

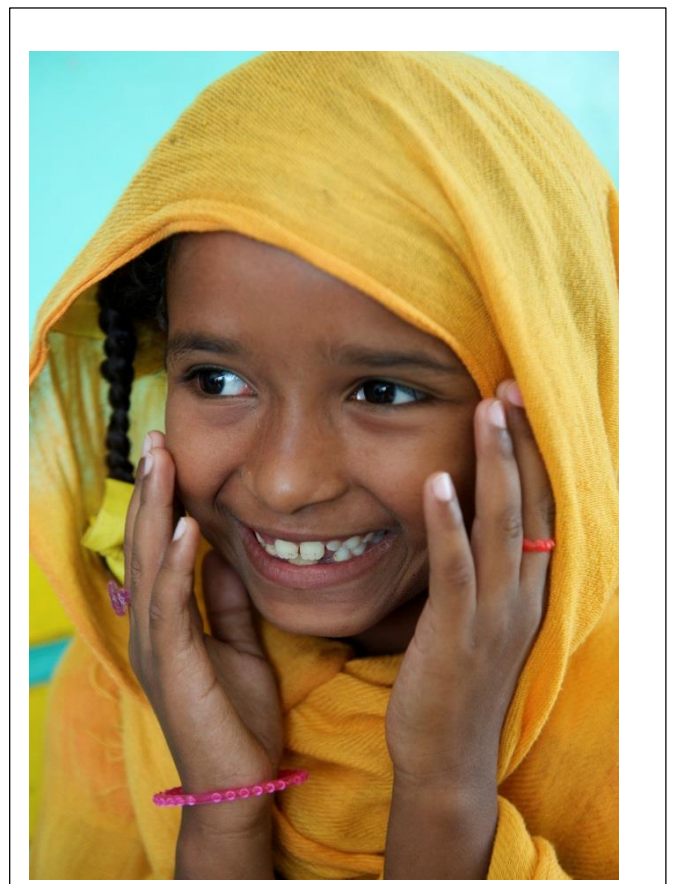


MINISTRY OF CABINET  
CENTRAL BUREAU OF STATISTICS

# SUDAN

## Multiple Indicator Cluster Survey 2014

### Final Report



The Sudan Multiple Indicator Cluster Survey (MICS) was carried out in 2014 by the Central Bureau of Statistics (CBS) Sudan in collaboration with the Ministry of Health as part of the global MICS programme, round 5. Technical support was provided by the United Nations Children's Fund (UNICEF) at national, regional and headquarter levels for quality assurance. A large partnership has been established for the conduct of MICS Sudan involving UNICEF, World Health Organization (WHO), United Nations Population Fund (UNFPA), World Food Program (WFP), and the Department for International Development (DfID) UK who provided financial support. The global MICS programme was developed by UNICEF in the 1990s as an international household survey programme to support countries in the collection of internationally comparable data on a wide range of indicators on the situation of children and women. MICS surveys measure key indicators that allow countries to generate data for use in policies and programmes, and to monitor progress towards the Millennium Development Goals (MDGs) and other internationally agreed upon commitments.

The specific objectives of the survey is to:

- Update information for assessing the situation of children and women in Sudan based on MICS5 modules and geographical coverage of the 18 States in Sudan.
- Measure the trend towards achievement of the MDGs and the goals of a World Fit For Children Plan of Action and other internationally agreed upon indicators related to children and women.
- Furnish data needed for the indicators as per the global review of the Millennium Development Goals.
- Contribute to the improvement of data and monitoring systems in Sudan and to strengthen technical expertise, national capacity building in the design, implementation, and analysis of such systems.
- Update Census indicators and provide solid evidence for decentralization (planning and measure of progress).
- Provide key evidence for social sector programming and the Poverty Reduction Strategy Paper (PRSP) under development and accountabilities for sector strategic plans and UNDAF 2013-2016.

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Citation: Central Bureau of Statistics (CBS), UNICEF Sudan. 2016, *Multiple Indicator Cluster Survey 2014 of Sudan, Final Report*. Khartoum, Sudan: UNICEF and Central Bureau of Statistics (CBS), February 2016.

## Summary Table of Survey Implementation and the Survey Population, Sudan MICS, 2014

Survey implementation			
<b>Sample frame</b>	Sudan Population Census 2008	<b>Questionnaires</b>	Household Women (age 15-49) Children under five
- Household Listing	July, 2014		
<b>Interviewer training</b>	July, 2014	<b>Fieldwork</b>	10 <sup>th</sup> September – 30 <sup>th</sup> October 2014
<b>Survey sample</b>			
<b>Households</b>		<b>Children under five</b>	
- Sampled	18,000	- Eligible	14,751
- Occupied	17,142	- Mothers/caretakers interviewed	14,081
- Interviewed	16,801	- Response rate (Percent)	95.5
- Response rate (Percent)	98.0		
<b>Women</b>			
- Eligible for interviews	20,327		
- Interviewed	18,302		
- Response rate (Percent)	90.0		

Survey population			
Average household size	5.9	<b>Percentage of population living in</b>	
<b>Percentage of population under:</b>		- Urban area	29.8
- Age 5	15.2	- Rural area	70.2
- Age 18	50.6	<b>States</b>	
Percentage of women age 15-49 years with at least one live birth in the last 2 years	30.7	- Northern	2.5
		- River Nile	4.0
		- Red Sea	3.1
		- Kassala	4.3
		- Gadarif	5.1
		- Khartoum	13.8
		- Gezira	15.6
		- White Nile	5.2
		- Sinnar	3.9
		- Blue Nile	3.9
		- North Kordofan	6.7
		- South Kordofan	2.8
		- West Kordofan	6.0
		- North Darfur	7.4
		- West Darfur	3.3
		- South Darfur	7.6
		- Central Darfur	1.8
		- East Darfur	3.0

Housing characteristics		Household or personal assets	
<b>Percentage of households with</b>		<b>Percentage of households that own</b>	
- Electricity	44.9	- A television	39.6
- Finished floor	14.0	- A refrigerator	25.9
- Finished roofing	25.0	- Agricultural land	39.5
- Finished walls	28.1	- Farm animals/livestock	51.0
Mean number of persons per room used for sleeping		<b>Percentage of households where at least a member has or owns a</b>	
	3.2	- Mobile phone	73.8
		- Car or truck	6.4

## Summary Table of Findings<sup>1</sup>

Multiple Indicator Cluster Surveys (MICS) and Millennium Development Goals (MDG) Indicators, Sudan MICS, 2014

CHILD MORTALITY			
Early childhood mortality <sup>a</sup>			
MICS Indicator	Indicator	Description	Value
1.1	Neonatal mortality rate	Probability of dying within the first month of life	33
1.2 <b>MDG 4.2</b>	Infant mortality rate	Probability of dying between birth and the first birthday	52
1.3	Post-neonatal mortality rate	Difference between infant and neonatal mortality rates	19
1.4	Child mortality rate	Probability of dying between the first and the fifth birthdays	17
1.5 <b>MDG 4.1</b>	Under-five mortality rate	Probability of dying between birth and the fifth birthday	68
<sup>a</sup> Indicator values are per 1,000 live births and refer to the five-year period before the survey			

NUTRITION			
Nutritional status			
MICS Indicator	Indicator	Description	Value
2.1a <b>MDG 1.8</b>	Underweight prevalence	Percentage of children under age 5 who fall below	
2.1b	(a) Moderate and severe	(a) minus two standard deviations (moderate and severe)	33.0
	(b) Severe	(b) minus three standard deviations (severe) of the median weight for age of the WHO standard	12.0
2.2a	Stunting prevalence	Percentage of children under age 5 who fall below	
2.2b	(a) Moderate and severe	(a) minus two standard deviations (moderate and severe)	38.2
	(b) Severe	(b) minus three standard deviations (severe) of the median height for age of the WHO standard	18.2
2.3a	Wasting prevalence	Percentage of children under age 5 who fall below	
2.3b	(a) Moderate and severe	(a) minus two standard deviations (moderate and severe)	16.3
	(b) Severe	(b) minus three standard deviations (severe) of the median weight for height of the WHO standard	4.5

<sup>1</sup> See Appendix E for a detailed description of MICS indicators

NUTRITION			
Nutritional status			
MICS Indicator	Indicator	Description	Value
2.4	Overweight prevalence	Percentage of children under age 5 who are above two standard deviations of the median weight for height of the WHO standard	3.0
Breastfeeding and infant feeding			
2.5	Children ever breastfed	Percentage of women with a live birth in the last 2 years who breastfed their last live-born child at any time	95.6
2.6	Early initiation of breastfeeding	Percentage of women with a live birth in the last 2 years who put their last new-born to the breast within one hour of birth	68.7
2.7	Exclusive breastfeeding under 6 months	Percentage of infants under 6 months of age who are exclusively breastfed	55.4
2.8	Predominant breastfeeding under 6 months	Percentage of infants under 6 months of age who received breast milk as the predominant source of nourishment during the previous day	80.8
2.9	Continued breastfeeding at 1 year	Percentage of children age 12-15 months who received breast milk during the previous day	89.4
2.10	Continued breastfeeding at 2 years	Percentage of children age 20-23 months who received breast milk during the previous day	48.8
2.11	Median duration of breastfeeding	The age in months when 50 percent of children age 0-35 months did not receive breast milk during the previous day	21.2
2.12	Age-appropriate breastfeeding	Percentage of children age 0-23 months appropriately fed during the previous day	63.1
2.13	Introduction of solid, semi-solid or soft foods	Percentage of infants age 6-8 months who received solid, semi-solid or soft foods during the previous day	61.2
2.14	Milk feeding frequency for non-breastfed children	Percentage of non-breastfed children age 6-23 months who received at least 2 milk feedings during the previous day	57.5
2.15	Minimum meal frequency	Percentage of children age 6-23 months who received solid, semi-solid and soft foods (plus milk feeds for non-breastfed children) the minimum number of times or more during the previous day	40.7
2.16	Minimum dietary diversity	Percentage of children age 6-23 months who received foods from 4 or more food groups during the previous day	28.0
2.17a 2.17b	Minimum acceptable diet	(a) Percentage of breastfed children age 6-23 months who had at least the minimum dietary diversity and the minimum meal frequency during the previous day (b) Percentage of non-breastfed children age 6-23 months who received at least 2 milk feedings and had at least the minimum dietary diversity not including milk feeds and the minimum meal frequency during the previous day	25.0 37.0
2.18	Bottle feeding	Percentage of children age 0-23 months who were fed with a bottle during the previous day	7.3
Salt iodization			
2.19	Iodized salt consumption	Percentage of households with salt testing 15 parts per million or more of iodide/iodate	7.6
Low-birthweight			
2.20	Low-birthweight infants	Percentage of most recent live births in the last 2 years weighing below 2,500 grams at birth	32.3
2.21	Infants weighed at birth	Percentage of most recent live births in the last 2 years who were weighed at birth	16.3

CHILD HEALTH			
Vaccinations			
MICS Indicator	Indicator	Description	Value
3.1	Tuberculosis immunization coverage	Percentage of children age 12-23 months who received BCG vaccine by their first birthday	78.5
3.2	Polio immunization coverage	Percentage of children age 12-23 months who received the third dose of OPV vaccine (OPV3) by their first birthday	65.3
3.3 3.5 3.6	Pentavalent (DPT+HepB+Hib) immunization coverage	Percentage of children age 12-23 months who received the third dose of Pentavalent (DPT+HepB+Hib) vaccine by their first birthday	63.9
3.4 <b>MDG 4.3</b>	Measles immunization coverage	Percentage of children age 12-23 months who received measles vaccine by their first birthday	60.9
3.8	Full immunization coverage	Percentage of children age 12-23 months who received all vaccinations recommended in the national immunization schedule by their first birthday	42.8
Tetanus toxoid			
3.9	Neonatal tetanus protection	Percentage of women age 15-49 years with a live birth in the last 2 years who were given at least two doses of tetanus toxoid vaccine within the appropriate interval prior to the most recent birth	58.2
Diarrhoea			
-	Children with diarrhoea	Percentage of children under age 5 with diarrhoea in the last 2 weeks	29.0
3.10	Care-seeking for diarrhoea	Percentage of children under age 5 with diarrhoea in the last 2 weeks for whom advice or treatment was sought from a health facility or provider	42.7
3.11	Diarrhoea treatment with oral rehydration salts (ORS) and zinc	Percentage of children under age 5 with diarrhoea in the last 2 weeks who received ORS and zinc	28.9
3.12	Diarrhoea treatment with oral rehydration therapy (ORT) and continued feeding	Percentage of children under age 5 with diarrhoea in the last 2 weeks who received ORT (ORS packet, pre-packaged ORS fluid, recommended homemade fluid or increased fluids) and continued feeding during the episode of diarrhoea	59.3
Acute Respiratory Infection (ARI) symptoms			
-	Children with ARI symptoms	Percentage of children under age 5 with ARI symptoms in the last 2 weeks	17.8
3.13	Care-seeking for children with ARI symptoms	Percentage of children under age 5 with ARI symptoms in the last 2 weeks for whom advice or treatment was sought from a health facility or provider	48.3
3.14	Antibiotic treatment for children with ARI symptoms	Percentage of children under age 5 with ARI symptoms in the last 2 weeks who received antibiotics	59.0
Solid fuel use			
3.15	Use of solid fuels for cooking	Percentage of household members in households that use solid fuels as the primary source of domestic energy to cook	58.2

## WATER AND SANITATION

MICS Indicator	Indicator	Description	Value
4.1	<b>MDG 7.8</b>	Use of improved drinking water sources	Percentage of household members using improved sources of drinking water
4.2		Water treatment	Percentage of household members in households using unimproved drinking water who use an appropriate treatment method
4.3	<b>MDG 7.9</b>	Use of improved sanitation	Percentage of household members using improved sanitation facilities which are not shared
4.4		Safe disposal of child's faeces	Percentage of children age 0-2 years whose last stools were disposed of safely
4.5		Place for handwashing	Percentage of households with a specific place for hand washing where water and soap or other cleansing agent are present
4.6		Availability of soap or other cleansing agent	Percentage of households with soap or other cleansing agent

## REPRODUCTIVE HEALTH

### Contraception and unmet need

MICS Indicator	Indicator	Description	Value
-		Total fertility rate	Total fertility rate <sup>A</sup> for women age 15-49 years
5.1	<b>MDG 5.4</b>	Adolescent birth rate	Age-specific fertility rate <sup>A</sup> for women age 15-19 years
5.2		Early childbearing	Percentage of women age 20-24 years who had at least one live birth before age 18
5.3	<b>MDG 5.3</b>	Contraceptive prevalence rate	Percentage of women age 15-49 years currently married who are using (or whose partner is using) a (modern or traditional) contraceptive method
5.4	<b>MDG 5.6</b>	Unmet need	Percentage of women age 15-49 years who are currently married who are fecund and want to space their births or limit the number of children they have and who are not currently using contraception

<sup>A</sup> The age-specific fertility rate is defined as the number of live births to women in a specific age group during a specified period, divided by the average number of women in that age group during the same period, expressed per 1,000 women. The age-specific fertility rate for women age 15-19 years is also termed as the adolescent birth rate. The total fertility rate (TFR) is calculated by summing the age-specific fertility rates calculated for each of the 5-year age groups of women, from age 15 through to age 49. The TFR denotes the average number of children to which a woman will have given birth by the end of her reproductive years (by age 50) if current fertility rates prevailed.

### Maternal and newborn health

5.5a	<b>MDG 5.5</b>	Antenatal care coverage	Percentage of women age 15-49 years with a live birth in the last 2 years who were attended during their last pregnancy that led to a live birth
5.5b	<b>MDG 5.5</b>		(a) at least once by skilled health personnel
			(b) at least four times by any provider
5.6		Content of antenatal care	Percentage of women age 15-49 years with a live birth in the last 2 years who had their blood pressure measured and gave urine and blood samples during the last pregnancy that led to a live birth
5.7	<b>MDG 5.2</b>	Skilled attendant at delivery	Percentage of women age 15-49 years with a live birth in the last 2 years who were attended by skilled health personnel during their most recent live birth
5.8		Institutional deliveries	Percentage of women age 15-49 years with a live birth in the last 2 years whose most recent live birth was delivered in a health facility

5.9	Caesarean section	Percentage of women age 15-49 years whose most recent live birth in the last 2 years was delivered by caesarean section	9.1
<b>Post-natal health checks</b>			
5.10	Post-partum stay in health facility	Percentage of women age 15-49 years who stayed in the health facility for 12 hours or more after the delivery of their most recent live birth in the last 2 years	51.5
5.11	Post-natal health check for the newborn	Percentage of last live births in the last 2 years who received a health check while in facility or at home following delivery, or a post-natal care visit within 2 days after delivery	27.7
5.12	Post-natal health check for the mother	Percentage of women age 15-49 years who received a health check while in facility or at home following delivery, or a post-natal care visit within 2 days after delivery of their most recent live birth in the last 2 years	26.6

<b>CHILD DEVELOPMENT</b>			
<b>MICS Indicator</b>	<b>Indicator</b>	<b>Description</b>	<b>Value</b>
6.1	Attendance to early childhood education	Percentage of children age 36-59 months who are attending an early childhood education programme	22.3
6.5	Availability of children's books	Percentage of children under age 5 who have three or more children's books	1.5
6.6	Availability of playthings	Percentage of children under age 5 who play with two or more types of playthings	45.5

<b>LITERACY AND EDUCATION</b>			
<b>MICS Indicator</b>	<b>Indicator</b>	<b>Description</b>	<b>Value</b>
7.1 <b>MDG 2.3</b>	Literacy rate among young people	Percentage of young people age 15-24 years who are able to read a short simple statement about everyday life or who attended secondary or higher education (a) women	59.8
7.2	School readiness	Percentage of children in first grade of primary school who attended pre-school during the previous school year	69.7
7.3	Net intake rate in primary education	Percentage of children of school-entry age who enter the first grade of primary school	36.8
7.4 <b>MDG 2.1</b>	Primary school net attendance ratio (adjusted)	Percentage of children of primary school age currently attending primary or secondary school	76.4
7.5	Secondary school net attendance ratio (adjusted)	Percentage of children of secondary school age currently attending secondary school or higher	28.4
7.6 <b>MDG 2.2</b>	Children reaching last grade of primary	Percentage of children entering the first grade of primary school who eventually reach last grade	80.4
7.7	Primary completion rate	Number of children attending the last grade of primary school (excluding repeaters) divided by number of children of primary school completion age (age appropriate to final grade of primary school)	79.3
7.8	Transition rate to secondary school	Number of children attending the last grade of primary school during the previous school year who are in the first grade of secondary school during the current school year divided by number of children attending the last grade of primary school during the previous school year	90.7
7.9 <b>MDG 3.1</b>	Gender parity index (primary school)	Primary school net attendance ratio (adjusted) for girls divided by primary school net attendance ratio (adjusted) for boys	0.98



7.10	<b>MDG 3.1</b>	Gender parity index (secondary school)	Secondary school net attendance ratio (adjusted) for girls divided by secondary school net attendance ratio (adjusted) for boys	1.07
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CHILD PROTECTION			
Birth registration			
MICS Indicator	Indicator	Description	Value
8.1	Birth registration	Percentage of children under age 5 whose births are reported registered	67.3
Child labour			
8.2	Child labour	Percentage of children age 5-17 years who are involved in child labour	24.9
Child discipline			
8.3	Violent discipline	Percentage of children age 1-14 years who experienced psychological aggression or physical punishment during the last one month	63.9
Early marriage and polygyny			
8.4	Marriage before age 15	Percentage of people age 15-49 years who were first married before age 15 (a) Women	11.9
8.5	Marriage before age 18	Percentage of people age 20-49 years who were first married before age 18 (a) Women	38.0
8.6	Young people age 15-19 years currently married	Percentage of young people age 15-19 years who are married (a) Women	21.2
8.7	Polygyny	Percentage of people age 15-49 years who are in a polygynous union (a) Women	21.7
8.8a 8.8b	Spousal age difference	Percentage of young women who are married and whose spouse is 10 or more years older, (a) among women age 15-19 years, (b) among women age 20-24 years	7.9 23.0
Female genital mutilation/cutting			
8.9	Approval for female genital mutilation/cutting (FGM/C)	Percentage of women age 15-49 years who state that FGM/C should be continued	40.9
8.10	Prevalence of FGM/C among women	Percentage of women age 15-49 years who report to have undergone any form of FGM/C	86.6
8.11	Prevalence of FGM/C among girls	Percentage of daughters age 0-14 years who have undergone any form of FGM/C, as reported by mothers age 15-49 years	31.5
Attitudes towards domestic violence			
8.12	Attitudes towards domestic violence	Percentage of people age 15-49 years who state that a husband is justified in hitting or beating his wife in at least one of the following circumstances: (1) she goes out without telling him, (2) she neglects the children, (3) she argues with him, (4) she refuses sex with him, (5) she burns the food (a) Women	34.0
Children's living arrangements			
8.13	Children's living arrangements	Percentage of children age 0-17 years living with neither biological parent	3.4

8.14	Prevalence of children with one or both parents dead	Percentage of children age 0-17 years with one or both biological parents dead	5.3
8.15	Children with at least one parent living abroad	Percentage of children 0-17 years with at least one biological parent living abroad	1.8
<b>HIV/AIDS AND SEXUAL BEHAVIOUR</b>			
<b>HIV/AIDS knowledge and attitudes</b>			
<b>MICS Indicator</b>	<b>Indicator</b>	<b>Description</b>	<b>Value</b>
-	Have heard of AIDS	Percentage of people age 15-49 years who have heard of AIDS (a) Women	74.8
9.1 <b>MDG 6.3</b>	Knowledge about HIV prevention among young people	Percentage of young people age 15-24 years who correctly identify ways of preventing the sexual transmission of HIV, and who reject major misconceptions about HIV transmission (a) Women	8.5
9.2	Knowledge of mother-to-child transmission of HIV	Percentage of people age 15-49 years who correctly identify all three means of mother-to-child transmission of HIV (a) Women	28.4
9.3	Accepting attitudes towards people living with HIV	Percentage of people age 15-49 years expressing accepting attitudes on all four questions toward people living with HIV (a) Women	7.9
<b>HIV testing</b>			
9.4	People who know where to be tested for HIV	Percentage of people age 15-49 years who state knowledge of a place to be tested for HIV (a) Women	17.0
9.5	People who have been tested for HIV and know the results	Percentage of people age 15-49 years who have been tested for HIV in the last 12 months and who know their results (a) Women	1.6
9.6	Sexually active young people who have been tested for HIV and know the results	Percentage of young people age 15-24 years who have had sex in the last 12 months, who have been tested for HIV in the last 12 months and who know their results (a) Women	1.2
9.7	HIV counselling during antenatal care	Percentage of women age 15-49 years who had a live birth in the last 2 years and received antenatal care during the pregnancy of their most recent birth, reporting that they received counselling on HIV during antenatal care	4.2
9.8	HIV testing during antenatal care	Percentage of women age 15-49 years who had a live birth in the last 2 years and received antenatal care during the pregnancy of their most recent birth, reporting that they were offered and accepted an HIV test during antenatal care and received their results	3.6
<b>Orphans</b>			
9.16 <b>MDG 6.4</b>	Ratio of school attendance of orphans to school attendance of non-orphans	Proportion attending school among children age 10-14 years who have lost both parents divided by proportion attending school among children age 10-14 years whose parents are alive and who are living with one or both parents	0.82

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## List of Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
ARI	Acute Respiratory Infection
BCG	Bacillus-Calmette-Guérin (Tuberculosis)
CBS	Central Bureau of Statistics
CPR	Contraceptive Prevalence Rate
CRC	Convention on the Rights of the Child
CSPRO	Census and Survey Processing System
DHS	Demographic and Health Survey
DPT	Diphtheria Pertussis Tetanus
EPI	Expanded Programme on Immunization
FGM/C	Female Genital Mutilation/Cutting
FMoH	Federal Ministry of Health
FP	Family Planning
GPI	Gender Parity Index
HB	Hepatitis B
HIB	Haemophilus Influenza type B
HIV	Human Immunodeficiency Virus
ICPD	International Conference on Population and Development
IDD	Iodine Deficiency Disorders
IGME	Inter-Agency Group on Mortality Estimation
IMR	Infant Mortality Rate
ITN	Insecticide Treated Net
IUD	Intrauterine Device
JICA	Japan International Cooperation Agency
JMP	Joint Monitoring Programme
LAM	Lactational Amenorrhea Method
MD	Millennium Declaration
MDG	Millennium Development Goals
MICS	Multiple Indicator Cluster Survey
MICS4	Multiple Indicator Cluster Survey Round 4
MICS5	Fifth global round of Multiple Indicator Clusters Surveys programme
MMR	Measles, Mumps, and Rubella
NAR	Net Attendance Rate
NCCW	National Council for Child Welfare
NIDs	National Immunisation Days
NMR	Neonatal Mortality Rate
ORT	Oral Rehydration Treatment
PAPFAM	Pan Arab Project for Family Health
PRSP	Poverty Reduction Strategy Paper
RH	Reproductive Health
SHHS	Sudan Household Health Survey
SHHS2	Sudan Household Health Survey - Second Round

SPSS	Statistical Package for Social Sciences
STI	Sexually Transmitted Infections
TBA	Traditional Birth Attendant
TT	Tetanus Toxoid
USMR	Under 5 Mortality Rate
UNAIDS	United Nations Programme on HIV/ AIDS
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNGASS	United Nations General Assembly Special Session on HIV/AIDS
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
Vit. A	Vitamin A
WFFC	World Fit for Children
WFP	World Food Programme
WHO	World Health Organization

## Foreword

The Government of Sudan represented by the Ministry of Cabinet Affairs and UNICEF Representative in Sudan are pleased to launch this Multiple Indicator Cluster Survey (2014) Final Report for Sudan.

This report of statistically sound and internationally comparable data source provides a credible evidence for informing policies and programmes, and for monitoring Sudan's progress toward national development plan and the Sustainable Development Goals (SDGs).

Under the leadership of the Director General of the Central Bureau of Statistics (CBS), a steering committee comprising of representatives from national and international institutions that contribute to the goals of the survey worked tirelessly for the past year to present a coherent and nationally validated information related to nutrition, education, child health, maternal health, HIV/AIDS, water and sanitation and child protection. The availability of accurate and current nationwide data provided by MICS 2014 represents a key asset for Sudan after the separation of South Sudan in 2011.

We are grateful for the role played by a wide range of partnerships during the implementation of this survey with special reference to the Government of Sudan including all relevant line ministries, states, and local authorities.

We are also grateful for the technical and financial support provided by UNICEF, WFP, UNFPA, WHO and DFID for this exercise.

In the light of the above we encourage all policy makers, humanitarian and development partners, academic institutions, and indeed the people of Sudan to make effective use of this report to plan, monitor and evaluate relevant goals and objectives addressing the survival, development and protection rights of children in the country.

Signed on 03rd March 2016, by:

For the Government of Sudan

Signature \_\_\_\_\_

**Mr Tarig Tawfig Moh. Suliman**  
**Minister of State**  
**Ministry of Cabinet**

For the United Nations Children Funds  
(UNICEF)

Signature \_\_\_\_\_

**Mr Geert Cappelaere**  
**UNICEF Representative in Sudan**

## Acknowledgements

The fourth Sudan Multiple Indicator Cluster Survey (MICS5), was conducted from August to December 2014 at national level covering all eighteen states. The MICS was designed to collect information on a variety of socioeconomic and health indicators required to inform the planning, implementation and monitoring of national policies and programmes for the enhancement of the welfare of women and children. The MICS plays a critical role in informing national policies such as the Sudan Strategic Plan (2012-2016); and the sector strategic plans of health, education, and water and sanitation. It also serves as an instrument to measure progress towards the achievement of national and international commitments for children and women wellbeing (MDG2015, SDG 2030).

The Central Bureau of Statistics (CBS) wishes to express sincere gratitude to the various institutions and individuals who worked tirelessly to make the survey a success. Their commitment and dedication to this exercise ensured quality information for data analysis and report writing. This survey was made possible through financial and technical support from the United Nations Children's Fund (UNICEF), the United Nations Population Fund (UNFPA), the World Food Programme (WFP), the Department for International Development (DFID).

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• Survey Technical Coordinator	Reporter
• Under Secretary, Federal Ministry of Health	Member
• Under Secretary Ministry of Education	Member
• Under Secretary Ministry of Welfare and S. Security	Member
• Under Secretary, Ministry of Environment and Public	Member
• UNICEF Representative	Member
• UNFPA Representative	Member
• WHO Representative	Member
• WFP Representative	Member
• Secretary General of National population Council	Member



Dr Yassin Elhag Abdin

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## **Executive Summary**

This Sudan Multiple Indicator Cluster Survey (MICS5) is a nationally representative survey of households, women, and children with fieldwork conducted from August to November 2014. The survey was conducted by the central bureau of statistics (CBS) in collaboration with the ministries of health, welfare, general education, national environment, and national water cooperation. The survey provides statistically sound and internationally comparable data essential for developing evidence-based policies and programmes, and for monitoring progress toward national goals and global commitments. Among these global commitments are those emanating from the World Fit for Children Declaration and Plan of Action, the goals of the United Nations General Assembly Special Session on HIV/AIDS, the Education for All Declaration and the Millennium Development Goals (MDGs).

Interviews were successfully completed in 15,801 households drawn from a sample 18,000 households all 18 states of Sudan with an overall response rate of 98 percent. The main results from the survey are summarized below.

### **Child Mortality**

Child mortality was measured in this survey through a methodology that produced retrospective estimates (for the year 2012) of the infant mortality rate (IMR) and under-five mortality rate (U5MR). The survey estimated the IMR as 52 per 1000 live births and the U5MR as 68 per 1000 live births indicating that 76.5 percent of under-five deaths are infant deaths.

Findings reveal that there is inequality of probabilities of dying between urban and rural areas: under-five mortality and infant mortality rates are respectively 56.5 and 11.8 deaths for 1,000 live births in urban area, 72.8 and 19.3 in rural area.

Also the risk of dying of under-five children before the five birthday widely varies among states with East Darfur (111.7/1,000 live births) the highest and Northern state (29.9/1,000 live births) the lowest.

There is also disparity in child mortality in Sudan by wealth index quintile: U5MR is estimated at 84/1,000 live births and 39/1,000 live births for the poorest and richest quintile respectively.

### **Nutrition**

The survey indicated that there is high prevalence of child malnutrition is high in Sudan: one-third (33 percent) of under-five children are underweight, nearly two in five (38.2 percent) children under-five years are stunted (too short for their age), and one in six (16.3 percent) children is wasted (too thin for their height).

The prevalence of underweight is 23.2 percent in urban area as compared to 37.1 percent in rural area; there is a very wide gap in child stunting between rural areas (43 percent) and urban areas (27.1 percent).

### **Breastfeeding**

There is a high breastfeeding practice in Sudan with approximately 96 percent of children ever breastfed. However only 69 percent of the babies are breastfed for the first time within one hour of birth, 28 percent of newborns are given pre-lacteal feeds birth. Fifty-five (55.4 percent) of children 0-5 months are exclusively breastfed, nearly 90 percent aged 12-15 months are having continued breastfeeding at year of age and nearly half (48.8 percent) of the children aged 20-23 months are receiving continued breastfeeding at 2 years of age.



### **Salt Iodization**

Sudan does not have a national law on salt iodization and as a consequence only 7.6 percent of households have adequately iodized salt (which contains 15 parts per million ppm or more of iodine). Use of adequately iodized salt is lowest in States of West Kordofan (2.9 percent), Blue Nile (3.1 percent), Red Sea (3.2 percent) and Khartoum (3.3 percent) and relatively highest use is recorded in East Darfur (18.1 percent), Central Darfur (14.8 percent) and Sinnar (15.6 percent).

There is no difference of iodized salt consumption between the richest (8.8 percent) and poorest households (8.0 percent).

### **Vitamin A Supplementation**

There is high coverage of vitamin A supplementation in Sudan; 78 percent of children under five years receive Vitamin A during the last 6 months preceding the survey. The coverage of Vitamin A varies by State, age of children, mother's education and wealth index quintile.

### **Low Birth Weight**

Weight at birth is an excellent indicator of both a mother's health and nutritional status and also a newborn's chances for survival, growth, long-term health and psychosocial development. The Sudan's 2014 MICS states that 16.3 percent of births were weighed at birth. Approximately 32.3 percent of infants born during the last two years were estimated to weigh less than 2,500 grams at birth. The prevalence of low birth weight varies by urban 27.9 percent and rural area 33.9 percent and by mother's education from 33.7 percent among children for whose mothers are not educated to 23.7 percent for children whose mothers have higher level of education

The highest prevalence of low birth weight was observed in states of North Darfur (47.5 percent), East Darfur (46.9percent), North Kordofan (41.4percent) and West Kordofan (36percent) in comparison to the low prevalence observed in states of River Nile (17.2 percent), Khartoum (22.2 percent), Gadarif (23.9 percent) and Blue Nile (25.7 percent).

## **Child Health**

### **Immunization**

Approximately 78.5 percent of children age 12-23 months received a BCG vaccination by the age of 12 by their first birthday. About sixty-four (63.9 percent) of the children received the third dose of Pentavalent (DPT+HepB+Hib). Similarly, 65.3 percent by the third dose of Polio vaccination, 58.9 percent for the first dose of measles vaccine by 12-23 months by 12 months of age. Overall, the percentage of children who had all the recommended vaccinations by their first birthday is low at only 42.8 percent.

### **Tetanus Toxoid**

Thirty-two (32.1 percent) of surveyed women aged 15-49 years who gave birth during the year prior to the MICS5 survey received at least two doses of tetanus toxoid (TT) vaccine during their pregnancy and 58.2 percent of the women were protected against neonatal tetanus due to previous TT vaccinations.

The data also showed a higher percentage of women aged 15-49 years in urban areas with a live birth in the last two years prior to the survey were protected against neonatal tetanus (65.9 percent) than their counterparts in rural areas (55.4 percent).

### **Oral Rehydration Treatment**

Approximately 34 percent of the children age 0-59 months with diarrhoea received ORS or increased fluids. Nearly sixty (59.3 percent) of children received ORT with continued feeding as recommended. There are notable differences in ORT and continued feeding during diarrhoea among the states ranging from 16.9 percent in River Nile State to 31.3 percent in West Kordofan.

### **Care Seeking and Antibiotic Treatment of Pneumonia**

Approximately half (48.3 percent) of children age 0-59 months with symptoms of ARI were taken to a qualified provider. While 59 percent of the children received antibiotics during the two weeks prior to the survey. The percentage was considerably higher in urban than in rural areas, and ranged from 49 percent in South Darfur state to 78 percent in River Nile state. Antibiotic treatment of ARI symptoms is low among the poorest households and among children whose mothers/caretakers have less than secondary education. Only about five (4.5 percent) of the children with symptoms of ARI received treatment from community health workers.

Mothers' knowledge of danger signs is an important determinant of care-seeking behaviour. In the Sudan MICS 2014, 26.9 percent of women knew at least one of the two danger signs of pneumonia – fast and/or difficult breathing. The most commonly identified symptom for taking a child to a health facility is fever accounting for more than 80 percent of respondents. About 11.7 percent and 20.9 percent of mothers identified fast breathing and difficult breathing respectively as symptoms for taking children immediately to a health care provider.

### **Solid Fuel Use**

Overall, more than 58.2 percent of the household population in Sudan use solid fuels for cooking, consisting mainly of wood (40.7 percent). Use of solid fuels is low in urban areas (40.7 percent), but high in rural areas, used by two-thirds (66 percent) of household members. Very big difference between the states as use of solid fuels ranges from 99.9 percent in Central Darfur and to 13.3 percent in River Nile State.

### **Water and Sanitation**

The MICS5 estimates of the Sudan population's access to improved sources of drinking water (68 percent). Overall, more than two-fifths (41.4 percent) of the household members used drinking water that was piped into their dwelling or into their compound, yard or plot or into public tap/standpipe. Nearly 41 percent of the population are living in households using improved sanitation facilities.

Access to improved sanitation facilities widely varies between urban areas (39.3 percent) as compared with 28.2 percent rural areas. About 30 percent of the households in Sudan practiced open defecation (no facility, bush field). Use of open defecation as a method of faecal disposal ranged from 1.7 percent in Khartoum State to 44.9 percent in Kassala State.

Overall 28 percent of the households in Sudan have access to both improved sources of drinking water and improved sources of sanitation. This figure greatly varies among households along the wealth index status ladder; 3 percent in households in the poorest quintile compared to 75 percent in households in the richest quintile.

## **Reproductive Health**

### **Fertility**

The Total Fertility Rate (FTR) for the three years preceding the MICS5 survey is 5.2 births per woman. Fertility is considerably higher in rural areas (5.6 births per woman) than in the urban areas (4.4 births per woman).

The urban-rural difference in fertility is most pronounced for women in the 20-24 age group: 167 births per 1,000 women in urban areas versus 225 births per 1,000 women in rural areas. The overall age pattern of fertility, as reflected in the ASFRs, indicates that childbearing begins early. Fertility is low among adolescents, increases to a peak of 259 births per 1,000 among women age 25-29

### **Contraception**

Current use of contraception in Sudan MICS5 was reported as 12.2 percent of women currently married<sup>2</sup>. The most popular method was the pill which is used by about one in ten married women in Sudan (9.0 percent).

Almost 87.8 percent of the married women reported that they are not using any form of contraception.

The survey results show that contraceptive prevalence ranges from 2.9 percent in Central Darfur to 26.5 percent in Khartoum State. About 20.1 percent of married women in urban and 9.0 percent in rural areas use a method of contraception.

Women's level of education is strongly associated with contraceptive prevalence; prevalence rising from 4.4 percent among those with no education to 13.3 percent among those with primary education, and to 21 percent and 27.6 percent among those with secondary and higher education respectively.

About 27 percent of women 15-49 years reported for unmet need in the Sudan MICS5.

### **Antenatal Care**

Overall, the proportion of women who received ANC from any skilled provider (i.e., a doctor, nurse, or midwife) was 79.1 percent while those women who did not receive ANC was 19.9 percent. There exists rural-urban differentials in favour of women who received antenatal care in urban areas (90.8 percent) compared to women in rural areas (74.9 percent).

There was also significant differences among the states for women who received ANC from any provider; ranging from 61.8 percent of women in South Darfur state to 97.1 percent of the women in Khartoum state.

### **Assistance at Delivery**

About 80 percent of births in Sudan that occurred in the two years preceding the MICS 2014 survey were delivered by the assistance of skilled personnel. This percentage is higher in urban areas with 92.9 percent of the deliveries by skilled personnel than 71.9 percent in rural areas. Deliveries by skilled personnel varied widely in the States ranging from 37.5 percent in Central Darfur state 99 percent in Northern State.

Also delivery by skilled personnel is found to be strongly influenced by the level of education; assistance by skilled delivery attendant for women with no education was 58.5 percent, while among

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<sup>2</sup> All references to "married women" in this chapter include women in marital union as well.

those with primary education it was 86.7 percent, and among women with secondary and higher education levels it was 95.7 percent and 97.6 percent respectively.

More than half of the births (55 percent) in the two years preceding the MICS survey were delivered with the assistance of a certified midwife. Medical doctors assisted with the delivery of 19.2 percent of births and the births delivered by assistance of Traditional Birth Attendants (TBAs) with is 18 percent.

### **Place of Delivery**

Slightly more than a quarter (27.7 percent) of births in Sudan are delivered in a health facility; of which 26.1 percent occur in public sector facilities while only 1.6 percent of the deliveries occur in private sector facilities. The MICS results also indicate that 71.3 percent of the deliveries takes place at home.

Women in urban areas (45.2 percent) are more than twice as likely to deliver in a health facility as their rural counterparts (21.5 percent).

Women with higher levels of educational attainment are more likely to deliver in a health facility than women with less education or no education. Specifically; 11.5 percent of women who had delivered in a health facility no education compared to 25.8 percent of the women with primary education, to 49.8 percent of the women with secondary education, and to 75.5 percent of the women with higher level of education.

### **Post-natal checks**

Overall, 51.5 percent of women who gave birth in a health facility stay 12 hours or more in the facility after delivery. Across the country, the percentage of women who stay 12 hours or more varies from 29.3 percent in Central Darfur to 73.2 percent in White Nile State. The survey results indicated small difference between proportions of those delivering in public and private facilities and who stay 12 hours or more in the facility.

### **Child Development**

About 22.3 percent of children aged 36-59 months are attending an organised early childhood education programme in Sudan. Urban-rural and statestate differentials are notable – the figure is as high as 44.6 percent in urban areas, compared to 13.9 percent in rural areas.

Among children aged 36-59 months, attendance to early childhood education programmes is more prevalent in Khartoum state (44.3 percent), and lowest in the West Kordofan (4.3 percent).

There are also significant differences among children living in different socioeconomic backgrounds; 59.4 percent of children living in the richest (20 percent) households attend such programmes, while the figure drops to 6.9 percent among children in the poorest households.

## **Literacy and Education**

### **Adult Literacy**

The MICS5 indicates that about six out of ten ( 59.8 percent) young women in Sudan are literate and that literacy status varies greatly by area (79.8 percent in urban areas and 50 percent in rural areas). Of women who stated that primary school was their highest level of education, just 43.7 percent were actually able to read a simple statement shown to them.

The proportion of women who were literate was higher at 63.4 percent among women aged 15-19 years than that among women age 20-24 years (55.6 percent). The proportion of literate women (aged 15-24 years) also varied by their household wealth. The proportion of literate women was much higher among those belonging to households in the richest quintile (92.2 percent) than those belonging to households in the poorest quintile (31.2 percent).

### **Pre-School Attendance and School Readiness**

Approximately seventy (69.7) percent of children who are currently attending the first grade of primary school were attending pre-school the previous year with varying proportion of children in first grade in urban areas (81.0 percent) had attended pre-school the previous year compared to 64.7 percent among children living in rural areas. State differentials are also very significant; first graders in Khartoum state have attended pre-school nearly 3 times as likely (87 percent) as their counterparts in Central Darfur State (30.5 percent). Socioeconomic status appears to have a positive correlation with school readiness – while the indicator is only 50.6 percent among the poorest households, it increases to 86.9 percent among children living in the richest households.

### **Primary and Secondary School Participation**

Less than forty (36.8) percent children who are of primary school entry age in Sudan are attending the first grade of primary school. Sex differentials do not exist; however, significant differentials are present by state and urban-rural areas. In Northern state, for instance, percentage of children entering grade one is 73.6 percent, while those entering at grade one in Western Kordofan state is 13.4 percent. Those entering grade one in urban areas (56.6 percent) is nearly twice as those in rural areas (29.5 percent). A positive correlation with socioeconomic status is observed for children aged 6 who were attending the first grade. In richest households, the proportion is around 77.6 percent, while it is 14.5 percent among children living in the poorest households.

Over three-fourths (76.4 percent) of children of primary school age are attending school while only (28.4 percent) of the children of secondary school age are attending secondary school.

## **Child Protection**

### **Birth Registration**

The births of 67.3 percent of children under five years in Sudan have been registered; 23.4 percent of the registration certificates have been seen by the interviewers, 26.4 percent have not been seen by the interviewers, and 17.5 were reported to have no birth certificate.

Children in Central Darfur State (30.9 percent) were the least to have their births registered than children in other states with Northern states (98.3 percent) registering the highest number of children under five at birth. While only 37.0 percent of the children in the poorest households were registered, nearly all children (97.9 percent) of under five children who belong to richest households were registered. Overall, only 49.8 of the children possess a birth certificate.

### **Child Labour**

According to the definition of “child labour” that was used in MICS5, a child aged 5-11 years was considered to be involved in child labour activities if s/he, during the week preceding the survey, performed at least one hour of economic work or 28 hours or more of domestic work per week. For a child aged 12-14 years the cut-off points to be considered a “child labourer” were at least 14 hours of economic work or 28 hours or more of domestic work per week.

While 41.2 percent of children age 12-14 are engaged in some forms of economic activities, 9 percent are performing such tasks for fourteen or more hours. The involvement in economic activities change with age: 21 percent of children aged 5-11 years is engaged in economic activities, compared to 39.1 percent of children aged 12-14 years, and 41.2 percent of children aged 15-17 years.

It is also clear from the MICS5 results that engagement in economic activities increases with movement from wealthiest to poorest households. For instance, among children aged 5 – 11 years engaged in economic activity, 9.2 percent of them belong to the wealthiest households while 35.0 percent of them fall in the poorest category. The involvement in economic activities by children varies by State ranging from 4.9 percent in Khartoum to 46.8 percent in South Darfur

### **Child Discipline**

In MICS 2014 for Sudan, 63.9 percent of children age 1-14 years was subjected to at least one form of psychological or physical punishment by household members during the past month prior to the survey.

Generally, the households employed a combination of violent disciplinary practices, reflecting caregivers' motivation to control children's behaviour by any means possible. While 52.8 percent of children experienced psychological aggression, about 47.7 percent experienced physical punishment. The most severe forms of physical punishment (hitting the child on the head, ears or face or hitting the child hard and repeatedly) are overall less common: 13.6 percent of children were subjected to severe punishment.

Overall, 52.8 percent of children in the aged group 1-14 years experienced psychological aggression in the month preceding the survey. River Nile state was reported of having the highest proportion (69.6 percent) and Central Darfur state (12.6 percent) the lowest of the children aged 1-14 years who experienced psychological aggression.

### **Early Marriage and Polygyny**

Early marriage, polygyny, and large spousal age differences are common in Sudan. About 21.2 percent of young women age 15-19 years are currently married. This proportion is significantly different between young women in urban areas (11.2 percent) and those in rural areas (26.0 percent). Wide variations between states are also observed; for example in Khartoum state it is 12 percent, while it is 29.9 percent in Blue Nile state. It is strongly related to the level of education, for example, 27.5 percent for women with primary education compared to only 2.4 percent for those with higher education. The percentage of women in a polygynous union is also provided in Table CP.7. Among all women age 15-49 years who are in union, 21.7 percent are in polygynous unions. Polygynous unions are more common among rural women 23.6 percent compared to 16.9 percent for urban women. Polygynous relationships are more prevalent among older women age 45-49 years 30.8 percent compared to only 7.7 percent among younger women age 15-19 years.

Among currently married women age 20-24 years, about (41.8 percent) are married to a man who is older by ten years or more. For currently married women age 15-19 years, the corresponding figure is (39.5 percent).

### **Female Genital Mutilation/Cutting**

The practice of female genital mutilation /cutting (FGM/C) is highly prevalent in Sudan. Approximately 87 percent of women aged 15-49 years had had some form of female genital mutilation. The percentages rise from 76.8 percent for women without formal education to 91.8 percent for women with higher education. The practice appears more common in rural areas, the highest percentage is in North Darfur state (97.6 percent) and lowest for Central Darfur state (45.4 percent). Surprisingly the practice is highly prevalent among women in wealthy households with population in the richest and

fourth richest quintiles recording 90.0 percent and 91.6 percent respectively. The prevalence of FGM is higher among older women 45-49 years with a percentage of 91.8 percent compared to 81.7 percent for women in the 15-19 years age group.

## **Domestic Violence**

Women aged 15-49 years were asked whether husbands are justified in hitting or beating their wives or partners according to five different scenarios. Researchers have found that women who agree that their partners are justified in beating them tend to themselves be victims of domestic violence. Overall, 34 percent of women in the survey feel that a husband is justified in hitting or beating his wife in at least one of the five situations (If she goes out without telling him, If she neglects the children, If she argues with him, If she refuses sex with him, and If she burns the food). Women who justify a husband's violence, in most cases agree and justify violence in instances when a wife neglects the children (24.2 percent), or if she demonstrates her autonomy, demonstrated by going out without telling her husband or arguing with him (19.5 percent). Nearly one-fifth (18.2 percent) of women believe that wife-beating is justified if the wife refuses to have sex with the husband. Justification in any of the five situations is more common among those living in poorest households, less educated, and also currently married women. Among the states, East Darfur with 77.4 percent of women approve wife beating reported the highest while River Nile with 9.6 percent reported the lowest.

## **HIV/AIDS and Orphanhood**

### **Knowledge of HIV Transmission and Utilization of HIV Testing Services**

In Sudan, about three-quarters (74.8 percent) of the women age 15-49 years have heard of HIV and AIDS. However, the percentage of those who know of both main ways of preventing HIV transmission – having only one faithful uninfected partner and using a condom every time – is only about one in ten (8.9 percent). About sixty (59.8 percent) of the women know of having one faithful uninfected sex partner and 26.7 percent know of using a condom every time as main ways of preventing HIV transmission.

Correct identification of misconceptions about HIV is based on the two most common and relevant misconceptions in the survey, that HIV can be transmitted by sharing food with someone with HIV (50.5 percent) and by mosquito bites (53.1 percent). Overall, 19.2 percent of the respondents reject the two most common misconceptions and know that a healthy-looking person can be HIV-positive.

People who have comprehensive knowledge about HIV prevention include those who know of the two main ways of HIV prevention (having only one faithful uninfected partner and using a condom every time), who know that a healthy looking person can be HIV-positive, and who reject the two most common misconceptions. Comprehensive knowledge of HIV prevention methods and transmission is fairly low although there are differences by area; 6.9 percent and 13.1 percent in rural and urban areas respectively.

Comprehensive knowledge about HIV transmission greatly varies with women's education (48.3 percent) in women with higher level of education compared to women with no education (2.1 percent) and with wealth index level of the household; (20.4 percent) in the richest quintile compared with (2.1 percent) in the poorest quintile of the households.

Seventeen percent of women know a place where to be tested, while 5.2 percent, have actually been tested, fewer, 4.3 percent of the women, know the result of their most recent test. A very small proportion has been tested within the last 12 months prior to the survey (1.9 percent), while a somewhat smaller proportion has been tested within the last 12 months and know the result (1.6 percent).

### **Orphanhood**

Less than one (0.3 percent) of children age 10-14 years in Sudan are orphans. Of these, 66.1 percent are attending school, as compared with a 80.2 percent attendance amongst non-orphan children of the same age group who are living with at least one parent. This results in an orphans to non-orphans school attendance ratio of 0.82 which suggests that orphans are not disadvantaged in relation to non-orphans. The ratio is 0.71 for girls and 1.0 for boys. The ratio is 0.92 for children in urban areas compared to 0.78 for children in rural areas.

### **Household Food Security**

Data was collected on two important proxy measures of household food security: the household food consumption score (FCS) and the coping strategies that households use when they don't have enough food or money to buy food.

The food consumption groups can be described as follows:

- **Poor food consumption:** Households that are consuming only cereals and vegetables every day and never or very seldom are consuming protein rich food such as meat and dairy.
- **Borderline food consumption:** Households that are consuming cereals and vegetables every day, accompanied by oil and pulses a few times a week.
- **Acceptable food consumption:** Households that are consuming cereals and vegetables every day, frequently accompanied by oil and pulses and occasionally meat and dairy.

Overall, 81 percent of the households were having acceptable food consumption score. There is wide variation of food security among the states with North Darfur state having the poorest food consumption score of 16 percent



## I. Introduction

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### 1.1 Background

This report is based on the Sudan Multiple Indicator Cluster Survey (MICS5), conducted in 2014 fieldwork August-November by the central bureau of statistics (CBS), ministry of health, ministry welfare, ministry of general education, national environment, national water cooperation. The survey provides statistically sound and internationally comparable data essential for developing evidence-based policies and programmes, and for monitoring progress toward national goals and global commitments. Among these global commitments are those emanating from the World Fit for Children Declaration and Plan of Action, the goals of the United Nations General Assembly Special Session on HIV/AIDS, the Education for All Declaration and the Millennium Development Goals (MDGs).

#### **A Commitment to Action: National and International Reporting Responsibilities**

The governments that signed the Millennium Declaration and the World Fit for Children Declaration and Plan of Action also committed themselves to monitoring progress towards the goals and objectives they contained:

“We will monitor regularly at the national level and, where appropriate, at the state level and assess progress towards the goals and targets of the present Plan of Action at the national, state and global levels. Accordingly, we will strengthen our national statistical capacity to collect, analyse and disaggregate data, including by sex, age and other relevant factors that may lead to disparities, and support a wide range of child-focused research. We will enhance international cooperation to support statistical capacity-building efforts and build community capacity for monitoring, assessment and planning.” (**A World Fit for Children**, paragraph 60)

“...We will conduct periodic reviews at the national and subnational levels of progress in order to address obstacles more effectively and accelerate actions....” (**A World Fit for Children**, paragraph 61)

The Plan of Action of the World Fit for Children (paragraph 61) also calls for the specific involvement of UNICEF in the preparation of periodic progress reports:

“... As the world’s lead agency for children, the United Nations Children’s Fund is requested to continue to prepare and disseminate, in close collaboration with Governments, relevant funds, programmes and the specialized agencies of the United Nations system, and all other relevant actors, as appropriate, information on the progress made in the implementation of the Declaration and the Plan of Action.”

Similarly, the **Millennium Declaration** (paragraph 31) calls for periodic reporting on progress:

“...We request the General Assembly to review on a regular basis the progress made in implementing the provisions of this Declaration, and ask the Secretary-General to issue periodic reports for consideration by the General Assembly and as a basis for further action.”

The MICS 2014 results will be critically important for final MDG reporting in 2015, and are expected to form part of the baseline data for the post-2015 era.

MICS 2014 is expected to contribute to the evidence base of several other important initiatives, including Committing to Child Survival: A Promise Renewed, a global movement to end child deaths from preventable causes, and the accountability framework proposed by the Commission on Information and Accountability for the Global Strategy for Women's and Children's Health.

This final report presents the results of the indicators and topics covered in the survey.

## **1.2 Survey Objectives**

The Sudan MICS 2014 has as its primary objectives:

- Measure the trend towards achievement of the MDGs and the goals of a World Fit for Children Plan of Action and other internationally agreed upon indicators related to children and women.
- Furnish data needed for the indicators as per the global review of the Millennium Development Goals.
- Contribute to the improvement of data and monitoring systems in Sudan and to strengthen technical expertise, national capacity building in the design, implementation, and analysis of such systems.
- Update Census indicators and provide solid evidence for decentralization (planning and measure of progress).
- Provide key evidence for social sector programming and the Poverty Reduction Strategy Paper (PRSP) under development and accountabilities for sector strategic plans and UNDAF 2013-2016.
- To provide up-to-date information for assessing the situation of children and women in Sudan
- To generate data for the critical assessment of the progress made in various areas, and to put additional efforts in those areas that require more attention;
- To collect disaggregated data for the identification of disparities, to allow for evidence based policy-making aimed at social inclusion of the most vulnerable;
- To contribute to the generation of baseline data for the post-2015 agenda;

In 2014, the population of Sudan was estimated at 36.2 million based on the 2008 population census. About 8 percent of the population (2.7 million) are nomads and pastoralists. The population of Sudan is growing very rapidly—2.5 percent annually—with an average fertility rate of 5.5. The average household size is 6.4 persons. Life Expectancy at birth is estimated at 54 years. Overall, Sudan is experiencing a major demographic shift to an increasingly young, urbanized population. There are 15 million children below the age of 18 years and 4.5 million below the age of five years. In some states, children under the age of 16 years constitute 52 percent of the population.

Agriculture and livestock are essential to Sudan's economic diversification (away from oil) and could contribute to medium-term macroeconomic stability. While these sectors presently contribute approximately 35 percent of gross domestic product (GDP), they could contribute significantly more with greater investment and better governance. Sudan now recognizes the need for greater attention to agriculture and livestock, as reflected in its Interim Poverty Reduction Strategy and the five- year program for economic reform.

## II. Sample and Survey Methodology

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### 2.1 Sample Design

The sample for Round Five of the Sudan Multiple Indicator Cluster Survey (MICS5) was designed to provide estimates for a large number of indicators that describe the situation of children and women at the national level, in urban and rural areas, and in the 18 States of Sudan. In order to produce State-level estimates of moderate precision, a minimum of 40 enumeration areas (EAs) were selected in each State, resulting in a sample that was not self-weighting. The urban and rural areas within each state were identified as the main sampling strata and the sample was selected in two stages. In the first stage, within each stratum, a specified number of EAs were selected systematically with probability proportional to size. In the second stage, after a household listing was carried out within the selected enumeration areas, a systematic sample of 25 households was drawn in each selected EA. All of the selected EAs were visited during the fieldwork period. The sample was thus stratified by state and then by urban / rural areas. For reporting national and state-level results, sample weights are used. A more detailed description of the sample design can be found in Appendix A.

### 2.2 Questionnaires

Three types of questionnaires were used in the survey: 1) a household questionnaire was used to collect information on all de jure household members, the household, and the dwelling; 2) a women's questionnaire administered in each household to all women aged 15-49 years; and 3) an under-5 questionnaire, administered to mothers or caretakers of all children under 5 years living in the household.

The questionnaires included the following:

✓ **Household Questionnaire**, including the following modules:

1. Household Information Panel
2. List of Household Members
3. Education
4. Child Labour
5. Child Discipline
6. Water and Sanitation
7. Hand washing
8. Salt Iodization
9. Food Consumption & Sources<sup>3</sup>
10. Coping Strategies<sup>3</sup>

✓ **Individual Women questionnaire**, including the following modules:

1. Woman's Information Panel
2. Woman's Background
3. Fertility/Birth History
4. Desire for Last Birth
5. Maternal and New-born Health
6. Post-Natal Health Checks
7. Contraception
8. Unmet Need
9. Female Genital Mutilation/Cutting
10. Attitudes toward Domestic Violence
11. HIV/AIDS

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<sup>3</sup> Survey-specific module

12. Mid Upper Arm Circumference(Muac)<sup>4</sup>
13. Haemoglobin Testing (Anaemia)<sup>4</sup>

- ✓ **Children under Five questionnaire**, administered to mothers or caretakers of children under-five years of age living in the households. The questionnaire included the following modules:
1. Under Five Child Information Panel
  2. Age
  3. Birth Registration
  4. Early Childhood Development
  5. Breastfeeding and Dietary Intake
  6. Immunization
  7. Care Of Illness
  8. Anthropometry
  9. Haemoglobin Testing (Anaemia)<sup>4</sup>

## 2.3 Training

Training of Trainers (TOT) was conducted in Khartoum during the period 24<sup>th</sup> May 2014 – 5<sup>th</sup> June 2014. The training was facilitated by three HH survey consultants (Housni Elarabi, Manar Abdel-Rahman and Achraf Mrabet). 18 State directors, 18 National Supervisor, 54 team supervisor and 18 measurers from Ministry of Health attended the TOT. Training of interviewers and measurers was conducted in the States the period 8<sup>th</sup> -17<sup>th</sup> July 2014.

## 2.4 Pre-test

Pre-test conducted in Khartoum states covering two clusters urban/ rural with one day workshop convened for questionnaire finalization. The exercise was to test the language, the clarity of questions, coding, skipping, the translation, test areas of senility and the overall do-ability within the country context and specifics.

## 2.5 Field work

The field work was applied by central bureau of statistics and states ministries of health. Overall, there are 54 teams for the 18 States. Each team consist of 6 members: 3 female interviewers, one supervisor, one editor and one measures. Therefore, the total field staff are 54 teams 6 members for each team. Each State is supported with the State CBS director and the National state supervisor.

The table below outlines the schedule of the start and completion dates of the field work in the States:

	State	Starting Date of data collection	Completion date of data collection
1.	Northern	2014/9/10	2014/10/30
2.	River Nile	2014/9/10	2014/10/28
3.	Red Sea	2014/9/10	2014/10/28
4.	Kassala	2014/9/13	2014/11/01
5.	Gadarif	2014/9/13	2014/11/01
6.	Gezira	2014/9/11	2014/10/27
7.	Khartoum	2014/8/11	2014/09/28
8.	White Nile	2014/9/16	2014/10/31
9.	Sinnar	2014/9/18	2014/11/06
10.	Blue Nile	2014/9/18	2014/11/05
11.	North Kordofan	2014/9/17	2014/10/27

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<sup>4</sup> Survey specific module

	State	Starting Date of data collection	Completion date of data collection
12.	South Kordofan	2014/9/12	2014/10/30
13.	West Kordofan	2014/9/16	2014/10/27
14.	North Darfur	2014/9/01	2014/10/20
15.	East Darfur	2014/9/09	2014/10/29
16.	Central Darfur	2014/9/08	2014/11/05
17.	West Darfur	2014/9/11	2014/10/30
18.	South Darfur	2014/9/10	2014/10/30

## 2.6 Data Processing

Data were entered into the computers using the Census and Surveys Processing System (CSPRO) software package, Version 5.0. The data were entered on 32 desktop computers by 40 data entry operators and 9 data entry supervisors. For quality assurance purposes, all questionnaires were double-entered and internal consistency checks were performed. Procedures and standard programmes developed under the global MICS programme and adapted to the Sudan questionnaires were used throughout. Data of entry started 14<sup>th</sup> of September and was completed in 27<sup>th</sup> of November 2014. Data were analyzed using the Statistical Package for Social Sciences (SPSS) software, Version 21. Model syntax and tabulation plans developed by the Global MICS team were customized and used for this purpose.

### **III. Sample Coverage and the Characteristics of Households and Respondents**

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#### **3.1 Sample Coverage**

Of the 18,000 households selected in the sample, 17,142 were found to be occupied. Of these, 16,801 were successfully interviewed for a household response rate of 98 percent. In the interviewed households, 20,327 women (age 15-49 years) were identified. Of these, 18,302 were successfully interviewed, yielding a response rate of 90 percent. In addition to the women, 14,751 children under the age of five years were listed in the household questionnaires. Questionnaires were completed for 14,081 of these children, corresponding to Under-5s response rate of 95.5 percent within the interviewed households.

The highest response rate at state level for households was in south Darfur at 99.3 percent, while the lowest response rate was in West Kordofan at 93.4 percent. Response rate was slightly higher in rural areas at 98.5 percent than in urban areas at 96.8 percent.

The highest response rate among eligible women 15-49 years was 96.6 percent in Giezero State while the lowest response rate of 78.1 percent was in North Darfur. Similarly, the highest response rate among eligible children under-5's was recorded for Giezero was 96.9 percent and the lowest response rate was also in North Darfur at 87.9 percent (Table HH.1).

**Table HH.1: Results of household, women's, and under-5 interviews**

Number of households, women, and children under 5 by results of the household, women's, and under-5's interviews, and household, women's and under-5's response rates, Sudan MICS, 2014

Background Characteristics	Total	Area		State																	
		Urban	Rural	North-ern	River Nile	Red Sea	Kassala	Gadarif	K/toum	Gezira	White Nile	Sinnar	Blue Nile	North Kordo-fan	South Kordo-fan	West Kordo-fan	North Darfur	West Darfur	South Darfur	Central Darfur	East Darfur
Households																					
Sampled	18,000	5,275	12,725	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Occupied	17,142	4,984	12,158	963	938	946	932	966	945	992	925	969	961	960	971	934	943	925	953	963	956
Interviewed response rate	16,801	4825	11,976	957	928	928	899	947	921	988	912	955	954	928	961	872	914	904	946	955	932
	98.0	96.8	98.5	99.4	98.9	98.1	96.5	98.0	97.5	99.6	98.6	98.6	99.3	96.7	99.0	93.4	96.9	97.7	99.3	99.2	97.5
Women																					
Eligible	20,327	6,692	13,635	1,191	1,115	969	1,036	1,110	1,274	1,395	1,074	1,158	1,181	1,096	1,264	969	1,153	1,035	1,176	988	1,143
Interviewed	18,302	5,979	12,323	1,083	1,027	826	946	1,012	1,171	1,347	1,027	1,057	1,079	949	1,171	863	901	918	1,065	878	982
Response rate	90.0	89.3	90.4	90.9	92.1	85.2	91.3	91.2	91.9	96.6	95.6	91.3	91.4	86.6	92.6	89.1	78.1	88.7	90.6	88.9	85.9
Overall response rate	88.2	86.5	89.0	90.4	91.1	83.6	88.1	89.4	89.6	96.2	94.3	90.0	90.7	83.7	91.7	83.1	75.7	86.7	89.9	88.1	83.8
Children under 5																					
Eligible	14,751	3,998	10,753	559	600	443	681	881	717	822	785	859	1,052	799	1,120	763	976	860	1,017	875	942
Mothers/ caretakers interviewed	14,081	3,811	10,270	532	565	404	655	858	699	800	754	814	1,006	750	1,092	741	885	843	975	837	871
Response rate	95.5	95.3	95.5	95.2	94.2	91.2	96.2	97.4	97.5	97.3	96.1	94.8	95.6	93.9	97.5	97.1	90.7	98.0	95.9	95.7	92.5
Overall response rate	93.6	92.3	94.1	94.6	93.2	89.5	92.8	95.5	95.0	96.9	94.7	93.4	94.9	90.7	96.5	90.7	87.9	95.8	95.2	94.9	90.1

### 3.2 Characteristics of Households

The weighted stratified age and sex distribution of the survey population is provided in Table HH.2. The distribution is also used to produce the population pyramid in Figure HH.1. In the 16,801 households successfully interviewed in the survey, 98,883 household members were listed. Of these, 49,286 were males, 49,577 were females and 21 of them were of unknown gender.

<b>Table HH.2: Age distribution of household population by sex</b>								
<b>Percent and frequency distribution of the household population by five-year age groups, dependency age groups, and by child (age 0-17 years) and adult populations (age 18 or more), by sex, Sudan MICS, 2014</b>								
Background characteristics	Total		Males		Females		Missing	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
<b>Sudan</b>	98,883	100.0	49,286	100.0	49,577	100.0	21	(100.0)
<b>Age</b>								
0-4	15,050	15.2	7,611	15.4	7,439	15.0	0	*
5-9	16,071	16.3	8,036	16.3	8,035	16.2	0	*
10-14	13,447	13.6	6,540	13.3	6,905	13.9	1	*
15-19	9,161	9.3	4,711	9.6	4,451	9.0	0	*
20-24	7,134	7.2	3,463	7.0	3,670	7.4	1	*
25-29	6,690	6.8	2,925	5.9	3,765	7.6	0	*
30-34	5,519	5.6	2,665	5.4	2,854	5.8	0	*
35-39	5,418	5.5	2,598	5.3	2,820	5.7	0	*
40-44	3,877	3.9	2,065	4.2	1,812	3.7	0	*
45-49	3,315	3.4	1,789	3.6	1,526	3.1	0	*
50-54	4,112	4.2	1,641	3.3	2,471	5.0	0	*
55-59	2,462	2.5	1,356	2.8	1,106	2.2	0	*
60-64	2,166	2.2	1,274	2.6	892	1.8	0	*
65-69	1,350	1.4	808	1.6	542	1.1	0	*
70-74	1,455	1.5	851	1.7	604	1.2	0	*
75-79	659	0.7	404	0.8	256	0.5	0	*
80-84	523	0.5	299	0.6	224	0.5	0	*
85+	421	0.4	229	0.5	192	0.4	0	*
Missing/DK	53	0.1	24	*	12	*	17	*
<b>Dependency age groups</b>								
0-14	44,568	45.1	22,187	45.0	22,380	45.1	1	*
15-64	49,855	50.4	24,485	49.7	25,368	51.2	2	*
65+	4,408	4.5	2,590	5.3	1,817	3.7	0	*
Missing/DK	53	0.1	24	*	12	*	17	*
<b>Children and adult populations</b>								
Children age 0-17 years	50,054	50.6	25,074	50.9	24,979	50.4	1	*
Adults age 18+ years	48,777	49.3	24,188	49.1	24,586	49.6	2	*
Missing/DK	53	0.1	24	*	12	*	17	*

[\*] Based on less than 25 unweighted cases and percentages have been suppressed.

( ) Figures that are based on 25-49 unweighted cases

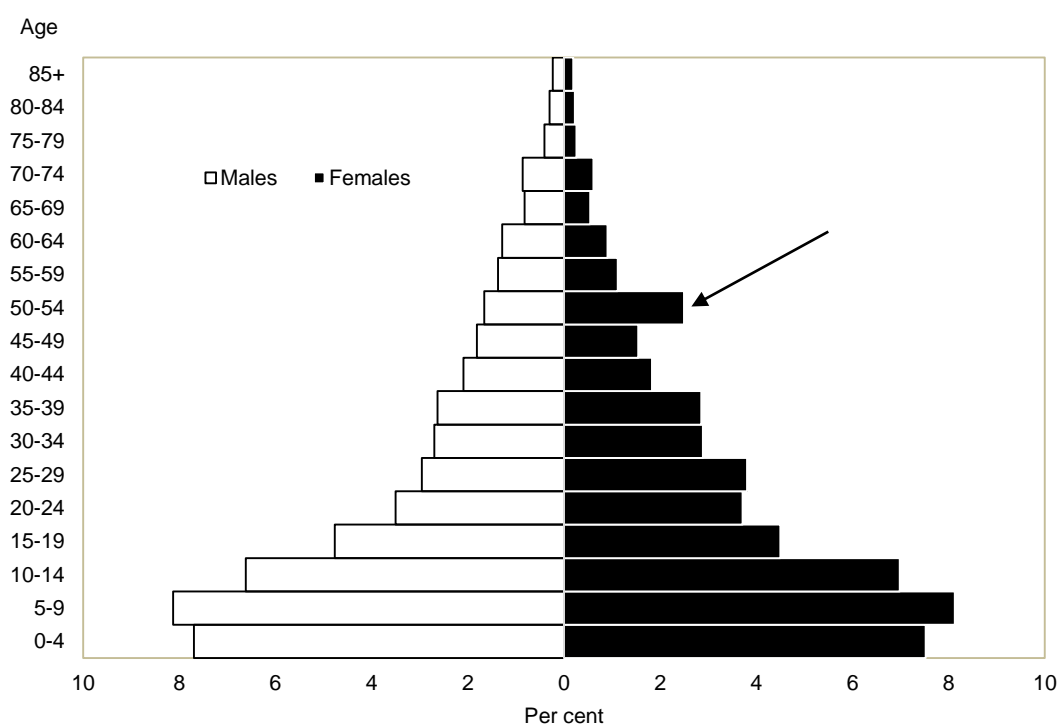


Children aged 0-17 years comprise 47.7<sub>3</sub> percent of the MICS4 survey population, indicating the young nature of the population in Sierra Leone.

Comparing the age distribution of MICS5 (table HH.2 ) with result from household survey 2010 no significant differences are observed for example the percentage of population aged 0-14 was 45.1 percent in MICS5 as compared to 45.6 percent for household survey 2010, percentage of population 15-64 was 50.4 percent and 50.5 percent respectively while population 65 + was 4.5 percent in MICS5 compare with 3.9 percent in 2010 household survey, comparing children aged 0-17 the percentage was 50.6 percent in MICS5 comparing with 50.8 percent in the 2010 Household **Health** survey the adult population 18+was 49.3 percent in MICS 5 and 49.1 percent in the 2010 Household **Health** survey.

Data from Table HH.2 are used to create the population pyramid in Figure HH.1. Examination of this figure reveals that the population pyramid is as the same as expected; it took bell shape. Except for the female population in the age group 50-54 compared to the neighbouring age groups where there was an over representation which could have been related to interviewers bias to reduce number of eligible women in the data collection.

**Figure HH.1: Age and sex distribution of household population, Sudan MICS, 2014**



Note: # household members with missing age and/or sex are

Tables HH.3, HH.4 and HH.5 provide basic information on the households, female respondents age 15-49, male respondents 15-49, and children under-5. Both unweight and weighted numbers are presented. Such information is essential for the interpretation of findings presented later in this report

and provide background information on the representativeness of the survey sample. The remaining tables in this report are presented only with weighted numbers.<sup>5</sup>

Table HH.3 provides basic background information on the households, including the sex of the household head, State, area, number of household members, and education of household head<sup>6</sup> shown in the table. These background characteristics are used in subsequent tables in this report; the figures in the table are also intended to show the numbers of observations by major categories of analysis in the report.

1. Select the cell or cells whose contents you want aligned.
2. Click repeatedly on the tab stop marker at the left edge of the ruler, stopping when you see the symbol for a decimal tab.
3. Click on the ruler above the selected cells, at the location where you want the numbers aligned.

<b>Table HH.3: Household composition</b>			
<b>Percent and frequency distribution of households by selected characteristics Sudan MICS, 2014</b>			
Background characteristics	Weighted percent	Number of households	
		Weighted	Unweighted
<b>Sudan</b>	100.0	16,801	16,801
<b>Sex of household head</b>			
Male	85.8	14,414	14,513
Female	14.2	2,387	2,288
<b>State</b>			
Northern	2.5	423	957
River Nile	4.0	666	928
Red Sea	3.1	519	928
Kassala	4.3	722	899
Gadarif	5.1	858	947
Khartoum	13.8	2,317	921
Gezira	15.6	2,629	988
White Nile	5.2	874	912
Sinnar	3.9	661	955
Blue Nile	3.9	656	954
North Kordofan	6.7	1,125	928
South Kordofan	2.8	462	961
West Kordofan	6.0	1,003	872
North Darfur	7.4	1,243	914
West Darfur	3.3	553	904
South Darfur	7.6	1,282	946
Central Darfur	1.8	299	955
East Darfur	3.0	508	932
<b>Area</b>			
Urban	29.8	5,000	4,825
Rural	70.2	11,801	11,976

<sup>5</sup> See Appendix A: Sample Design, for more details on sample weights.

<sup>6</sup> This was determined by asking the questions used for the construction of the background variables; typical questions asked in MICS surveys are mother tongue, ethnic background and/or religion.

<b>Number of household members</b>			
1	1.6	268	314
2	7.8	1,303	1,394
3	10.6	1,773	1,867
4	13.3	2,236	2,288
5	14.5	2,443	2,447
6	14.0	2,359	2,347
7	12.5	2,108	2,030
8	9.7	1,624	1,573
9	7.1	1,190	1,095
10+	8.9	1,498	1,446
<b>Education of household head</b>			
None	46.4	7,799	8,418
Primary	28.2	4,730	4,452
Secondary	18.7	3,137	2,885
Higher	6.0	1,013	915
Missing/DK	0.7	122	131
<b>Mean household size</b>	<b>5.9</b>	<b>16,801</b>	<b>16,801</b>

The weighted and unweighted Sudan number of households are equal, since sample weights were normalized.<sup>5</sup> The table also shows the weighted mean household size estimated by the survey. The head of household in the survey was predominantly male in 85.8 percent of surveyed household members. The most populated States in the survey were Gezira, 15.6 percent and Khartoum, 13.8 percent respectively. Approximately one-third of the population was urbanized (29.8percent) while 70.2 percent were Rural.

### 3.3 Characteristics of Female Respondents 15-49 Years of Age and Children Under-5

TableHH.4 and Table HH.5 provide information on the background characteristics of female respondents 15-49 years of age and of children under 5 years of age. In both tables, the Sudan numbers of weighted and unweighted observations are equal, since sample weights have been normalized (standardized).<sup>5</sup> In addition to providing useful information on the background characteristics of women, and children under age five, the tables are also intended to show the numbers of observations in each background category. These categories are used in the subsequent tabulations of this report.

**Table HH.4: Women's background characteristics**

Percent and frequency distribution of women age 15-49 years by selected background characteristics, Sudan MICS 2014

Background characteristics	Weighted percent	Number of women	
		Weighted	Unweighted
<b>Sudan</b>	100.0	18,302	18,302
<b>State</b>			
Northern	2.5	457	1,083
River Nile	3.8	701	1,027
Red Sea	2.7	493	826
Kassala	4.1	747	946
Gadarif	4.8	879	1,012
Khartoum	15.4	2,821	1,171
Gezira	17.4	3,176	1,347
White Nile	4.9	889	1,027
Sinnar	3.8	698	1,057
Blue Nile	4.0	729	1,079
North Kordofan	6.4	1,173	949
South Kordofan	2.9	525	1,171
West Kordofan	5.3	965	863
North Darfur	7.2	1,317	901
West Darfur	3.0	555	918
South Darfur	7.4	1,363	1,065
Central Darfur	1.5	272	878
East Darfur	3.0	542	982
<b>Area</b>			
Urban	32.9	6,029	5,979
Rural	67.1	12,273	12,323
<b>Age</b>			
15-19	20.3	3,709	3,655
20-24	17.3	3,162	3,150
25-29	18.4	3,359	3,415
30-34	14.0	2,558	2,593
35-39	13.9	2,542	2,527
40-44	8.9	1,633	1,639
45-49	7.3	1,339	1,323
<b>Marital status</b>			
Currently married	64.8	11,867	12,023
Widowed	1.5	278	286
Divorced	3.1	564	588
Separated	0.2	45	45
Never married	30.3	5,547	5,359
Missing	*	1	1
<b>Motherhood and recent births</b>			
Never gave birth	37.1	6,798	6,601
Ever gave birth	62.9	11,504	11,701

Background characteristics	Weighted percent	Number of women	
		Weighted	Unweighted
Gave birth in last two years	30.7	5,622	5,684
No birth in last two years	32.2	5,895	6,024
<b>Education</b>			
None	31.9	5,843	6,462
Primary	33.5	6,128	5,988
Secondary	23.8	4,361	4,132
Higher	10.7	1,965	1,715
Missing/DK	*	5	5
<b>Wealth index quintile</b>			
Poorest	17.7	3,246	3,345
Second	18.5	3,380	4,074
Middle	19.9	3,646	3,929
Fourth	20.5	3,759	3,363
Richest	23.3	4,271	3,591

[\*] Based on less than 25 unweighted cases and percentages have been suppressed.

Sixty-five percent of sampled women are married and 63 percent have given birth to at least one child. Thirty-two percent of MICS5 respondents are uneducated while 34 and 24 percent have completed primary and secondary education respectively. The large differences between weighted and unweighted numbers for state are due to the oversampling of smaller states as described in Chapter Two.

We observe that there is a significant variation between weight and un-weighted in number of women especially by state level also in HHs 2010 the same variation

Some background characteristics of children under 5 are presented in Table HH.5. These include the distribution of children by several attributes: sex, State and area, age, mother's or caretaker's education\*\*, and wealth of household head. 49.2 percent of the children represented in the MICS5 survey are female. Only 16 percent of children live in households in the wealthiest quintile while 23 percent of children live in households in the least wealthy quintile.

<b>Table HH.5: Under-5's background characteristics</b>			
<b>Percent and frequency distribution of children under five years of age by selected characteristics, Sudan MICS, 2014</b>			
Background characteristics	Weighted percent	Number of children	
		Weighted	Unweighted
<b>Sudan</b>	100.0	14,081	14,081
<b>Sex</b>			
Male	50.8	7,157	7,190
Female	49.2	6,924	6,891
<b>State</b>			
Northern	1.7	236	532

Background characteristics	Weighted percent	Number of children	
		Weighted	Unweighted
River Nile	2.8	393	565
Red Sea	1.7	244	404
Kassala	3.5	498	655
Gadarif	5.4	765	858
Khartoum	12.3	1,736	699
Gezira	15.3	2,149	800
White Nile	5.0	711	754
Sinnar	3.9	555	814
Blue Nile	4.9	691	1,006
North Kordofan	6.4	907	750
South Kordofan	3.8	529	1,092
West Kordofan	6.3	893	741
North Darfur	8.6	1,211	885
West Darfur	3.5	487	843
South Darfur	9.4	1,326	975
Central Darfur	1.8	254	837
East Darfur	3.5	495	871
<b>Area</b>			
Urban	27.4	3,862	3,811
Rural	72.6	10,219	10,270
<b>Age</b>			
0-5 months	10.8	1,516	1,543
6-11 months	10.3	1,448	1,423
12-23 months	19.0	2,672	2,641
24-35 months	18.6	2,618	2,647
36-47 months	23.2	3,268	3,217
48-59 months	18.2	2,559	2,610
<b>Respondent to the under-5 questionnaire</b>			
Mother	98.5	13,810	13,810
Other primary caretaker	1.5	213	214
<b>Mother's education**</b>			
None	42.6	5,994	6,587
Primary	35.1	4,936	4,666
Secondary	15.3	2,152	2,018
Higher	7.0	982	794
Missing/DK	*	17	16
<b>Wealth index quintile</b>			
Poorest	22.6	3,188	3,248
Second	21.4	3,015	3,734
Middle	21.0	2,956	3,088
Fourth	19.1	2,684	2,212
Richest	15.9	2,238	1,799

Background characteristics	Weighted percent	Number of children	
		Weighted	Unweighted
[*] Based on less than 25 unweighted cases and percentages have been suppressed.			
** In this table and throughout the report, mother's education refers to educational attainment of mothers as well as caretakers of children under 5, who are the respondents to the under-5 questionnaire if the mother is deceased or is living elsewhere.			

### 3.4 Housing Characteristics, Asset Ownership, and Wealth Quintiles

Tables HH.6, HH.7 and HH.8 provide further details on household level characteristics.

HH.6 presents characteristics of housing, disaggregated by area and state, distributed by whether the dwelling has electricity, the main materials of the flooring, roof, and exterior walls, as well as the number of rooms used for sleeping.

Only about 45 percent of the households in Sudan have access to electricity. Availability of electricity widely varies among the States: while 94.4 percent of the households in the Northern State has access to electricity, less than 20 percent of the Darfur and Kordofan States have access to electricity. North Darfur has the least percentage, 8.7 access to electricity. Seventy-six percent of households with access to electricity are in urban areas

Main shelter materials in Sudan are made of natural floors, natural roofing and natural walls. About 30 percent of the houses have single rooms for sleeping, 42 percent of the houses have 2 rooms for sleeping, and 28 percent of them have 3 or more rooms for sleeping. The mean number of persons per room used for sleeping is 3.23.

Table HH.6: Housing characteristics																					
Percent distribution of households by selected housing characteristics, according to area of residence and states, Sudan MICS, 2014																					
Background characteristics	Sudan	Area		State																	
		Urban	Rural	North ern	River Nile	Red Sea	Kass ala	Gadari f	Khart outh	Gezira	Whit e Nile	Sinna r	Blue Nile	North Kordo fan	South Kordo- fan	West Kordo- fan	N. Darfu r	West Darfu r	Sout h Darfu r	Centr al Darfu r	East Darfu r
Electricity																					
Yes	44.9	76.3	31.7	94.4	79.1	39.6	38.0	39.5	81.6	72.9	40.1	57.9	48.6	17.7	19.6	12.0	8.7	15.5	19.9	11.4	11.0
No	55.0	23.6	68.3	5.6	20.7	60.4	62.0	60.4	18.4	27.0	59.8	41.9	51.4	82.3	80.4	87.9	91.3	84.5	80.1	88.5	89.0
Missing	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0
Flooring																					
Natural floor	85.4	68.9	92.4	64.4	80.6	74.7	91.5	96.0	62.6	77.5	90.6	86.4	92.2	96.4	93.1	95.5	94.8	96.0	97.9	95.3	94.6
Rudimentary floor	0.1	0.2	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.2	0.0	0.3	0.2	0.0	0.0
Finished floor	14.0	30.2	7.2	35.4	19.2	22.5	7.9	2.9	36.9	22.3	9.2	13.2	7.8	2.6	6.2	4.0	4.4	2.7	1.3	4.0	4.7
Other	0.3	0.3	0.2	0.2	0.1	1.7	0.0	0.4	0.3	0.2	0.0	0.1	0.0	0.4	0.1	0.0	0.4	0.1	0.3	0.0	0.3
Missing/DK	0.3	0.4	0.2	0.0	0.0	0.4	0.6	0.8	0.1	0.0	0.2	0.3	0.1	0.5	0.3	0.3	0.3	0.9	0.3	0.7	0.3
Roof																					
Natural roofing	38.7	14.2	49.1	20.1	7.2	5.3	53.2	84.8	1.5	5.6	1.7	16.1	30.4	63.3	35.3	77.8	87.2	69.7	72.1	80.7	84.7
Rudimentary roofing	34.7	34.3	34.8	61.0	84.2	28.7	30.2	2.6	49.5	76.6	77.7	46.7	4.0	10.6	6.2	9.6	1.7	6.9	9.0	5.9	0.7
Finished roofing	25.0	50.5	14.2	18.7	8.1	50.8	11.7	12.6	48.4	17.1	20.5	36.7	62.9	25.1	54.4	12.4	10.4	21.7	18.1	11.5	5.8
Other	1.6	1.0	1.9	0.2	0.5	15.1	4.5	0.1	0.6	0.6	0.1	0.1	2.7	0.8	4.2	0.1	0.7	1.6	0.7	1.9	8.8
Missing/DK	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.3	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.1	0.0
Exterior walls																					
Natural walls	60.6	36.3	70.8	63.6	65.2	34.1	79.9	64.0	36.8	43.7	80.1	53.2	30.2	79.4	36.3	85.4	81.3	68.3	75.4	72.0	83.8
Rudimentary walls	4.9	7.5	3.8	11.4	8.8	13.9	6.7	1.5	4.7	5.0	1.6	2.0	1.5	4.4	4.8	3.4	5.9	3.8	6.7	7.8	.3
Finished walls	28.1	50.8	18.5	24.9	25.8	42.7	11.2	2.3	56.7	51.2	17.9	43.4	20.2	10.0	39.7	7.0	7.9	19.7	17.7	18.7	6.1
Other	6.3	5.3	6.8	0.1	0.1	9.2	1.6	32.2	1.8	0.2	0.4	1.1	48.0	6.1	19.1	4.1	4.7	8.0	0.3	1.5	9.8
Missing/DK	0.1	0.0	0.1	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.3	0.1	0.1	0.0	0.1	0.2	0.2	0.0	0.1	0.0



Background characteristics	Sudan	Area		State																	
		Urban	Rural	North ern	River Nile	Red Sea	Kass ala	Gadari f	Khart ous	Gezira	Whit e Nile	Sinna r	Blue Nile	North Kordo fan	South Kordo- fan	West Kordo- fan	N. Darfu r	West Darfu r	Sout h Darfu r	Centr al Darfu r	East Darfu r
Rooms used for sleeping 1	29.7	22.3	32.8	17.6	23.6	52.4	36.4	24.7	22.1	25.7	21.0	34.1	33.6	29.4	37.0	29.0	33.5	35.2	34.9	34.9	46.5
2	41.8	40.5	42.3	49.8	48.1	28.9	35.9	49.4	38.1	41.5	46.8	42.4	48.4	42.7	37.5	43.5	44.0	42.9	38.2	39.7	37.7
3 or more	28.2	36.5	24.6	32.6	28.0	18.6	27.1	25.6	39.4	32.7	31.4	23.3	17.9	27.2	25.6	26.2	22.5	20.9	26.3	24.8	15.9
Missing/DK	0.4	0.6	0.3	0.0	0.3	0.1	0.6	0.3	0.3	0.1	0.8	0.1	0.1	0.7	0.0	1.3	0.1	1.0	0.5	0.6	0.0
Sudan	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of households	16,801	5,000	11,801	423	666	519	722	858	2,317	2,629	874	661	656	1,125	462	1,003	1,243	553	1,282	299	508
Mean number of persons per room used for sleeping	3.23	3.06	3.30	2.61	2.94	3.28	3.35	3.13	2.98	3.26	2.87	3.22	3.56	3.11	3.87	3.17	3.58	3.13	3.38	3.16	4.00

### 3.5 Household Assets

MICS5 2014 collected information on households, ownership of selected assets that are in themselves believed to have a strong association with poverty levels. Some of these can be used to measure household welfare when combined with other indicators to generate wealth index. Information was collected on household ownership of television , radio as a measure of access to mass media ; non – mobile phone telephones as an indicator of access to an efficient means of communication ; refrigerators as indication of capacity for hygienic storage of foods; digital receiver flat TV screen ,internet ,computer and washing machine.

Information was also collected from households with regard to ownership of the following: means of transportation (bicycle, motorcycle, animal-drawn cart, car or truck, boat with motor), smart mobile, laptop, Thira mobile and bank account.

Table HH.7 shows the percentage distribution of households by ownership of selected household and personal assets, and percent distribution by ownership of dwelling, according to area of residence and states.

Access to non-mobile phones was the least at 1.8 percent while approximately 40 percent of the households have access to Television. About 74 percent of households had a least a household member possessing a mobile telephone with Northern, Khartoun, Blue Nile, Gezira, and River Nile having access at 96.6, 91.3, 87.5, 87.3, and 84.6 percent respectively. Central Darfur had the least access to mobile phones at 47.3 percent. Almost all the mobile phones are likely to be owned by urban households 87.3 percent own mobile phone compared to 68.1 percent ownership in rural areas.

Access to Internet and computer were minimal at 3.8 and 3.7 percent respectively.

Table HH.7 shows that 35.2 percent of the households own a radio; urban households are more likely than rural households to own television 71.1 percent compared with 26.3 percent respectively. Overall, 25.9 percent of all households own a refrigerator and as expected, urban households are more likely than rural households to own a refrigerator 50.1 percent compared with 15.7 percent respectively.

Access to Agricultural land and Farm animals/livestock was highest in rural households at 51 and 64 percent respectively. Such access unfavourably compares to urban households at 12 and 20 percent respectively.

With regard to access to transport, table HH.7 shows that access to car or truck transportation was 6.4 percent of households ranging from 4.4 percent in rural households to 11.0 percent in urban households. In contrast access to animal drawn transportation was 17.9 percent of rural households compared to 8.1 percent in urban households.

Most of the people surveyed did not own personal bank accounts. Ownership of personal bank account was 2.4 percent in rural households and 11.1 percent in urban households. Ownership of personal bank account was highest in Khartoun and Northern States respectively at 12.6 and 9.6

percent and lowest in Central Darfur and West Kordofan/North Darfur at 1.0 and 1.6 percent respectively.

Most of the dwellings were owned by a household member. The highest ownership was in households in North Darfur at 94.4 percent, West Kordofan at 93.5 percent, North Kordofan at 92.2 percent, Blue Nile at 92.2 percent, South Kordofan at 91.3 percent, and White Nile at 91.0 percent.

Table HH.7: Household and personal assets																					
Percentage of households by ownership of selected household and personal assets, and percent distribution by ownership of dwelling, according to area of residence and states, Sudan MICS, 2014																					
Background characteristics	Sudan	Area		State																	
		Urban	Rural	Northern	River Nile	Red Sea	Kassala	Gadarif	Khartoum	Gezira	White Nile	Sinnar	Blue Nile	North Kordofan	South Kordofan	West Kordofan	North Darfur	West Darfur	South Darfur	Central Darfur	East Darfur
Percentage of households that own a																					
Radio	35.2	41.5	32.6	30.5	37.1	27.7	21.2	30.5	42.3	35.1	41.2	36.5	44.0	41.9	47.0	29.4	30.7	20.9	37.5	22.2	31.7
Television	39.6	71.1	26.3	86.0	75.3	41.2	29.0	28.8	77.0	60.5	42.0	41.5	30.4	17.4	20.2	12.4	7.6	13.8	18.2	8.0	12.5
Non-mobile phone	1.8	3.6	1.1	2.6	3.3	2.7	2.7	0.9	3.1	2.1	1.6	2.7	1.0	1.2	1.0	1.5	0.8	1.1	0.6	1.3	1.2
Refrigerator	25.9	50.1	15.7	75.7	63.1	26.7	17.8	11.0	63.2	39.8	25.1	23.1	8.7	7.7	5.0	3.5	2.7	4.5	5.9	1.8	5.9
Digital receiver	33.8	62.5	21.6	81.8	71.0	36.3	24.3	20.3	71.6	52.8	32.6	37.4	22.8	10.1	13.6	3.8	5.5	10.6	14.1	3.9	10.7
Flat TV Screen	2.3	5.7	.9	3.6	2.3	2.1	2.0	0.8	7.1	2.8	2.2	1.7	1.1	0.6	0.3	0.3	0.8	1.7	1.6	0.6	0.2
Internet	3.8	10.2	1.1	3.3	2.3	6.8	1.7	1.8	16.4	2.7	1.1	5.7	0.2	1.0	0.6	0.3	0.4	0.5	1.6	0.9	0.2
Computer	3.7	8.9	1.4	5.8	5.0	4.6	2.9	0.9	12.0	4.2	1.6	3.4	0.8	1.2	1.4	.7	1.4	1.2	1.4	1.0	0.6
Wash Machine	11.1	22.5	6.2	43.6	31.7	15.4	7.8	2.8	30.8	15.5	5.8	7.1	2.7	2.6	0.6	0.8	0.6	0.8	0.6	1.3	0.8
Percentage of households that own																					
Agricultural land	39.5	12.0	51.1	31.3	22.7	30.3	28.0	43.4	7.0	24.0	30.2	42.7	48.0	55.6	52.0	43.2	83.4	69.4	63.3	48.8	55.7
Farm animals/ Livestock	51.0	20.3	64.0	65.1	51.9	44.0	44.9	51.0	13.8	45.4	54.8	51.7	62.9	62.3	52.7	55.1	83.1	54.4	66.5	54.2	71.7
Percentage of households where at least one member owns or has a																					
Mobile telephone	73.8	87.3	68.1	96.4	84.6	58.9	54.9	72.1	91.3	87.3	69.4	74.7	87.5	66.5	73.0	66.1	60.6	57.9	59.2	47.3	60.0
Bicycle	13.3	17.8	11.4	12.0	12.4	5.5	14.8	10.0	13.9	18.4	10.0	22.5	30.8	2.9	35.5	13.1	3.5	5.6	11.8	21.7	4.3
Motorcycle or scooter	4.4	6.6	3.5	2.5	4.4	2.9	6.1	3.5	4.2	2.8	2.3	6.2	15.8	1.1	10.4	7.0	1.1	3.4	7.0	6.2	1.9
Animal-drawn cart	15.0	8.1	17.9	16.4	11.8	1.9	9.0	16.3	5.6	14.8	24.3	21.7	14.2	16.5	24.1	28.0	4.5	8.2	19.8	16.4	39.1
Car or truck	6.4	11.0	4.4	12.7	10.8	6.1	6.0	3.1	16.4	7.8	6.0	6.2	4.1	4.2	1.4	0.7	1.4	1.9	2.6	0.8	2.4
Boat with motor	0.5	0.3	0.6	1.0	1.4	0.5	0.2	0.0	0.1	0.3	4.8	0.6	0.2	0.2	0.2	0.0	0.0	0.1	0.2	0.6	0.0

Background characteristics	Sudan	Area		State																	
		Urban	Rural	Northern	River Nile	Red Sea	Kassala	Gadarif	Khartoum	Gezira	White Nile	Sinnar	Blue Nile	North Kordofan	South Kordofan	West Kordofan	North Darfur	West Darfur	South Darfur	Central Darfur	East Darfur
Raksha	1.3	3.4	.4	2.0	2.8	2.7	0.1	0.5	3.6	1.0	1.8	1.6	0.5	0.2	1.3	0.3	0.0	0.2	1.4	0.8	0.1
Smart Mobile	8.9	17.8	5.1	33.4	15.3	10.3	12.4	2.9	22.1	9.8	11.0	6.7	2.9	2.8	2.5	1.0	1.5	1.8	3.1	6.1	2.7
Laptop/Tablet	3.8	9.4	1.4	7.2	4.8	4.4	2.0	.9	11.9	4.4	2.2	3.6	2.0	1.4	1.0	.4	1.0	2.2	2.3	1.4	1.2
Thria mobile	0.4	0.5	0.3	0.3	0.3	0.3	0.4	0.2	0.0	0.2	3.4	0.7	0.2	0.2	0.3	0.0	0.0	0.6	0.3	0.1	0.4
Bank account	5.0	11.1	2.4	9.6	4.4	8.2	2.1	4.5	12.6	4.9	2.3	5.4	5.6	1.7	4.3	1.6	1.6	3.3	3.4	1.0	2.9
<b>Ownership of dwelling</b>																					
Owned by a household member	85.5	67.3	93.3	75.5	84.4	81.4	91.1	89.1	69.3	87.2	91.0	82.6	92.2	92.2	91.3	93.5	94.4	85.8	83.5	83.2	86.3
Not owned	14.4	32.5	6.7	24.5	15.4	18.5	8.8	10.9	30.7	12.8	8.8	17.1	7.8	7.7	8.6	6.2	5.5	14.2	16.5	16.7	13.7
Rented	7.0	19.1	1.9	6.3	6.2	9.0	4.9	3.1	21.4	3.8	5.0	3.1	4.0	3.0	4.5	4.5	1.7	6.0	9.2	6.5	4.2
Other	7.4	13.4	4.8	18.3	9.2	9.6	3.9	7.8	9.4	9.0	3.7	14.0	3.8	4.6	4.1	1.7	3.7	8.2	7.3	10.2	9.5
Missing/DK	0.1	0.1	0.0	0.0	0.2	0.1	0.1	0.0	0.0	0.0	0.2	0.3	0.0	0.1	0.1	0.2	0.2	0.0	0.0	0.1	0.0
Number of households	16,801	5,000	11,801	423	666	519	722	858	2,317	2,629	874	661	656	1,125	462	1,003	1,243	553	1,282	299	508

[\*] Based on less than 25 unweighted cases and has been suppressed.

Table HH.8 shows how the household populations in Areas and States are distributed according to household wealth quintiles.

<b>Table HH.8: Wealth quintiles</b>							
<b>Percent distribution of the household population by wealth index quintiles, according to area of residence and states, Sudan MICS, 2014</b>							
Background characteristics	Wealth index quintile					Sudan	Number of household members
	Poorest	Second	Middle	Fourth	Richest		
<b>Sudan</b>	20.0	20.0	20.0	20.0	20.0	100.0	98,883
<b>Area</b>							
Urban	2.8	7.2	21.0	26.9	42.0	100.0	30,476
Rural	27.7	25.7	19.6	16.9	10.2	100.0	68,407
<b>State</b>							
Northern	0.0	0.8	10.5	39.3	49.5	100.0	2,181
River Nile	3.6	1.9	10.4	38.3	45.8	100.0	3,715
Red Sea	9.1	22.5	26	21.2	21.3	100.0	2,489
Kassala	19.5	28.4	25.3	13.6	13.1	100.0	4,117
Gadarif	16.7	35.5	30.7	12.8	4.3	100.0	5,005
Khartoum	0.2	2.8	12.5	26.0	58.4	100.0	13,830
Gezira	0.6	4.7	21.3	44.5	28.8	100.0	16,270
White Nile	2.0	22.5	38.3	21.3	15.9	100.0	5,016
Sinnar	1.2	21.2	36.7	21.8	19.1	100.0	3,763
Blue Nile	2.3	26.4	45.5	18.5	7.3	100.0	4,094
North Kordofan	37.4	28.1	21.3	8.1	5.1	100.0	6,359
South Kordofan	9.9	51.0	28.4	8.5	2.2	100.0	2,983
West Kordofan	41.6	40.9	14	2.9	0.6	100.0	5,745
North Darfur	59.9	26.8	8.0	2.8	2.5	100.0	7,776
West Darfur	40.5	30.0	13.7	11.0	4.8	100.0	3,023
South Darfur	52.0	22.3	14.8	7.9	2.9	100.0	7,712
Central Darfur	32.1	49.5	12.7	4.0	1.7	100.0	1,646
East Darfur	60.8	26.0	5.9	3.4	3.9	100.0	3,158

## IV. Child Mortality

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### 4.1 Introduction

One of the overarching goals of the Millennium Development Goals (MDGs) is to reduce infant and under-five mortality. Specifically, the MDGs call for the reduction of under-five mortality by two-thirds between 1990 and 2015. The Goal of the Sudan Health Sector Strategic Plan (HSSP 2012-2016) was to “improve health status and outcomes, especially for poor, underserved, disadvantaged and vulnerable populations” expecting the reduction of under-five mortality rate from 83 thousands life births estimated by SHHS 2010 to 53 thousands life births and the reduction of infant mortality rate from 57 to 43 at the end of the health strategic plan in 2016. This national commitment is part of the Government’s National Development Plan 2012-2016 compatible with the 25-year National Strategic Plan for Health (2003-2027) and the National Health Policy (2007).

Monitoring progress towards those global and national goals is an important but difficult objective. MICS 2014 offers an opportunity to generate accurate evidence on the status of child survival in Sudan at national level and by state following the separation of the South Sudan with Sudan in 2011 which resulted to structural economic challenges of limited fiscal space (the loss of 65 percent of oil revenue) for capital investment on social sector. The persistent humanitarian responses to vulnerable population affected by natural disasters, conflicts and displacements represent also major challenges for development results.

The gap of human resources capacities and health financing, the limited geographic coverage of PHC (11.3 percent of population don’t have access to health services within 5km), the financial barriers of use of health services by poorest families because of the requirement of users fees and the prevailing social norms and behaviours issues represent major bottlenecks for the acceleration of progress to achieve MDG4 and MDG5 in Sudan as mentioned in 2012 by the SHSS 2012-2016.

Despite those challenges and bottlenecks, it is important to recognise that in Sudan health infrastructures and skilled manpower are in place and efforts have been made to operationalize strategies and innovative high impact interventions as agreed within HSSP and the Health Sector COMPACT in a very large partnerships of Government, Donors, Civil Society, Local Authorities with engagement of communities and family participation.

Mortality rates presented in this chapter are calculated from information collected in the birth histories of the Women’s Questionnaires. All interviewed women were asked whether they had ever given birth, and if yes, they were asked to report the number of sons and daughters who live with them, the number who live elsewhere, and the number who have died. In addition, they were asked to provide a detailed birth history of live births of children in chronological order starting with the firstborn. Women were asked whether births were single or multiple, the sex of the children, the date of birth (month and year), and survival status. Further, for children still alive, they were asked the current age of the child and, if not alive, the age at death.

Childhood mortality rates are expressed by conventional age categories and are defined as follows:

- Neonatal mortality (NN): probability of dying within the first month of life
- Post-neonatal mortality (PNN): difference between infant and neonatal mortality rates
- Infant mortality ( ${}_1q_0$ ): probability of dying between birth and the first birthday

- Child mortality ( ${}_4q_1$ ): probability of dying between the first and the fifth birthdays
- Under-five mortality ( ${}_5q_0$ ): the probability of dying between birth and the fifth birthday

Rates are expressed as deaths per 1,000 live births, except in the case of child mortality, which is expressed as deaths per 1,000 children surviving to age one, and post-neonatal mortality, which is the difference between infant and neonatal mortality rates.

#### 4.2. Status of Child Mortality at national level

Table CM.1 and Figure CM.1 present neonatal, post-neonatal, infant, child, and under-five mortality rates for the three most recent five-year periods before the survey.

In Sudan, the under-five mortality is estimated by MICS 2014 at 68 deaths per 1,000 live births for the period of five years preceding the survey (2010-2014) and the infant mortality rate is 52 per 1,000 live births for the same period indicating that 76.5 percent of under-five deaths are infant deaths.

Neonatal mortality in the most recent 5-year period is estimated at 33 per 1,000 live births, while the post-neonatal mortality rate is estimated at 19 per 1,000 live births.

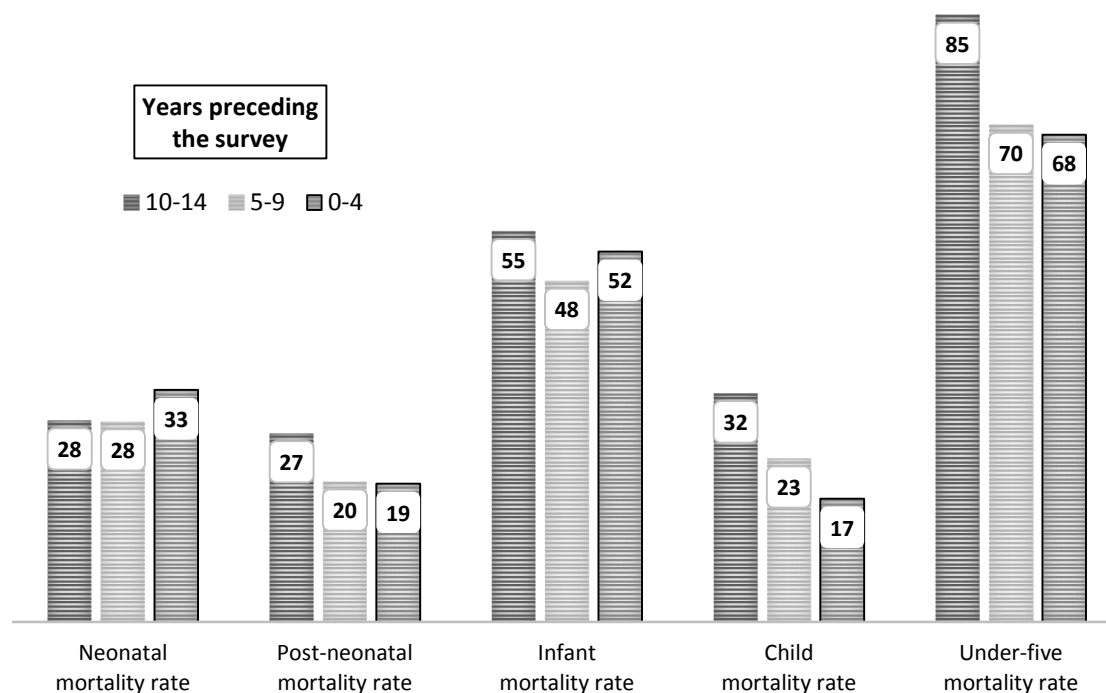
<b>Table CM.1: Early childhood mortality rates</b>					
<b>Neonatal, post-neonatal, infant, child and under-five mortality rates for five year periods preceding the survey, Sudan MICS, 2014</b>					
Years preceding the survey	Neonatal mortality rate (1)	Post neonatal mortality(2)	Infant mortality(3)	Child mortality (4)	Under five mortality(5)
0-4	<b>32.6</b>	<b>19.4</b>	<b>52.0</b>	<b>17.3</b>	<b>68.4</b>
5-9	28.2	19.7	47.9	23.0	69.8
10-14	28.3	26.5	54.9	32.1	85.2
<sup>1</sup> MICS indicator 1.1 – Neonatal mortality					
<sup>2</sup> MICS indicator 1.3 – Post neonatal mortality rate					
<sup>3</sup> MICS indicator 1.2 – MDG indicator 4.2 – infant mortality rate					
<sup>4</sup> MICS indicator 1.4 – Child Mortality Rate					
<sup>5</sup> MICS indicator 1.5 - MDG indicator 4.1 – Under-five mortality rate					
Post neonatal mortality rates are computed as the difference between the infant and neonatal mortality rate					

The birth history method enables to calculate early child mortality rates for different years preceding the survey. The table and figure also show a declining trend at the national level, during the last 15 years, with under-five mortality at 85 per 1,000 live births during the 10-14 year period preceding the survey, and 69.8 per 1,000 live births during the most recent 5-year period, roughly referring to the years indicate period. A similar pattern is observed in all other indicators.

However, there has been stagnation of neonatal mortality rate during the period 10-14 years (28.3) and 5-9 years (28.2) preceding the MICS 2014.



**Figure CM.1: Early childhood mortality rates, Sudan MICS, 2014**



Note: Indicator values are per 1,000 live births

### 4.3 Geographic Disparity in Childhood Mortality

Tables CM.2 and figure CM.2 provide estimates of child mortality by area and by states. Findings reveal that there is inequality of probabilities of dying between urban and rural areas: under-five mortality and infant mortality rates are respectively 56.5 and 11.8 deaths for 1,000 live births in urban area, 72.8 and 19.3 in rural area.

The risk of dying of under-five children before the five birthday is very high in the states of East Darfur (111.7), South Kordofan (95.4), West Darfur (91.4), North Darfur (90.3); however the lowest under-five mortality rates are measured in Northern (29.9), River Nile (35.1), North Kordofan (41.9) and Khartoum (49.8) states. Figure CM.2 provides a graphical presentation of these differences.

**Table CM.2: Early Childhood Mortality**

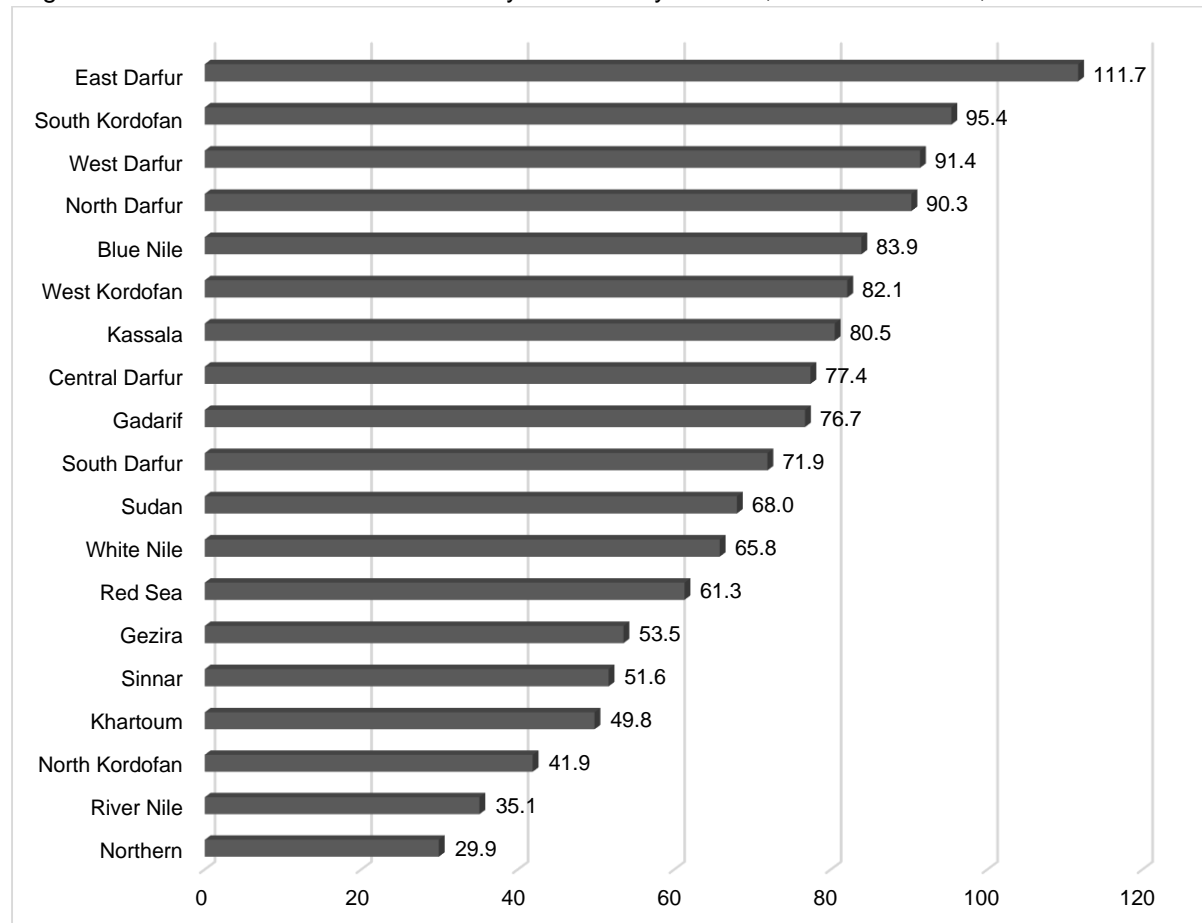
Neonatal, post-neonatal, infant, child and under-five mortality rates for five year periods preceding the survey by Area and State, Sudan MICS, 2014

Geographic area	Neonatal mortality <sup>1</sup>	Post neonatal mortality <sup>2</sup>	Infant mortality <sup>3</sup>	Child mortality <sup>4</sup>	Under five mortality <sup>5</sup>
<b>Sudan</b>	<b>32.6</b>	<b>19.4</b>	<b>52.0</b>	<b>17.3</b>	<b>68.4</b>
<b>Area</b>					
Urban	30.3	14.8	45.1	11.8	56.5
Rural	33.4	21.1	54.5	19.3	72.8
<b>State</b>					
Northern	23.0	6.9	30.0	0.0	29.9
River Nile	25.8	2.3	28.1	7.2	35.1
Red Sea	18.6	25.6	44.2	17.9	61.3
Kassala	47.2	15.0	62.1	19.7	80.5
Gadarif	32.6	20.8	53.4	24.6	76.7
Khartoum	30.5	14.6	45.1	4.9	49.8
Gezira	26.2	15.2	41.4	12.6	53.5
White Nile	30.3	16.5	46.8	20.0	65.8
Sinnar	18.0	16.1	34.1	18.1	51.6
Blue Nile	26.0	20.8	46.8	38.9	83.9
North Kordofan	23.0	12.7	35.6	6.5	41.9
South Kordofan	32.5	37.6	70.2	27.1	95.4
West Kordofan	43.4	24.8	68.2	15.0	82.1
North Darfur	43.9	24.6	68.5	23.4	90.3
West Darfur	39.2	32.0	71.2	21.8	91.4
South Darfur	35.2	17.5	52.6	20.4	71.9
Central Darfur	24.7	19.8	44.5	34.4	77.4
East Darfur	51.8	36.7	88.5	25.5	111.7

<sup>1</sup> MICS indicator 1.1 - Neonatal mortality rate<sup>2</sup> MICS indicator 1.3 - Post-neonatal mortality rate<sup>3</sup> MICS indicator 1.2; MDG indicator 4.2 - Infant mortality rate<sup>4</sup> MICS indicator 1.4 - Child mortality rate<sup>5</sup> MICS indicator 1.5; MDG indicator 4.1 - Under-five mortality rate

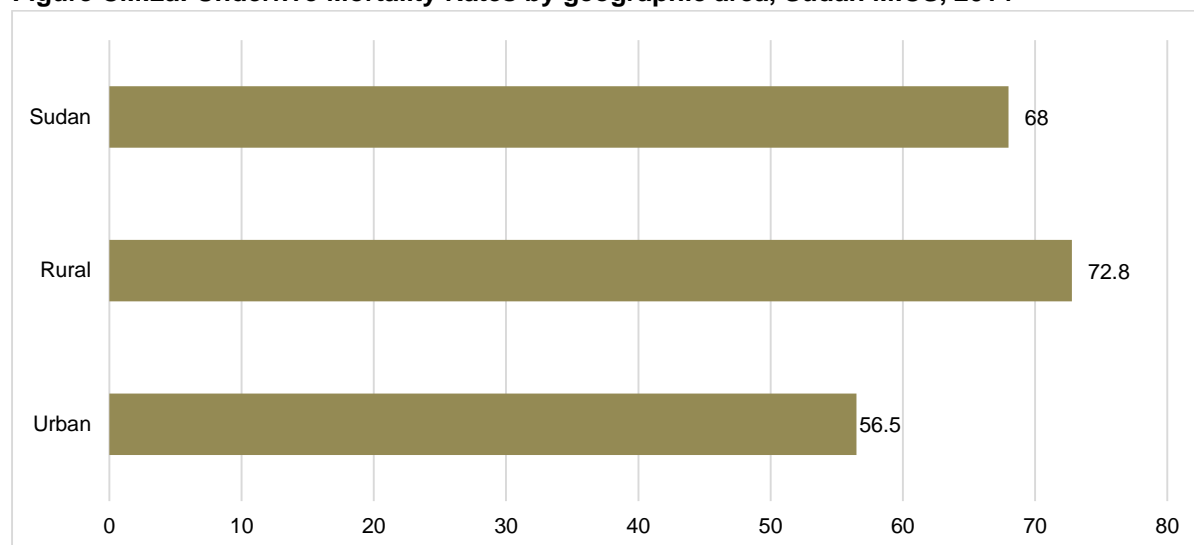
Graph below reveals the 3.7 times gap of equity in child survival between Northern state (the lowest U5MR of 30 deaths per 1,000 live births) and East Darfur (the highest under-five mortality rate of 111.7 deaths for 1,000 live births).

Figure CM.2: Underfive Mortality Rates by State, Sudan MICS, 2014



The gap of equity of child survival between urban and rural area is high in Sudan as indicated below.

**Figure CM.2a: Underfive Mortality Rates by geographic area, Sudan MICS, 2014**

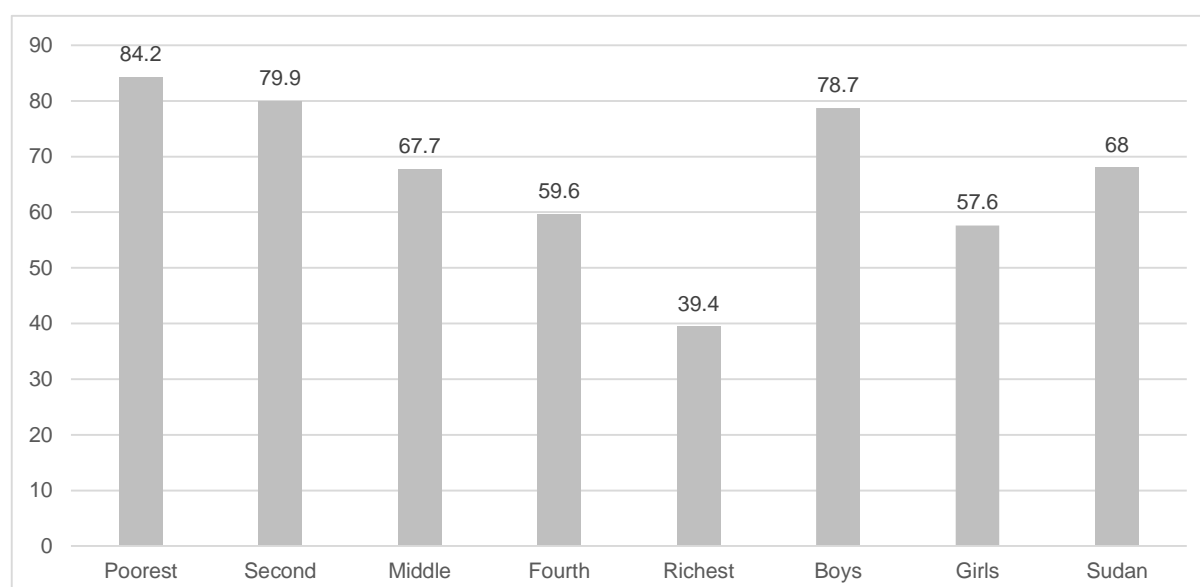


#### 4.4 Disparity in Childhood mortality by socioeconomic and demographic patterns

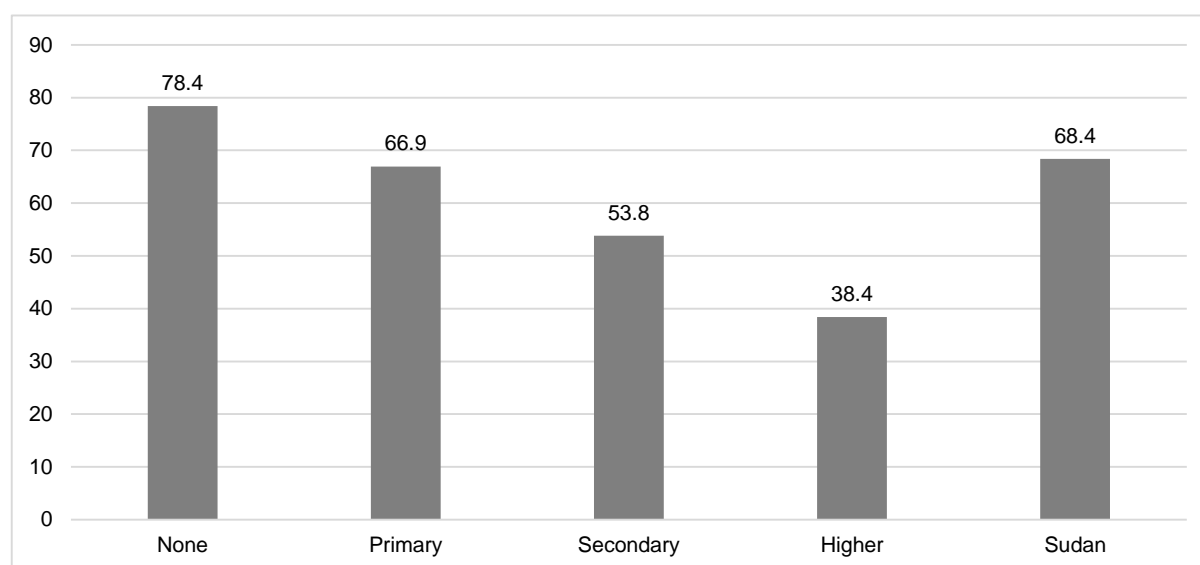
Tables CM.2b and figures CM.2c-CM.2d provide estimates of child mortality by socioeconomic and demographic characteristics. There is difference between the probabilities of dying among boys (78.7) and girls (57.6). Inequity for child survival is very high in Sudan: children living in poorest families are double times at risk of dying before their fifth birthday (U5MR of 84.2) in comparison to children from richest household (U5MR of 39.4).

There are also differences in mortality in terms of mothers' education, age-group, birth order and interval of birth as indicated in figures and tables below.

**Figure CM.2b: Under Five Mortality Rates by sex of child and wealth quintile, Sudan MICS, 2014**



**Figure CM.2c: Underfive mortality rates by mother's education, Sudan MICS, 2014**



**Table CM.3: Early Childhood Mortality**

Neonatal, post-neonatal, infant, child and under-five mortality rates for five year periods, preceding the survey by demographic characteristics, Sudan MICS, 2014

Background characteristics	Neonatal mortality	Post neonatal mortality	Infant mortality	Child mortality	Under five mortality
<b>Sudan</b>	<b>32.6</b>	<b>19.4</b>	<b>52.0</b>	<b>17.3</b>	<b>68.4</b>
<b>Sex of child</b>					
Boys	38.4	21.1	59.4	20.5	78.7
Girls	26.5	17.7	44.2	14.1	57.6
<b>Birth order</b>					
1	37.9	10.2	48.0	12.5	60.0
2-3	22.8	20.5	43.3	14.8	57.5
4-6	28.3	19.6	47.9	18.9	65.9
7+	53.4	25.8	79.2	24.4	101.7
<b>Previous birth interval</b>					
< 2 years	52.7	30.2	82.9	27.1	107.8
2 years	23.8	19.8	43.7	18.4	61.3
3 years	13.7	11.6	25.3	7.3	32.4
4+ years	30.5	15.8	46.3	8.7	54.6
<b>Mother's education</b>					
None	34.6	20.6	55.3	24.6	78.4
Primary	32.5	20.7	53.2	14.5	66.9
Secondary	35.0	13.0	48.0	6.1	53.8
Higher	14.6	20.2	34.8	3.8	38.4
<b>Wealth index quintile</b>					
Poorest	41.1	23.8	64.9	20.6	84.2
Second	36.0	24.3	60.3	20.9	79.9
Middle	31.2	19.2	50.3	18.2	67.7
Fourth	25.0	17.7	42.7	17.7	59.6

Richest	25.7	8.2	33.9	5.7	39.4
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<sup>1</sup> MICS indicator 1.1 - Neonatal mortality rate

<sup>2</sup> MICS indicator 1.3 - Post-neonatal mortality rate

<sup>3</sup> MICS indicator 1.2; MDG indicator 4.2 - Infant mortality rate

<sup>4</sup> MICS indicator 1.4 - Child mortality rate

<sup>5</sup> MICS indicator 1.5; MDG indicator 4.1 - Under-five mortality rate

<sup>a</sup> Post-neonatal mortality rates are computed as the difference between the infant and neonatal mortality rates

(\*) Rates based on fewer than 250 unweighted exposed persons

() Rates based on 250 to 499 unweighted exposed persons

## 4.5 Trend in Childhood mortality rate using different sources

As part of an effort to recap the overall evolution of child mortality measurement done in Sudan, this section presents data related to the estimation of under-five mortality as officially approved and published within national household survey full report completed in Sudan since 2000. In addition, reference to the estimation performed by the United Nations inter agency estimation group (IGME) is also presented in the graph for information.

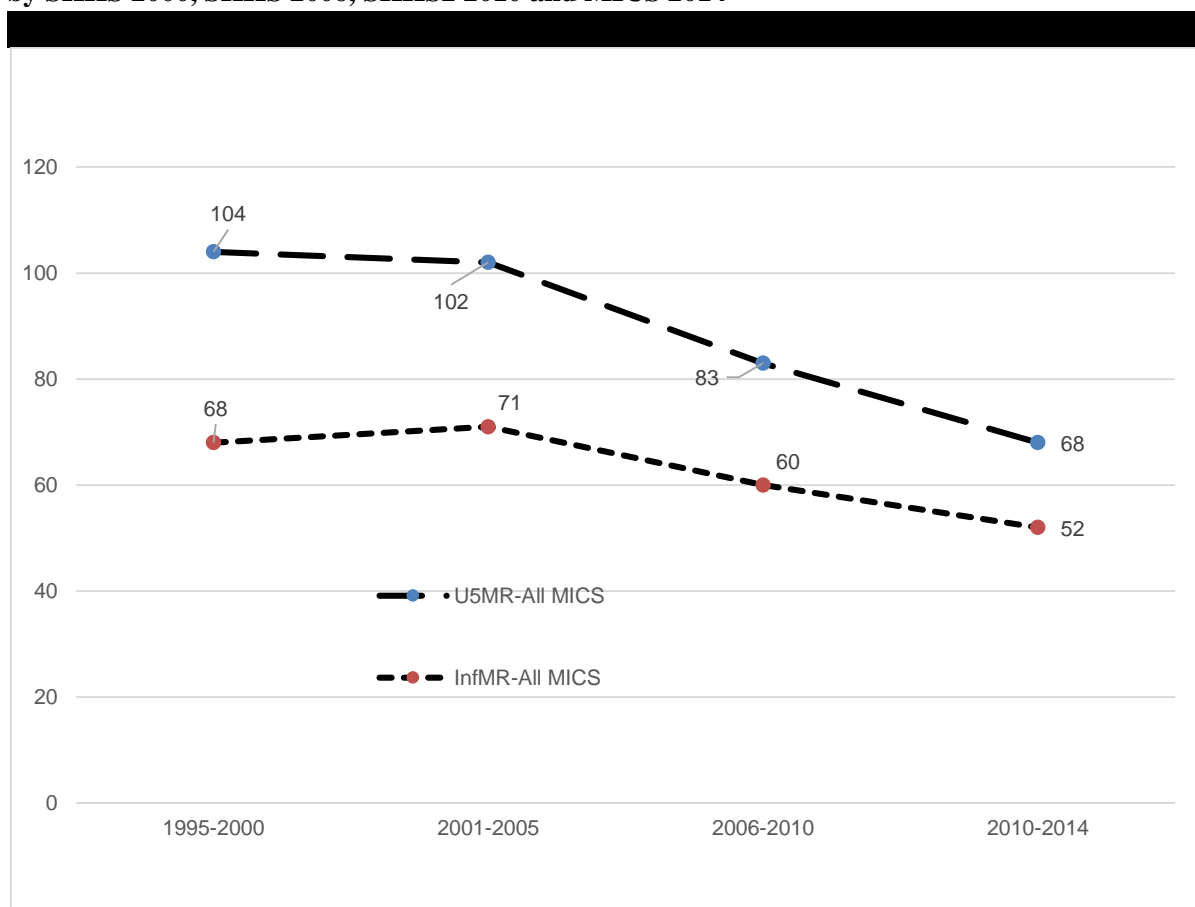
This trend analysis will cover the evolution of under-five mortality at national level, by state and by wealth quintile. Those data must be considered with caution taking into account the difference of sampling, the variance of indicator, method used and variation of geographic area (variation from 15 states in 2010 to 18 states in 2014). Despite, the limitations of different surveys in statistical view, those recap of estimation from previous surveys provide an indication of potential evolution of the situation of child survival in Sudan (decrease or increase by state and wealth quintile).

### 4.5.1 Trend at national level

Figure CM.3 compares the findings of MICS 2014 on under-5 mortality rates with those from other data sources like SHHS 2010, SHSS 2006 and SHSS 2000.

The MICS estimates indicate a decline in mortality during the last 20 years. Further secondary data analysis will provide explanation related to probable factors determinants of the acceleration or not of decline of U5MR during the two periods (1995-2006 and 2006-2014).

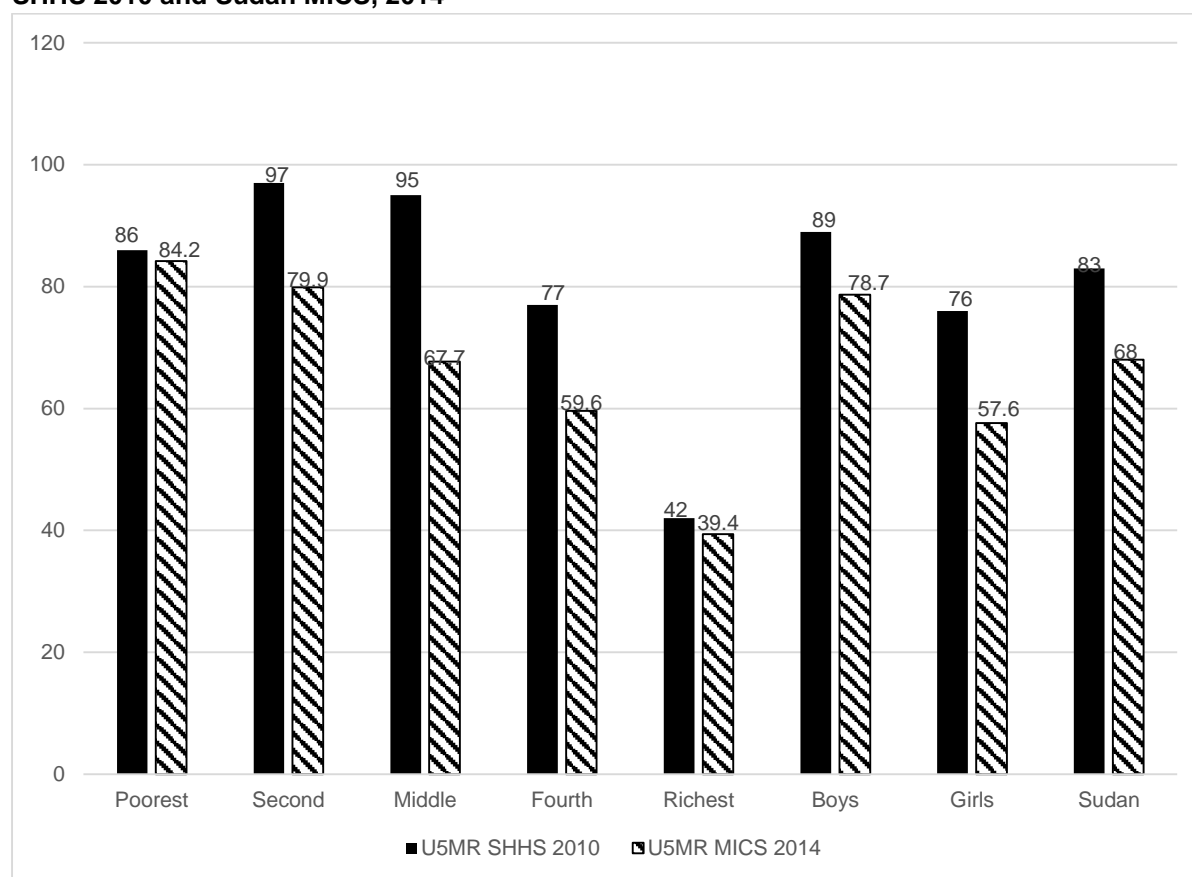
**Figure CM.3: Trends in Under-Five Mortality and Infant Mortality in Sudan as estimated by SHHS 2000, SHHS 2006, SHHS2 2010 and MICS 2014**



#### 4.5.3 Trend by wealth index quintile from SHHS 2010 and MICS 2014 data sources

Figure CM.3a below seems to indicate that the reduction of under-five mortality during the last five years greatest among the middle wealth quintile than the poorest and richest quintiles.

**Figure CM.3a: Trend in Under Five Mortality Rates by sex of child and wealth quintile in Sudan, SHHS 2010 and Sudan MICS, 2014**





## **V. Nutrition**

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Sudan has been committed to the 2015 Millennium Development Goals aiming to eradicate the extreme poverty and hunger. The reduction of child malnutrition is one of the goals of Sudan's National Health Sector Strategic Plan (NHSSP) 2012-2016 which intended to reduce the prevalence of moderate malnutrition (underweight) from 32 percent to 16 percent.

According to the Ministry of Health's annual statistical reports, pneumonia, malaria, diarrhoea and malnutrition are the major causes of under-five illness and hospital admission. With reference to the global evidence of studies conducted by the World Bank (2010) and Horton and Steckel (2013) which estimated that investing in nutrition can increase a country's GDP by at least 3 percent annually, the Investment in Nutrition Case Document developed for Sudan in 2014 has estimated that investing in nutrition can increase Sudan's 2013 GDP by US\$66.55 billions, equaling to a gain of US\$2 billion per annum.

Sudan has a National Nutrition Policy which supports many of the interventions that are considered to be high impact and evidence based. Within the SHSSP 2012-2016, efforts have been made by Government and Donors in order to strengthen institutional capacity of coordination and management of nutrition services at federal, state and periphery levels and to increase financial investment for addressing the prevention and treatment of acute malnutrition: the coverage of health-based services for treatment of severe acute malnutrition has reached 28 percent in 2014 and government has allocated in 2015 a Sudan amount of US\$ 8 million for therapeutic foods.

MICS 2014 offers an opportunity to assess the status of child malnutrition in Sudan vis-à-vis MDG 2015 and the NHSSP 2012-2016 targets and to provide baseline evidence-based prioritization of child malnutrition within the full Poverty Reduction Strategic Paper in process, the development of a national multi-sector nutrition strategy and better targeting and investment of humanitarian responses to reduce child acute malnutrition.

This chapter presents findings related to low birth weight, nutritional status of children under-five years, breastfeeding and Infant and Young Child Feeding, the use of salt iodization at household level, and the coverage of child's Vitamin A supplementation.

### **5.1 Low Birth Weight**

Weight at birth is a good indicator not only of a mother's health and nutritional status but also the newborn's chances for survival, growth, long-term health and psychosocial development. Low birth weight (defined as less than 2,500 grams) carries a range of grave health risks for children. Babies who were undernourished during pregnancy face a greatly increased risk of dying during their early stages of life up to five years of age. Those who survive may have impaired immune function and increased risk of disease; they are likely to remain undernourished, with reduced muscle strength, throughout their lives, and suffer a higher incidence of diabetes and heart disease in later life. Children born with low birth weight also have a risk of lower IQ and cognitive disabilities, affecting their performance in school and their job opportunities as adults.

In developing countries, low birth weight stems primarily from the mother's poor health and nutrition. Three factors have the most impact: the mother's poor nutritional status before conception, short stature (due mostly to under nutrition and infections during her childhood), and poor nutrition during pregnancy. Inadequate weight gain during pregnancy is particularly important since it accounts for a

large proportion of foetal growth retardation. Moreover, diseases such as diarrhoea and malaria, which are common in many developing countries, can significantly impair foetal growth if the pregnant mother becomes infected

Cigarette smoking during pregnancy is a leading cause of low birth weight. In addition, teenagers who give birth when their own bodies have yet to finish growing run a higher risk of bearing low birth weight babies.

One of the major challenges in measuring the incidence of low birth weight is that more than half of infants are not weighed at birth. In the past, most estimates of low birth weight for developing countries were based on data compiled from health facilities. However, these estimates are biased for most developing countries because the majority of new-borns are not delivered in facilities, and those who are represent only a selected sample of all births.

Because many infants are not weighed at birth and those who are weighed may be a biased sample of all births, the reported birth weights usually cannot be used to estimate the prevalence of low birth weight among all children.

The percentage of births weighing below 2500 grams is estimated from two items in the questionnaire: the mother's own assessment of the child's **size** at birth (i.e., very small, smaller than average, average, larger than average, very large) and the mother's recall of the child's **weight** or the weight as recorded on a health card if the child was weighed at birth.<sup>7</sup>

Sudan's 2014 MICS report states that 16.3 percent of births were weighed at birth. Approximately 32.3 percent of infants born during the last two years were estimated to weigh less than 2,500 grams at birth (Table NU.1). The prevalence of low birth weight varies by urban 27.9 percent and rural area 33.9 percent and by mother's education from 33.7 percent among children for whose mothers are not educated to 23.7 percent for children whose mothers have higher level of education.

The highest prevalence of low birth weight was observed in states of North Darfur (47.5 percent), East Darfur (46.9 percent), North Kordofan (41.4 percent) and West Kordofan (36 percent) in comparison to the low prevalence observed in states of River Nile (17.2 percent), Khartoum (22.2 percent), Gadarif (23.9 percent) and Blue Nile (25.7 percent).

There is inequality of the prevalence of low birth weight among children in the wealth index quintiles of the population; 39 percent among children living in the poorest household to 22.2 percent for children of richest household category.

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<sup>7</sup> For a detailed description of the methodology, see Boerma, JT et al. 1996. *Data on Birth Weight in Developing Countries: Can Surveys Help?* Bulletin of the World Health Organization 74(2): 209-16.

**Table NU.1: Low birth weight infants**

Percentage of last live-born children in the last two years that are estimated to have weighed below 2,500 grams at birth and percentage of live births weighed at birth, Sudan MICS, 2014

Background Characteristics	Percent distribution of births by mother's assessment of size at birth					Sudan	Percentage of live births:		Number of last live-born children in the last two years
	Very small	Smaller than average	Average	Larger than average or very large	DK		Below 2,500 grams [1]	Weighed at birth [2]	
Sudan	18.6	15.2	51.5	12.9	1.8	100.0	32.3	16.3	5,622
<b>Mother's age at birth</b>									
Less than 20 years	19.7	20.2	47.2	11.3	1.5	100.0	36.2	11.6	640
20-34 years	18.8	14.9	51.5	13.1	1.8	100.0	32.2	16.4	4,001
35-49 years	17.4	13.3	54.0	13.4	1.8	100.0	30.3	19.2	981
<b>Birth order</b>									
1	16.6	16.8	53.7	11.7	1.1	100.0	31.9	21.9	910
2-3	16.2	14.8	54.0	13.0	2.0	100.0	30.5	19.3	1,669
4-5	18.8	16.1	51.0	12.2	1.9	100.0	33.1	13.5	1,428
6+	22.1	14.0	48.0	14.1	1.8	100.0	33.8	12.7	1,614
<b>State</b>									
Northern	16.3	9.0	67.9	5.8	1.1	100.0	27.1	27.3	92
River Nile	2.7	7.5	81.2	8.6	.0	100.0	17.2	26.5	151
Red Sea	15.4	9.1	53.0	6.2	16.2	100.0	29.3	26.2	92
Kassala	16.2	7.8	62.3	12.4	1.3	100.0	26.0	13.7	199
Gadarif	9.0	11.6	70.9	7.8	0.6	100.0	23.9	7.2	307
Khartoum	7.8	10.5	69.5	11.4	0.8	100.0	22.2	56.3	684
Gezira	13.3	19.5	60.8	6.0	0.3	100.0	31.6	15.2	852
White Nile	24.6	13.4	50.0	8.7	3.3	100.0	35.6	13.6	273
Sinnar	18.2	15.4	55.6	9.9	0.9	100.0	32.1	13.1	226
Blue Nile	15.2	9.9	43.9	30.9	0.1	100.0	25.7	12.4	287
North Kordofan	23.8	23.9	36.5	13.2	2.5	100.0	41.4	10.9	352
South Kordofan	20.4	14.0	51.2	12.1	2.2	100.0	32.9	7.9	194
West Kordofan	26.6	12.9	48.2	10.8	1.5	100.0	36.0	4.3	341
North Darfur	29.5	26.9	34.6	6.0	3.0	100.0	47.5	5.3	525
West Darfur	14.4	17.3	37.0	27.0	4.2	100.0	30.7	12.7	179
South Darfur	26.6	11.2	37.1	23.2	1.9	100.0	34.5	5.1	556
Central Darfur	11.2	11.8	42.9	33.3	0.9	100.0	24.3	5.7	99
East Darfur	38.8	17.5	21.6	19.4	2.6	100.0	46.9	4.2	211
<b>Area</b>									
Urban	15.2	11.7	56.4	14.6	2.1	100.0	27.9	33.6	1,488
Rural	19.9	16.5	49.7	12.3	1.7	100.0	33.9	10.1	4,134
<b>Mother's education</b>									
None	20.2	15.8	46.4	15.2	2.4	100.0	33.7	5.8	2,247
Primary	19.4	16.9	50.0	12.5	1.2	100.0	33.8	13.2	2,022
Secondary	16.6	12.9	58.6	10.0	2.0	100.0	29.7	31.3	942
Higher	10.9	9.5	69.9	8.9	0.8	100.0	23.7	54.7	410
Wealth index quintile									

Background Characteristics	Percent distribution of births by mother's assessment of size at birth					Sudan	Percentage of live births:		Number of last live-born children in the last two years
	Very small	Smaller than average	Average	Larger than average or very large	DK		Below 2,500 grams [1]	Weighed at birth [2]	
Poorest	25.3	19.2	39.2	14.7	1.7	100.0	39.0	3.7	1,251
Second	22.7	15.3	44.9	14.7	2.4	100.0	35.1	7.4	1,232
Middle	17.7	14.7	52.8	13.0	1.8	100.0	31.4	10.9	1,192
Fourth	15.2	16.0	55.9	11.5	1.5	100.0	30.6	21.0	1,096
Richest	8.9	9.0	71.3	9.5	1.3	100.0	22.2	49.3	851

[1] MICS indicator 2.20 - Low-birthweight infants

[2] MICS indicator 2.21 - Infants weighed at birth

## 5.2 Nutritional Status

Children's nutritional status is a reflection of their overall health. When children have access to an adequate food supply, are not exposed to repeated illness, and are well cared for, they reach their growth potential and are considered well nourished.

Malnutrition is associated with more than half of all child deaths worldwide. Undernourished children are more likely to die from common childhood ailments, and for those who survive, have recurring sicknesses and faltering growth. Three-quarters of children who die from causes related to malnutrition were only mildly or moderately malnourished – showing no outward sign of their vulnerability. The Millennium Development Goal target is to reduce by half the proportion of people who suffer from hunger between 1990 and 2015. A reduction in the prevalence of malnutrition will also assist in the goal to reduce child mortality.

In a well-nourished population, there is a reference distribution of height and weight for children under age five. Under-nourishment in a population can be gauged by comparing children to a reference population. The reference population used in this report is based on the WHO growth standards<sup>8</sup>. Each of the three nutritional status indicators – weight-for-age, height-for-age, and weight-for-height - can be expressed in standard deviation units (z-scores) from the median of the reference population.

*Weight-for-age* is a measure of both acute and chronic malnutrition. Children whose weight-for-age is more than two standard deviations below the median of the reference population are considered *moderately or severely underweight* while those whose weight-for-age is more than three standard deviations below the median are classified as *severely underweight*.

*Height-for-age* is a measure of linear growth. Children whose height-for-age is more than two standard deviations below the median of the reference population are considered short for their age and are classified as *moderately or severely stunted*. Those whose height-for-age is more than three standard deviations below the median are classified as *severely stunted*. Stunting is a reflection of chronic malnutrition as a result of failure to receive adequate nutrition over a long period and recurrent or chronic illness.

<sup>8</sup> [http://www.who.int/childgrowth/standards/technical\\_report](http://www.who.int/childgrowth/standards/technical_report)

*Weight-for-height* can be used to assess wasting and overweight status. Children whose *weight-for-height* is more than two standard deviations below the median of the reference population are classified as *moderately or severely wasted*, while those who fall more than three standard deviations below the median are classified as *severely wasted*. Wasting is usually the result of a recent nutritional deficiency. The indicator of wasting may exhibit significant seasonal shifts associated with changes in the availability of food or disease prevalence.

Children whose weight-for-height is more than two standard deviations above the median reference population are classified as moderately or severely overweight.

In MICS, weights and heights of all children under 5 years of age were measured using the anthropometric equipment recommended<sup>9</sup> by UNICEF. Findings in this section are based on the results of these measurements.

Table NU.2 shows percentages of children classified into each of the above described categories, based on the anthropometric measurements that were taken during fieldwork. Additionally, the table includes mean z-scores for all three anthropometric indicators.

Regarding the quality of nutrition's indicators, children whose full birth date (month and year) were not obtained and children whose measurements are outside a plausible range are excluded from Table NU.2. Children are excluded from one or more of the anthropometric indicators when their weights and heights have not been measured, whichever applicable. For example, if a child has been weighed but his/her height has not been measured, the child is included in underweight calculations, but not in the calculations for stunting and wasting.

Percentages of children by age and reasons for exclusion are shown in the data quality Tables DQ.12, DQ.13, and DQ.14 in Appendix D. The tables show that due to incomplete dates of birth, implausible measurements, missing weight and/or height and possible particular situation in Sudan, 19.3 percent of children have been excluded from calculations of the weight-for-age indicator, 21.8 percent from the height-for-age indicator, and 11.9 percent for the weight-for-height indicator.

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<sup>9</sup> See MICS Supply Procurement Instructions: [http://www.childinfo.org/mics5\\_planning.html](http://www.childinfo.org/mics5_planning.html)

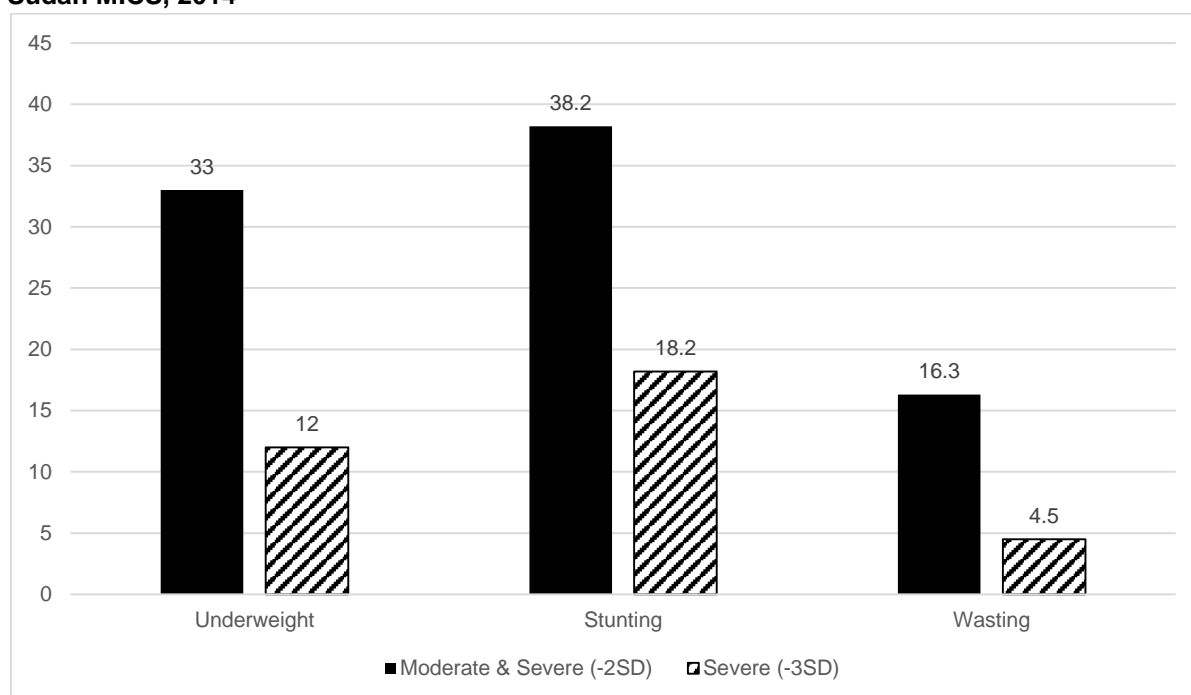
Table NU.2: Nutritional status of children													
Percentage of children under age 5 by nutritional status according to three anthropometric indices: weight for age, height for age, and weight for height, Sudan MICS, 2014													
Background characteristics	Weight for age		Mean Z- Score (SD)	Number of children under age 5	Height for age		Number of children under age 5	Weight for height				Number of children under age 5	
	Underweight				Mean Z- Score (SD)	Stunted		Wasted		Overweight			
	Percent below					Percent below		Percent above					
	- 2 SD [1]	- 3 SD [2]				- 2 SD [3]		- 3 SD [4]	- 2 SD [5]	- 3 SD [6]	+ 2 SD [7]		
<b>Sudan</b>	33.0	12.0	-1.5	11,713	38.2	18.2	-1.6	11,333	16.3	4.5	3.0	-8	12,550
<b>Sex</b>													
Male	34.6	12.8	-1.5	5,975	40.3	20.5	-1.6	5,778	16.9	5.1	3.2	-9	6,375
Female	31.5	11.2	-1.4	5,737	36.1	15.8	-1.5	5,556	15.7	3.8	2.8	-8	6,175
<b>State</b>													
Northern	21.9	4.5	-1.1	214	22.6	7.2	-1.1	208	11.4	2.6	2.7	-7	206
River Nile	32.2	11.0	-1.5	338	29.5	12.1	-1.2	336	20.1	6.1	2.0	-1.0	346
Red Sea	33.6	15.9	-1.6	182	45.4	27.1	-1.9	178	14.0	2.3	4.1	-6	184
Kassala	42.0	15.5	-1.7	409	48.8	25.7	-1.8	400	18.5	5.1	1.7	-1.0	414
Gadarif	37.7	15.5	-1.6	666	46.0	24.3	-1.9	658	15.4	5.4	4.6	-7	698
Khartoum	23.2	6.4	-1.2	1,603	21.9	8.4	-1.0	1,593	14.5	3.8	.5	-8	1,632
Gezira	32.4	12.3	-1.3	2,084	41.6	21.1	-1.7	2,046	14.0	3.7	8.5	-5	2,050
White Nile	29.8	11.1	-1.4	572	36.6	17.4	-1.5	562	14.4	3.5	2.2	-7	622
Sinnar	36.4	14.6	-1.6	471	38.1	17.9	-1.5	465	16.0	4.5	1.6	-1.0	477
Blue Nile	35.3	10.7	-1.5	668	46.7	22.6	-1.9	656	11.1	2.7	2.2	-6	666
North Kordofan	32.4	11.5	-1.5	752	40.8	17.5	-1.7	731	14.8	4.5	2.5	-8	764
South Kordofan	34.8	14.5	-1.6	431	40.6	23.7	-1.6	413	16.3	3.8	2.6	-8	452
West Kordofan	38.7	14.8	-1.5	388	42.5	22.4	-1.5	383	18.7	5.1	1.5	-1.0	781
North Darfur	44.9	16.9	-1.9	861	45.9	21.6	-1.8	759	27.9	8.6	.9	-1.4	959
West Darfur	29.4	9.9	-1.3	223	35.2	13.7	-1.2	218	19.1	6.7	4.7	-0.9	455
South Darfur	29.4	9.9	-1.4	1,231	34.2	12.8	-1.4	1,120	15.9	3.5	.3	-1.0	1,164
Central Darfur	41.0	18.5	-1.6	163	47.5	25.5	-1.8	156	17.8	4.3	5.9	-0.7	221
East Darfur	40.2	16.6	-1.7	457	46.6	24.7	-1.8	452	15.3	4.2	.9	-0.9	460
<b>Area</b>													
Urban	23.2	7.6	-1.2	3,405	27.1	10.8	-1.2	3,327	13.4	3.6	2.5	-0.7	3,494

Background characteristics	Weight for age			Number of children under age 5	Height for age			Number of children under age 5	Weight for height				Number of children under age 5
	Underweight		Mean Z-Score (SD)		Stunted		Mean Z-Score (SD)		Wasted		Overweight	Mean Z-Score (SD)	
	Percent below				Percent below				Percent below		Percent above		
	- 2 SD [1]	- 3 SD [2]			- 2 SD [3]	- 3 SD [4]			- 2 SD [5]	- 3 SD [6]	+ 2 SD [7]		
	- 2 SD [1]	- 3 SD [2]			- 2 SD [3]	- 3 SD [4]			- 2 SD [5]	- 3 SD [6]	+ 2 SD [7]		
Rural	37.1	13.8	-1.6	8,308	42.9	21.2	-1.7	8,006	17.4	4.8	3.2	-0.9	9,056
Age													
0-5 months	12.4	4.3	-0.5	1,296	12.2	5.3	-0.3	1,100	12.2	4.1	7.2	-0.3	1,158
6-11 months	24.1	9.1	-1.1	1,308	18.6	6.4	-0.8	1,274	18.3	6.1	3.3	-0.8	1,319
12-17 months	34.8	12.7	-1.4	1,290	36.1	14.8	-1.4	1,274	22.6	6.6	2.4	-1.1	1,361
18-23 months	36.3	15.1	-1.7	1,034	46.0	23.5	-1.9	1,014	19.5	5.2	0.9	-0.9	1,083
24-35 months	39.4	16.6	-1.8	2,216	49.8	25.2	-2.0	2,166	17.1	4.9	2.3	-0.9	2,391
36-47 months	37.9	13.3	-1.6	2,555	47.2	23.9	-1.9	2,519	13.2	3.0	3.0	-0.8	2,928
48-59 months	36.2	10.2	-1.6	2,014	38.8	17.5	-1.7	1,987	15.2	3.7	2.7	-0.9	2,310
Mother's education													
None	40.8	17.2	-1.7	4,683	46.8	24.3	-1.9	4,504	18.1	5.2	2.0	-1.0	5,278
Primary	32.3	11.1	-1.4	4,179	37.8	17.1	-1.5	4,055	16.3	4.5	3.4	-0.8	4,430
Secondary	23.8	5.4	-1.1	1,930	27.6	10.1	-1.2	1,883	13.5	2.9	4.1	-0.7	1,934
Higher	16.8	3.7	-0.9	907	19.7	9.2	-1.0	877	12.1	3.2	4.5	-0.5	891
Missing/DK	*	*	-1.0	14	*	*	-0.9	13	*	*	*	-1.0	16
Wealth index quintile													
Poorest	39.5	14.9	-1.7	2,277	44.0	22.2	-1.8	2,127	20.1	5.7	1.4	-1.1	2,720
Second	39.8	16.4	-1.7	2,321	47.3	23.9	-1.8	2,235	17.8	4.9	2.0	-0.9	2,657
Middle	35.4	13.6	-1.6	2,548	43.6	20.9	-1.7	2,481	15.4	5.3	3.4	-0.8	2,641
Fourth	31.1	9.9	-1.4	2,493	33.8	14.9	-1.4	2,462	15.4	3.3	3.8	-0.7	2,482
Richest	17.8	4.6	-1.0	2,072	21.1	8.4	-1.0	2,027	11.7	2.6	4.8	-0.6	2,050
1 MICS indicator 2.1a and MDG indicator 1.8 - Underweight prevalence (moderate and severe)													
2 MICS indicator 2.1b - Underweight prevalence (severe)													
3 MICS indicator 2.2a - Stunting prevalence (moderate and severe)													
4 MICS indicator 2.2b - Stunting prevalence (severe)													
5 MICS indicator 2.3a - Wasting prevalence (moderate and severe)													
6 MICS indicator 2.3b - Wasting prevalence (severe)													
7 MICS indicator 2.4 - Overweight prevalence													

### 5.2.1 Overall Status of Child Malnutrition

In Sudan, as indicated by the graph below, the overall prevalence of child malnutrition is high: one-third (33 percent) of under-five children are underweight, approximately two in five children (38.2 percent) under-five years are stunted (too short for their age), and one in six (16.3 percent) children is wasted (too thin for their height).

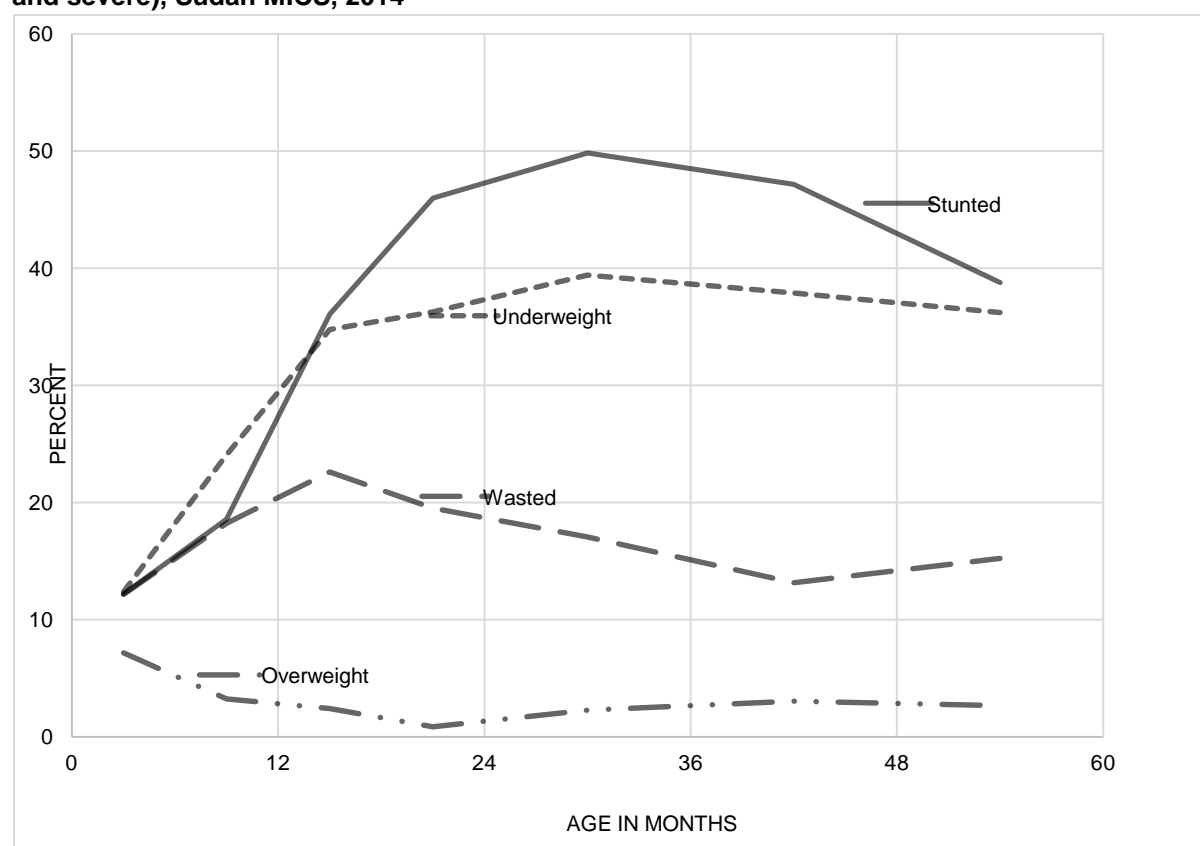
**Figure NU.1a: Percentage of underweight, stunted and wasted children under-five years in Sudan MICS, 2014**



With regard to gender variation in undernutrition, boys were reported to be slightly more underweight, stunted, and wasted than girls. The age pattern shows that a higher percentage of children in the age group 12-23 months are undernourished according to all three indices in comparison to children who are in the younger and older age groups (Figure NU.1b). This pattern is expected and is related to the age group at which many children cease to be breastfed and are exposed to contamination in water, food, and environment.



**Figure NU.1: Underweight, stunted, wasted and overweight children under age 5 (moderate and severe), Sudan MICS, 2014**



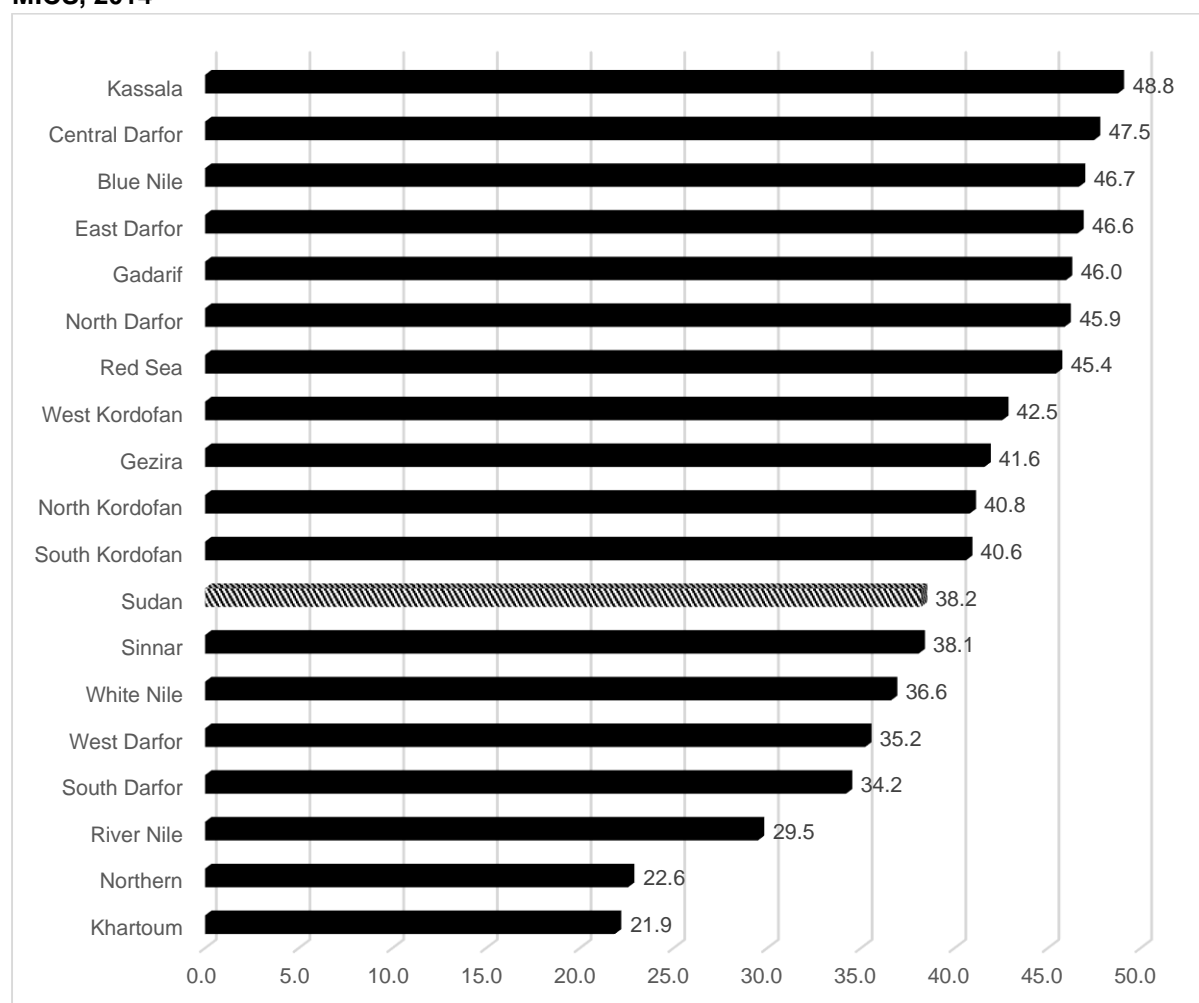
### 5.2.2 Geographic Inequity in Child Malnutrition

Table NU.2 shows that children living in the rural area are the most affected by child malnutrition. The prevalence of underweight is 23.2 percent in urban area in comparison to 37.1 percent in rural area; 17.4 percent of children living in rural area are affected by acute malnutrition in comparison to 13.4 percent for urban area. The gap is very high regarding child stunting between rural area (43 percent) and urban area (27.1 percent).

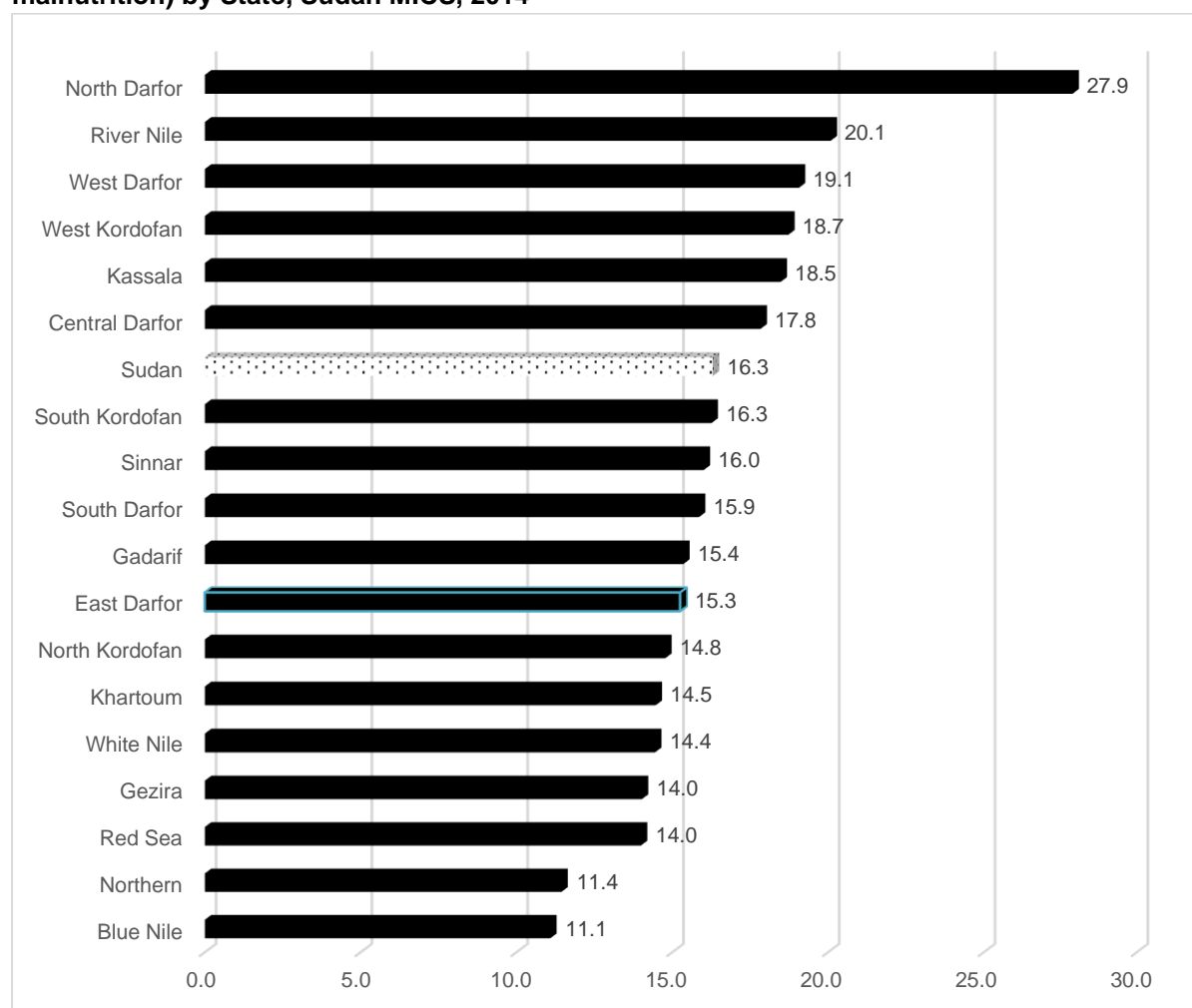
In Sudan, children are mostly affected by malnutrition in the states affected by conflicts and displacements of populations; Darfur and Kordofan, and in Kassala state as indicated below:

- Very high prevalence of child underweight in the states of North Darfur (44.9 percent), Central Darfur (41.0 percent), East Darfur (40.2 percent), West Kordofan (38.7 percent) and Kassala (42.0 percent) in comparison to the lowest prevalence in Northern (21.9 percent), Khartoum (23.2 percent) and White Nile (29.8 percent).
- High stunting prevalence among children in the states of Kassala (48.8 percent), Blue Nile (46.7 percent), Central Darfur (47.5 percent), North Darfur (45.9 percent) and East Darfur (46.6 percent).
- Severe wasting prevalence, children are likely to be affected in the states of North Darfur (8.6 percent), West Darfur (6.7 percent), Central Darfur (4.3 percent) and Kassala (5.1 percent).

**Figure NU.1b: Percentage of underfive children stunted (moderate and severe) by State, Sudan  
MICS, 2014**



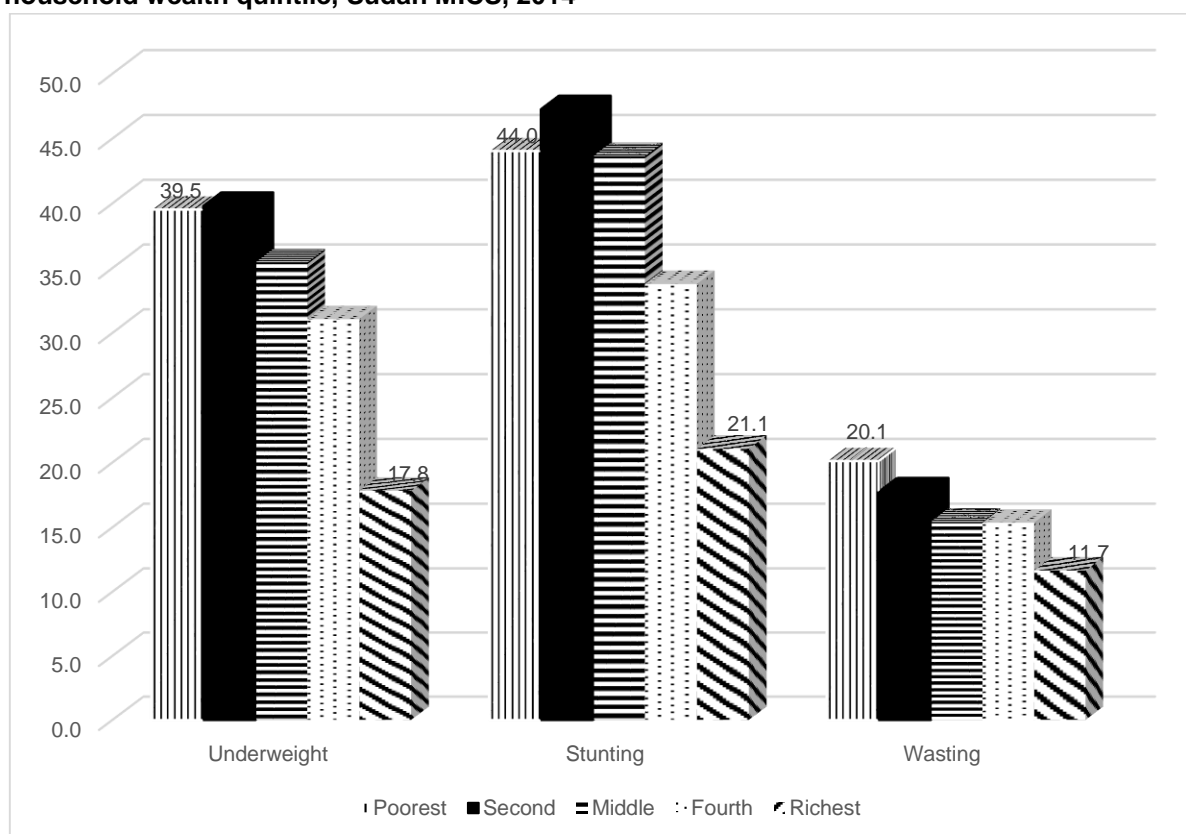
**Figure NU.1.c: Percentage of underfive children wasted (moderate and severe acute malnutrition) by State, Sudan MICS, 2014**



### 5.2.3 Disparity of Child Malnutrition by Wealth Index Quintile

Figure NU.1d below shows the disparity in child malnutrition by household poverty conditions measured through the wealth index calculated using household assets. The prevalence of underweight, stunting and wasting is highest among children living in poorest household respectively 39.5 percent, 44.0 percent and 20.1 percent in comparison to low prevalence of malnutrition among children living in the richest household respectively 17.8 percent, 21.1percent and 11.7percent.

**Figure NU.1d: Percentage of children under five years underweight, stunted or wasted by household wealth quintile, Sudan MICS, 2014**



#### **5.2.4 Disparity in Child Malnutrition by Mother's Education**

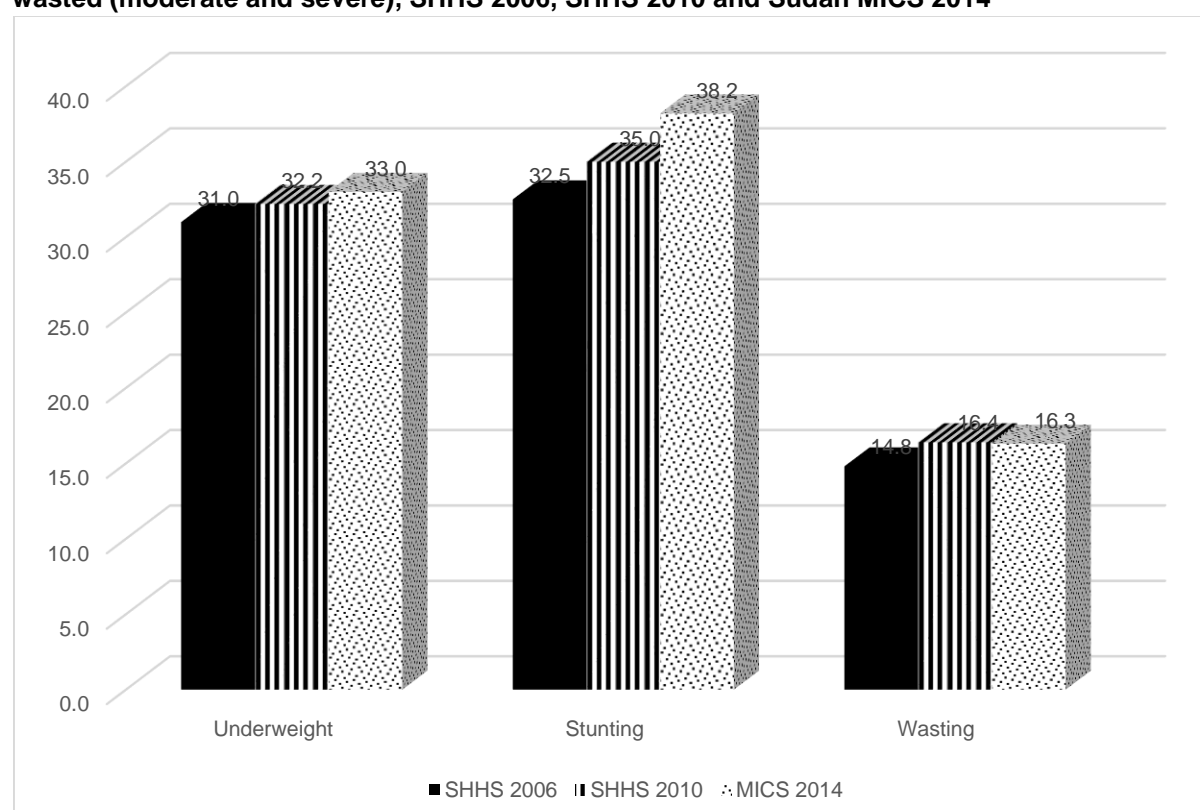
Children whose mothers have secondary or higher education are the least likely to be underweight and stunted compared to children of mothers with no education as indicated by table NU.2.

## 5.2.5 Trends in Under-five Nutritional Status from 2006 to 2014

Since 2006, the nutritional status of children in Sudan remains as very challenging issues for child survival. Using the same WHO standard reference, the figure NU1.f below indicates that there has not been any change in the prevalence of acute malnutrition. The prevalence is still over the WHO emergency threshold of 15 percent. The percentage of underweight children remains also high at the same level of approximately one-third of under-five children as estimated by all three national surveys; SHHS 2006, SHHS 2010 and MICS 2014.

The prevalence of stunting has increased from 32.5 percent in 2006 to 35 percent in 2010 and to 38.2 percent in 2014. With reference to the literature, gap of knowledge of mothers of child malnutrition, the gap of capacities of health facilities, the low effective use of health services due to limited geographic access and financial barriers (poverty issue and health policy of cost recovery), low coverage of use of improved sanitation facilities (33 percent), the high prevalence of diarrhoea among children (29 percent) and the continuous influx of displaced populations and refugees represent key determinant factors for increased child malnutrition in Sudan.

**Figure NU.1e: Trend in percentage of children underfive years that are underweight, stunted and wasted (moderate and severe), SHHS 2006, SHHS 2010 and Sudan MICS 2014**



In view of equity, figure NU.1g below shows that there is an important increase of stunting (from 15 percent in 2010 to 21.1) among children living in richest household conditions in comparison to low increase affecting poorest children. However, regarding the acute malnutrition, there has been a tendency of increase of prevalence of wasting among poorest children in comparison to a decrease trend for children living in richest family conditions.

**Figure NU.1f: Trend in inequality of Poorest and Richest under five children underweight, stunted or wasted, SHHS 2010 and Sudan MICS, 2014**

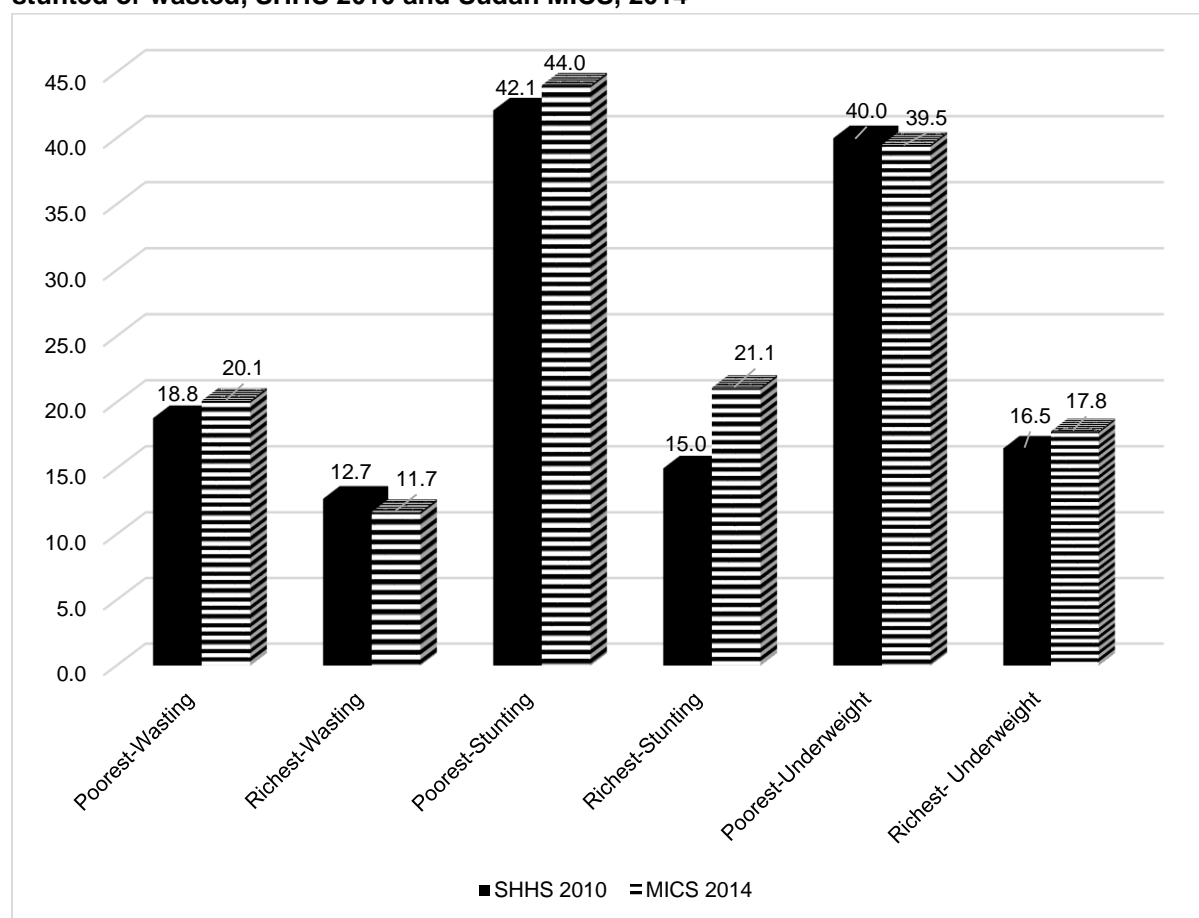
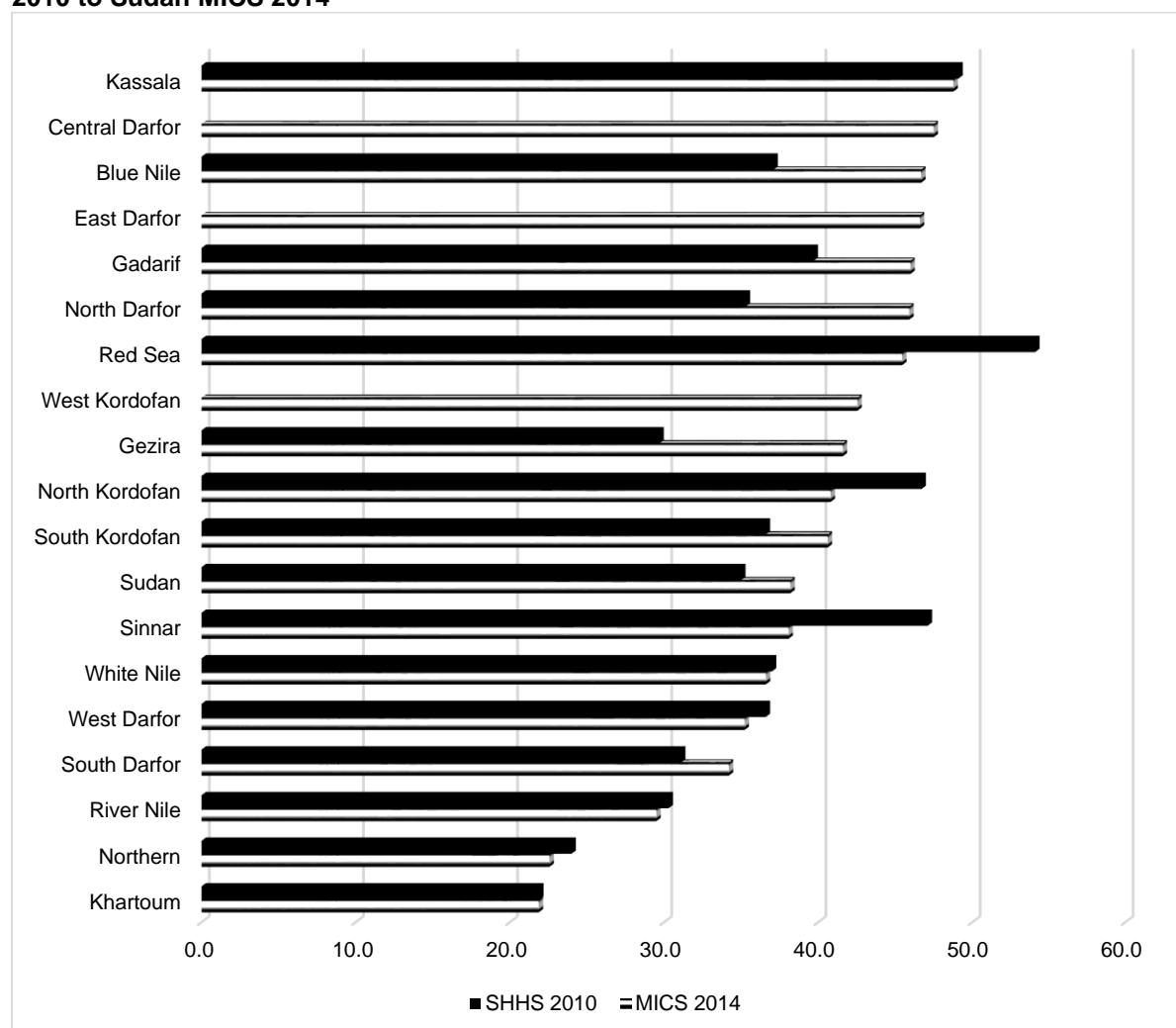


Figure NU.1g below indicates that the prevalence of stunting has increased in the states of Darfur, Kordofan, Blue Nile and Gadarif. However, the prevalence of stunting has decreased in River Nile, Read Sea, Sinnar and Northern.

The prevalence of acute malnutrition has increased in Darfur from 24.4 percent in 2010 to 28 percent in 2014.

**Figure NU.1g: Trend in Stunted Children underfive years (moderate and severe) from SHHS 2010 to Sudan MICS 2014**



### 5.3 Breastfeeding and Infant and Young Child Feeding

Proper feeding of infants and young children can increase their chances of survival; it can also promote optimal growth and development, especially in the critical window from birth to 2 years of age. Breastfeeding for the first few years of life protects children from infection, provides an ideal source of nutrients, and is economical and safe. However, many mothers don't start to breastfeed early enough, do not breastfeed exclusively for the recommended 6 months or stop breastfeeding too soon. There are often pressures to switch to infant formula, which can contribute to growth faltering and micronutrient malnutrition and can be unsafe if hygienic conditions, including safe drinking water are not readily available. Studies have shown that, in addition to continued breastfeeding, consumption of appropriate, adequate and safe solid, semi-solid and soft foods from the age of 6 months onwards, leads to better health and growth outcomes, with potential to reduce stunting during the first two years of life.<sup>10</sup>

<sup>10</sup> Bhuta, Z. et al. 2013. *Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost?* The Lancet June 6, 2013.

UNICEF and WHO recommend that infants be breastfed within one hour of birth, breastfed exclusively for the first six months of life and continue to be breastfed up to 2 years of age and beyond.<sup>11</sup> Starting at 6 months, breastfeeding should be combined with safe, age-appropriate feeding of solid, semi-solid and soft foods.<sup>12</sup> A summary of key guiding principles<sup>13, 14</sup> for feeding 6-23 month olds is provided in the table below along with proximate measures for these guidelines collected in this survey.

The guiding principles for which proximate measures and indicators exist are:

- (i) continued breastfeeding;
- (ii) appropriate frequency of meals (but not energy density); and
- (iii) appropriate nutrient content of food

Feeding frequency is used as proxy for energy intake, requiring children to receive a minimum number of meals/snacks (and milk feeds for non-breastfed children) for their age. Dietary diversity is used to ascertain the adequacy of the nutrient content of the food (not including iron) consumed. For dietary diversity, seven food groups were created for which a child consuming at least four of these is considered to have a better quality diet. In most populations, consumption of at least four food groups means that the child has a high likelihood of consuming at least one animal-source food and at least one fruit or vegetable, in addition to a staple food (grain, root or tuber).<sup>15</sup>

These three dimensions of child feeding are combined into an assessment of the children who received appropriate feeding, using the indicator of “minimum acceptable diet”. To have a minimum acceptable diet in the previous day, a child must have received:

- (i) the appropriate number of meals/snacks/milk feeds;
- (ii) food items from at least 4 food groups; and
- (iii) breastmilk or at least 2 milk feeds (for non-breastfed children).

Guiding Principle (age 6-23 months)	Proximate measures	Table
Continue frequent, on-demand breastfeeding for two years and beyond	Breastfed in the last 24 hours	NU.4
Appropriate frequency and energy density of meals	<b>Breastfed children</b> Depending on age, two or three meals/snacks provided in the last 24 hours  <b>Non-breastfed children</b> Four meals/snacks <u>and/or milk feeds</u> provided in the last 24 hours	NU.6
Appropriate nutrient content of food	Four food groups <sup>16</sup> eaten in the last 24 hours	NU.6
Appropriate amount of food	No standard indicator exists	na
Appropriate consistency of food	No standard indicator exists	na
Use of vitamin-mineral supplements or fortified products for infant and mother	No standard indicator exists	na

<sup>11</sup> WHO. 2003. *Implementing the Global Strategy for Infant and Young Child Feeding*. Meeting Report Geneva, 3-5 February, 2003.

<sup>12</sup> WHO. 2003. *Global Strategy for Infant and Young Child Feeding*.

<sup>13</sup> PAHO. 2003. *Guiding principles for complementary feeding of the breastfed child*.

<sup>14</sup> WHO. 2005. *Guiding principles for feeding non-breastfed children 6-24 months of age*.

<sup>15</sup> WHO. 2008. *Indicators for assessing infant and young child feeding practices. Part 1: Definitions*.

<sup>16</sup> Food groups used for assessment of this indicator are 1) Grains, roots and tubers, 2) legumes and nuts, 3) dairy products (milk, yogurt, cheese), 4) flesh foods (meat, fish, poultry and liver/organ meats), 5) eggs, 6) vitamin-A rich fruits and vegetables, and 7) other fruits and vegetables.



Practice good hygiene and proper food handling	While it was not possible to develop indicators to fully capture programme guidance, one standard indicator does cover part of the principle: Not feeding with a bottle with a nipple	NU.9
Practice responsive feeding, applying the principles of psycho-social care	No standard indicator exists	na

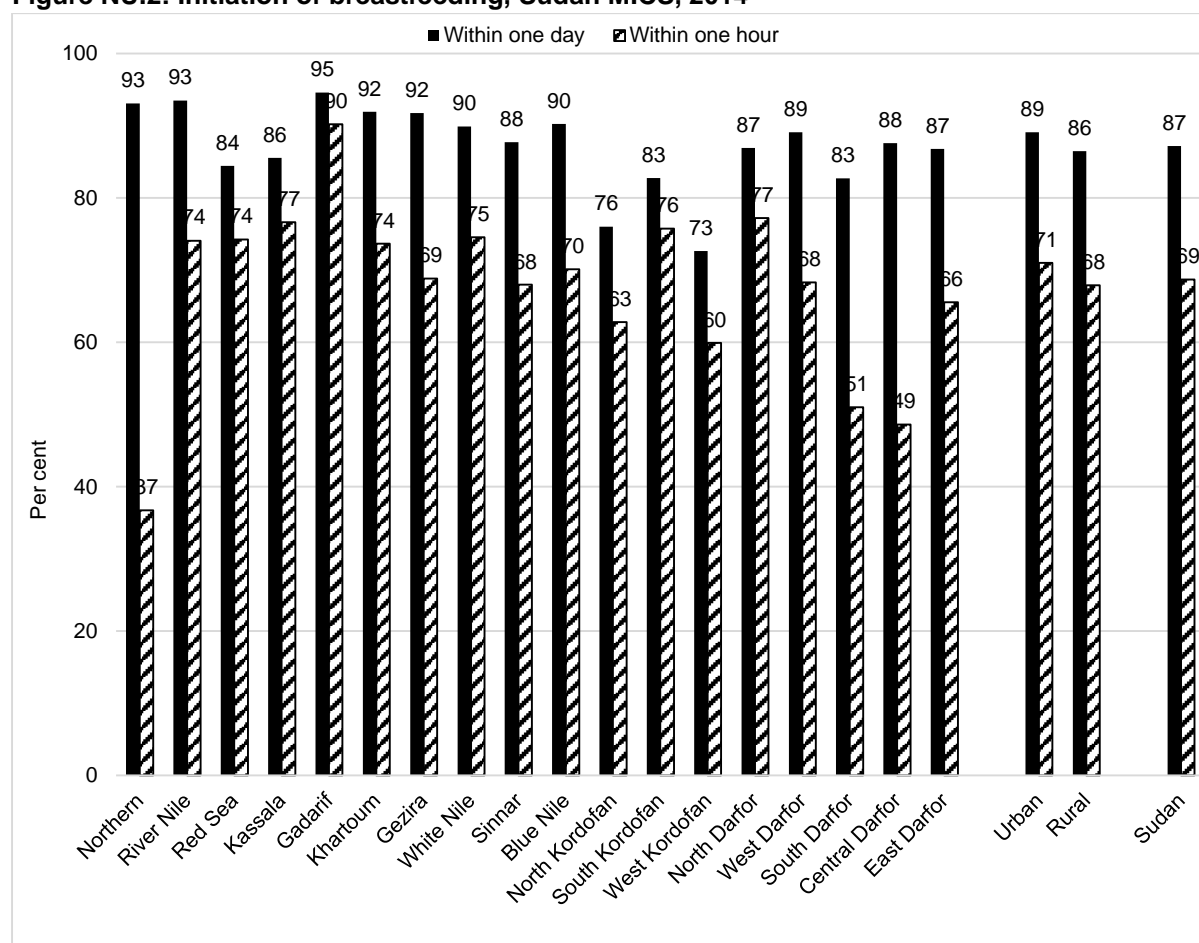
### 5.3.1 Initial Breastfeeding

Table NU.3 is based on mothers' reports of what their last-born child, born in the last two years, was fed in the first few days of life. It indicates the proportion who were ever breastfed, those who were first breastfed within one hour and one day of birth, and those who received a prelacteal feed.<sup>17</sup>

In Sudan, 95.6 percent of children ever breastfed. Although a very important step in management of lactation and establishment of a physical and emotional relationship between the baby and the mother, only 68.7 percent of babies are breastfed for the first time within one hour of birth, while 87.2 percent of new-borns in Sudan start breastfeeding within one day of birth.

The findings are presented in Figure NU.2 by state and area. The relative low percentage of initial breastfed children within one hour is observed in Central Darfur (48.6percent) and South Darfur (51.0percent).

**Figure NU.2: Initiation of breastfeeding, Sudan MICS, 2014**



<sup>17</sup> Prelacteal feed refers to the provision any liquid or food, other than breastmilk, to a newborn during the period when breastmilk flow is generally being established (estimated here as the first 3 days of life).

Table NU.3 shows that early breastfeeding of children by mothers within one hour of birth represents a universal practice of mothers in Sudan irrespective of their socio-economic status, education level, location of delivery or assistance at delivery by skilled health worker.

<b>Table NU.3: Initial breastfeeding</b>					
<b>Percentage of last live-born children in the last two years who were ever breastfed, breastfed within one hour of birth, and within one day of birth, and percentage who received a pre-lacteal feed, Sudan MICS, 2014</b>					
Background characteristics	Percentage who were ever breastfed [1]	Percentage who were first breastfed:		Percentage who received a pre-lacteal feed	Number of last live-born children in the last two years
		Within one hour of birth [2]	Within one day of birth		
<b>Sudan</b>	95.6	68.7	87.2	28.3	5,622
<b>State</b>					
Northern	99.2	36.7	93.1	44.2	92
River Nile	97.3	74.1	93.5	43.6	151
Red Sea	87.3	74.2	84.4	16.9	92
Kassala	94.9	76.6	85.5	19.5	199
Gadarif	96.8	90.2	94.6	25.7	307
Khartoum	96.9	73.7	91.9	35.9	684
Gezira	95.2	68.8	91.8	35.2	852
White Nile	97.4	74.6	89.9	42.1	273
Sinnar	97.9	68.0	87.7	32.6	226
Blue Nile	98.8	70.1	90.2	25.1	287
North Kordofan	96.9	62.8	76.0	38.6	352
South Kordofan	96.2	75.7	82.8	30.7	194
West Kordofan	88.6	59.9	72.7	11.8	341
North Darfur	95.9	77.2	86.9	10.2	525
West Darfur	93.4	68.3	89.1	3.6	179
South Darfur	95.2	51.0	82.7	28.8	556
Central Darfur	95.8	48.6	87.6	14.9	99
East Darfur	95.7	65.5	86.8	33.9	211
<b>Area</b>					
Urban	96.0	71.0	89.1	30.1	1,488
Rural	95.5	67.9	86.5	27.6	4,134
<b>Months since last birth</b>					
0-11 months	95.5	68.9	86.2	27.0	3,001
12-23 months	95.8	68.5	88.3	29.7	2,620
<b>Assistance at delivery</b>					
Skilled attendant	96.4	70.2	88.8	28.4	4,370
Traditional birth attendant/Daya habil	96.2	65.8	84.2	26.8	1,014
Other	93.7	67.4	84.9	28.7	144
No one/Missing	57.9	33.2	48.9	35.7	94
<b>Place of delivery</b>					
Home	96.4	71.5	87.8	26.3	4,006
Health facility: Public	96.3	63.4	88.1	34.0	1,468
Health facility: Private	96.7	65.1	86.6	37.1	91
Other/Missing	22.9	16.7	18.6	1.6	57
<b>Mother's education</b>					
None	95.5	68.0	85.1	27.7	2,247

Background characteristics	Percentage who were ever breastfed [1]	Percentage who were first breastfed:		Percentage who received a pre-lacteal feed	Number of last live-born children in the last two years
		Within one hour of birth [2]	Within one day of birth		
Primary	95.9	67.5	87.3	29.4	2,022
Secondary	94.9	73.1	89.8	25.4	942
Higher	97.3	68.8	92.0	32.5	410
<b>Wealth index quintile</b>					
Poorest	94.4	62.1	81.2	23.9	1,251
Second	95.5	69.8	86.1	22.3	1,232
Middle	97.5	73.1	89.6	30.4	1,192
Fourth	94.6	68.2	89.5	34.3	1,096
Richest	96.4	71.3	91.1	32.5	851
[1] MICS indicator 2.5 - Children ever breastfed					
[2] MICS indicator 2.6 - Early initiation of breastfeeding					

### 5.3.2 Young Child Feeding

The set of Infant and Young Child Feeding indicators reported in tables NU.4 through NU.8 are based on the mother's report of children's consumption of food and fluids during the day or night prior to being interviewed. Data are subject to a number of limitations, some related to the respondent's ability to provide a full report on the child's liquid and food intake due to recall errors as well as lack of knowledge in cases where the child was fed by other individuals.

In Table NU.4, breastfeeding status is presented for both *exclusively breastfed* and *predominantly breastfed*. *Exclusively breastfed* refers to children age less than 6 months who received only breast milk (and vitamins, mineral supplements, or medicine), distinguished by *the predominantly breastfed* allowing also plain water and non-milk liquids. The table also shows continued breastfeeding of children at 12-15 and 20-23 months of age.

In Sudan, overall 55.4 percent of children age less than six months are exclusively breastfed with limited disparity between girls (54.3 percent) and boys (56.7 percent) and between urban (53.1 percent) and rural area (56.3 percent). With 80.8 percent predominantly breastfed, it is evident that water-based liquids are displacing feeding of breastmilk to the greatest degree.

**Table NU.4: Breastfeeding****Percentage of living children according to breastfeeding status at selected age groups, Sudan MICS, 2014**

Background characteristics	Children age 0-5 months			Children age 12-15 months		Children age 20-23 months	
	Percent exclusively breastfed [1]	Percent pre-dominantly breastfed [2]	Number of children	Percent breastfed (Continued breastfeeding at 1 year) [3]	Number of children	Percent breastfed (Continued breastfeeding at 2 years) [4]	Number of children
<b>Sudan</b>	55.4	80.8	1,516	89.4	1,019	48.8	799
<b>Sex</b>							
Male	56.7	80.4	735	88.5	496	50.7	425
Female	54.3	81.2	781	90.1	523	46.6	375
<b>State</b>							
Northern	(34.7)	(79.5)	21	(93.7)	19	(48.6)	13
River Nile	(38.2)	(81.0)	39	(95.7)	32	(74.6)	17
Red Sea	*	*	17	*	14	*	21
Kassala	61.3	79.5	56	(74.9)	27	(39.8)	23
Gadarif	67.3	86.7	96	85.2	51	(37.7)	38
Khartoum	55.9	81.0	160	98.7	146	49.1	133
Gezira	50.0	83.0	226	87.7	142	52.1	154
White Nile	59.4	84.3	74	94.2	56	(58.7)	31
Sinnar	43.1	83.3	58	91.0	37	(42.1)	30
Blue Nile	54.9	90.4	70	92.1	56	40.5	48
North Kordofan	69.6	87.4	92	(92.7)	56	(36.6)	57
South kordofan	51.3	71.2	56	87.2	31	61.9	25
West Kordofan	43.5	64.2	126	83.9	68	(65.6)	35
North Darfur	75.6	90.3	121	87.0	96	(43.7)	42
West Darfur	57.0	66.7	50	82.7	25	(40.8)	22
South Darfur	50.4	84.7	155	83.4	108	41.9	79
Central Darfur	44.5	65.4	34	84.9	23	*	7
East Darfur	60.3	75.8	65	89.0	35	(54.0)	23
<b>Area</b>							
Urban	53.1	78.9	399	90.4	253	46.7	260
Rural	56.3	81.5	1,117	89.0	767	49.8	539
<b>Mother's education</b>							
None	51.6	80.0	648	85.2	447	55.2	265
Primary	57.2	81.4	581	90.6	322	42.5	302
Secondary	61.3	87.2	193	95.2	183	54.2	154
Higher	59.2	69.8	92	95.0	68	41.0	78
Missing/DK	*	*	1	*	0	*	0
<b>Wealth index quintile</b>							
Poorest	58.4	81.8	364	84.7	231	45.7	124
Second	55.9	77.9	350	90.5	226	49.0	158
Middle	52.4	85.2	332	91.6	229	55.2	163
Fourth	53.4	84.1	274	86.7	179	48.2	212
Richest	57.0	72.1	196	94.5	155	44.7	142

[1] MICS indicator 2.7 - Exclusive breastfeeding under 6 months

[2] MICS indicator 2.8 - Predominant breastfeeding under 6 months

[3] MICS indicator 2.9 - Continued breastfeeding at 1 year

[4] MICS indicator 2.10 - Continued breastfeeding at 2 years ( ) Figures that are based on 25-49 unweighted cases;

(\*) Figures that are based on fewer than 25 unweighted cases

**Figure NU.3: Exclusive Breastfeeding (per cent), Sudan MICS, 2014**

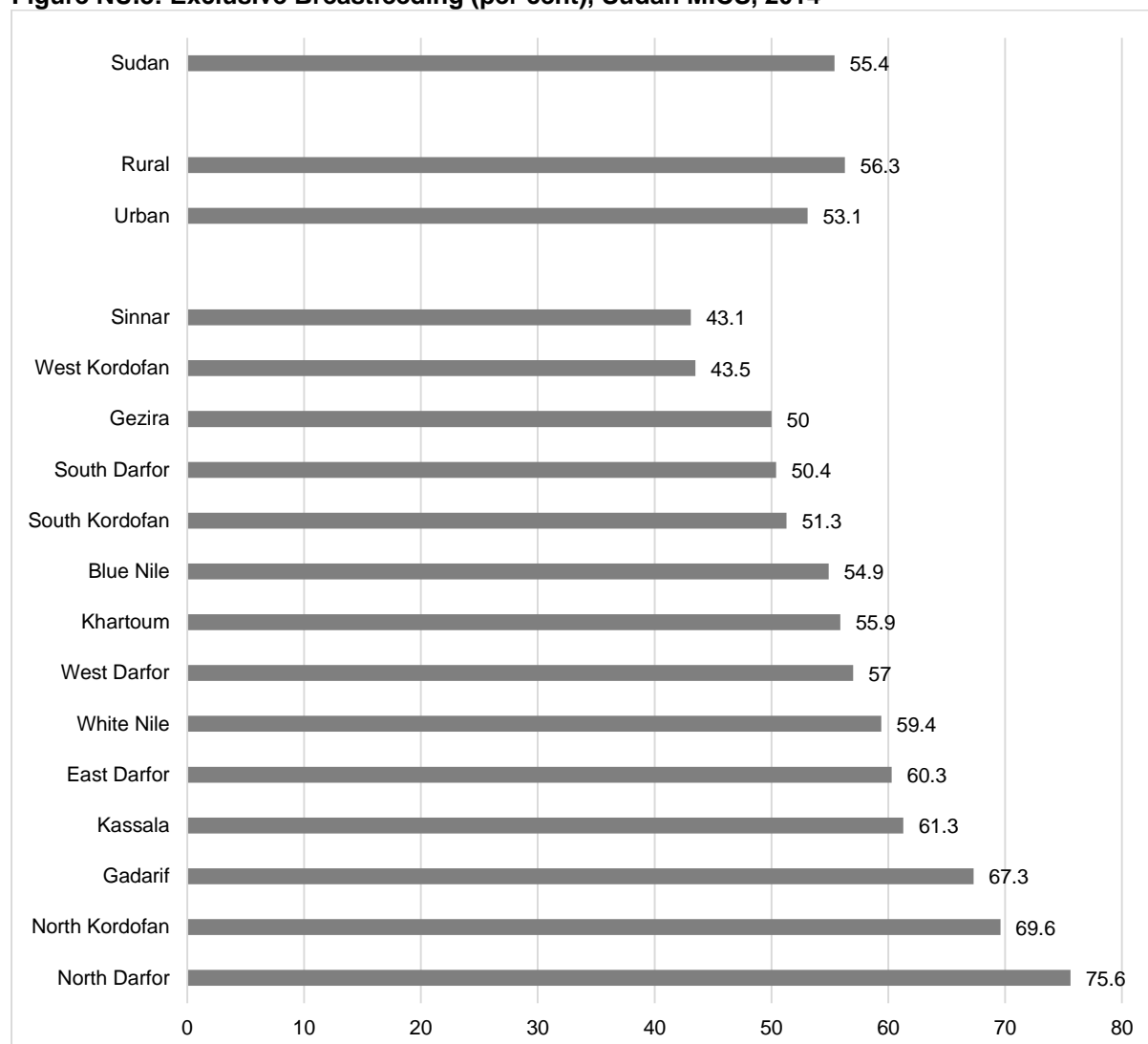


Figure NU.4 shows the detailed pattern of breastfeeding by the child's age in months. Even at the earliest ages, the majority of children are receiving liquids or foods other than breast milk, with local soup named "Salega/Maraga" being of highest prevalence, even at the early age of 0-1 months.

At age 4-5 months old, the percentage of children exclusively breastfed is below 20 percent. Only about 0.7 percent of children are receiving breast milk at age 2 years.

Figure NU.4: Infant feeding patterns by age, Sudan MICS, 2014

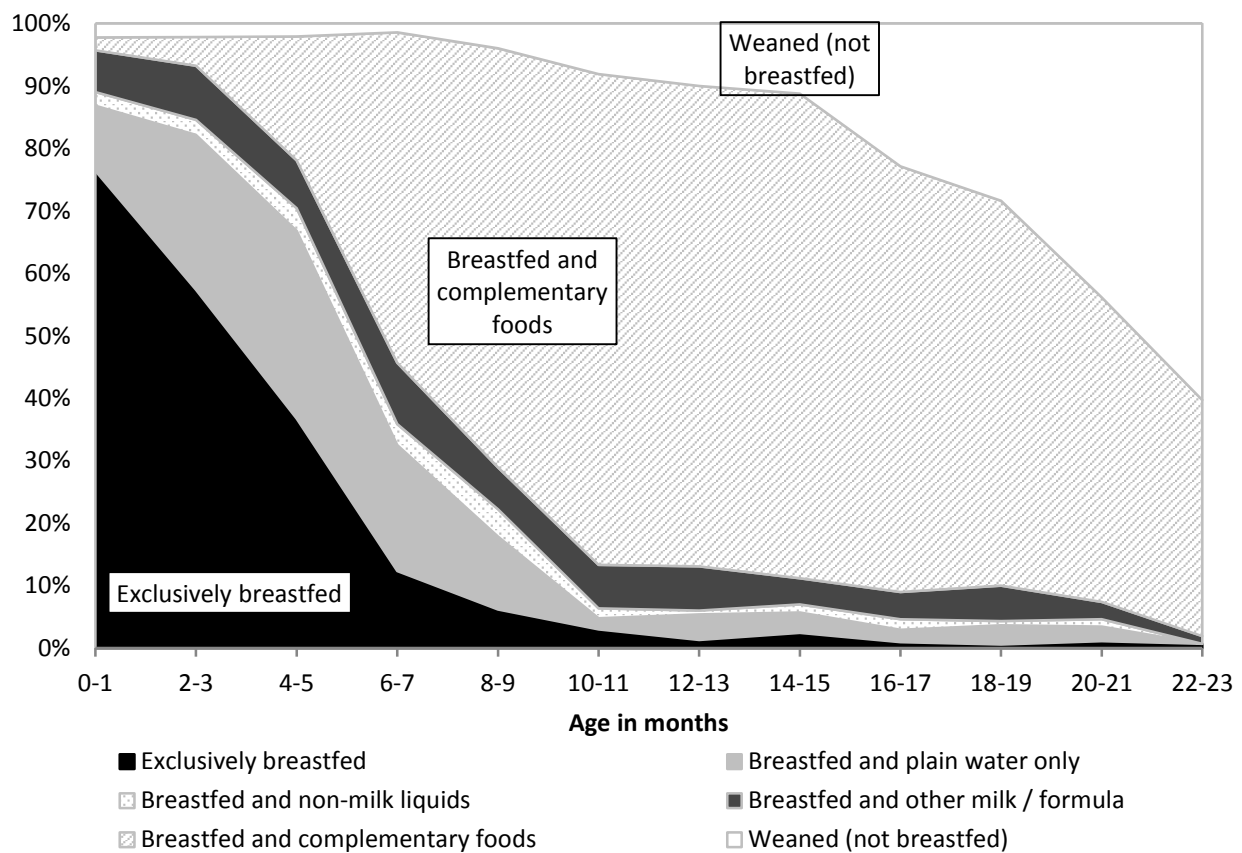


Table NU.5 shows the median duration of breastfeeding by selected background characteristics. Among children under age 36 months, the median duration is 21.2 months for any breastfeeding, 3.1 months for exclusive breastfeeding, and 5.8 months for predominant breastfeeding. There is no significant difference of duration of breastfeeding by geographic area, mother's education and wealth index quintile. However specific cases of very low duration of exclusive breastfeeding of children is observed in Northern and West Kordofan (0.7 months), River Nile (1.4 months) and Central Darfur (1.9 months).

**Table NU.5: Duration of breastfeeding****Median duration of any breastfeeding, exclusive breastfeeding, and predominant breastfeeding among children age 0-35 months, Sudan MICS, 2014**

Background characteristics	Median duration (in months) of			Number of children age 0-35 months
	Any breastfeeding [1]	Exclusive breastfeeding	Predominant breastfeeding	
<b>Median</b>	21.2	3.1	5.8	8,254
<b>Sex</b>				
Male	21.3	3.1	5.7	4,200
Female	21.0	3.0	6.0	4,054
<b>State</b>				
Northern	21.2	.7	4.6	141
River Nile	23.4	1.4	6.1	224
Red Sea	23.5	3.1	4.8	145
Kassala	21.1	4.1	7.1	298
Gadarif	20.1	4.4	6.2	470
Khartoum	21.5	2.9	5.3	1,015
Gezira	21.5	2.5	5.4	1,257
White Nile	21.7	3.2	5.8	435
Sinnar	20.0	2.1	5.4	333
Blue Nile	20.1	3.1	6.7	422
North Kordofan	20.0	4.3	6.0	501
South Kordofan	21.7	2.6	5.8	302
West Kordofan	22.4	.7	5.3	499
North Darfur	20.5	4.8	6.2	682
West Darfur	20.9	4.5	7.0	276
South Darfur	20.7	2.5	6.7	823
Central Darfur	21.5	1.9	6.8	141
East Darfur	21.6	3.5	5.5	288
<b>Area</b>				
Urban	21.0	2.8	5.6	2,268
Rural	21.2	3.2	5.9	5,986
<b>Mother's education</b>				
None	21.4	2.7	6.6	3,358
Primary	20.8	3.2	5.8	2,971
Secondary	21.7	3.3	5.1	1,308
Higher	19.9	3.4	4.2	607
<b>Wealth index quintile</b>				
Poorest	21.0	3.4	6.7	1,794
Second	21.4	3.2	6.0	1,784
Middle	21.5	2.8	6.0	1,773
Fourth	21.1	2.8	5.7	1,608
Richest	20.9	3.2	4.5	1,295
<b>Mean</b>	21.0	3.8	6.4	8,254

[1] MICS indicator 2.11 - Duration of breastfeeding

The age-appropriateness of breastfeeding of children under age 24 months is provided in Table NU.6. Different criteria of feeding are used depending on the age of the child. For infants age 0-5 months, exclusive breastfeeding is considered as age-appropriate feeding, while children age 6-23 months are considered to be appropriately fed if they are receiving breastmilk and solid, semi-solid or soft food.

Overall 66.0 percent of children age 6-23 months are being appropriately breastfed. Among children age 0-23 months, 63.1 percent are age-appropriate breastfeeding. There is disparity of appropriately breastfeeding practices of children aged 0-23 months by state: low level of practice is observed in Central (50.9 percent) and West Darfur (51.2 percent), South Darfur (57.9 percent) and in West Kordofan (54.6 percent). Children from mothers of secondary or high education level and those living in richest households are the most appropriately breastfed in comparison to other groups.



**Table NU.6: Age-appropriate breastfeeding****Percentage of children age 0-23 months who were appropriately breastfed during the previous day, Sudan MICS, 2014**

Background characteristics	Children age 0-5 months		Children age 6-23 months		Children age 0-23 months	
	Percent exclusively breastfed [1]	Number of children	Percent currently breastfeeding and receiving solid, semi-solid or soft foods	Number of children	Percent appropriately breastfed [2]	Number of children
<b>Sudan</b>	55.4	1,516	66.0	4,120	63.1	5,636
<b>Sex</b>						
Male	56.7	735	66.4	2,118	63.9	2,853
Female	54.3	781	65.4	2,002	62.3	2,782
<b>State</b>						
Northern	(34.7)	21	83.0	74	72.4	95
River Nile	38.2	39	82.7	109	71.0	148
Red Sea	(54.8)	17	69.2	72	66.4	89
Kassala	61.3	56	39.4	134	45.8	190
Gadarif	67.3	96	65.4	213	66.0	309
Khartoum	55.9	160	71.1	534	67.6	694
Gezira	50.0	226	70.9	689	65.8	915
White Nile	59.4	74	72.4	210	69.0	284
Sinnar	43.1	58	63.1	169	58.0	227
Blue Nile	54.9	70	68.3	218	65.1	288
North Kordofan	69.6	92	64.0	253	65.5	345
South Kordofan	51.3	56	65.7	132	61.4	189
West Kordofan	43.5	126	60.4	245	54.6	371
North Darfur	75.6	121	65.5	342	68.1	463
West Darfur	57.0	50	49.0	131	51.2	180
South Darfur	50.4	155	60.9	392	57.9	547
Central Darfur	44.5	34	54.1	67	50.9	101
East Darfur	60.3	65	65.0	136	63.5	202
<b>Area</b>						

Background characteristics	Children age 0-5 months		Children age 6-23 months		Children age 0-23 months	
	Percent exclusively breastfed [1]	Number of children	Percent currently breastfeeding and receiving solid, semi-solid or soft foods	Number of children	Percent appropriately breastfed [2]	Number of children
Urban	53.1	399	68.7	1,104	64.6	1,503
Rural	56.3	1,117	64.9	3,016	62.6	4,133
<b>Mother's education</b>						
None	51.6	648	60.6	1,577	57.9	2,225
Primary	57.2	581	66.0	1,478	63.5	2,059
Secondary	61.3	193	74.9	734	72.1	927
Higher	59.2	92	72.0	329	69.2	421
Missing/DK	*	1	*	1	*	2
<b>Wealth index quintile</b>						
Poorest	58.4	364	59.6	848	59.2	1,212
Second	55.9	350	62.7	876	60.7	1,225
Middle	52.4	332	66.2	867	62.4	1,199
Fourth	53.4	274	68.0	867	64.5	1,142
Richest	57.0	196	75.5	661	71.3	858
[1] MICS indicator 2.7 - Exclusive breastfeeding under 6 months [2] MICS indicator 2.12 - Age-appropriate breastfeeding ( ) Figures that are based on 25-49 unweighted cases [*] Based on less than 25 unweighted cases and has been suppressed.						

Overall, 61.2 percent of infant's age 6-8 months received solid, semi-solid, or soft foods at least once during the previous day (Table NU.7). Among currently breastfeeding infants this percentage is 61.1 percent while it is 63.4 percent among infants currently not breastfeeding.

The practice of introduction of solid, semi-solid and soft foods to children aged of 6-8 months currently breastfeeding, varies by sex of children (62.4 percent for boys and 59.7 percent for girls) and by urban (67.9percent) and rural (58.9 percent).

<b>Table NU.7: Introduction of solid, semi-solid, or soft foods</b>						
<b>Percentage of infants age 6-8 months who received solid, semi-solid, or soft foods during the previous day, Sudan MICS, 2014</b>						
Background characteristics	Currently breastfeeding		Currently not breastfeeding		All	
	Percent receiving solid, semi-solid or soft foods	Number of children age 6-8 months	Percent receiving solid, semi-solid or soft foods	Number of children age 6-8 months	Percent receiving solid, semi-solid or soft foods [1]	Number of children age 6-8 months
<b>Sudan</b>	61.1	798	*	19	61.2	817
<b>Sex</b>						
Male	62.4	427	*	9	62.0	436
Female	59.7	371	*	10	60.2	381
<b>Area</b>						
Urban	67.9	192	*	5	68.1	198
Rural	58.9	605	*	14	59.0	619
[1] MICS indicator 2.13 - Introduction of solid, semi-solid or soft foods						
[*] Based on less than 25 unweighted cases and has been suppressed.						

Table NU.8 in next page indicates that more than one-fourth of the children age 6-23 months (40.7 percent) were receiving solid, semi-solid and soft foods the minimum number of times. There is no difference of practices for boys (40.7 percent) and girls (40.7 percent) in achieving the minimum meal frequency.

The proportion of children receiving the minimum dietary diversity, or foods from at least 4 food groups (28.0 percent), was much lower than that for minimum meal frequency (40.7 percent), indicating the need to focus on improving diet quality and nutrient intake among this vulnerable group.

A slightly higher proportion of older (18-23 month, old) children (37.2 percent) were achieving the minimum dietary diversity compared to younger (6-8 month old) children (9.2 percent).

The overall assessment using the indicator of minimum acceptable diet revealed that only 15.1 percent of children were benefitting from a diet sufficient in both diversity and frequency. A very few percentage of children are benefitting from a diet sufficient in both diversity and frequency in the states of Kassala (3.4 percent), South Darfur (6.0 percent), North Darfur (6.6 percent), Central Darfur (6.9 percent) and North Kordofan (9.0 percent). These figures unfavourably compare to the high percentages of diet sufficiency in both diversity and frequency in Northern (48.4 percent), River Nile (29.4 percent) and Sinnar (21.5 percent) states. Children from uneducated mothers/caretakers are less covered (10.8 percent) than children from higher educated mothers (30.1 percent). Children of poorest household are less benefitting from a diet sufficient in both diversity and frequency (6.4 percent) in comparison to children living in richest household conditions (29.6 percent).

**Table NU.8: Infant and young child feeding (IYCF) practices**

Percentage of children age 6-23 months who received appropriate liquids and solid, semi-solid, or soft foods the minimum number of times or more during the previous day, by breastfeeding status, Sudan MICS, 2014

Background characteristics	Currently breastfeeding				Currently not breastfeeding					All			
	Percent of children who received:			Number of children age 6-23 months	Percent of children who received:				Number of children age 6-23 months	Percent of children who received:			Number of children age 6-23 months
	Minimum dietary diversity [a]	Minimum meal frequency [b]	Minimum acceptable diet [1], [c]		Minimum dietary diversity [a]	Minimum meal frequency [b]	Minimum acceptable diet [2], [c]	At least 2 milk feeds [3]		Minimum dietary diversity [4], [a]	Minimum meal frequency [5], [b]	Minimum acceptable diet [c]	
<b>Sudan</b>	25.0	37.0	15.0	3,325	42.0	57.7	15.3	57.5	718	28.0	40.7	15.1	4,120
<b>Sex</b>													
Male	25.2	36.9	15.2	1,722	42.7	59.3	15.8	58.6	353	28.1	40.7	15.3	2,118
Female	24.9	37.1	14.8	1,603	41.3	56.1	14.7	56.5	365	27.9	40.7	14.8	2,002
<b>Age</b>													
6-8 months	8.9	38.8	6.6	798	*	*	*	*	12	9.2	38.7	6.6	817
9-11 months	25.8	34.5	15.1	589	(38.2)	(48.3)	(13.3)	(46.3)	36	26.3	35.3	15.0	631
12-17 months	31.6	37.3	18.1	1,271	33.0	61.1	12.6	64.7	190	31.8	40.4	17.4	1,486
18-23 months	31.2	36.5	19.1	667	46.1	57.8	16.7	56.1	480	37.2	45.4	18.1	1,186
<b>State</b>													
Northern	63.3	72.8	49.8	62	(76.1)	(72.2)	(41.1)	(56.7)	12	65.4	72.7	48.4	74
River Nile	41.5	52.1	27.8	100	*	*	*	*	9	44.5	52.8	29.4	109
Red Sea	36.1	27.1	12.8	64	*	*	*	*	8	36.7	30.3	13.2	72
Kassala	5.4	12.4	.3	100	(30.4)	(52.1)	(14.5)	(72.6)	28	11.6	21.0	3.4	134
Gadarif	29.2	40.2	20.0	166	(43.7)	(57.2)	(19.6)	(58.8)	45	32.3	43.9	19.9	213
Khartoum	39.9	26.4	12.1	435	(65.7)	(51.1)	(20.3)	(69.2)	88	44.0	30.6	13.5	534
Gezira	23.5	50.1	19.4	559	(45.7)	(68.2)	(11.8)	(51.8)	117	27.7	53.2	18.1	689
White Nile	31.3	39.0	19.4	178	(60.7)	(72.6)	(23.6)	(79.0)	29	36.0	43.8	20.0	210
Sinnar	26.5	50.8	24.3	133	43.1	68.1	10.2	50.5	33	29.8	54.2	21.5	169
Blue Nile	34.4	43.6	22.3	176	71.0	61.5	21.4	59.0	41	41.7	47.0	22.1	218

Background characteristics	Currently breastfeeding				Currently not breastfeeding					All			
	Percent of children who received:			Number of children age 6-23 months	Percent of children who received:				Number of children age 6-23 months	Percent of children who received:			Number of children age 6-23 months
	Minimum dietary diversity [a]	Minimum meal frequency [b]	Minimum acceptable diet [1], [c]		Minimum dietary diversity [a]	Minimum meal frequency [b]	Minimum acceptable diet [2], [c]	At least 2 milk feeds [3]		Minimum dietary diversity [4], [a]	Minimum meal frequency [5], [b]	Minimum acceptable diet [c]	
North Kordofan	16.1	37.7	10.4	201	(24.1)	(37.3)	(2.4)	(37.1)	42	17.8	37.6	9.0	253
South Kordofan	21.4	40.5	13.6	109	34.6	59.2	15.3	42.9	22	23.5	43.6	13.9	132
West Kordofan	27.9	37.0	20.6	197	(21.0)	(52.6)	(12.6)	(69.8)	42	26.1	39.8	19.2	245
North Darfur	7.4	30.5	6.1	266	15.0	47.4	8.5	40.4	69	8.8	34.0	6.6	342
West Darfur	22.0	25.3	12.3	107	59.3	(55.6)	(25.9)	(64.6)	23	28.4	30.7	14.7	131
South Darfur	13.8	22.1	4.3	309	28.0	61.5	13.2	65.2	75	16.5	29.8	6.0	392
Central Darfur	11.9	29.7	5.7	52	(25.7)	(30.4)	(13.2)	(34.8)	10	13.8	29.8	6.9	67
East Darfur	14.1	38.8	9.0	112	(27.7)	(65.8)	(11.0)	(47.7)	23	16.3	43.5	9.3	136
<b>Area</b>													
Urban	36.1	34.9	16.5	877	58.8	59.4	26.7	65.0	201	40.1	39.5	18.4	1,104
Rural	21.1	37.8	14.5	2,448	35.5	57.0	10.8	54.6	517	23.6	41.1	13.9	3,016
<b>Mother's education</b>													
None	16.2	31.3	10.7	1,276	27.1	55.2	11.4	57.8	271	18.4	35.5	10.8	1,577
Primary	20.4	37.5	11.0	1,186	41.3	57.4	14.7	50.0	266	24.1	41.2	11.7	1,478
Secondary	42.2	44.0	24.8	608	65.7	60.4	21.6	67.2	114	45.2	46.6	24.3	734
Higher	49.9	46.4	32.0	254	(65.7)	(64.5)	(22.6)	(69.4)	66	53.2	50.2	30.1	329
Missing/DK	*	*	*	0	*	*	*	*	1	*	*	*	1
<b>Wealth index quintile</b>													
Poorest	10.7	28.8	6.6	680	12.4	55.5	5.4	57.3	154	11.0	33.8	6.4	848
Second	17.4	31.6	11.5	712	27.5	46.5	9.3	48.3	144	18.9	34.1	11.1	876
Middle	23.2	40.3	13.9	703	49.6	56.0	16.1	57.4	153	28.2	43.1	14.3	867
Fourth	27.6	41.3	17.2	688	52.2	68.1	17.8	58.3	159	32.3	46.3	17.3	867

Background characteristics	Currently breastfeeding				Currently not breastfeeding					All			
	Percent of children who received:			Number of children age 6-23 months	Percent of children who received:				Number of children age 6-23 months	Percent of children who received:			Number of children age 6-23 months
	Minimum dietary diversity [a]	Minimum meal frequency [b]	Minimum acceptable diet [1], [c]		Minimum dietary diversity [a]	Minimum meal frequency [b]	Minimum acceptable diet [2], [c]	At least 2 milk feeds [3]		Minimum dietary diversity [4], [a]	Minimum meal frequency [5], [b]	Minimum acceptable diet [c]	
Richest	52.1	44.8	29.0	541	78.3	63.0	32.6	69.4	107	56.1	47.8	29.6	661

[1] MICS indicator 2.17a - Minimum acceptable diet (breastfed)

[2] MICS indicator 2.17b - Minimum acceptable diet (non-breastfed)

[3] MICS indicator 2.14 - Milk feeding frequency for non-breastfed children

[4] MICS indicator 2.16 - Minimum dietary diversity

[5] MICS indicator 2.15 - Minimum meal frequency

[a] Minimum dietary diversity is defined as receiving foods from at least 4 of 7 food groups: 1) Grains, roots and tubers, 2) legumes and nuts, 3) dairy products (milk, yogurt, cheese), 4) flesh foods (meat, fish, poultry and liver/organ meats), 5) eggs, 6) vitamin-A rich fruits and vegetables, and 7) other fruits and vegetables

[b] Minimum meal frequency among currently breastfeeding children is defined as children who also received solid, semi-solid, or soft foods 2 times or more daily for children age 6-8 months and 3 times or more daily for children age 9-23 months. For non-breastfeeding children age 6-23 months it is defined as receiving solid, semi-solid or soft foods, or milk feeds, at least 4 times

[c] The minimum acceptable diet for breastfed children age 6-23 months is defined as receiving the minimum dietary diversity and the minimum meal frequency, while it for non-breastfed children further requires at least 2 milk feedings and that the minimum dietary diversity is achieved without counting milk feeds

( ) Figures that are based on 25-49 unweighted cases

[\*] Based on less than 25 unweighted cases and has been suppressed.

The continued practice of bottle-feeding is a concern because of the possible contamination due to unsafe water and lack of appropriate hygiene practices during preparation. Table NU.9 shows that 7.3 percent of infants Sudan are bottle fed. About 7.4 percent of children under 6 months are fed using a bottle with a nipple. Bottle-feeding of children is very prevalent in Red Sea (20.7 percent), Northern (16.7 percent) and Central Darfur (16.2 percent) states of Sudan. This practice is more common in urban areas, among richest households and in households with higher educated mothers.

<b>Table NU.9: Bottle feeding</b>		
<b>Percentage of children age 0-23 months who were fed with a bottle with a nipple during the previous day, Sudan MICS, 2014</b>		
Background characteristics	Percentage of children age 0-23 months fed with a bottle with a nipple [1]	Number of children age 0-23 months:
<b>Sudan</b>	7.3	5,636
<b>Sex</b>		
Male	6.9	2,853
Female	7.8	2,782
<b>Age</b>		
0-5 months	7.4	1,516
6-11 months	9.0	1,448
12-23 months	6.4	2,672
<b>State</b>		
Northern	16.7	95
River Nile	10.3	148
Red Sea	20.7	89
Kassala	14.5	190
Gadarif	4.7	309
Khartoum	13.8	694
Gezira	5.9	915
White Nile	8.6	284
Sinnar	5.6	227
Blue Nile	1.6	288
North Kordofan	4.4	345
South Kordofan	7.4	189
West Kordofan	5.6	371
North Darfur	2.6	463
West Darfur	8.1	180
South Darfur	5.0	547
Central Darfur	16.2	101
East Darfur	5.1	202
<b>Area</b>		
Urban	10.6	1,503
Rural	6.2	4,133
<b>Mother's education</b>	6.0	2,225
None	5.3	2,059
Primary	9.7	927
Secondary	19.0	421

Background characteristics	Percentage of children age 0-23 months fed with a bottle with a nipple [1]	Number of children age 0-23 months:
Higher	*	2
<b>Wealth index quintile</b>		
Poorest	4.0	1,212
Second	5.8	1,225
Middle	5.5	1,199
Fourth	8.3	1,142
Richest	15.7	858
[1] MICS indicator 2.18 - Bottle feeding		
[*] Based on less than 25 unweighted cases and has been suppressed.		

## 5.4 Salt Iodization

Iodine Deficiency Disorders (IDD) is the world's leading cause of preventable mental retardation and impaired psychomotor development in young children. In its most extreme form, iodine deficiency causes cretinism. It also increases the risks of stillbirth and miscarriage in pregnant women. Iodine deficiency is most commonly and visibly associated with goitre. IDD takes its greatest toll in impaired mental growth and development, contributing in turn to poor school performance, reduced intellectual ability, and impaired work performance. The indicator is the percentage of households consuming adequately iodized salt ( $\geq 15$  parts per million).

National laws required to support key nutrition interventions such as food fortification, salt iodisation and the breast milk substitute code are absent or are not been enforced.

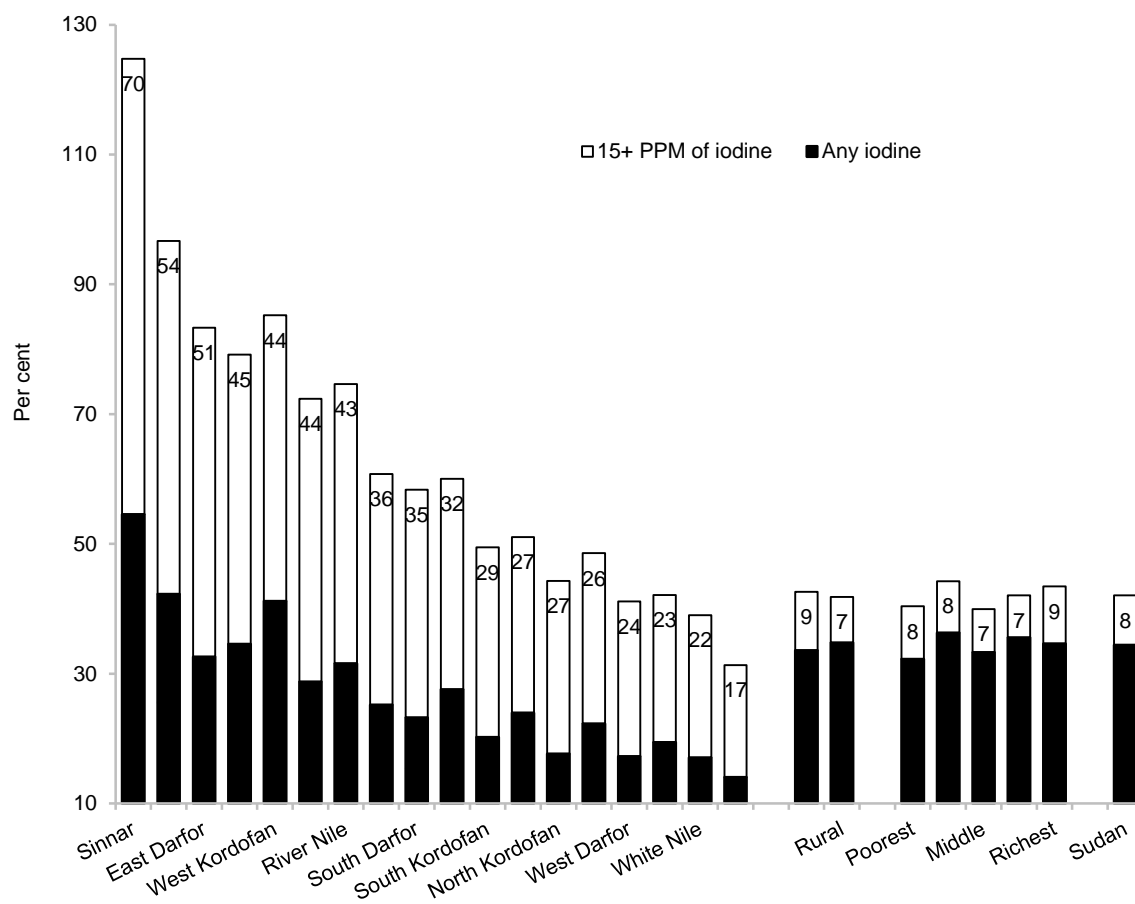
During 2014 MICS field data collection, salt used for cooking was tested for iodine content by using salt test kits and testing for the presence of indicate whether salt was tested for potassium iodide or potassium iodate content or both. Table NU.10 shows that cooking salt was tested in 93.9 percent of households surveyed. The table also shows that in 4.8 percent of households, there was no salt available. These households are included in the denominator of the indicator.

As a result of absence of national law, in Sudan, only 7.6 percent of households have adequately iodized salt (which contains 15 parts per million ppm or more of iodine). Use of adequately iodized salt is lowest in States of West Kordofan (2.9 percent), Blue Nile (3.1 percent), Red Sea (3.2 percent) and Khartoum (3.3 percent) and relatively highest use in recorded in East Darfur (18.1 percent), Central Darfur (14.8 percent) and Sinnar (15.6 percent). Disparity is very low between Urban (9.0 percent) and rural area (7.0 percent).

There is no difference of iodized salt consumption between the richest (8.8 percent) and poorest households (8.1 percent). Figure NU.5 below presents the percentage of adequately iodized salt and also salt containing less 15 ppm.



**Figure NU.5: Consumption of iodized salt:**  
**Percentage of households consuming adequately iodized salt, Sudan MICS, 2014**



<b>Table NU.10: Iodized salt consumption</b>							
<b>Percent distribution of households by consumption of iodized salt, Sudan MICS, 2014</b>							
Background characteristics	Percent of households in which salt was tested	Number of households	Percent of households with salt test result				Number of households in which salt was tested or with no salt
			Percent of households with no salt	Not iodized 0 PPM	>0 and <15 PPM	15+ PPM [1]	
<b>Sudan</b>	93.9	16,801	4.8	60.7	26.8	7.6	16,574
<b>State</b>							
Northern	96.5	423	1.1	72.6	22.3	4.0	413
River Nile	98.6	666	0.9	56.0	31.5	11.5	663
Red Sea	94.6	519	3.3	79.4	14.1	3.2	508
Kassala	94.6	722	5.2	50.2	34.6	10.0	721
Gadarif	92.7	858	6.0	39.6	42.3	12.2	847
Khartoum	95.5	2,317	2.5	74.8	19.4	3.3	2,270
Gezira	96.3	2,629	3.6	63.9	27.6	4.8	2,626
White Nile	93.7	874	5.8	72.3	17.1	4.9	869
Sinnar	91.4	661	7.7	22.1	54.6	15.6	654
Blue Nile	93.4	656	6.4	66.5	24.0	3.1	654
North Kordofan	93.6	1,125	2.8	70.5	17.7	9.0	1,084
South Kordofan	94.9	462	3.5	67.2	20.2	9.1	455
West Kordofan	94.2	1,003	4.5	51.5	41.2	2.9	990
North Darfur	90.6	1,243	6.7	57.7	25.2	10.4	1,208
West Darfur	95.6	553	2.9	73.2	17.3	6.6	545
South Darfur	88.7	1,282	10.8	54.1	23.2	11.9	1,274
Central Darfur	92.5	299	5.2	51.3	28.8	14.8	292
East Darfur	89.2	508	9.8	39.5	32.6	18.1	502
<b>Area</b>							
Urban	94.9	5,000	3.6	62.8	24.6	9.0	4,921
Rural	93.5	11,801	5.4	59.9	27.7	7.0	11,652
<b>Wealth index quintile</b>							
Poorest	90.7	3,368	7.7	60.0	24.1	8.1	3,310
Second	92.2	3,592	6.2	57.5	28.3	8.0	3,534
Middle	93.2	3,339	5.5	61.2	26.6	6.7	3,293
Fourth	95.7	3,209	3.5	61.0	29.1	6.5	3,181
Richest	97.8	3,293	1.1	64.3	25.8	8.8	3,256

[1] MICS indicator 2.18 - Bottle feeding

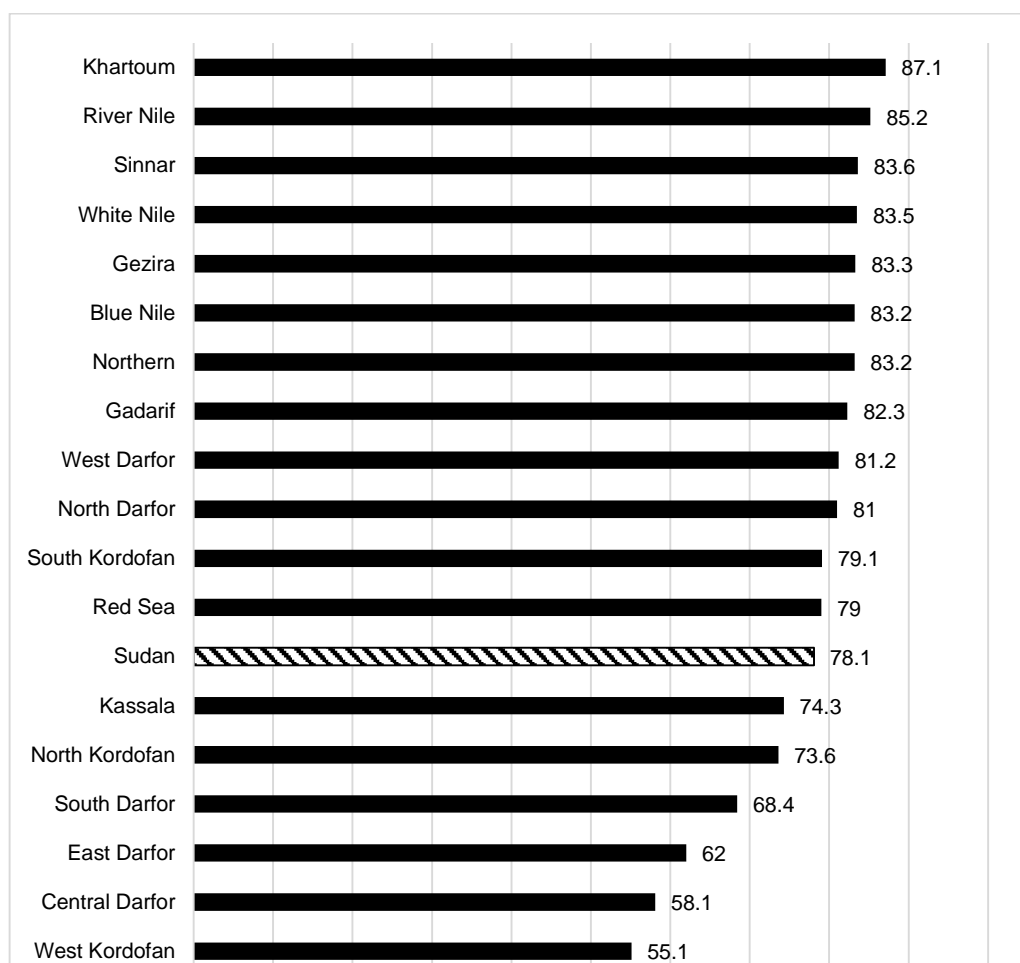
## 5.5 Children's Vitamin A supplementation

Tables Nu.11 and Figure NU.6 below show that 78. percent of children in Sudan have received the Vitamin A during the last 6 months preceding the survey. The coverage of Vitamin A varies by State, age of children, mother's education and wealth index quintile.

<b>Table NU.11: Children's vitamin A supplementation</b>		
<b>Percent distribution of children age 6-59 months by receipt of a high dose vitamin A supplement in the last 6 months, Sudan MICS, 2014</b>		
Background characteristics	Percentage of children who received Vitamin A during the last 6 months [1]	Number of children age 6-59 months
<b>Sudan</b>	<b>78.1</b>	<b>12,565</b>
<b>Child's Sex</b>		
Male	78.5	6,422
Female	77.6	6,143
<b>State</b>		
Northern	83.2	215
River Nile	85.2	355
Red Sea	79.0	226
Kassala	74.3	442
Gadarif	82.3	668
Khartoum	87.1	1,576
Gezira	83.3	1,924
White Nile	83.5	636
Sinnar	83.6	497
Blue Nile	83.2	621
North Kordofan	73.6	816
South Kordofan	79.1	472
West Kordofan	55.1	767
North Darfur	81.0	1,090
West Darfur	81.2	438
South Darfur	68.4	1,171
Central Darfur	58.1	220
East Darfur	62.0	430
<b>Area</b>		
Urban	84.5	3,463
Rural	75.6	9,102
<b>Child's age in month</b>		
6-11	30.0	1,448
12-23	78.4	2,672
24-35	85.8	2,618
36-47	85.8	3,268
48-59	87.1	2,559
<b>Mother's education</b>		
None	73.8	5,346
Primary	80.0	4,355
Secondary	82.6	1,959
Higher	83.9	890
<b>Wealth index quintile</b>		
Poorest	67.7	2,824

Background characteristics	Percentage of children who received Vitamin A during the last 6 months [1]	Number of children age 6-59 months
Second	74.6	2,666
Middle	81.4	2,624
Fourth	84.7	2,410
Richest	84.8	2,042

**Figure NU.6. Percentage of children who received Vitamin A during the last 6 months in Sudan MICS, 2014**



## VI. Child Health

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### 6.1 Vaccinations

Providing a safe and healthy start in life for all children and avoiding child deaths due to preventable diseases are critical to the task of reducing infant and under-five mortality rates. Immunization plays a key part towards achieving the goal of reducing infant and under-five mortality rates. The Millennium Development Goal (MDG) 4 is to reduce child mortality by two thirds between 1990 and 2015. In addition, the Global Vaccine Action Plan (GVAP) was endorsed by the 194 Member States of the World Health Assembly in May 2012 to achieve the Decade of Vaccines vision by delivering universal access to immunization. Immunization has saved the lives of millions of children in the four decades since the launch of the Expanded Programme on Immunization (EPI) in 1974. Worldwide there are still millions of children not reached by routine immunization and as a result, vaccine-preventable diseases account for more than 2 million child deaths every year.

The WHO Recommended Routine Immunizations for Children<sup>18</sup> recommends all children to be vaccinated against tuberculosis, diphtheria, pertussis, tetanus, polio, measles, hepatitis B, haemophilus influenza type b, pneumonia/meningitis, rotavirus, and rubella.

All doses in the primary series are recommended to be completed before the child's first birthday, although depending on the epidemiology of disease in a country, the first doses of measles and rubella containing vaccines may be recommended at 12 months or later. The recommended number and timing of most other doses also vary slightly with local epidemiology and may include booster doses later in childhood.

The vaccination schedule followed by the Sudan National Immunization Programme provides all the above mentioned vaccinations with birth doses of BCG, Polio, and Hepatitis B vaccines (within 24 hours of birth), three doses of the Pentavalent vaccine containing DPT, Hepatitis B, and *Haemophilus influenza* type b (Hib) antigens, three doses of Polio vaccine, and measles. All vaccinations should be received during the first year of life. Taking into consideration this vaccination schedule, the estimates for full immunization coverage from the Sudan MICS 2014 are based on children aged 12-23/24-35 months.

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<sup>18</sup><http://www.who.int/immunization/diseases/en>. Table 2 includes recommendations for all children and additional antigens recommended only for children residing in certain regions of the world or living in certain high-risk population groups.

**Vaccination Schedule for Sudan as of 2014**

Age	Vaccination	Type
Birth/First contact	BCG	International
6 weeks	OPV1, Pentavalent1 ,	Oral drops, IM right, IM left, Thigh, oral drops
10 weeks	OPV2, Pentavalent2	Oral drops, IM right, IM left, Thigh, oral drops
14 weeks	OPV3, Pentavalent3	Oral drops, IM right, IM left, Thigh
9 months	Measles	Subcutaneously
18 months	OPV Booster, DPT booster	Oral Drops, IM right Thigh

Information on vaccination coverage was collected for all children under three years of age. All mothers or caretakers were asked to provide vaccination cards. If the vaccination card for a child was available, interviewers copied vaccination information from the cards onto the MICS questionnaire. If no vaccination card was available for the child, the interviewer proceeded to ask the mother to recall whether or not the child had received each of the vaccinations, and for Polio, DPT and Hepatitis B, how many doses were received. Information was also obtained from vaccination records at health facilities. The final vaccination coverage estimates are based on information obtained from the vaccination card and the mother's report of vaccinations received by the child.

The percentage of children age 12-23 months and 24-35 months who have received each of the specific vaccinations by source of information (vaccination card or vaccination records at health facilities and mother's recall) is shown in Table CH.1 above and Figure CH.1 below. The denominators for the table are comprised of children age 12-23 months and 24-35 months so that only children who are old enough to be fully vaccinated are counted. In the first three columns in each panel of the table, the numerator includes all children who were vaccinated at any time before the survey according to the vaccination card or the vaccination records at health facilities or the mother's report. In the last column in each panel, only those children who were vaccinated before their first birthday, as recommended, are included. For children without vaccination cards/records, the proportion of vaccinations given before the first birthday is assumed to be the same as for children with vaccination cards/records.

**Table CH.1: Vaccinations in the first years of life**

Percentage of children age 12-23 months and 24-35 months vaccinated against vaccine preventable childhood diseases at any time before the survey and by their first birthday, Sudan MICS, 2014

Background characteristics	Children Age 12-23 months:				Children Age 24-35 months:			
	Vaccinated at any time before the survey according to:			Vaccinated by 12 months of age <sup>a</sup>	Vaccinated at any time before the survey according to:			Vaccinated by 12 months of age <sup>a</sup>
	Child health card	Mother's report	Either		Child health card	Mother's report	Either	
BCG [1]	43.7	41.6	85.3	78.5	27.3	56.7	84.0	72.1
Polio 0	42.2	45.3	87.4	30.4	26.4	60.1	86.4	29.7
Polio 1	43.8	43.7	87.5	83.7	27.4	59.1	86.5	80.2
Polio 2	43.5	38.6	82	75.7	27.4	54.0	81.3	73.0
Polio 3 [2]	42.9	32.2	75.1	65.3	27.3	45.0	72.3	59.3
Pentavalent 1	44.2	40.4	84.6	81.1	27.7	56.1	83.8	76.7
Pentavalent 2	43.9	36.7	80.6	74.5	27.6	51.9	79.5	70.7
Pentavalent 3 [3][4][5]	43.4	30.5	73.9	63.9	27.4	43.6	71.0	58.1
Measles 1 [7]	41.7	38.2	79.9	60.9	26.9	53.9	80.8	58.9
Measles 2	36.6	39	75.6	8.8	25.2	54.6	79.8	8.3
Fully vaccinated <sup>b</sup> [8]	42.2	25.3	67.5	42.8	26.3	36.4	62.7	23.1
No vaccinations	.0	11.8	11.8	12.8	.0	12.6	12.6	14.9
Number of children	2,672	2,672	2,672	2,672	2,618	2,618	2,618	2,618
[1] MICS indicator 3.1 - Tuberculosis immunization coverage [2] MICS indicator 3.2 - Polio immunization coverage [3] MICS indicator 3.3 - Diphtheria, pertussis and tetanus (DPT) immunization coverage [4] MICS indicator 3.5 - Hepatitis B immunization coverage [5] MICS indicator 3.6 - Haemophilus influenzae type B (Hib) immunization coverage [7] MICS indicator 3.4; MDG indicator 4.3 - Measles immunization coverage [8] MICS indicator 3.8 - Full immunization coverage [a] MICS indicators 3.1, 3.2, 3.3, 3.5, 3.6, and 3.7 refer to results of this column in the left panel; MICS indicators 3.4 and 3.8 refer to this column in the right panel [b] Includes: BCG, Polio3, Pentavalent3 and Measles 1 (MCV1) as per the vaccination schedule in Sudan								

Approximately 78.5 percent of children age 12-23 months received a BCG vaccination by the age of 12 months and the first dose of Pentavalent vaccine was given to 81.1 percent. The percentage declines to 74.5 percent for the second dose of Pentavalent, and 63.9 percent for the third dose. Similarly, 83.7 percent of children received Polio 1 by age 12 months and this declines to 65.3 percent by the third dose. The coverage for the first dose of measles vaccine by 12-23 months is lower than for the other vaccines at 60.9 percent.

Overall, the percentage of children who had all the recommended vaccinations by their first birthday is low at only 42.8 percent.

**Figure CH.1: Vaccinations by age 12 months, Sudan MICS, 2014**

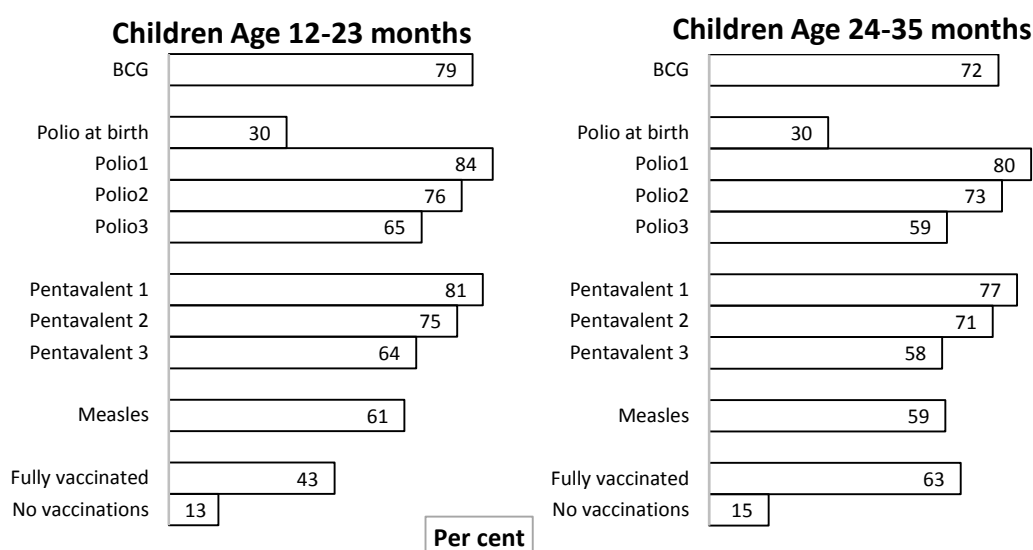


Table CH.2 presents vaccination coverage estimates among children age 12-23 and 24-35 months by background characteristics. The figures indicate children receiving the vaccinations at **any time** up to the date of the survey, and are based on information from both the vaccination cards or health facility records and mothers'/caretakers' reports. Vaccination cards have been seen by the interviewer for only 43.7 percent of children age 12-23 months. The survey data indicated that 85.3 percent of children age 12-23 months had received BCG vaccination at any time up to the date of the survey. There was only a slight difference in BCG vaccination coverage rate by gender, the BCG vaccination coverage for males and females respectively being 83.7 percent and 86.9 percent. The BCG vaccination coverage was higher for children in urban areas (92.0 percent) than among children in rural areas (82.8 percent). The BCG vaccination coverage rate, as expected, seems to have a close link with the level of mothers' education. The BCG vaccination coverage ranged from 76.6 percent for children of mothers with no education to 88.9 percent for children of mothers with primary education, and to 94.1 percent for children of mothers with secondary or and 92.5 percent of mothers with higher education. The BCG vaccination coverage rate also has a high association with the economic status of the household. The BCG vaccination coverage was 68.0 percent in the case of children belonging to households in the poorest quintile compared to 94.6 percent for children from households in the richest quintile. The BCG vaccination coverage rate ranged from 64.5 percent in South Darfur to 97.4 percent in Blue Nile State. The vaccination coverage rate was more than 80 percent in eleven states and below 80 percent in seven states.



**Figure CH.1a: Measles Vaccination Coverage by States**

**Percentage of children age 24-35 months currently vaccinated against Measles, Sudan MICS, 2014**

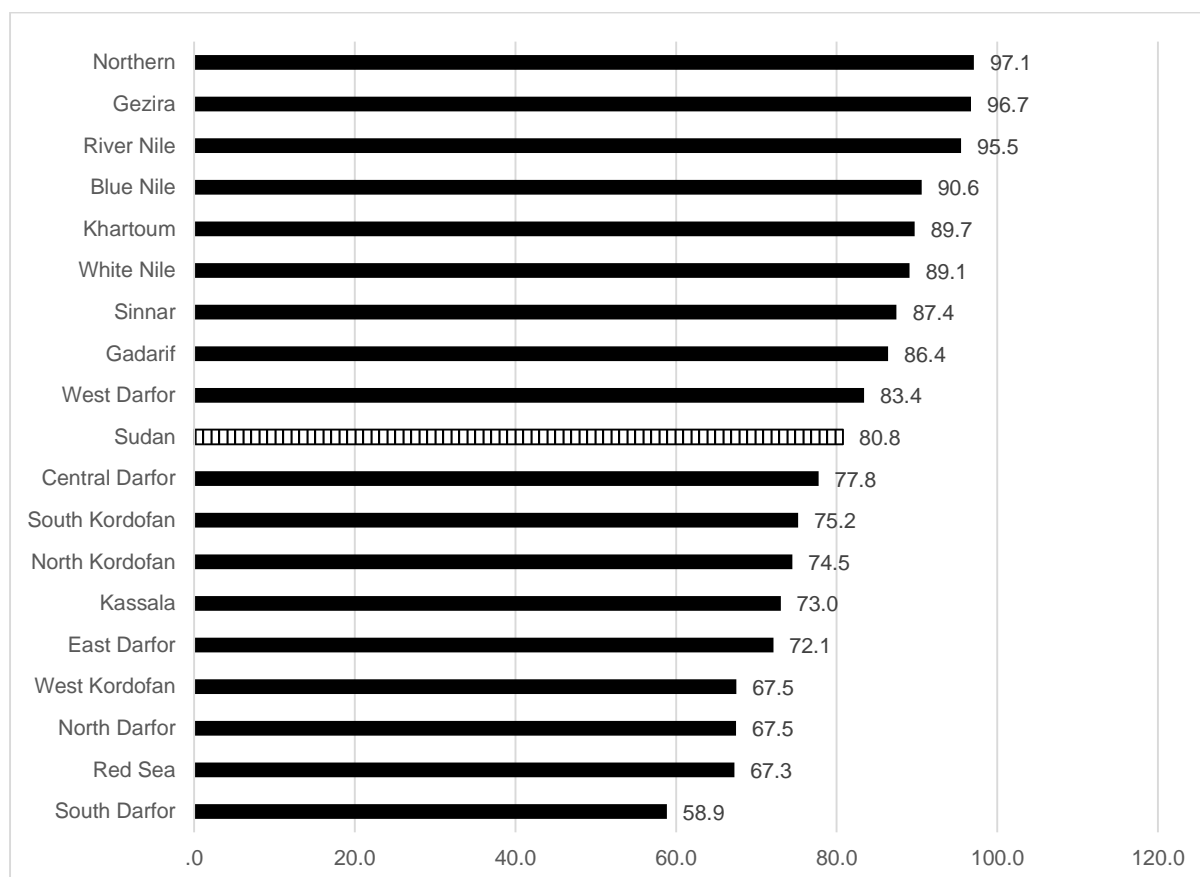


Table CH.2: Vaccinations by background characteristics															
Percentage of children age 12-23 months and 24-35 months currently vaccinated against vaccine preventable childhood diseases, Sudan MICS, 2014															
Background characteristics	Percentage of children age 12-23 months who received:								Percentage with vaccination card seen	Number of children age 12-23 months	Percentage of children age 24-35 months who received:			With Card	
	BCG	Polio 0	Polio 1	Polio 2	Polio 3	Pentavalent 1	Pentavalent 2	Pentavalent 3			Measles 1	Measles 2	Full [a]	Percentage with vaccination card seen	Number of children age 24-35 months
<b>Sudan</b>	85.3	87.4	87.5	82.0	75.1	84.6	80.6	73.9	43.7	2,672	80.8	79.8	62.7	27.3	2,618
<b>Sex</b>															
Male	83.7	86.3	86.5	81.3	74.0	84.0	79.9	72.6	42.4	1,337	79.2	77.7	60.4	26.7	1,347
Female	86.9	88.5	88.5	82.8	76.2	85.1	81.2	75.2	44.9	1,335	82.5	82.1	65.2	27.9	1,272
<b>State</b>															
Northern	93.3	96.2	96.2	94.6	90.9	94.5	94.0	89.6	50.0	48	97.1	96.0	87.2	44.2	47
River Nile	92.8	93.4	93.4	90.6	82.2	92.8	91.3	88.5	39.6	74	95.5	95.5	86.5	20.5	76
Red Sea	65.7	71.3	71.3	65.2	60.2	62.5	62.5	53.3	22.5	46	67.3	67.3	42.0	15.2	56
Kassala	78.4	79.8	79.8	71.0	64.0	77.6	67.9	62.8	38.6	93	73.0	73.0	56.6	22.3	108
Gadarif	94.4	95.3	95.3	92.8	87.5	95.2	93.7	87.2	43.5	132	86.4	85.8	66.7	21.2	161
Khartoum	95.4	96.0	96.0	92.3	89.7	94.5	92.4	89.9	52.1	364	89.7	88.6	74.1	31.6	320
Gezira	94.8	96.4	96.4	91.6	88.8	95.7	93.5	91.4	55.2	430	96.7	94.0	85.8	39.7	342
White Nile	89.9	93.6	93.6	87.4	77.2	91.2	87.1	79.6	37.1	131	89.1	88.3	67.0	24.2	151
Sinnar	80.2	82.2	82.2	75.8	68.6	79.8	73.1	60.7	42.6	102	87.4	86.6	63.9	38.3	105
Blue Nile	97.4	98.3	98.3	98.0	95.0	97.7	97.4	96.1	72.6	148	90.6	90.3	86.2	46.1	135
North Kordofan	82.9	83.6	85.1	78.5	74.9	81.6	78.5	73.5	38.4	157	74.5	74.5	54.7	24.5	156
South Kordofan	77.3	82.3	82.3	79.0	70.2	80.3	75.4	69.0	46.4	85	75.2	75.2	48.4	16.2	113
West Kordofan	72.2	74.4	74.4	63.4	49.8	66.6	59.5	46.5	11.3	156	67.5	66.8	39.1	8.3	129
Kordofan North Darfur	81.6	83.1	83.1	79.8	71.3	80.4	76.8	67.3	47.3	223	67.5	67.0	52.5	27.7	219

Background characteristics	Percentage of children age 12-23 months who received:								Percentage of children age 12-23 months who received	Number of children age 12-23 months	Percentage of children age 24-35 months who received:			With Card	
	BCG	Polio 0	Polio 1	Polio 2	Polio 3	Pentavalent 1	Pentavalent 2	Pentavalent 3			Measles 1	Measles 2	Full [a]	Percentage of children age 24-35 months who received	Number of children age 24-35 months
West Darfur	90.9	96.1	96.1	83.2	70.2	87.1	83.3	68.6	26.2	76	83.4	83.4	53.9	15.4	96
South Darfur	64.5	67.7	68.2	61.1	49.5	63.4	54.9	42.9	29.3	266	58.9	57.2	41.7	20.7	276
Central Darfur	75.9	74.9	74.2	66.3	51.5	71.3	61.5	49.1	43.1	51	(77.8)	(76.8)	(44.6)	(37.9)	40
East Darfur	77.6	86.2	86.2	74.8	60.2	74.4	67.6	57.7	44.9	91	72.1	69.8	38.6	22.2	87
Area															
Urban	92.0	93.4	93.4	89.1	82.9	91.3	88.4	82.1	47.2	726	86.7	85.4	68.5	34.6	766
Rural	82.8	85.2	85.3	79.4	72.2	82.0	77.6	70.8	42.3	1,946	78.4	77.5	60.3	24.2	1,853
Mother's education															
None	76.6	80.2	80.6	73.8	64.9	76.0	70.8	63.2	38.1	1,049	72.3	71.1	53.1	21.5	1,132
Primary	88.9	90.6	90.6	85.1	78.5	87.6	84.0	77.6	46.1	929	86.8	86.0	68.7	34.5	912
Secondary	94.1	95.0	95.0	92.4	87.2	93.7	91.7	85.9	50.2	481	87.1	86.2	69.0	28.8	381
Higher	92.5	92.1	92.1	86.2	83.1	92.3	88.0	82.9	45.8	211	92.7	91.5	80.0	24.9	186
Wealth index quintile															
Poorest	68.0	72.8	73.5	64.5	53.8	66.9	59.3	50.3	29.6	536	61.6	61.0	43.5	17.2	583
Second	79.8	82.4	82.4	76.4	67.0	78.4	73.4	63.2	37.1	591	77.4	76.7	51.5	19.9	558
Middle	91.6	93.3	93.3	88.2	82.5	90.9	87.9	83.1	50.7	560	86.8	85.1	70.6	34.6	574
Fourth	94.0	94.4	94.4	90.5	85.5	93.3	90.9	86.7	49.8	553	90.9	90.5	76.1	31.3	466
Richest	94.6	95.4	95.4	92.3	89.2	94.8	93.3	88.7	53.0	432	91.5	90.0	76.9	36.1	437

[a] Includes: BCG, Polio3, Pentavalent3 and Measles (MCV1) as per the vaccination schedule in Sudan

() Figures that are based on 25-49 unweighted cases

[\*] Based on less than 25 unweighted cases and has been suppressed.

## 6.2 Neonatal Tetanus Protection

MDG 5 aims to reduce by three quarters the maternal mortality ratio, with one of its strategies to eliminate maternal tetanus. Following on the 42<sup>nd</sup> and 44<sup>th</sup> World Health Assembly calling for elimination of neonatal tetanus, the global community continues to work to reduce the incidence of neonatal tetanus to less than 1 case of neonatal tetanus per 1,000 live births in every state by 2015.

Prevention of maternal and neonatal tetanus can be ensured if all pregnant women receive at least two doses of tetanus toxoid vaccine. If a woman has received at least two doses of tetanus toxoid during a particular pregnancy, she (and her new born) are also considered to be protected against tetanus. Other conditions for neonatal Tetanus Protection are when the woman:

- Received at least two doses of tetanus toxoid vaccine, the last within the previous 3 years;
- Received at least 3 doses, the last within the previous 5 years;
- Received at least 4 doses, the last within the previous 10 years;
- Received 5 or more doses anytime during her life.<sup>19</sup>

To assess the status of tetanus vaccination coverage, women who had a live birth during the two years before the survey were asked if they had received tetanus toxoid injections during the pregnancy and if so, they were asked for the number of such injections received. Women who did not receive two or more tetanus toxoid vaccinations during this recent pregnancy were then asked about tetanus toxoid vaccinations they may have previously received. Interviewers also asked the women to present their vaccination cards on which dates of tetanus toxoid are recorded and referred to information from the cards when available.

Table CH.3 shows the status of women's protection from tetanus among women aged 15-49 years who have had a live birth within the last 2 years prior to the survey. Overall, the table shows that 58.2 percent of the women with a live birth in the last two years were protected against neonatal tetanus. Also only 32.1 percent of the women received at least two doses of tetanus toxoid (TT) vaccine during last pregnancy.

The data also showed a higher percentage of women aged 15-49 years in urban areas with a live birth in the last two years prior to the survey were protected against neonatal tetanus (65.9 percent) than their counterparts in rural areas (55.4 percent). However, there was only a marginal difference in the percentage of women who received at least two doses of tetanus toxoid (TT) vaccine during last pregnancy between those living in urban areas (32.7 percent) and those living in rural areas (31.8 percent). The data also shows that the level of education of woman in Sudan is highly related to the likelihood of neonatal tetanus protection. For instance, the percentage of women aged 15-49 years who were protected against neonatal tetanus was only 46.7 percent for women with no education, compared to 79.0 percent for women with secondary and higher levels of education. Similar differences were shown among women with varying economic status; percentage of neonatal tetanus protection among women in the richest quintile was 74.2 percent compared with the women from the poorest quintile (44.4 percent)

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<sup>19</sup> Deming, M.S. et al. 2002. *Tetanus toxoid coverage as an indicator of serological protection against neonatal tetanus*. Bulletin of the World Health Organization 80(9):696-703

**Table CH.3: Neonatal tetanus protection****Percentage of women age 15-49 years with a live birth in the last 2 years protected against neonatal tetanus, Sudan  
MICS, 2014**

Background characteristics	Percentage of women who received at least 2 doses during last pregnancy	Percentage of women who did not receive two or more doses during last pregnancy but received:				Protected against tetanus [1]	Number of women with a live birth in the last 2 years
		2 doses, the last within prior 3 years	3 doses, the last within prior 5 years	4 doses, the last within prior 10 years	5 or more doses during lifetime		
<b>Sudan</b>	32.1	19.3	3.8	2.3	.7	58.2	5,622
<b>State</b>							
Northern	41.9	15.0	1.6	.7	1.7	60.9	92
River Nile	42.1	25.7	3.0	2.1	.0	73.0	151
Red Sea	27.6	11.0	0.8	3.0	0.0	42.3	92
Kassala	27.5	9.8	2.2	.8	0.0	40.3	199
Gadarif	27.5	20.3	4.0	3.0	0.4	55.2	307
Khartoum	28.8	33.8	4.1	4.0	2.7	73.4	684
Gezira	36.5	18.0	5.5	2.6	0.7	63.4	852
White Nile	33.2	16.8	5.6	1.6	0.2	57.6	273
Sinnar	31.1	20.0	5.5	3.3	0.2	60.1	226
Blue Nile	31.7	12.4	2.2	4.4	0.3	50.9	287
North Kordofan	34.2	19.4	3.5	1.5	0.5	59.2	352
South Kordofan	32.3	21.7	4.2	1.4	0.0	59.6	194
West Kordofan	33.1	10.2	0.1	0.6	0.0	44.0	341
North Darfur	26.0	23.1	5.1	2.8	0.4	57.4	525
West Darfur	38.5	20.9	3.0	0.9	0.6	64.0	179
South Darfur	28.1	16.0	3.1	2.0	0.6	49.8	556
Central Darfur	51.1	7.7	1.2	0.0	0.0	60.0	99
East Darfur	31.7	13.8	4.5	1.1	0.2	51.3	211
<b>Area</b>							
Urban	32.7	23.3	3.9	4.4	1.6	65.9	1,488
Rural	31.8	17.9	3.7	1.6	0.3	55.4	4,134
<b>Mother's education</b>							
None	26.1	14.3	3.5	2.4	0.5	46.7	2,247
Primary	33.5	20.3	4.1	2.2	1.0	61.1	2,022
Secondary	38.8	23.9	4.0	2.7	0.8	70.3	942
Higher	42.5	30.9	3.4	2.1	0.1	79.0	410
<b>Wealth index quintile</b>							
Poorest	25.3	14.1	3.6	1.0	0.3	44.4	1,251
Second	31.5	17.5	2.7	1.8	0.2	53.7	1,232
Middle	35.2	16.4	3.0	1.7	0.6	56.8	1,192
Fourth	34.4	22.0	6.5	3.7	1.3	68.0	1,096
Richest	35.6	30.0	3.2	4.3	1.2	74.2	851

[1] MICS indicator 3.9 - Neonatal tetanus protection

### 6.3 Care of Illness

A key strategy for accelerating progress toward MDG 4 is to tackle the diseases that are the leading killers of children under 5. Diarrhoea and pneumonia are two such diseases. The Global Action Plan for the Prevention and Control of Pneumonia and Diarrhoea (GAPPD) aims to end preventable pneumonia and diarrhoea death by reducing mortality from pneumonia to 3 deaths per 1000 live births and mortality from diarrhoea to 1 death per 1000 live births by 2025.

Table CH.4 presents the percentage of children under 5 years of age who were reported to have had an episode of diarrhoea, and symptoms of acute respiratory infection (ARI). These results are not measures of true prevalence, and should not be used as such, but rather the period-prevalence of those illnesses over a two-week time window.

The definition of a case of diarrhoea in this survey, was the mother's (or caretaker's) report that the child had such symptoms over the specified period; no other evidence were sought beside the opinion of the mother. A child was considered to have had an episode of ARI if the mother or caretaker reported that the child had, over the specified period, an illness with a cough with rapid or difficult breathing, and whose symptoms were perceived to be due to a problem in the chest or both a problem in the chest and a blocked nose. While this approach is reasonable in the context of a MICS survey, these basically simple case definitions must be kept in mind when interpreting the results, as well as the potential for reporting and recall biases. Further, diarrhoea, fever and ARI are not only seasonal but are also characterized by the often rapid spread of localized outbreaks from one area to another at different points in time. The timing of the survey and the location of the teams might thus considerably affect the results, which must consequently be interpreted with caution. For these reasons, although the period-prevalence over a two-week time window is reported, these data should not be used to assess the epidemiological characteristics of these diseases but rather to obtain denominators for the indicators related to use of health services and treatment.

Overall, 29.0 percent of under five children were reported to have had diarrhoea in the two weeks preceding the survey, 17percent symptoms of ARI, (Table CH.4). Period-prevalence of diarrhoea ranges from 19.3 percent in the age group 48-59 months to 38.5 percent in the age group 12-23 months. In the case of ARI, the period prevalence ranges from 15.1 percent in the age group 0-11 months to 19.8 percent in the age group 24-35 months. There are minor differences in the prevalence of diarrhoea/ARI between urban and rural areas, and male and female populations. The prevalence of diarrhoea among children widely varies between states, ranging from the lowest in West Kordofan (7.6 percent) to the highest in Khartoum (42.7 percent). In the case of ARI, the prevalence ranges from the lowest in West Kordofan (5.0 percent) to the highest in North Darfur (30.8 percent).

**Table CH.4: Reported disease episodes****Percentage of children age 0-59 months for whom the mother/caretaker reported an episode of diarrhoea, and/or symptoms of acute respiratory infection (ARI) in the last two weeks, Sudan MICS, 2014**

Background characteristics	Percentage of children who in the last two weeks had:		Number of children age 0-59 months
	An episode of diarrhoea	Symptoms of ARI [a]	
<b>Sudan</b>	29.0	17.8	14,081
<b>Sex</b>			
Male	29.7	18.4	7,157
Female	28.3	17.1	6,924
<b>State</b>			
Northern	23.9	12.2	236
River Nile	22.5	11.2	393
Red Sea	9.6	5.9	244
Kassala	32.9	15.1	498
Gadarif	22.0	10.5	765
Khartoum	42.7	13.2	1,736
Gezira	34.8	16.8	2,149
White Nile	36.2	25.3	711
Sinnar	28.2	23.4	555
Blue Nile	20.3	12.9	691
North Kordofan	17.4	15.8	907
South Kordofan	25.0	24.3	529
West Kordofan	7.6	5.0	893
North Darfur	37.2	30.8	1,211
West Darfur	23.9	9.0	487
South Darfur	27.2	25.8	1,326
Central Darfur	31.1	14.9	254
East Darfur	35.9	31.1	495
<b>Area</b>			
Urban	31.5	17.5	3,862
Rural	28.1	17.8	10,219
<b>Age</b>			
0-11	31.5	15.1	2,964
12-23	38.5	18.3	2,672
24-35	33.2	19.8	2,618
36-47	23.3	18.6	3,268
48-59	19.3	17.1	2,559
<b>Mother's education</b>			
None	27.0	17.6	5,994
Primary	30.9	18.4	4,936
Secondary	30.1	18.3	2,152
Higher	30.0	14.7	982
Missing/DK	*	*	17
<b>Wealth index quintile</b>			
Poorest	26.5	19.7	3,188
Second	24.9	19.2	3,015
Middle	28.2	18.8	2,956
Fourth	37.1	15.1	2,684

Background characteristics	Percentage of children who in the last two weeks had:		Number of children age 0-59 months
	An episode of diarrhoea	Symptoms of ARI [a]	
Richest	29.6	14.8	2,238

[a] Children with symptoms of ARI are those who had an illness with a cough accompanied by a rapid or difficult breathing  
Sudan MICS did not include question on symptoms due to a problem in the chest, or both a problem in the chest and a blocked nose

[\*] Based on less than 25 unweighted cases and has been suppressed.

### 6.3.1 Diarrhoea

Diarrhoea is a leading cause of death among children under five worldwide. Most diarrhoea-related deaths in children are due to dehydration from loss of large quantities of water and electrolytes from the body in liquid stools. Management of diarrhoea – either through oral rehydration salts (ORS) or a recommended home fluid (RHF) – can prevent many of these deaths. In addition, provision of zinc supplements has been shown to reduce the duration and severity of the illness as well as the risk of future episodes within the next two or three months. Preventing dehydration and malnutrition by increasing fluid intake and continuing to feed the child are also important strategies for managing diarrhoea.

In the MICS 2014, mothers or caretakers were asked whether their child under age five years had an episode of diarrhoea in the two weeks prior to the survey. In cases where mothers reported that the child had diarrhoea, a series of questions were asked about the treatment of the illness, including what the child had been given to drink and eat during the episode and whether this was more or less than what was usually given to the child.

The overall period-prevalence of diarrhoea in children under 5 years of age is 29.0 percent (Table CH.4) and ranges from 9.0 percent in West Darfur state to 42.7 percent in Khartoum state . The highest period-prevalence is seen among children age 12-23 months which grossly corresponds to the weaning period.

Table CH.5 shows the percentage of children with diarrhoea in the two weeks preceding the survey for and from whom advice or treatment was sought. Overall, a health facility or provider was seen in 42.7 percent of the cases, and predominantly in the public sector at 37.3 percent and only 3.2 percent from a community health provider. Generally the proportion of those seeking advice is similar between male and female children; 42.7 percent for both sexes. There was significant difference between urban (46.1 percent) and rural (41.3 percent) respondents. Approximately 40.8 percent of children with diarrhoea in the last two weeks did not seek advice for treatment. There were notable differences between mothers'/caretakers' education levels on seeking advice was observed in the data.



**Table CH.5: Care-seeking during diarrhoea****Percentage of children age 0-59 months with diarrhoea in the last two weeks for whom advice or treatment was sought, by source of advice or treatment, Sudan MICS, 2014**

Background characteristics	Percentage of children with diarrhoea for whom:						Number of children age 0-59 months with diarrhoea in the last two weeks
	Advice or treatment was sought from:					No advice or treatment sought	
	Health facilities or providers			Other source	A health facility or provider [1] [b]		
	Public	Private	Community health provider [a]				
<b>Sudan</b>	37.3	13.1	3.2	9.9	42.7	40.8	4,088
<b>Sex</b>							
Male	37.4	14.0	2.7	10.5	42.7	39.2	2,125
Female	37.3	12.1	3.6	9.3	42.7	42.5	1,963
<b>State</b>							
Northern	48.3	8.8	.7	10.6	53.6	33.6	56
River Nile	48.5	9.7	3.6	9.0	53.6	33.7	88
Red Sea	(48.7)	(9.4)	(3.2)	(17.2)	(53.3)	(26.6)	23
Kassala	55.5	4.1	2.7	3.8	57.5	36.6	164
Gadarif	44.8	15.3	3.1	5.5	52.8	36.2	168
Khartoum	39.2	18.4	.3	8.1	46.4	35.3	742
Gezira	36.6	12.7	6.0	5.5	43.8	45.2	749
White Nile	41.8	7.4	3.4	18.9	46.3	34.2	257
Sinnar	46.8	12.7	1.0	7.5	51.2	33.3	156
Blue Nile	46.1	11.1	0.0	14.6	46.5	29.8	141
North Kordofan	40.8	8.9	8.8	2.8	46.2	47.8	158
South Kordofan	35.7	5.4	1.7	8.6	36.6	51.0	132
West Kordofan	30.9	7.6	4.5	10.9	35.2	51.4	68
North Darfur	30.7	15.8	2.7	10.2	32.6	43.9	450
West Darfur	56.2	7.7	2.5	7.2	58.6	29.4	117
South Darfur	18.5	17.6	5.2	17.4	29.1	50.4	360
Central Darfur	38.7	6.1	2.1	20.8	40.1	36.4	79
East Darfur	19.6	14.5	2.0	19.3	22.2	49.9	178
<b>Area</b>							
Urban	38.4	18.2	.7	9.1	46.1	36.5	1,216
Rural	36.9	10.9	4.2	10.3	41.3	42.6	2,872
<b>Age</b>							
0-11	37.6	10.4	1.9	5.3	42.1	47.3	933
12-23	40.6	15.0	4.0	10.7	48.4	35.5	1,028
24-35	36.2	13.1	3.7	10.2	42.0	42.0	870
36-47	31.3	14.1	3.2	11.7	35.4	42.9	763
48-59	41.5	12.6	2.7	14.0	44.5	34.2	494
<b>Mother's education</b>							
None	33.7	13.1	2.9	12.4	38.1	42.3	1,618
Primary	38.0	11.7	4.1	9.3	42.8	42.1	1,525
Secondary	47.4	13.8	2.8	6.7	53.8	32.7	648
Higher	32.1	18.6	.8	6.7	43.4	44.0	295
Missing/DK	*	*	*	*	*	*	2
<b>Wealth index quintile</b>							

Background characteristics	Percentage of children with diarrhoea for whom:						Number of children age 0-59 months with diarrhoea in the last two weeks
	Advice or treatment was sought from:					No advice or treatment sought	
	Health facilities or providers			Other source	A health facility or provider [1] [b]		
	Public	Private	Community health provider [a]				
Poorest	24.3	13.7	3.5	15.8	29.2	47.7	845
Second	39.2	10.8	5.0	9.0	42.5	41.8	750
Middle	46.7	10.9	2.6	10.1	50.8	34.0	834
Fourth	39.0	13.3	2.8	8.2	44.8	40.9	995
Richest	37.6	17.4	1.9	5.9	46.7	39.2	662
<p>[1] MICS indicator 3.10 - Care-seeking for diarrhoea</p> <p>[a] Community health providers includes both public (Community health worker and Mobile/Outreach clinic) and private (Mobile clinic) health facilities</p> <p>[b] Includes all public and private health facilities and providers, but excludes private pharmacy</p> <p>[*] Based on less than 25 unweighted cases and has been suppressed.</p> <p>( ) Figures that are based on 25-49 unweighted cases</p>							

Table CH.6 provides statistics on drinking and feeding practices during diarrhoea. Only 19.0 percent of under five children with diarrhoea were given more than usual while 27.3 percent were given the same or less. About 26.7 percent were given somewhat less, same or more (continued feeding), but 18.4 percent were given much less or almost nothing.

The proportion of female children who were given less to drink was 15.7 percent and 20.8 percent were given much less or somewhat less for males. The proportion of children under 5 years of age who had an episode of diarrhoea in the 2 weeks preceding the survey and who were given less to drink ranged from 18.7 percent in Central Darfur and Northern states to 37.6 percent in West Kordofan. The proportion of children under 5 years of age who had an episode of diarrhea in the 2 weeks preceding the survey who were given no food to eat was 18.2 percent in urban areas compared to 17.9 percent in rural areas; 18.3 percent for male children compared to 17.6 percent for female children; and 14.4 percent for children in the poorest quintile compared 16.3 percent for children in the richest quintile

Table CH.6: Feeding practices during diarrhoea																
Percent distribution of children age 0-59 months with diarrhoea in the last two weeks by amount of liquids and food given during episode of diarrhoea, Sudan MICS, 2014																
Background characteristics	Drinking practices during diarrhoea:							Eating practices during diarrhoea:							Number of children aged 0-59 months with diarrhoea	
	Child was given to drink: Much less	Child was given to drink: Somewhat less	Child was given to drink: About the same	Child was given to drink: More	Child was given to drink: Nothing	Missing/ DK	Sudan	Child was given to eat: Much less	Child was given to eat: Somewhat less	Child was given to eat: About the same	Child was given to eat: More	Child was given to eat: Nothing	Missing/ DK	Sudan		
<b>Sudan</b>	18.4	26.7	27.3	19.0	7.7	1.0	100.0	18.3	32.0	24.3	6.0	18.0	1.5	100.0	4,088	
<b>Sex</b>																
Male	20.8	25.5	26.9	18.9	7.0	0.8	100.0	19.6	32.2	23.2	5.4	18.3	1.3	100.0	2,125	
Female	15.7	27.9	27.7	19.1	8.3	1.2	100.0	16.9	31.7	25.5	6.7	17.6	1.7	100.0	1,963	
<b>State</b>																
Northern	6.7	18.7	45.0	25.1	4.6	0.0	100.0	10.5	33.4	28.4	2.6	25.1	0.0	100.0	56	
River Nile	10.9	21.1	28.5	30.0	9.6	0.0	100.0	6.8	29.0	23.1	11.4	29.6	0.0	100.0	88	
Red Sea	(10.9)	(32.5)	(17.0)	(20.1)	(19.5)	(0.0)	(100.0)	(24.6)	(28.3)	(9.8)	(9.1)	(25.9)	(2.3)	(100.0)	23	
Kassala	26.3	34.4	18.3	13.7	5.5	1.7	100.0	24.0	33.4	18.2	9.1	13.9	1.3	100.0	164	
Gadarif	16.9	31.3	21.4	24.6	5.2	0.6	100.0	12.5	41.8	28.5	8.3	8.2	0.6	100.0	168	
Khartoum	26.9	22.1	27.7	21.1	2.2	0.0	100.0	18.5	32.1	23.0	6.8	18.9	0.7	100.0	742	
Gezira	8.9	33.8	25.1	16.7	15.0	0.6	100.0	12.0	33.8	22.4	4.1	26.9	0.8	100.0	749	
White Nile	13.7	15.7	38.3	20.0	11.4	0.9	100.0	15.9	23.5	35.2	10.4	14.4	0.6	100.0	257	
Sinnar	18.6	23.2	25.3	28.3	4.7	0.0	100.0	24.6	29.8	26.3	4.5	14.7	0.0	100.0	156	
Blue Nile	22.9	26.2	21.8	21.5	7.6	0.0	100.0	21.8	29.1	28.0	7.7	12.9	0.5	100.0	141	
North Kordofan	19.2	29.1	29.0	16.2	6.4	0.0	100.0	26.1	28.3	29.1	1.6	14.9	0.0	100.0	158	
South Kordofan	12.8	37.9	35.4	9.1	4.4	0.5	100.0	15.3	38.8	30.6	6.2	8.9	0.2	100.0	132	
West Kordofan	37.6	26.2	17.4	3.3	10.8	4.7	100.0	33.0	31.5	20.5	3.1	8.4	3.5	100.0	68	
North Darfur	19.7	32.5	25.6	12.1	7.4	2.8	100.0	21.0	37.7	19.2	3.7	13.3	5.0	100.0	450	
West Darfur	25.2	33.3	19.4	12.5	9.4	0.3	100.0	18.2	34.5	20.6	10.6	15.7	0.5	100.0	117	
South Darfur	16.8	15.4	38.3	26.2	2.6	0.7	100.0	24.7	24.1	27.0	7.4	15.1	1.7	100.0	360	

Background characteristics	Drinking practices during diarrhoea:							Eating practices during diarrhoea:							Number of children aged 0-59 months with diarrhoea
	Child was given to drink: Much less	Child was given to drink: Somewhat less	Child was given to drink: About the same	Child was given to drink: More	Child was given to drink: Nothing	Missing/ DK	Sudan	Child was given to eat: Much less	Child was given to eat: Somewhat less	Child was given to eat: About the same	Child was given to eat: More	Child was given to eat: Nothing	Missing/ DK	Sudan	
Central Darfur	18.7	19.2	29.4	8.3	17.1	7.4	100.0	14.2	21.4	33.2	6.3	19.3	5.6	100.0	79
East Darfur	19.0	24.7	17.0	28.5	7.6	3.3	100.0	18.6	33.7	17.8	2.3	24.2	3.6	100.0	178
<b>Area</b>															
Urban	22.3	22.7	29.6	21.0	3.9	0.4	100.0	19.9	30.4	24.2	6.5	18.2	0.7	100.0	1,216
Rural	16.7	28.3	26.3	18.1	9.2	1.3	100.0	17.6	32.6	24.3	5.8	17.9	1.8	100.0	2,872
<b>Age</b>															
0-11	18.2	22.8	27.7	10.1	20.1	1.1	100.0	14.6	19.0	13.3	3.7	47.6	1.8	100.0	933
12-23	20.3	30.5	23.6	20.1	4.9	0.6	100.0	20.4	34.1	25.7	5.0	13.4	1.4	100.0	1,028
24-35	18.3	26.0	31.8	19.5	3.1	1.3	100.0	18.7	33.5	30.8	6.4	9.1	1.5	100.0	870
36-47	17.3	29.0	27.4	22.0	3.4	0.9	100.0	19.4	39.7	24.5	8.7	6.2	1.4	100.0	763
48-59	16.4	23.5	26.3	27.9	4.6	1.3	100.0	18.4	37.3	30.4	7.8	5.1	1.0	100.0	494
<b>Mother's education</b>															
None	17.9	26.0	28.4	18.7	7.7	1.3	100.0	18.9	31.7	24.7	5.9	16.9	1.9	100.0	1,618
Primary	17.5	29.5	24.9	18.1	9.3	0.8	100.0	17.7	32.8	23.4	5.3	19.7	1.1	100.0	1,525
Secondary	24.2	23.1	27.6	20.4	4.1	0.6	100.0	19.7	29.8	25.1	6.8	17.5	1.1	100.0	648
Higher	12.7	23.7	33.2	22.1	7.0	1.3	100.0	15.1	33.9	24.6	8.9	16.1	1.5	100.0	295
Missing/DK	*	*	*	*	*	*	100.0	*	*	*	*	*	*	100.0	2
<b>Wealth index quintile</b>															
Poorest	19.3	24.8	27.8	19.6	6.3	2.3	100.0	22.3	33.6	20.3	5.9	14.4	3.5	100.0	845
Second	17.1	31.0	27.6	15.5	7.5	1.4	100.0	16.0	33.8	27.0	4.9	16.8	1.5	100.0	750
Middle	22.7	24.6	22.8	20.2	9.1	0.7	100.0	20.8	28.2	23.9	6.0	20.4	0.7	100.0	834
Fourth	15.2	26.8	28.4	18.4	10.7	0.5	100.0	14.9	31.4	25.9	5.8	20.8	1.1	100.0	995
Richest	18.0	26.6	30.3	21.6	3.3	0.1	100.0	17.7	33.4	24.3	7.7	16.3	0.5	100.0	662

[\*] Based on less than 25 unweighted cases and has been suppressed

() Figures that are based on 25-49 unweighted cases

Table CH.7 shows the percentage of children receiving ORS, various types of recommended homemade fluids, and zinc during an episode of diarrhoea. Since children were likely to be given more than one type of liquid, the percentages do not necessarily add to 100. Of the children with diarrhoea in the two weeks prior to the survey, about 14.5 percent of them received fluids from ORS packets or pre-packaged ORS fluids, and 88.9 percent received recommended homemade fluids (fresh juice and rice with water), 15.2 percent received zinc in one form or another. Over ninety (90.4 percent) of children with diarrhoea received one or more of the recommended home treatments (i.e., were treated with ORS or any recommended homemade fluid). Percentage of children who received the recommended homemade fluid in form of fresh juice, rice with water and water were 48.0 percent, 47.7 percent and 85.8 respectively. Treatment with ORS (fluid from packet) during diarrhoea episodes varies from urban to rural area; 20.7 percent in urban compared to 11.8 percent in rural areas. However there was no noticeable difference between children in urban and rural areas for the reception of ORS or any recommended homemade fluid.

**Table CH.7: Oral rehydration solutions, recommended homemade fluids, and zinc**

Percentage of children age 0-59 months with diarrhoea in the last two weeks, and treatment with oral rehydration salts (ORS), recommended homemade fluids, and zinc, Sudan MICS, 2014

Background characteristics	Percentage of children with diarrhoea who received:											ORS or zinc [1]	Number of children aged 0-59 months with diarrhoea
	Oral rehydration salts (ORS)			Recommended homemade fluids				ORS or any recommended homemade fluid	Zinc				
	Fluid from packers	Pre-packaged fluid	Any ORS	Fresh juice	Rice water or starch	Water	Any recommended homemade fluid		Tablet	Syrup	Any zinc		
Sudan	14.5	9.1	19.6	48.0	47.7	85.8	88.9	90.4	3.7	14.4	15.2	28.9	4,088
<b>Sex</b>													
Male	14.5	9.0	19.8	48.6	48.7	85.6	88.9	90.2	3.6	14.1	15.1	28.8	2,125
Female	14.4	9.3	19.5	47.4	46.8	86.0	88.9	90.5	3.7	14.7	15.4	29.0	1,963
<b>State</b>													
Northern	11.3	1.4	11.3	72.7	46.0	92.3	95.1	96.1	.7	7.0	7.0	17.6	56
River Nile	21.9	12.3	27.4	60.7	49.4	88.0	94.4	94.4	1.2	10.8	10.8	30.8	88
Red Sea	(34.6)	(23.7)	(37.5)	(68.6)	(59.8)	(81.6)	(90.1)	(95.2)	(17.0)	(19.8)	(27.9)	(53.0)	23
Kassala	34.8	14.4	41.8	40.7	42.1	77.6	82.5	86.4	2.7	21.2	22.5	51.8	164
Gadarif	11.9	10.9	19.8	53.6	50.5	89.8	92.3	92.3	1.7	22.4	22.4	37.3	168
Khartoum	19.8	9.5	22.3	73.2	64.3	88.1	93.0	94.6	2.2	14.5	14.5	30.6	742
Gezira	4.0	11.7	15.2	39.1	37.2	85.9	86.5	87.4	.8	8.9	8.9	22.4	749
White Nile	11.1	6.3	15.7	52.1	52.9	89.5	91.8	93.0	3.1	13.0	13.4	24.8	257
Sinnar	8.8	7.8	13.9	59.6	42.1	91.1	93.2	93.8	2.2	12.5	13.9	24.0	156
Blue Nile	22.7	6.4	27.6	54.7	70.0	93.7	94.2	95.5	2.4	9.9	11.0	31.8	141
North Kordofan	10.1	1.9	11.4	56.6	51.2	83.4	89.7	89.7	7.4	25.1	27.2	35.3	158
South Kordofan	10.2	9.7	15.9	40.8	53.5	88.7	91.9	93.4	9.9	17.2	17.9	27.4	132
West Kordofan	5.5	11.1	13.6	50.8	38.8	77.8	84.1	85.7	.8	9.9	10.7	14.4	68
North Darfor	17.6	8.7	20.2	36.1	41.1	84.7	87.9	90.6	5.6	13.4	13.7	25.1	450

Background characteristics	Percentage of children with diarrhoea who received:											ORS or zinc [1]	Number of children aged 0-59 months with diarrhoea
	Oral rehydration salts (ORS)			Recommended homemade fluids				ORS or any recommend ed homemade fluid	Zinc				
	Fluid from packers	Pre-packaged fluid	Any ORS	Fresh juice	Rice water or starch	Water	Any recommend ed homemade fluid		Tablet	Syrup	Any zinc		
West Darfor	29.3	10.3	32.8	39.2	65.4	84.2	87.1	89.9	14.6	22.0	26.6	46.6	117
South Darfor	10.6	6.3	15.5	28.9	38.1	86.6	89.6	90.4	5.2	19.3	22.3	28.2	360
Central Darfor	23.7	16.8	26.4	27.3	41.7	69.4	73.4	76.0	11.4	29.4	31.9	47.5	79
East Darfor	14.3	4.5	15.2	25.2	27.3	73.6	76.4	77.7	2.3	4.6	5.4	18.1	178
Area													
Urban	20.7	10.3	24.8	62.7	58.8	87.8	91.6	93.1	4.9	19.5	20.1	35.6	1,216
Rural	11.8	8.6	17.5	41.9	43.1	85.0	87.8	89.2	3.1	12.2	13.2	26.0	2,872
Age													
0-11	12.2	7.7	16.7	27.5	29.1	67.0	69.6	73.2	3.8	15.5	16.1	26.8	933
12-23	16.7	8.8	21.6	55.8	52.8	90.2	94.0	95.2	2.5	15.1	15.8	30.8	1,028
24-35	15.0	10.9	20.9	52.9	52.6	91.6	95.4	96.1	3.8	14.1	14.7	29.9	870
36-47	14.5	10.2	20.6	52.4	53.7	92.3	94.0	94.9	4.7	12.7	14.0	28.5	763
48-59	13.1	7.9	17.5	55.4	54.8	91.9	95.4	95.5	3.7	13.9	15.1	27.3	494
Wealth index quintile													
Poorest	12.6	7.5	15.9	27.1	37.1	83.0	85.8	87.1	4.7	12.6	14.2	24.2	845
Second	15.7	7.3	19.1	38.8	45.1	83.7	88.1	89.4	5.2	17.7	19.0	30.9	750
Middle	16.1	9.0	21.1	49.1	54.0	87.2	89.2	91.7	4.4	12.7	13.6	28.9	834
Fourth	13.7	11.2	21.2	53.5	49.8	85.7	89.2	89.9	2.2	14.6	15.0	30.0	995
Richest	14.4	10.4	20.7	75.7	53.4	90.1	93.0	94.6	1.8	14.6	14.6	30.7	662

1 MICS indicator 3.11 - Diarrhoea treatment with oral rehydration salts (ORS) and zinc

( ) Figures that are based on 25-49 unweighted cases

The figure below shows the distribution of children under age 5 with diarrhoea who received ORS or recommended homemade fluids.

**Figure CH.2: Children under age 5 with diarrhoea who received ORS or recommended homemade fluids, Sudan MICS, 2014**

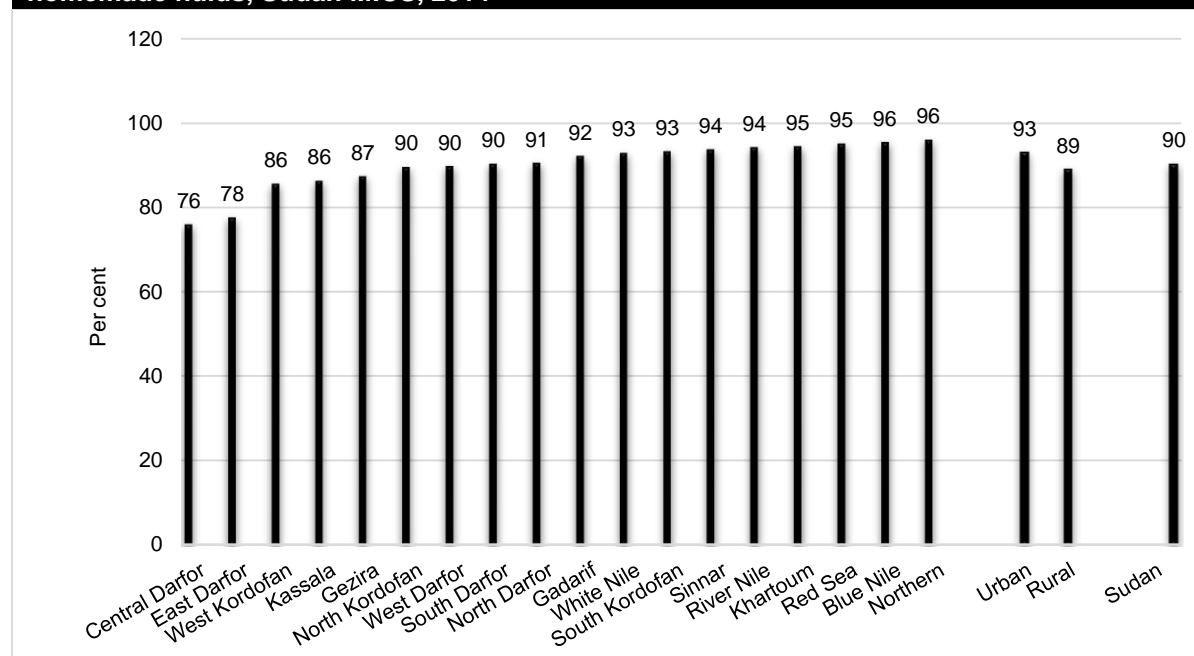


Table CH.8 provides the proportion of children age 0-59 months with diarrhoea in the last two weeks who received oral rehydration therapy with continued feeding, and who received other treatments. Overall, 33.7 percent of children with diarrhoea received ORS or increased fluids, 91.0 percent received ORT (ORS or recommended homemade fluids or increased fluids). Combining the information in Table CH.6 with that of Table CH.7 on oral rehydration therapy, it is observed that 59.3 percent of children received ORT with continued feeding as recommended. There are notable differences in the home management of diarrhoea by background characteristics. The figures for ORT and continued feeding in table CH.8 range from 47.2 percent in Red Sea State to 74.9 percent in Gadarif State. There is also a notable difference among children from poorest homes with 55.5 percent and those from richest homes with 63.9 percent for ORT and continued feeding.



**Table CH.8: Oral rehydration therapy with continued feeding and other treatments**

Percentage of children age 0-59 months with diarrhoea in the last two weeks who were given oral rehydration therapy with continued feeding and percentage who were given other treatments, Sudan MICS, 2014

Background characteristics	Children with diarrhoea who were given:														Not given any treatment or drug	Number of children age 0-59 months with diarrhoea in the last two weeks
	Zinc	ORS or increased fluids	ORT (ORS or recommended homeade fluids or increased fluids)	ORT with continued feeding [1]	Other treatment:											
					Pill or syrup: Antibiotic	Pill or syrup: Antimotility	Pill or syrup : Other	Pill or syrup: Unknown	Injection : Antibiotic	Injection: Non-antibiotic	Injection: Unknown	Intravenous	Home remedy, herbal medicine	Other		
<b>Sudan</b>	15.2	33.7	91.0	59.3	15.0	13.8	0.8	5.0	1.3	0.1	0.3	0.3	5.9	5.6	5.6	4,088
<b>Sex</b>																
Male	15.1	33.7	90.9	57.7	17.3	15.0	0.7	5.4	1.6	0.0	0.4	0.3	5.3	5.5	5.8	2,125
Female	15.4	33.8	91.1	61.1	12.6	12.4	0.9	4.7	0.9	0.2	0.1	0.3	6.6	5.7	5.4	1,963
<b>State</b>																
Northern	7.0	33.6	97.1	64.4	13.0	22.2	0.0	4.5	0.0	0.0	0.0	2.8	22.5	4.4	.9	56
River Nile	10.8	47.9	97.2	62.3	30.1	13.6	0.3	1.9	3.4	0.0	0.0	0.0	6.7	3.9	2.0	88
Red Sea	(27.9)	(45.8)	(95.2)	(47.2)	(16.3)	(26.2)	(1.8)	(6.2)	(0.0)	(0.0)	(0.0)	(0.0)	(22.2)	(5.1)	(2.7)	23
Kassala	22.5	45.8	86.4	54.0	8.0	16.8	1.5	1.4	0.0	0.0	0.0	0.0	7.5	1.4	8.3	164
Gadarif	22.4	35.6	92.3	74.9	33.2	13.0	1.2	1.6	2.3	0.0	.4	0.0	6.7	6.7	3.2	168
Khartoum	14.5	36.8	94.8	59.7	25.4	26.5	0.6	2.8	2.3	0.2	.0	.6	5.5	.8	2.8	742
Gezira	8.9	29.2	89.0	58.0	8.5	10.4	0.3	4.4	0.9	0.3	1.3	.2	3.4	8.4	7.6	749
White Nile	13.4	31.3	93.0	66.6	16.4	17.5	0.0	1.9	0.9	0.0	.4	1.2	7.0	3.0	4.4	257
Sinnar	13.9	39.8	95.7	59.8	14.6	21.0	0.0	4.1	0.3	0.0	0.0	.7	2.5	2.6	1.7	156
Blue Nile	11.0	41.1	95.8	63.7	15.6	19.7	0.5	21.5	0.0	0.0	0.0	0.0	3.0	8.7	1.3	141
North Kordofan	27.2	25.4	89.7	56.3	18.5	3.6	2.4	.6	2.7	0.0	0.0	0.0	4.6	3.7	5.5	158
South Kordofan	17.9	22.4	93.7	72.1	6.4	15.5	6.0	8.1	2.1	0.0	0.0	0.0	6.3	8.5	3.3	132
West Kordofan	10.7	16.9	85.7	53.8	23.7	7.6	.7	.0	4.3	0.0	0.0	0.0	4.3	10.5	8.9	68
North Darfur	13.7	28.3	90.9	57.2	11.9	5.8	1.0	7.7	.4	0.0	0.0	0.0	2.0	4.5	7.4	450
West Darfur	26.6	41.4	90.3	61.4	12.4	5.1	0.0	1.8	1.6	0.0	0.0	0.0	9.5	4.4	5.1	117

Background characteristics	Children with diarrhoea who were given:														Not given any treatment or drug	Number of children age 0-59 months with diarrhoea in the last two weeks
	Zinc	ORS or increased fluids	ORT (ORS or recommended homemade fluids or increased fluids)	ORT with continued feeding [1]	Other treatment:											
					Pill or syrup: Antibiotic	Pill or syrup: Antimotility	Pill or syrup : Other	Pill or syrup: Unknown	Injection : Antibiotic	Injection: Non-antibiotic	Injection: Unknown	Intravenous	Home remedy, herbal medicine	Other		
South Darfur	22.3	37.5	91.1	56.8	7.8	9.5	0.0	7.7	0.9	0.0	0.0	0.0	12.8	10.1	6.2	360
Central Darfur	31.9	31.1	76.2	49.0	7.7	4.8	1.1	11.1	0.6	0.4	0.0	0.0	6.3	7.4	11.0	79
East Darfur	5.4	35.4	78.8	47.2	7.4	1.0	0.0	8.6	0.3	0.0	0.0	0.0	7.8	14.5	13.6	178
Area																
Urban	20.1	38.8	93.4	58.4	16.9	20.3	0.7	3.6	1.5	0.2	0.1	.5	6.0	3.5	3.7	1,216
Rural	13.2	31.6	90.0	59.7	14.2	11.0	0.8	5.7	1.2	0.1	0.4	.2	5.9	6.6	6.4	2,872
Age																
0-11	16.1	24.3	74.1	30.8	13.0	11.5	0.4	4.2	0.7	0.0	1.0	.2	4.8	4.1	16.6	933
12-23	15.8	35.5	95.2	62.2	18.5	14.8	0.6	5.3	1.7	0.0	0.1	.5	5.7	6.2	3.1	1,028
24-35	14.7	34.9	96.7	69.2	14.8	15.7	0.7	5.0	1.3	0.0	0.2	.1	5.7	5.4	2.4	870
36-47	14.0	37.6	95.6	69.9	13.1	12.4	1.6	6.3	1.4	0.0	0.0	.4	6.8	7.0	2.2	763
48-59	15.1	39.9	97.3	73.5	15.1	14.5	0.5	4.2	1.2	0.0	0.0	.1	7.7	5.5	0.8	494
Wealth index quintile											0.0					
Poorest	14.2	31.3	87.7	55.5	13.0	5.7	0.8	6.6	0.7	0.0	0.0	0.0	7.4	6.5	8.2	845
Second	19.0	30.1	89.9	61.8	11.5	10.3	1.0	6.7	1.2	0.0	0.2	0.0	7.5	7.8	6.2	750
Middle	13.6	35.8	92.3	56.0	18.4	17.0	0.6	7.2	.9	0.3	1.1	.5	4.2	6.7	3.4	834
Fourth	15.0	34.9	90.9	60.5	13.4	15.7	1.0	2.7	2.1	0.2	0.0	.4	4.8	4.3	6.1	995
Richest	14.6	36.6	95.1	63.9	19.8	20.9	0.2	2.0	1.1	0.0	0.1	.5	6.4	2.7	3.6	662

[1] MICS indicator 3.12 - Diarrhoea treatment with oral rehydration therapy (ORT) and continued feeding

( ) Figures that are based on 25-49 unweighted cases

Figure CH.3 shows slight difference between urban and rural in case of the children under five with diarrhoea who received the distribution of children under age 5 with diarrhoea who received ORT (ORS, RHF, or increased fluids) and continued feeding. A higher percentage of children in urban areas (58.4 percent) received ORT with continued feeding than those in rural areas (59.7 percent). The apparent minimal difference among the children along the wealth index spectrum on ORT with continued feeding treatment of children with diarrhoea can be attributed to the free access to ORT in public health facilities by all the families.

**Figure CH.3: Children under age 5 with diarrhoea who received ORT (ORS, RHF, or increased fluids) and continued feeding, Sudan MICS, 2014**

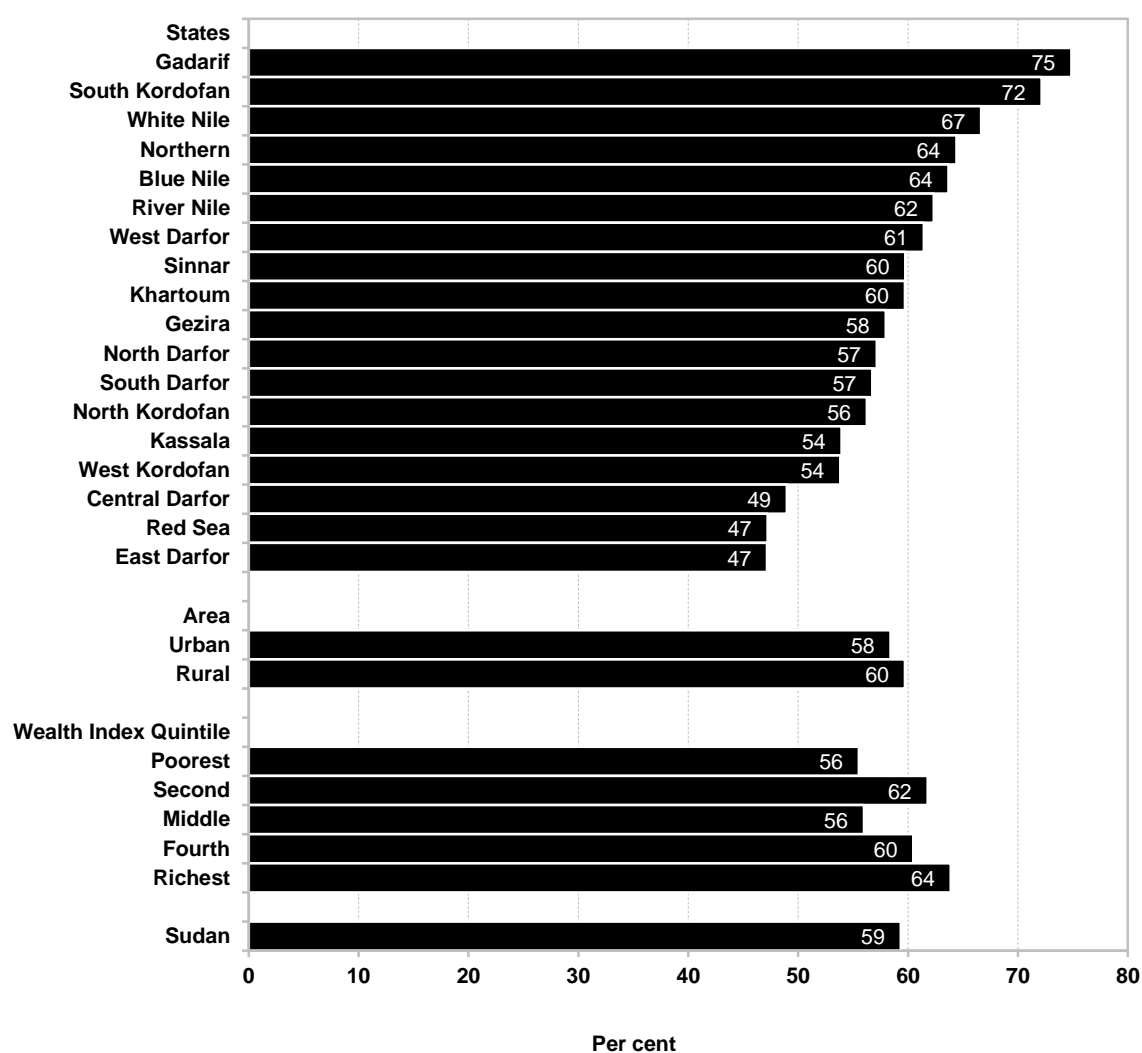


Table CH.9 provides information on the source of ORS and zinc for children who benefitted from these treatments; ORS (63.8 percent) and zinc (59.5 percent). The percentage of children who were given ORS and zinc as treatment for diarrhoea were 19.6 percent, 15.2 percent respectively. For both ORS and zinc, the main source is from providers in the public health facilities. The source of ORS is 25.1 percent in public health facilities as compared to 3.6 percent from private service providers. Similar observations were reported for the source of zinc supply as treatment for diarrhoea.

**Figure CH.3a: Source of ORS and ZINC, Sudan MICS, 2014**

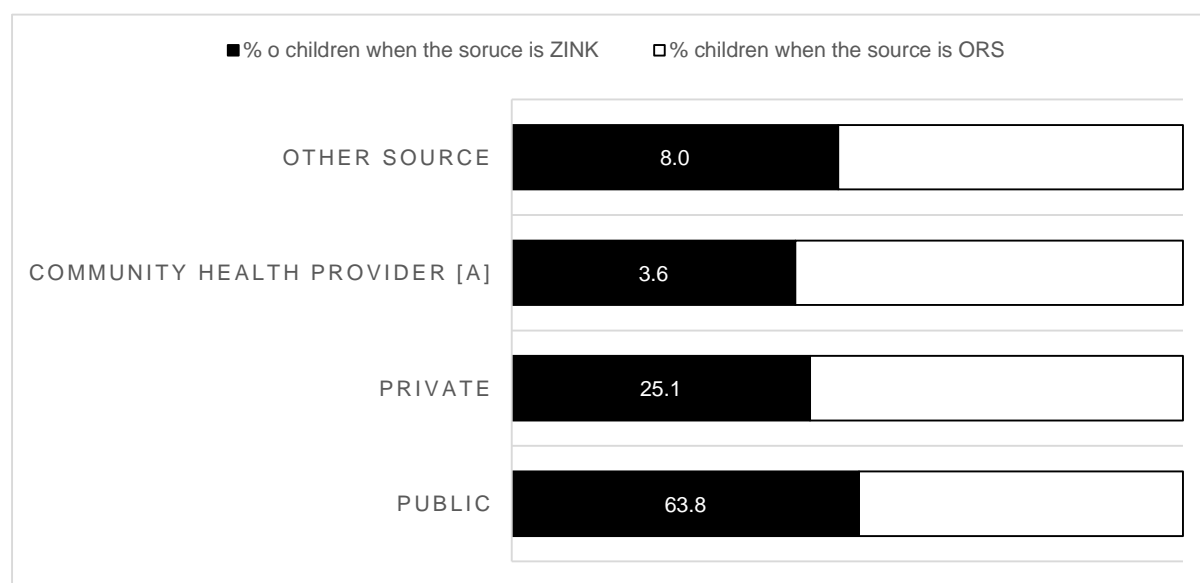


Table CH.9: Source of ORS and zinc

Percentage of children age 0-59 months with diarrhoea in the last two weeks who were given ORS, and percentage given zinc, by the source of ORS and zinc, Sudan MICS, 2014

Background characteristics	Percentage of children who were given as treatment for diarrhoea:		Number of children age 0-59 months	Percentage of children for whom the source of ORS was:						Numbrer of children age 0-59 months	Percentage of children for whom the source of zinc was:						Number of children age 0-59 months
	ORS	Zinc		Health facilities or providers					A health facility or provider [b]		Health facilities or providers					A health facility or provider [b]	
				Public	Private	Community health provider [a]	Other source	DK/ Missing			Public	Private	Community health provider [a]	Other source	DK/ Missing		
<b>Sudan</b>	19.6	15.2	4,088	63.8	25.1	3.6	8.0	3.1	88.9	803	59.5	31.4	4.9	8.5	0.7	90.9	622
<b>Sex</b>																	
Male	19.8	15.1	2,125	61.4	26.3	3.0	9.9	2.4	87.6	421	58.1	32.1	4.9	9.1	0.8	90.1	321
Female	19.5	15.4	1,963	66.4	23.8	4.3	6.0	3.8	90.2	382	61.0	30.6	5.0	7.9	0.5	91.6	301
<b>State</b>																	
Northern	11.3	7.0	56	*	*	*	*	*	*	6	*	*	*	*	*	*	4
River Nile	27.4	10.8	88	(68.5)	(23.7)	(3.4)	(3.8)	(3.9)	(92.2)	24	*	*	*	*	*	*	10
Red Sea	37.5	27.9	23	*	*	*	*	*	*	9	*	*	*	*	*	*	7
Kassala	41.8	22.5	164	90.9	4.5	4.2	3.7	.9	95.4	68	(73.8)	(21.5)	(.0)	(4.7)	(0.0)	(95.3)	37
Gadarif	19.8	22.4	168	(64.5)	(16.4)	(1.2)	(17.5)	(1.6)	(80.9)	33	(76.4)	(23.6)	(2.5)	(.0)	(0.0)	(100.0)	38
Khartoum	22.3	14.5	742	54.0	31.5	.0	9.6	4.9	85.5	165	58.6	41.4	5.4	0.0	0.0	100.0	108
Gezira	15.2	8.9	749	(46.8)	(51.8)	(4.5)	(1.4)	(0.0)	(98.6)	114	(41.7)	(45.1)	(0.0)	(13.2)	(0.0)	(86.8)	66
White Nile	15.7	13.4	257	(71.8)	(22.1)	(3.0)	(6.1)	(0.0)	(93.9)	40	(72.2)	(21.7)	(.0)	(3.5)	(2.6)	(93.9)	35
Sinnar	13.9	13.9	156	(67.5)	(4.2)	(0.0)	(11.2)	(17.0)	(71.8)	22	(58.6)	(37.6)	(3.8)	(3.9)	(0.0)	(96.1)	22
Blue Nile	27.6	11.0	141	(91.2)	(3.9)	(0.0)	(4.9)	(0.0)	(95.1)	39	(80.1)	(15.5)	(0.0)	(4.5)	(0.0)	(95.5)	15
North Kordofan	11.4	27.2	158	*	*	*	*	*	*	18	(56.1)	(37.6)	(10.6)	(6.3)	(0.0)	(93.7)	43
South Kordofan	15.9	17.9	132	(73.3)	(12.1)	(11.6)	(6.4)	(8.3)	(85.3)	21	(75.6)	(23.1)	(2.2)	(0.0)	(1.3)	(98.7)	24
West Kordofan	13.6	10.7	68	*	*	*	*	*	*	9	*	*	*	*	*	*	7
North Darfur	20.2	13.7	450	61.4	15.7	8.1	18.6	4.3	77.1	91	66.0	16.7	7.2	13.6	3.7	82.7	62
West Darfur	32.8	26.6	117	84.2	12.6	0.0	0.9	2.3	96.8	38	79.6	18.0	5.7	2.4)	0.0	97.6	31
South Darfur	15.5	22.3	360	39.7	47.5	10.1	8.1	4.7	87.2	56	26.1	44.4	12.6	29.4	.0	70.6	80

Background characteristics	Percentage of children who were given as treatment for diarrhoea:		Number of children age 0-59 months	Percentage of children for whom the source of ORS was:						Numby er of childre n age 0-59 months	Percentage of children for whom the source of zinc was:						Numbe r of childre n age 0-59 months
	ORS	Zinc		Health facilities or providers					A health facility or provide r [b]		Health facilities or providers					A health facility or provider [b]	
				Public	Private	Communi ty health provider [a]	Other source	DK/ Missing			Public	Private	Communi ty health provide r [a]	Other sourc e	DK/ Missin g		
Central Darfur	26.4	31.9	79	84.1	3.7	0.0	8.7	3.4	87.9	21	73.7	12.4	2.3	11.6	2.3	86.1	25
East Darfur	15.2	5.4	178	69.4	(26.1)	(3.7)	(4.5)	(.0)	(95.5)	27	*	*	*	*	*	*	10
Area																	
Urban	24.8	20.1	1,216	63.9	25.7	.2	7.3	3.1	89.7	302	63.1	35.9	.7	.4	.7	98.9	244
Rural	17.5	13.2	2,872	63.7	24.7	5.6	8.5	3.1	88.4	501	57.2	28.5	7.7	13.7	.6	85.6	378
Age																	
0-11	16.7	16.1	933	72.4	18.3	2.4	6.3	3.0	90.7	156	67.8	25.2	4.4	6.4	.6	93.0	150
12-23	21.6	15.8	1,028	65.4	23.6	4.7	7.8	3.2	89.0	222	58.4	36.1	2.0	4.3	1.2	94.5	163
24-35	20.9	14.7	870	57.8	32.3	5.4	6.2	3.7	90.1	182	47.0	39.2	7.6	13.7	.1	86.2	127
36-47	20.6	14.0	763	52.2	32.1	.6	14.3	1.4	84.3	157	56.7	34.1	6.9	9.3	.0	90.7	107
48-59	17.5	15.1	494	77.7	13.3	4.3	4.4	4.5	91.0	86	70.4	16.3	5.2	11.7	1.5	86.8	75
Wealth index quintile																	
Poorest	15.9	14.2	845	66.2	17.6	10.7	12.9	3.3	83.8	135	46.2	25.4	10.0	26.5	1.9	71.6	120
Second	19.1	19.0	750	71.0	20.7	6.9	6.8	1.5	91.7	143	69.6	24.8	7.4	4.6	1.0	94.3	143
Middle	21.1	13.6	834	67.4	16.3	1.9	14.0	2.3	83.7	176	69.0	26.2	1.4	4.5	.3	95.2	114
Fourth	21.2	15.0	995	60.3	35.3	.3	3.4	1.1	95.6	211	62.2	31.9	.6	5.9	.0	94.1	149
Richest	20.7	14.6	662	54.6	32.7	.4	4.2	8.6	87.3	137	45.8	53.7	6.0	.5	.0	99.5	97

[a] Community health provider includes both public (Community health worker and Mobile/Outreach clinic) and private (Mobile clinic) health facilities

[b] Includes all public and private health facilities and providers

[\*] Based on less than 25 unweighted cases and has been suppressed

( ) Figures that are based on 25-49 unweighted cases

### 6.3.2 Acute Respiratory Infections

Symptoms of ARI are collected during the Sudan MICS to capture pneumonia disease, the leading cause of death in children under five. Once diagnosed, pneumonia is treated effectively with antibiotics. Studies have shown a limitation in the survey approach of measuring pneumonia because many of the suspected cases identified through surveys are in fact, not true pneumonia.<sup>20</sup> While this limitation does not affect the level and patterns of care-seeking for suspected pneumonia, it limits the validity of the level of treatment of pneumonia with antibiotics, as reported through household surveys. The treatment indicator described in this report must therefore be taken with caution, keeping in mind that the accurate level is likely higher.

**Table CH.10: Care-seeking for and antibiotic treatment of symptoms of acute respiratory infection ARI**

Percentage of children age 0-59 months with symptoms of ARI in the last two weeks for whom advice or treatment was sought, by source of advice or treatment, and percentage of children with symptoms who were given antibiotics, Sudan MICS, 2014

MICS, 2014

Background characteristics	Percentage of children with symptoms of ARI for whom:					No advice or treatment sought	Percentage of children with symptoms of ARI in the last two weeks who were given antibiotics [2]	Number of children age 0-59 months with symptoms of ARI in the last two weeks [d]
	Advice or treatment was sought from:			Other source	A health facility or provider [1], [b]			
	Health facilities or providers: Public	Health facilities or providers: Private	Health facilities or providers: Community health provider [a]					
<b>Sudan</b>	42.1	15.1	4.5	9.2	48.3	34.8	59.0	2,500
<b>Sex</b>								
Male	41.5	16.2	4.1	9.8	48.1	33.9	59.5	1,316
Female	42.8	13.8	4.9	8.6	48.5	35.8	58.4	1,185
<b>State</b>								
Northern	55.5	17.8	.0	1.7	64.3	26.7	71.6	29
River Nile	62.3	16.3	5.2	(4.5	74.4	15.4	78.0	44
Red Sea	*	*	*	*	*	*	*	14
Kassala	51.6	7.7	5.0	2.6	56.0	38.0	63.4	75
Gadarif	60.8	11.7	5.3	3.8	69.6	27.7	72.8	81
Khartoum	41.1	20.4	.0	10.4	49.0	29.0	61.4	229
Gezira	58.8	11.9	4.6	3.9	63.6	25.4	65.5	361
White Nile	54.6	13.7	5.5	12.4	64.0	22.2	75.4	180
Sinnar	52.3	9.1	2.1	13.7	56.3	25.8	60.8	130
Blue Nile	58.6	8.7	.4	6.4	59.5	28.5	62.6	89
North Kordofan	49.6	11.5	9.4	7.8	54.9	31.1	66.7	144
South Kordofan	42.5	8.7	1.7	8.0	43.3	39.7	68.0	129
West Kordofan	52.6	15.8	14.4	7.5	60.2	27.6	59.2	45
North Darfur	25.3	15.5	2.6	5.1	29.2	54.2	46.5	373
West Darfur	63.1	12.2	2.5	8.5	67.8	21.6	54.2	44
South Darfur	21.7	23.4	10.1	11.1	34.8	45.1	49.0	342
Central Darfur	45.7	5.2	0.5	17.8	46.5	33.6	54.1	38
East Darfur	17.1	21.7	3.1	30.1	19.5	37.2	42.0	154
<b>Area</b>								
Urban	42.7	24.4	1.2	8.1	54.7	26.8	64.3	677
Rural	41.9	11.6	5.7	9.7	45.9	37.8	57.0	1,823
<b>Age</b>								
0-11	43.7	13.4	3.8	11.5	49.9	32.9	60.7	447
12-23	44.0	17.0	4.7	8.4	52.3	32.2	58.4	488
24-35	43.2	12.6	4.6	6.4	48.6	38.3	58.8	518
36-47	39.1	17.0	4.2	10.1	46.1	35.0	61.3	609
48-59	41.3	14.8	5.1	10.1	44.7	35.5	54.9	438
<b>Wealth index quintile</b>								
Poorest	21.9	14.0	7.3	13.7	27.2	51.4	43.3	627
Second	39.3	16.6	6.0	10.7	45.4	35.6	58.5	580
Middle	58.3	9.3	3.1	5.7	61.9	27.2	65.2	556
Fourth	49.1	13.4	1.5	7.4	54.1	30.8	61.0	406

<sup>20</sup>Campbell, H. et al. 2013. *Measuring Coverage in MNCH: Challenges in Monitoring the Proportion of Young Children with Pneumonia Who Receive Antibiotic Treatment*. PLoS Med 10(5): e1001421. doi:10.1371/journal.pmed.1001421

Background characteristics	Percentage of children with symptoms of ARI for whom:				No advice or treatment sought	Percentage of children with symptoms of ARI in the last two weeks who were given antibiotics [2]	Number of children age 0-59 months with symptoms of ARI in the last two weeks [d]	
	Advice or treatment was sought from:							
	Health facilities or providers: Public	Health facilities or providers: Private	Health facilities or providers: Community health provider [a]					
Richest	49.6	26.0	2.4	6.6	63.3	19.9	76.6	331

[1] MICS indicator 3.13 - Care-seeking for children with acute respiratory infection (ARI) symptoms

[2] MICS indicator 3.14 - Antibiotic treatment for children with ARI symptoms

[a] Community health providers includes both public (Community health worker and Mobile/Outreach clinic) and private (Mobile clinic) health facilities

[b] Includes all public and private health facilities and providers, but excludes private pharmacy

[c] Includes all public and private health facilities and providers

[d] Children with symptoms of ARI are those who had an illness with a cough accompanied by a rapid or difficult breathing  
Sudan MICS did not include question on symptoms due to a problem in the chest, or both a problem in the chest and a blocked nose

( ) Figures that are based on 25-49 unweighted cases [\*] Based on less than 25 unweighted cases and has been suppressed

Table CH.10 presents the percentage of children with symptoms of ARI in the two weeks preceding the survey for whom care was sought, by source of care and the percentage who received antibiotics. Approximately half (48.3 percent) of children age 0-59 months with symptoms of ARI were taken to a qualified provider.

Table CH.10 also presents the use of antibiotics for the treatment of children under 5 years with symptoms of ARI by sex, age, state, area, age, and socioeconomic factors. In Sudan, 59.0 percent of under-5 children with symptoms of ARI received antibiotics during the two weeks prior to the survey. The percentage was considerably higher in urban (64.3 percent) than in rural areas (57.0 percent, and ranged from 49.0 percent in South Darfur state to 78.0 percent in River Nile state. The table also shows that antibiotic treatment of ARI symptoms is low among the poorest households and among children whose mothers/caretakers have less than secondary education. The use of antibiotics increases with the age of the child.

With regard to the point of treatment among children with symptoms of ARI who were treated with antibiotics, Table CH. 10 shows treatment was mostly received from public health facilities (42.1 percent). Treatment was received in 4.5 percent of cases from community health workers.

Mothers' knowledge of danger signs is an important determinant of care-seeking behaviour. In the Sudan MICS 2014, mothers or caretakers were asked to report symptoms that would cause them to take a child under-five for care immediately at a health facility. Issues related to knowledge of danger signs of pneumonia are presented in Table CH.11. Knowledge of at least the two danger signs of pneumonia, i.e. fast and/or difficult breathing would cause women aged 15-49 years who are mothers or caretakers of under 5 children to take them immediately to a health facility for treatment.



**Table CH.11: Knowledge of the two danger signs of pneumonia**

Percentage of women age 15-49 years who are mothers or caretakers of children under age 5 by symptoms that would cause them to take a child under age 5 immediately to a health facility, and percentage of mothers who recognize fast or difficult breathing as signs for seeking care immediately, Sudan MICS, 2014

Background characteristics	Percentage of mothers / caretakers who think that a child should be taken immediately to a health facility if the child:								Mothers/ caretakers who recognize at least one of the two danger signs of pneumonia (fast and/or difficult breathing)	Number of mothers / caretakers of children age 0-59 months
	Is not able to drink or breastfeed	Become sicker	Develops a fever	Has fast breathing	Has difficulty breathing	Has blood in stool	Drinking poorly	Has other symptoms		
<b>Sudan</b>	11.2	21.3	80.8	11.7	20.9	8.0	7.5	64.8	26.9	8,715
<b>State</b>										
Northern	7.2	7.6	85.6	6.0	17.6	5.5	4.8	84.1	21.5	164
River Nile	13.2	21.2	86.6	20.4	28.3	2.7	6.2	64.8	44.3	258
Red Sea	7.0	19.6	85.0	18.7	19.1	3.9	9.3	48.2	33.9	167
Kassala	6.1	14.2	82.8	6.0	17.7	5.6	3.2	43.7	20.7	328
Gadarif	20.7	28.4	92.9	13.3	25.2	13.9	15.0	63.4	27.2	476
Khartoum	36.2	32.5	89.1	29.4	43.0	31.8	21.5	71.3	51.3	1,113
Gezira	5.2	27.4	74.4	5.2	19.1	1.0	1.1	75.6	21.8	1,311
White Nile	3.6	4.7	84.6	8.3	23.4	1.6	1.2	65.4	29.6	420
Sinnar	2.7	34.2	73.8	13.0	29.4	2.9	.4	59.6	34.3	331
Blue Nile	5.0	6.8	94.0	4.8	9.4	2.7	1.2	79.6	13.9	405
North Kordofan	3.6	10.9	77.2	7.6	20.4	1.0	6.0	62.7	23.5	587
South Kordofan	4.6	14.7	80.7	6.4	9.9	1.8	1.9	51.1	14.3	297
West Kordofan	20.3	33.3	72.4	20.3	24.6	9.1	24.8	44.9	40.1	541
North Darfur	1.1	11.8	73.0	2.8	7.7	1.1	2.9	83.6	10.4	756
West Darfur	17.1	23.3	82.6	15.1	18.7	12.4	7.6	67.8	28.7	314
South Darfur	9.0	19.8	81.9	12.2	15.5	10.5	4.9	39.7	23.5	787
Central Darfur	4.5	12.6	77.9	4.4	14.1	5.0	3.9	71.2	17.8	151
East Darfur	1.1	21.9	71.4	2.2	2.3	.4	1.3	66.7	4.3	308
<b>Area</b>										
Urban	17.7	22.1	85.5	19.2	29.1	14.9	11.2	63.3	37.5	2,430
Rural	8.7	21.0	79.0	8.8	17.7	5.4	6.1	65.3	22.8	6,284
<b>Mother's education</b>										
None	8.4	21.6	79.7	9.3	14.7	5.8	6.4	60.6	20.8	3,611
Primary	11.8	20.3	81.0	11.2	22.0	7.5	7.2	66.5	27.8	2,999
Secondary	14.3	20.8	82.7	15.8	28.0	12.1	8.5	69.8	33.9	1,443
Higher	17.1	25.0	82.7	18.5	34.7	14.0	13.1	68.6	41.0	658
Missing/DK	*	*	*	*	*	*	*	*	*	3

[\*] Based on less than 25 unweighted cases and has been suppressed

Overall, 26.9 percent of women knew at least one of the two danger signs of pneumonia – fast and/or difficult breathing. The most commonly identified symptom for taking a child to a health facility is fever accounting for more than 80 percent of respondents. About 11.7 percent and 20.9 percent of mothers identified fast breathing and difficult breathing respectively as symptoms for taking children immediately to a health care provider.

The percentage of mothers/caretakers who recognised the two danger signs of pneumonia was higher among mothers with higher education (41.0 percent) compared to the low percentage (20.8 percent) for mothers with no education. The percentage of mothers/caretakers who recognized the two danger signs of pneumonia was highest in Khartoum State (51.3 percent) and lowest in East Darfur state (4.3 percent). Also there was higher percentage recognition of the two danger of signs of pneumonia among urban (37.5 percent) respondents than rural (22.8 percent) respondents.

### **6.3.3 Solid Fuel Use**

More than 3 billion people around the world rely on solid fuels for their basic energy needs, including cooking and heating. Solid fuels include biomass fuels, such as wood, charcoal, crops or other agricultural waste, dung, shrubs and straw, and coal. Cooking and heating with solid fuels leads to high levels of indoor smoke which contains a complex mix of health-damaging pollutants. The main problem with the use of solid fuels is their incomplete combustion, which produces toxic elements such as carbon monoxide, polyaromatic hydrocarbons, and sulphur dioxide (SO<sub>2</sub>), among others. Use of solid fuels increases the risks of incurring acute respiratory illness, pneumonia, chronic obstructive lung disease, cancer, and possibly tuberculosis, asthma, or cataracts, and may contribute to low birth weight of babies born to pregnant women exposed to smoke. The primary indicator for monitoring use of solid fuels is the proportion of the population using solid fuels as the primary source of domestic energy for cooking, shown in Table CH.12. Solid fuel use. Percent distribution of household members according to type of cooking fuel mainly used by the household, and percentage of household members living in households using solid fuels for cooking, Sudan MICS, 2014

Overall, 58.2 percent of the household population in Sudan use solid fuels for cooking, consisting mainly of wood (40.7 percent). Use of solid fuels is low in urban areas (40.7 percent), but high in rural areas, where they are used by two third of households members (66.1 percent). Differentials with respect to household wealth and the educational level of the household head need more attention. Very big difference between the poorest and richest which is related very much to ability and purchasing power for the options other than access wood. The findings show that use of solid fuels ranges from 99.9 percent in Central Darfur and to 12.5 percent in Khartoum State.

**Table CH.12: Solid fuel use by place of cooking**

**Percent distribution of household members in households using solid fuels by place of cooking, Sudan MICS, 2014**

Background characteristics	Percentage of household members in households using:														Solid fuels for cooking [1]	Number of household members
	Electricity	Liquefied Petroleum Gas (LPG)	Kerosene	Solid fuels: Coal / Lignite	Solid fuels: Charcoal	Solid fuels: Wood	Solid fuels: Straw / Shrubs / Grass	Solid fuels: Animal dung	Solid fuels: Agricultural crop residue	Solar	No food cooked in household	Other	Missing	Total		
<b>Sudan</b>	0.4	41.3	0.0	1.2	15.7	40.7	0.5	0.1	0.0	0.0	0.0	0.0	0.0	100.0	58.2	98,883
<b>State</b>																
Northern	2.1	81.3	0.1	0.9	1.2	14.4	0.0	0.0	0.0	0.0	0.1	0.0	0.0	100.0	16.4	2,181
River Nile	3.2	83.1	0.4	0.1	1.7	10.8	0.7	0.0	0.0	0.0	0.0	0.1	0.0	100.0	13.3	3,715
Red Sea	0.6	42.1	0.0	8.2	28.4	20.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	57.2	2,489
Kassala	0.0	25.3	0.0	0.7	35.3	37.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	100.0	74.7	4,117
Gadarif	0.1	29.8	.2	4.2	32.5	31.8	0.7	0.0	0.3	0.1	0.2	0.0	0.0	100.0	69.6	5,005
Khartoum	0.5	87.0	0.0	1.6	7.6	3.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	100.0	12.5	13,830
Gezira	0.4	83.3	0.0	0.2	7.1	8.8	0.0	0.1	0.0	0.0	0.0	0.0	0.0	100.0	16.2	16,270
White Nile0	0.1	61.7	0.0	3.3	13.3	19.7	0.8	1.0	0.0	0.0	0.1	0.0	0.0	100.0	38.2	5,016
Sinnar	0.0	42.0	0.0	0.4	18.9	37.8	0.3	0.1	0.0	0.1	0.2	0.0	0.3	100.0	57.4	3,763
Blue Nile	0.1	11.3	0.0	1.8	35.7	50.8	0.2	0.0	0.0	0.0	0.1	0.0	0.0	100.0	88.5	4,094
North Kordofan	0.1	17.2	0.0	0.2	22.0	60.0	0.4	0.0	0.0	0.0	0.1	0.1	0.0	100.0	82.5	6,359
South Kordofan	.0	2.5	0.0	3.8	24.9	66.2	2.4	0.0	0.1	0.0	0.0	0.0	0.0	100.0	97.5	2,983
West Kordofan	0.1	1.6	0.0	0.1	15.0	82.9	0.4	0.0	0.0	0.0	0.0	0.0	0.0	100.0	98.3	5,745
North Darfur	0.1	2.5	0.0	0.2	7.2	86.8	3.2	0.0	0.0	0.0	0.0	0.0	0.1	100.0	97.4	7,776
West Darfur	0.1	0.1	0.0	0.0	20.2	79.5	0.0	0.0	0.0	0.0	0.1	0.0	0.0	100.0	99.7	3,023
South Darfur	0.4	1.8	0.0	1.0	23.2	73.3	0.1	0.0	0.1	0.0	0.0	0.0	0.0	100.0	97.7	7,712
Central Darfur	0.0	.0	0.0	1.0	11.9	86.8	0.2	.0	0.0	0.0	0.0	0.0	0.1	100.0	99.9	1,646
East Darfur	0.0	1.1	0.0	0.1	13.1	85.6	0.1	.0	0.0	0.0	0.0	0.0	0.0	100.0	98.9	3,158

Background characteristics	Percentage of household members in households using:														Solid fuels for cooking [1]	Number of household members
	Electricity	Liquefied Petroleum Gas (LPG)	Kerosene	Solid fuels: Coal / Lignite	Solid fuels: Charcoal	Solid fuels: Wood	Solid fuels: Straw / Shrubs / Grass	Solid fuels: Animal dung	Solid fuels: Agricultural crop residue	Solar	No food cooked in household	Other	Missing	Total		
<b>Area</b>																
Urban	0.4	58.8	0.0	2.5	26.0	12.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	100.0	40.7	30,476
Rural	0.4	33.5	0.0	.6	11.1	53.4	0.8	0.1	0.0	0.0	0.0	0.0	0.0	100.0	66.1	68,407
<b>Education of the household head</b>																
None	0.2	23.8	0.0	1.2	16.8	57.0	0.8	0.1	0.0	0.0	0.0	0.0	0.0	100.0	76.0	45,740
Primary	0.7	46.7	0.1	1.2	16.2	34.7	0.3	0.1	0.1	0.0	0.1	0.0	0.0	100.0	52.5	28,007
Secondary	0.3	64.9	0.1	1.3	14.2	18.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0	100.0	34.7	18,812
Higher	0.6	79.6	0.0	1.2	9.4	9.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	19.8	5,564
Missing/DK	0.6	30.3	0.0	6.7	11.6	50.6	0.0	0.0	0.0	0.0	0.2	0.0	0.0	100.0	68.9	761
<b>Wealth index quintile</b>																
Poorest	0.0	0.0	0.0	0.0	2.9	96.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	100.0	99.9	19,775
Second	0.0	3.0	0.0	1.5	19.1	74.6	1.4	.3	0.1	0.0	0.1	0.0	0.0	100.0	96.9	19,776
Middle	0.3	33.6	0.1	2.9	35.4	27.2	0.2	.1	0.1	0.0	0.1	0.0	0.0	100.0	65.9	19,779
Fourth	1.0	74.5	0.1	1.2	17.9	5.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	100.0	24.3	19,773
Richest	0.6	95.1	0.0	.5	3.1	.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	4.2	19,781
[1] MICS indicator 3.15 - Use of solid fuels for cooking																

Solid fuel use by place of cooking is shown in Table CH.13. The presence and extent of indoor pollution are dependent on cooking practices, places used for cooking, as well as types of fuel used. According to the Sudan MICS, 67.8 percent of the population living in households using solid fuels for cooking, cooking food in a separate room that is used as a kitchen. The percentage of households that cook food within the dwelling unit is slightly higher in urban areas (69.8 percent) than in rural areas (67.3 percent). Percentage of households using separate rooms as kitchen are correlated positively with the level of education and with the level of income.

**Table CH.13: Solid fuel use by place of cooking**

Percent distribution of household members in households using solid fuels by place of cooking, Sudan MICS, 2014

Background characteristics	Place of cooking:						Number of household members in households using solid fuels for cooking
	In the house: In a separate room used as kitchen	In the house: Elsewhere in the house	In a separate building	Outdoors	Other place	Missing	
<b>Sudan</b>	67.8	18.8	4.7	5.6	2.7	0.3	57,587
<b>State</b>							
Northern	83.8	13.7	1.4	0.3	0.3	0.5	358
River Nile	78.1	21.1	0.0	0.7	.2	0.0	493
Red Sea	43.0	38.5	1.8	13.0	1.8	1.8	1,425
Kassala	31.1	43.8	4.1	17.4	3.2	0.4	3,076
Gadarif	54.7	29.3	0.5	8.7	6.7	0.1	3,481
Khartoum	60.3	28.6	1.0	7.3	2.8	0.0	1,726
Gezira	54.5	34.7	0.8	3.3	5.1	1.6	2,633
White Nile0	41.1	52.1	4.0	1.4	0.3	1.1	1,915
Sinnar	48.0	40.3	1.2	10.3	0.1	0.0	2,161
Blue Nile	51.1	26.4	3.2	18.4	0.8	0.1	3,623
North Kordofan	77.6	9.5	10.1	0.9	1.9	0.1	5,249
South Kordofan	46.0	27.8	17.1	6.6	2.1	0.4	2,909
West Kordofan	86.4	5.2	2.5	5.1	0.5	0.3	5,648
North Darfur	87.4	2.2	6.5	0.7	3.1	0.1	7,571
West Darfur	67.0	11.5	18.1	2.3	0.9	0.2	3,014
South Darfur	82.4	10.5	0.4	2.0	4.2	0.5	7,538
Central Darfur	68.6	14.8	1.9	9.7	4.8	0.3	1,645
East Darfur	79.6	10.9	0.8	3.7	4.8	0.2	3,123
<b>Area</b>							
Urban	69.8	18.8	3.6	4.0	3.2	0.6	12,402
Rural	67.3	18.8	5.0	6.1	2.6	0.3	45,185
<b>Education of household head</b>							
None	63.7	21.1	4.6	7.4	3.0	0.3	34,745
Primary	72.3	16.5	4.7	3.3	2.9	0.3	14,694
Secondary	76.3	12.6	6.1	2.5	1.7	0.7	6,523
Higher	83.5	12.2	3.0	0.8	0.5	0.0	1,101
Missing/DK	77.5	18.3	3.5	0.3	0.3	0.0	525
<b>Wealth index quintile</b>							
Poorest	73.1	14.3	4.8	4.3	3.4	0.1	19,761

Background characteristics	Place of cooking:						Number of household members in households using solid fuels for cooking
	In the house: In a separate room used as kitchen	In the house: Elsewhere in the house	In a separate building	Outdoors	Other place	Missing	
Second	63.3	21.0	5.5	7.3	2.6	0.3	19,167
Middle	63.2	23.5	4.1	6.5	2.4	0.3	13,032
Fourth	74.2	16.9	3.5	2.4	2.1	0.8	4,798
Richest	83.8	8.5	1.6	1.1	0.0	4.9	829

## VII. Water and Sanitation

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Safe drinking water is a basic necessity for good health. Unsafe drinking water can be a significant determinant of diseases such as cholera, typhoid, and schistosomiasis. Drinking water can also be contaminated with chemical and physical contaminants with harmful effects on human health. In addition to preventing disease, improved access to drinking water may be particularly important for women and children, especially in rural areas, who bear the primary responsibility for carrying water, often for long distances.<sup>21</sup>

Inadequate disposal of human excreta and personal hygiene are associated with a range of diseases including diarrhoeal diseases, polio, and are important determinants of malnutrition such as stunting. Improved sanitation can reduce diarrhoeal disease by more than a third<sup>22</sup>, and can substantially lessen the adverse health impacts of other disorders among millions of children in many countries.

The MDG target (7, C) is to reduce by half, between 1990 and 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.

For more details on water and sanitation and to access some reference documents, please visit [data.unicef.org](http://data.unicef.org)<sup>23</sup> or the website of the WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation<sup>24</sup>.

### 7.1 Use of Improved Water Sources

The water and sanitation module was adapted and customized to observe the water sources in Sudan. The population using *improved sources* of drinking water are those using any of the following types of supply: piped water (into dwelling, compound, yard or plot, to neighbour, public tap/standpipe), tube well/borehole, protected well, protected spring and rainwater collection. Bottled water is considered as an improved water source only if the household is using an improved water source for handwashing and cooking. The rain water collection source is not part of Sudan's MICS 2014 questionnaire (reference to questionnaire in page 340).

The distribution of the population by main source of drinking water is shown in Table WS.1. with the indicator: percent distribution of household population according to main sources of drinking water and percentage of household population using improved drinking water sources.

Table WS.1 shows use of improved water sources. Overall, 68.0 percent of the population uses an improved source of drinking water. The situation in Gadarif State is considerably worse than in other states; only 27.7 percent of the population in this state gets its drinking water from an improved source.

The table also shows that 10.2 percent of the household population used drinking water that was piped into dwelling while 26.7 percent used drinking water that was piped into their compound. Overall, more than two-fifths (41.4 percent) of the household members used drinking water that was piped into their dwelling or into their compound, yard or plot or into public tap/standpipe. Other improved sources of drinking water used by the household members include water yard/hand pump

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<sup>21</sup> WHO/UNICEF. 2012. *Progress on Drinking water and Sanitation: 2012 update*.

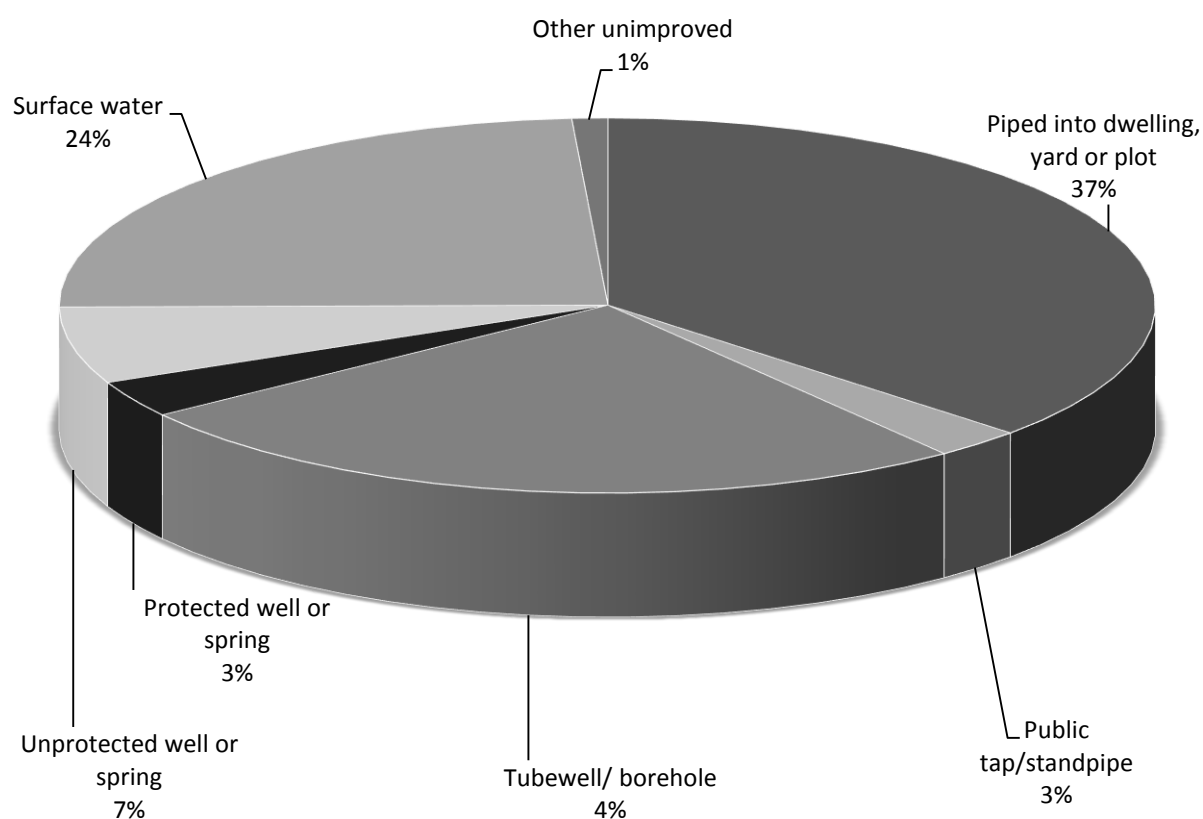
<sup>22</sup> Cairncross, S. 2010. *Water, sanitation and hygiene for the prevention of diarrhoea*. Int. J. Epidemiology 39: i193-i205.

<sup>23</sup> <http://data.unicef.org/water-sanitation>

<sup>24</sup> <http://www.wssinfo.org>

(22.4 percent), protected/covered well (3.1 percent), and protected spring (0.1 percent) and bottled water (0.1 percent). See also Figure WS.1

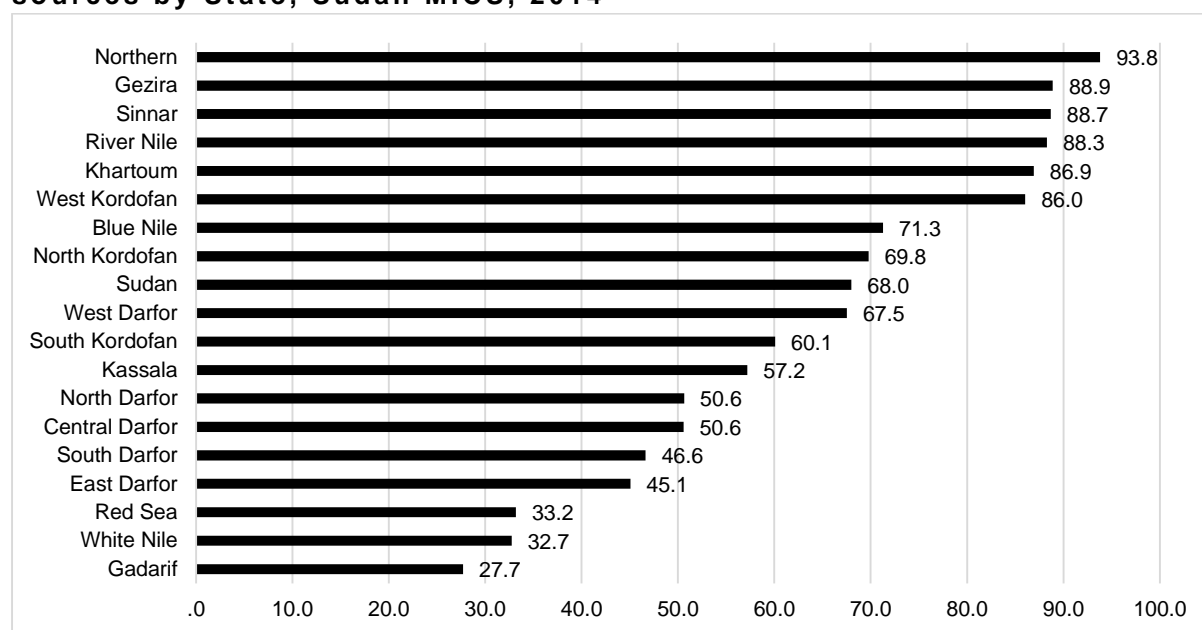
Figure WS.1: Distribution of household members by source of drinking water, Sudan MICS, 2014



Access to improved water sources by state is shown in Figure WS.1a). Differences exist between access to improved water sources by urban households 78.3 percent compared 63.5 percent of households in rural areas. Among wealth index quintiles, significant differences were observed; ranging from 45.5 percent in poorest households to 96.0 percent in the richest households (WS. Figure 1b).



**Figure WS.1a: Household members with access to improved water sources by State, Sudan MICS, 2014**



**Figure WS.1b: Household members with access to improved water sources by urban and rural residence and by wealth index quintiles, Sudan MICS, 2014**

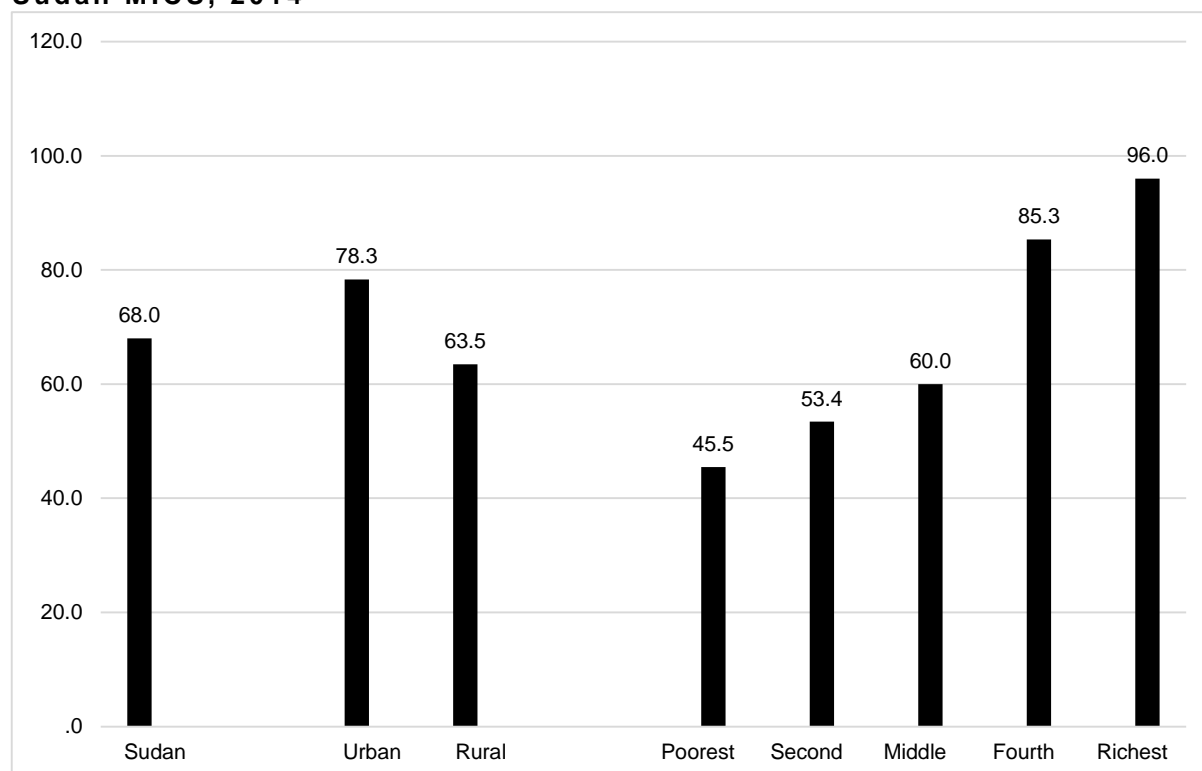


Table WS.1: Use of improved water sources

Percent distribution of household population according to main source of drinking water and percentage of household population using improved drinking water sources, Sudan MICS, 2014

Background characteristics	Main source of drinking water																		Percent age using improve d sources of drinking water [1]	Number of household members
	Improved sources								Unimproved sources											
	Piped into dwelling	Piped into compound, yard or plot	Piped to neighborhood	Public tap / stand pipe	Elevated tank, hand pump (Kharjaka)	Protected well	Protected spring	Bottled water [a]	Unprotected well	Unprotected spring	Filtered Surface water	Un-Filtered Surface water	Tanker-truck from protected sources	Tanker-truck from unprotected sources	Tanker-truck from unknown sources	Bottled water [a]	Other	Missing		
Sudan	10.2	26.7	2.9	2.6	22.4	3.1	0.1	0.0	5.3	1.3	2.4	8.3	11.5	1.9	0.3	0.0	0.9	0.2	68.0	98,883
State																				
Northern	12.7	59.2	1.4	1.6	17.9	1.1	0.0	0.0	0.1	0.0	0.7	2.2	2.2	0.3	0.0	0.0	0.8	0.0	93.8	2,181
River Nile	40.3	33.8	2.9	0.8	8.9	1.6	0.0	0.0	0.6	0.0	0.3	5.8	3.3	1.7	0.0	0.0	0.0	0.0	88.3	3,715
Red Sea	7.3	4.8	1.4	1.5	14.9	2.9	0.0	0.4	0.8	0.3	0.0	0.2	55.8	0.0	7.9	1.2	0.3	0.4	33.2	2,489
Kassala	2.9	25.3	6.2	9.9	7.3	5.6	0.0	0.0	0.5	0.3	6.4	19.6	12.8	2.6	0.0	0.0	0.7	0.0	57.2	4,117
Gadarif	1.8	4.3	.2	13.5	6.4	1.4	0.0	0.0	1.7	0.0	4.3	20.7	35.7	8.8	0.6	0.0	0.0	0.5	27.7	5,005
hartoum	22.3	57.3	2.4	0.8	4.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	9.5	0.2	0.0	0.0	3.4	0.0	86.9	13,830
Gezira	18.1	62.7	5.3	0.2	2.3	0.2	0.0	0.1	0.1	0.0	2.2	1.6	6.2	0.9	0.0	0.0	0.1	0.0	88.9	16,270
White Nile	8.4	15.6	3.1	4.5	0.3	0.5	0.4	0.0	4.9	2.0	8.0	23.9	23.0	5.0	0.1	0.0	0.5	0.0	32.7	5,016
Sinnar	5.0	31.9	9.2	5.5	36.0	1.0	0.2	0.0	0.0	0.3	2.0	2.7	3.6	2.3	0.0	0.0	0.0	0.3	88.7	3,763
Blue Nile	5.8	31.0	6.0	0.7	27.7	0.0	0.1	0.0	0.7	1.0	1.1	20.0	4.4	1.5	0.0	0.0	0.0	0.0	71.3	4,094
North Kordofan	2.0	10.3	4.0	4.4	38.2	11.0	0.0	0.0	6.0	0.0	1.8	6.2	15.7	0.5	0.0	0.0	0.0	0.0	69.8	6,359
South Kordofan	1.0	1.2	0.6	0.3	49.5	7.4	0.0	0.0	4.4	1.2	1.2	8.2	24.6	0.0	0.0	0.0	0.1	0.2	60.1	2,983
West Kordofan	0.1	0.2	0.0	0.9	83.3	1.5	0.0	0.0	6.4	0.7	2.8	1.0	1.2	0.1	0.4	0.0	0.1	1.3	86.0	5,745
North Darfur	2.6	0.2	0.6	0.1	38.9	8.3	0.0	0.0	15.2	3.7	4.8	19.0	5.6	0.7	0.1	0.0	0.0	0.2	50.6	7,776
West Darfur	8.1	7.2	1.8	5.0	36.5	8.9	0.1	0.0	19.8	9.2	00.4	1.4	1.0	0.2	0.0	0.0	0.1	0.3	67.5	3,023

Background characteristics	Main source of drinking water																		Percent age using improved sources of drinking water [1]	Number of household members
	Improved sources								Unimproved sources											
	Piped into dwelling	Piped into compound, yard or plot	Piped to neighbour	Public tap / stand pipe	Elevated tank, hand pump (Kharjaka)	Protected well	Protected spring	Bottled water [a]	Unprotected well	Unprotected spring	Filtered Surface water	Unfiltered Surface water	Tanker-truck from protected sources	Tanker-truck from unprotected sources	Tanker-truck from unknown sources	Bottled water [a]	Other	Missing		
South Darfur	4.3	.4	0.7	2.7	32.9	5.3	0.2	0.1	24.6	5.4	1.9	8.4	8.0	4.4	0.3	0.0	0.2	0.2	46.6	7,712
Central Darfur	1.4	1.3	0.7	1.5	33.4	11.1	1.4	0.0	12.3	5.9	0.3	17.1	.2	0.0	0.0	0.0	13.1	0.4	50.6	1,646
East Darfur	1.7	4.9	1.5	1.2	35.7	0.1	0.0	0.0	0.4	0.0	3.9	16.6	25.2	6.9	0.0	0.0	2.0	0.0	45.1	3,158
Darfur Area																				
Urban	19.8	37.6	4.7	3.3	11.4	1.4	0.0	0.1	0.8	0.0	.4	0.7	16.1	1.0	0.7	0.1	1.7	0.1	78.3	30,476
Rural	5.9	21.9	2.1	2.3	27.3	3.9	0.1	0.0	7.3	1.9	3.3	11.6	9.4	2.2	0.1	0.0	0.5	0.2	63.5	68,407
Education of the household head																				
None	4.3	17.6	2.7	2.8	28.3	3.8	0.1	0.1	6.9	2.3	3.0	11.9	12.5	2.3	0.2	0.0	1.0	0.2	59.7	45,740
Primary	9.1	31.0	3.8	2.9	21.2	2.9	0.1	0.0	4.7	0.7	2.2	6.7	11.7	1.7	0.3	0.0	0.7	0.3	71.0	28,007
Secondary	19.9	38.2	2.5	2.0	14.1	2.1	0.0	0.0	3.2	0.4	1.7	3.6	9.3	1.4	0.4	0.1	1.1	0.0	78.8	18,812
Higher	30.9	43.5	1.9	1.3	7.1	1.7	0.0	0.2	1.2	0.0	0.6	2.0	7.8	0.5	0.5	0.1	0.4	0.4	86.5	5,564
Missing/DK	8.3	12.8	0.6	2.6	30.8	2.3	0.0	0.0	7.5	1.4	0.7	8.3	22.8	1.9	0.0	0.0	0.0	0.1	57.4	761
Wealth index quintile																				
Poorest	0.0	0.0	0.0	1.2	38.2	5.8	0.2	0.0	17.4	4.8	3.7	17.0	8.1	2.7	0.0	0.0	0.7	0.2	45.5	19,775
Second	0.2	0.0	0.6	4.7	42.5	5.2	0.2	0.0	6.3	1.7	4.1	13.9	15.4	3.8	0.2	0.0	0.9	0.4	53.4	19,776
Middle	2.6	17.0	7.3	5.1	24.5	3.4	0.0	0.1	2.4	0.2	3.6	8.2	22.1	1.8	0.4	0.0	1.0	0.3	60.0	19,779
Fourth	12.9	58.7	5.4	1.4	5.8	1.0	0.0	0.0	0.1	0.0	0.7	1.7	9.3	0.8	0.6	0.0	1.4	0.0	85.3	19,773
Richest	35.2	58.0	1.2	.4	1.0	0.1	0.0	0.2	0.1	0.0	0.0	0.4	2.5	0.2	0.3	0.2	0.3	0.0	96.0	19,781

† MICS indicator 4.1; MDG indicator 7.8 - Use of improved drinking water sources

Use of household water treatment is presented in Table WS.2. Households were asked about ways they may be treating water at home to make it safer to drink. Boiling water, adding bleach or chlorine, using a water filter, and using solar disinfection are considered as effective treatment of drinking water. The table shows water treatment by all household members and the percentage of those living in households using unimproved water sources but using appropriate water treatment methods. The data indicate no significant variation between urban and rural areas in terms of water treatment for drinking; the percentage of urban households using unimproved sources of drinking water and reporting treatment of drinking water was 3.7 percent compared with 4.2 percent of rural households. The overall percent of the households in the country who are treating water from unimproved sources is 4.1 percent with wide disparities among the states. Gezira state reported the highest treatment of water for drinking purposes at 11.5 percent of households using unimproved sources, followed by Red Sea state at 8.5. Households in South Kordofan state reported almost zero percent for water treatment. There was not much variation between wealth quintiles for this indicator with 2.9 percent of households using unimproved sources in the poorest quintile reporting an appropriate water treatment method compared to 7.0 percent of households in the richest quintile.

**Table WS.2: Household water treatment**

Percentage of household population by drinking water treatment method used in the household, and for household members living in households where an unimproved drinking water source is used, the percentage who are using an appropriate treatment method, Sudan MICS, 2014

Background characteristics	Water treatment method used in the household									Number of household members	Percent of household members in households using unimproved drinking water sources and using an appropriate water treatment method [1]	Number of household members in households using unimproved drinking water sources
	None	Boil	Add bleach / chlorine	Strain through a cloth	Use water filter	Solar disinfection	Let it stand and settle	Other	Don't know			
<b>Sudan</b>	70.9	2.2	1.3	4.0	0.8	0.2	22.4	1.4	0.1	98,883	4.1	31,603
<b>State</b>												
Northern	36.7	0.1	0.8	0.9	1.9	0.1	58.7	4.5	0.0	2,181	7.7	135
River Nile	6.6	1.1	2.8	1.1	0.6	0.2	92.2	4.6	0.0	3,715	1.2	435
Red Sea	64.3	4.7	4.0	20.7	0.4	0.0	16.0	0.0	0.2	2,489	8.5	1,663
Kassala	96.7	0.0	1.1	0.4	1.2	0.0	0.6	0.1	0.0	4,117	3.2	1,762
Gadarif	80.5	0.1	6.1	1.4	0.0	0.2	11.8	0.7	0.0	5,005	8.0	3,618
Khartoum	73.0	1.1	0.7	0.4	2.3	0.5	21.1	1.5	0.1	13,830	1.1	1,810
Gezira	40.9	10.2	0.0	2.4	1.1	0.2	54.4	1.7	0.0	16,270	11.5	1,806
White Nile	66.1	0.9	4.4	25.5	0.2	0.4	7.3	1.4	0.0	5,016	4.9	3,374
Sinnar	85.6	0.5	0.4	2.6	0.3	0.0	10.0	1.9	0.0	3,763	2.8	426
Blue Nile	85.3	0.0	0.5	1.7	0.1	0.0	12.5	3.1	0.0	4,094	1.0	1,176
North Kordofan	85.8	0.1	0.7	2.7	0.0	0.4	10.1	0.8	0.0	6,359	1.7	1,922

Background characteristics	Water treatment method used in the household									Number of household members	Percent of household members in households using unimproved drinking water sources and using an appropriate water treatment method [1]	Number of household members in households using unimproved drinking water sources
	None	Boil	Add bleach / chlorine	Strain through a cloth	Use water filter	Solar disinfection	Let it stand and settle	Other	Don't know			
South Kordofan	71.5	0.0	1.1	4.5	0.0	0.1	21.5	1.2	0.5	2,983	0.1	1,191
West Kordofan	97.2	0.1	0.0	0.9	0.0	0.1	0.9	0.3	0.4	5,745	0.0	803
North Darfur	85.6	0.2	2.2	7.7	0.0	0.1	3.3	0.8	0.1	7,776	4.3	3,838
West Darfur	51.0	0.0	0.0	3.6	2.8	0.5	42.7	0.6	0.0	3,023	1.6	982
South Darfur	90.4	0.8	0.9	2.8	0.0	0.1	6.1	0.0	0.0	7,712	1.9	4,115
Central Darfur	94.8	0.0	0.9	3.0	0.1	0.0	0.8	0.4	0.0	1,646	0.7	814
East Darfur	89.0	0.4	2.3	2.7	0.6	0.1	0.2	5.1	0.1	3,158	5.2	1,735
<b>Area</b>												
Urban	74.7	1.3	1.6	3.0	1.3	0.2	19.0	1.0	0.1	30,476	3.7	6,612
Rural	69.3	2.6	1.2	4.5	0.5	0.2	23.9	1.6	0.0	68,407	4.2	24,991
<b>Main source of drinking water</b>												
Improved	69.8	2.6	0.8	1.4	1.0	0.2	26.4	1.0	0.1	67,280	.	.
Unimproved	73.3	1.1	2.5	9.6	0.3	0.2	13.9	2.3	0.1	31,603	4.1	31,603
<b>Education of household head</b>												
None	75.0	1.7	1.4	4.8	0.4	0.1	17.9	1.4	0.1	45,740	4.0	18,414
Primary	68.8	2.4	1.3	3.4	0.4	0.5	25.1	1.4	0.1	28,007	5.1	8,128
Secondary	65.4	2.8	1.2	3.7	1.2	0.1	28.8	1.3	0.1	18,812	3.0	3,984
Higher	65.0	2.8	2.2	2.1	3.6	0.0	25.5	2.3	0.0	5,564	5.1	753
Missing/DK	84.9	0.0	0.0	2.0	0.0	0.0	10.6	1.9	0.0	761	0.0	324
<b>Wealth index quintile</b>												
Poorest	84.4	0.3	1.3	4.4	0.2	0.1	8.3	1.4	0.0	19,775	2.9	10,786
Second	80.9	1.0	1.5	5.0	0.4	0.1	11.6	1.4	0.2	19,776	4.4	9,213
Middle	71.6	2.0	1.3	6.2	0.4	0.2	20.6	1.3	0.1	19,779	4.3	7,914
Fourth	58.1	3.2	1.1	2.9	0.4	0.3	37.3	1.4	0.0	19,773	6.4	2,898
Richest	59.6	4.4	1.6	1.6	2.5	0.3	34.0	1.6	0.0	19,781	7.0	792
[1] MICS indicator 4.2 - Water treatment na: not applicable												

The amount of time it takes household members to obtain water in Sudan is presented in Table WS.3. The person who usually collects the water is presented in Table WS.4. Note that in Table WS.3, household members using water on premises are also shown and for Table WS.4, the results refer to

one roundtrip from the household to the drinking water source and that information on the number of trips made in one day was not collected.

Table WS.3 shows that for 41.1 percent of the household population, the drinking water source is on premises. The availability of water on premises is associated with greater use, better family hygiene practices and better health outcomes. For a water collection round trip of 30 minutes or more it has been observed that households carry progressively less water and are likely to compromise on the minimal basic drinking water needs of the household.<sup>25</sup> For almost a third (31.4 percent) of the household population, it takes the household more than 30 minutes to get to the water source and bring water, on the other hand only 14.5 percent of those using an improved drinking water source spend 30 minutes or more per round trip to get water into their households. In rural areas a higher percentage of household members live in households that spend more time in collecting water compared to those in urban areas; 63 percent of members in urban households have improved drinking water sources on their premises versus 31 percent of members of rural households having access to improved drinking water sources on their premises. One striking finding is that households in Northern (90.6 percent), Gezira (86.1 percent), River Nile (84.4 percent), and Khartoum (82.3 percent) states have greater access to improved water sources on their premises than the other states. Households in the West Kordofan State (1.1 percent) have the least access to improved water sources for drinking on the premises of their households.

Table WS.3 indicates that the percent of household with improved water on premises increased with the level education of the household head. The percent of household heads with no education who have improved water on premises is 25.5 percent compared to 77.5 percent for household head with higher education. Similarly the wealth index analysis validated the correlation between water on premises and weelath; households in the richest quintile, 95.5 percent of them had improved water on their premises, compared with 0.3 percent of households in the poorest quintile.

Table WS.3: Time to source of drinking water									
Percent distribution of household population according to time to go to source of drinking water, get water and return, for users of improved and unimproved drinking water sources, Sudan MICS, 2014									
Background characteristics	Time to source of drinking water								Number of household members
	Users of improved drinking water sources				Users of unimproved drinking water sources				
	Water on premises	Less than 30 minutes	30 minutes or more	Missing / DK	Water on premises	Less than 30 minutes	30 minutes or more	Missing/ DK	
<b>Sudan</b>	41.1	10.7	14.5	1.7	2.3	8.3	16.9	4.5	98,883
<b>State</b>									
Northern	90.6	1.2	1.3	0.7	2.1	1.1	2.3	0.7	2,181
River Nile	84.4	0.6	2.7	.6	5.7	0.7	4.7	0.7	3,715
Red Sea	14.3	5.0	11.5	2.8	.2	8.9	14.3	43.0	2,489
Kassala	34.8	9.9	9.7	2.8	0.3	11.9	20.3	10.4	4,117
Gadarif	8.9	13.4	3.4	2.0	35.4	15.0	17.6	4.3	5,005
Khartoum	82.3	2.4	1.2	1.0	0.2	2.6	2.3	8.0	13,830
Gezira	86.1	0.8	1.8	0.1	0.6	5.4	4.9	0.1	16,270

<sup>25</sup> Cairncross, S and Cliff, JL. 1987. *Water use and Health in Mueda, Mozambique*. Transactions of the Royal Society of ,Tropical Medicine and Hygiene 81: 51-4.

Background characteristics	Time to source of drinking water								Number of household members
	Users of improved drinking water sources				Users of unimproved drinking water sources				
	Water on premises	Less than 30 minutes	30 minutes or more	Missing / DK	Water on premises	Less than 30 minutes	30 minutes or more	Missing/ DK	
White Nile	27.7	2.7	1.9	0.4	0.0	24.4	31.7	11.1	5,016
Sinnar	46.0	12.8	29.7	0.2	0.1	2.0	8.7	0.5	3,763
Blue Nile	43.0	9.2	18.9	0.2	0.1	6.8	21.3	0.5	4,094
North Kordofan	16.9	25.0	18.1	9.9	0.2	13.8	14.4	1.8	6,359
South Kordofan	2.9	28.2	24.3	4.6	0.1	18.2	20.8	0.8	2,983
West Kordofan	1.1	33.5	48.7	2.7	0.0	4.3	7.7	2.0	5,745
North Darfur	3.6	10.2	34.7	2.2	0.7	6.5	38.7	3.5	7,776
West Darfur	17.1	20.2	28.7	1.5	0.0	7.5	24.1	0.9	3,023
South Darfur	8.6	14.6	23.1	0.4	0.3	9.2	41.0	2.9	7,712
Central Darfur	4.0	23.4	22.5	0.7	0.1	14.7	32.7	1.9	1,646
East Darfur	8.2	19.3	16.8	0.8	0.1	15.6	33.9	5.3	3,158
Area									
Urban	63.1	5.5	7.0	2.7	3.1	3.9	5.6	9.1	30,476
Rural	31.3	13.0	17.9	1.3	2.0	10.2	21.9	2.4	68,407
Education of household head									
None	25.5	13.6	18.9	1.7	2.2	10.3	22.8	4.9	45,740
Primary	45.3	10.0	13.8	1.9	2.4	7.7	14.7	4.3	28,007
Secondary	62.7	7.0	7.5	1.7	2.4	5.3	9.2	4.2	18,812
Higher	77.5	3.8	4.4	0.9	1.5	3.2	5.4	3.3	5,564
Missing/DK	23.1	6.2	27.2	1.0	8.1	15.5	14.7	4.3	761
Wealth index quintile									
Poorest	.3	13.8	30.7	.7	0.2	10.8	41.8	1.8	19,775
Second	2.0	23.6	25.5	2.4	3.4	15.7	22.8	4.7	19,776
Middle	28.3	13.7	14.0	4.0	4.4	11.6	14.7	9.3	19,779
Fourth	79.3	2.2	2.2	1.6	3.0	2.6	4.1	5.0	19,773
Richest	95.6	0.2	0.2	0.0	0.6	0.6	0.9	1.7	19,781

Table WS.4 shows that more than half of the household (57.7 percent) are without water on premises, with 33.7 percent in the urban areas and 67.9 percent in rural areas. The survey findings indicated that 36.0 percent of households had an adult female primarily responsible for collecting drinking water for the household when the source of drinking water is not on the premises. There was no significant difference between adult men (35.5 percent) on this indicator. Similarly, responsibility of children less than 15 years of age for collecting drinking water for the households was 10.8 percent and 11.3 percent for female and male children respectively. The proportion of adult women collecting drinking water for the household was significantly lower (21.3 percent) than adult males (46.7 percent) in households where the head of the household had higher educational level collecting drinking water for the household.

**Table WS.4: Persons collecting water:**

Percentage of households without drinking water on premises, and percent distribution of households without drinking water on premises according to the person usually collecting drinking water used in the household, Sudan MICS, 2014

Background characteristics	Percentage of households without drinking water on premises	Number of households	Person usually collecting drinking water						Number of households without drinking water on premises
			Adult woman (age 15+ years)	Adult man (age 15+ years)	Female child (under 15)	Male child (under 15)	DK	Missing	
<b>Sudan</b>	57.7	16,801	36.0	35.5	10.8	11.3	5.4	1.0	9,696
<b>State</b>									
Northern	6.3	423	56.0	38.2	2.4	3.4	0.0	0.0	27
River Nile	11.1	666	42.8	28.2	10.8	13.6	3.3	1.3	74
Red Sea	85.2	519	5.6	63.5	.9	4.4	21.1	4.5	443
Kassala	66.8	722	16.5	55.0	8.3	12.2	6.5	1.4	482
Gadarif	56.7	858	24.0	47.8	14.2	12.7	0.4	0.9	487
Khartoum	18.4	2,317	11.7	38.1	4.3	28.3	15.8	1.8	427
Gezira	14.1	2,629	42.2	34.0	7.8	14.3	0.4	1.2	370
White Nile	73.5	874	16.0	32.2	11.5	16.9	22.2	1.1	642
Sinnar	54.8	661	47.9	25.7	12.9	12.4	0.7	0.5	362
Blue Nile	59.0	656	29.4	39.7	15.2	15.1	0.3	0.3	387
North Kordofan	84.5	1,125	28.5	47.1	9.2	10.9	3.5	0.8	951
South Kordofan	96.5	462	58.6	23.4	8.3	5.5	3.8	0.4	446
West Kordofan	99.0	1,003	32.2	44.0	10.1	7.9	4.2	1.6	993
North Kordofan	96.0	1,243	46.7	32.3	9.8	9.5	1.4	0.3	1,193
Darfur									
West Darfur	87.0	553	61.8	11.4	14.9	9.1	2.3	0.6	482
South Darfur	91.5	1,282	48.1	26.8	14.3	8.0	2.2	0.6	1,173
Central Darfur	96.5	299	65.0	11.7	15.7	5.6	1.4	0.5	289
East Darfur	92.3	508	36.7	24.5	15.8	17.2	5.7	0.0	469
<b>Area</b>									
Urban	33.7	5,000	19.4	46.7	5.5	9.0	16.9	2.6	1,683
Rural	67.9	11,801	39.6	33.2	11.9	11.7	3.0	0.6	8,013
<b>Education of household head</b>									
None	74.4	7,799	38.8	32.6	12.7	11.0	4.1	0.8	5,806
Primary	52.8	4,730	34.7	38.5	9.0	11.5	5.1	1.1	2,499
Secondary	35.0	3,137	27.4	42.4	6.3	11.8	11.0	1.1	1,099
Higher	20.8	1,013	21.3	46.7	3.9	12.4	12.9	2.7	211
Missing/DK	67.6	122	34.0	29.2	12.3	14.7	8.4	1.4	82
<b>Wealth index quintile</b>									
Poorest	99.6	3,368	46.0	29.0	13.2	10.6	0.9	0.2	3,354
Second	95.0	3,592	39.4	34.5	11.7	10.3	3.3	0.7	3,411
Middle	67.2	3,339	23.7	42.0	8.5	14.3	9.6	1.9	2,243



Background characteristics	Percentage of households without drinking water on premises	Number of households	Person usually collecting drinking water						Number of households without drinking water on premises
			Adult woman (age 15+ years)	Adult man (age 15+ years)	Female child (under 15)	Male child (under 15)	DK	Missing	
Fourth	17.7	3,209	12.2	50.9	2.4	10.2	22.1	2.1	568
Richest	3.6	3,293	4.0	53.4	1.4	4.9	30.6	5.8	120

[1] MICS indicator 4.1;

MDG indicator 7.8 - Use of improved drinking water sources

[a] Households using bottled water as the main source of drinking water are classified into improved or unimproved drinking water users according to the water source used for other purposes such as cooking and handwashing.

## 7.2 Use of Improved Sanitation

An improved sanitation facility is defined as one that hygienically separates human excreta from human contact. Improved sanitation facilities include flush or pour flush to a piped sewer system, septic tank, or pit latrine; ventilated improved pit latrine, pit latrine with slab, and use of a composting toilet. The data on the use of improved sanitation facilities in the country are provided in Figure WS.2 and Table WS.5.

**Figure WS.2a: Households using Improved sanitation facility by state, Sudan MICS, 2014**

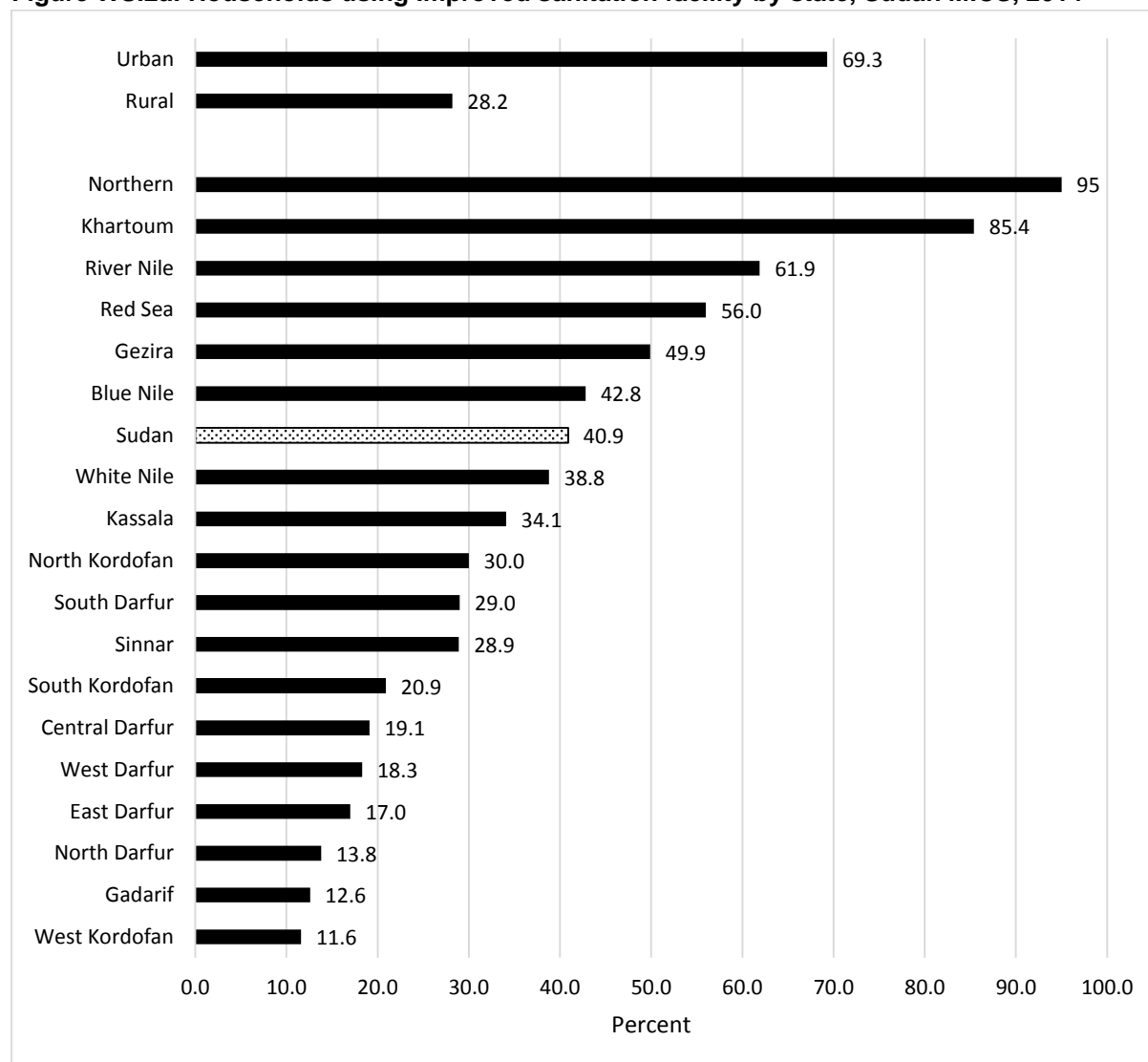


Table WS.5: Types of sanitation facilities

Percent distribution of household population according to type of toilet facility used by the household, Sudan MICS, 2014

Background characteristics	Type of toilet facility used by household													Number of household members
	Improved sanitation facility								Unimproved sanitation facility				Open defecation (no facility, bush field)	
	Flush to piped sewer system	Flush to septic tank	Flush to pit latrine	Flush to somewhere else	Flush to unknown place / Not sure / DK where	Ventilated Improved Pit latrine (VIP)	Pit latrine with slab	Composting toilet	Pit latrine without slab / Open pit	Bucket	Other	Missing/DK		
Sudan	0.8	4.9	1.9	0.2	0.1	11.7	21.0	0.3	27.6	0.0	2.0	0.2	29.2	98,883
State														
Northern	0.0	9.8	2.5	0.3	0.0	27.9	54.5	0.0	0.9	0.0	1.8	0.0	2.2	2,181
River Nile	0.5	2.9	1.6	0.0	0.0	6.6	50.3	0.0	26.6	0.0	0.4	0.1	11.0	3,715
Red Sea	1.0	11.5	4.1	0.3	0.0	31.5	7.6	0.0	6.6	0.0	2.0	0.6	35.0	2,489
Kassala	0.0	8.1	2.0	0.0	0.0	9.8	11.9	2.3	20.4	0.0	0.5	0.1	44.9	4,117
Gadarif	0.0	0.1	0.8	0.1	0.0	3.3	8.3	0.0	43.8	0.0	0.3	0.2	43.0	5,005
Khartoum	2.8	16.0	2.1	0.5	0.0	16.5	47.4	0.1	10.4	0.0	2.3	0.2	1.7	13,830
Gezira	0.8	3.2	2.3	0.0	0.0	13.1	30.5	0.0	14.0	0.2	3.6	0.1	32.4	16,270
White Nile	2.5	4.9	1.9	0.1	0.1	16.2	13.1	0.0	15.9	0.0	2.0	0.2	43.0	5,016
Sinnar	0.5	3.2	1.9	0.0	0.0	4.5	16.9	1.9	33.1	0.0	3.0	0.3	34.6	3,763
Blue Nile	0.0	2.1	3.6	0.0	0.0	1.7	35.4	0.0	45.0	0.0	0.8	0.0	11.4	4,094
North Kordofan	0.0	3.6	2.2	0.0	0.0	12.3	11.9	0.0	22.3	0.0	2.9	0.4	44.5	6,359
South Kordofan	0.8	1.1	3.3	0.0	0.2	9.3	5.7	0.5	37.5	0.0	0.8	0.0	40.7	2,983
West Kordofan	0.3	0.1	0.7	0.1	0.0	4.4	5.6	0.4	67.2	0.0	0.2	1.3	19.7	5,745
North Darfur	0.0	0.4	0.7	0.0	0.0	3.3	7.9	1.5	40.1	0.1	4.5	0.4	41.1	7,776
West Darfur	0.0	3.2	2.0	0.0	0.0	7.8	5.3	0.0	48.6	0.0	1.3	0.0	31.8	3,023
South Darfur	0.6	3.5	2.0	0.8	0.7	20.1	1.2	0.1	28.7	0.0	0.9	0.0	41.3	7,712
Central Darfur	2.0	0.3	1.7	0.0	0.0	9.7	5.4	0.0	35.2	0.0	1.0	0.2	44.6	1,646

Background characteristics	Type of toilet facility used by household													Number of household members
	Improved sanitation facility								Unimproved sanitation facility				Open defecation (no facility, bush field)	
	Flush to piped sewer system	Flush to septic tank	Flush to pit latrine	Flush to somewhere else	Flush to unknown place / Not sure / DK where	Ventilated Improved Pit latrine (VIP)	Pit latrine with slab	Composting toilet	Pit latrine without slab / Open pit	Bucket	Other	Missing/DK		
East Darfur	0.1	1.0	0.7	0.0	0.0	11.9	3.2	0.1	55.4	0.0	0.7	0.2	26.6	3,158
Area														
Urban	2.4	14.0	4.6	0.5	0.2	17.6	29.7	0.3	23.6	0.0	1.9	0.2	5.0	30,476
Rural	0.1	0.8	0.7	0.0	0.0	9.1	17.1	0.4	29.5	.1	2.1	0.2	40.0	68,407
Education of household head														
None	0.5	1.5	0.8	0.1	0.0	9.7	13.7	0.3	31.1	0.0	1.7	0.2	40.4	45,740
Primary	0.4	3.7	1.8	0.1	0.0	12.3	21.7	0.5	28.0	.1	3.1	0.4	28.1	28,007
Secondary	1.9	8.7	4.1	0.4	0.2	15.5	33.2	0.3	23.1	0.0	1.4	0.2	11.1	18,812
Higher	2.8	26.2	4.6	0.3	0.4	12.3	36.1	0.1	12.5	0.0	0.8	0.3	3.6	5,564
Missing/DK	0.8	2.9	0.5	0.0	0.0	11.2	14.0	0.0	31.5	0.0	8.5	0.0	30.5	761
Wealth index quintile														
Poorest	0.0	0.0	0.0	0.0	0.0	4.6	1.2	0.5	30.2	0.0	1.8	0.1	61.6	19,775
Second	0.1	0.1	0.3	0.0	0.0	7.4	3.5	0.5	40.6	0.0	1.8	0.5	45.1	19,776
Middle	0.2	0.7	0.8	0.2	0.0	12.2	17.3	0.2	39.4	0.0	3.5	0.2	25.4	19,779
Fourth	0.6	2.8	2.0	0.1	0.1	18.8	38.1	0.2	21.1	.1	2.5	0.2	13.4	19,773
Richest	3.4	20.9	6.5	0.5	0.2	15.5	44.6	0.4	6.8	0.0	0.6	0.2	0.5	19,781

Over two-fifths (40.9 percent) of the population are living in households using improved sanitation facilities (Table WS.5), 69.3 percent of the households live in urban areas while 28.2 percent live in rural areas. Use of improved sanitation facilities varies across states ranging from residents of West Kordofan state (11.6 percent) to residents in the Norther state (95.0 percent). The table also indicates that use of improved sanitation facilities is strongly correlated with wealth with 6.2 percent access in poorest quintile of the population, followed by the second poorest (12.0 percent), the middle quintile (31.5 percent), fourth richest at (62.7 percent), and the richest at (91.9 percent). Access to improved sanitation is also positively associated with living in urban areas (69.3 percent) compared with residence in rural areas (28.2 percent). In rural areas, the population primarily uses pit latrines without slabs, or simply have no facilities. In contrast, the most common facilities in urban areas are flush toilets with connection to a sewage system or septic tank. use of ventilated Improved Pit (VIP) latrine widely varied across states with Red sea (31.5 percent) followed by Northern State (27.9 percent), and Blue Nile state (1.7) percent recording the least for use of VIP as an improved sanitation facility.

About one in three of the households in Sudan practiced open defecation (no facility, bush field). Use The practice of open defecation ranged from 1.7 percent in Khartoum State to 44.9 percent in Kassala State.

The MDGs and the WHO / UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation classify otherwise acceptable sanitation facilities which are public or shared between two or more households as unimproved. Therefore, “use of improved sanitation” is used both in the context of this report and as an MDG indicator to refer to improved sanitation facilities, which are not public or shared. Data on the use of improved sanitation are presented in Tables WS.6 and WS.7.

As shown in Table WS.6, 32.9 percent of the household population is using an improved sanitation facility that is not shared. . Only 7.6 percent of households use an improved sanitation facility that is public or shared with other households. Urban households were more likely to share an improved sanitation facility than rural households (11.6 percent and 5.8 percent, respectively). Khartoum State recorded the highest percentage (15.6 percent) of households who use shared improved toilet facility compared with West Kordofan State (0.7 percent

Use of an improved sanitation facility that is not shared is positively associated with the level of economic status of the household; ranging from 5.4 percent in the poorest quintile to 78.1 percent in the highest quintile

**Table WS.6: Use and sharing of sanitation facilities**

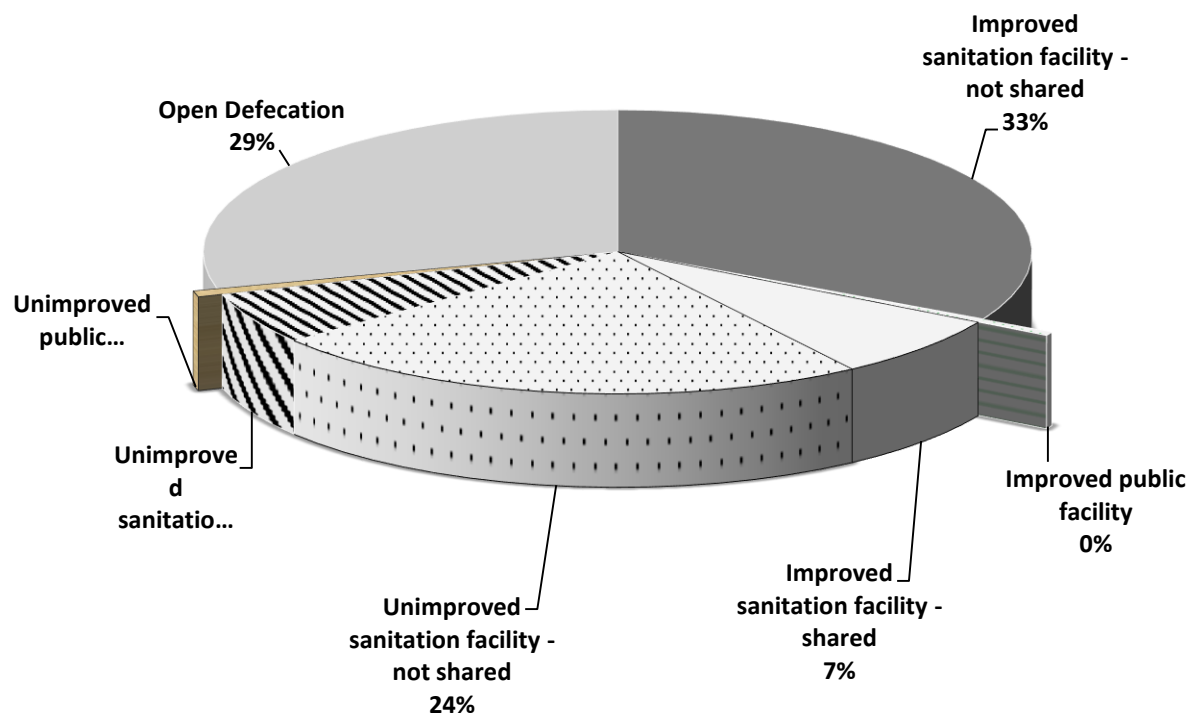
Percent distribution of household population by use of private and public sanitation facilities and use of shared facilities, by users of improved and unimproved sanitation facilities, Sudan MICS, 2014

Background characteristics	Users of improved sanitation facilities					Users of unimproved sanitation facilities					Open defecation (no facility, bush field)	Number of household members
	Not shared [1]	Public facility	Shared by: 5 households or less	Shared by: More than 5 households	Missing/ DK	Not shared	Public facility	Shared by: 5 households or less	Shared by: More than 5 households	Missing/ DK		
<b>Sudan</b>	32.9	0.4	6.2	1.0	0.4	23.8	0.7	4.6	0.6	0.3	29.2	98,883
<b>State</b>												
Northern	79.4	0.8	12.7	2.1	0.1	1.0	0.0	1.7	0.1	0.0	2.2	2,181
River Nile	49.8	1.2	9.2	1.1	0.5	23.5	0.1	3.3	0.1	0.0	11.0	3,715
Red Sea	52.4	0.2	1.5	1.1	0.7	8.1	0.2	.6	0.1	0.1	35.0	2,489
Kassala	29.3	0.1	2.7	1.2	0.7	19.9	0.1	1.0	0.1	0.0	44.9	4,117
Gadarif	9.8	0.0	1.1	0.9	0.9	36.0	0.1	5.8	0.9	1.4	43.0	5,005
Khartoum	66.4	1.7	15.5	1.3	0.4	8.8	00.6	3.3	0.1	0.1	1.7	13,830
Gezira	38.3	0.2	9.6	1.6	0.1	9.9	2.4	5.1	0.3	0.1	32.4	16,270
White Nile	29.8	0.1	7.7	0.7	0.5	12.4	0.2	4.5	1.0	0.1	43.0	5,016
Sinnar	18.6	0.1	9.1	1.1	0.0	22.2	0.1	12.5	1.4	0.2	34.6	3,763
Blue Nile	39.7	0.0	3.1	0.0	0.0	38.4	0.2	6.7	0.5	0.1	11.4	4,094
North Kordofan	25.0	0.3	3.1	1.4	0.1	15.9	0.3	7.5	1.7	0.2	44.5	6,359
South Kordofan	14.3	0.2	4.5	0.9	1.1	27.2	0.5	7.5	1.8	1.4	40.7	2,983
West Kordofan	10.4	0.1	0.4	0.2	0.5	64.7	0.3	2.3	0.8	0.6	19.7	5,745
North Darfur	12.3	0.1	0.8	0.4	0.2	43.2	0.0	1.9	0.0	0.1	41.1	7,776
West Darfur	16.0	0.1	1.4	0.4	0.3	44.9	0.8	2.4	1.4	0.5	31.8	3,023
South Darfur	24.7	0.1	2.8	1.0	0.4	21.8	0.6	6.0	0.9	0.4	41.3	7,712
Central Darfur	15.8	0.6	1.8	0.8	0.0	25.9	1.8	5.8	2.1	0.8	44.6	1,646
East Darfur	14.4	0.1	1.8	0.3	0.3	50.2	0.6	4.2	1.2	0.2	26.6	3,158

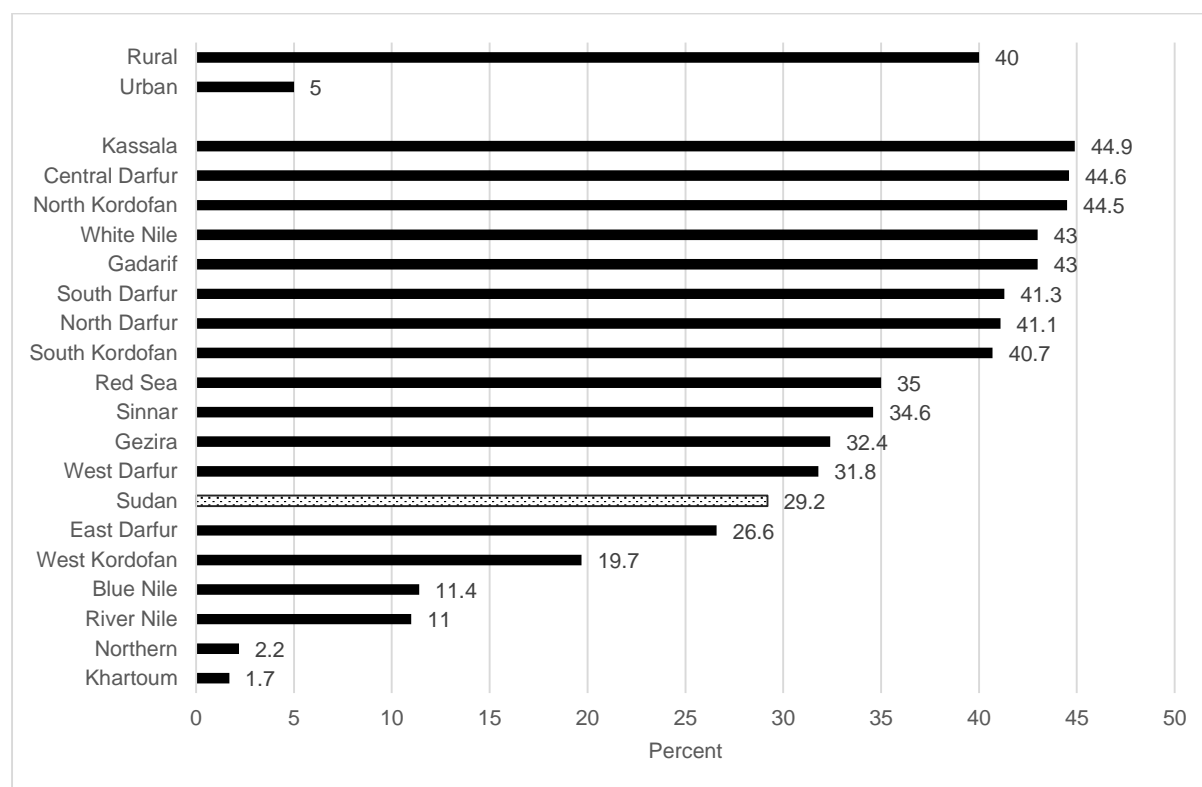
Background characteristics	Users of improved sanitation facilities					Users of unimproved sanitation facilities					Open defecation (no facility, bush field)	Number of household members
	Not shared [1]	Public facility	Shared by: 5 households or less	Shared by: More than 5 households	Missing/ DK	Not shared	Public facility	Shared by: 5 households or less	Shared by: More than 5 households	Missing/ DK		
<b>Area</b>												
Urban	57.0	0.6	10.0	1.0	0.6	20.4	.4	4.2	0.4	0.3	5.0	30,476
Rural	22.1	0.3	4.5	1.0	0.3	25.3	.8	4.7	0.7	0.2	40.0	68,407
<b>Education of household head</b>												
None	21.3	0.3	4.0	0.8	0.3	27.0	.9	4.1	0.7	0.2	40.4	45,740
Primary	32.1	0.4	6.5	0.9	0.3	23.5	.8	6.3	0.7	0.3	28.1	28,007
Secondary	51.5	0.4	10.2	1.7	0.4	19.6	.2	3.9	0.6	0.4	11.1	18,812
Higher	69.7	1.3	10.2	0.6	1.0	11.4	.1	1.9	0.2	0.0	3.6	5,564
Missing/DK	24.6	0.0	4.9	0.0	0.0	34.0	.0	5.3	0.0	0.7	30.5	761
<b>Wealth index quintile</b>												
Poorest	5.4	0.1	.5	0.2	0.0	28.4	.3	2.8	0.5	0.2	61.6	19,775
Second	9.2	0.1	1.6	0.7	0.4	35.1	.4	6.0	1.0	0.4	45.1	19,776
Middle	24.3	0.7	4.7	1.5	0.4	31.2	2.3	7.9	1.1	0.6	25.4	19,779
Fourth	47.2	0.4	13.0	1.7	0.4	17.6	.4	5.1	0.6	0.1	13.4	19,773
Richest	78.1	0.9	11.4	0.9	0.6	6.5	.0	1.0	0.0	0.1	0.5	19,781

[1] MICS indicator 4.3; MDG indicator 7.9 - Use of improved sanitation

**Figure WS.2: Household members by use and sharing of sanitation facilities, Sudan MICS, 2014**



**Figure WS.2b: Household members practicing open defecation by urban and rural residence and by state, Sudan MICS, 2014**





Having access to both an improved drinking water source and an improved sanitation facility brings the largest public health benefits to a household.<sup>26</sup> In its 2008 report<sup>27</sup>, the JMP developed a new way of presenting the access figures, by disaggregating and refining the data on drinking-water and sanitation and reflecting them in "ladder" format. This ladder allows a disaggregated analysis of trends in a three rung ladder for drinking-water and a four-rung ladder for sanitation. For sanitation, this gives an understanding of the proportion of population with no sanitation facilities at all – who revert to open defecation, of those reliant on technologies defined by JMP as "unimproved," of those sharing sanitation facilities of otherwise acceptable technology, and those using "improved" sanitation facilities.

Table WS.7 presents the percentages of household population by these drinking water and sanitation ladders. The table also shows the percentage of household members using both improved sources of drinking water<sup>28</sup> and an improved sanitary means of excreta disposal.

In Sudan, the percentage of household population using both improved drinking water sources and improved sanitation facilities was only 28.2 percent. The percentage of household population using both improved drinking water sources and improved sanitation facilities showed an increasing trend with the educational level of the household head. In the case of households which had a household head with no education, 17.2 percent used an improved drinking water source and an improved sanitation facility, which compares with 27.6 percent of households which had a head of households with primary education and 64.5 percent of households which had a household head with secondary or higher level of education. The percentage of household population using both improved drinking water sources and improved sanitation facilities also varied significantly with household wealth. The percentage of household population using both improved drinking water sources and improved sanitation facilities was only 3.4 percent in the case of the poorest households compared to 75.1 percent in the case of the richest households.

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<sup>26</sup> Wolf, J et al. 2014. *Systematic review: Assessing the impact of drinking water and sanitation on diarrhoeal disease in low- and middle-income settings: systematic review and meta-regression*. Tropical Medicine and International Health 2014.

DfID. 2013. *Water, Sanitation and Hygiene: Evidence Paper*. DfID: <http://r4d.dfid.gov.uk/pdf/outputs/sanitation/WASH-evidence-paper-april2013.pdf>

<sup>27</sup> WHO/UNICEF JMP. 2008. *MDG assessment report*. [http://www.wssinfo.org/fileadmin/user\\_upload/resources/1251794333-JMP\\_08\\_en.pdf](http://www.wssinfo.org/fileadmin/user_upload/resources/1251794333-JMP_08_en.pdf)

<sup>28</sup> Those indicating bottled water as the main source of drinking water are distributed according to the water source used for other purposes such as cooking and handwashing.

**Table WS.7: Drinking water and sanitation ladders:**

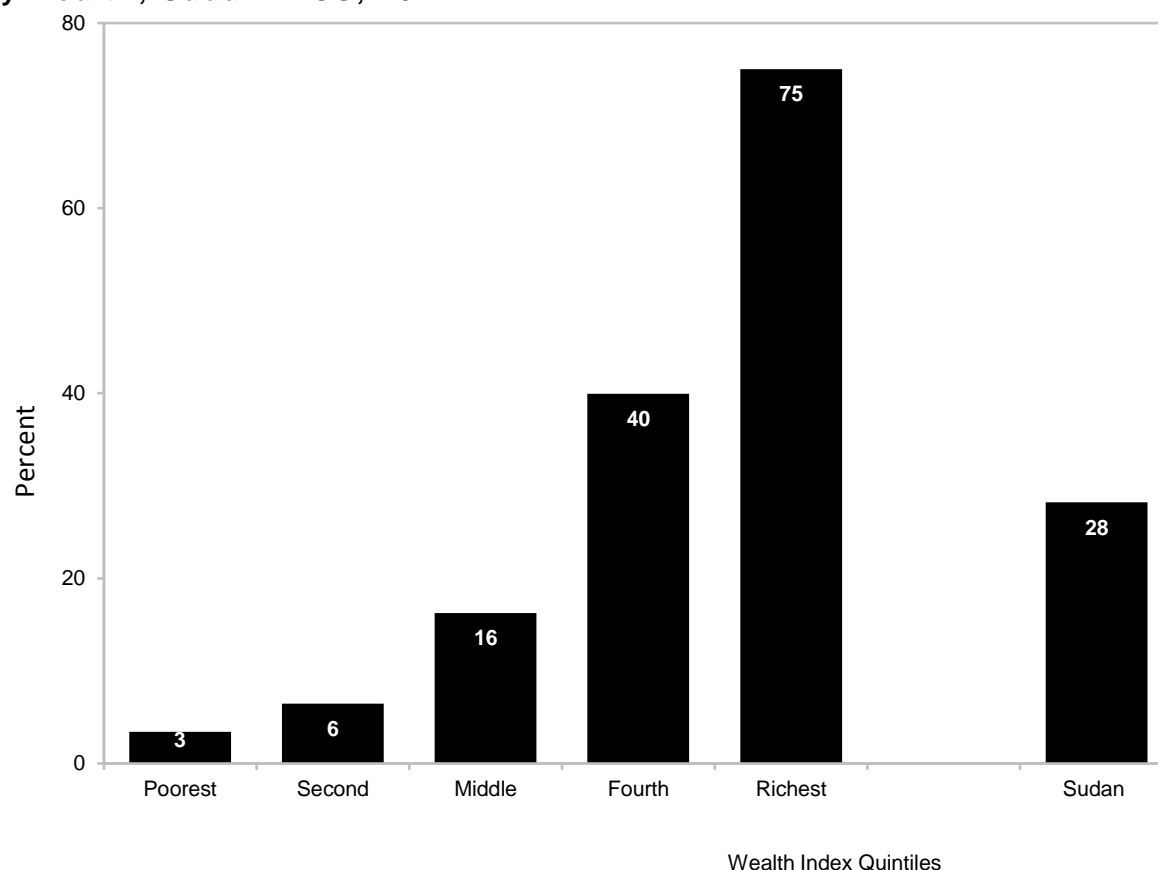
Percentage of household population by drinking water and sanitation ladders, Sudan MICS, 2014

Background characteristics	Percentage of household population using:								Number of household members
	Improved drinking water [1] [a]		Un improved drinking water	Improved sanitation [2]	Unimproved sanitation			Improved drinking water sources and improved sanitation	
	Piped into dwelling, plot or yard	Other improved			Shared improved facilities	Un improved facilities	Open defecation		
<b>Sudan</b>	36.9	31.1	32.0	32.9	8.0	29.9	29.2	28.2	98,883
<b>State</b>									
Northern	71.9	22.0	6.2	79.4	15.7	2.7	2.2	76.3	2,181
River Nile	74.1	14.2	11.7	49.8	12.1	27.1	11.0	44.7	3,715
Red Sea	12.5	20.7	66.8	52.4	3.4	9.2	35.0	11.4	2,489
Kassala	28.2	29.0	42.8	29.3	4.6	21.1	44.9	24.8	4,117
Gadarif	6.2	21.5	72.3	9.8	2.9	44.3	43.0	4.0	5,005
Khartoum	79.7	7.2	13.1	66.4	19.0	12.9	1.7	62.7	13,830
Gezira	80.9	8.0	11.1	38.3	11.5	17.8	32.4	37.7	16,270
White Nile	23.9	8.8	67.3	29.8	9.0	18.2	43.0	20.1	5,016
Sinnar	36.8	51.8	11.3	18.6	10.4	36.4	34.6	17.5	3,763
Blue Nile	36.8	34.5	28.7	39.7	3.1	45.8	11.4	36.5	4,094
North Kordofan	12.2	57.5	30.2	25.0	4.9	25.6	44.5	22.5	6,359
South Kordofan	2.2	57.9	39.9	14.3	6.6	38.3	40.7	9.6	2,983
West Kordofan	.3	85.7	14.0	10.4	1.2	68.7	19.7	9.7	5,745
North Darfur	2.8	47.8	49.4	12.3	1.5	45.1	41.1	7.9	7,776
West Darfur	15.2	52.3	32.5	16.0	2.3	50.0	31.8	14.2	3,023
South Darfur	4.8	41.8	53.4	24.7	4.3	29.6	41.3	18.9	7,712
Central Darfur	2.6	47.9	49.4	15.8	3.2	36.4	44.6	8.9	1,646
East Darfur	6.6	38.5	54.9	14.4	2.6	56.4	26.6	6.3	3,158
<b>Area</b>									
Urban	57.5	20.8	21.7	57.0	12.2	25.7	5.0	48.7	30,476
Rural	27.8	35.7	36.5	22.1	6.1	31.8	40.0	19.1	68,407
<b>Education of household head</b>									
None	22.0	37.7	40.3	21.3	5.4	32.9	40.4	17.2	45,740
Primary	40.1	30.9	29.0	32.1	8.2	31.6	28.1	27.6	28,007
Secondary	58.1	20.7	21.2	51.5	12.7	24.6	11.1	45.9	18,812
Higher	74.6	11.9	13.5	69.7	13.1	13.6	3.6	64.4	5,564
Missing/DK	21.1	36.3	42.6	24.6	4.9	40.0	30.5	13.3	761
<b>Wealth index quintile</b>									
Poorest	.0	45.5	54.5	5.4	0.8	32.2	61.6	3.4	19,775
Second	.2	53.2	46.6	9.2	2.7	43.0	45.1	6.5	19,776
Middle	19.6	40.4	40.0	24.3	7.3	43.1	25.4	16.3	19,779
Fourth	71.6	13.7	14.7	47.2	15.5	23.9	13.4	39.9	19,773
Richest	93.3	2.7	4.0	78.1	13.8	7.6	0.5	75.1	19,781

[1] MICS indicator 4.1; MDG indicator 7.8 - Use of improved drinking water sources

[2] MICS indicator 4.3; MDG indicator 7.9 - Use of improved sanitation; [a] Those indicating bottled water as the main source of drinking water are distributed according to the water source used for other purposes such as cooking and

**Figure WS.3: Household members using improved improved sanitation, by wealth, Sudan MICS, 2014**



Safe disposal of a child's faeces is disposing of the stool, by the child using a toilet or by rinsing the stool into a toilet or latrine. Putting disposable diapers with solid waste, a very common practice throughout the world has thus far been classified as an inadequate means of disposal of child faeces for concerns about poor disposal of solid waste itself. This classification is currently under review. Disposal of faeces of children 0-2 years of age is presented in Table WS.8.

Overall, the percentage of children whose stools were disposed of safely was 53.0 percent. There was a significant difference between rural and urban areas in the proportion of children whose stools were disposed of safely. The proportion of children whose stools were disposed of safely was 78.3 percent in urban areas compared to 43.4 percent in rural areas. There was also a significant difference between the proportion of children whose stools were disposed of safely among children whose mothers had no education (36.5 percent) and among children whose mothers had secondary or higher level of education (81.2 percent). Significant difference between those in households in the richest and poorest quintiles were also found in terms of the proportion of children whose stools were disposed of safely; recording 81.6 percent among those from households in the richest quintile compared to only 22.9 percent among those from households in the poorest quintile.

**Table WS.8: Disposal of child's faeces**

Percent distribution of children age 0-2 years according to place of disposal of child's faeces, and the percentage of children age 0-2 years whose stools were disposed of safely the last time the child passed stools, Sudan MICS, 2014

Background characteristics	Place of disposal of child's faeces									Percentage of children whose last stools were disposed of safely [1]	Number of children age 0-2 years
	Child used toilet / latrine	Put / Rinsed into toilet or latrine	Put / Rinsed into drain or ditch	Thrown into garbage (solid waste)	Buried	Left in the open	Other	DK	Missing		
<b>Sudan</b>	3.8	49.2	7.8	11.2	9.7	12.1	3.8	0.9	1.5	53.0	8,263
<b>Type of sanitation facility in dwelling</b>											
Improved	8.2	74.1	2.8	7.4	1.3	2.5	1.8	0.7	1.3	82.3	3,022
Unimproved	2.3	62.9	12.1	8.2	5.4	4.1	2.7	0.9	1.4	65.3	2,576
Open defecation	0.4	7.7	9.4	18.5	23.3	30.7	7.2	1.0	1.8	8.1	2,665
<b>State</b>											
Northern	8.8	71.0	1.3	15.3	0.4	2.2	.9	0.0	0.0	79.8	142
River Nile	3.3	65.6	4.0	8.3	4.2	10.2	3.3	0.3	0.9	68.9	224
Red Sea	6.6	47.8	4.5	15.6	4.2	12.0	6.0	2.5	0.6	54.4	145
Kassala	1.7	26.9	5.3	14.3	10.0	39.9	.1	0.3	1.5	28.6	298
Gadarif	2.1	35.6	11.3	12.3	10.9	19.1	6.5	0.8	1.2	37.8	471
Khartoum	15.0	65.1	2.8	12.1	0.2	1.9	.7	0.6	1.6	80.0	1,016
Gezira	2.1	55.2	9.1	11.0	4.8	12.7	4.2	0.6	0.2	57.4	1,257
White Nile	3.9	37.5	5.9	12.8	4.3	21.4	11.7	0.4	2.1	41.5	435
Sinnar	1.5	55.3	5.0	22.4	5.6	6.6	2.3	0.0	1.3	56.8	333
Blue Nile	1.6	68.0	5.2	12.2	3.7	4.8	3.5	0.2	0.8	69.7	426
North Kordofan	3.4	38.4	4.0	12.2	18.9	9.6	9.1	1.8	2.7	41.8	501
South Kordofan	2.3	41.3	7.8	14.8	9.0	9.0	12.3	1.1	2.4	43.6	302
West Kordofan	0.3	63.5	11.0	4.5	7.5	11.6	0.0	0.2	1.4	63.7	499
North Darfur	0.9	30.9	18.1	19.6	7.6	16.5	1.0	1.7	3.7	31.8	684
West Darfur	0.2	59.0	2.7	3.4	19.8	7.5	2.5	1.1	3.8	59.2	278
South Darfur	3.2	37.6	3.8	4.1	32.9	12.2	3.9	1.8	0.4	40.7	823
Central Darfur	0.6	33.3	12.0	4.6	25.0	17.4	2.8	2.1	2.1	34.0	141
East Darfur	2.0	49.4	25.4	2.4	5.4	12.9	1.0	0.0	1.5	51.4	289
<b>Area</b>											
Urban	9.1	69.2	3.4	8.0	2.1	2.6	2.9	0.9	1.7	78.3	2,273
Rural	1.8	41.6	9.5	12.4	12.6	15.6	4.2	0.9	1.4	43.4	5,990
<b>Education of household head</b>											
None	1.9	34.5	9.9	12.3	15.3	18.2	5.3	0.8	1.6	36.5	3,361
Primary	4.0	52.4	8.0	10.9	8.3	10.6	3.5	1.1	1.2	56.4	2,976
Secondary	6.8	67.9	4.6	9.5	2.6	4.3	1.9	0.2	2.2	74.7	1,308
Higher	7.3	73.9	2.4	10.4	0.9	1.5	1.5	1.5	0.6	81.2	607

Background characteristics	Place of disposal of child's faeces									Percentage of children whose last stools were disposed of safely [1]	Number of children age 0-2 years
	Child used toilet / latrine	Put / Rinsed into toilet or latrine	Put / Rinsed into drain or ditch	Thrown into garbage (solid waste)	Buried	Left in the open	Other	DK	Missing		
Missing/DK	*	*	*	*	*	*	*	*	*	*	10
<b>Wealth index quintile</b>											
Poorest	0.6	22.3	10.1	11.8	26.2	20.4	4.9	1.8	1.8	22.9	1,795
Second	1.8	37.1	11.6	14.1	10.7	17.7	5.0	0.4	1.8	38.8	1,786
Middle	2.3	55.1	8.3	12.0	5.2	10.3	4.6	0.6	1.6	57.4	1,775
Fourth	5.8	68.7	5.0	6.2	2.5	7.4	2.8	0.8	0.9	74.5	1,608
Richest	10.8	70.8	2.3	11.5	0.6	0.9	1.1	0.7	1.2	81.6	1,299

[1] MICS indicator 4.5 - Place for handwashing

[\*] Based on less than 25 unweighted cases and has been suppressed

### 7.3 Handwashing

Hand washing with water and soap is the most cost effective health intervention to reduce both the incidence of diarrhoea and pneumonia in children under five<sup>29</sup>. It is most effective when done using water and soap after visiting a toilet or cleaning a child, before eating or handling food and, before feeding a child. Monitoring correct hand washing behaviour at these critical times is challenging. A reliable alternative to observations or self-reported behaviour is assessing the likelihood that correct hand washing behaviour takes place by asking if a household has a specific place where people wash their hands and, if yes, observing whether water and soap (or other local cleansing materials) are available at this place.

Table WS.9 indicates that in only 40.9 percent of the households was a specific place for hand washing in the dwelling, yard or plot observed.

The proportion of households where the interviewers could not observe a specific place where household members usually wash their hands was 46.1 percent. In a further 17.5 percent of households permission to see a handwashing facility was not granted. The data suggests that more than half of the population have no specific place for hand washing in the dwelling, yard or plot.

In only one fourth (25.0 percent) of the households both water and soap (or another cleansing agent) were present at the specific place for hand washing while an small proportion of households had only water available at the specific place (0.8 percent) or soap but no water (1.3 percent). The proportion of households with a specific place for hand washing with water and soap in urban areas was 34.0 percent and that of rural areas was 21.8 percent. It was observed that the availability of places for handwashing with water and soap increased with the level of education of the head of the household as the wealth index quintile of the household.

Nearly 20 percent of the households were not able or refused to show the presence of any soap in the household, whereas another 26 percent did not have any soap in the households, leaving the

<sup>29</sup> Cairncross, S and Valdmanis, V. 2006. *Water supply, sanitation and hygiene promotion* Chapter 41 in *Disease Control Priorities in Developing Countries*. 2<sup>nd</sup> Edition, Edt. Jameson et al. The World Bank.

remaining 55.4 percent of households, in which either the soap was observed or shown to the interviewer (Table WS.10)

Table WS9. Water and soap at place for handwashing

Percent of household where place for handwashing was observed, percentage with no specific place for handwashing and percent distribution of households by availability of water and soap at specific place for handwashing, Sudan MICS, 2014

Table WS 10. Availability of soap or other cleansing agent.

Percent distribution of households by availability of soap or other cleansing agent in dwelling, Sudan MICS, 2014

**Table WS.9: Water and soap at place for handwashing**

Percentage of households where place for handwashing was observed, percentage with no specific place for handwashing, and percent distribution of households by availability of water and soap at specific place for handwashing, Sudan MICS, 2014

	Percentage of households:		Number of households	Place for handwashing observed: Water is available and: Water is available and: Soap present	Place for handwashing observed: Water is available and: No soap: Ash, mud, or sand present	Place for handwashing observed: Water is available and: No soap: No other cleansing agent present	Place for handwashing observed: Water is not available and: Water is not available and: Soap present	Place for handwashing observed: Water is not available and: No soap: Ash, mud, or sand present	Place for handwashing observed: Water is not available and: No soap: No other cleansing agent present	No specific place for handwashing in the dwelling, yard, or plot	Total	Percentage of households with a specific place for handwashing where water and soap or other cleansing agent are present [1]	Number of households where place for handwashing was observed or with no specific place for handwashing
	Where place for handwashing was observed	With no specific place for handwashing in the dwelling, yard, or plot											
Sudan	40.9	46.1	16,801	25.0	0.8	13.5	1.3	0.2	6.3	53.0	100.0	25.8	14,625
<b>State</b>													
Northern	48.0	20.8	423	33.3	0.0	34.5	0.5	0.0	1.5	30.2	100.0	33.3	290
River Nile	64.5	33.5	666	48.0	0.0	17.2	0.2	0.0	0.4	34.2	100.0	48.0	653
Red Sea	15.9	79.3	519	12.8	0.0	0.7	2.5	0.0	0.7	83.3	100.0	12.8	494
Kassala	19.8	79.3	722	10.6	0.0	7.4	0.2	0.0	1.8	80.0	100.0	10.6	715
Gadarif	1.9	67.4	858	2.0	0.0	0.6	0.1	0.0	0.2	97.2	100.0	2.0	595
	53.0	44.0	2,317	42.0	0.1	10.5	1.3	0.0	0.8	45.4	100.0	42.1	2,248
Khartoum													
Gezira	57.4	40.3	2,629	18.9	0.5	31.2	0.9	0.0	7.2	41.3	100.0	19.4	2,567
White Nile	49.8	29.3	874	33.0	0.1	13.4	3.3	0.0	13.0	37.1	100.0	33.1	691
Sinnar	53.9	45.4	661	44.0	0.0	3.9	0.6	0.0	5.8	45.7	100.0	44.0	656
Blue Nile	52.3	22.5	656	17.8	9.4	30.4	1.4	0.7	10.3	30.1	100.0	27.2	491
North	3.5	96.0	1,125	2.6	0.0	0.4	0.1	0.0	0.5	96.5	100.0	2.6	1,120
Kordofan													
South	61.6	24.8	462	35.5	0.0	12.1	3.2	0.0	20.5	28.7	100.0	35.5	400
Kordofan													
West	22.7	64.8	1,003	6.7	0.0	2.6	3.5	0.0	13.1	74.0	100.0	6.7	878
Kordofan													
North	62.4	10.0	1,243	49.5	5.8	14.7	1.4	1.9	12.9	13.8	100.0	55.3	900
Darfur													
West	47.1	41.6	553	30.5	0.0	6.6	1.5	0.3	14.2	46.9	100.0	30.5	491
Darfur													
South	17.2	46.7	1,282	17.0	0.0	6.8	0.8	0.0	2.3	73.1	100.0	17.0	819
Darfur													
Central	93.3	3.3	299	22.4	0.5	32.7	2.7	0.5	37.9	3.4	100.0	22.9	289
Darfur													
East	8.3	55.9	508	8.3	0.9	1.8	0.4	0.0	1.6	87.0	100.0	9.2	326
<b>Darfur Area</b>													
Urban	47.3	46.9	5,000	33.8	0.2	11.2	1.5	0.0	3.4	49.8	100.0	34.0	4,711
Rural	38.2	45.8	11,801	20.7	1.1	14.6	1.1	0.2	7.7	54.5	100.0	21.8	9,913
<b>Education of</b>													

	Percentage of households:												
	Where place for handwashing was observed	With no specific place for handwashing in the dwelling, yard, or plot											
			Number of households	Place for handwashing observed: Water is available and: No soap: Water is available and: Soap present	Place for handwashing observed: Water is available and: No soap: No other cleansing agent present	Place for handwashing observed: Water is not available and: Soap present	Place for handwashing observed: Water is not available and: No soap: Ash, mud, or sand present	Place for handwashing observed: Water is not available and: No soap: No other cleansing agent present	Place for handwashing observed: Water is not available and: No soap: No other cleansing agent present	No specific place for handwashing in the dwelling, yard, or plot	Total	Percentage of households with a specific place for handwashing where water and soap or other cleansing agent are present [1]	Number of households where place for handwashing was observed or with no specific place for handwashing
<b>household head</b>													
None	34.1	50.4	7,799	17.8	1.1	12.5	0.8	0.2	7.9	59.6	100.0	18.9	6,585
Primary	39.2	48.6	4,730	22.4	0.9	14.6	1.4	0.2	5.2	55.4	100.0	23.3	4,154
Secondary	52.6	38.1	3,137	36.2	0.2	14.4	2.2	0.0	4.9	42.0	100.0	36.5	2,845
Higher	65.7	27.1	1,013	52.8	0.1	13.5	0.7	0.0	3.7	29.2	100.0	52.9	940
Missing/DK	39.8	42.9	122	18.0	2.7	11.9	1.8	0.0	13.7	51.9	100.0	20.7	101
<b>Wealth index quintile</b>													
Poorest	23.3	52.2	3,368	13.0	1.5	4.7	1.2	0.6	9.8	69.2	100.0	14.4	2,543
Second	30.6	54.1	3,592	16.4	1.0	9.3	1.1	0.1	8.2	63.9	100.0	17.5	3,041
Middle	37.7	49.9	3,339	19.1	0.8	13.5	1.4	0.1	8.1	57.0	100.0	19.9	2,925
Fourth	43.3	48.4	3,209	18.9	0.6	21.8	1.0	0.0	5.0	52.7	100.0	19.4	2,942
Richest	71.2	25.2	3,293	53.8	0.3	16.8	1.5	0.0	1.5	26.1	100.0	54.0	3,174
[1] MICS indicator 4.5 - Place for handwashing													



Table WS.10: Availability of soap or other cleansing agent

Percent distribution of households by availability of soap or other cleansing agent in the dwelling, Sudan, 2014

Background Characteristics	Place for handwashing observed					Place for handwashing not observed		
	Soap or other cleansing agent observed	Soap or other cleansing agent not observed: Soap or other cleansing agent shown	Soap or other cleansing agent not observed at place for handwashing: No soap or other cleansing agent in household	Soap or other cleansing agent not observed at place for handwashing: Not able/Does not want to show cleansing agent	Missing	Soap or other cleansing agent not observed: Soap or other cleansing agent shown	Soap or other cleansing agent not observed at place for handwashing: No soap or other cleansing agent in household	Soap or other cleansing agent not observed at place for handwashing: Not able/Does not want to show cleansing agent
Sudan	23.7	7.2	6.9	3.0	0.2	24.5	19.1	15.3
State								
Northern	23.2	19.0	1.9	3.8	0.0	33.5	5.5	13.1
River Nile	47.3	4.9	2.4	10.0	0.0	19.2	4.5	11.8
Red Sea	14.6	0.2	0.6	0.5	0.0	21.0	38.1	24.7
Kassala	10.7	4.7	3.0	1.5	0.0	24.1	42.1	14.0
Gadarif	1.4	0.4	0.1	0.1	0.0	41.4	39.3	17.3
Khartoum	42.1	8.1	0.9	1.5	0.5	31.7	5.6	9.5
Gezira	19.8	14.6	19.0	3.9	0.0	25.9	5.9	10.8
White Nile	28.8	4.9	7.0	8.4	0.7	12.4	27.0	10.7
Sinnar	44.3	1.8	2.5	5.2	0.1	11.6	19.9	14.5
Blue Nile	21.9	26.6	2.8	1.0	0.1	32.6	12.5	2.6
North Kordofan	2.6	0.6	0.0	0.2	0.0	44.0	20.6	31.6
South Kordofan	33.4	4.0	21.1	2.7	0.3	8.7	19.1	10.6
West Kordofan	9.0	1.9	7.6	4.2	0.0	17.8	28.5	30.5
North Darfor	42.4	8.8	7.7	3.4	0.2	6.2	10.2	21.0
West Darfor	28.6	3.1	11.3	4.1	0.0	23.6	10.2	18.6
South Darfor	11.3	2.7	2.1	0.8	0.3	26.4	36.9	19.5
Central Darfor	25.1	16.3	43.6	7.4	0.8	1.2	4.8	0.7
East Darfor	6.2	0.3	1.7	0.2	0.0	26.7	58.9	6.0
Area								
Urban	33.5	7.1	4.1	2.2	0.3	27.3	13.7	11.6
Rural	19.5	7.2	8.1	3.3	0.1	23.4	21.3	16.9
Education of household head								
None	16.8	6.2	8.0	2.9	0.1	23.5	25.7	16.5
Primary	21.8	7.8	6.3	3.3	0.0	27.1	16.7	16.8
Secondary	35.1	8.5	5.8	2.7	0.5	25.1	10.4	11.9
Higher	49.7	9.0	3.7	3.0	0.2	18.7	5.9	9.6
Missing/DK	18.6	2.8	16.4	1.9	0.0	20.2	20.0	20.0
Wealth index quintile								
Poorest	12.3	2.5	6.3	2.2	0.0	18.8	34.8	22.9
Second	15.8	4.6	7.5	2.6	0.1	22.3	28.7	18.2
Middle	18.8	7.8	8.1	2.7	0.1	29.4	18.3	14.5
Fourth	18.8	11.4	9.6	3.4	0.2	33.1	9.8	13.5
Richest	53.6	10.1	3.1	4.1	0.4	19.5	2.2	7.1

[1] MICS indicator 4.6 - Availability of soap or other cleansing agent

## VIII. REPRODUCTIVE HEALTH

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### 8.1 Fertility

Measures of current fertility are presented in Table RH.1 for the three-year period preceding the survey. A three-year period was chosen for calculating these rates to provide the most current information while also allowing the rates to be calculated for a sufficient number of cases so as not to compromise the statistical precision of the estimates. Age-specific fertility rates (ASFRs), expressed as the number of births per 1,000 women in a specified age group, show the age pattern of fertility. Numerators for ASFRs are calculated by identifying live births that occurred in the three-year period preceding the survey classified according to the age of the mother (in five-year age groups) at the time of the child's birth. The denominators of the rates represent the number of woman-years lived by the survey respondents in each of the five-year age groups during the specified period. The total fertility rate (TFR) is a synthetic measure that denotes the number of live births a woman would have if she were subject to the current age-specific fertility rates throughout her reproductive years (15-49 years). The general fertility rate (GFR) is the number of live births occurring during the specified period per 1,000 women age 15-49. The crude birth rate (CBR) is the number of live births per 1,000 population during the specified period.

Measures of current fertility are presented in Table RH.1 for the three year period preceding the survey. In MICS5, age specific and Sudan fertility rates are calculated by using information on the date of last birth of each woman and are based on the one-year period (1-12 months) preceding the survey. Rates are underestimated by a very small margin due to absence of information on multiple births (twins, triplets, etc.) and on women who may have had multiple deliveries during the one year period preceding the survey. The total fertility rate (TFR) is calculated by summing the age-specific fertility rates calculated for each of the 5-year age groups of women, from age 15 through to age 49. The total fertility rate (TFR) is a synthetic measure that denotes the number of live births a woman would have if she were subject to the current age-specific fertility rates throughout her reproductive years (15-49 years). The general fertility rate (GFR) is the number of live births occurring during the specified period per 1,000 women age 15-49. The crude birth rate (CBR) is the number of live births per 1,000 population during the specified period.

**Table RH.1: Fertility rates**

Adolescent birth rate, age-specific and Sudan fertility rates, the general fertility rate, and the crude birth rate for the one-year / three-year period preceding the survey, by area, Sudan MICS, 2014

Age	Area		Sudan
	Urban	Rural	
15-19 [1]	53	103	87
20-24	167	225	207
25-29	238	268	259
30-34	194	243	226
35-39	151	165	160
40-44	58	78	71
45-49	13	29	23
TFR [a]	4.4	5.6	5.2
GFR [b]	139.5	181.3	167.5
CBR [c]	30.6	35.7	34.2

1 MICS indicator 5.1; MDG indicator 5.4 - Adolescent birth rate

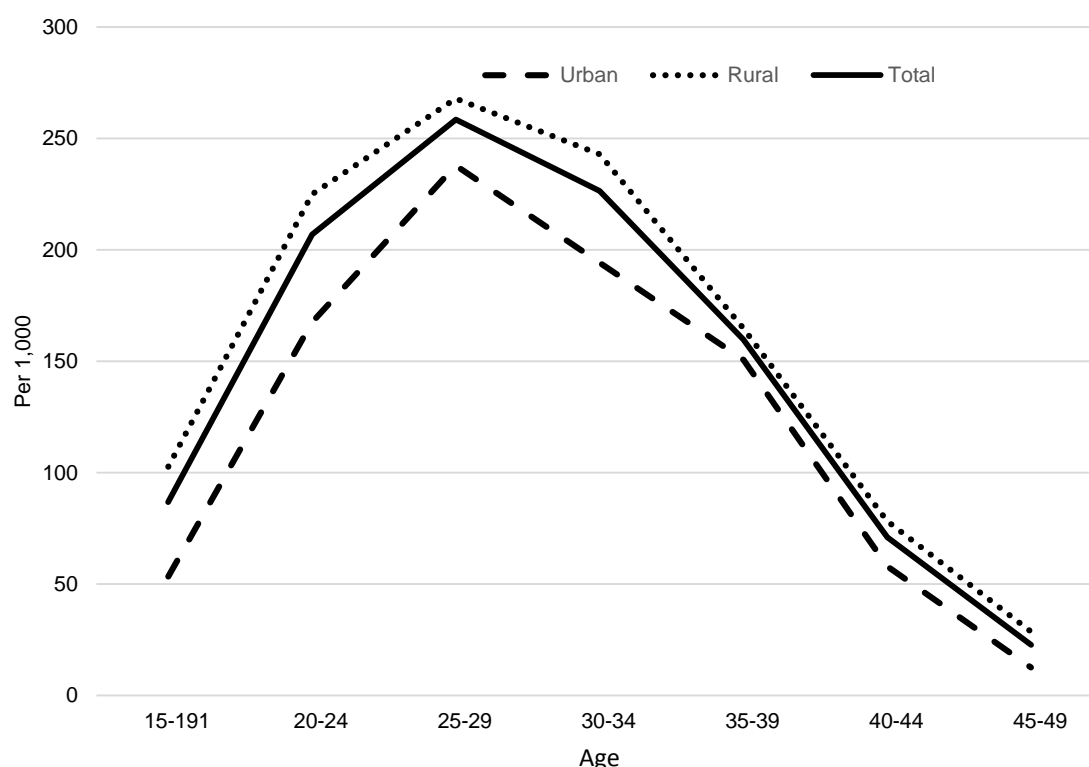
[a] TFR: total fertility rate expressed per woman age 15-49

[b] GFR: General fertility rate expressed per 1,000 women age 15-49

[c] CBR: Crude birth rate expressed per 1,000 population

Table RH.1 shows current fertility in Sudan at the national level and by urban-rural area. The TFR for the three years preceding the survey MICS5 is 5.2 births per woman. Fertility is considerably higher in rural areas (5.6 births per woman) than in the urban areas (4.4 births per woman). As the ASFRs show, the pattern of higher rural fertility is prevalent in all age groups. These results are shown in Figure RH.1 as well.

**Figure RH.1: Age-specific fertility rates by area, Sudan MICS, 2014**



Rates refer to the one year/three years period preceding the survey

The urban-rural difference in fertility is most pronounced for women in the 20-24 age group: 167 births per 1,000 women in urban areas versus 225 births per 1,000 women in rural areas. The overall age pattern of fertility, as reflected in the ASFRs, indicates that childbearing begins early. Fertility is low among adolescents, increases to a peak of 259 births per 1,000 among women age 25-29, and declines thereafter.

Table RH.2 shows adolescent birth rates and Sudan fertility rates. The adolescent birth rate (age-specific fertility rate for women age 15-19) is defined as the number of births to women age 15-19 years during the three year period preceding the survey, divided by the average number of women age 15-19 (number of women-years lived between ages 15 through 19, inclusive) during the same period, expressed per 1,000 women.

Adolescent birth rates at national level according to Table RH.2 is 87 births per 1000 women.

Considerable variations between states are observed. For example adolescent birth rates for Khartoum state is 47 compared to 125 births for South Darfur. Similar variations in TFR are also observed between the states. The highest TFR of 6.9 births is registered for South Darfur state, as compared with a rate of 3.2 births for Red Sea state as the lowest.

According to Table RH.2 the level of education of the woman is inversely correlated with her fertility. Women with secondary or high education shows lower fertility compared with women with primary or no education.

**Table RH.2: Adolescent birth rate and total fertility rate****Adolescent birth rates and Sudan fertility rates for the one-year / three-year period preceding the survey, Sudan  
MICS, 2014**

Background characteristics	Adolescent birth rate [1] (Age-specific fertility rate for women age 15-19)	TFR [a]
<b>Sudan</b>	87	5.2
<b>State</b>		
Northern	52	3.8
River Nile	49	3.6
Red Sea	49	3.2
Kassala	113	4.8
Gadarif	115	5.9
Khartoum	47	4.2
Gezira	65	4.3
White Nile	91	5.2
Sinnar	86	5.3
Blue Nile	114	6.7
North Kordofan	113	4.8
South Kordofan	119	5.8
West Kordofan	91	5.8
North Darfur	100	6.8
West Darfur	117	6.7
South Darfur	125	6.9
Central Darfur	113	5.7
East Darfur	112	6.2
<b>Education</b>		
None	169	6.4
Primary	112	5.4
Secondary	34	4.2
Higher	8	3.2
[1] MICS indicator 5.1; MDG indicator 5.4 - Adolescent birth rate		

**Table RH.3: Early childbearing**

Percentage of women age 15-19 years who have had a live birth, are pregnant with the first child, have begun childbearing, and who have had a live birth before age 15, and percentage of women age 20-24 years who have had a live birth before age 18, Sudan MICS, 2014

Background characteristics	Percentage of women age 15-19 who:				Number of women age 15-19	Percentage of women age 20-24 who have had a live birth before age 18 [1]	Number of women age 20-24
	Have had a live birth	Are pregnant with first child	Have begun childbearing	Have had a live birth before age 15			
<b>Sudan</b>	11.8	3.3	15.1	1.4	3,709	21.5	3,162
<b>State</b>							
Northern	4.9	3.8	8.6	0.3	81	6.3	65
River Nile	10.8	4.3	15.1	1.1	123	10.7	131
Red Sea	10.8	4.7	15.5	2.6	74	10.2	76
Kassala	19.0	3.6	22.6	2.6	147	24.4	125
Gadarif	14.7	4.1	18.8	4.2	164	25.4	163
Khartoum	6.3	3.0	9.4	1.2	583	10.5	470
Gezira	9.7	3.8	13.5	0.9	681	15.1	550
White Nile	9.5	5.0	14.5	0.0	165	21.7	147
Sinnar	10.8	2.3	13.1	1.3	124	24.1	133
Blue Nile	15.2	8.1	23.4	1.6	167	27.8	130
North Kordofan	19.1	1.8	20.9	1.8	249	23.5	222
South Kordofan	15.1	0.8	15.9	3.7	112	36.8	86
West Kordofan	12.1	1.9	14.0	1.0	168	24.8	172
North Darfur	8.5	3.3	11.8	0.1	265	30.4	214
West Darfur	11.9	2.7	14.6	2.6	125	33.8	89
South Darfur	17.2	1.9	19.1	0.8	307	33.5	260
Central Darfur	13.3	1.1	14.4	1.5	63	38.4	41
East Darfur	18.7	1.1	19.8	2.7	114	29.6	88
<b>Area</b>							
Urban	6.5	2.1	8.7	1.0	1219	12.3	1,044
Rural	14.4	3.8	18.2	1.6	2491	26.0	2,118
<b>Education</b>							
None	28.4	4.5	32.9	6.3	519	42.4	802
Primary	14.4	4.1	18.5	1.0	1622	26.4	1,040
Secondary	3.9	2.1	6.0	0.2	1409	8.0	771
Higher	1.7	0.7	2.4	0.8	160	.7	548
<b>Wealth index quintile</b>							
Poorest	15.5	2.7	18.2	1.5	629	32.4	536
Second	17.8	3.8	21.6	2.2	720	35.8	617
Middle	14.9	3.2	18.1	2.4	777	20.1	608
Fourth	7.3	3.6	11.0	0.3	753	16.8	731
Richest	5.1	2.9	8.0	0.7	831	6.2	669

1 MICS indicator 5.2 - Early childbearing

Table RH.4: Trends in early childbearing												
Percentage of women who have had a live birth, by age 15 and 18, by area and age group, Sudan MICS, 2014												
Background characteristics	Urban				Rural				All			
	Percentage of women with a live birth before age 15	Number of women age 15-49 years	Percentage of women with a live birth before age 18	Number of women age 20-49 years	Percentage of women with a live birth before age 15	Number of women age 15-49 years	Percentage of women with a live birth before age 18	Number of women age 20-49 years	Percentage of women with a live birth before age 15	Number of women age 15-49 years	Percentage of women with a live birth before age 18	Number of women age 20-49 years
<b>Sudan</b>	3.6	6029	18.1	4810	6.0	12273	25.5	9783	5.2	18302	23.0	14,593
<b>Age</b>												
15-19	1.0	1219	*	0	1.6	2491	*	0	1.4	3709	*	0
20-24	1.7	1044	12.3	1044	7.1	2118	26.0	2118	5.3	3162	21.5	3,162
25-29	4.9	1030	17.4	1030	7.9	2329	28.4	2329	7.0	3359	25.0	3,359
30-34	4.9	859	20.1	859	6.3	1698	27.6	1698	5.8	2558	25.1	2,558
35-39	4.6	834	20.9	834	6.1	1707	22.1	1707	5.6	2542	21.7	2,542
40-44	5.9	578	20.7	578	7.6	1055	22.0	1055	7.0	1633	21.6	1,633
45-49	4.6	464	20.2	464	7.8	875	22.9	875	6.7	1339	21.9	1,339

[\*] Based on less than 25 unweighted cases and has been suppressed.

Table RH.3 presents some early childbearing<sup>30</sup> indicators for women age 15-19 and 20-24 while Table RH.4 presents the trends for early childbearing.

As shown in Table RH.3, 11.8 percent of women age 15-19 have already had a birth, 3.3 percent are pregnant with their first child, and 1.4 percent have had a live birth before age 15. The table also shows that 21.5 percent of women age 20-24 have had a live birth before age 18.

Generally speaking Table RH.3 shows some variations among the states in all the indicators. Urban women show comparatively lower indicators than the rural women.

The table also shows that women with secondary or higher education show lower indicators compared with women of primary or no education.

In Table RH.4 of the percentage of women who experienced child bearing before age 15 was 5.2 percent. Child bearing before age 15 is significantly higher among rural women 6 percent compared with 3.6 percent among those in urban areas.

Considering child bearing before age 15 by current age of women, the table shows no clear pattern according to the age neither at national nor at urban or rural settings.

Table RH4 also shows percentage distribution of women according their experience with child bearing before age 18 and their current age. The table shows that at national level 23 percent of the women

<sup>30</sup>Childbearing is the process of giving birth to children. While early childbearing is defined as having had live births before specific young ages, for the purposes of Table RH.3, women age 15-19 years who have begun childbearing includes those who have had a live birth as well as those who have not had a live birth but are pregnant with their first child.

have experienced child bearing before age 18, as compared with 18.1 percent for the urban and 25.5 percent for the rural women.

Considering the child bearing before age 18 by current age of women the table shows that:

- Age by age, fewer women in the urban areas experienced bearing before age 18 compared with their rural counterparts.
- Child bearing before age 18 is more prevalent among older generation of urban women while in the rural areas the child bearing before age 18 is more prevalent among younger women.

## **8.2 Contraception**

Appropriate family planning is important to the health of women and children by: 1) preventing pregnancies that are too early or too late; 2) extending the period between births; and 3) limiting the Sudan number of children. Access by all couples to information and services to prevent pregnancies that are too early, too closely spaced, too late or too many is critical.



Table RH.5: Use of contraception

Percentage of women age 15-49 years currently married who are using (or whose partner is using) a contraceptive method, Sudan MICS, 2014

Background characteristics	Percent of women currently married who are using (or whose partner is using):													Any modern method	Any traditional method	Any method [1]	Number of women currently married
	Not method	IUD	Injectable	Implants	Pill	Male condom	Female condom	Diaphragm / foam /jelly	LAM	Periodic abstinence /Rhythm	Withdrawal	Other	Missing				
<b>Sudan</b>	87.8	0.4	1.4	0.3	9.0	0.0	0.0	0.0	0.4	0.2	0.0	0.3	0.1	11.7	0.5	12.2	11,867
<b>State</b>																	
Northern	77.1	0.9	2.4	1.2	15.0	0.1	0.0	0.0	0.2	1.3	0.0	1.8	0.0	19.7	3.1	22.9	280
River Nile	78.7	0.3	2.4	0.1	15.7	0.1	0.0	0.0	1.3	0.5	0.4	0.4	0.0	19.9	1.4	21.3	409
Red Sea	90.4	0.5	1.4	0.5	7.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	9.6	0.0	9.6	323
Kassala	92.1	0.1	0.8	0.2	6.2	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.2	7.3	0.4	7.9	506
Gadarif	90.5	0.1	1.1	0.0	8.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.0	9.2	0.3	9.5	630
Khartoum	73.5	1.7	3.3	1.5	17.3	0.1	0.0	0.0	1.0	0.5	0.0	1.0	0.2	24.9	1.5	26.5	1,623
Gezira	87.8	0.2	1.6	0.0	9.6	0.0	0.1	0.0	0.4	0.1	0.1	0.0	0.1	11.9	0.2	12.2	1,961
White Nile	84.4	0.2	1.6	0.0	11.9	0.1	0.0	0.0	0.4	0.0	0.0	0.9	0.5	14.2	0.9	15.6	577
Sinnar	86.5	0.1	0.9	0.1	11.8	0.0	0.0	0.0	0.6	0.1	0.1	0.0	0.0	13.4	0.1	13.5	450
Blue Nile	92.9	0.1	1.1	0.3	4.5	0.0	0.0	0.0	0.9	0.0	0.0	0.2	0.0	6.9	0.2	7.1	525
North	85.3	0.1	0.7	0.0	13.3	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.2	14.2	0.2	14.7	743
Kordofan																	
South	91.0	0.1	1.1	0.0	7.2	0.0	0.0	0.0	0.4	0.0	0.0	0.1	0.1	8.8	0.1	9.0	355
Kordofan																	
West	93.9	0.1	0.2	0.1	4.8	0.0	0.0	0.3	0.4	0.0	0.0	0.0	0.0	6.0	0.0	6.1	687
Kordofan																	
North Darfur	96.3	0.5	0.2	0.1	2.7	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	3.7	0.0	3.7	913
West Darfur	95.9	0.3	0.8	0.0	2.4	0.2	0.0	0.0	0.2	0.2	0.0	0.0	0.0	3.9	0.2	4.1	383
South	94.6	0.0	1.6	0.1	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	5.3	0.1	5.4	933
Darfur																	
Central	97.1	0.0	0.2	0.0	2.4	0.0	0.2	0.0	0.0	0.2	0.0	0.0	0.0	2.7	0.2	2.9	188
Darfur																	
East Darfur	93.8	0.4	0.5	0.1	3.8	0.0	0.0	0.0	1.0	0.0	0.0	0.2	0.1	5.8	0.2	6.2	378
<b>Area</b>																	
Urban	79.9	1.0	1.9	0.8	14.5	0.1	0.0	0.0	0.7	0.3	0.1	0.7	0.0	19.0	1.0	20.1	3,437
Rural	91.0	0.2	1.2	0.1	6.8	0.0	0.0	0.0	0.3	0.1	0.0	0.1	0.1	8.7	0.3	9.0	8,430
<b>Age</b>																	
15-19	93.6	0.0	0.2	0.0	5.5	0.0	0.0	0.0	0.2	0.5	0.0	0.0	0.0	5.9	0.5	6.4	741

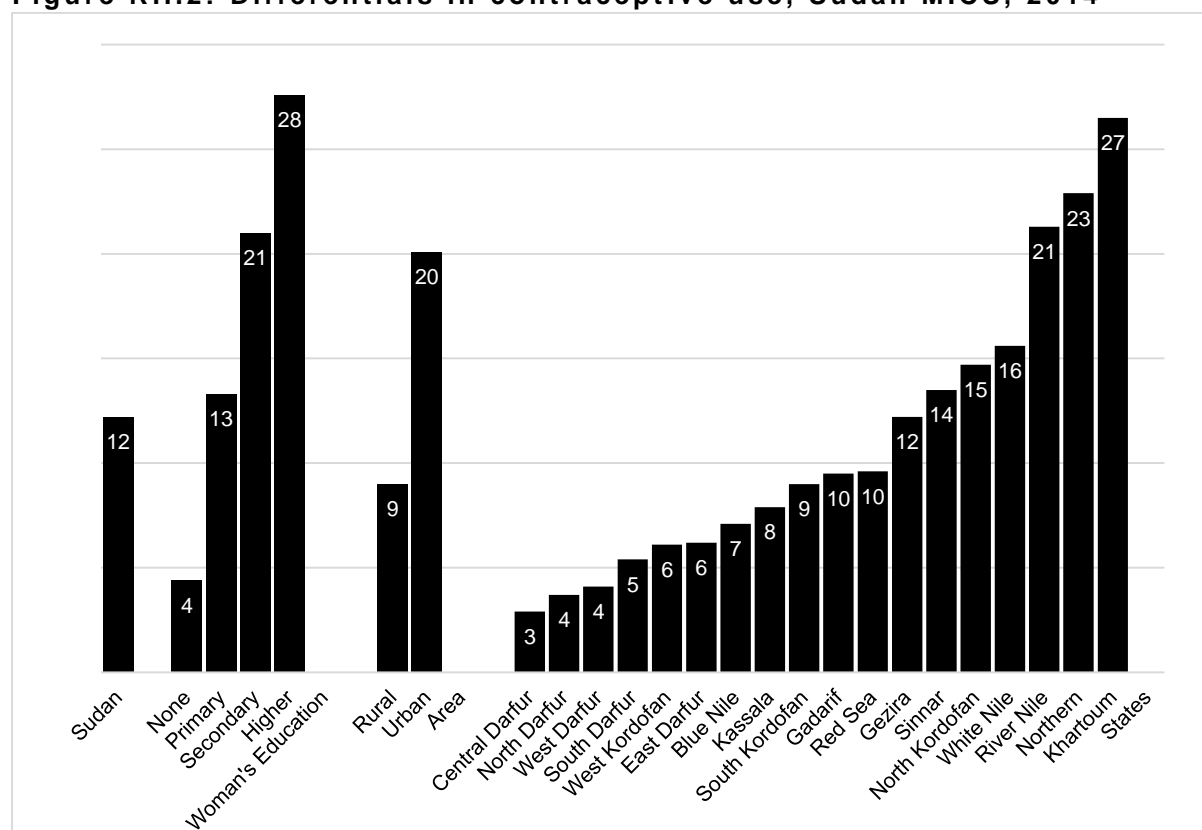
Background characteristics	Percent of women currently married who are using (or whose partner is using):													Any modern method	Any traditional method	Any method [1]	Number of women currently married
	Not method	IUD	Injectables	Implants	Pill	Male condom	Female condom	Diaphragm / foam /jelly	LAM	Periodic abstinence /Rhythm	Withdrawal	Other	Missing				
20-24	89.3	0.2	1.1	0.3	8.3	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.2	10.5	0.0	10.7	1,737
25-29	86.0	0.2	0.8	0.5	11.8	0.0	0.0	0.0	0.4	0.1	0.0	0.0	0.2	13.7	0.1	14.0	2,617
30-34	86.7	0.5	1.3	0.5	9.5	0.1	0.0	0.1	0.7	0.1	0.0	0.3	0.1	12.8	0.4	13.3	2,130
35-39	85.3	0.3	2.9	0.2	10.0	0.0	0.0	0.0	0.5	0.1	0.0	0.6	0.0	14.1	0.7	14.7	2,160
40-44	88.1	0.8	2.2	0.1	7.8	0.1	0.1	0.0	0.2	0.5	0.0	0.2	0.0	11.3	0.6	11.9	1,374
45-49	92.2	1.2	0.4	0.0	4.4	0.0	0.0	0.0	0.2	0.4	0.3	1.0	0.0	6.2	1.6	7.8	1,107
Number of living children																	
0	99.6	0.0	0.1	0.0	.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	.4	1,156
1	89.6	0.0	0.2	0.3	9.2	0.0	0.0	0.0	0.2	0.3	0.0	0.1	0.0	9.9	0.4	10.4	1,506
2	83.9	0.5	1.3	0.7	12.9	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.2	15.9	0.0	16.1	1,590
3	82.5	0.6	2.0	0.3	13.4	0.1	0.0	0.0	0.5	0.1	0.1	0.2	0.2	17.0	0.3	17.5	1,653
4+	87.5	0.5	1.9	0.2	8.4	0.0	0.0	0.0	0.5	0.2	0.0	0.5	0.1	11.7	0.8	12.5	5,962
Education																	
None	95.6	0.1	0.5	0.0	3.2	0.0	0.0	0.0	0.3	0.0	0.0	0.1	0.0	4.2	0.1	4.4	4,778
Primary	86.7	0.3	1.8	0.2	9.7	0.1	0.0	0.1	0.5	0.2	0.0	0.3	0.2	12.6	0.5	13.3	3,961
Secondary	79.0	0.8	2.6	0.5	15.4	0.0	0.1	0.0	0.6	0.4	0.2	0.4	0.0	20.0	1.0	21.0	2,228
Higher	72.4	1.4	1.9	1.8	21.1	0.1	0.0	0.0	0.3	0.2	0.1	0.5	0.1	26.6	0.9	27.6	895
Missing/DK	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	5
Wealth index quintile																	
Poorest	96.2	0.1	0.2	0.0	3.3	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	3.8	0.0	3.8	2,341
Second	94.9	0.1	0.7	0.0	3.7	0.0	0.0	.1	0.3	0.1	0.0	0.0	0.1	4.9	0.2	5.1	2,412
Middle	90.9	0.1	1.2	0.1	7.1	0.0	0.0	0.0	0.3	0.0	0.0	0.2	0.0	8.8	0.3	9.1	2,417
Fourth	82.7	0.5	2.5	0.2	12.4	0.0	0.1	0.0	0.9	0.1	0.0	0.2	0.3	16.7	0.3	17.3	2,333
Richest	74.0	1.3	2.6	1.2	18.7	0.1	0.0	0.0	0.4	0.5	0.2	0.9	0.0	24.4	1.7	26.0	2,364
[1] MICS indicator 5.3; MDG indicator 5.3 - Contraceptive prevalence rate, [*] Based on less than 25 unweighted cases and has been suppressed.																	

Current use of contraception was reported by 12.2 percent of women currently married<sup>31</sup> (See Table RH.5). The most popular method was the pill which is used by about one in ten married women in Sudan (9.0 percent). The next most popular method is injectable, which accounts for 1.4 percent of married women. Between 0.4 percent and 1.4 percent of married women reported the use of IUDs, and injectable. Less than 1 percent use periodic abstinence, withdrawal, female condom, male condom, implants, diaphragm/foam/jelly or the lactational amenorrhea method (LAM). Almost 87.8 percent of the married women reported that they are not using any form of contraception.

The survey results show that contraceptive prevalence ranges from 2.9 percent in Central Darfur to 26.5 percent in Khartoum State. About 20.1 percent of married women in urban and 9.0 percent in rural areas use a method of contraception. The findings by state and area are shown in Figure RH.5. Adolescents are far less likely to use contraception than older women. Only 6.4 percent of women age 15-19 married currently use a method of contraception compared to 10.7 percent of 20-24 year olds, while the use of contraception among older women ranges from 7.8 percent to 14.7 percent.

Women's level of education is strongly associated with contraceptive prevalence. The percentage of married women using any method of contraception rises from 4.4 percent among those with no education to 13.3 percent among those with primary education, and to 21.0 percent and 27.6 percent among those with secondary and higher education respectively. Despite the differences in overall prevalence, the pattern of use by specific methods does not vary significantly with the level of education.

**Figure RH.2: Differentials in contraceptive use, Sudan MICS, 2014**



<sup>31</sup> All references to "married women" in this chapter include women in marital union as well.

### 8.3 Unmet Need

Unmet need for contraception refers to fecund women who are married and are not using any method of contraception, but who wish to postpone the next birth (spacing) or who wish to stop childbearing altogether (limiting). Unmet need is identified in MICS by using a set of questions eliciting current behaviours and preferences pertaining to contraceptive use, fecundity, and fertility preferences.

Table RH.6 shows the levels of met need for contraception, unmet need, and the demand for contraception satisfied.

Unmet need for spacing is defined as the percentage of women who are married and are not using a method of contraception AND

- are not pregnant, and not postpartum amenorrheic<sup>32</sup>, and are fecund<sup>33</sup>, and say they want to wait two or more years for their next birth OR
- are not pregnant, and not postpartum amenorrheic, and are fecund, and unsure whether they want another child OR
- are pregnant, and say that pregnancy was mistimed: would have wanted to wait OR
- are postpartum amenorrheic, and say that the birth was mistimed: would have wanted to wait

Unmet need for limiting is defined as percentage of women who are married and are not using a method of contraception AND

- are not pregnant, and not postpartum amenorrheic, and are fecund, and say they do not want any more children OR
- are pregnant, and say they did not want to have a child OR
- Are postpartum amenorrheic, and say that they did not want the birth.

Sudan unmet need for contraception is the sum of unmet need for spacing and unmet need for limiting. This indicator is also known as unmet for family planning and is one of the indicators used to track progress towards achieving the MDG 5 of improving maternal health.

This indicator is also known as unmet need for family planning and is one of the indicators used to track progress toward the Millennium Development Goal 5 of improving maternal health.

Met need for limiting includes women married who are using (or whose partner is using) a contraceptive method<sup>34</sup>, and who want no more children, are using male or female sterilization, or declare themselves as infecund. Met need for spacing includes women who are using (or whose partner is using) a contraceptive method, and who want to have another child, or are undecided

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<sup>32</sup> A woman is postpartum amenorrheic if she had a birth in last two years and is not currently pregnant, and her menstrual period has not returned since the birth of the last child

<sup>33</sup> A woman is considered infecund if she is neither pregnant nor postpartum amenorrheic, and (1a) has not had menstruation for at least six months, or (1b) never menstruated, or (1c) her last menstruation occurred before her last birth, or (1d) in menopause/has had hysterectomy OR (2) She declares that she has had hysterectomy, or that she has never menstruated, or that she is menopausal, or that she has been trying to get pregnant for 2 or more years without result in response to questions on why she thinks she is not physically able to get pregnant at the time of survey OR (3) She declares she cannot get pregnant when asked about desire for future birth OR (4) She has not had a birth in the preceding 5 years, is currently not using contraception and is currently married and was continuously married during the last 5 years preceding the survey.

<sup>34</sup> In this chapter, whenever reference is made to the use of a contraceptive by a woman, this may refer to her partner using a contraceptive method (such as male condom).

whether to have another child. The Sudan of met need for spacing and limiting adds up to the Sudan met need for contraception.

Using information on contraception and unmet need, the percentage of demand for contraception satisfied is also estimated from the MICS data. The percentage of demand satisfied is defined as the proportion of women currently married who are currently using contraception, over the Sudan demand for contraception. The Sudan demand for contraception includes women who currently have an unmet need (for spacing or limiting), plus those who are currently using contraception.

Table RH.6 shows that the Sudan met need (13.4 percent) is higher than the Sudan unmet need (26.6 percent) for family planning. Unmet need is also highest among rural (27.5 percent) compared to urban women (24.4 percent); and is higher among women with no education (26.9 percent) or primary education (28.8 percent) compared to those with secondary (24.0 percent) and higher education (21.5 percent).. The table also highlights that the Sudan demand for satisfactory family planning is 33.4 percent, with some discrepancies according to location with satisfactory demand in urban areas as 47.4 percent while in rural areas it is still relatively low (26.4 percent).

Table RH.6: Unmet need for contraception									
Percentage of women age 15-49 years currently married with an unmet need for family planning and percentage of demand for contraception satisfied, Sudan MICS, 2014									
Background characteristics	Met need for contraception			Unmet need for contraception			Number of women currently married	Percentage of demand for contraception satisfied	Number of women currently married with need for contraception
	For spacing	For limiting	Total	For spacing	For limiting	Total [1]			
<b>Sudan</b>	9.1	4.2	13.4	19.1	7.5	26.6	11,867	33.4	4,739
<b>State</b>									
Northern	15.1	9.5	24.6	15.6	14.3	29.9	280	45.1	153
River Nile	16.1	7.0	23.1	16.4	8.4	24.8	409	48.3	196
Red Sea	7.5	3.0	10.5	13.0	6.1	19.1	323	35.5	96
Kassala	5.0	3.8	8.8	12.0	4.7	16.7	506	34.5	129
Gadarif	7.4	2.6	10.0	19.4	4.6	24.0	630	29.4	214
Khartoum	18.4	11.1	29.5	14.6	6.6	21.3	1,623	58.2	824
Gezira	9.4	3.2	12.6	22.5	6.2	28.7	1,961	30.5	811
White Nile	11.4	5.8	17.2	19.8	9.1	28.8	577	37.4	266
Sinnar	10.6	4.1	14.7	19.7	6.5	26.1	450	36.1	184
Blue Nile	6.2	1.6	7.8	20.7	5.1	25.8	525	23.1	176
North Kordofan	11.9	4.6	16.5	19.9	12.5	32.4	743	33.7	363
South Kordofan	7.6	1.8	9.4	24.1	9.7	33.8	355	21.7	153
West Kordofan	4.6	1.7	6.2	16.0	8.0	23.9	687	20.7	207
North Darfur	3.4	0.9	4.4	21.2	8.4	29.7	913	12.8	311
West Darfur	3.2	1.2	4.4	16.1	5.1	21.2	383	17.2	98
South Darfur	4.0	2.3	6.4	22.9	8.9	31.8	933	16.7	356
Central Darfur	3.2	0.6	3.8	19.8	8.0	27.9	188	11.9	60
East Darfur	3.6	3.0	6.6	22.4	8.5	30.9	378	17.5	142

Background characteristics	Met need for contraception			Unmet need for contraception			Number of women currently married	Percentage of demand for contraception satisfied	Number of women currently married with need for contraception
	For spacing	For limiting	Total	For spacing	For limiting	Total [1]			
<b>Area</b>									
Urban	13.9	8.1	22.0	16.3	8.1	24.4	3,437	47.4	1,595
Rural	7.2	2.7	9.8	20.2	7.3	27.5	8,430	26.4	3,144
<b>Age</b>									
15-19	6.7	0.3	6.9	23.8	1.0	24.8	741	21.9	235
20-24	10.2	1.6	11.8	23.3	1.7	25.0	1,737	32.1	641
25-29	13.1	2.6	15.7	22.9	4.9	27.8	2,617	36.1	1,137
30-34	10.7	4.2	14.9	21.6	8.6	30.2	2,130	33.1	961
35-39	9.1	6.5	15.6	17.7	9.8	27.5	2,160	36.2	932
40-44	4.4	8.1	12.5	11.3	15.3	26.6	1,374	32.0	538
45-49	2.2	6.0	8.2	7.6	11.0	18.6	1,107	30.6	297
<b>Education</b>									
None	2.8	1.9	4.7	18.4	8.5	26.9	4,778	14.9	1,509
Primary	10.2	4.4	14.5	21.5	7.2	28.8	3,961	33.6	1,716
Secondary	15.0	8.3	23.3	16.3	7.7	24.0	2,228	49.2	1,053
Higher	23.5	6.3	29.8	18.5	3.0	21.5	895	58.1	459
Missing/DK	*	*	*	*	*	*	5	*	2
[[1] MICS indicator 5.4; MDG indicator 5.6 - Unmet need									
[*] Based on less than 25 unweighted cases and has been suppressed.									

Table RH.6 shows that unmet need for contraception is highest (33.8 percent) among women in South Kordofan State and lowest (16.7 percent) among women in Kassala State. The results show no large differences in the unmet need of different age groups, this ranges from 24.8 percent for women in the age 15-19 to 30.2 percent among those falling in the age group 30 – 34.

## 8.4 Antenatal Care (ANC)

The antenatal period presents important opportunities for reaching pregnant women with a number of interventions that may be vital to their health and well-being and that of their infants. Better understanding of foetal growth and development and its relationship to the mother's health has resulted in increased attention to the potential of antenatal care as an intervention to improve both maternal and new-born health. For example, antenatal care can be used to inform women and families about risks and symptoms in pregnancy and about the risks of labour and delivery, and therefore it may provide the route for ensuring that pregnant women do, in practice, deliver with the assistance of a skilled health care provider. Antenatal visits also provide an opportunity to supply information on birth spacing, which is recognized as an important factor in improving infant survival. Tetanus immunization during pregnancy can be life-saving for both the mother and the infant. The prevention and treatment of malaria among pregnant women, management of anaemia during pregnancy and treatment of sexually transmitted infections (STIs) can significantly improve foetal outcomes and improve maternal health. Adverse outcomes such as low birth weight can be reduced through a combination of interventions to improve women's nutritional status and prevent infections (e.g., malaria and STIs) during pregnancy. More recently, the potential of the antenatal care as an entry

point for HIV prevention and care, in particular for the prevention of HIV transmission from mother to child, has led to renewed interest in access to and use of antenatal services.

WHO recommends a minimum of four antenatal visits based on a review of the effectiveness of different models of antenatal care. WHO guidelines are specific on the content on antenatal care visits, which include:

- Blood pressure measurement
- Urine testing for bacteriuria and proteinuria
- Blood testing to detect syphilis and severe anaemia
- Weight/height measurement (optional).

It is of crucial importance for pregnant women to start attending antenatal care visits as early in pregnancy as possible in order to prevent and detect pregnancy conditions that could affect both the woman and her baby. Antenatal care should continue throughout the entire pregnancy.

Antenatal care coverage indicators (at least one visit with a skilled provider and 4 or more visits with any providers) are used to track progress toward the Millennium Development Goal 5 of improving maternal health.

The type of personnel providing antenatal care to women age 15-49 years who gave birth in the two years preceding is presented in Table RH.7. Overall, the proportion of women who received ANC from any skilled provider was 79.1 percent while those women who did not receive ANC was 19.9 percent. There exists rural-urban differentials in favour of women who received antenatal care in urban areas (90.8 percent) compared to women in rural areas (74.9 percent).

There was also significant differences among the states for women who received ANC from any provider; ranging from 61.8 percent of women in South Darfur state to 97.1 percent of the women in Khartoum state.

Differences also exist among women in the wealth index households who received ANC ranging from 61.7 in the poorest households to 97.2 percent in the richest households.

Table RH.7: Antenatal care coverage

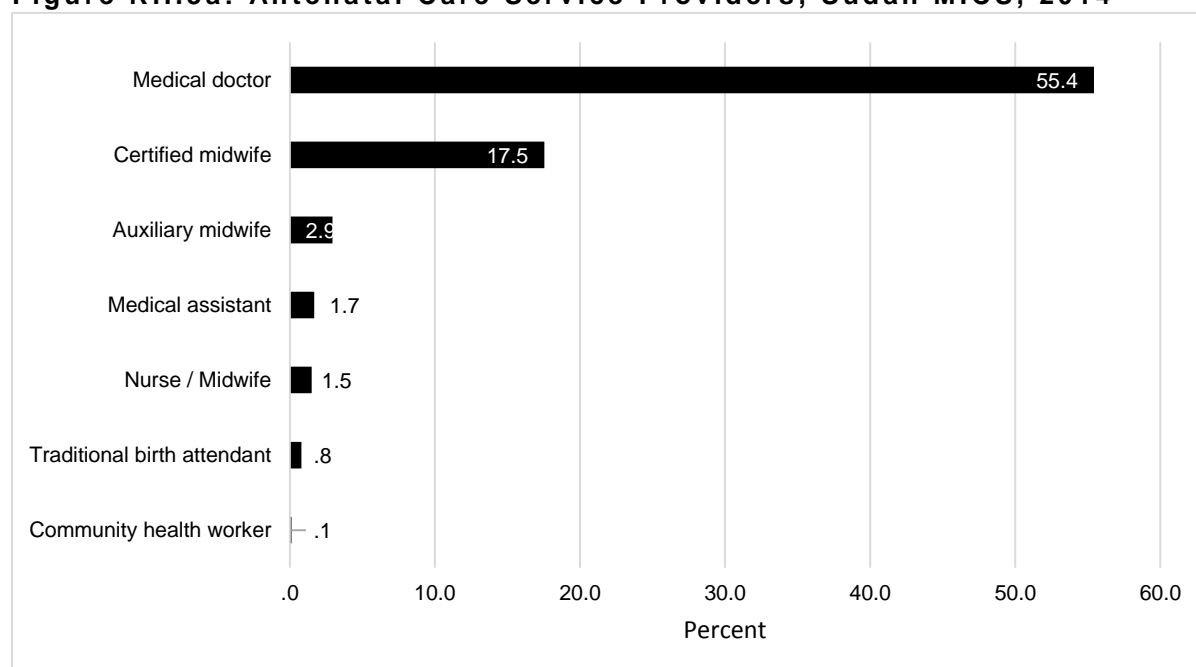
Percent distribution of women age 15-49 years with a live birth in the last two years by antenatal care provider during the pregnancy for the last birth, Sudan MICS, 2014

Background characteristics	Provider of antenatal care [a]									Any skilled provider [1]	Number of women with a live birth in the last two years
	Medical doctor	Nurse / Midwife	Auxiliary midwife	Certified midwife	Medical assistant	Traditional birth attendant	Community health worker	Other/missing	No antenatal care		
<b>Sudan</b>	55.4	1.5	2.9	17.5	1.7	0.8	0.1	0.1	19.9	79.1	5,622
<b>State</b>											
Northern	94.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.3	94.7	92
River Nile	88.8	0.0	1.2	4.4	0.7	0.0	0.0	0.0	4.8	95.2	151
Red Sea	64.2	1.7	1.4	5.1	0.0	0.9	0.0	0.0	26.7	72.4	92
Kassala	60.4	0.3	4.8	11.5	6.0	0.0	0.0	0.5	16.5	83.0	199
Gadarif	58.5	2.9	2.5	16.7	0.0	0.6	0.0	0.0	18.9	80.5	307
Khartoum	84.2	1.8	4.8	6.3	0.0	0.0	0.5	0.0	2.4	97.1	684
Gezira	74.9	1.0	2.4	4.9	0.0	0.0	0.0	0.0	16.7	83.3	852
White Nile	71.1	0.2	0.0	6.2	1.2	0.0	0.1	0.0	21.1	78.8	273
Sinnar	59.3	2.0	3.0	11.0	0.0	0.0	0.0	0.0	24.7	75.3	226
Blue Nile	46.9	0.5	1.0	23.0	0.4	0.2	0.0	0.0	28.0	71.8	287
North Kordofan	66.3	0.6	1.9	12.7	4.2	0.0	0.0	0.0	14.4	85.6	352
South Kordofan	38.8	1.1	7.4	36.7	0.9	0.3	0.2	1.0	13.4	85.1	194
West Kordofan	37.2	3.8	3.0	18.3	3.0	0.6	0.2	0.0	34.0	65.3	341
North Darfur	35.5	2.1	5.8	22.2	2.9	2.3	0.4	0.0	28.7	68.7	525
West Darfur	15.6	2.3	0.9	55.7	0.7	2.8	0.0	0.0	22.0	75.2	179
South Darfur	25.3	1.5	3.2	27.3	4.5	2.3	0.0	0.3	35.7	61.8	556
Central Darfur	16.1	1.2	0.5	42.1	7.9	8.1	0.0	0.4	23.6	67.9	99
East Darfur	24.3	1.8	0.0	56.4	0.5	0.6	0.2	0.0	16.3	82.9	211
<b>Area</b>											
Urban	68.3	2.4	4.9	14.9	0.2	0.3	0.0	0.1	8.9	90.8	1,488
Rural	50.8	1.2	2.2	18.5	2.2	1.0	0.2	0.1	23.9	74.9	4,134
<b>Mother's age at birth</b>											
Less than 20	56.8	0.9	1.6	19.6	2.5	0.7	0.0	0.0	17.9	81.4	640
20-34	56.2	1.3	3.2	17.2	1.6	0.9	0.2	0.1	19.5	79.4	4,001
35-49	51.4	2.9	2.9	17.6	1.7	0.6	0.1	0.0	22.9	76.4	980
Missing	*	*	*	*	*	*	*	*	*	*	1
<b>Education</b>											
None	35.8	1.3	2.8	23.1	2.7	1.5	0.1	0.1	32.5	65.7	2,247
Primary	59.3	2.0	3.1	18.0	1.3	0.3	0.2	0.1	15.7	83.8	2,022
Secondary	77.4	1.5	3.6	9.2	0.8	0.2	0.0	0.0	7.2	92.5	942
Higher	93.1	0.0	1.3	4.0	0.2	0.4	0.1	0.0	.9	98.6	410
<b>Wealth index quintile</b>											
Poorest	27.8	1.0	2.1	26.0	4.7	2.1	0.1	0.3	35.8	61.7	1,251
Second	41.3	2.2	2.5	25.5	2.3	1.1	0.1	0.1	24.8	73.9	1,232
Middle	53.6	1.6	4.9	17.3	0.5	0.5	0.3	0.0	21.3	78.0	1,192
Fourth	77.9	1.6	3.1	9.3	0.1	0.0	0.1	0.0	7.9	92.0	1,096
Richest	90.0	0.8	1.8	4.5	0.1	0.0	0.0	0.0	2.8	97.2	851



In Sudan, antenatal care is mostly provided by medical doctors (55.4 percent) while a minority of women receive care from a traditional birth attendant (0.8 percent), mostly in rural areas. Figure RH.3 below shows the distribution of people that provide antenatal care to the pregnant women

**Figure RH.3a: Antenatal Care Service Providers, Sudan MICS, 2014**



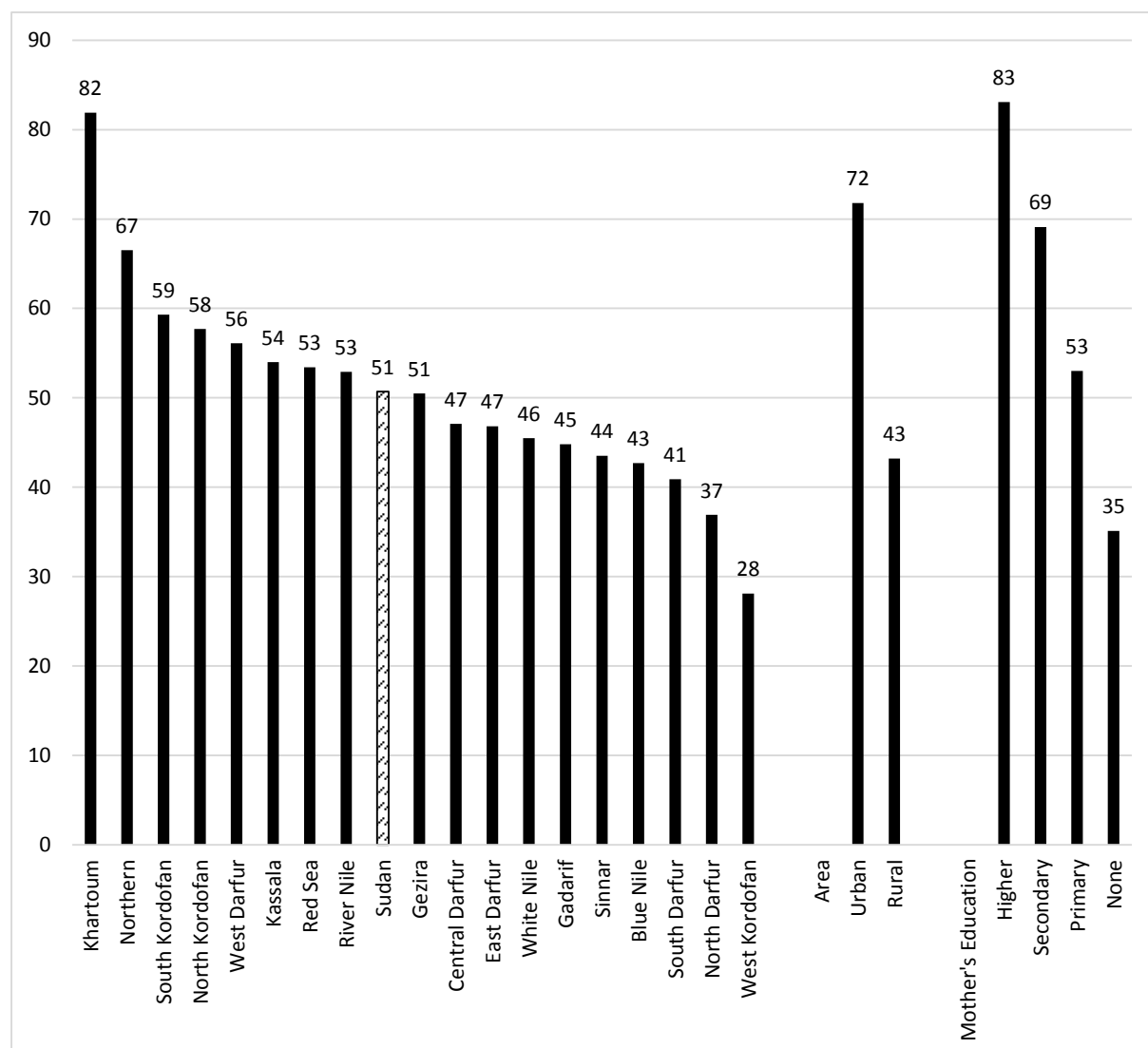
The percentage of women who received ANC was found to be influenced by the women's educational level and the level of household wealth: only 65.7 percent of women with no formal education received ANC at least once by skilled personnel, while 83.8 percent of women with primary education and 92.5 percent and 98.6 percent of women with secondary and higher level of education respectively; have received ANC at least once by skilled personnel. There were significant differentials among women who received ANC from households in the richest quintile (97.2 percent) and those in the poorest quintile (61.7 percent) respectively.

Table RH.8 shows the number of antenatal care visits during the latest pregnancy that took place within the two years preceding the survey, regardless of provider, by selected characteristics. Almost four in five mothers (82.3 percent) received antenatal care more than once and over half of mothers received antenatal care at least four times (50.7 percent). Mothers from the poorest households and those with primary or no education are less likely than more advantaged mothers to receive antenatal care four or more times. For example, while only 35.1 percent of the women with no education have reported four or more antenatal care visits, as large as 83.1 of the women with higher education have been served four times or more. Along the same line, 31.9 percent of the women living in poorest households reported four or more antenatal care visits compared with 81.3 percent among those living in richest households.

Table RH.8 also provides information about the timing of the first antenatal care visit. Overall, 59.2 percent of women with a live birth in the last two years had their first antenatal care visit during the

first trimester of their last pregnancy, with a median of 2.0 months of pregnancy at the first visit among those who received antenatal care.

**Figure RH.3b: Women age 15-49 years with a live birth in the last two years who made 4 or more antenatal care visits, by state, area and mother's education, Sudan MICS, 2014**



**Table RH.8: Number of antenatal care visits**

Percent distribution of women age 15-49 years with a live birth in the last two years by number of antenatal care visits by any provider and by the timing of first antenatal care visits, Sudan MICS, 2014

Background characteristics	Percent distribution of women who had:						Percent distribution of women by number of months pregnant at the time of first antenatal care visit						Number of women with a live birth in the last two years	Median months pregnant at first ANC visit	Number of women with a live birth in the last two years who had at least one ANC visit
	No antenatal care visits	1 visit	2 visits	3 visits	4 or more visits [1]	Missing/ DK	No antenatal care visits	First trimester	4-5 months	6-7 months	8+ months	DK/ Missing			
<b>Sudan</b>	19.9	4.6	9.3	14.4	50.7	1.0	20.1	46.5	21.3	9.4	2.4	0.4	5,622	3	4,468
<b>State</b>															
Northern	5.6	5.2	9.3	13.5	66.5	0.0	5.3	63.1	17.8	9.4	4.1	0.3	92	2	87
River Nile	4.8	7.8	11.8	22.6	52.9	0.0	4.8	49.6	28.8	11.7	4.6	0.4	151	3	143
Red Sea	26.7	1.1	6.3	11.5	53.4	1.0	27.2	44.4	22.6	4.2	0.4	1.2	92	3	66
Kassala	16.5	6.8	8.8	13.3	54.0	0.7	17.4	44.8	22.9	11.4	2.9	0.6	199	3	164
Gadarif	18.9	5.8	12.5	16.7	44.8	1.4	18.9	43.3	27.4	7.3	1.6	1.6	307	3	244
Khartoum	2.4	1.8	5.1	8.2	81.9	0.6	2.7	65.8	22.7	7.9	0.3	0.6	684	3	661
Gezira	16.7	4.9	10.8	16.8	50.5	0.2	16.7	55.0	18.1	8.5	1.7	0.0	852	3	710
White Nile	21.1	8.7	8.3	16.1	45.5	0.4	21.1	39.8	23.6	9.2	6.0	0.3	273	3	215
Sinnar	24.7	6.2	12.2	13.5	43.5	0.0	24.7	48.5	17.9	7.5	1.5	0.0	226	3	170
Blue Nile	28.0	5.0	9.3	14.8	42.7	0.3	28.0	46.2	14.9	8.0	2.7	0.2	287	3	206
North Kordofan	14.4	1.6	6.9	15.6	57.7	3.9	14.8	54.7	18.0	10.5	2.0	0.0	352	3	300
South Kordofan	13.6	2.7	9.4	14.2	59.3	0.9	13.6	36.4	32.8	14.3	2.5	0.4	194	4	167
West Kordofan	34.0	5.7	13.7	17.9	28.1	0.6	34.1	32.7	15.1	11.8	5.2	1.0	341	3	221
North Darfur	28.8	5.8	12.9	14.8	36.9	0.8	28.7	30.8	27.7	10.7	1.8	0.3	525	4	373

Background characteristics	Percent distribution of women who had:						Percent distribution of women by number of months pregnant at the time of first antenatal care visit						Number of women with a live birth in the last two years	Median months pregnant at first ANC visit	Number of women with a live birth in the last two years who had at least one ANC visit
	No antenatal care visits	1 visit	2 visits	3 visits	4 or more visits [1]	Missing/ DK	No antenatal care visits	First trimester	4-5 months	6-7 months	8+ months	DK/ Missing			
West Darfur	22.0	3.3	8.9	9.8	56.1	0.0	23.1	43.8	21.2	8.6	2.9	0.3	179	3	137
South Darfur	35.7	2.9	6.8	11.8	40.9	1.9	35.7	38.0	14.8	8.5	2.3	0.7	556	3	354
Central Darfur	23.6	3.6	5.7	17.7	47.1	2.3	23.6	40.5	22.8	11.0	1.9	0.2	99	3	75
East Darfur	16.3	8.8	7.2	18.9	46.8	2.1	16.8	37.4	29.8	11.6	4.3	0.2	211	4	175
<b>Area</b>															
Urban	9.0	2.4	4.8	10.5	71.8	1.5	9.2	58.3	23.4	6.8	1.6	0.7	1,488	3	1,340
Rural	23.9	5.4	10.9	15.9	43.2	0.8	24.0	42.2	20.6	10.3	2.7	0.3	4,134	3	3,128
<b>Mother's age at birth</b>															
Less than 20	17.9	6.0	9.4	16.9	49.0	0.8	18.0	52.2	19.1	7.9	2.4	0.3	640	3	523
20-34	19.5	4.4	9.8	14.7	50.7	1.0	19.7	46.5	21.7	9.3	2.4	0.4	4,001	3	3,196
35-49	22.9	4.8	7.4	12.0	52.2	0.8	23.0	42.5	21.2	10.5	2.3	0.5	980	3	750
<b>Education</b>															
None	32.5	5.6	11.6	14.3	35.1	1.0	32.6	33.8	19.6	10.2	3.0	0.7	2,247	3	1,498
Primary	15.8	4.8	10.2	15.5	53.0	0.7	15.9	47.0	24.6	10.2	2.1	0.1	2,022	3	1,698
Secondary	7.2	3.3	5.0	14.0	69.1	1.5	7.3	60.5	21.4	8.5	1.9	0.4	942	3	870
Higher	0.9	1.7	2.3	11.1	83.1	0.9	1.5	80.7	13.7	2.1	1.5	0.5	410	2	402

The coverage of key services that pregnant women are expected to receive during antenatal care are shown in Table RH.9 below. Among those women who had a live birth during the two years preceding the survey, 66.1 percent reported that a blood sample was taken during antenatal care visits, 66.9 percent that their blood pressure was checked, and 66.1 percent that urine specimen was taken. In general, 62.8 percent of these women reported that their blood sample and urine taken and blood pressure measured. The proportion of women who had had two samples and one measurement taken was higher for urban (81.3 percent) than rural areas (56.1 percent) and it increases with education level of the mother; with 43.4 percent for those with no education, 68.3 percent for mothers with primary, 82.7 for those with secondary, and 96.2 percent for women with higher education. Khartoum State had the highest proportion (95.6 percent) of women who received antenatal care and had their blood pressure measured, urine sample taken and blood test taken during ANC visits. The lowest proportion of women who received these services during ANC visits was in Central Darfur State (30.7 percent). The survey results indicated significant differentials according to household well-being with 38.1 percent in the poorest quintile and 92.7 percent of the women in the richest quintile had had their blood pressure measured, urine sample taken and blood test done during the ANC visit

**Table RH.9: Content of antenatal care**

Percentage of women age 15-49 years with a live birth in the last two years who, at least once, had their blood pressure measured, urine sample taken, and blood sample taken as part of antenatal care, during the pregnancy for the last birth, Sudan MICS, 2014

Background characteristics	Percentage of women who, during the pregnancy of their last birth, had:				Number of women with a live birth in the last two years
	Blood pressure measured	Urine sample taken	Blood sample taken	Blood pressure measured, urine and blood sample taken [1]	
<b>Sudan</b>	66.9	66.1	66.1	62.8	5,622
<b>State</b>					
Northern	91.3	94.0	94.1	90.6	92
River Nile	90.2	88.7	89.9	87.3	151
Red Sea	72.6	72.0	67.6	66.1	92
Kassala	73.2	74.4	73.8	71.5	199
Gadarif	66.3	65.9	65.2	64.4	307
Khartoum	96.3	96.9	96.1	95.6	684
Gezira	74.8	72.8	74.1	68.9	852
White Nile	70.3	69.0	68.8	65.6	273
Sinnar	62.5	63.8	64.1	58.8	226
Blue Nile	50.7	54.8	53.6	46.8	287
North Kordofan	74.1	75.3	73.9	73.1	352
South Kordofan	80.4	81.6	81.1	79.5	194
West Kordofan	55.0	54.8	54.8	53.0	341
North Darfur	51.8	49.8	49.8	46.7	525
West Darfur	51.9	48.7	48.5	45.0	179
South Darfur	37.7	37.7	37.5	35.2	556
Central Darfur	47.3	35.0	42.1	30.7	99

Background characteristics	Percentage of women who, during the pregnancy of their last birth, had:				Number of women with a live birth in the last two years
	Blood pressure measured	Urine sample taken	Blood sample taken	Blood pressure measured, urine and blood sample taken [1]	
East Darfur	58.2	48.3	49.0	38.3	211
<b>Area</b>					
Urban	83.6	84.1	83.7	81.3	1,488
Rural	60.9	59.6	59.7	56.1	4,134
<b>Mother's age at birth</b>					
Less than 20	64.4	65.4	66.3	61.2	640
20-34	67.9	67.0	66.7	63.7	4,001
35-49	64.6	63.0	63.4	60.2	980
Missing	*	*	*	*	1
<b>Mother's education</b>					
None	48.2	46.7	47.2	43.4	2,247
Primary	72.7	71.9	71.4	68.3	2,022
Secondary	85.7	86.2	86.2	82.7	942
Higher	97.2	97.8	97.0	96.2	410
<b>Wealth index quintile</b>					
Poorest	44.0	41.3	41.5	38.1	1,251
Second	55.2	55.0	54.8	51.5	1,232
Middle	66.4	66.6	66.4	63.0	1,192
Fourth	85.1	84.3	84.0	80.2	1,096
Richest	94.7	94.3	95.0	92.7	851

[1] MICS indicator 5.6 - Content of antenatal care

[\*] Based on less than 25 unweighted cases and has been suppressed.

## 8.5 Assistance at Delivery

About three quarters of all maternal deaths occur due to direct obstetric causes.<sup>35</sup> The single most critical intervention for safe motherhood is to ensure that a competent health worker with midwifery skills is present at every birth, and in case of emergency that transport is available to a referral facility for obstetric care. The skilled attendant at delivery indicator is used to track progress toward the Millennium Development Goal 5 of improving maternal health.

The MICS included a number of questions to assess the proportion of births attended by a skilled attendant. A *skilled attendant* includes a doctor, nurse, certified midwife, Traditional Birth Attendants, nurse/midwife, and community health workers.

Over seventy (77.7) percent of births occurring in the two years preceding the MICS 2014 survey were delivered by the assistance of skilled personnel (Table RH.10). This percentage is higher in urban areas with 93.2 percent of the deliveries by skilled personnel than 71.9 percent in rural areas. Deliveries by

<sup>35</sup> Say, L et al. 2014. *Global causes of maternal death: a WHO systematic analysis*. *The Lancet Global Health* 2(6): e323-33. DOI: 10.1016/S2214-109X(14)70227-X

skilled personnel varied widely in the States ranging from 36.4 percent in Central Darfur state 99.6 percent in Khartoum State.

Results show that delivery by skilled personnel is found to be strongly influenced by the level of education; assistance by skilled delivery attendant for women with no education was 58.5 percent, while among those with primary education it was 86.2 percent, and among women with secondary and higher education levels it was 95.7 percent and 97.6 percent respectively.

More than half of the births (55.0 percent) in the two years preceding the MICS survey were delivered with the assistance of a certified midwife. Medical doctors assisted with the delivery of 19.2 percent of births and the births delivered by assistance of Traditional Birth Attendants (TBAs) with 18 percent.

**Figure RH.3: Person assisting at delivery, Sudan MICS, 2014**

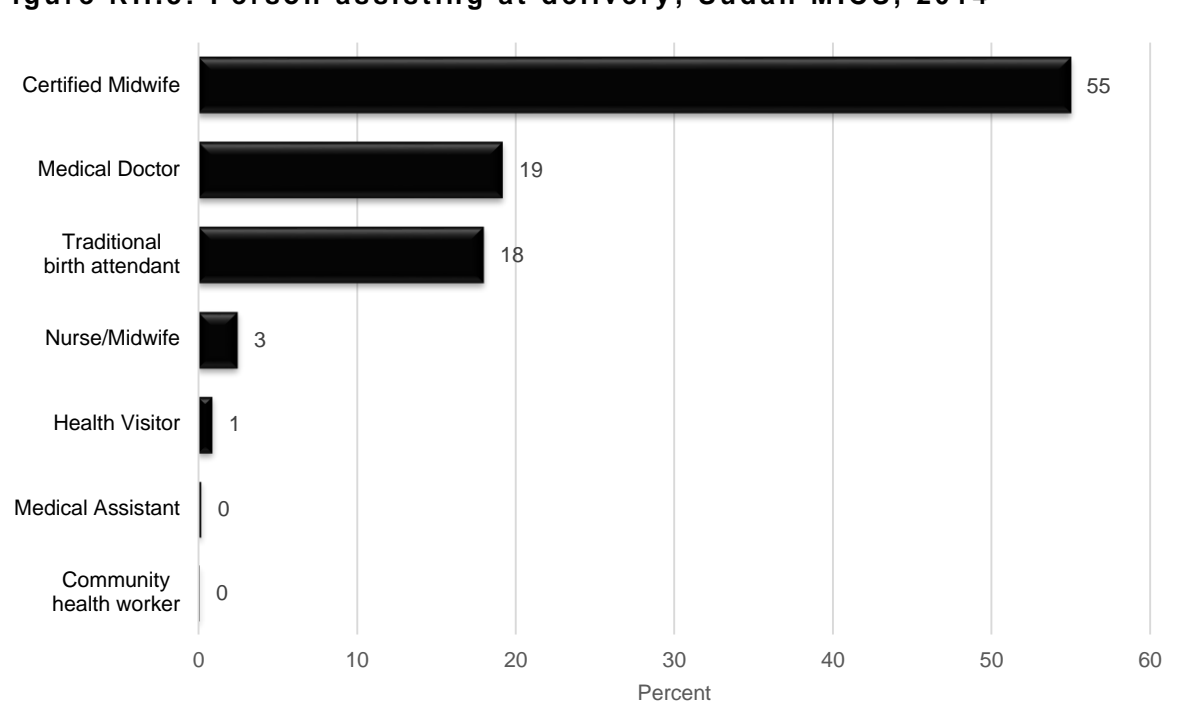


Table RH.10 also shows information on women who delivered by caesarean section (C-section) and provides additional information on the timing of the decision to conduct a C-section (before labour pains began or after) in order to better assess if such decisions are mostly driven by medical or non-medical reasons.

Overall, 9.1 percent of women who delivered in the last two years had a C-section; for 6.1 percent of women, the decision was taken before the onset of labour pains and for 3 percent of them after. Mother's age at delivery was found to considerably affect the decision for opting to C-section as shown in the data. Women who delivered and had C-section among women less than 20 years is 6.4 percent and it rises to 8.8 percent in age group 20-34, and to 11.9 percent among women in the age group 35-49. It is clear that women who delivered in the last two years and had a C-section among urban areas (14.7 percent) doubled the percentage of the women in who had C-section in rural areas (7 percent).

Table RH.10: Assistance during delivery and caesarean section													
Percent distribution of women age 15-49 years with a live birth in the last two years by person providing assistance at delivery, and percentage of births delivered by C-section, Sudan MICS, 2014													
Background characteristics	Person assisting at delivery								Deliver y assiste d by any skilled attend ant [1]	Percent delivered by C-section			Number of women who had a live birth in the last two years
	Medic al doctor	Nurs e / Mid-wife	Healt h visito r	Certif ied mid-wife	TBA	Comm unity health worker	Other / missi ng	No atten dant		Decide d before onset of labour pains	Decide d after onset of labour pains	C- sectio n total [2]	
<b>Sudan</b>	19.2	2.5	0.9	55.0	18.0	0.1	3.4	1.0	77.5	6.1	3.0	9.1	5,622
<b>State</b>													
Northern	49.1	8.7	0.0	41.2	0.0	0.0	1.0	0.0	99.0	23.1	12.2	35.2	92
River Nile	37.7	4.7	1.3	53.3	2.9	0.0	0.0	0.0	97.1	14.0	4.8	18.8	151
Red Sea	25.9	12.8	0.9	38.2	20.2	0.0	2.1	0.0	77.8	8.3	0.6	9.0	92
Kassala	14.3	1.4	0.7	60.3	22.3	0.0	1.0	0.0	76.8	4.7	1.0	5.6	199
Gadarif	13.8	3.8	0.0	65.1	10.1	0.0	5.8	1.4	82.7	3.6	2.9	6.5	307
Khartoum	48.0	1.6	1.7	48.3	0.4	0.0	0.0	0.0	99.6	14.4	6.4	20.7	684
Gezira	25.5	2.2	2.0	62.8	4.0	0.0	2.0	1.4	92.5	7.3	5.1	12.4	852
White Nile	25.1	2.9	0.0	64.2	6.1	0.0	1.6	0.0	92.3	11.5	5.9	17.4	273
Sinnar	16.5	7.5	0.0	65.1	2.8	0.0	6.6	1.4	89.1	3.3	4.0	7.2	226
Blue Nile	7.4	1.6	0.3	51.8	8.9	0.0	21.7	8.4	61.0	2.9	1.1	4.0	287
North Kordofan	18.9	0.7	0.3	67.0	9.6	0.0	3.1	0.3	86.9	5.9	2.2	8.1	352
South Kordofan	4.5	3.5	1.0	71.0	15.6	0.2	3.0	1.2	80.0	3.3	0.8	4.1	194
West Kordofan	6.6	1.7	0.8	57.3	29.0	0.6	3.6	0.4	66.3	1.9	0.2	2.1	341
North Darfur	6.4	1.6	1.7	51.0	38.5	0.0	0.6	0.2	60.7	2.3	1.9	4.2	525
West Darfur	6.7	0.5	0.2	50.3	36.8	0.0	5.4	0.0	57.7	1.9	0.2	2.0	179
South Darfur	9.8	1.8	0.7	36.3	47.9	0.0	2.5	0.9	48.7	2.0	0.5	2.5	556
Central Darfur	3.0	0.0	0.0	33.4	56.7	0.7	5.8	0.5	36.4	1.1	0.5	1.5	99
East Darfur	2.8	2.4	0.0	55.3	36.5	0.3	2.6	0.0	60.6	0.8	0.2	1.0	211
<b>Area</b>													
Urban	33.1	3.8	1.5	54.8	4.7	0.0	1.7	0.3	93.2	10.5	4.2	14.7	1,488
Rural	14.2	2.0	0.7	55.0	22.8	0.1	4.0	1.2	71.9	4.4	2.6	7.0	4,134
<b>Mother's age at birth</b>													
Less than 20	14.2	2.5	0.3	59.8	19.2	0.0	3.3	0.7	76.8	3.5	2.9	6.4	640
20-34	19.2	2.3	1.1	55.6	17.9	0.1	3.1	0.8	78.1	5.6	3.2	8.8	4,001
35-49	22.2	3.3	0.8	49.3	17.9	0.1	4.3	1.9	75.7	9.6	2.3	11.9	980
Missing	*	*	*	*	*	*	*	*	*	*	*	*	1
<b>Place of delivery</b>													
Home	1.5	1.6	1.0	65.8	25.1	0.1	3.6	1.3	69.9	0.0	0.0	0.0	4,006
Health facility	65.1	4.9	0.8	28.4	0.3	0.0	0.5	0.0	99.2	21.9	10.8	32.7	1,559
Public	64.8	4.7	0.7	29.0	0.4	0.0	0.5	0.0	99.1	21.1	10.9	32.0	1,468
Private	70.2	8.1	3.0	18.7	0.0	0.0	0.0	0.0	100.0	34.6	9.6	44.3	91
Other/ DK/Missing	6.1	0.0	0.0	19.5	2.8	0.0	68.6	3.0	25.6	0.0	0.0	0.0	57
<b>Mother's education</b>													



Background characteristics	Person assisting at delivery								Delivery assisted by any skilled attendant [1]	Percent delivered by C-section			Number of women who had a live birth in the last two years
	Medical doctor	Nurse / Mid-wife	Health visitor	Certified mid-wife	TBA	Community health worker	Other / missing	No attendant		Decided before onset of labour pains	Decided after onset of labour pains	C-section total [2]	
None	7.1	2.0	0.8	48.7	33.0	0.0	6.4	2.1	58.5	1.8	1.3	3.1	2,247
Primary	16.0	2.8	0.8	66.7	11.6	0.1	1.7	0.2	86.2	4.6	2.7	7.4	2,022
Secondary	37.8	2.9	1.2	53.8	3.0	0.0	1.0	0.3	95.7	13.7	5.1	18.8	942
Higher	58.2	3.1	2.4	34.0	2.1	0.0	0.2	0.0	97.6	18.8	9.0	27.8	410
<b>Wealth index quintile</b>													
Poorest	5.0	1.1	0.2	41.6	48.9	0.0	2.4	0.8	.0	1.9	0.7	2.5	1,251
Second	9.6	1.9	0.8	58.2	23.7	0.2	4.6	1.1	47.9	2.1	1.4	3.6	1,232
Middle	13.1	2.2	0.9	68.4	6.8	0.1	6.1	2.3	70.5	4.0	3.0	6.9	1,192
Fourth	27.4	3.6	0.7	63.4	2.5	0.0	1.9	0.4	84.6	7.9	4.8	12.6	1,096
Richest	51.6	4.2	2.7	40.2	0.3	0.0	1.0	0.1	95.2	18.4	6.5	25.0	851

## 8.6 Place of Delivery

Increasing the proportion of births that are delivered in health facilities is an important factor in reducing the health risks to both the mother and the baby. Proper medical attention and hygienic conditions during delivery can reduce the risks of complications and infection that can cause morbidity and mortality to either the mother or the baby. Table RH.11 presents the percentage distribution of women age 15-49 years who had a live birth in the two years preceding the survey by place of delivery, and the percentage of births delivered in a health facility according to their background characteristics. Slightly more than a quarter (27.7 percent) of births in Sudan are delivered in a health facility; of which 26.1 percent occurred in public sector facilities while only 1.6 percent of the deliveries occurred in private sector facilities. The MICS results also indicate that 71.3 percent of the deliveries takes place at home.

Women in urban areas (45.2 percent) are more than twice as likely to deliver in a health facility as their rural counterparts (21.5 percent). Women with higher levels of educational attainment are more likely to deliver in a health facility than women with less education or no education. Specifically; 11.5 percent of women who had delivered in a health facility with no education compared to 25.8 percent of the women with primary education, to 49.8 percent of the women with secondary education, and to 75.5 percent of the women with higher level of education.

Institutional deliveries varies from as low as 7.5 percent in West Kordofan to almost ten times (72.5 percent) in Northern state. Similarly, the proportion of births occurring in a health facility steadily increases with wealth from as low as 8.9 percent among women in the poorest households to 70.8 percent among women in the richest households. Majority of the women, 87.1 percent, who received no antenatal care services delivered at home.

Table RH.11: Place of delivery

Percent distribution of women age 15-49 years with a live birth in the last two years by place of delivery of their last birth, Sudan MICS, 2014

Background characteristics	Place of delivery					Delivered in health facility [1]	Number of women with a live birth in the last two years
	Public sector health facility	Private sector health facility	Home	Other	Missing/DK		
<b>Sudan</b>	26.1	1.6	71.3	0.2	0.9	27.7	5,622
<b>State</b>							
Northern	69.9	2.6	27.1	0.0	0.4	72.5	92
River Nile	54.0	2.4	43.6	0.0	0.0	56.4	151
Red Sea	36.3	10.2	51.5	0.0	2.1	46.5	92
Kassala	26.0	0.9	71.5	0.5	1.1	26.9	199
Gadarif	20.2	0.0	79.5	0.1	0.2	20.2	307
Khartoum	55.5	8.6	35.7	0.0	0.2	64.1	684
Gezira	36.4	0.7	62.5	0.0	0.3	37.1	852
White Nile	33.8	1.4	63.4	0.3	1.1	35.2	273
Sinnar	24.4	0.6	73.7	0.4	0.9	25.0	226
Blue Nile	13.6	0.0	86.1	0.2	0.1	13.6	287
North Kordofan	21.8	0.4	76.1	0.0	1.7	22.2	352
South Kordofan	12.8	0.3	85.0	0.3	1.6	13.1	194
West Kordofan	7.3	0.2	91.4	0.0	1.1	7.5	341
North Darfur	10.7	0.0	88.9	0.1	0.4	10.7	525
West Darfur	12.9	0.4	82.5	0.0	4.2	13.3	179
South Darfur	10.0	0.0	88.6	0.4	1.0	10.0	556
Central Darfur	9.3	0.2	88.1	1.3	1.0	9.5	99
East Darfur	13.3	0.0	84.2	0.5	2.0	13.3	211
<b>Area</b>							
Urban	40.0	5.2	53.7	0.2	1.0	45.2	1,488
Rural	21.1	0.3	77.6	0.2	0.8	21.5	4,134
<b>Mother's age at birth</b>							
Less than 20	27.6	0.9	70.7	0.1	0.7	28.5	640
20-34	26.0	1.5	71.6	0.1	0.8	27.5	4,001
35-49	25.7	2.6	70.1	0.3	1.2	28.4	980
Missing	*	*	*	*	*	*	1
<b>Percent of women who had:</b>							
None	6.8	0.1	89.2	0.2	3.7	6.8	1,120
1-3 visits	18.7	0.7	80.4	0.2	0.1	19.4	1,596
4+ visits	37.9	2.7	59.1	0.1	0.1	40.6	2,852
Missing/DK	23.8	3.7	70.2	0.0	2.4	27.4	54
<b>Mother's education</b>							
None	11.4	0.1	87.1	0.3	1.2	11.5	2,247
Primary	24.6	1.2	73.6	0.1	0.6	25.8	2,022

Background characteristics	Place of delivery					Delivered in health facility [1]	Number of women with a live birth in the last two years
	Public sector health facility	Private sector health facility	Home	Other	Missing/ DK		
Secondary	46.3	3.5	49.3	0.1	0.8	49.8	942
Higher	67.7	7.8	23.7	0.0	0.8	75.5	410
<b>Wealth index quintile</b>							
Poorest	8.9	0.0	90.3	0.2	0.6	8.9	1,251
Second	15.1	0.2	83.4	0.3	1.1	15.3	1,232
Middle	18.6	0.6	79.5	0.2	1.0	19.2	1,192
Fourth	37.9	1.1	60.3	0.0	0.7	39.0	1,096
Richest	62.7	8.2	28.3	0.0	0.8	70.8	851

[\*] Based on less than 25 unweighted cases and has been suppressed.

## 8.7 Post-natal Health Checks

The time of birth and immediately after is a critical window of opportunity to deliver lifesaving interventions for both the mother and new-born. Across the world, approximately 3 million new-borns annually die in the first month of life<sup>36</sup> and the majority of these deaths occur within a day or two of birth<sup>37</sup>, which is also the time when the majority of maternal deaths occur<sup>38</sup>.

Despite the importance of the first few days following birth, large-scale, nationally representative household survey programmes have not systematically included questions on the post-natal period and care for the mother and new-born. In 2008, the Countdown to 2015 initiative, which monitors progress on maternal, new-born and child health interventions, highlighted this data gap, and called not only for post-natal care (PNC) programmes to be strengthened, but also for better data availability and quality<sup>39</sup>.

Following the establishment and discussions of an Inter-Agency Group on PNC and drawing on lessons learned from earlier attempts of collecting PNC data, a new questionnaire module for MICS was developed and validated. Named the Post-natal Health Checks (PNHC) module, the objective is to collect information on new-borns' and mothers' contact with a provider, not content of care. The rationale for this is that as PNC programmes scale up, it is important to measure the coverage of that scale up and ensure that the platform for providing essential services is in place. Content is considered more difficult to measure, particularly because the respondent is asked to recall services delivered up to two years preceding the interview.

Table RH.12 below shows the percentage distribution of women age 15-49 years that gave birth in a health facility in the two years preceding the survey by duration of stay in the facility following the delivery, according to background characteristics.

<sup>36</sup> UN Interagency Group for Child Mortality Estimation. 2013. *Levels and Trends in Child Mortality: Report 2013*

<sup>37</sup> Lawn, JE et al. 2005. *4 million neonatal deaths: When? Where? Why?* Lancet 2005; 365:891–900.

<sup>38</sup> WHO, UNICEF, UNFPA, The World Bank. 2012. *Trends in Maternal Mortality: 1990-2010*. World Health Organization.

<sup>39</sup> HMN, UNICEF, WHO. 2008. *Countdown to 2015: Tracking Progress in Maternal, Newborn & Child Survival, The 2008 Report*. UNICEF.

Overall, 51.5 percent of women who gave birth in a health facility stay 12 hours or more in the facility after delivery. Across the country, the percentage of women who stay 12 hours or more varies from 29.3 percent in Central Darfur to 73.2 percent in White Nile State. The survey results indicated small difference between proportions of those delivering in public and private facilities and who stay 12 hours or more in the facility. The proportion of women delivering in private facilities who stay 12 hours or more is 55.2 percent while those delivering in public facilities is 51.2 percent. The same applies to differences between women who deliver in rural areas (55.8 percent) and those who deliver in urban areas (45.8 percent). As expected, nearly all women (95.9 percent) giving birth through C-section stay 12 hours or more in the facility after giving birth. There are no clear patterns with regards to background characteristics of woman's age at delivery and her education.

Safe motherhood programmes have recently increased emphasis on the importance of post-natal care, recommending that all women and new-borns receive a health check within two days of delivery. To assess the extent of post-natal care utilization, women were asked whether they and their new-born received a health check after the delivery, the timing of the first check, and the type of health provider for the woman's last birth in the two years preceding the survey.

**Table RH.12: Post-partum stay in health facility**

Percent distribution of women age 15-49 years with a live birth in the last two years who had their last birth delivered in a health facility by duration of stay in health facility, Sudan MICS, 2014

Background characteristics	Duration of stay in health facility:						12 hours or more [1]	Number of women who had their last birth delivered in a health facility in the last 2 years
	Less than 6 hours	6-11 hours	12-23 hours	1-2 days	3 days or more	Missing/ DK		
<b>Sudan</b>	44.5	3.7	1.7	18.1	31.7	0.3	51.5	1,559
<b>State</b>								
Northern	35.4	5.7	0.4	15.7	42.8	0.0	58.9	67
River Nile	61.6	1.2	0.7	6.5	30.0	0.0	37.2	85
Red Sea	68.9	0.0	5.6	5.1	20.5	0.0	31.1	43
Kassala	36.6	2.4	0.0	38.6	22.4	0.0	61.0	54
Gadarif	43.3	1.1	0.0	23.5	32.2	0.0	55.7	62
Khartoum	51.4	3.9	2.3	12.2	30.3	0.0	44.8	438
Gezira	40.0	3.8	2.2	20.9	33.1	0.0	56.2	316
White Nile	23.1	3.4	3.1	21.9	48.2	0.3	73.2	96
Sinnar	46.6	2.5	1.2	22.5	27.2	0.0	50.9	56
Blue Nile	(52.8)	(1.8)	(2.6)	(25.1)	(17.7)	(0.0)	(45.4)	39
North Kordofan	45.0	4.6	0.7	22.1	27.6	0.0	50.4	78
South Kordofan	(30.7)	(5.3)	(0.0)	(36.7)	(25.8)	(1.5)	(62.5)	25
West Kordofan	(39.9)	(1.4)	(0.0)	(10.8)	(47.9)	(0.0)	(58.7)	26
North Darfur	(32.5)	(11.8)	(0.0)	(15.8)	(40.0)	(0.0)	(55.8)	56
West Darfur	33.0	2.9	-	39.2	23.7	1.2	100.0	24

Background characteristics	Duration of stay in health facility:						12 hours or more [1]	Number of women who had their last birth delivered in a health facility in the last 2 years
	Less than 6 hours	6-11 hours	12-23 hours	1-2 days	3 days or more	Missing/ DK		
South Darfur	(34.6)	(1.7)	(0.0)	(22.0)	(35.4)	(6.3)	(57.4)	55
Central Darfur		-		7.2		-		9
East Darfur	70.7 (58.1)	(8.8)	(2.8)	(17.9)	22.1 (10.7)	(1.7)	100.0 (31.4)	28
<b>Area</b>								
Urban	49.5	4.3	2.0	13.7	30.1	0.4	45.8	672
Rural	40.8	3.2	1.4	21.4	32.9	0.3	55.8	887
<b>Mother's age at birth</b>								
Less than 20	46.3	2.8	4.9	23.9	21.2	0.9	50.0	182
20-34	45.2	3.9	1.0	18.4	31.2	0.2	50.7	1,099
35-49	40.8	3.3	2.1	13.1	40.4	0.3	55.6	278
<b>Type of health facility</b>								
Public	44.7	3.7	1.8	18.3	31.2	0.3	51.2	1,468
Type of delivery	41.5	3.3	0.3	15.0	39.9	0.0	55.2	91
Vaginal birth	65.1	4.7	2.4	21.6	5.8	0.4	29.8	1,046
C-section	2.5	1.5	.1	10.9	84.8	0.1	95.9	511
Missing	*	*	*	*	*	*	*	1
<b>Mother's education</b>								
None	45.6	2.4	1.7	21.8	27.0	1.5	50.5	259
Primary	47.2	2.9	1.3	19.9	28.7	0.1	49.9	521
Secondary	45.4	2.9	2.4	16.1	33.0	0.2	51.5	469
Higher	37.9	7.2	1.0	15.0	38.8	0.0	54.8	310
<b>Wealth index quintile</b>								
Poorest	40.8	5.5	0.0	24.5	27.8	1.3	52.3	111
Second	47.0	2.4	1.7	23.2	25.5	0.2	50.4	188
Middle	35.8	2.1	0.9	25.1	35.3	0.9	61.2	229
Fourth	45.2	2.9	1.7	18.1	32.1	0.1	51.8	428
Richest	47.3	4.9	2.3	12.7	32.7	0.1	47.7	603

( ) Figures that are based on 25-49 unweighted cases

[\*] Based on less than 25 unweighted cases and has been suppressed.

Table RH.13 shows the percentage of new-borns born in the last two years who received health checks and post-natal care visits from any health provider after birth. Please note that *health checks following birth* while in facility or at home refer to checks provided by any health provider regardless of timing (column 1), whereas *post-natal care visits* refer to a separate visit to check on the health of the new-born and provide preventive care services and therefore do not include *health checks following birth* while in facility or at home. The indicator *Post-natal health checks* includes any health check after birth

received while in the health facility and at home (column 1), regardless of timing, as well as PNC visits within two days of delivery (columns 2, 3, and 4).

Overall, 23.4 percent of new-borns receive a health check following birth while in a facility or at home. With regards to PNC visits, these predominantly occur either on the first or 3 - 6 days following the delivery (2.9 percent and 3.6 percent, respectively). As a result, a Sudan of 27.7 percent of all new-borns receive a post-natal health check. This percentage varies from 12.2 percent in Central Darfur to 57.4 percent in Khartoum. Urban new-borns are more likely to receive a health check, both following birth (39.3 percent) and in Sudan including PNC visits (41.8 percent), than their rural counterparts (17.6 percent and 22.6 percent, respectively). There is a very clear correlation with both education and household wealth, with the percentage of post-natal health checks of new-borns increasing with education and wealth. For example, the percentage of post-natal health checks of new-borns is lower (15.2 percent) among those with no education than those with higher education (63.9 percent). Likewise, the percentage of post-natal health checks of new-borns is 16.6 percent among those belonging to the poorest quintile compared to 61.5 percent among those who live in the richest quintile.

Generally, health checks occur following birth whether in health facility or home deliveries (77.8 percent public, 78.6 percent private). Looking only at those new-borns that did not receive a PNC visit, an expected pattern is seen. However, it is worth noting that new-borns to young women, age less than 20 years, have the highest rate of no PNC visits among age groups of women (88.7 percent).

**Table RH.13: Post-natal health checks for new-borns**

Percentage of women age 15-49 years with a live birth in the last two years whose last live birth received health checks while in facility or at home following birth, percent distribution whose last live birth received post-natal care (PNC) visits from any health provider after birth, by timing of visit, and percentage who received post-natal health checks, Sudan MICS, 2014										
Background characteristics	Health check following birth while in facility or at home [a]	PNC visit for newborns [b]							Post-natal health check for the newborn [1], [c]	Number of last live births in the last two years
		Same day	1 day following birth	2 days following birth	3-6 days following birth	After the first week following birth	No post-natal care visit	Missing/ DK		
<b>Sudan</b>	23.4	2.6	2.9	2.7	3.6	2.7	85.2	0.2	27.7	5,622
<b>State</b>										
Northern	47.5	1.8	0.0	2.1	3.1	5.0	88.0	0.0	48.2	92
River Nile	43.0	5.8	1.2	1.1	2.3	5.5	84.0	0.0	45.7	151
Red Sea	30.8	3.2	0.3	0.0	1.6	3.6	91.2	0.0	32.4	92
Kassala	23.4	3.5	1.3	2.5	2.7	.6	89.2	0.3	27.2	199
Gadarif	17.2	1.7	2.4	2.7	2.3	3.2	86.9	0.8	20.8	307
Khartoum	55.0	3.1	0.8	3.2	5.5	3.2	84.2	0.0	57.4	684
Gezira	27.3	.7	1.9	2.5	5.6	2.0	87.0	0.3	28.5	852
White Nile	31.3	2.3	0.0	4.1	2.8	3.2	87.4	0.2	32.7	273
Sinnar	21.7	0.7	2.3	3.4	5.0	3.7	84.7	0.2	24.5	226
Blue Nile	11.5	0.7	4.5	2.1	0.4	1.2	91.1	0.0	15.8	287
North Kordofan	21.0	4.7	6.7	4.3	4.4	4.5	74.9	0.4	31.3	352
South Kordofan	13.4	2.4	2.4	2.8	4.4	3.0	84.6	0.4	16.2	194
West Kordofan	6.9	3.6	2.5	1.4	5.0	3.0	83.6	0.9	12.4	341

Background characteristics	Health check following birth while in facility or at home [a]	PNC visit for newborns [b]							Post-natal health check for the newborn [1], [c]	Number of last live births in the last two years
		Same day	1 day following birth	2 days following birth	3-6 days following birth	After the first week following birth	No post-natal care visit	Missing/ DK		
North Darfur	10.0	2.4	3.7	3.3	1.3	.9	88.4	0.0	15.8	525
West Darfur	12.4	7.4	10.7	2.1	2.8	1.7	75.1	0.3	27.1	179
South Darfur	12.1	3.8	4.7	2.7	2.2	2.6	84.0	0.0	19.0	556
Central Darfur	5.3	2.1	4.8	3.5	3.1	1.9	84.6	0.0	12.2	99
East Darfur	14.1	1.7	3.5	0.2	3.1	5.3	86.2	0.0	17.6	211
<b>Area</b>										
Urban	39.3	2.4	2.0	3.7	5.0	3.1	83.6	0.2	41.8	1,488
Rural	17.6	2.7	3.3	2.3	3.1	2.6	85.8	0.2	22.6	4,134
<b>Mother's age at birth</b>										
Less than 20	22.3	1.2	3.5	1.4	2.7	2.0	88.7	0.5	26.0	640
20-34	23.0	3.2	2.9	2.7	3.9	2.4	84.7	0.2	27.8	4,001
35-49	25.4	1.3	2.9	3.2	2.6	4.7	85.0	0.2	28.5	980
Missing	*	*	*	*	*	*	*	*	*	1
<b>Place of delivery</b>										
Home	2.5	2.7	3.6	3.3	3.9	2.3	84.2	0.1	8.4	4,006
Health facility	77.8	2.7	1.5	1.2	2.8	3.9	87.4	0.6	78.2	1,559
Public	77.7	2.7	1.5	1.0	2.8	3.8	87.5	0.6	78.2	1,468
Private	78.6	2.9	.5	3.9	2.6	5.6	84.6	0.0	78.6	91
Other/DK/ Missing	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	57
<b>Mother's education</b>										
None	10.1	2.0	3.8	2.0	2.4	1.6	88.2	0.0	15.2	2,247
Primary	21.1	3.3	2.7	3.1	4.4	3.1	83.1	0.4	26.1	2,022
Secondary	42.7	2.5	2.7	3.1	4.8	4.1	82.7	0.1	45.3	942
Higher	62.8	2.8	.6	3.4	3.2	4.1	85.3	0.6	63.9	410
<b>Wealth index quintile</b>										
Poorest	8.3	3.5	5.8	2.6	1.8	2.4	84.0	0.0	16.6	1,251
Second	13.8	2.7	2.9	2.1	2.7	2.8	86.4	0.5	18.7	1,232
Middle	16.7	2.0	2.2	2.9	4.3	1.6	87.0	0.2	19.9	1,192
Fourth	30.3	1.7	1.7	2.7	5.8	2.4	85.7	0.1	32.6	1,096
Richest	59.8	3.4	1.6	3.5	3.6	5.2	82.3	0.4	61.5	851

[\*] Based on less than 25 unweighted cases and has been suppressed.

In Table RH.14, the percentage of new-borns who received the first PNC visit within one week of birth is shown by location and type of provider of service. As defined above, a visit does not include a check in the facility or at home following birth.

Survey results indicated that one in ten (10.0 percent) of the first PNC visits for new-borns occur in a public facility. There exists no wide variations regarding this proportion across the different

background characteristics such as education and wealth of the household. However, there are large differences according to background characteristics when looking at the proportions of new-borns taking place at home or in private facilities. Note that there was minimal or almost no new-borns delivered at home that attended a private facility for PNC visit, whereas 55.8 percent of the new-borns delivered in a private facility also attended a private facility for the PNC visit. Also, it is quite clear that public facility visits are predominantly among women in the wealthiest households (20.1 percent) as well as with mothers with high education (25.5 percent).

Again, in Sudan, around four in five (84.1 percent) of the first PNC visits for new-borns are provided by a Doctor, nurse or midwife and certified midwife combined. Urban-rural distribution shows that 93.7 percent and 80.1 percent of the first visits among new-borns are attended by a doctor, nurse, or mid-wife, in urban and rural areas respectively. It is interesting to observe that attendance by a traditional birth attendant (TBA) is more prevalent in Central Darfur (48.2 percent), South Darfur (42.5 percent), East Darfur (29.5 percent), Kassala (29.4 percent), and West Darfur state (26.8 percent) than in other states. The less educated or not educated a woman is, the more likely she would have delivered at home. For instance, the percentage of women who delivered at home was 30.2 percent in the case of women with no education compared to 7.1 percent among women with primary education and 2.0 percent among women with secondary level of education. The percentage of women who delivered at home was 32.7 percent among women belonging to the poorest households as compared to 0.5 percent among those living in the richest households.

**Table RH.14: Post-natal care visits for newborns within one week of birth**

Percent distribution of women age 15-49 years with a live birth in the last two years whose last live birth received a post-natal care (PNC) visit within one week of birth, by location and provider of the first PNC visit, Sudan MICS, 2014

Background characteristics	Location of first PNC visit for newborns				Provider of first PNC visit for newborns					Number of last live births in the last two years with a PNC visit within the first week of life
	Home	Public sector	Private sector	Missing	Doctor/nurse/mid-wife/certified midwife	Health visitor	Medical assistant	Community health worker	Traditional birth attendant	
<b>Sudan</b>	88.9	10.0	0.8	0.3	84.1	1.4	.4	.4	13.7	665
<b>State</b>										
Northern	*	*	*	*	*	*	*	*	*	6
River Nile	(52.9)	(47.1)	(0.0)	(0.0)	(100.0)	(97.1)	(2.9)	(0.0)	(0.0)	16
Red Sea	*	*	*	*	*	*	*	*	*	5
Kassala	(78.6)	(21.4)	(0.0)	(0.0)	(100.0)	(63.9)	(4.0)	(2.6)	(0.0)	20
Gadarif	(95.0)	(5.0)	(0.0)	(0.0)	(96.4)	(0.0)	(0.0)	(0.0)	(3.6)	28
Khartoum	(79.0)	(17.2)	(3.7)	(0.0)	(100.0)	(0.0)	(0.0)	(0.0)	(0.0)	86
Gezira	(95.2)	(4.8)	(0.0)	(0.0)	(90.9)	(4.0)	(0.0)	(2.0)	(3.1)	91
White Nile	(90.8)	(7.2)	(2.0)	(0.0)	(93.9)	(0.0)	(0.0)	(0.0)	(6.1)	25
Sinnar	(92.3)	(6.6)	(0.0)	(1.1)	(90.1)	(1.1)	(0.0)	(0.0)	(8.8)	26
Blue Nile	(92.4)	(7.6)	(0.0)	(0.0)	(100.0)	(89.2)	(0.0)	(0.0)	(0.0)	22



Background characteristics	Location of first PNC visit for newborns				Provider of first PNC visit for newborns					Number of last live births in the last two years with a PNC visit within the first week of life
	Home	Public sector	Private sector	Missing	Doctor/nurse/mid-wife/certified midwife	Health visitor	Medical assistant	Community health worker	Traditional birth attendant	
North Kordofan	96.0	2.2	1.8	0.0	94.7	0.0	1.2	0.0	4.1	71
South Kordofan	79.0	19.4	1.6	0.0	100.0	93.3	0.0	0.0	0.0	23
West Kordofan	(88.0)	(12.0)	(0.0)	(0.0)	(81.2)	(4.3)	(0.0)	(2.6)	(11.9)	43
North Darfur	(97.5)	(2.5)	(0.0)	(0.0)	(76.6)	(2.8)	(1.8)	(0.0)	(18.8)	56
West Darfur	91.0	9.0	0.0	0.0	72.2	1.1	0.0	0.0	26.8	41
South Darfur	88.0	9.9	0.0	2.1	57.5	0.0	0.0	0.0	42.5	74
Central Darfur	(95.7)	(4.3)	(0.0)	(0.0)	(100.0)	(51.8)	(0.0)	(0.0)	(0.0)	13
East Darfur	(94.1)	(5.9)	(0.0)	(0.0)	(100.0)	(70.5)	(0.0)	(0.0)	(0.0)	18
<b>Area</b>										
Urban	84.1	13.9	1.8	0.2	93.7	1.3	0.0	0.0	5.0	195
Rural	90.9	8.3	0.4	0.3	80.1	1.5	.5	0.6	17.3	469
<b>Mother's age at birth</b>										
Less than 20	88.3	11.7	0.0	0.0	85.5	0.0	0.0	0.0	14.5	56
20-34	89.0	9.9	0.8	0.4	83.1	1.6	0.3	0.6	14.4	509
35-49	89.0	9.6	1.4	0.0	88.3	1.4	0.9	0.0	9.4	99
<b>Place of delivery</b>										
Home	98.5	1.1	0.0	0.4	81.2	1.3	0.3	0.2	16.9	538
Health facility	48.2	47.5	4.2	0.0	96.4	1.8	0.4	1.4	0.0	127
Public	48.5	51.1	0.3	0.0	96.5	1.6	0.4	1.5	0.0	118
Private	*	*	*	*	*	*	*	*	*	9
<b>Mother's education</b>										
None	92.4	7.6	0.0	0.0	68.6	0.5	0.2	0.5	30.2	229
Primary	91.8	6.1	1.5	0.6	91.2	1.4	0.3	0.0	7.1	271
Secondary	81.0	17.6	1.1	0.2	92.0	3.7	0.8	1.5	2.0	123
Higher	(74.5)	(25.5)	(0.0)	(0.0)	(100.0)	(0.0)	(0.0)	(0.0)	(0.0)	41
<b>Wealth index quintile</b>										
Poorest	92.7	6.4	0.0	0.9	66.2	0.0	0.8	0.3	32.7	171
Second	93.6	5.3	1.0	0.0	78.3	1.2	0.8	0.4	19.3	127
Middle	90.6	9.1	0.3	0.0	91.5	2.3	0.0	0.0	6.2	134
Fourth	87.2	12.2	0.4	0.2	96.8	0.6	0.0	1.4	1.2	129
Richest	76.8	20.1	3.1	0.0	95.5	4.0	0.0	0.0	0.5	103

( ) Figures that are based on 25-49 unweighted cases

[\*] Based on less than 25 unweighted cases and has been suppressed.

Tables RH.15 and RH.16 present information collected on post-natal health checks and visits of the mother and are identical to Tables RH.13 and RH.14 that presented the data collected for new-born. Table RH.15 presents a pattern somewhat similar to Table RH.13, but with some important differences. Overall, 23.4 percent of mothers receive a health check following birth while in a facility or at home. With regards to PNC visits, the majority take place 3-6 days following birth or after the first week following birth (3.0 percent and 3.6 percent, respectively). As a result, a Sudan of 26.6 percent of all mothers receive a post-natal health check. This percentage varies from 10.3 percent in West Kordofan State to 56.1 percent in Khartoum State. Urban mothers are much more likely to receive a health check, both following birth (39.2 percent) and PNC visits (41.7 percent), than their rural counterparts (17.7 percent and 21.2 percent, respectively). There is again a very clear correlation to both education and household wealth, with the percentage of post-natal health checks of mothers increasing with education and wealth. Health checks following birth occur mainly in health facility deliveries (77.6 percent public, 83.9 percent private), whereas for mothers delivering at home the figure is very low (2.5 percent). The main difference between the table for new-borns and the table for mothers is that the percentage with health checks, both following the birth and through a visit, is lower for mothers than for new-borns. As was the case for the new-born, the age group of mothers age less than 20, has a very low percentage receiving a health check through a timely visit.

Table RH.15: Post-natal health checks for mothers

Percentage of women age 15-49 years with a live birth in the last two years who received health checks while in facility or at home following birth, percent distribution who received post-natal care (PNC) visits from any health provider after birth at the time of last birth, by timing of visit, and percentage who received post-natal health checks, Sudan MICS, 2014

Background characteristics	Health check after birth while in facility or at home [a]	PNC visit for mothers [b]							Post-natal health check for the mother [1], [c]	Number of women who gave birth in the two years preceding the survey
		Same day	1 day after birth	2 days after birth	3-6 days after birth	After the first week after birth	No post-natal care visit	Missing/ DK		
<b>Sudan</b>	23.4	2.1	2.1	2.0	3.0	3.1	87.3	0.3	26.6	5,622
<b>State</b>										
Northern	53.8	1.0	0.0	1.0	3.8	11.4	82.2	0.6	54.4	92
River Nile	42.9	3.2	0.4	0.3	2.5	6.7	86.8	0.0	43.3	151
Red Sea	34.6	2.3	0.8	0.0	1.2	1.8	94.0	0.0	35.3	92
Kassala	23.2	1.3	1.0	1.6	2.2	1.0	92.2	0.8	24.9	199
Gadarif	16.9	1.0	2.2	2.3	2.6	3.6	88.4	0.0	19.3	307
Khartoum	54.3	2.7	0.7	1.4	2.6	5.4	86.5	0.8	56.1	684
Gezira	27.2	0.0	0.5	2.1	4.4	1.6	91.2	0.2	27.6	852
White Nile	31.5	1.0	1.1	2.5	5.3	5.5	84.6	0.0	32.7	273
Sinnar	22.0	.6	2.3	3.3	4.3	4.1	85.2	0.2	24.4	226
Blue Nile	11.7	2.2	3.8	1.6	0.9	1.2	90.3	0.0	16.8	287
North Kordofan	20.3	2.4	4.5	4.1	6.7	6.4	75.1	0.7	25.9	352
South Kordofan	13.4	1.4	0.9	2.7	2.6	2.5	89.8	0.2	15.3	194
West Kordofan	6.9	2.5	1.5	1.5	2.8	1.3	90.4	0.0	10.3	341
North Darfur	10.5	3.8	0.6	3.3	0.9	1.4	89.7	0.2	13.8	525
West Darfur	11.6	9.2	11.3	1.0	3.5	0.6	74.3	0.0	28.9	179
South Darfur	12.1	3.2	4.4	1.8	1.9	2.4	86.0	0.2	18.6	556
Central Darfur	6.0	2.1	2.7	2.5	3.4	0.6	88.7	0.0	10.8	99
East Darfur	13.2	.9	2.6	0.1	2.8	2.9	90.7	0.0	15.5	211
<b>Area</b>										
Urban	39.2	2.5	1.4	2.8	3.5	4.3	85.1	0.3	41.7	1,488
Rural	17.7	2.0	2.3	1.8	2.9	2.7	88.1	0.3	21.2	4,134
<b>Mother's age at birth</b>										
Less than 20	22.7	.6	2.9	0.9	3.0	2.6	89.9	0.1	25.6	640
20-34	23.1	2.3	2.0	2.2	3.1	2.6	87.5	0.3	26.5	4,001
35-49	25.1	2.3	1.8	2.3	2.7	5.4	85.2	0.3	27.7	980
Missing	*	*	*	*	*	*	*	*	*	1
<b>Place of delivery</b>										
Home	2.5	2.1	2.6	2.5	3.0	2.0	87.4	0.3	6.9	4,006
Health facility	78.0	2.2	0.7	0.9	3.2	5.9	86.9	0.2	78.1	1,559
Public	77.6	2.0	0.7	0.9	3.4	5.8	86.9	0.2	77.7	1,468
Private	83.9	5.2	0.0	0.4	0.0	7.5	86.9	0.0	83.9	91
Other/Missing	0.0	1.0	0.0	0.0	0.9	1.1	96.9	0.0	1.0	57
<b>Type of delivery</b>										
Vaginal birth	71.2	2.2	0.9	1.2	1.9	2.4	91.3	0.1	71.4	1,047
C-section	91.7	2.3	0.3	0.4	5.8	13.0	77.8	0.4	91.7	511
Missing	2.7	0.0	0.0	0.0	1.1	1.3	97.6	0.0	2.7	49
<b>Mother's education</b>										
None	10.2	2.1	3.0	1.7	1.8	2.0	89.2	0.1	14.7	2,247

Background characteristics	Health check after birth while in facility or at home [a]	PNC visit for mothers [b]							Post-natal health check for the mother [1], [c]	Number of women who gave birth in the two years preceding the survey
		Same day	1 day after birth	2 days after birth	3-6 days after birth	After the first week after birth	No post-natal care visit	Missing/ DK		
Primary	21.2	2.1	1.9	2.5	3.9	2.8	86.4	0.5	24.1	2,022
Secondary	42.5	2.5	1.3	1.9	3.9	5.1	85.1	0.2	44.5	942
Higher	62.9	1.9	0.1	2.0	3.6	6.0	86.4	0.1	63.3	410
<b>Wealth index quintile</b>										
Poorest	8.3	3.0	3.4	2.1	1.9	2.1	87.4	0.1	14.0	1,251
Second	13.7	2.4	3.2	1.8	1.9	2.4	88.1	0.2	18.4	1,232
Middle	17.3	1.1	1.4	2.7	4.2	2.3	87.9	0.4	19.0	1,192
Fourth	29.9	1.5	1.2	1.8	3.8	4.2	87.2	0.3	31.7	1,096
Richest	59.7	2.9	0.4	1.6	3.9	5.3	85.7	0.2	61.1	851

[\*] Based on less than 25 unweighted cases and has been suppressed.

Table RH.16 matches Table RH.14, but now deals with PNC visits for mothers by location and type of provider. As defined above, a visit does not include a check in the facility or at home following birth. Overall, 11.7 percent of the first PNC visits occur in a public facility. This proportion varies across background characteristics. The largest variation is found according to household wealth; where as high as 94.5 percent of the women belonging to the poorest households have their first PNC visit in a public facility compared to 67.4 percent of the women of the richest households who have their first PNC visit in a public facility.

With regards to provider of the first PNC visit for mothers, the variations across background characteristics are not large, although there is a higher prevalence among urban women whose first PNC visit provider is Doctor/ nurse/ midwife /certified midwife at 90.7 percent against their rural counterparts at 78.9 percent. One in six (17.3 percent) of rural women are receiving their PNC by traditional birth attendants. It is expected, but nevertheless interesting, to note that almost 86.4 percent of the women giving birth by C-section are seen by a doctor/nurse/midwife at their first PNC visit.

**Table RH.16: Post-natal care visits for mothers within one week of birth**

Percent distribution of women age 15-49 years with a live birth in the last two years who received a post-natal care (PNC) visit within one week of birth, by location and provider of the first PNC visit, Sudan MICS, 2014

Background characteristics	Location of first PNC visit				Provider of first PNC visit for newborns					Number of women who gave birth in the two years preceding survey and received a PNC visit within one week of delivery
	Home	Public Sector	Private Sector	Missing/ DK	Doctor/ nurse/ midwife /certified midwife	Health visitor	Medical assistant	Community health worker	TBA	
<b>Sudan</b>	87.7	11.7	0.5	0.2	82.3	2.3	0.7	0.7	13.9	523
<b>State</b>										
Northern	*	*	*	*	*	*	*	*	*	5
River Nile	*	*	*	*	*	*	*	*	*	10
Red Sea	*	*	*	*	*	*	*	*	*	4
Kassala	*	*	*	*	*	*	*	*	*	12
Gadarif	(87.1)	(12.9)	(0.0)	(0.0)	(100.0)	(0.0)	(0.0)	(0.0)	(0.0)	25
Khartoum	*	*	*	*	*	*	*	*	*	50
Gezira	*	*	*	*	*	*	*	*	*	59
White Nile	(76.5)	(23.5)	(0.0)	(0.0)	(91.1)	(3.2)	(0.0)	(0.0)	(5.6)	27
Sinnar	(95.0)	(5.0)	(0.0)	(0.0)	(100.0)	(94.0)	(0.0)	(0.0)	(0.0)	24
Blue Nile	(94.6)	(5.4)	(0.0)	(0.0)	(100.0)	(92.6)	(0.0)	(3.7)	(0.0)	24
North	96.3	3.7	0.0	0.0	95.9	0.0	1.4	0.0	2.8	63
Kordofan										
South	(91.0)	(9.0)	(0.0)	(0.0)	(100.0)	(73.6)	(3.3)	(0.0)	(2.6)	15
Kordofan										
West	(78.1)	(21.9)	(0.0)	(0.0)	(85.6)	(3.3)	(0.0)	(2.0)	(9.2)	28
Kordofan										
North Darfur	(90.0)	(7.6)	(2.4)	(0.0)	(67.2)	(5.4)	(2.3)	(2.4)	(22.7)	45
West Darfur	94.1	.9	1.0	0.0	69.1	1.0	0.0	0.0	29.9	45
South	86.9	11.6	0.0	1.5	56.5	2.5	0.0	0.0	41.0	63
Darfur										
Central	(84.4)	(15.6)	(0.0)	(0.0)	(100.0)	(70.0)	(0.0)	(2.5)	(0.0)	11
Darfur										
East Darfur	*	*	*	*	*	*	*	*	*	14
<b>Area</b>										
Urban	81.8	16.9	1.2	0.0	90.7	2.7	0.0	0.9	5.7	153
Rural	90.1	9.5	0.1	0.3	78.9	2.2	1.0	0.6	17.3	370
<b>Mother's age at birth</b>										
Less than 20	97.1	2.9	0.0	0.0	80.3	1.0	0.0	0.0	18.7	47
20-34	89.0	10.1	0.6	0.3	80.9	2.9	0.6	1.0	14.6	386
35-49	76.9	23.1	0.0	0.0	89.8	0.5	1.3	0.0	8.4	89
<b>Place of delivery</b>										
Home	98.8	1.2	0.0	0.0	79.5	2.1	0.7	0.2	17.5	413
Health facility	45.6	51.3	2.2	0.9	93.3	3.3	0.7	2.6	0.0	109
Public	44.6	52.6	1.9	0.9	93.0	3.5	0.7	2.8	0.0	104
Private	*	*	*	*	*	*	*	*	*	5
Other/Missing	*	*	*	*	*	*	*	*	*	1
<b>Type of delivery</b>										
Vaginal birth	62.0	35.8	0.7	1.5	98.1	0.7	1.2	0.0	0.0	65
C-section	(22.5)	(73.0)	(4.4)	(0.0)	(86.4)	(7.1)	(0.0)	(6.4)	(0.0)	45

Background characteristics	Location of first PNC visit				Provider of first PNC visit for newborns					Number of women who gave birth in the two years preceding survey and received a PNC visit within one week of delivery
	Home	Public Sector	Private Sector	Missing/ DK	Doctor/ nurse/ midwife /certified midwife	Health visitor	Medical assistant	Community health worker	TBA	
Missing	*	*	*	*	*	*	*	*	*	1
<b>Mother's education</b>										
None	93.3	6.7	0.0	0.0	67.3	1.3	0.9	0.3	30.3	194
Primary	88.3	10.7	0.5	0.5	89.3	3.1	0.4	0.7	6.5	208
Secondary	78.5	21.0	0.5	0.0	92.7	3.8	1.1	2.0	0.4	90
Higher	(75.1)	(22.0)	(2.9)	(0.0)	(100.0)	(0.0)	(0.0)	(0.0)	(0.0)	31
<b>Wealth index quintile</b>										
Poorest	94.5	4.7	0.0	0.7	60.7	1.2	1.0	0.4	36.6	130
Second	95.0	5.0	0.0	0.0	79.7	1.4	1.6	0.0	17.4	115
Middle	89.6	10.4	0.0	0.0	92.6	2.4	0.3	0.3	4.3	112
Fourth	83.0	15.2	1.8	0.0	95.0	1.5	0.0	3.2	0.3	91
Richest	67.4	31.5	1.1	0.0	93.3	6.7	0.0	0.0	0.0	75

( ) Figures that are based on 25-49 unweighted cases

[\*] Based on less than 25 unweighted cases and has been suppressed.

Table RH.17 presents the distribution of women with a live birth in the two years preceding the survey by receipt of health checks or PNC visits within 2 days of birth for the mother and the new-born, thus combining the indicators presented in Tables RH.13 and RH.15.

Sudan MICS 2014 shows that for 23.7 percent of live births, both the mothers and their new-borns receive either a health check following birth or a timely PNC visit, whereas for as large as 69.4 percent of births neither receive health checks Nor timely visits. There are quite large discrepancies across the background characteristics. Births in Urban areas (37.3 percent) are twice better served with health checks or timely visits as compared to births in rural areas (18.7 percent). The figures between states vary from 8.5 percent in Central Darfur to 51.0 percent in Khartoum state. There are also very clear correlations to household wealth and the education of the woman, where increasing wealth and education tends to be associated with better coverage. As expected, the opposite is true for births without health checks or timely visits. For example, births belonging to the wealthiest households (55.0 percent) are more than four times better served with health checks or timely visits as compared to births in households in the poorest quintile (12.7 percent). The picture is less clear when it comes to patterns on health checks or timely visits for either the mother or the new-born alone, although generally a higher level of coverage for new-borns.

**Table RH.17: Post-natal health checks for mothers and new-borns**

Percent distribution of women age 15-49 years with a live birth in the last two years by post-natal health checks for the mother and new-born, within two days of the most recent birth, Sudan MICS, 2014

Background characteristics	Health checks or PNC visits within 2 days of birth for:					Number of women age 15-49 years who gave birth in the 2 years preceding the survey
	Both mothers and newborns	Mothers only	Newborns only	Neither mother nor newborn	Missing	
<b>Sudan</b>	23.7	2.9	4.0	69.4	0.0	5,622
<b>State</b>						
Northern	43.8	10.6	4.3	41.3	0.0	92
River Nile	40.0	3.3	5.7	51.0	0.0	151
Red Sea	28.8	6.6	3.6	61.0	0.0	92
Kassala	21.7	3.3	5.6	69.5	0.0	199
Gadarif	18.2	1.1	2.7	78.0	0.0	307
Khartoum	51.0	5.1	6.3	37.5	0.0	684
Gezira	24.5	3.1	4.0	68.4	0.0	852
White Nile	29.9	2.7	2.8	64.6	0.0	273
Sinnar	21.9	2.2	2.4	73.3	0.2	226
Blue Nile	13.3	3.5	2.5	80.7	0.0	287
North Kordofan	22.8	3.0	8.4	65.7	0.0	352
South Kordofan	12.8	2.5	3.4	81.3	0.0	194
West Kordofan	9.3	1.0	3.0	86.6	0.0	341
North Darfur	12.6	1.2	3.2	83.0	0.0	525
West Darfur	22.7	6.2	4.4	66.7	0.0	179
South Darfur	16.6	1.9	2.4	79.1	0.0	556
Central Darfur	8.5	2.3	3.7	85.5	0.0	99
East Darfur	15.1	0.4	2.5	82.0	0.0	211
<b>Area</b>						
Urban	37.3	4.3	4.4	53.9	0.0	1,488
Rural	18.7	2.4	3.9	74.9	0.0	4,134
<b>Mother's age at birth</b>						
Less than 20	22.1	3.5	3.9	70.5	0.0	640
20-34	23.6	2.9	4.2	69.3	0.0	4,001
35-49	24.9	2.8	3.5	68.8	0.0	980
	*	*	*	*	*	1
<b>Place of delivery</b>						
Home	5.5	1.5	3.0	90.1	0.0	4,006
Health facility	71.3	6.8	6.9	15.0	0.0	1,559
Public	71.2	6.5	7.0	15.3	0.0	1,468
Private	73.2	10.7	5.4	10.7	0.0	91
Other/DK/Missing	0.0	1.0	0.0	99.0	0.0	57
<b>Type of delivery</b>						
Vaginal birth	66.0	5.4	8.7	19.8	0.0	1,047
C-section	82.0	9.6	3.0	5.2	0.1	511
Missing	2.7	0.0	0.0	97.3	0.0	49
<b>Mother's education</b>						
None	12.7	2.0	2.6	82.8	0.0	2,247
Primary	21.5	2.6	4.5	71.3	0.0	2,022
Secondary	39.7	4.8	5.5	50.0	0.0	942
Higher	57.8	5.5	6.0	30.7	0.0	410
<b>Wealth index quintile</b>						
Poorest	12.7	1.3	3.9	82.1	0.0	1,251

Background characteristics	Health checks or PNC visits within 2 days of birth for:					Number of women age 15-49 years who gave birth in the 2 years preceding the survey
	Both mothers and newborns	Mothers only	Newborns only	Neither mother nor newborn	Missing	
Second	15.6	2.7	3.1	78.5	0.0	1,232
Middle	16.6	2.4	3.3	77.7	0.0	1,192
Fourth	28.5	3.2	4.1	64.2	0.0	1,096
Richest	55.0	6.1	6.5	32.4	0.0	851

( ) Figures that are based on 25-49 unweighted cases

[\*] Based on less than 25 unweighted cases and has been suppressed.



## IX. Child Development

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### 9.1 Early Childhood Care and Education

Readiness of children for primary school can be improved through attendance to early childhood education programmes or through pre-school attendance. Early childhood education programmes include programmes for children that have organised learning components as opposed to baby-sitting and day-care which do not typically have organised education and learning.

For Sudan, structural changes were introduced in the general education system in 1998 when the old system of 6+3+3 grades (adopted in the 1970s) was changed into 2+8+3 to include two years pre-school, 8 years at the basic stage and three years of secondary school. Currently Basic Education in Sudan includes pre-school education (Khalwa and kindergarten) - two consecutive years targeting children of four to five years of age at basic education level, eight consecutive years of schooling from 6 to 13 years of age, at the end of which students sit for the basic level certificate examination which qualifies them for admission to secondary school.

Observing the context of Sudan and during the customization of the Child development module only the questions that will allow the production of Tables CD.1 and CD.3 were kept as part of the under-five questionnaires.

Table CD.1: indicates that 22.3 percent of children aged 36-59 months are attending an organised early childhood education programme (Table CD.1). Urban-rural and state differentials are notable – the figure is as high as 44.6 percent in urban areas, compared to 13.9 percent in rural areas. Among children aged 36-59 months, attendance to early childhood education programmes is more prevalent in Khartoum state (56.2 percent), and lowest in the West Kordofan (4.3 percent). No gender differential exists, but differentials by socioeconomic status seem to be significant; 59.4 percent of children living in the richest households while the figure drops to 6.9 percent among children in the poorest households. The data indicates that there is notable variation between children attending early childhood education programmes at ages 36-47 months and 48-59 months as 13.5 percent and 33.5 percent respectively.

**Table CD.1: Early childhood education**

Percentage of children age 36-59 months who are attending an organized early childhood education programme, Sudan  
MICS, 2014

Background characteristics	Percentage of children age 36-59 months attending early childhood education [1]	Number of children age 36-59 months
<b>Sudan</b>	22.3	5,827
<b>Sex</b>		
Male	21.9	2,957
Female	22.7	2,869
<b>State</b>		
Northern	47.3	94
River Nile	36.1	169
Red Sea	37.6	98
Kassala	12.2	200
Gadarif	16.2	295
Khartoum	56.2	721
Gezira	21.0	892
White Nile	26.2	275
Sinnar	24.8	223
Blue Nile	13.3	268
North Kordofan	9.4	407
South Kordofan	21.9	227
West Kordofan	4.3	394
North Darfur	13.7	529
West Darfur	13.5	211
South Darfur	17.3	503
Central Darfur	9.1	113
East Darfur	11.8	207
<b>Area</b>		
Urban	44.6	1,594
Rural	13.9	4,233
<b>Age of child</b>		
36-47 months	13.5	3,268
48-59 months	33.5	2,559
<b>Mother's education</b>		
None	8.8	2,636
Primary	22.7	1,965
Secondary	46.0	844
Higher	62.0	375
Missing/DK	*	7
<b>Wealth index quintile</b>		
Poorest	6.9	1,393
Second	9.2	1,232
Middle	17.2	1,182
Fourth	30.0	1,076
Richest	59.4	943

[1] MICS indicator 6.1 - Attendance to early childhood education

[\*] Based on less than 25 unweighted cases and has been suppressed.

## 9.2 Quality of Care

Exposure to books in early years not only provides the child with greater understanding of the nature of print, but may also give the child opportunities to see others reading, such as older siblings doing school work. Presence of books is important for later school performance. The mothers/caretakers of all children under 5 were asked about number of children's books or picture books they have for the child, and the types of playthings that are available at home.

In Sudan, only 1.3 percent of children age 0-59 months live in households where at least 3 children's books are present for the child (Table CD.3). Overall, there exists very small number of households with 10 or more children's books. While no gender differentials are observed, a higher percentage of urban children appear to have access to children's books than those children living in rural households. The proportion of under-5 children who have 3 or more children's books is 4.4 percent in urban areas, compared to .4 percent in rural areas.

**Table CD.3: Learning materials**

Percentage of children under age 5 by numbers of children's books present in the household, and by playthings that child plays with, Sudan MICS, 2014

Background characteristics	Percentage of children living in households that have for the child:		Percentage of children who play with:				Number of children under age 5
	3 or more children's books [1]	10 or more children's books	Home-made toys	Toys from a shop/ manufactured toys	Household objects/ objects found outside	Two or more types of playthings [2]	
<b>Sudan</b>	1.5	0.0	41.1	39.8	54.8	45.5	14,081
<b>Sex</b>							
Male	1.6	0.0	42.1	40.9	55.0	46.2	7,157
Female	1.4	0.0	40.1	38.8	54.7	44.8	6,924
<b>State</b>							
Northern	0.8	0.2	47.6	78.0	75.3	73.1	236
River Nile	2.1	0.2	32.2	57.7	51.3	44.6	393
Red Sea	2.0	0.0	27.0	34.6	40.3	30.6	244
Kassala	0.5	0.0	15.6	22.3	38.6	18.6	498
Gadarif	0.5	0.0	37.3	43.1	69.0	49.4	765
Khartoum	7.2	0.0	30.0	72.2	42.5	45.6	1,736
Gezira	1.0	0.0	53.5	39.6	63.8	56.1	2,149
White Nile	0.9	0.0	39.8	46.3	62.7	51.8	711
Sinnar	1.3	0.1	43.5	52.2	51.6	47.7	555
Blue Nile	0.3	0.0	43.8	31.7	77.2	54.3	691
North Kordofan	0.3	0.0	46.9	34.5	47.2	44.3	907
South Kordofan	0.1	0.0	58.5	32.9	60.8	55.6	529
West Kordofan	0.6	0.1	38.4	39.5	50.6	39.4	893
North Darfur	0.4	0.0	21.8	17.7	45.2	20.7	1,211
West Darfur	0.5	0.0	53.4	26.6	46.0	44.2	487
South Darfur	0.6	0.0	59.2	31.2	60.0	57.1	1,326

Background characteristics	Percentage of children living in households that have for the child:		Percentage of children who play with:				Number of children under age 5
	3 or more children's books [1]	10 or more children's books	Home-made toys	Toys from a shop/ manufactured toys	Household objects/ objects found outside	Two or more types of playthings [2]	
Central Darfur	0.2	0.0	18.8	10.5	40.3	15.9	254
East Darfur	0.5	0.0	37.8	22.2	55.4	40.9	495
<b>Area</b>							
Urban	4.4	0.1	37.7	58.9	50.7	48.6	3,862
Rural	0.4	0.0	42.4	32.7	56.3	44.4	10,219
<b>Age of child</b>							
36-47 months	0.4	0.0	27.0	31.3	35.7	30.0	5,636
48-59 months	2.2	0.0	50.5	45.6	67.5	55.9	8,445
<b>Mother's education</b>							
None	0.3	0.0	41.5	24.5	56.3	41.3	5,994
Primary	0.7	0.0	40.5	40.2	53.1	44.8	4,936
Secondary	3.3	0.0	41.9	64.4	55.5	55.0	2,152
Higher	8.6	0.2	40.1	78.1	53.2	55.2	982
Missing/DK	*	*	*	*	*	*	17
<b>Wealth index quintile</b>							
Poorest	0.2	0.0	38.1	20.1	52.5	36.2	3,188
Second	0.1	0.0	40.5	26.7	52.3	39.3	3,015
Middle	0.5	0.0	45.9	36.8	60.0	49.5	2,956
Fourth	1.1	0.0	42.3	50.0	57.0	51.1	2,684
Richest	7.0	0.1	38.5	77.6	52.0	55.3	2,238
[1] MICS indicator 6.5 - Availability of children's books							
[2] MICS indicator 6.6 - Availability of playthings							

Table CD.3 also shows that 45.5 percent of children age 0-59 months had 2 or more types of playthings to play with in their homes. The types of playthings included in the questionnaires were homemade toys (such as dolls and cars, or other toys made at home), toys that came from a store, and household objects (such as pots and bowls) or objects and materials found outside the home (such as sticks, rocks, animal shells, or leaves). It is interesting to note that less than four out of ten (39.8 percent) of children play with toys that come from a store as compared to 54.8 percent of the toys coming from the homes. The proportion of children who have 2 or more types of playthings to play with is 46.2 percent among male children and 44.8 percent among female children. Urban-rural differentials are observed in this respect; significant differences are observed in terms of mother's education – 55.2 percent of children whose mothers with secondary or higher education have 2 or more types of playthings as compared 41.3 percent for children whose mothers have no education. Differentials are observed by socioeconomic status of the households, in the range of 36.2 percent among the poorest households to 55.3 percent among the richest households.

## X. Literacy and Education

### 10.1 Literacy among Young Women

The Youth Literacy Rate reflects the outcomes of primary education over the previous 10 years or so. As a measure of the effectiveness of the primary education system, it is often seen as a proxy measure of social progress and economic achievement. In Sudan Multiple Indicator Cluster Survey (MICS 2014), since only a women's questionnaire was administered, the results are based only on females age 15-24. Literacy is assessed on the ability of the respondent to read a short simple statement or based on school attendance.

The percent literate is presented in Table ED.1. This table indicates that 59.8 percent of young women in Sudan are literate and that literacy status varies greatly by area (79.8 percent in urban areas and 50.0 percent in rural areas). Of women who stated that primary school was their highest level of education, just 43.7 percent were actually able to read the statement shown to them.

The proportion of women who were literate was higher at 63.4 percent among women age 15-19 years than that among women age 20-24 years (55.6 percent). The proportion of literate women (aged 15-24 years) also varied by their household wealth. The proportion of literate women was much higher among those belonging to households in the richest quintile (92.2 percent) than those belonging to households in the poorest quintile (31.2 percent).

<b>Table ED.1: Literacy among young women</b>			
<b>Percentage of women age 15-24 years who are literate, Sudan MICS, 2014</b>			
Background characteristics	Percentage literate [1]	Percentage not known	Number of women age 15- 24 years
<b>Sudan</b>	59.8	1.4	6,871
<b>State</b>			
Northern	91.5	0.2	146
River Nile	79.8	2.5	253
Red Sea	71.9	3.4	150
Kassala	48.4	0.7	272
Gadarif	42.8	0.4	327
Khartoum	82.6	1.8	1,053
Gezira	66.4	0.8	1,231
White Nile	67.5	2.5	312
Sinnar	54.0	2.3	257
Blue Nile	36.1	0.6	297
North Kordofan	58.8	1.5	471
South Kordofan	49.2	1.3	197
West Kordofan	32.9	0.6	341
North Darfur	56.0	0.9	479
West Darfur	50.1	1.8	214
South Darfur	49.3	1.1	567
Central Darfur	27.4	2.7	104
East Darfur	40.0	4.0	201
<b>Area</b>			
Urban	79.8	1.7	2,262
Rural	50.0	1.2	4,609

Background characteristics	Percentage literate [1]	Percentage not known	Number of women age 15- 24 years
<b>Education</b>			
None	4.2	0.7	1,321
Primary	43.7	3.2	2,662
Secondary	100.0	0.0	2,180
Higher	100.0	0.0	708
<b>Age</b>			
15-19	63.4	1.7	3,709
20-24	55.6	1.0	3,162
<b>Wealth index quintile</b>			
Poorest	31.2	1.0	1,165
Second	38.1	1.2	1,338
Middle	55.6	1.6	1,385
Fourth	72.9	1.8	1,483
Richest	92.2	1.2	1,500
[1] MICS indicator 7.1; MDG indicator 2.3 - Literacy rate among young women			

## 10.2 School Readiness

Attendance to pre-school education is important for the readiness of children to school. Table ED.2 shows the proportion of children in the first grade of primary school (regardless of age) who attended pre-school the previous year<sup>40</sup>. Overall, 69.7 percent of children who are currently attending the first grade of primary school were attending pre-school the previous year. The proportion among males is lower (66.0 percent) than females (73.4 percent), while a higher proportion of children in first grade in urban areas (81.0 percent) had attended pre-school the previous year compared to children living in rural areas (64.7 percent).. State differentials are also very significant; first graders in Khartoum state have attended pre-school nearly 3 times as likely (87.0 percent) as their counterparts in Central Darfur State (30.5 percent). Socioeconomic status appears to have a positive correlation with school readiness – while the indicator is only 50.6 percent among the poorest households, it increases to 86.9 percent among those children living in the richest households.

<sup>40</sup> The computation of the indicator does not exclude repeaters, and therefore is inclusive of both children who are attending primary school for the first time, as well as those who were in the first grade of primary school the previous school year and are repeating. Children repeating may have attended pre-school prior to the school year during which they attended the first grade of primary school for the first time; these children are not captured in the numerator of the indicator

**Table ED.2: School readiness****Percentage of children attending first grade of primary school who attended pre-school the previous year, Sudan  
MICS, 2014**

Background characteristics	Percentage of children attending first grade who attended preschool in previous year [1]	Number of children attending first grade of primary school
<b>Sudan</b>	69.7	2,580
<b>Sex</b>		
Male	66.0	1,299
Female	73.4	1,281
<b>State</b>		
Northern	79.9	56
River Nile	86.6	94
Red Sea	66.9	57
Kassala	65.7	77
Gadarif	72.3	145
Khartoum	87.0	329
Gezira	77.0	486
White Nile	82.9	140
Sinnar	72.1	90
Blue Nile	77.0	107
North Kordofan	68.2	172
South Kordofan	64.7	84
West Kordofan	51.5	116
North Darfur	61.8	221
West Darfur	59.5	75
South Darfur	39.3	211
Central Darfur	30.5	46
East Darfur	60.2	75
<b>Area</b>		
Urban	81.0	790
Rural	64.7	1,790
<b>Wealth index quintile</b>		
Poorest	50.6	471
Second	57.7	472
Middle	69.5	573
Fourth	80.6	569
Richest	86.9	495

[1] MICS indicator 7.2 - School readiness

### 10.3 Primary and Secondary School Participation

Universal access to basic education and the completion of primary education by the world's children is one of the Millennium Development Goals. Education is a vital prerequisite for combating poverty, empowering women, protecting children from hazardous and exploitative labour and sexual exploitation, promoting human rights and democracy, protecting the environment, and influencing population growth.

In Sudan, children enter primary school at age 6 and enter secondary school at age 14. There are 8 grades in primary school and 3 grades in secondary school. In primary school, grades are referred to as year 1 basic to year 8 basic. For secondary school, grades are referred to as grade 1 to grade 3. The school year typically runs from June of one year to March of the following year.

Of children who are of primary school entry age in Sudan, 36.8 percent are attending the first grade of primary school (Table ED.3). Sex differentials do not exist; however, significant differentials are present by state and urban-rural areas. In Northern state, for instance, percentage of children entering grade one is 73.6 percent, while those entering at grade one in Western Kordofan state is 13.4 percent. Those entering grade one in urban urban areas (56.6 percent) is nearly twice as those in rural areas (29.5 percent). A positive correlation with socioeconomic status is observed for children age 6 who were attending the first grade. In richest households, the proportion is around 77.6 percent, while it is 14.5 percent among children living in the poorest households.

**Table ED.3: Primary school entry**

**Percentage of children of primary school entry age entering grade 1 (net intake rate), Sudan MICS, 2014**

Background characteristics	Percentage of children of primary school entry age entering grade 1 [1]	Number of children of primary school entry age
<b>Sudan</b>	36.8	3,142
<b>Sex</b>		
Male	36.1	1,560
Female	37.5	1,582
<b>State</b>		
Northern	73.6	54
River Nile	66.5	88
Red Sea	44.1	78
Kassala	27.5	141
Gadarif	34.4	180
Khartoum	68.0	372
Gezira	46.0	456
White Nile	39.7	163
Sinnar	31.9	129
Blue Nile	28.4	141
North Kordofan	36.6	225
South Kordofan	28.5	111
West Kordofan	13.4	180
North Darfur	19.7	263
West Darfur	23.0	122
South Darfur	22.6	272



Background characteristics	Percentage of children of primary school entry age entering grade 1 [1]	Number of children of primary school entry age
Central Darfur	22.9	58
East Darfur	19.6	108
<b>Area</b>		
Urban	56.6	843
Rural	29.5	2,299
<b>Wealth index quintile</b>		
Poorest	14.5	727
Second	20.3	693
Middle	33.2	704
Fourth	56.9	548
Richest	77.6	469

[1] MICS indicator 7.3 - Net intake rate in primary education

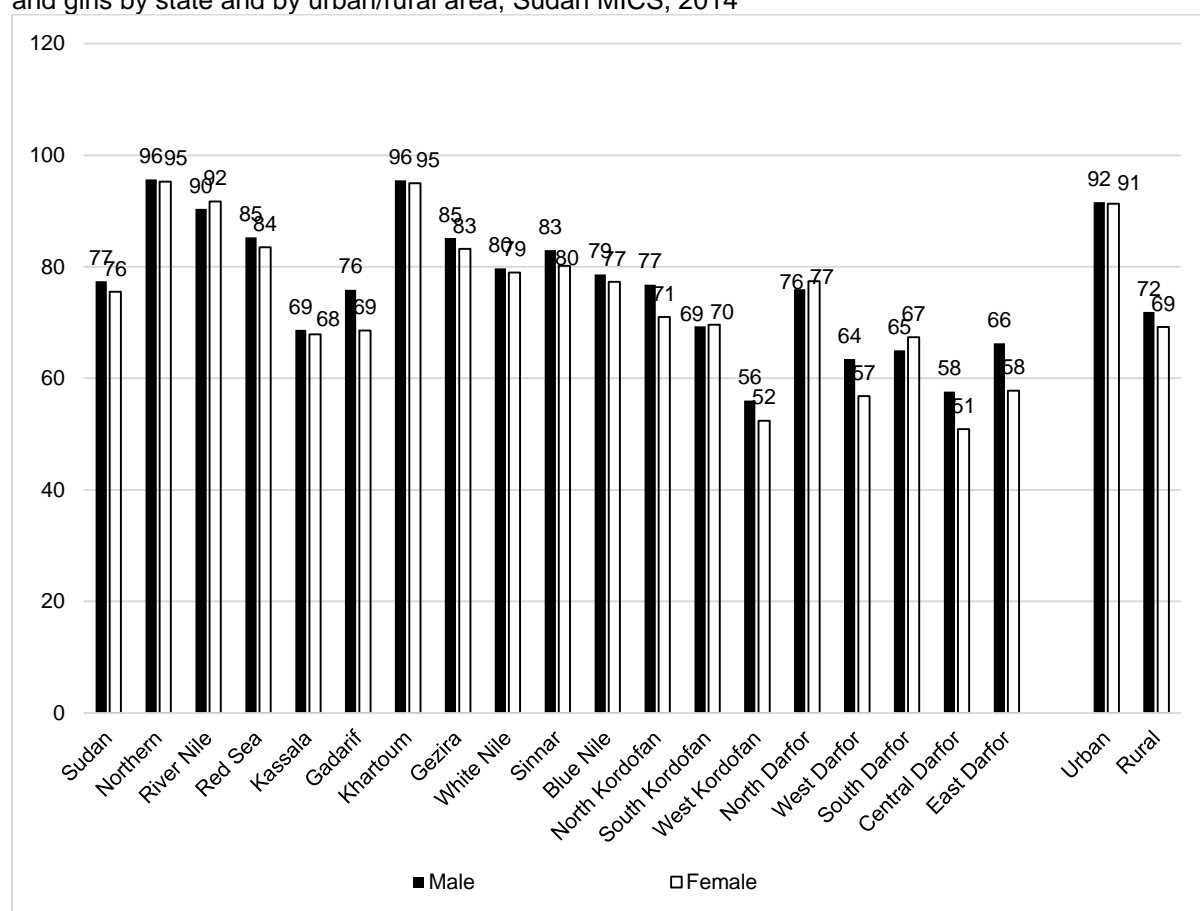
Table ED.4 provides the percentage of children of primary school age (6 to 13 years) who are attending primary or secondary school<sup>41</sup> and those who are out of school. Over three-quarters (76.4 percent) of children of primary school age are attending school. A large proportion (21.6 percent) of the children are out of school primarily due to a very low attendance rate (45.1 percent) for children age 6, who appear to be starting late in school, as seen by a relatively high percentage attending pre-school. In urban areas 91.4 percent of children attend school while 70.6 percent of them attend in rural areas.

There were also considerable variations in the net primary school attendance ratios among states. The net primary school attendance ratio ranged from 54.1 percent in Western Kordofan State to 95.5 percent in Northern State . The net attendance varied among sex in states (see fig. ED.1a)

The household wealth also appears to have an influence on the net primary school attendance ratio. The net primary school attendance ratio was only 57.4 percent among children belonging to households in the poorest quintile compared to 96.9 percent among children from households in the richest quintile.

<sup>41</sup> Ratios presented in this table are "adjusted" since they include not only primary school attendance, but also secondary school attendance in the numerator.

Figure ED.1a: Children of primary school age attending primary (adjusted attendance ratio) for boys and girls by state and by urban/rural area, Sudan MICS, 2014



**Table ED.4: Primary school attendance and out of school children**

Percentage of children of primary school age attending primary or secondary school (adjusted net attendance ratio), percentage attending preschool, and percentage out of school, Sudan MICS, 2014

Background characteristics	Male					Female					Sudan				
	Net attendance ratio (adjusted) [1]	Percentage of children:			Number of children	Net attendance ratio (adjusted) [1]	Percentage of children:			Number of children	Net attendance ratio (adjusted) [1]	Percentage of children:			Number of children
		Not attending school or pre-school	Attending pre-school	Out of school [a]			Not attending school or preschool	Attending preschool	Out of school [a]			Not attending school or pre-school	Attending pre-school	Out of school [a]	
<b>Sudan</b>	77.4	12.5	8.5	21.0	11,522	75.5	13.9	8.4	22.3	11,454	76.4	13.2	8.5	21.6	22,977
<b>State</b>															
Northern	95.7	2.8	3.1	5.8	204	95.3	2.2	3.3	5.5	200	95.5	2.5	3.2	5.7	404
River Nile	90.4	4.4	5.5	9.8	321	91.7	5.5	2.3	7.8	344	91.1	4.9	3.9	8.8	665
Red Sea	85.3	9.0	8.5	17.5	263	83.5	9.9	7.9	17.8	249	84.4	9.4	8.2	17.7	512
Kassala	68.7	14.1	11.7	25.7	547	67.9	14.9	17.5	32.4	469	68.3	14.4	14.4	28.8	1,016
Gadarif	75.9	12.9	12.1	25.0	621	68.6	16.2	10.1	26.3	600	72.3	14.5	11.1	25.6	1,220
Khartoum	95.5	3.0	7.4	10.4	1,377	95.0	2.1	6.2	8.3	1,411	95.3	2.6	6.8	9.3	2,788
Gezira	85.2	9.3	5.9	15.2	1,801	83.2	8.9	7.6	16.5	1,783	84.2	9.1	6.7	15.8	3,585
White Nile	79.7	12.8	5.5	18.3	564	79.0	12.9	5.2	18.1	584	79.3	12.9	5.3	18.2	1,148
Sinnar	83.0	10.7	14.5	25.2	408	80.2	13.0	15.6	28.6	409	81.6	11.9	15.1	26.9	816
Blue Nile	78.6	14.3	28.2	42.5	500	77.3	14.7	27.8	42.5	479	78.0	14.5	28.0	42.5	979
North Kordofan	76.8	13.1	3.8	16.9	748	71.0	17.2	2.9	20.1	758	73.9	15.2	3.3	18.5	1,506
South Kordofan	69.3	17.2	5.5	22.7	399	69.6	13.8	8.3	22.1	380	69.5	15.6	6.8	22.4	779
West Kordofan	56.0	21.6	5.0	26.7	715	52.4	27.5	8.2	35.8	769	54.1	24.7	6.7	31.4	1,483
North Darfur	76.0	15.0	9.3	24.3	989	77.4	14.1	7.6	21.7	959	76.7	14.6	8.4	23.0	1,949
West Darfur	63.5	19.1	8.4	27.5	436	56.8	28.0	5.1	33.1	405	60.3	23.4	6.8	30.2	841
South Darfur	65.0	17.2	9.6	26.7	979	67.4	18.6	8.9	27.5	996	66.2	17.9	9.2	27.1	1,975
Central Darfur	57.6	22.9	6.4	29.3	219	50.9	25.3	5.5	30.9	230	54.1	24.1	6.0	30.1	449
East Darfur	66.3	16.2	8.0	24.2	431	57.8	23.0	6.6	29.6	428	62.0	19.6	7.3	26.9	859

Background characteristics	Male					Female					Sudan				
	Net attendance ratio (adjusted) [1]	Percentage of children:			Number of children	Net attendance ratio (adjusted) [1]	Percentage of children:			Number of children	Net attendance ratio (adjusted) [1]	Percentage of children:			Number of children
		Not attending school or pre-school	Attending pre-school	Out of school [a]			Not attending school or preschool	Attending preschool	Out of school [a]			Not attending school or pre-school	Attending pre-school	Out of school [a]	
<b>Area</b>															
Urban	91.6	5.1	6.0	11.1	3,205	91.3	4.0	5.5	9.5	3,241	91.4	4.5	5.7	10.3	6,446
Rural	71.9	15.3	9.5	24.8	8,317	69.2	17.8	9.6	27.4	8,213	70.6	16.5	9.6	26.1	16,531
<b>Age at beginning of school year</b>															
6	62.7	20.9	24.7	45.6	1,560	64.5	19.7	24.9	44.6	1,582	63.6	20.3	24.8	45.1	3,142
7	71.8	16.1	11.3	27.4	1,605	70.7	15.1	10.7	25.8	1,706	71.2	15.6	11.0	26.6	3,311
8	76.3	12.7	7.3	20.0	1,637	76.8	12.9	7.5	20.4	1,567	76.5	12.8	7.4	20.2	3,204
9	84.2	8.3	5.3	13.5	1,357	80.9	10.7	6.1	16.8	1,284	82.6	9.4	5.7	15.1	2,640
10	79.9	10.2	4.3	14.4	1,607	80.5	10.8	4.2	15.0	1,456	80.2	10.5	4.2	14.7	3,063
11	85.6	6.5	3.6	10.1	1,127	82.3	10.9	4.1	15.0	1,161	84.0	8.7	3.9	12.6	2,289
12	83.1	10.5	5.2	15.7	1,541	76.8	13.0	2.9	15.9	1,509	80.0	11.7	4.1	15.8	3,051
13	79.5	12.4	3.1	15.4	1,088	74.7	16.8	3.5	20.3	1,189	77.0	14.7	3.3	18.0	2,277
<b>Wealth index quintile</b>															
Poorest	58.8	20.7	8.2	28.9	2,710	56.0	24.1	7.8	31.9	2,644	57.4	22.4	8.0	30.4	5,353
Second	66.5	18.7	10.2	28.9	2,473	62.1	22.0	10.6	32.6	2,469	64.3	20.4	10.4	30.8	4,942
Middle	81.6	11.5	13.5	25.0	2,462	80.0	12.5	13.0	25.6	2,326	80.8	12.0	13.3	25.3	4,788
Fourth	92.6	5.2	5.1	10.3	2,154	91.5	4.4	6.5	10.9	2,197	92.0	4.8	5.8	10.6	4,352
Richest	97.2	1.0	3.8	4.9	1,724	96.7	1.1	2.9	4.0	1,818	96.9	1.1	3.3	4.4	3,542

[1] MICS indicator 7.4; MDG indicator 2.1 - Primary school net attendance ratio (adjusted)

[a] The percentage of children of primary school age out of school are those not attending school and those attending preschool

The secondary school net attendance ratio is presented in Table ED.5<sup>42</sup>. More dramatic than in primary school, only (28.4 percent) of the children of secondary school age are attending secondary school or higher. Of those who are not attending secondary schools, some were attending primary schools while the rest were out of school. Approximately 37.0 percent of the children of secondary school age were attending primary schools while the remaining 24.2 percent out of school.

The net secondary school attendance ratios were highest (38.4 percent) among children aged 16 years and lowest (20.1 percent) among those aged 14 years. In the case of boys, the net attendance rate was highest (36.1 percent) among those aged 16 years and lowest (19.3 percent) among boys aged 14 years. Net secondary school attendance ratios for girls was highest (40.9 percent) among 16 year-olds and lowest (20.7 percent) among those aged 14 years.

There were variations in net secondary school attendance ratios for children living in urban and rural areas; 42.2 percent for children in urban areas compared to 22.2 percent for those in rural areas.

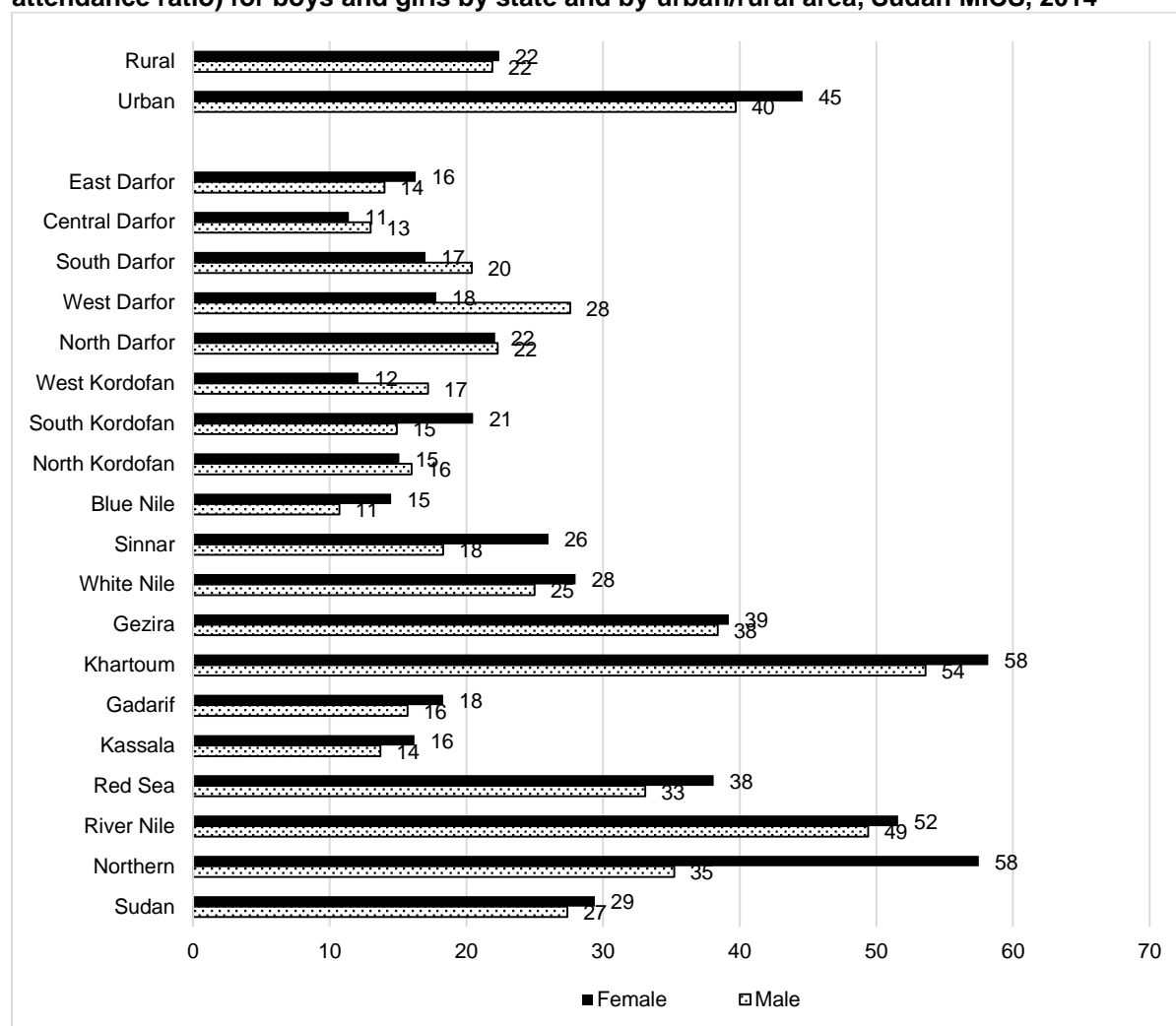
There were also considerable variations in the net secondary school attendance ratios among States; the net secondary school attendance ratios ranged from 12.2 percent in Central Darfur State to 56.1 percent in Khartoum State. Also even within states variations exists between boys and girls in terms of the net secondary school attendance ratios for boys, ranging from 10.7 percent in Blue Nile State to 53.6 percent in Khartoum State. Noticeable variations also exist among States in net secondary school attendance ratio for girls, ranging from 11.4 percent in Central Darfur State to 58.2 percent in Khartoum State. (see figure ED.2)

The household wealth also appears to have an influence on the net secondary school attendance ratio. The net secondary school attendance ratio was only 9.1 percent among children belonging to households in the poorest quintile compared to 68.5 percent among children from the households in the richest quintile.

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<sup>42</sup> Ratios presented in this table are "adjusted" since they include not only secondary school attendance, but also attendance to higher levels in the numerator.

**Figure ED.1b: Children of secondary school age attending secondary school (adjusted net attendance ratio) for boys and girls by state and by urban/rural area, Sudan MICS, 2014**



**Table ED.5: Secondary school attendance and out of school children**  
**Percentage of children of secondary school age attending secondary school or higher (adjusted net attendance ratio), percentage attending primary school, and percentage out of school, Sudan MICS, 2014**

Background characteristics	Male				Female				Sudan			
	Net attendance ratio (adjusted) [1]	Percent age of children : Attending primary school	Percent age of children : Out of school [a]	Number of children	Net attendance ratio (adj. [1]	Percent age of children : Attending primary school	Percent age of children : Out of school [a]	Number of children	Net attendance ratio (adjusted) [1]	Percent age of children : Attending primary school	Percent age of children : Out of school [a]	Number of children
<b>Sudan</b>	27.4	41.6	20.8	3087	29.4	32.6	27.5	3214	28.4	37.0	24.2	6,300
<b>State</b>												
Northern	35.2	43.4	20.0	77	57.5	30.4	11.5	64	45.4	37.5	16.1	141
River Nile	49.4	29.0	17.7	118	51.6	19.3	26.4	104	50.5	24.4	21.8	222
Red Sea	33.1	45.8	13.2	79	38.1	33.3	19.8	58	35.2	40.5	16.0	137
Kassala	13.7	44.9	32.7	148	16.2	29.2	37.8	127	14.8	37.7	35.1	275
Gadarif	15.7	44.7	21.8	167	18.3	37.3	29.2	154	16.9	41.2	25.4	321
Khartoum	53.6	27.1	11.9	369	58.2	29.4	9.1	422	56.1	28.3	10.4	790
Gezira	38.4	40.3	18.3	464	39.2	17.2	32.2	567	38.9	27.5	25.9	1,031
White Nile	25.0	40.4	30.2	172	28.0	34.0	32.3	150	26.4	37.4	31.2	322
Sinnar	18.3	43.8	31.8	102	26.0	35.9	21.9	100	22.1	39.9	26.9	202
Blue Nile	10.7	34.2	29.0	137	14.5	25.9	30.6	137	12.6	30.0	29.8	274
North Kordofan	16.0	40.6	32.2	213	15.1	38.8	34.9	192	15.6	39.7	33.5	405
South Kordofan	14.9	43.6	29.1	73	20.5	31.8	35.9	92	18.0	37.0	32.9	165
West Kordofan	17.2	39.2	24.6	178	12.1	36.8	33.3	197	14.5	37.9	29.2	374
North Darfur	22.3	53.8	15.6	248	22.1	48.6	23.1	285	22.2	51.1	19.6	533
West Darfur	27.6	52.3	8.5	105	17.8	41.3	29.8	114	22.5	46.6	19.6	219
South Darfur	20.4	49.3	13.6	263	17.0	43.9	32.1	273	18.7	46.6	23.0	536
Central Darfur	13.0	47.0	20.4	63	11.4	38.2	38.3	66	12.2	42.5	29.6	130
East Darfur	14.0	51.0	23.9	112	16.3	38.5	28.6	111	15.2	44.8	26.2	224
<b>Area</b>												
Urban	39.7	42.2	12.4	959	44.6	37.6	12.3	1007	42.2	39.9	12.3	1,966
Rural	21.9	41.4	24.6	2128	22.4	30.3	34.4	2207	22.2	35.7	29.6	4,334
<b>Age at beginning of school year</b>												
14	19.3	55.4	14.3	1094	20.7	45.2	22.4	1499	20.1	49.5	19.0	2,593
15	28.0	39.8	22.8	1025	32.9	28.2	29.4	848	30.2	34.5	25.8	1,873
16	36.1	28.1	25.9	969	40.9	15.1	34.3	866	38.4	22.0	29.9	1,835
<b>Melevel</b>												
Cannot be determined [b]	26.7	33.0	20.0	166	14.1	16.8	51.9	253	19.1	23.2	39.3	419
Missing	27.5	42.1	20.8	2921	30.7	33.9	25.4	2960	29.1	38.0	23.1	5,882
<b>Wealth index quintile</b>												
Poorest	9.6	46.5	25.1	658	8.6	36.5	39.3	679	9.1	41.4	32.3	1,337
Second	17.6	40.1	27.3	674	13.2	36.7	36.6	645	15.5	38.4	31.9	1,320
Middle	15.0	50.9	25.6	590	15.3	36.1	34.4	640	15.1	43.2	30.2	1,230
Fourth	34.6	42.3	19.1	565	40.2	34.4	18.8	645	37.6	38.1	19.0	1,210
Richest	63.6	28.2	5.5	599	73.3	18.1	6.2	604	68.5	23.1	5.8	1,204

[1] MICS indicator 7.5; MDG indicator 2.1 - Secondary school net attendance ratio (adjusted)

<sup>a</sup> The percentage of children of secondary school age out of school are those who are not attending primary, secondary, or higher education

The percentage of children entering first grade who eventually reach the last grade of primary school is presented in Table ED.6. Of all children starting grade one, the majority (80.4 percent) will eventually reach grade 8. The MICS included only questions on school attendance in the current and previous year. Thus, the indicator is calculated synthetically by computing the cumulative probability of survival from the first to the last grade of primary school, as opposed to calculating the indicator for a real cohort which would need to be followed from the time a cohort of children entered primary school, up to the time they reached the last grade of primary school. Repeaters are excluded from the calculation of the indicator, because it is not known whether they will eventually graduate. As an example, the probability that a child will move from the first grade to the second grade is computed by dividing the number of children who moved from the first grade to the second grade (during the two consecutive school years covered by the survey) by the number of children who have moved from the first to the second grade plus the number of children who were in the first grade the previous school year, but dropped out. Both the numerator and denominator excludes children who repeated during the two school years under consideration.

The percentage of children entering first grade who eventually reach grade 8 of primary school was 93.2 in urban areas compared to 73.8 in rural areas. The percentage of children entering first grade of primary school in a given year and who eventually reach grade 8 was associated with household wealth. The percentage of children reaching grade 8 was 97.4 among children from households in the richest quintile compared to 66.1 among children from households in the poorest quintile.

<b>Table ED.6: Children reaching last grade of primary school</b>								
<b>Percentage of children entering first grade of primary school who eventually reach the last grade of primary school (Survival rate to last grade of primary school), Sudan MICS, 2014</b>								
Background characteristics	Percent attending grade 1 last school year who are in grade 2 this school year	Percent attending grade 2 last school year who are attending grade 3 this school year	Percent attending grade 3 last school year who are attending grade 4 this school year	Percent attending grade 4 last school year who are attending grade 5 this school year	Percent attending grade 5 last school year who are attending grade 6 this school year	Percent attending grade 6 last school year who are attending grade 7 this school year	Percent attending grade 7 last school year who are attending grade 8 this school year	Percent who reach grade 8 of those who enter grade 1 [1]
<b>Sudan</b>	97.3	98.5	97.6	97.4	97.4	96.4	94.0	80.4
<b>Sex</b>								
Male	96.8	98.5	98.1	97.6	97.4	95.8	93.9	80.0
Female	97.9	98.6	97.0	97.2	97.4	97.0	94.0	80.8
<b>State</b>								
Northern	100.0	99.5	99.0	98.6	95.7	95.7	92.2	81.9
River Nile	100.0	98.8	98.4	98.8	98.9	97.1	96.8	89.2
Red Sea	100.0	98.7	99.2	95.9	100.0	98.0	97.9	90.1
Kassala	99.0	98.6	100.0	99.2	100.0	98.4	96.9	92.4
Gadarif	98.3	99.5	98.0	97.4	96.0	98.9	88.8	78.8
Khartoum	100.0	100.0	98.8	98.9	99.4	97.9	99.3	94.4
Gezira	96.9	99.7	97.9	98.5	98.9	96.4	95.0	84.4
White Nile	98.3	97.9	97.5	97.7	97.6	97.3	91.8	80.0
Sinnar	100.0	98.6	97.9	98.2	98.7	97.1	86.8	78.9



Background characteristics	Percent attending grade 1 last school year who are in grade 2 this school year	Percent attending grade 2 last school year who are attending grade 3 this school year	Percent attending grade 3 last school year who are attending grade 4 this school year	Percent attending grade 4 last school year who are attending grade 5 this school year	Percent attending grade 5 last school year who are attending grade 6 this school year	Percent attending grade 6 last school year who are attending grade 7 this school year	Percent attending grade 7 last school year who are attending grade 8 this school year	Percent who reach grade 8 of those who enter grade 1 [1]
Blue Nile	93.6	93.3	92.1	95.5	96.4	88.9	90.1	59.4
North Kordofan	99.0	99.6	98.8	100.0	97.6	93.1	86.6	76.7
South Kordofan	96.8	99.0	100.0	98.0	95.2	93.8	93.2	78.2
West Kordofan	97.8	97.1	93.2	93.5	94.4	97.6	89.7	68.3
North Darfur	98.7	98.3	98.5	95.9	96.3	95.6	92.1	77.8
West Darfur	89.5	95.2	93.5	92.2	90.5	92.2	92.0	56.4
South Darfur	91.5	96.0	95.6	95.4	95.0	97.3	93.5	69.3
Central Darfur	92.3	98.0	94.5	95.4	87.7	96.5	98.5	67.9
East Darfur	96.0	100.0	97.4	97.6	98.7	98.9	98.4	87.6
<b>Area</b>								
Urban	99.4	99.8	99.0	99.3	99.2	99.2	97.1	93.2
Rural	96.2	98.0	96.9	96.4	96.2	94.8	91.8	73.8
<b>Wealth index quintile</b>								
Poorest	94.5	98.2	96.1	93.6	94.3	94.2	89.3	66.1
Second	96.2	96.7	96.1	96.9	94.5	96.4	91.3	72.1
Middle	96.6	98.3	97.0	96.8	97.4	93.8	90.8	74.0
Fourth	99.4	99.4	98.9	99.3	99.0	97.4	97.4	91.2
Richest	100.0	100.0	99.7	100.0	99.7	99.5	98.4	97.4

1 MICS indicator 7.6; MDG indicator 2.2 - Children reaching last grade of primary

The primary school completion rate and transition rate to secondary education are presented in Table ED.7. The primary completion rate is the ratio of the Sudan number of students, regardless of age, entering the last grade of primary school for the first time, to the number of children of the primary graduation age at the beginning of the current (or most recent) school year.

Over nine-tenths (90.7 percent) of the children who were attending the last grade of primary school in the previous school year were found to be attending the first grade of secondary school in the school year of the survey. The table also provides “effective” transition rate which takes account of the presence of repeaters in the final grade of primary school. This indicator better reflects situations in which pupils repeat the last grade of primary education but eventually make the transition to the secondary level. The simple transition rate tends to underestimate pupils’ progression to secondary school as it assumes that the repeaters never reach secondary school. The table shows that in Sudan 97.9 percent of the children in the last grade of primary school are expected to move on transition to secondary school.

At the time of the survey, the primary school completion rate was 79.3 percent (84.8 percent for boys and 74.3 percent for girls). The primary school completion rate was 111.2 percent for children in urban

areas compared to 65.8 percent for children in rural areas. It appears that in urban areas there exist a number of overaged children in the last grade of primary schools

The primary school completion rate seems to increase with the household wealth. It was only 57.7 percent among children from households in the poorest quintile compared to 118.6 percent among children from households in the richest quintile.

<b>Table ED.7: Primary school completion and transition to secondary school</b>						
<b>Primary school completion rates and transition and effective transition rates to secondary school, Sudan MICS, 2014</b>						
Background characteristics	Primary school completion rate [1]	Number of children of primary school completion age	Transition rate to secondary school [2]	Number of children who were in the last grade of primary school the previous year	Effective transition rate to secondary school	Number of children who were in the last grade of primary school the previous year and are not repeating that grade in the current school year
<b>Sudan</b>	79.3	2,277	90.7	1,161	97.9	1,075
<b>Sex</b>						
Male	84.8	1,088	90.4	587	99.5	534
Female	74.3	1,189	91.0	574	96.4	542
<b>State</b>						
Northern	95.9	45	92.4	27	92.4	27
River Nile	90.8	67	96.1	48	97.0	47
Red Sea	(102.7)	41	*	15	*	14
Kassala	63.1	104	(65.8)	27	*	22
Gadarif	53.0	129	87.6	56	93.4	53
Khartoum	119.6	285	92.6	165	96.7	158
Gezira	70.2	363	90.9	249	96.7	234
White Nile	90.0	110	96.8	63	106.1	57
Sinnar	59.6	85	(90.1)	30	(105.4)	25
Blue Nile	49.1	91	(81.2)	33	(94.2)	28
North Kordofan	58.5	160	(86.7)	46	(118.2)	33
South Kordofan	78.8	64	86.9	27	91.7	26
West Kordofan	55.2	148	(83.0)	37	(83.8)	36
North Darfur	91.3	176	88.7	154	96.9	141
West Darfur	87.8	81	94.8	47	104.1	43
South Darfur	95.9	188	90.1	90	94.6	86
Central Darfur	71.1	47	93.7	17	(110.9)	14
East Darfur	69.2	91	93.7	32	97.6	31
<b>Area</b>						
Urban	111.2	677	93.9	441	100.6	411
Rural	65.8	1,600	88.7	720	96.2	664
<b>Wealth index quintile</b>						
Poorest	57.7	510	84.4	167	94.0	150
Second	57.0	489	91.3	193	98.1	180
Middle	79.0	447	87.0	194	96.6	175
Fourth	95.4	452	89.9	289	99.1	262
Richest	118.6	378	96.6	318	99.5	309

[1] MICS indicator 7.7 - Primary completion rate

[2] MICS indicator 7.8 - Transition rate to secondary school

( ) Figures that are based on 25-49 unweighted cases

[\*] Based on less than 25 unweighted cases and has been suppressed.

The ratio of girls to boys attending primary and secondary education is provided in Table ED.8. These ratios are better known as the Gender Parity Index (GPI). Notice that the ratios included here are obtained from net attendance ratios rather than gross attendance ratios. The latter provide an erroneous description of the GPI mainly because, in most cases, the majority of over-aged children attending primary education tend to be boys.

The table shows that gender parity for primary school is (0.98) close to 1.00, indicating no difference in the attendance of girls and boys to primary school. However, the indicator increases to 1.07 for secondary education. The disadvantage of girls at the primary stage of education is particularly pronounced in Eastern Darfur state (GPI: 0.87), as well as among children living in the poorest households (GPI: 0.95).

The GPI at the secondary stage for children belonging to households in the richest quintile was 1.15 compared to 0.90 for children belonging to households in the poorest quintile. The GPI at the secondary stage of education ranged between 0.64 in Western Darfur State to 1.63 in Northern state.

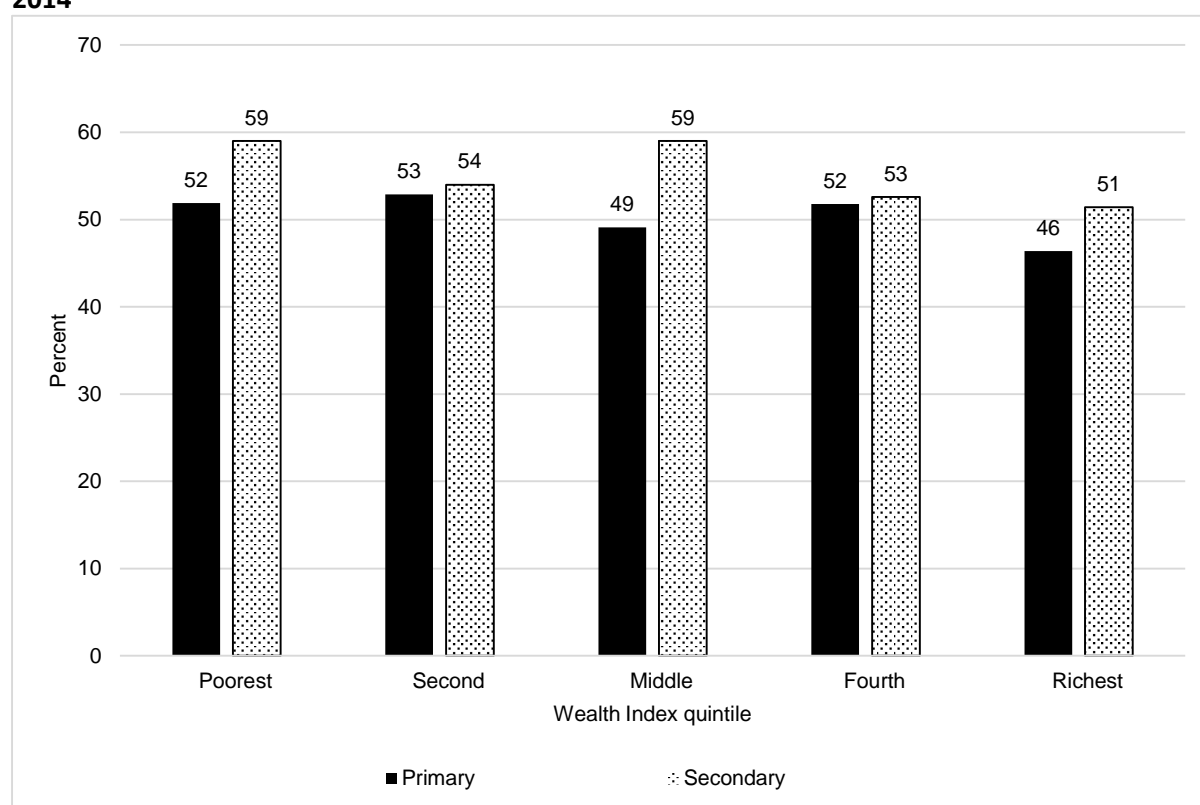
<b>Table ED.8: Education gender parity</b>						
<b>Ratio of adjusted net attendance ratios of girls to boys, in primary and secondary school, Sudan MICS, 2014</b>						
Background characteristics	Primary school adjusted net attendance ratio (NAR), girls	Primary school adjusted net attendance ratio (NAR), boys	Gender parity index (GPI) for primary school adjusted NAR [1]	Secondary school adjusted net attendance ratio (NAR), girls	Secondary school adjusted net attendance ratio (NAR), boys	Gender parity index (GPI) for secondary school adjusted NAR [2]
<b>Sudan</b>	75.5	77.4	0.98	29.4	27.4	1.07
<b>State</b>						
Northern	95.3	95.7	1.00	57.5	35.2	1.63
River Nile	91.7	90.4	1.01	51.6	49.4	1.04
Red Sea	83.5	85.3	0.98	38.1	33.1	1.15
Kassala	67.9	68.7	0.99	16.2	13.7	1.18
Gadarif	68.6	75.9	0.90	18.3	15.7	1.17
Khartoum	95.0	95.5	1.00	58.2	53.6	1.09
Gezira	83.2	85.2	0.98	39.2	38.4	1.02
White Nile	79.0	79.7	0.99	28.0	25.0	1.12
Sinnar	80.2	83.0	0.97	26.0	18.3	1.42
Blue Nile	77.3	78.6	0.98	14.5	10.7	1.35
North Kordofan	71.0	76.8	0.92	15.1	16.0	0.94
South Kordofan	69.6	69.3	1.00	20.5	14.9	1.38
West Kordofan	52.4	56.0	0.93	12.1	17.2	0.71
North Darfur	77.4	76.0	1.02	22.1	22.3	0.99
West Darfur	56.8	63.5	0.89	17.8	27.6	0.64
South Darfur	67.4	65.0	1.04	17.0	20.4	0.83
Central Darfur	50.9	57.6	0.88	11.4	13.0	0.88
East Darfur	57.8	66.3	0.87	16.3	14.0	1.16

<b>Table ED.8: Education gender parity</b>						
<b>Ratio of adjusted net attendance ratios of girls to boys, in primary and secondary school, Sudan MICS, 2014</b>						
Background characteristics	Primary school adjusted net attendance ratio (NAR), girls	Primary school adjusted net attendance ratio (NAR), boys	Gender parity index (GPI) for primary school adjusted NAR [1]	Secondary school adjusted net attendance ratio (NAR), girls	Secondary school adjusted net attendance ratio (NAR), boys	Gender parity index (GPI) for secondary school adjusted NAR [2]
<b>Area</b>						
Urban	91.3	91.6	1.00	44.6	39.7	1.12
Rural	69.2	71.9	0.96	22.4	21.9	1.02
<b>Wealth index quintile</b>						
Poorest	56.0	58.8	0.95	8.6	9.6	0.90
Second	62.1	66.5	0.93	13.2	17.6	0.75
Middle	80.0	81.6	0.98	15.3	15.0	1.02
Fourth	91.5	92.6	0.99	40.2	34.6	1.16
Richest	96.7	97.2	0.99	73.3	63.6	1.15
[1] MICS indicator 7.9; MDG indicator 3.1 - Gender parity index (primary school)						
[2] MICS indicator 7.10; MDG indicator 3.1 - Gender parity index (secondary school)						
[a] Children age 15 or higher at the time of the interview whose mothers were not living in the household						

The percentage of girls in Sudan out of school population, in both primary and secondary school, are provided in Table ED.9. The table shows that at the primary level girls account for about half (51.4 percent) of the out-of-school population. Girls' share increased to 56.4 percent, however, at the secondary level.

There were also considerable variations in the out-of-school at primary level among States with West Kordofan recording up to 59.1 percent of girls of primary school age out of school. At secondary level there also exists considerable variations among states in terms of the out-of-school for girls of primary school age with south Darfur recoding up 65.8 percent.

**Figure ED.1c: Girls out of school in primary and secondary by wealth index quintiles, Sudan MICS, 2014**



**Table ED.9: Out of school gender parity**

**Percentage of girls in the Sudan out of school population, in primary and secondary school, Sudan MICS, 2014**

Background characteristics	Primary school				Secondary school			
	Percentage of out of school children	Number of children of primary school age	Percent age of girls in the Sudan out of school population of primary school age	Number of children of primary school age out of school	Percentage of out of school children	Number of children of secondary school age	Percent age of girls in the Sudan out of school population of secondary school age	Number of children of secondary school age out of school
<b>Sudan</b>	21.6	22,977	51.4	4,974	26.7	6,300	56.4	1,682
<b>State</b>								
Northern	5.7	404	*	23	16.3	141	*	23
River Nile	8.8	665	46.0	59	22.3	222	57.7	50
Red Sea	17.7	512	49.0	90	17.9	137	(46.6)	25
Kassala	28.8	1,016	51.9	293	39.6	275	49.9	109
Gadarif	25.6	1,220	50.3	313	30.2	321	49.6	97
Khartoum	9.3	2,788	45.0	260	12.4	790	44.3	98
Gezira	15.8	3,585	51.8	568	26.5	1,031	68.0	274
White Nile	18.2	1,148	50.5	209	32.1	322	48.9	103
Sinnar	26.9	816	53.2	220	31.7	202	44.7	64

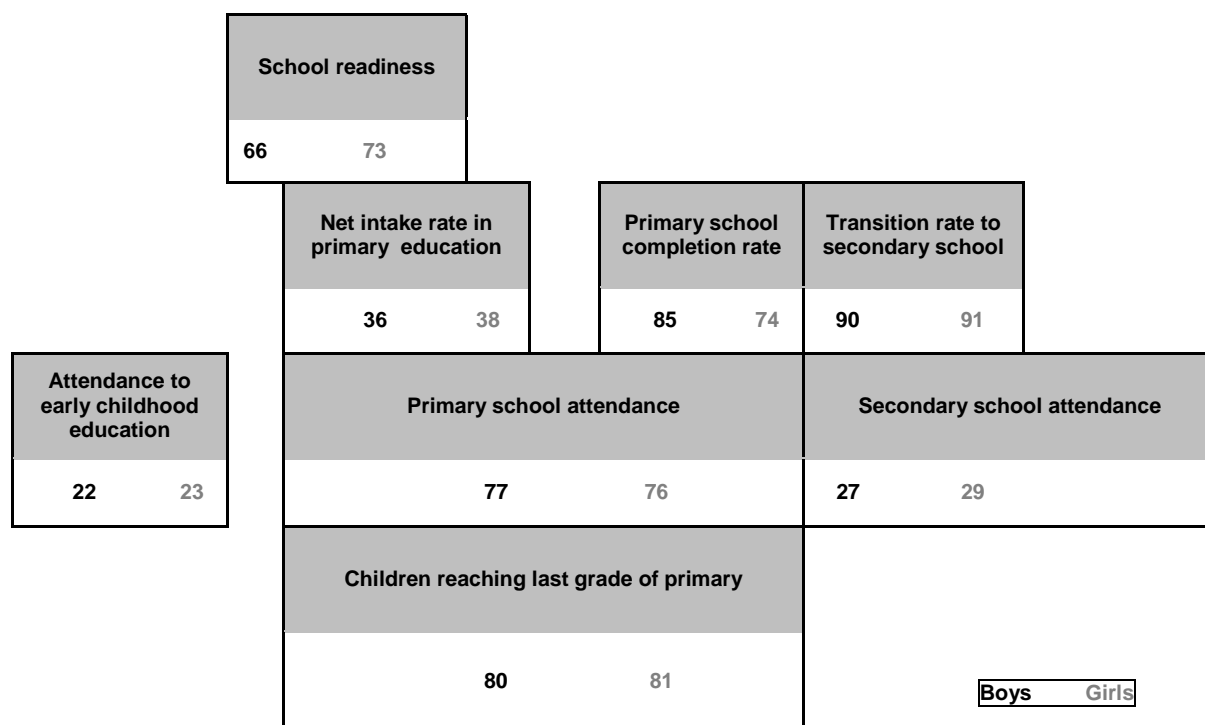
Background characteristics	Primary school				Secondary school			
	Percentage of out of school children	Number of children of primary school age	Percent age of girls in the Sudan out of school population of primary school age	Number of children of primary school age out of school	Percentage of out of school children	Number of children of secondary school age	Percent age of girls in the Sudan out of school population of secondary school age	Number of children of secondary school age out of school
Blue Nile	42.5	979	48.9	416	47.7	274	52.2	131
North Kordofan	18.5	1,506	54.7	279	33.5	405	49.4	136
South Kordofan	22.4	779	48.2	175	34.5	165	61.5	57
West Kordofan	31.4	1,483	59.1	466	31.6	374	57.9	118
North Darfur	23.0	1,949	46.4	448	20.1	533	61.3	107
West Darfur	30.2	841	52.8	254	20.5	219	(76.8)	45
South Darfur	27.1	1,975	51.1	536	25.3	536	65.8	136
Central Darfur	30.1	449	52.5	135	33.5	130	(63.0)	43
East Darfur	26.9	859	54.9	231	30.3	224	51.0	68
<b>Area</b>								
Urban	10.3	6,446	46.3	662	13.2	1,966	50.5	259
Rural	26.1	16,531	52.1	4,312	32.8	4,334	57.4	1,423
<b>Wealth index quintile</b>								
Poorest	30.4	5,353	51.9	1,628	35.0	1,337	59.0	468
Second	30.8	4,942	52.9	1,521	36.0	1,320	54.0	474
Middle	25.3	4,788	49.1	1,209	34.9	1,230	59.0	429
Fourth	10.6	4,352	51.8	460	19.6	1,210	52.6	237
Richest	4.4	3,542	46.4	156	6.1	1,204	51.4	74

[a] Children age 15 or higher at the time of the interview whose mothers were not living in the household

[\*] Based on less than 25 unweighted cases and has been suppressed.

Figure ED.1 brings together all of the attendance and progression related education indicators covered in this chapter, by sex. Information on attendance to early childhood education is also included, which was covered in Chapter 9, in Table CD.1.

**Figure ED.1: Education indicators by sex, Sudan MICS, 2014**



Note: All indicator values are in per cent

## XI. Child Protection

### 11.1 Birth Registration

A name and nationality is every child's right, enshrined in the Convention on the Rights of the Child (CRC) and other international treaties. Yet the births of around one in four children under the age of five worldwide have never been recorded.<sup>43</sup> This lack of formal recognition by the State usually means that a child is unable to obtain a birth certificate. As a result, he or she may be denied health care or education. Later in life. The lack of official identification documents can mean that a child may enter into marriage or the labour market, or be conscripted into the armed forces before the legal age. In adulthood, birth certificates may be required to obtain social assistance or a job in the formal sector, to buy or prove the right to inherit property, to vote, and to obtain a passport. Registering children at birth is the first step in securing their recognition before the law, safeguarding their rights, and ensuring that any violation of these rights does not go unnoticed.<sup>44</sup>

**Table CP.1: Birth registration**

Percentage of children under age 5 by whether birth is registered and percentage of children not registered whose mothers/caretakers know how to register birth, Sudan MICS, 2014

Background characteristics	Children under age 5 whose birth is registered with civil authorities				Number of children under age 5	Children under age 5 whose birth is not registered	
	Has birth certificate		No birth certificate	Total registered [1]		Percent of children whose mother/ caretaker knows how to register birth	Number of children under age 5 without birth registration
	Seen	Not seen					
<b>Sudan</b>	23.4	26.4	17.5	67.3	14,081	35.2	4,599
<b>Sex</b>							
Male	24.3	27.2	17.4	68.8	7,157	35.2	2,230
Female	22.5	25.6	17.7	65.8	6,924	35.3	2,369
<b>State</b>							
Northern	43.4	41.9	13.0	98.3	236	*	4
River Nile	26.1	50.6	20.2	96.8	393	*	13
Red Sea	37.8	34.0	8.8	80.5	244	28.3	47
Kassala	24.4	20.2	14.7	59.2	498	13.9	203
Gadarif	19.9	32.7	27.1	79.8	765	40.7	155
Khartoum	39.8	41.9	15.2	96.9	1736	*	55
Gezira	37.6	22.5	19.8	79.9	2149	57.1	433
White Nile	19.9	27.8	23.1	70.8	711	62.2	207
Sinnar	29.7	29.0	16.9	75.6	555	46.7	135
Blue Nile	31.2	14.9	12.9	58.9	691	36.1	284
North Kordofan	23.8	25.5	26.5	75.8	907	47.7	219
South Kordofan	17.5	17.6	26.0	61.2	529	39.3	205
West Kordofan	4.2	24.1	10.5	38.7	893	34.5	547
North Darfur	8.0	26.7	15.0	49.7	1,211	27.9	609
West Darfur	11.6	27.0	9.1	47.8	487	28.0	254

<sup>43</sup> UNICEF. 2014. *The State of the World's Children 2015*. UNICEF.

<sup>44</sup> UNICEF. 2013. *Every Child's Birth Right: Inequities and trends in birth registration*. UNICEF.



Background characteristics	Children under age 5 whose birth is registered with civil authorities				Number of children under age 5	Children under age 5 whose birth is not registered	
	Has birth certificate		No birth certificate	Total registered [1]		Percent of children whose mother/ caretaker knows how to register birth	Number of children under age 5 without birth registration
	Seen	Not seen					
South Darfur	9.9	19.4	15.4	44.7	1,326	23.7	733
Central Darfur	7.0	9.4	14.5	30.9	254	22.9	176
East Darfur	11.0	7.6	16.8	35.5	495	32.4	320
Area							
Urban	38.2	37.4	13.4	89.0	3,862	51.4	426
Rural	17.8	22.3	19.1	59.2	10,219	33.6	4,173
Age							
0-11	16.8	19.7	25.5	62.0	2,964	40.1	1,125
12-23	21.8	25.6	21.9	69.2	2,672	36.6	822
24-35	26.4	27.2	14.9	68.4	2,618	32.0	827
36-47	25.6	30.5	12.4	68.4	3,268	31.0	1,031
48-59	26.9	29.0	13.1	69.0	2,559	35.8	794
Mother's education							
None	13.1	18.7	15.3	47.2	5,994	30.2	3,163
Primary	24.7	27.7	22.9	75.4	4,936	41.3	1,215
Secondary	37.3	37.4	16.1	90.8	2,152	73.2	197
Higher	48.1	42.4	7.4	97.9	982	*	21
Missing/DK	*	*	*	*	17	*	2
Wealth index quintile							
Poorest	5.5	17.0	14.5	37.0	3,188	26.2	2,008
Second	11.3	20.3	21.8	53.4	3,015	36.8	1,405
Middle	23.8	26.2	23.8	73.8	2,956	42.9	773
Fourth	36.0	33.2	17.1	86.4	2,684	57.3	366
Richest	49.4	40.0	8.5	97.9	2,238	(76.6)	46

[1] MICS indicator 8.1 - Birth registration

( ) Figures that are based on 25-49 unweighted cases

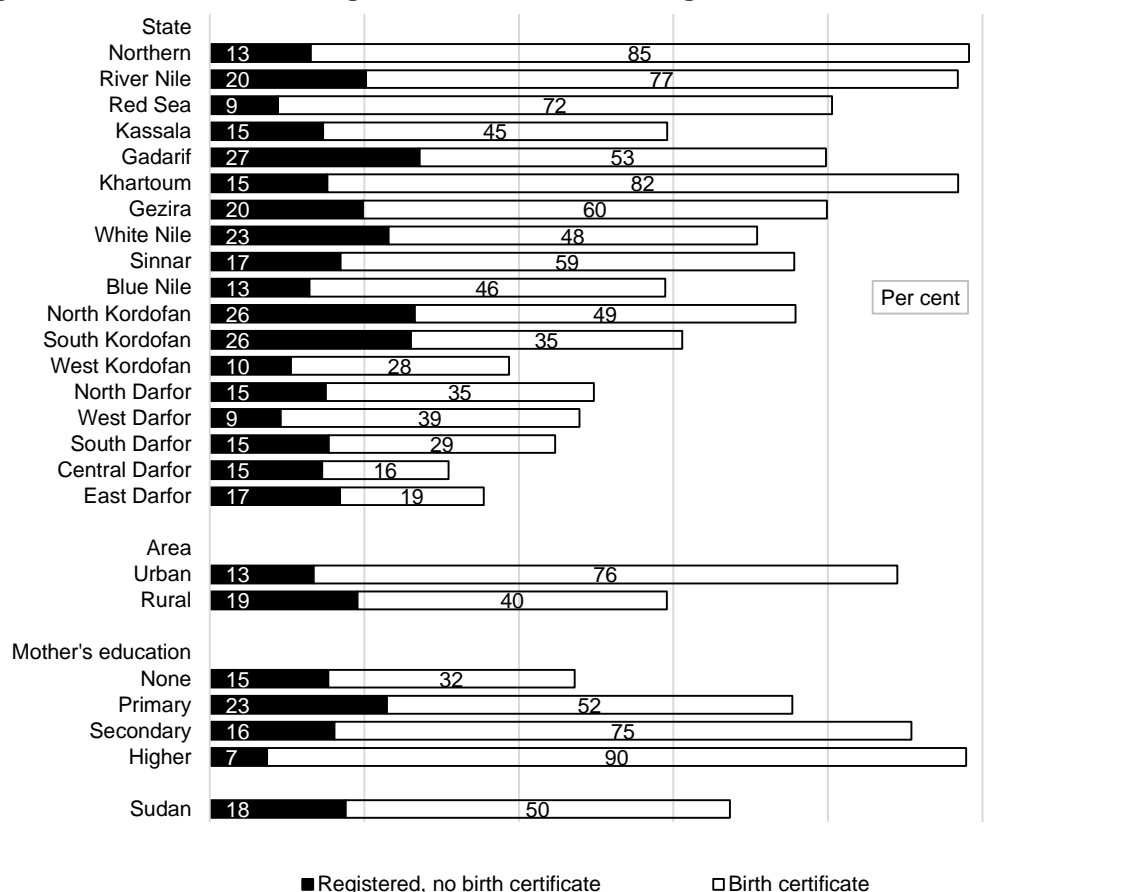
\* Based on less than 25 unweighted cases and has been suppressed.

The births of 67.3 percent of children under five years in MICS 2014 have been registered; 23.4 percent of the registration certificates have been seen by the interviewers, 26.4 percent have not been seen by the interviewers, and 17.5 were reported to have no birth certificate (Table CP.1). Registration of birth becomes more likely as a child grows older. There are no significant variations in birth registration depending on the sex of the child with male children registered at 68.8 percent and females at 65.8 percent.

Children in Central Darfur State (30.9 percent) were the least to have their births registered than children other states with Northern states (98.3 percent) recording the highest number of children under five whose births are registered. While only 37.0 percent of the children in the poorest households were registered, nearly all children (97.9 percent) of under five children who belong to richest households were registered. The data show significant differences between the proportion of children whose births are reported as registered and those who actually have a birth certificate.

Overall, only 49.8 of children possess a birth certificate. These findings are also presented in Figure CP.1. Urban-rural differentials indicated that 89.0 percent and 59.2 percent of under five children were registered in urban and rural areas respectively.

**Figure CP.1: Children under age five whose births are registered, Sudan MICS, 2014**



The lack of adequate knowledge of how to register a child can present another major obstacle to the fulfilment of a child's right to identity. Data show that only 35.2 percent of mothers of unregistered children report knowing how to register a child's birth or the majority of mothers without registered children appear not to be aware of the registration process. This is further shown that while only 47.2 percent of under five children whose mothers' have no education have been registered, as high as 97.9 percent of those whose mothers are highly educated, have been registered.

## 11.2 Child Labour

Children around the world are routinely engaged in paid and unpaid forms of work that are not harmful to them. However, they are classified as child labourers when they are either too young to work or are involved in hazardous activities that may compromise their physical, mental, social or educational development. Article 32 (1) of the Convention on the Rights of the Child states: "States Parties recognize the right of the child to be protected from economic exploitation and from performing any work that is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral or social development".

The child labour module was administered for children age 5-17 and includes questions on the type of work a child does and the number of hours he or she is engaged in it. Data are collected on both economic activities (paid or unpaid work for someone who is not a member of the household, work for a family farm or business) and domestic work (household chores such as cooking, cleaning or caring for children, as well as collecting firewood or fetching water). The module also collects information on hazardous working conditions.<sup>45, 46</sup>

Table CP.2 presents children's involvement in economic activities. The methodology of the MICS Indicator on Child Labour uses three age-specific thresholds for the number of hours a child can perform economic activity without it being classified as in child labour. A child that performed economic activities during the last week for more than the age-specific number of hours is classified as in child labour:

- i. age 5-11: 1 hour or more
- ii. age 12-14: 14 hours or more
- iii. age 15-17: 43 hours or more

While 39.1 percent of children age 12-14 are engaged in some forms of economic activities, 9 percent are performing such tasks for fourteen or more hours. The involvement in economic activities change with age: 21.0 percent of children age 5-11 years is engaged in economic activities, compared to 39.1 percent of children age 12-14 years, and 41.2 percent of children age 15-17 years.

It is also clear from the MICS results that engagement in economic activities increases with movement from wealthiest to poorest households. For instance, among children aged 5 – 11 years engaged in economic activity, 9.2 percent of them belong to the wealthiest households while 35.0 percent of them fall in the poorest category. Similarly, involvement in economic activities varies with State ranging from 4.9 percent in Khartoum to 46.8 percent in South Darfur among children aged 5-11.

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<sup>45</sup> UNICEF. 2012. *How Sensitive Are Estimates of Child Labour to Definitions?* MICS Methodological Paper No. 1. UNICEF.

<sup>46</sup> The Child Labour module and the Child Discipline module were administered using random selection of a single child in all households with one or more children age 1-17 (See Appendix F: Questionnaires). The Child Labour module was administered if the selected child was age 5-17 and the Child Discipline module if the child was age 1-14 years old. To account for the random selection, the household sample weight is multiplied by the total number of children age 1-17 in each household.

**Table CP.2: Children's involvement in economic activities****Percentage of children by involvement in economic activities during the last week, according to age groups, Sudan  
MICS, 2014**

Background characteristics	Percentage of children age 5-11 years involved in economic activity for at least one hour	Number of children age 5-11 years	Percentage of children age 12-14 years involved in:		Number of children age 12-14 years	Percentage of children age 15-17 years involved in:		Number of children age 15-17 years
			Economic activity less than 14 hours	Economic activity for 14 hours or more		Economic activity less than 43 hours	Economic activity for 43 hours or more	
<b>Sudan</b>	21.0	20,809	30.1	9.0	7,942	38.0	3.2	5,526
<b>Sex</b>								
Male	23.6	10,457	32.1	10.4	3,916	40.5	4.8	2,881
Female	18.4	10,352	28.2	7.7	4,024	35.4	1.4	2,645
Missing	*	0	*	*	2	*	*	0
<b>State</b>								
Northern	12.2	348	22.5	5.1	148	20.2	1.7	137
River Nile	7.3	606	15.4	4.1	279	23.0	0.7	183
Red Sea	11.9	470	25.5	0.3	151	18.2	0.0	129
Kassala	8.0	850	11.7	0.2	346	20.4	0.0	279
Gadarif	22.2	1,024	20.0	16.3	484	34.8	4.4	276
Khartoum	4.9	2,592	13.1	2.1	930	18.7	3.1	818
Gezira	15.1	3,092	23.9	2.2	1,284	31.0	3.0	877
White Nile	12.1	1,104	33.1	0.2	359	31.8	0.2	261
Sinnar	18.7	690	32.4	9.8	306	34.3	4.9	169
Blue Nile	33.9	928	31.1	16.5	334	45.1	14.8	249
North Kordofan	16.0	1,404	30.2	16.6	562	41.2	4.3	337
South Kordofan	33.0	750	50.4	9.0	235	65.6	0.3	151
West Kordofan	26.2	1,282	40.8	7.6	508	51.2	0.0	356
North Darfur	22.8	1,806	42.1	9.1	611	47.7	5.3	484
West Darfur	28.9	827	44.9	6.6	231	49.8	3.9	190
South Darfur	46.8	1,870	40.4	24.0	660	67.3	0.0	383
Central Darfur	39.4	422	64.5	8.6	151	71.5	5.6	106
East Darfur	36.0	744	46.9	23.9	364	70.3	6.1	141
<b>Area</b>								
Urban	11.0	5,777	20.7	2.8	2,473	20.9	0.9	1,695
Rural	24.9	15,032	34.4	11.8	5,469	45.6	4.2	3,831
<b>School attendance</b>								
Yes	20.5	14,961	27.6	7.5	6,235	31.4	1.0	3,349
No	22.4	5,848	39.3	14.4	1,707	48.3	6.5	2,177
<b>melevel</b>								
Cannot be determined [a]	*	3	*	*	8	34.9	4.4	574
<b>Wealth index quintile</b>								
Poorest	35.0	4,932	42.7	18.9	1,785	63.7	4.9	1,084

Background characteristics	Percentage of children age 5-11 years involved in economic activity for at least one hour	Number of children age 5-11 years	Percentage of children age 12-14 years involved in:		Number of children age 12-14 years	Percentage of children age 15-17 years involved in:		Number of children age 15-17 years
			Economic activity less than 14 hours	Economic activity for 14 hours or more		Economic activity less than 43 hours	Economic activity for 43 hours or more	
Second	25.1	4,577	42.2	10.7	1,633	54.3	3.4	1,066
Middle	18.1	4,563	30.6	9.9	1,450	32.2	5.7	1,120
Fourth	10.6	3,732	15.2	3.2	1,616	21.7	1.3	1,073
Richest	9.2	3,006	17.4	0.6	1,459	20.2	0.7	1,184

\* Based on less than 25 unweighted cases and has been suppressed.

Table CP.3 presents children's involvement in household chores. As for economic activity above, the methodology also uses age-specific thresholds for the number of hours a child can perform household chores without it being classified as child labour. A child that performed household chores during the last week for more than the age-specific number of hours is classified as in child labour:

- i. age 5-11 and age 12-14: 28 hours or more
- ii. age 15-17: 43 hours or more

The survey revealed that girls are more likely to perform household chores than boys across all three age groups. The percentage of children involved seem consistently higher in rural areas than in urban areas as well as strongly correlated to mother's education and household wealth. For example, in age group 15 – 17 years, 85.4 percent are engaged in chores less than 43 hours in urban areas; while in rural settings it is 75.4 percent with Blue Nile state recording the highest percentage (92.1 percent) and North Darfur state reporting the lowest (59.2 percent). Similarly, within the same age group, an interesting results shows that percentage of children engaged in chores less than 43 hours declines as we move from wealthiest (85.6 percent) households to the poorest ones (71.1 Percent).

<b>Table CP.3: Children's involvement in household chores</b>									
<b>Percentage of children by involvement in household chores during the last week, according to age groups, Sudan MICS, 2014</b>									
Background characteristics	Percentage of children age 5-11 years involved in:		Number of children age 5-11 years	Percentage of children age 12-14 years involved in:		Number of children age 12-14 years	Percentage of children age 15-17 years involved in:		Number of children age 15-17 years
	Household chores less than 28 hours	Household chores for 28 hours or more		Household chores less than 28 hours	Household chores for 28 hours or more		Household chores less than 43 hours	Household chores for 43 hours or more	
<b>Sudan</b>	64.3	1.5	20,809	78.2	4.0	7,942	78.4	2.3	5,526
<b>Sex</b>									
Male	60.5	1.1	10,457	76.8	2.2	3,916	70.0	2.0	2,881
Female	68.1	2.0	10,352	79.6	5.9	4,024	87.7	2.5	2,645
Missing	*	*	0	*	*	2	*	*	0
<b>State</b>									
Northern	70.8	1.6	348	82.0	6.1	148	91.0	2.7	137
River Nile	75.0	0.4	606	88.2	1.0	279	83.1	0.0	183
Red Sea	54.1	0.2	470	83.6	0.0	151	66.6	1.4	129

Background characteristics	Percentage of children age 5-11 years involved in:		Number of children age 5-11 years	Percentage of children age 12-14 years involved in:		Number of children age 12-14 years	Percentage of children age 15-17 years involved in:		Number of children age 15-17 years
	Household chores less than 28 hours	Household chores for 28 hours or more		Household chores less than 28 hours	Household chores for 28 hours or more		Household chores less than 43 hours	Household chores for 43 hours or more	
Kassala	36.6	0.2	850	52.8	0.2	346	59.5	0.3	279
Gadarif	58.8	3.1	1,024	70.4	5.2	484	77.4	5.7	276
Khartoum	72.2	0.0	2,592	85.1	0.0	930	86.1	0.0	818
Gezira	71.5	0.4	3,092	89.1	1.5	1,284	78.7	0.0	877
White Nile	66.0	0.1	1,104	82.4	0.3	359	84.1	2.1	261
Sinnar	74.8	1.1	690	84.9	2.5	306	83.5	3.6	169
Blue Nile	80.5	2.3	928	81.7	7.3	334	92.1	3.5	249
North Kordofan	60.3	2.0	1,404	79.7	1.7	562	73.7	1.0	337
South Kordofan	62.6	4.3	750	86.3	7.9	235	94.1	1.5	151
West Kordofan	54.1	2.1	1,282	76.8	6.9	508	77.9	2.5	356
North Darfur	43.4	1.1	1,806	57.5	4.3	611	59.2	0.0	484
West Darfur	63.9	4.1	827	60.9	9.5	231	71.4	6.4	190
South Darfur	73.4	3.3	1,870	76.5	11.7	660	85.6	11.0	383
Central Darfur	58.0	3.2	422	76.5	6.2	151	68.4	9.2	106
East Darfur	67.0	2.8	744	76.9	9.2	364	83.3	2.6	141
<b>Area</b>									
Urban	68.3	0.8	5,777	82.4	1.9	2,473	85.4	0.5	1,695
Rural	62.8	1.8	15,032	76.3	5.0	5,469	75.4	3.0	3,831
<b>School attendance</b>									
Yes	68.6	1.5	14,961	78.3	3.6	6,235	81.7	1.9	3,349
No	53.2	1.7	5,848	78.1	5.8	1,707	73.5	2.8	2,177
<b>melevel</b>									
Cannot be determined	*	*	3	*	*	8	68.9	3.8	574
<b>[a] Wealth index quintile</b>									
Poorest	56.7	2.7	4,932	72.5	7.6	1,785	71.1	2.9	1,084
Second	60.0	2.0	4,577	72.9	5.0	1,633	74.0	6.2	1,066
Middle	65.7	1.3	4,563	79.6	4.2	1,450	84.1	1.5	1,120
Fourth	73.7	1.0	3,732	87.7	1.5	1,616	76.4	0.8	1,073
Richest	69.7	0.0	3,006	79.3	1.4	1,459	85.6	0.1	1,184
[a] Children age 15 or higher at the time of the interview whose mothers were not living in the household									
na: not applicable									
[*] Based on less than 25 unweighted cases and has been suppressed									

Table CP.4 combines the children working and performing household chores at or above and below the age-specific thresholds as detailed in the previous tables, as well as those children reported working under hazardous conditions, into the Sudan child labour indicator.

The results show that there is discrepancy between those males and females at or above the age specific threshold or below the age specific threshold among all children aged 5-17 with regards to

economic activities; with higher percentage of males (17.5 percent) than females (13.2 percent) of those at or above the age specific threshold for household. In the contrary, there is a higher percentage of females (73.9 percent) than males (65.8 percent) among those below the age specific threshold.

The MICS results indicates that working in hazardous conditions is higher among the age group 15 – 17 years (28.5 percent) with clear differentials in the proportion of children working under hazardous conditions who live in urban areas (8.1 percent) than those dwelling in rural areas (21.8 percent). State differentials also show that Khartoum state records the lowest percentage of children working under hazardous conditions (5.9 percent), while East Darfur state has the highest percentage of children working under hazardous conditions (40.4 percent). Not surprisingly, working in hazardous conditions seems to be strongly related to the well-being of household, with those higher percentages of children working under hazardous conditions among children whose families are classified among the poorest households (28.3 percent) compared to 6.8 percent of working children from the wealthiest households.

<b>Table CP.4: Child labour</b>							
<b>Percentage of children age 5-17 years by involvement in economic activities or household chores during the last week, percentage working under hazardous conditions during the last week, and percentage engaged in child labour during the last week, Sudan MICS, 2014</b>							
Background characteristics	Children involved in economic activities for a total number of hours during last week:		Children involved in household chores for a total number of hours during last week:		Children working under hazardous conditions	Total child labour [1]	Number of children age 5-17 years
	Below the age specific threshold	At or above the age specific threshold	Below the age specific threshold	At or above the age specific threshold			
<b>Sudan</b>	14.3	15.4	69.8	2.2	17.8	24.9	34,278
<b>Sex</b>							
Male	15.0	17.5	65.8	1.5	20.7	27.9	17,255
Female	13.6	13.2	73.9	3.0	14.8	21.8	17,021
Missing	*	*	*	*	*	*	2
<b>State</b>							
Northern	13.6	8.2	77.8	2.9	9.4	15.3	634
River Nile	8.8	5.4	79.8	0.5	9.5	11.2	1,068
Red Sea	8.3	7.5	62.1	0.4	10.9	12.7	750
Kassala	7.9	4.6	44.7	0.2	7.6	9.6	1,475
Gadarif	11.1	17.9	64.8	4.1	15.2	26.7	1,784
Khartoum	7.0	4.0	77.6	0.0	5.9	7.5	4,340
Gezira	11.8	9.9	77.0	0.6	13.5	17.2	5,253
White Nile	12.7	7.8	72.1	0.4	12.4	15.9	1,724
Sinnar	14.7	14.4	78.7	1.8	17.7	25.4	1,166
Blue Nile	16.4	26.9	82.7	3.6	28.7	38.1	1,512
North Kordofan	13.7	14.5	67.0	1.8	16.5	23.4	2,303
South Kordofan	24.6	23.7	71.7	4.7	34.6	41.4	1,135
West Kordofan	18.9	17.4	63.4	3.3	24.7	31.4	2,147
North Darfur	17.7	17.0	49.0	1.6	23.2	29.4	2,902
West Darfur	19.2	21.0	64.5	5.5	17.2	29.8	1,248

Background characteristics	Children involved in economic activities for a total number of hours during last week:		Children involved in household chores for a total number of hours during last week:		Children working under hazardous conditions	Total child labour [1]	Number of children age 5-17 years
	Below the age specific threshold	At or above the age specific threshold	Below the age specific threshold	At or above the age specific threshold			
South Darfur	19.0	35.5	75.7	6.2	25.4	48.2	2,913
Central Darfur	28.3	27.3	63.8	4.8	32.7	45.1	678
East Darfur	23.1	29.1	71.7	4.6	40.4	49.4	1,249
<b>Area</b>							
Urban	9.8	7.2	74.7	1.0	8.1	13.0	9,945
Rural	16.1	18.7	67.8	2.7	21.8	29.8	24,332
<b>Age</b>							
5-11	2.0	21.0	64.3	1.5	12.3	22.2	20,809
12-14	30.1	9.0	78.2	4.0	24.7	28.7	7,942
15-17	38.0	3.2	78.4	2.3	28.5	29.7	5,526
<b>School attendance</b>							
Yes	12.4	14.5	72.9	2.1	15.7	22.6	24,544
No	19.1	17.5	62.1	2.7	23.1	30.8	9,733
<b>melevel</b>							
Cannot be determined [a]	34.2	4.5	68.4	3.7	26.6	29.2	585
<b>Wealth index quintile</b>							
Poorest	19.8	27.1	62.3	3.8	28.3	40.6	7,800
Second	18.7	18.7	64.9	3.3	25.1	32.7	7,276
Middle	12.7	14.5	71.4	1.9	17.1	23.2	7,133
Fourth	8.5	7.2	77.7	1.1	7.3	11.8	6,420
Richest	9.7	5.2	75.5	0.4	6.8	10.2	5,648

[1] MICS indicator 8.2 - Child labour

[a] Children age 15 or higher at the time of the interview whose mothers were not living in the household

[\*] Based on less than 25 unweighted cases and has been suppressed.

### 11.3 Child Discipline

Teaching children self-control and acceptable behavior is an integral part of child discipline in all cultures. Positive parenting practices involve providing guidance on how to handle emotions or conflicts in manners that encourage judgment and responsibility and preserve children's self-esteem, physical and psychological integrity and dignity. Too often however, children are raised through the use of punitive methods that rely on the use of physical force or verbal intimidation to obtain desired behaviors. Studies<sup>47</sup> have found that exposing children to violent discipline have harmful consequences, which range from immediate impacts to long-term harm that children carry forward into adult life. Violence hampers children's development, learning abilities and school performance;

<sup>47</sup> Straus, MA and Paschall MJ. 2009. *Corporal Punishment by Mothers and Development of Children's Cognitive Ability: A longitudinal study of two nationally representative age cohorts*. Journal of Aggression, Maltreatment & Trauma 18(5): 459-83.

Erickson, MF and Egeland, B. 1987. *A Developmental View of the Psychological Consequences of Maltreatment*. School Psychology Review 16: 156-68.

Schneider, MW et al. 2005. *Do Allegations of Emotional Maltreatment Predict Developmental Outcomes Beyond that of Other Forms of Maltreatment?*. Child Abuse & Neglect 29(5): 513-32.



it inhibits positive relationships, provokes low self-esteem, emotional distress and depression; and, at times, it leads to risk taking and self-harm.

In the MICS, respondents to the household questionnaire were asked a series of questions on the methods adults in the household used to discipline a selected child during the past month prior to the survey.<sup>46</sup>

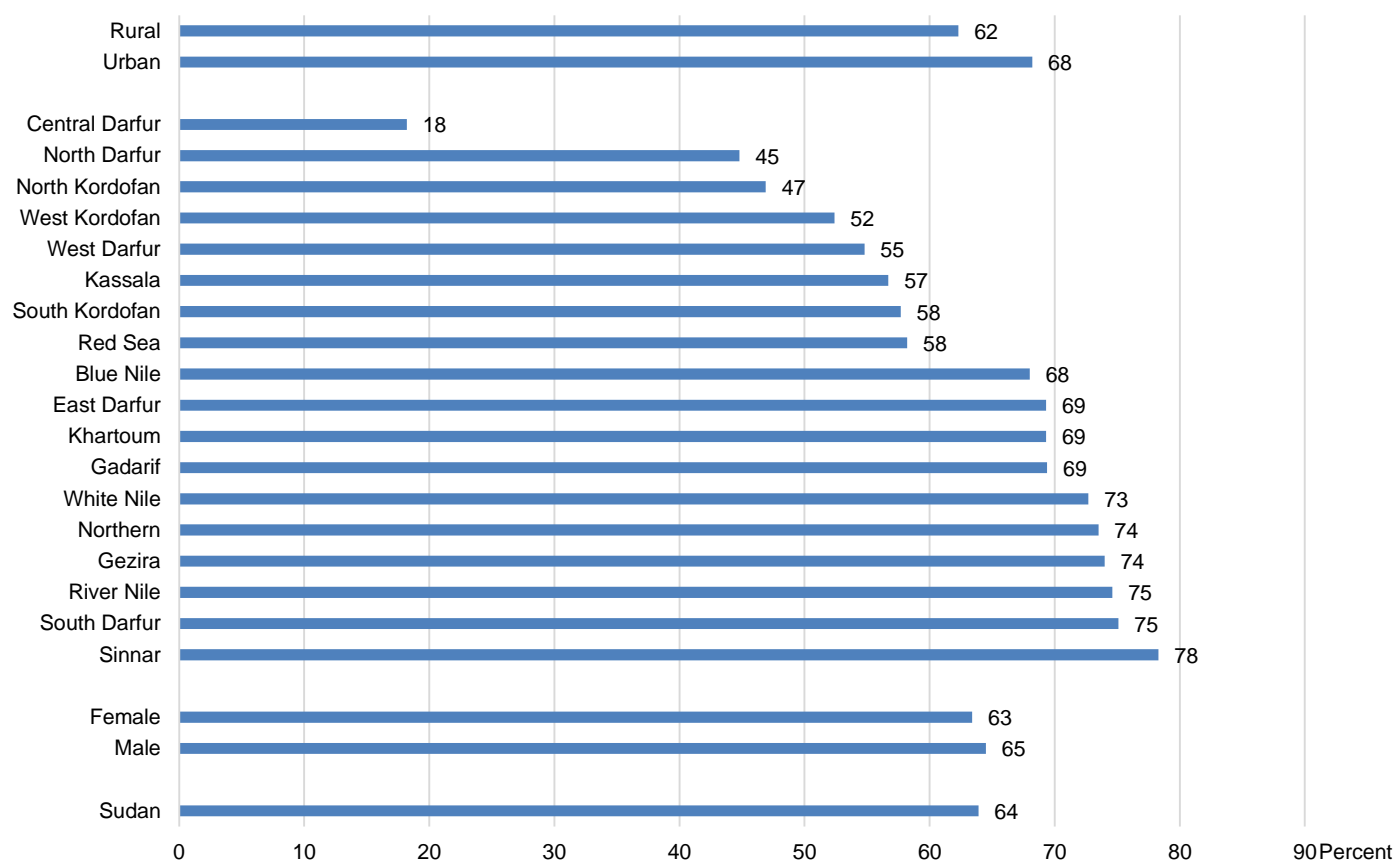
In MICS Table CP.5, 63.9 percent of children age 1-14 years was subjected to at least one form of psychological or physical punishment by household members during the past month prior to the survey.

Generally, households employ a combination of violent disciplinary practices, reflecting caregivers' motivation to control children's behaviour by any means possible. While 52.8 percent of children experienced psychological aggression, about 61.3 percent experienced physical punishment. The most severe forms of physical punishment (hitting the child on the head, ears or face or hitting the child hard and repeatedly) are overall less common: 13.6 percent of children were subjected to severe punishment.

The survey reveals no variations between male and female children who were subjected to physical discipline: male (61.6 percent) and female children (60.8 percent). Differentials with respect to many of the background variables were relatively small. Children living in rural areas (62.3 percent), while those living urban areas (68.2 percent), while those living in the richest households (71.6 percent) were likely than those living in poor households (54.1 percent) of children to be subjected to any violent discipline method.

Overall, 52.8 percent of children in the aged group 1-14 years experienced psychological aggression in the month preceding the survey. River Nile state was reported of having the highest proportion (69.6 percent) and Central Darfur state (12.6 percent) the lowest of the children aged 1-14 years who experienced psychological aggression. Children between 10 - 14 years were slightly more likely to experience non-violent discipline than the other age groups (23.8 percent).

**Figure CP.2a: Children age 1-14 years experiencing any violent disciplining method by sex, state and urban/rural disaggregation, Sudan MICS, 2014**



**Table CP.5: Child discipline****Percentage of children age 1-14 years by child disciplining methods experienced during the last one month, Sudan MICS, 2014**

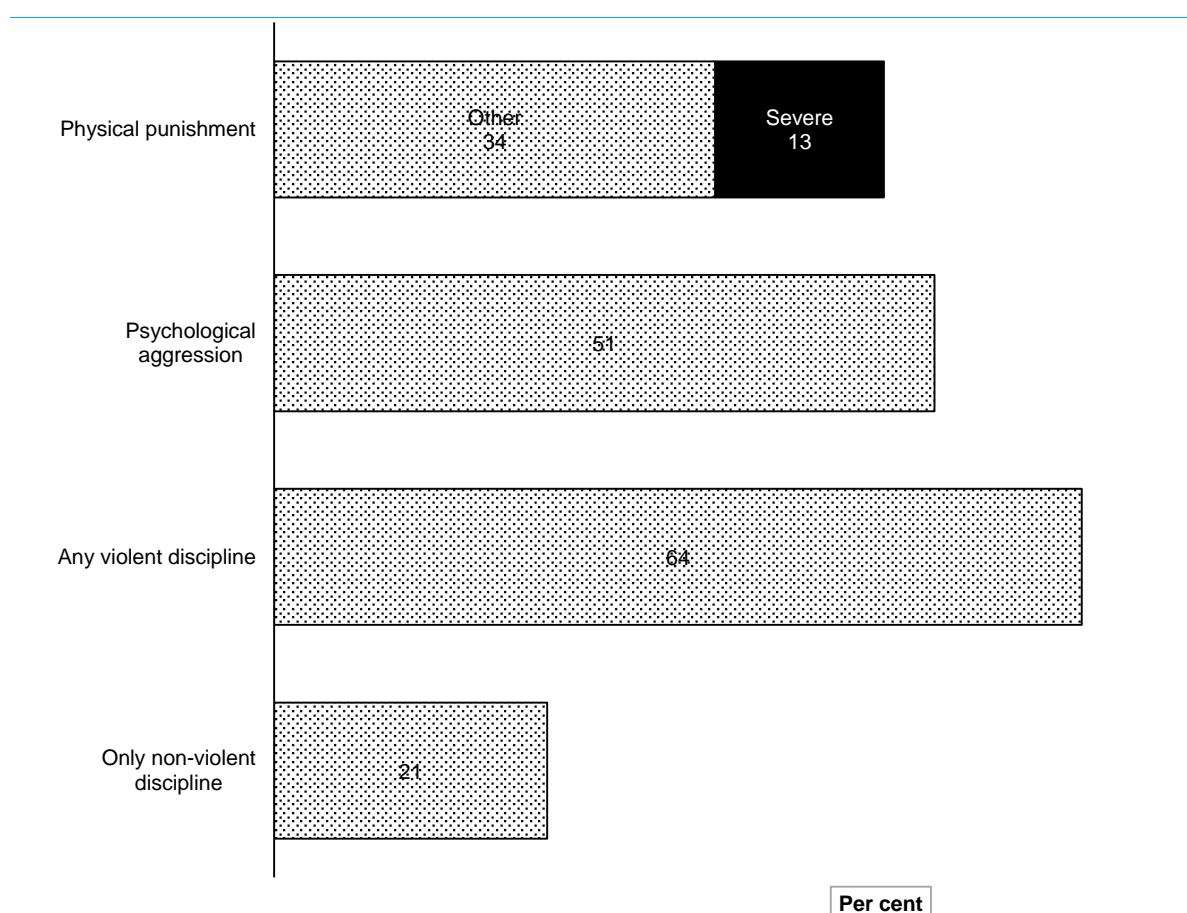
Background characteristics	Percentage of children age 1-14 years who experienced:					Number of children age 1-14 years
	Only non-violent discipline	Psychological aggression	Physical punishment		Any violent discipline method [1]	
			Any	Severe		
<b>Sudan</b>	21.6	52.8	47.7	13.6	63.9	40,814
<b>Sex</b>						
Male	20.5	53.7	47.9	13.7	64.5	20,494
Female	22.8	52.0	47.4	13.4	63.4	20,318
Missing	*	*	*	*	*	2
<b>State</b>						
Northern	22.2	61.0	61.2	8.8	73.5	699
River Nile	21.3	69.6	43.9	4.5	74.6	1,215
Red Sea	19.9	52.1	39.9	7.5	58.2	840
Kassala	27.2	46.1	42.9	14.7	56.7	1,653
Gadarif	21.7	58.3	51.6	13.6	69.4	2,114
Khartoum	19.9	61.8	46.3	11.8	69.3	4,927
Gezira	19.4	66.3	52.4	13.3	74.0	6,472
White Nile	13.0	65.5	51.9	18.9	72.7	2,027
Sinnar	17.8	67.8	66.4	21.2	78.3	1,498
Blue Nile	24.8	56.9	57.0	13.0	68.0	1,831
North Kordofan	7.6	34.1	38.6	12.0	46.9	2,649
South Kordofan	20.6	37.4	50.7	17.2	57.7	1,408
West Kordofan	33.1	39.1	38.6	17.4	52.4	2,555
North Darfur	37.7	28.5	36.5	7.3	44.8	3,535
West Darfur	39.1	36.1	47.6	19.0	54.8	1,449
South Darfur	15.3	61.7	52.7	12.4	75.1	3,617
Central Darfur	13.6	12.6	14.9	4.3	18.2	799
East Darfur	14.4	55.2	56.8	28.2	69.3	1,523
<b>Area</b>						
Urban	20.3	57.2	50.6	14.7	68.2	11,487
Rural	22.1	51.1	46.5	13.1	62.3	29,327
<b>Age</b>						
1-2 years	19.6	42.8	40.8	8.6	54.1	5,611
3-4 years	20.9	54.4	56.1	16.4	68.5	6,452
5-9 years	20.8	54.8	52.5	15.2	67.2	15,522
10-14 years	23.8	54.0	40.8	12.3	62.1	13,229
<b>Education of household head</b>						
None	22.2	50.0	45.6	14.1	60.6	18,764
Primary	19.8	55.1	50.7	14.3	67.5	12,061

Background characteristics	Percentage of children age 1-14 years who experienced:					Number of children age 1-14 years
	Only non-violent discipline	Psychological aggression	Physical punishment		Any violent discipline method [1]	
			Any	Severe		
Secondary	22.6	56.6	48.5	12.9	67.1	7,625
Higher	22.7	53.4	47.6	5.9	64.3	2,035
Missing/DK	23.7	44.1	36.6	14.9	51.6	330
<b>Wealth index quintile</b>						
Poorest	23.7	41.0	41.5	12.9	54.1	9,383
Second	23.5	47.0	45.1	14.8	58.9	8,797
Middle	19.0	56.8	52.3	14.6	68.8	8,438
Fourth	21.9	60.3	52.9	13.9	70.0	7,773
Richest	19.2	63.7	47.7	11.0	71.6	6,423

[1] MICS indicator 8.3 - Violent discipline

[\*] Based on less than 25 unweighted cases and has been suppressed.

**Figure CP.2: Child disciplining methods, children age 1-14 years, Sudan MICS, 2014**



While violent methods are extremely common forms of discipline, Table CP.6 reveals that only 29.7 percent of respondents believe that physical punishment is a necessary part of child-rearing. There

are large differentials across background variables of respondents, with the percentage in rural areas higher (31.8 percent) than those in urban areas (24.6 percent).

Overall, respondents with secondary education attainment are more likely to find physical punishment as necessary in disciplining children, with 45.5 percent respectively. The respondent's relationship to the child also matters: 29.5 percent of mothers believe in the necessity of physical punishment compared to 33.2 percent of fathers and 27.4 percent among other adult household members.

<b>Table CP.6: Attitudes toward physical punishment</b>		
<b>Percentage of respondents to the child discipline module who believe that physical punishment is needed to bring up, raise, or educate a child properly, Sudan MICS, 2014</b>		
Background characteristics	Respondent believes that a child needs to be physically punished	Number of respondents to the child discipline module
<b>Sudan</b>	29.7	11,848
<b>Sex</b>		
Male	33.1	2,232
Female	28.9	9,616
<b>State</b>		
Northern	30.9	246
River Nile	22.3	406
Red Sea	8.9	299
Kassala	23.0	497
Gadarif	37.9	622
Khartoum	21.7	1,552
Gezira	26.8	1,804
White Nile	16.7	596
Sinnar	45.1	452
Blue Nile	20.6	485
North Kordofan	24.8	763
South Kordofan	40.3	364
West Kordofan	34.0	733
North Darfur	46.1	948
West Darfur	33.3	418
South Darfur	36.9	1,023
Central Darfur	21.2	226
East Darfur	40.7	414
<b>Area</b>		
Urban	24.6	3,415
Rural	31.8	8,434
<b>Age</b>		
<25	30.0	1,726
25-39	30.1	6,162
40-59	28.6	3,288
60+	31.3	672
Missing\DK	*	2

Background characteristics	Respondent believes that a child needs to be physically punished	Number of respondents to the child discipline module
<b>Respondent's relationship to selected child</b>		
Mother	29.5	8,088
Father	33.2	1,849
Other	27.4	1,911
<b>Respondent's education</b>		
None	31.0	9,002
Primary	*	18
Secondary	45.5	115
Higher	29.2	1,108
Missing/DK	22.0	1,606
<b>Wealth index quintile</b>		
Poorest	38.5	2,558
Second	32.6	2,587
Middle	27.9	2,400
Fourth	25.7	2,236
Richest	21.8	2,068

[\*] Based on less than 25 unweighted cases and has been suppressed.

## 11.4 Early Marriage and Polygamy

Marriage<sup>48</sup> before the age of 18 years is a reality for many young girls. In many parts of the world parents encourage the marriage of their daughters while they are still children in hopes that the marriage will benefit them both financially and socially, while also relieving financial burdens on the family. In actual fact, child marriage is a violation of human rights, compromising the development of girls and often resulting in early pregnancy and social isolation, with little education and poor vocational training reinforcing the gendered nature of poverty.<sup>49</sup> The right to 'free and full' consent to a marriage is recognized in the Universal Declaration of Human Rights - with the recognition that consent cannot be 'free and full' when one of the parties involved is not sufficiently mature to make an informed decision about a life partner.

Closely related to the issue of child marriage is the age at which girls become sexually active. Women who are married before the age of 18 tend to have more children than those who marry later in life. Pregnancy related deaths are known to be a leading cause of mortality for both married and unmarried girls between the ages of 15 and 19, particularly among the youngest of this cohort. There is evidence to suggest that girls who marry at young ages are more likely to marry older men which puts them at increased risk of HIV infection. The demand for this young wife to reproduce and the power imbalance resulting from the age differential lead to very low condom use among such couples.<sup>50</sup>

<sup>48</sup> All references to marriage in this chapter include marital union as well.

<sup>49</sup> Bajracharya, A ND Amin, S. 2010. *Poverty, marriage timing, and transitions to adulthood in Nepal: A longitudinal analysis using the Nepal living standards survey*. Poverty, Gender, and Youth Working Paper No. 19. Population Council.

Godha, D et al. 2011. *The influence of child marriage on fertility, fertility-control, and maternal health care utilization*. MEASURE/Evaluation PRH Project Working paper 11-124.

<sup>50</sup> Clark, S et al. 2006. *Protecting young women from HIV/AIDS: the case against child and adolescent marriage*. *International Family Planning Perspectives* 32(2): 79-88.

The percentage of women married before ages of 15 and 18 years are provided in Table CP.7. Among women age 15-49 years, (11.9 percent) were married before age 15 and, among women age 20-49 years, (38.0 percent) were married before age 18.

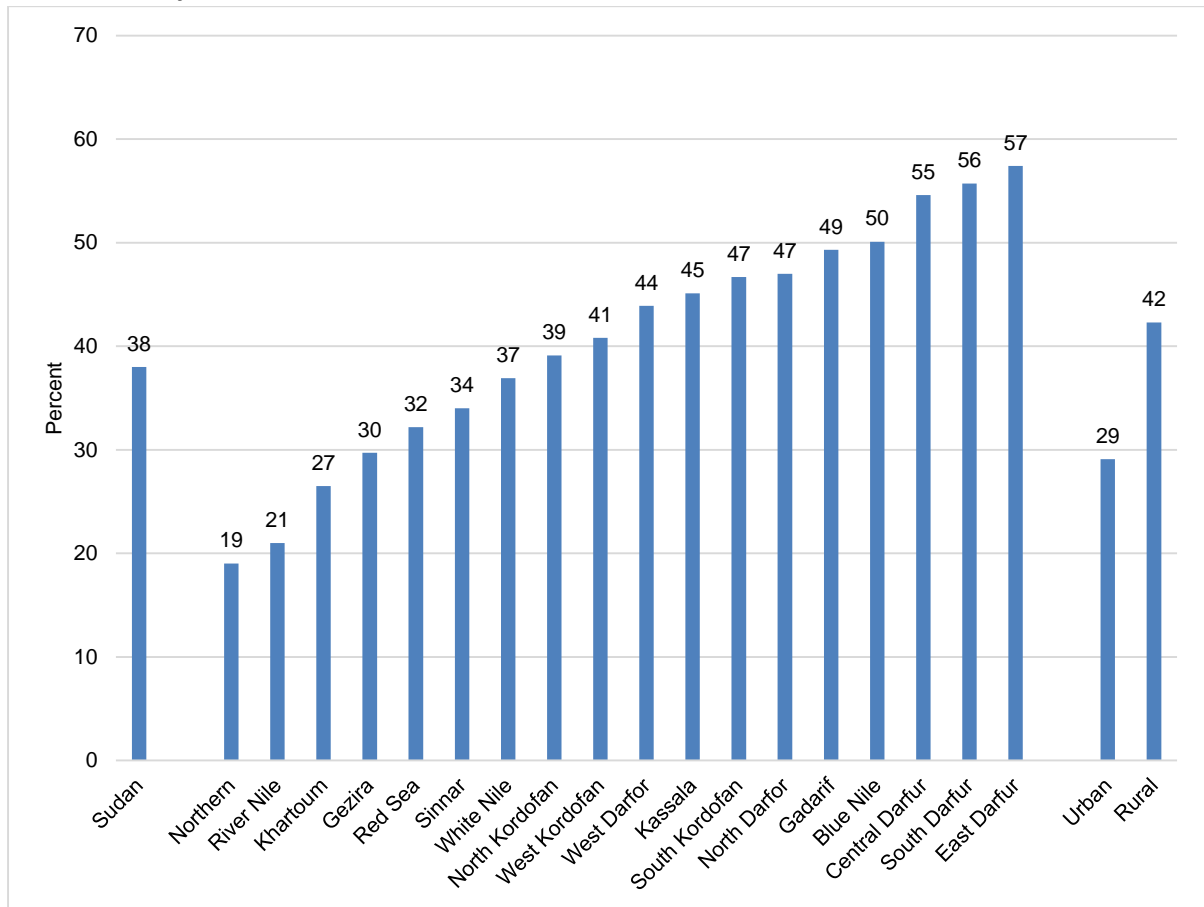
About 21.2 percent of young women age 15-19 years are currently married. This proportion is significantly different between young women in urban areas (11.2 percent) and those in rural areas (26.0 percent). Wide variations between states are also observed; for example in Khartoum state, 12.0 percent, while it is 33 percent in Gadarif state. It is strongly related to the level of education, for example, 27.5 percent for women with primary education compared to only 2.4 percent for those with higher education. The percentage of women in a polygynous union is also provided in Table CP.7. Among all women age 15-49 years who are in union, 21.7 percent are in polygynous unions. Polygynous unions are more common among rural women 23.6 percent compared to 16.9 percent for urban women. Polygynous relationships are more prevalent among older women age 45-49 years 30.8 percent compared to only 7.7 percent among younger women age 15-19 years.

The wealth index quintiles in the table show that women in the richest and the fourth quintiles have consistently lower levels of early marriage and polygamy than the first, second and middle wealth quintiles.

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Raj, A et al. 2009. *Prevalence of child marriage and its effect on fertility and fertility-control outcomes of young women in India: a cross-sectional, observational study*. The Lancet 373 (9678): 1883–9.

**Figure CP.3a: Women age 20-49 years who first married or entered a marital union before their 18th birthday, Sudan MICS, 2014**





**Table CP.7: Early marriage and polygyny among women**

Percentage of women age 15-49 years who first married or entered a marital union before their 15th birthday, percentages of women age 20-49 years who first married or entered a marital union before their 15th and 18th birthdays, percentage of women age 15-19 years currently married , and the percentage of women who are in a polygynous marriage or union, Sudan MICS, 2014

Background characteristics	Women age 15-49 years		Women age 20-49 years			Women age 15-19 years		Women age 15-49 years	
	Percent married before age 15 [1]	Number of women age 15-49 years	Percent married before age 15	Percent married before age 18 [2]	Number of women age 20-49 years	Percent currently married [3]	Women age 15-19 years	Percent in polygynous marriage/ union [4]	Number of women age 15-49 years currently married
<b>Sudan</b>	11.9	18,302	13.4	38.0	14,593	21.2	3,709	21.7	11,867
<b>State</b>									
Northern	5.1	457	6.0	19.0	376	13.6	81	6.4	280
River Nile	6.2	701	6.6	21.0	579	22.3	123	6.0	409
Red Sea	10.0	493	9.8	32.2	420	23.0	74	6.1	323
Kassala	18.6	747	20.0	45.1	600	29.8	147	10.7	506
Gadarif	14.9	879	16.2	49.3	715	33.1	164	19.1	630
Khartoum	6.9	2,821	7.8	26.5	2,239	12.0	583	13.9	1,623
Gezira	8.7	3,176	9.6	29.7	2,495	21.1	681	13.3	1,961
White Nile	9.1	889	10.3	36.9	724	20.8	165	11.9	577
Sinnar	12.3	698	13.6	34.0	574	19.2	124	17.8	450
Blue Nile	16.5	729	19.7	50.1	562	29.9	167	28.3	525
North Kordofan	15.6	1,173	17.5	39.1	924	27.6	249	14.3	743
South Kordofan	18.0	525	20.7	46.7	414	20.1	112	25.5	355
West Kordofan	13.5	965	15.2	40.8	796	19.6	168	33.2	687
North Darfur	12.9	1,317	15.0	47.0	1,052	16.6	265	35.2	913
West Darfur	14.1	555	15.6	43.9	430	20.5	125	52.9	383
South Darfur	17.8	1,363	22.0	55.7	1,056	23.7	307	40.9	933
Central Darfur	16.4	272	19.8	54.6	209	22.5	63	45.3	188
East Darfur	15.3	542	18.0	57.4	428	26.3	114	35.2	378
<b>Area</b>									
Urban	8.0	6,029	9.2	29.1	4,810	11.2	1219	16.9	3,437
Rural	13.7	12,273	15.5	42.3	9,783	26.0	2491	23.6	8,430
<b>Age</b>									
15-19	5.7	3,709			0	21.2	3709	7.7	741
20-24	11.9	3,162	11.9	34.2	3,162		0	12.1	1,737
25-29	14.7	3,359	14.7	40.0	3,359		0	18.1	2,617
30-34	12.4	2,558	12.4	37.9	2,558		0	21.2	2,130
35-39	13.8	2,542	13.8	38.6	2,542		0	30.1	2,160
40-44	13.7	1,633	13.7	37.8	1,633		0	28.2	1,374
45-49	14.6	1,339	14.6	40.9	1,339		0	30.8	1,107
<b>Education</b>									
None	19.7	5,843	20.2	54.6	5,324	40.5	519	32.4	4,778
Primary	13.9	6,128	16.2	43.5	4,506	27.5	1622	16.4	3,961
Secondary	3.7	4,361	5.1	20.8	2,953	8.8	1409	12.7	2,228
Higher	.2	1,965	0.1	3.1	1,805	2.4	160	9.9	895

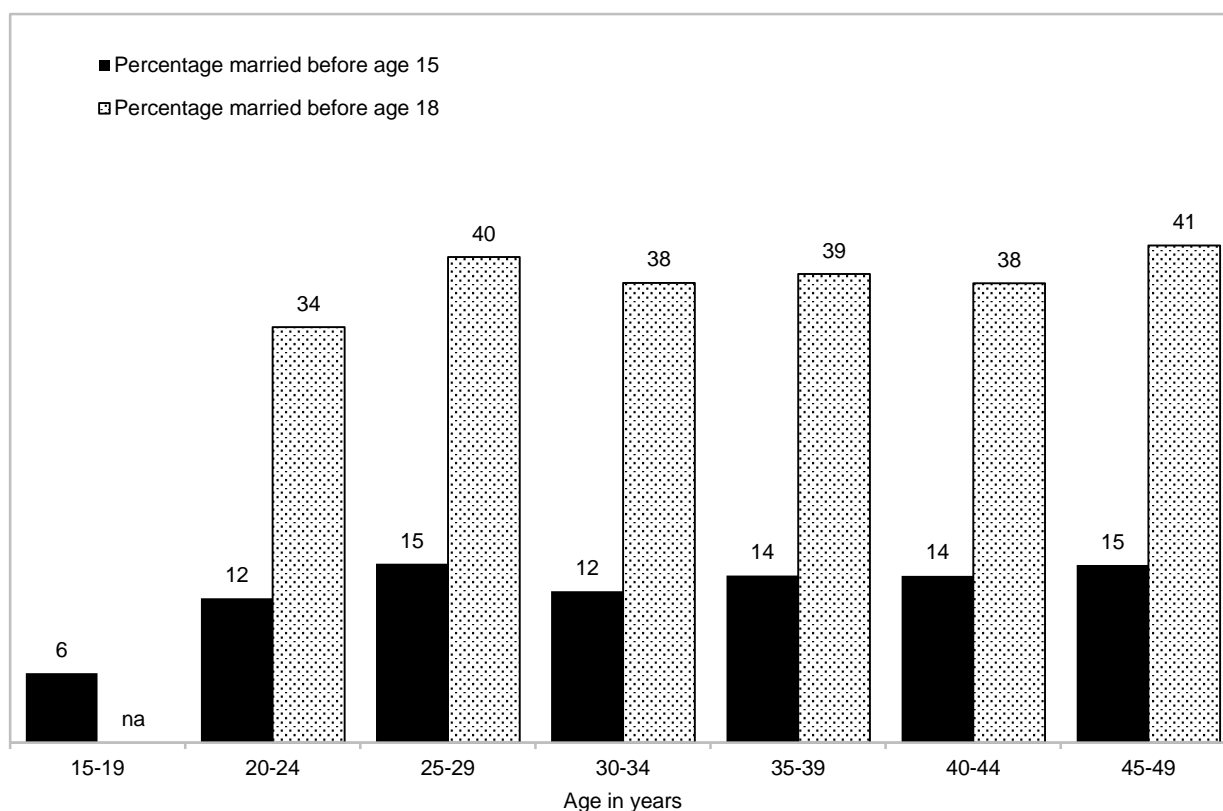
Background characteristics	Women age 15-49 years		Women age 20-49 years			Women age 15-19 years		Women age 15-49 years	
	Percent married before age 15 [1]	Number of women age 15-49 years	Percent married before age 15	Percent married before age 18 [2]	Number of women age 20-49 years	Percent currently married [3]	Women age 15-19 years	Percent in polygynous marriage/union [4]	Number of women age 15-49 years currently married
Missing/DK	*	5	0.0	49.8	5		0	40.8	5
<b>Wealth index quintile</b>									
Poorest	17.8	3,246	20.6	53.8	2,616	24.5	629	35.5	2,341
Second	17.1	3,380	19.2	50.9	2,660	30.1	720	27.2	2,412
Middle	12.7	3,646	14.1	39.6	2,870	25.5	777	21.1	2,417
Fourth	9.0	3,759	10.3	32.6	3,006	16.9	753	13.3	2,333
Richest	5.0	4,271	5.6	19.2	3,441	10.7	831	11.2	2,364
[1] MICS indicator 8.4 - Marriage before age 15 [2] MICS indicator 8.5 - Marriage before age 18 [3] MICS indicator 8.6 - Young women age 15-19 years currently married or in union [4] MICS indicator 8.7 - Polygyny									

Tables CP.8 presents the proportion of women who were first married before age 15 and 18 by area and age groups. Examining the percentages married before age 15 and 18 by different age groups allow for trends to be observed in early marriage over time. Data show that 40.9 percent of women age 45-49 years were first married by age 18 compared to 34.2 percent of women age 20-24 years at national level. While it is 14.6 percent and 11.9 percent for women age 45-49 and 20-24 respectively marrying before 15. In the rural area the percentages are 44.0 and 40.4 for women age 45-49 and 20-24 respectively marrying before age 18. In urban areas comparable figures are 35.1 and 21.6 percent respectively

<b>Table CP.8: Trends in early marriage among women</b>												
<b>Percentage of women who were first married or entered into a marital union before age 15 and 18, by area and age groups, Sudan MICS, 2014</b>												
Background characteristics	Urban				Rural				All			
	Percent of women married before age 15	Number of women age 15-49 years	Percent of women married before age 18	Number of women age 20-49 years	Percent of women married before age 15	Number of women age 15-49 years	Percent of women married before age 18	Number of women age 20-49 years	Percent of women married before age 15	Number of women age 15-49 years	Percent of women married before age 18	Number of women age 20-49 years
<b>Sudan</b>	8.0	6,029	29.1	4,810	13.7	12,273	42.3	9,783	11.9	18,302	38.0	14,593
<b>Age group</b>												
15-19	3.3	1,219	*	0	6.9	2,491	*	0	5.7	3,709	*	0
20-24	5.5	1,044	21.6	1,044	15.0	2,118	40.4	2,118	11.9	3,162	34.2	3,162
25-29	8.0	1,030	26.8	1,030	17.7	2,329	45.8	2,329	14.7	3,359	40.0	3,359
30-34	9.6	859	31.3	859	13.9	1,698	41.2	1,698	12.4	2,558	37.9	2,558
35-39	11.1	834	33.7	834	15.1	1,707	41.0	1,707	13.8	2,542	38.6	2,542
40-44	11.9	578	31.8	578	14.7	1,055	41.1	1,055	13.7	1,633	37.8	1,633
45-49	12.3	464	35.1	464	15.8	875	44.0	875	14.6	1,339	40.9	1,339

[\*] Based on less than 25 unweighted cases and has been suppressed

Figure CP.3: Early marriage before ages 15 and 18 by age group of women 15-49 years, Sudan MICS, 2014



na: not applicable

Another component is the spousal age difference with the indicator being the percentage of married women 10 or more years younger than their current spouse. Table CP.9 presents percentage distribution of women currently married age 15-19 and 20-24 years according to the age difference with their husband or partner. The results show that there are some important spousal age differences in Sudan MICS, 2014. Among currently married women age 20-24 years, about (41.8 percent) are married to a man who is older by ten years or more. For currently married women age 15-19 years, the corresponding figure is (39.5 percent).

The differences between states for women aged 15-19 varied between 20.2 percent for Central Darfur and 50.6 percent for Khartoum state. The corresponding figures for urban and rural areas are 48.7 percent and 37.7 percent respectively.

The percentage of women who are married to men older by 10+ is inversely proportional to the level of education. For example the percentage of the women with higher education are lower than women with less or no education in both age groups 15-19 and 20-24 years. There are no discernible spousal age differences among the women according to the wealth index backgrounds.

**Table CP.9: Spousal age difference****Percent distribution of women currently married age 15-19 and 20-24 years according to the age difference with their husband or partner, Sudan MICS, 2014**

Background characteristics	Percentage of currently married women age 15-19 years whose husband or partner is:					Number of women age 15-19 years currently married/in union	Percentage of currently married women age 20-24 years whose husband or partner is:					Number of women age 20-24 years currently married/in union
	Younger	0-4 years older	5-9 years older	10+ years older [1]	Husband / partner's age unknown		Younger	0-4 years older	5-9 years older	10+ years older [2]	Husband / partner's age unknown	
<b>Sudan</b>	0.1	3.3	8.0	7.9	80.7	3,709	0.6	10.5	19.1	23.0	46.8	3,162
<b>State</b>												
Northern	0.0	2.0	4.7	5.9	87.4	81	0.0	5.6	14.5	20.0	59.9	65
River Nile	0.0	1.5	8.6	10.2	79.7	123	0.0	8.1	11.7	20.5	59.6	131
Red Sea	0.0	6.2	8.8	5.8	79.2	74	0.6	9.0	12.8	19.5	58.2	76
Kassala	0.5	4.0	15.0	8.0	72.4	147	0.5	17.2	15.5	18.0	48.8	125
Gadarif	0.4	4.0	13.0	12.1	70.5	164	0.0	8.4	23.1	32.6	35.9	163
Khartoum	0.0	.4	5.5	6.1	88.0	583	0.0	6.1	13.9	18.2	61.8	470
Gezira	0.0	2.4	8.8	8.8	80.1	681	1.1	6.7	18.2	26.0	48.0	550
White Nile	0.0	3.5	7.6	7.9	80.9	165	1.0	7.3	24.7	23.3	43.6	147
Sinnar	0.0	1.9	7.6	7.1	83.4	124	0.0	10.5	20.7	23.5	45.3	133
Blue Nile	0.0	9.5	11.1	6.9	72.5	167	0.6	14.5	25.8	28.6	30.6	130
North Kordofan	0.3	2.8	8.2	12.7	76.1	249	0.4	12.2	17.4	17.5	52.5	222
South Kordofan	0.0	2.2	5.2	8.8	83.8	112	0.7	13.2	26.8	16.3	42.9	86
West Kordofan	0.0	5.8	6.3	5.9	81.9	168	1.2	18.4	21.1	16.6	42.7	172
North Darfur	0.0	4.0	7.7	3.8	84.4	265	0.5	18.0	26.2	19.6	35.8	214
West Darfur	0.0	1.9	8.1	9.5	80.5	125	0.7	13.3	21.6	31.2	33.1	89
South Darfur	0.0	5.9	6.7	8.5	78.9	307	0.7	13.0	19.4	31.2	35.8	260
Central Darfur	0.5	3.0	10.4	4.1	82.0	63	2.5	11.9	11.8	30.4	43.4	41
East Darfur	1.2	5.7	5.9	7.9	79.3	114	1.1	10.1	24.8	22.2	41.8	88
<b>Area</b>												
Urban	0.0	1.4	3.4	4.9	90.4	1,219	0.3	5.9	12.5	19.3	62.0	1,044
Rural	0.2	4.2	10.3	9.4	76.0	2,491	0.7	12.8	22.4	24.8	39.3	2,118
<b>Age</b>												
15-19	0.1	3.3	8.0	7.9	80.7	3709	*	*	*	*	*	0
20-24	0.0	0.0	0.0	0.0	0.0	0	0.6	10.5	19.1	23.0	46.8	3162
<b>Education</b>												
None	0.2	6.7	15.9	15.0	62.2	519	0.6	18.6	23.5	29.8	27.5	802
Primary	0.2	4.6	10.8	9.3	75.1	1622	0.8	12.2	22.3	25.1	39.5	1040
Secondary	0.0	.8	2.8	4.4	92.0	1409	0.6	5.9	18.2	22.6	52.8	771
Higher	0.0	0.0	0.0	1.7	98.3	160	0.1	2.1	8.0	9.5	80.4	548
<b>Wealth Index quintile</b>												
Poorest	0.2	5.6	8.8	6.9	78.5	629	1.3	17.8	22.1	22.3	36.5	536
Second	0.1	4.2	12.9	10.8	71.9	720	0.0	14.9	25.4	25.0	34.7	617
Middle	0.2	3.8	7.8	10.8	77.4	777	0.5	10.4	19.7	22.8	46.6	608
Fourth	0.0	2.3	8.3	5.6	83.9	753	1.0	8.1	18.3	26.6	46.0	731
Richest	0.0	1.2	3.2	5.5	90.2	831	0.2	3.5	11.3	17.7	67.2	669

( ) Figures that are based on 25-49 unweighted cases [\*] Based on less than 25 unweighted cases and has been suppressed

## 11.5 Female Genital Mutilation/Cutting

Female genital mutilation/cutting (FGM/C) is the partial or total removal of the female external genitalia or other injury to the female genital organs. FGM/C is always traumatic with immediate complications including excruciating pain, shock, urine retention, ulceration of the genitals and injury to adjacent tissue. Other complications include septicaemia, infertility, obstructed labour, and even death. The procedure is generally carried out on girls between the ages of 4 and 14; it is also done to infants, women who are about to be married and, sometimes, to women who are pregnant with their first child or who have just given birth. It is often performed by traditional practitioners, including midwives and barbers, without anaesthesia, using scissors, razor blades, or broken glass.

FGM/C is a fundamental violation of human rights. It subjects girls and women to health risks and has life-threatening consequences. Although no international human rights instruments specifically addressed the practice, Article 25 of the Universal Declaration of Human Rights states that “everyone has the right to a standard of living adequate for health and well-being” and has been used to argue that FGM/C violates the right to health and bodily integrity. Furthermore, it could be argued that girls, i.e. children, cannot be said to give informed consent to such a potentially damaging practice as FGM/C.

Table CP.10 presents the prevalence of FGM/C among women age 15-49 years and the type of procedure. The table shows that 86.6 percent of women had some form of female genital mutilation. The percentages rises from 76.8 percent for women without formal education to 91.8 percent for women with higher education. The practice appears more common in rural areas, the highest percentage is 97.7 for North Kordofan state and the lowest 45.4 for Central Darfur. Surprisingly the practice is highly prevalent among women in wealthy households with population in the richest and fourth richest quintiles recording 91.6 percent and 90.0 percent respectively.

<b>Table CP.10: Female genital mutilation/cutting (FGM/C) among women</b>								
<b>Percentage of women age 15-49 years by FGM/C status and percent distribution of women who had FGM/C by type of FGM/C, Sudan MICS, 2014</b>								
Background characteristics	Percentage who had any form of FGM/C [1]	Number of women age 15-49 years	Percent distribution of women age 15-49 years who had FGM/C:					Number of women age 15-49 years who had FGM/C
			Had flesh removed	Were nicked	Were sewn closed	Form of FGM/C not determined	Sudan	
<b>Sudan</b>	86.6	18,302	16.3	2.2	77.0	4.5	100.0	15,853
<b>State</b>								
Northern	97.5	457	2.9	0.4	94.6	2.1	100.0	446
River Nile	96.4	701	11.1	2.2	74.5	12.2	100.0	676
Red Sea	89.0	493	8.8	2.4	86.6	2.2	100.0	439
Kassala	78.7	747	3.7	1.4	86.4	8.4	100.0	587
Gadarif	78.5	879	22.1	0.6	71.3	5.9	100.0	690
Khartoum	87.5	2,821	9.7	9.5	74.6	6.2	100.0	2,469
Gezira	86.9	3,176	5.0	0.7	90.0	4.3	100.0	2,759
White Nile	93.7	889	20.3	0.7	77.2	1.8	100.0	833
Sinnar	84.0	698	4.2	1.6	91.7	2.6	100.0	586
Blue Nile	68.0	729	14.3	0.7	84.1	1.0	100.0	495
North Kordofan	97.7	1,173	24.8	0.2	71.9	3.0	100.0	1,146
South Kordofan	88.8	525	20.8	1.8	68.8	8.7	100.0	467

Background characteristics	Percentage who had any form of FGM/C [1]	Number of women age 15-49 years	Percent distribution of women age 15-49 years who had FGM/C:					Number of women age 15-49 years who had FGM/C
			Had flesh removed	Were nicked	Were sewn closed	Form of FGM/C not determined	Sudan	
West Kordofan	81.0	965	5.1	0.3	91.6	3.1	100.0	781
North Darfur	97.6	1,317	39.8	0.4	58.5	1.2	100.0	1,286
West Darfur	61.2	555	24.7	0.9	60.3	14.2	100.0	339
South Darfur	88.2	1,363	27.7	0.9	68.7	2.7	100.0	1,203
Central Darfur	45.4	272	47.0	0.9	36.7	15.4	100.0	124
East Darfur	97.3	542	44.3	0.0	55.4	0.3	100.0	528
<b>Area</b>								
Urban	85.5	6,029	12.4	4.7	77.9	5.0	100.0	5,153
Rural	87.2	12,273	18.2	0.9	76.6	4.3	100.0	10,700
<b>Age</b>								
15-19	81.7	3,709	18.2	3.9	70.8	7.1	100.0	3,029
20-24	85.7	3,162	16.2	2.7	75.8	5.3	100.0	2,709
25-29	87.6	3,359	16.4	2.2	77.5	3.9	100.0	2,943
30-34	88.0	2,558	14.4	1.7	80.1	3.7	100.0	2,250
35-39	86.6	2,542	16.5	1.2	79.3	2.9	100.0	2,201
40-44	91.4	1,633	13.6	1.0	81.7	3.7	100.0	1,493
45-49	91.8	1,339	17.9	0.8	78.2	3.0	100.0	1,229
<b>Woman's education</b>								
None	76.8	5,843	25.3	1.0	70.1	3.7	100.0	4,487
Primary	90.4	6,128	13.9	1.3	81.2	3.7	100.0	5,541
Secondary	92.1	4,361	11.2	3.9	79.0	5.9	100.0	4,018
Higher	91.8	1,965	12.6	4.2	77.0	6.1	100.0	1,804
Missing/DK	*	5	*	*	*	*	100.0	4
<b>Wealth index quintile</b>								
Poorest	88.0	3,246	34.1	0.5	62.1	3.3	100.0	2,855
Second	81.7	3,380	20.7	1.2	74.8	3.3	100.0	2,761
Middle	80.7	3,646	12.6	1.6	82.1	3.6	100.0	2,944
Fourth	90.0	3,759	7.7	2.8	84.0	5.5	100.0	3,381
Richest	91.6	4,271	10.4	4.0	79.6	6.0	100.0	3,912
[1] MICS indicator 8.10 - Prevalence of FGM/C among women								
[*] Based on less than 25 unweighted cases and has been suppressed								

Table CP.11 presents the prevalence and extent of FGM/C performed on all daughters, age 0-14 years, of the respondents. It is important to remember that prevalence data for girls age 0-14 years reflect their current – not final – FGM/C status, since many of them may not have reached the customary age for cutting at the time of the survey. They are reported as being uncut but are still at risk of undergoing the procedure.

Overall, 31.5 percent of girls have undergone FGM/C. Daughters whose mothers have no education (33.6 percent) are more likely to be exposed to the practice of FGM/C compared to daughters whose mothers have primary education (32.7 percent), secondary education (28.6 percent) and higher education (15.2 percent).

The practice of FGM on young girls is most prevalent in the Red Sea state with 55.6 percent compared to the West Darfur state where only 12.1 percent of the young girls have undergone the practice. The practice is slightly more common in rural areas (33.0 percent) than in urban areas (27.8 percent).

The table shows that the prevalence of the FGM is 69.0 percent for girls 10-14 of age compared with 31.5 percent for 5-9 age group and only 4.3 percent among 0-4 age group. 34.6 percent of daughters of women who had experienced FGM have also undergone cutting compared with only 2.3 percent among the daughters of women who had not experienced FGM. The wealth index have no effect on the practice of FGM.

<b>Table CP.11: Female genital mutilation/cutting (FGM/C) among girls</b>			
<b>Percentage of daughters aged 0-14 years by FGM/C status and percent distribution of daughters who had FGM/C by type of FGM/C Sudan MICS, 2014</b>			
Background characteristics	Percentage of daughters who had any form of FGM/C [1]	Number of daughters age 0-14 years	Number of daughters age 0-14 years who had FGM/C
<b>Sudan</b>	31.5	17,661	5,570
<b>State</b>			
Northern	43.1	323	139
River Nile	50.0	508	254
Red Sea	55.6	326	181
Kassala	46.6	674	314
Gadarif	28.9	937	271
Khartoum	29.9	2,205	658
Gezira	31.9	2,790	890
White Nile	43.8	876	384
Sinnar	27.4	652	179
Blue Nile	30.0	762	229
North Kordofan	49.1	1,196	587
South Kordofan	27.3	601	164
West Kordofan	25.6	996	255
North Darfur	27.0	1,645	443
West Darfur	12.1	633	76
South Darfur	21.2	1,609	340
Central Darfur	13.9	230	32
East Darfur	24.8	697	173
<b>Area</b>			
Urban	27.8	4,844	1,345
Rural	33.0	12,818	4,225
<b>Age</b>			
0-4	4.3	6,481	279
5-9	31.5	6,460	2,033
10-14	69.0	4,720	3,258
<b>Mother's education</b>			
None	33.6	7,943	2,668
Primary	32.7	6,028	1,970
Secondary	28.6	2,763	789
Higher	15.2	919	140



Background characteristics	Percentage of daughters who had any form of FGM/C [1]	Number of daughters age 0-14 years	Number of daughters age 0-14 years who had FGM/C
Missing/DK	*	8	3
<b>Mother's FGM/C experience</b>			
No FGM/C	2.3	1,680	39
Had FGM/C	34.6	15,982	5,531
<b>Wealth index quintile</b>			
Poorest	30.2	4,029	1,216
Second	30.3	3,617	1,094
Middle	31.5	3,684	1,161
Fourth	35.6	3,418	1,217
Richest	30.3	2,913	882

[1] MICS indicator 8.11 - Prevalence of FGM/C among girls

[\*] Based on less than 25 unweighted cases and has been suppressed

**Figure CP.3b : Women age 15-49 years and girls 0-14 years who have undergone FGM/C by education of the woman or mother of the child, Sudan MICS, 2014**

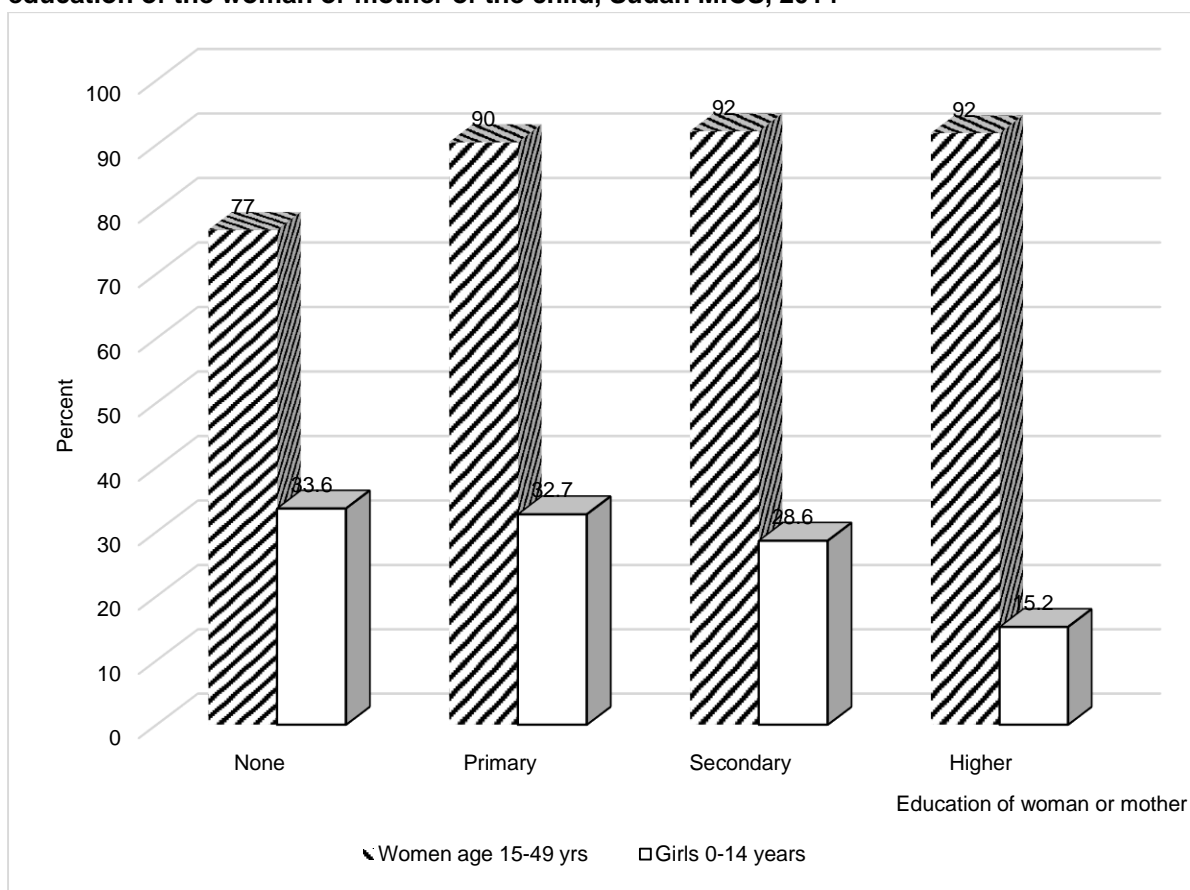


Table CP.12 presents the women's attitudes towards FGM/C. In respect of whether the practice should be continued or discontinued, 40.9 percent of the women thought it should be continued while 52.8 percent of them believed it should be discontinued. Women in East Darfur state (64.4 percent) are most likely to support the continuation of the practice of FGM/C than women in other

states with women in Khartoum state (24.0 percent) supporting continuation of the the practice the least. The level of education of the woman has significant effect on her attitude towards the practice of FGM; 16.9 percent of the women with higher education approved the continuation of the practice of FGM compared to 55.0 percent of the women with no education. Table CP.12 also shows that women in the poorest households are more likely to support the continuation of the practice with 61.9 percent compared to their counterparts in the richest households (23.3 percent). The continuation of the FGM is supported by 28.0 percent of the urban women compared with 47.4 percent of rural women.

**Table CP.12: Approval of female genital mutilation/cutting (FGM/C)**

Percentage of women age 15-49 years who have heard of FGM/C, and percent distribution of women according to attitudes towards whether the practice of FGM/C should be continued, Sudan MICS, 2014

Background characteristics	Percentage of women who have heard of FGM/C	Number of women aged 15-49 years	Percent distribution of women who believe the practice of FGM/C should be:				Number of women age 15-49 years who have heard of FGM/C
			Continued [1]	Discontinued	Depends	Don't know/ Missing	
<b>Sudan</b>	96.3	18,302	40.9	52.8	2.3	4.0	17,620
<b>State</b>							
Northern	99.3	457	33.0	64.5	0.4	2.2	454
River Nile	99.1	701	40.8	55.0	1.5	2.8	694
Red Sea	90.6	493	51.8	46.6	0.3	1.3	447
Kassala	96.6	747	53.1	42.0	1.4	3.4	721
Gadarif	93.1	879	39.1	55.6	1.2	4.2	818
Khartoum	98.5	2,821	24.0	71.0	2.7	2.3	2,779
Gezira	97.2	3,176	31.8	55.8	5.7	6.8	3,086
White Nile	98.5	889	43.1	53.4	1.0	2.5	875
Sinnar	96.6	698	33.5	59.2	5.6	1.7	675
Blue Nile	93.7	729	36.3	59.8	0.9	3.0	683
North Kordofan	99.3	1,173	53.1	38.7	1.9	6.2	1,165
South Kordofan	96.3	525	37.6	54.0	2.3	6.1	506
West Kordofan	85.6	965	58.1	35.8	1.8	4.3	826
North Darfur	99.1	1,317	55.7	39.9	0.1	4.3	1,305
West Darfur	96.4	555	37.8	59.4	0.3	2.5	535
South Darfur	97.2	1,363	52.8	43.3	0.9	3.0	1,326
Central Darfur	71.5	272	45.7	48.0	1.1	5.2	194
East Darfur	98.0	542	64.4	30.6	0.4	4.6	531
<b>Area</b>							
Urban	97.1	6,029	28.0	67.3	2.1	2.6	5,856
Rural	95.8	12,273	47.4	45.5	2.4	4.7	11,764
<b>Age</b>							
15-19	96.3	3,709	38.9	53.3	1.7	6.1	3,572
20-24	96.5	3,162	40.9	53.7	2.3	3.1	3,050
25-29	96.2	3,359	43.2	50.4	2.4	3.9	3,232
30-34	96.2	2,558	42.8	50.6	2.8	3.7	2,461

Background characteristics	Percentage of women who have heard of FGM/C	Number of women aged 15-49 years	Percent distribution of women who believe the practice of FGM/C should be:				Number of women age 15-49 years who have heard of FGM/C
			Continued [1]	Discontinued	Depends	Don't know/ Missing	
35-39	95.4	2,542	40.5	54.1	1.9	3.5	2,424
40-44	96.7	1,633	37.4	56.2	3.3	3.1	1,579
45-49	97.1	1,339	42.5	52.4	2.1	3.0	1,300
<b>Woman's education</b>							
None	92.3	5,843	55.0	37.3	1.6	6.1	5,394
Primary	96.9	6,128	47.3	46.3	2.3	4.1	5,939
Secondary	99.2	4,361	25.7	69.0	2.8	2.5	4,328
Higher	99.5	1,965	16.9	79.1	3.1	0.9	1,954
Missing/DK	*	5	*	*	*	*	5
<b>FGM/C experience</b>							
No FGM/C	72.1	2,449	8.0	83.0	1.3	7.8	1,767
Had FGM/C	100.0	15,853	44.6	49.4	2.4	3.6	15,853
<b>Wealth index quintile</b>							
Poorest	95.9	3,246	61.9	32.3	0.7	5.2	3,112
Second	92.6	3,380	54.9	38.8	1.7	4.6	3,130
Middle	95.2	3,646	40.6	52.8	2.1	4.5	3,473
Fourth	97.9	3,759	32.0	60.3	3.6	4.1	3,678
Richest	99.0	4,271	23.3	71.6	2.9	2.1	4,226

() Figures that are based on 25-49 unweighted cases

(\*) Figures that are based on fewer than 25 unweighted cases

## 11.6 Attitudes toward Domestic Violence

MICS assessed the attitudes of women age 15-49 years towards wife beating by asking the respondents whether they think that husbands are justified to hit or beat their wives in a variety of situations. The purpose of these questions was to capture the social justification of violence (in contexts where women have a lower status in society) as a disciplinary action when a woman does not comply with certain expected gender roles.

The responses to these questions are presented in Table CP.13. Overall, 34.0 percent of women in the survey feel that a husband is justified in hitting or beating his wife in at least one of the five situations (If she goes out without telling him, If she neglects the children, If she argues with him, If she refuses sex with him, and If she burns the food). Women who justify a husband's violence, in most cases agree and justify violence in instances when a wife neglects the children (24.2 percent), or if she demonstrates her autonomy, demonstrated by going out without telling her husband (21.8 percent) or arguing with him (19.5 percent). Nearly one-fifth (18.2 percent) of women believe that wife-beating is justified if the wife refuses to have sex with the husband. Justification in any of the five situations is more common among those living in poorest households, less educated, and also currently married women. Among the states, East Darfur with 77.4 percent of women can justify wife beating reported the highest while River Nile with 9.6 percent reported the lowest. The percentages for the urban and the rural areas are 25.0 percent and 38.4 percent respectively.

**Table CP.13: Attitudes toward domestic violence among women**

Percentage of women age 15-49 years who believe a husband is justified in beating his wife in various circumstances, Sudan MICS, 2014

Background characteristics	Percentage of women age 15-49 years who believe a husband is justified in beating his wife:						Number of women age 15-49 years
	If she goes out without telling him	If she neglects the children	If she argues with him	If she refuses sex with him	If she burns the food	For any of these five reasons [1]	
<b>Sudan</b>	21.8	24.2	19.5	18.2	15.2	34.0	18,302
<b>State</b>							
Northern	11.7	16.9	11.8	8.7	6.7	25.7	457
River Nile	5.9	6.7	5.5	6.0	5.2	9.6	701
Red Sea	3.2	6.7	4.2	3.3	1.5	10.4	493
Kassala	6.1	8.4	7.8	7.0	3.3	14.1	747
Gadarif	14.7	15.5	14.3	13.3	10.4	22.0	879
Khartoum	9.5	10.8	6.9	4.9	3.2	18.8	2,821
Gezira	9.3	10.9	6.0	5.9	5.0	17.0	3,176
White Nile	18.5	21.3	16.8	15.5	14.6	35.2	889
Sinnar	25.2	23.7	17.7	18.6	14.0	40.0	698
Blue Nile	23.9	24.7	18.7	14.8	14.8	38.8	729
North Kordofan	18.4	21.9	18.8	17.0	15.0	28.9	1,173
South Kordofan	39.0	40.1	36.4	29.6	27.5	58.1	525
West Kordofan	33.6	37.5	31.2	28.5	27.2	50.5	965
North Darfur	46.4	50.6	38.5	41.5	35.6	62.2	1,317
West Darfur	39.9	41.9	37.8	34.7	29.5	57.1	555
South Darfur	47.1	50.9	46.7	43.4	32.7	65.2	1,363
Central Darfur	44.9	44.8	39.6	40.2	33.2	63.4	272
East Darfur	51.3	62.4	55.4	54.7	45.5	77.4	542
<b>Area</b>							
Urban	13.3	15.4	11.8	11.0	7.2	25.0	6,029
Rural	25.9	28.5	23.3	21.8	19.1	38.4	12,273
<b>Age</b>							
15-19	23.0	25.5	20.5	17.1	15.4	35.5	3,709
20-24	21.0	24.9	19.3	18.2	14.8	34.9	3,162
25-29	23.2	25.3	20.6	19.1	15.7	35.5	3,359
30-34	20.9	23.4	17.7	18.5	14.7	32.6	2,558
35-39	20.8	22.7	20.0	19.4	15.6	33.0	2,542
40-44	20.5	22.7	17.7	17.6	15.7	31.5	1,633
45-49	21.5	22.0	19.0	17.0	13.4	32.1	1,339
<b>Marital status</b>							
Currently married	23.7	25.8	21.3	20.6	16.6	36.2	11,867
Formerly married	22.2	26.0	21.3	20.0	16.6	35.8	887
Never married	17.6	20.5	15.2	12.9	11.9	29.2	5,547
<b>Woman's education</b>							
None	32.1	33.9	29.8	28.2	24.0	45.6	5,843
Primary	24.2	26.8	20.4	19.0	16.1	36.7	6,128
Secondary	12.0	15.1	11.1	9.7	7.6	23.7	4,361
Higher	5.2	7.2	4.3	4.9	3.0	14.4	1,965

Background characteristics	Percentage of women age 15-49 years who believe a husband is justified in beating his wife:						Number of women age 15-49 years
	If she goes out without telling him	If she neglects the children	If she argues with him	If she refuses sex with him	If she burns the food	For any of these five reasons [1]	
Missing/DK	*	*	*	*	*	*	5
<b>Wealth index quintile</b>							
Poorest	43.3	47.3	41.0	40.3	35.2	58.3	3,246
Second	32.4	34.5	30.1	26.8	24.0	46.7	3,380
Middle	19.4	21.5	16.7	15.4	12.1	32.9	3,646
Fourth	13.2	14.9	9.6	8.5	6.5	22.7	3,759
Richest	6.5	8.9	5.8	5.6	3.1	16.4	4,271

[1] MICS indicator 8.12 - Attitudes towards domestic violence. [\*] Based on less than 25 unweighted cases and has been suppressed

(\*) Figures that are based on fewer than 25 unweighted cases

## 11.7 Children's Living Arrangements

The CRC recognizes that “the child, for the full and harmonious development of his or her personality, should grow up in a family environment, in an atmosphere of happiness, love and understanding. Millions of children around the world grow up with or without the care of their parents for several reasons, including due to the premature death of the parents or their migration for work. In most cases, these children are cared for by members of their extended families, while in others, children may be living in households other than their own, as live-in domestic workers for instance. Understanding the children's living arrangements, including the composition of the households where they live and the relationships with their primary caregivers, is key to design of targeted interventions aimed at promoting child's care and wellbeing.

Table CP.14 presents information on the living arrangements and orphanhood status of children under age 18. As shown on the table 81.8 percent of children aged 0-17 years in Sudan MICS, 2014 live with both their parents, 12.8 percent live with only their mothers, and 1.7 percent live with only their fathers. About two (2.4) percent of the children live with neither of their biological parents while both of them are alive. One in ten (9.4 percent) of the children live with their mothers only while the biological fathers are alive, considerably a significant difference (0.8 percent) of the children living with their fathers when their biological mothers are alive.

About 5.3 percent of the children have lost one or both parents with a very small percentage (0.3 percent) have lost both parents.

As expected, older children are less likely than younger children to live with both parents and slightly more likely than younger children to have lost one or both parents. Table CP.14 also shows that the percentage of children living with both parents in the richest wealth quintile (80.6 percent) and in the poorest quintile (82.9 percent). About seven (6.9 percent) of children in the poorest households live with only their mothers while their fathers are alive. The corresponding proportion of such children in the richest quintile is 11.6 percent.

**Table CP.14: Children's living arrangements and orphanhood**

Percent distribution of children age 0-17 years according to living arrangements, percentage of children age 0-17 years not living with a biological parent and percentage of children who have one or both parents dead, Sudan MICS, 2014

Background characteristics	Living with both parents	Living with neither biological parent				Living with mother only		Living with father only		Missing information on father/mother	Sudan	Living with neither biological parent [1]	One or both parents dead [2]	Number of children age 0-17 years
		Only father alive	Only mother alive	Both alive	Both dead	Father alive	Father dead	Mother alive	Mother dead					
<b>Sudan</b>	81.8	0.5	0.3	2.4	0.3	9.4	3.4	0.8	0.9	0.4	100.0	3.4	5.3	50,054
<b>Sex</b>														
Male	82.6	0.4	0.3	1.9	0.2	9.1	3.4	0.9	0.9	0.3	100.0	2.8	5.3	25,074
Female	81.1	0.5	0.3	3.0	0.3	9.6	3.4	0.7	0.8	0.4	100.0	4.0	5.3	24,979
<b>State</b>														
Northern	89.5	0.4	0.1	1.2	0.1	4.7	2.0	0.2	1.5	0.3	100.0	1.8	4.1	898
River Nile	88.7	0.3	0.0	1.8	0.1	5.5	2.8	0.4	0.4	0.1	100.0	2.1	3.5	1,495
Red Sea	91.8	0.4	0.5	1.8	0.1	2.1	1.6	0.3	1.1	0.4	100.0	2.8	3.7	1,024
Kassala	87.3	0.8	0.1	1.2	0.4	5.8	2.7	0.1	1.3	0.4	100.0	2.5	5.2	2,060
Gadarif	87.7	0.3	0.2	2.1	0.5	5.2	2.5	0.7	0.4	0.2	100.0	3.2	4.0	2,608
Khartoum	83.3	0.2	0.3	2.0	0.3	8.7	3.7	0.6	0.8	0.2	100.0	2.8	5.4	6,169
Gezira	71.4	0.4	0.2	2.1	0.1	21.0	2.7	0.7	1.3	0.2	100.0	2.7	4.6	7,966
White Nile	81.9	0.6	0.2	1.4	0.1	9.9	3.1	2.0	0.6	0.2	100.0	2.3	4.6	2,479
Sinnar	85.7	0.3	0.2	2.1	0.3	7.0	2.7	0.7	0.8	0.1	100.0	2.9	4.2	1,819
Blue Nile	83.1	0.5	0.3	2.2	0.4	9.0	1.9	1.5	0.6	0.5	100.0	3.4	3.6	2,248
North Kordofan	90.0	0.3	0.2	1.1	0.2	4.8	1.8	0.4	0.4	0.7	100.0	1.8	2.9	3,226
South Kordofan	85.4	0.9	0.4	2.7	0.4	4.8	2.9	1.1	0.6	0.9	100.0	4.3	5.1	1,687
West Kordofan	88.4	0.2	0.1	1.8	0.2	4.4	3.2	0.4	0.5	0.8	100.0	2.3	4.2	3,168
North Darfur	81.1	0.2	0.4	4.4	0.2	5.7	6.1	0.5	1.1	0.3	100.0	5.2	8.1	4,325
West Darfur	66.1	0.7	0.4	3.9	0.7	18.2	5.9	2.4	1.2	0.6	100.0	5.7	9.0	1,770
South Darfur	81.0	1.0	0.7	3.5	0.2	7.4	4.1	0.8	1.2	0.2	100.0	5.4	7.2	4,345
Central Darfur	70.0	1.0	0.7	3.6	0.4	16.9	4.8	1.2	1.0	0.3	100.0	5.8	8.0	969
East Darfur	83.0	0.6	0.6	3.9	0.5	4.7	4.4	1.4	0.5	0.5	100.0	5.6	6.6	1,798
<b>Area</b>														

Background characteristics	Living with both parents	Living with neither biological parent				Living with mother only		Living with father only		Missing information on father/mother	Sudan	Living with neither biological parent [1]	One or both parents dead [2]	Number of children age 0-17 years
		Only father alive	Only mother alive	Both alive	Both dead	Father alive	Father dead	Mother alive	Mother dead					
Urban	81.1	0.4	0.5	2.6	0.3	9.0	3.9	1.0	0.8	0.4	100.0	3.8	5.9	14,169
Rural	82.1	0.5	0.2	2.3	0.2	9.5	3.2	0.7	0.9	0.3	100.0	3.3	5.0	35,885
<b>Age</b>														
0-4	85.7	0.2	0.1	1.1	0.1	10.8	1.4	0.4	0.2	0.1	100.0	1.4	1.9	15,050
5-9	82.9	0.4	0.3	2.3	0.1	9.6	2.5	0.8	0.9	0.3	100.0	3.1	4.2	16,071
10-14	79.6	0.7	0.5	3.0	0.3	8.2	5.0	1.0	1.3	0.3	100.0	4.5	7.8	13,447
15-17	73.4	1.0	0.8	4.9	0.9	7.7	7.2	1.2	1.6	1.3	100.0	7.6	11.5	5,486
<b>Wealth index quintile</b>														
Poorest	82.9	0.7	0.4	3.1	0.3	6.9	4.0	0.6	0.9	0.3	100.0	4.5	6.2	11,305
Second	83.5	0.5	0.3	2.4	0.3	7.2	3.8	0.8	0.8	0.4	100.0	3.6	5.8	10,653
Middle	82.1	0.4	0.3	2.3	0.3	9.9	2.8	0.9	0.8	0.4	100.0	3.2	4.5	10,344
Fourth	79.5	0.4	0.3	2.1	0.2	12.4	3.1	0.9	1.0	0.3	100.0	2.9	4.9	9,584
Richest	80.6	0.2	0.3	2.0	0.2	11.6	3.0	0.9	1.0	0.3	100.0	2.6	4.7	8,168

<sup>1</sup> MICS indicator 8.13 - Children's living arrangements

<sup>2</sup> MICS indicator 8.14 - Prevalence of children with one or both parents dead

The Sudan MICS, 2014 included a simple measure of one particular aspect of migration related to what is termed children left behind, i.e. for whom one or both parents have moved abroad. While the amount of literature is growing, the long-term effects of the benefits of remittances versus the potential adverse psycho-social effects are not yet conclusive, as there is somewhat conflicting evidence available as to the effects on children.

Besides presenting simple prevalence rates, the results presented in Table CP.15 of this survey is supposed to help fill the data gap on the topic of migration. As expected, only 1.8 percent of children aged 0-17 years have one or both parents living abroad. There are notable differences between groups of children by state with Gezira state (6.4 percent) having the highest percentage of children who have at least one parent living abroad compared South Darfur where no children have their parents living abroad; and among children in the richest households (4.3 percent) as compared with the poorest households (0.1 percent). Generally, the data on parents living abroad is very small to allow for detailed analysis such as shown in table CP15.

Table CP.15: Children with parents living abroad							
Percent distribution of children age 0-17 years by residence of parents in another country, Sudan MICS, 2014							
Background characteristics	Percent distribution of children age 0-17 years:					Percentage of children age 0-17 years with at least one parent living abroad [1]	Number of children age 0-17 years
	With at least one parent living abroad: Only mother abroad	With at least one parent living abroad: Only father abroad	With at least one parent living abroad: Both mother and father abroad	With neither parent living abroad	Sudan		
<b>Sudan</b>	0.0	1.7	0.0	98.2	100.0	1.8	50,054
<b>Sex</b>							
Male	0.0	1.7	0.0	98.3	100.0	1.7	25,074
Female	0.0	1.8	0.0	98.2	100.0	1.8	24,979
Missing	*	*	*	*	100.0	*	1
<b>State</b>							
Northern	0.0	2.9	0.0	97.1	100.0	2.9	898
River Nile	0.0	1.7	0.0	98.3	100.0	1.7	1,495
Red Sea	0.0	0.1	0.0	99.9	100.0	0.1	1,024
Kassala	0.0	1.7	0.0	98.2	100.0	1.8	2,060
Gadarif	0.1	0.6	0.0	99.3	100.0	0.7	2,608
Khartoum	0.0	1.9	0.0	98.1	100.0	1.9	6,169
Gezira	0.0	6.4	0.0	93.6	100.0	6.4	7,966
White Nile	0.1	1.7	0.0	98.2	100.0	1.8	2,479
Sinnar	0.1	1.4	0.0	98.5	100.0	1.5	1,819
Blue Nile	0.0	0.5	0.0	99.5	100.0	0.5	2,248
North Kordofan	0.0	0.4	0.0	99.6	100.0	0.4	3,226
South Kordofan	0.0	0.1	0.0	99.9	100.0	0.1	1,687
West Kordofan	0.0	0.2	0.0	99.8	100.0	0.2	3,168
North Darfur	0.0	0.1	0.0	99.9	100.0	0.1	4,325
West Darfur	0.0	1.3	0.0	98.5	100.0	1.5	1,770
South Darfur	0.0	0.0	0.0	100.0	100.0	0.0	4,345
Central Darfur	0.1	0.5	0.0	99.3	100.0	0.7	969



Background characteristics	Percent distribution of children age 0-17 years:					Percentage of children age 0-17 years with at least one parent living abroad [1]	Number of children age 0-17 years
	With at least one parent living abroad: Only mother abroad	With at least one parent living abroad: Only father abroad	With at least one parent living abroad: Both mother and father abroad	With neither parent living abroad	Sudan		
East Darfur	0.1	0.3	0.1	99.5	100.0	0.5	1,798
<b>Area</b>							
Urban	0.1	1.2	0.0	98.7	100.0	1.3	14,169
Rural	0.0	2.0	0.0	98.0	100.0	2.0	35,885
<b>Age</b>							
0-4	0.0	2.5	0.0	97.4	100.0	2.6	15,050
5-9	0.0	2.0	0.0	98.0	100.0	2.0	16,071
10-14	0.0	1.2	0.0	98.7	100.0	1.3	13,447
15-17	0.1	0.0	0.0	99.9	100.0	0.1	5,486
<b>Wealth index quintile</b>							
Poorest	0.0	0.1	0.0	99.9	100.0	0.1	11,305
Second	0.0	0.3	0.0	99.6	100.0	0.4	10,653
Middle	0.0	1.7	0.0	98.3	100.0	1.7	10,344
Fourth	0.0	3.3	0.0	96.7	100.0	3.3	9,584
Richest	0.1	4.2	0.0	95.7	100.0	4.3	8,168
[1] MICS indicator 8.15 - Children with at least one parent living abroad							
[*] Based on less than 25 unweighted cases and has been suppressed							

## XII. HIV/AIDS and Sexual Behaviour

### 12.1 Knowledge about HIV Transmission and Misconceptions about HIV

One of the most important prerequisites for reducing the rate of HIV infection is accurate knowledge of how HIV is transmitted and strategies for preventing transmission. Correct information is the first step towards raising awareness and giving adolescents and young people the tools to protect themselves from infection. Misconceptions about HIV are common and can confuse adolescents and young people and hinder prevention efforts. The UN General Assembly Special Session on HIV/AIDS (UNGASS) called on governments to improve the knowledge and skills of young people to protect themselves from HIV. The indicators to measure this goal as well as the MDG of reducing HIV infections by half include improving the level of knowledge of HIV and its prevention, and changing behaviours to prevent further spread of the disease. HIV module(s) were administered to women and men 15-49 years of age. Please note that the questions in this module often refer to “the AIDS virus”. This terminology is used strictly as a method of data collection to aid respondents, preferred over the correct terminology of “HIV” that is used here in reporting the results, where appropriate.

**Table HA.1: Knowledge about HIV transmission, misconceptions about HIV, and comprehensive knowledge about HIV transmission among women**

Percentage of women age 15-49 years who know the main ways of preventing HIV transmission, percentage who know that a healthy looking person can be HIV-positive, percentage who reject common misconceptions, and percentage who have comprehensive knowledge about HIV transmission, Sudan MICS, 2014

Background characteristics	Percentage who have heard of AIDS	Percentage who know transmission can be prevented by:			Percentage who know that a healthy looking person can be HIV-positive	Percentage who know that HIV cannot be transmitted by:			Percentage who reject the two most common misconceptions and know that a healthy looking person can be HIV-positive	Percentage with comprehensive knowledge [1]	Number of women age 15-49
		Having only one faithful uninfected sex partner	Using a condom every time	Percentage of women who know both ways		Mosquito bites	Super-natural means	Sharing food with someone with HIV			
<b>Sudan</b>	74.8	59.7	26.7	24.7	34.6	46.9	56.4	49.5	19.2	8.9	18,302
<b>State</b>											
Northern	88.9	75.5	42.6	39.6	52.7	60.9	69.3	65.9	32.2	17.0	457
River Nile	85.3	72.8	40.9	38.3	55.8	64.9	72.8	57.3	33.1	17.9	701
Red Sea	69.8	51.9	20.9	18.2	34.6	47.6	48.3	40.6	16.9	6.1	493
Kassala	56.7	36.0	16.7	15.0	19.8	32.8	36.6	36.5	14.1	6.5	747
Gadarif	73.0	59.2	20.0	18.7	32.0	37.8	50.6	43.6	14.9	5.8	879
Khartoum	94.8	84.2	32.5	30.7	67.4	75.3	79.8	67.2	40.3	15.3	2,821
Gezira	71.5	54.4	27.5	26.1	33.4	50.6	55.0	51.4	21.0	11.9	3,176
White Nile	80.1	64.3	25.8	23.9	28.2	41.5	59.2	59.0	12.7	4.6	889
Sinnar	68.3	62.7	32.4	31.3	34.1	40.8	53.9	48.9	18.6	8.5	698
Blue Nile	66.9	54.9	23.0	21.7	22.3	39.7	50.2	41.6	13.0	8.5	729
North Kordofan	69.8	44.8	17.4	15.3	19.2	32.6	50.6	41.9	7.4	2.9	1,173
South	73.1	55.0	28.1	25.1	31.3	38.3	48.6	52.2	16.1	9.5	525

Background characteristics	Perce nt-age who have heard of AIDS	Percentage who know transmission can be prevented by:			Perce nt-age who know that a health y looking person can be HIV- positiv e	Percentage who know that HIV cannot be transmitted by:			Percent- age who reject the two most common misconce ptions and know that a healthy looking person can be HIV- positive	Percent- age with compreh en-sive knowledg e [1]	Number of women age 15-49
		Having only one faithful uninfec ted sex partner	Using a cond om every time	Perce ntage of wome n who know both ways		Mosq uito bites	Supe r- natur al mea ns	Sharing food with someon e with HIV			
Kordofan											
West Kordofan	67.3	46.4	31.4	28.1	16.8	33.9	40.7	36.7	6.7	3.6	965
North Darfur	63.1	50.5	18.3	17.4	16.8	29.3	41.9	31.7	6.3	2.8	1,317
West Darfur	78.4	60.5	37.6	33.0	37.0	44.6	58.1	49.3	19.8	14.0	555
South Darfur	75.1	63.5	26.1	22.8	27.6	44.1	59.4	52.7	14.3	5.7	1,363
Central Darfur	48.9	29.8	12.2	10.8	15.6	16.4	27.2	22.7	6.5	2.1	272
East Darfur	71.5	54.9	17.7	15.5	17.0	32.0	49.5	39.9	4.9	2.5	542
Area											
Urban	90.5	76.9	34.6	32.3	52.0	64.9	73.7	65.9	30.4	13.1	6,029
Rural	67.1	51.2	22.8	21.0	26.1	38.1	47.9	41.5	13.6	6.9	12,273
Age											
15-24 [1]	74.2	58.2	25.0	23.0	34.1	49.0	57.6	50.4	19.9	8.5	6,871
15-19	72.1	55.3	22.8	20.8	33.9	49.1	56.8	48.9	19.5	7.7	3,709
20-24	76.6	61.6	27.5	25.5	34.4	48.9	58.6	52.2	20.3	9.5	3,162
25-29	76.4	62.2	29.3	27.2	34.8	45.3	56.0	49.6	18.6	9.4	3,359
30-39	75.0	59.9	26.9	24.6	33.5	44.3	54.9	49.1	17.4	8.3	5,099
40-49	74.4	59.9	27.4	25.9	37.3	48.2	56.6	48.2	21.2	10.5	2,972
Marital status											
Ever married	73.3	58.1	25.6	23.7	32.0	42.8	53.0	46.6	16.7	8.1	12,754
Never married	78.5	63.3	29.2	27.0	40.7	56.4	64.3	56.2	24.9	10.8	5,547
Missing	*	*	*	*	*	*	*	*	*	*	1
Education											
None	52.2	35.8	12.6	11.0	15.0	22.7	30.5	26.5	5.3	2.1	5,843
Primary	74.8	57.8	24.6	22.5	29.0	41.1	53.9	46.8	13.0	5.5	6,128
Secondary	94.7	80.8	38.3	36.0	52.0	72.1	80.1	71.7	33.3	15.1	4,361
Higher	98.4	89.7	49.5	47.2	72.0	81.0	88.3	77.5	48.3	26.4	1,965
Missing/DK	*	*	*	*	*	*	*	*	*	*	5
Wealth index quintile											
Poorest	56.3	39.9	15.4	13.1	15.0	23.8	34.8	28.0	4.8	2.0	3,246
Second	62.3	44.5	17.9	16.1	17.9	29.6	40.7	34.3	7.3	3.0	3,380
Middle	69.4	54.5	21.1	19.5	27.3	39.2	49.8	44.4	12.6	4.8	3,646
Fourth	83.4	67.3	30.5	28.6	40.7	54.7	65.0	60.2	23.5	11.2	3,759
Richest	96.0	84.4	43.7	41.3	63.6	77.8	83.2	72.9	41.2	20.4	4,271

One indicator which is both an MDG and the Global AIDS Response Progress Reporting (GARPR; formerly UNGASS) indicator is the percentage of young people who have comprehensive and correct knowledge of HIV prevention and transmission. This is defined as 1) knowing that consistent use of a condom during sexual intercourse and having just one uninfected faithful partner can reduce the chance of getting HIV, 2) knowing that a healthy-looking person can have HIV, and 3) rejecting the two most common local misconceptions about transmission/prevention of HIV. In the Sudan MICS 2014, all women who have heard of AIDS were asked questions on all three components and the results are detailed in Tables HA.1 above.

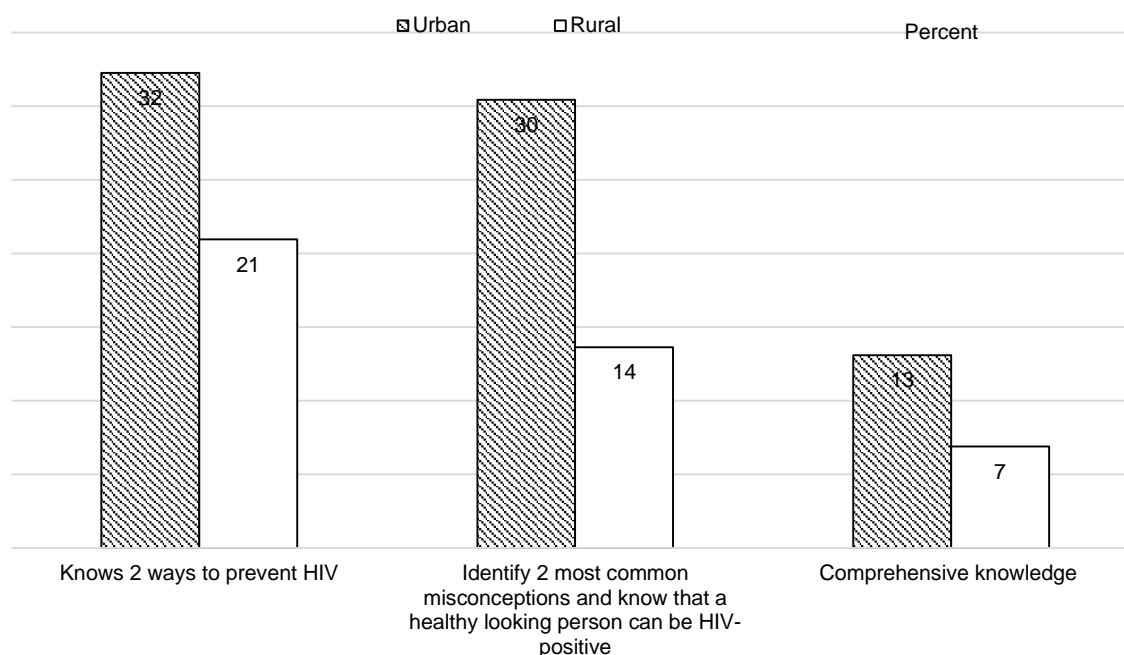
In Sudan, about three-quarters (74.8 percent) of the women age 15-49 years have heard of HIV and AIDS. However, the percentage of those who know of both main ways of preventing HIV transmission – having only one faithful uninfected partner and using a condom every time – is only about one in ten (24.7percent). About sixty (59.7 percent) of the women know of having one faithful uninfected sex partner and 26.7 percent know of using a condom every time as main ways of preventing HIV transmission.

Table HA.1 also presents the percentage of women who can correctly identify misconceptions concerning HIV. The indicator is based on the two most common and relevant misconceptions in the survey, that HIV can be transmitted by sharing food with someone with HIV (49.5 percent) and by mosquito bites (46.9 percent). The table also provide information on whether women know that HIV cannot be transmitted by supernatural means (56.4 percent). Overall, 19.2 percent of the respondents reject the two most common misconceptions and know that a healthy-looking person can be HIV-positive.

People who have comprehensive knowledge about HIV prevention include those who know of the two main ways of HIV prevention (having only one faithful uninfected partner and using a condom every time), who know that a healthy looking person can be HIV-positive, and who reject the two most common misconceptions. Comprehensive knowledge of HIV prevention methods and transmission is fairly low although there are differences by area; 6.9 percent and 13.1 percent in rural and urban areas respectively.

Comprehensive knowledge about HIV transmission greatly varies with women's education (26.4 percent) in women with higher level of education compared to women with no education (2.1 percent) and with wealth index level of the household; (20.4 percent) in the richest quintile compared with (2.0 percent) in the poorest quintile of the households.

**Figure HA.1: Women aged 15-49 years who have comprehensive knowledge of HIV transmission, Sudan MICS, 2014**



Knowledge of mother-to-child transmission of HIV is also an important first step for women to seek HIV testing when they are pregnant to avoid infection in the baby. Women should know that HIV can be transmitted during pregnancy, during delivery, and through breastfeeding. The level of knowledge among women age 15-49 years concerning mother-to-child transmission is presented in Table HA.2. Overall, 57.0 percent of women know that HIV can be transmitted from mother to child. The percentage of women who know all three ways of mother-to-child transmission is 28.4 percent, while 17.8 percent of women did not know of any specific way.

The percentage of women who know all three ways that mother-to-child transmission can take place ranges from 17.8 percent in the Kassala State to 38.7 percent in River Nile State. Increasing levels of this indicator are associated with urban residence, never-married status and higher levels of women's education (secondary and above) and household wealth.

**Table HA.2: Knowledge of mother-to-child HIV transmission among women**

Percentage of women age 15-49 years who correctly identify means of HIV transmission from mother to child, Sudan MICS, 2014

Background characteristics	Percentage of women age 15-49 who have heard of AIDS and:						Number of women age 15-49
	Know HIV can be transmitted from mother to child:					Do not know any of the specific means of HIV transmission from mother to child	
	During pregnancy	During delivery	By breast-feeding	By at least one of the three means	By all three means [1]		
<b>Sudan</b>	46.7	47.0	36.9	57.0	28.4	17.8	18,302
<b>State</b>							
Northern	63.7	51.1	52.3	73.6	33.8	15.2	457
River Nile	55.9	58.7	46.0	67.3	38.7	18.0	701
Red Sea	41.4	43.5	27.7	51.9	22.2	17.9	493
Kassala	29.0	25.8	23.8	36.3	17.8	20.3	747
Gadarif	41.9	43.2	35.7	49.6	30.2	23.4	879
Khartoum	69.8	70.3	42.6	82.3	35.3	12.5	2,821
Gezira	46.0	46.6	28.4	55.2	23.2	16.3	3,176
White Nile	54.4	49.4	47.2	65.4	34.0	14.7	889
Sinnar	41.1	40.6	33.7	53.9	22.5	14.4	698
Blue Nile	38.5	41.9	32.7	50.7	22.6	16.2	729
North Kordofan	46.0	45.6	42.1	51.5	35.7	18.3	1,173
South Kordofan	48.0	47.2	48.1	56.5	37.8	16.5	525
West Kordofan	31.6	38.1	35.8	46.0	25.2	21.4	965
North Darfur	33.4	31.4	32.6	41.3	22.4	21.8	1,317
West Darfur	40.5	44.3	40.9	56.6	29.0	21.9	555
South Darfur	38.9	41.9	37.9	50.9	26.7	24.2	1,363
Central Darfur	30.1	29.1	27.6	33.4	23.6	15.5	272
East Darfur	40.2	38.6	42.3	51.1	28.9	20.4	542
<b>Area</b>							
Urban	62.8	62.1	45.2	75.5	35.7	15.1	6,029
Rural	38.8	39.5	32.8	48.0	24.8	19.2	12,273
<b>Age</b>							
15-24 [1]	45.7	45.7	38.2	56.9	28.0	17.2	6,871
15-19	45.3	44.3	38.5	56.5	27.5	15.6	3,709
20-24	46.3	47.4	37.7	57.4	28.6	19.1	3,162
25-29	46.0	46.6	36.5	56.3	27.8	20.1	3,359
30-39	46.5	47.4	35.8	56.9	28.2	18.1	5,099
40-49	49.9	49.4	36.5	58.2	30.2	16.1	2,972
<b>Marital status</b>							
Ever married	44.7	45.0	35.4	54.3	27.6	19.0	12,754
Never married	51.3	51.5	40.4	63.3	30.2	15.2	5,547
Missing	*	*	*	*	*	*	1
<b>Education</b>							
None	25.1	25.6	23.7	31.4	18.0	20.8	5,843
Primary	45.9	46.0	40.0	56.2	30.9	18.5	6,128

Background characteristics	Percentage of women age 15-49 who have heard of AIDS and:						Number of women age 15-49
	Know HIV can be transmitted from mother to child:					Do not know any of the specific means of HIV transmission from mother to child	
	During pregnancy	During delivery	By breast-feeding	By at least one of the three means	By all three means [1]		
Secondary	65.1	64.2	47.3	78.5	36.5	16.2	4,361
Higher	72.5	75.0	43.3	88.2	33.5	10.2	1,965
Missing/DK	*	*	*	*	*	*	5
<b>Wealth index quintile</b>							
Poorest	26.2	28.0	28.6	34.8	20.0	21.5	3,246
Second	33.1	33.4	31.9	41.5	24.0	20.9	3,380
Middle	42.1	42.7	36.9	50.9	29.3	18.5	3,646
Fourth	55.1	53.9	41.0	65.8	32.5	17.6	3,759
Richest	69.5	69.6	43.6	83.8	33.7	12.2	4,271

[1] MICS indicator 9.2 - Knowledge of mother-to-child transmission of HIV  
[\*] Based on less than 25 unweighted cases and has been suppressed

## 12.2 Accepting Attitudes toward People Living with HIV

The indicators on attitudes toward people living with HIV measure stigma and discrimination in the community. Stigma and discrimination are considered low if respondents report an accepting attitude on the following four questions: 1) would care for a family member with AIDS in own home; 2) would buy fresh vegetables from a vendor who is HIV-positive; 3) thinks that a female teacher who is HIV-positive should be allowed to teach in school; and 4) would not want to keep it a secret if a family member is HIV-positive.

Table HA.3: Accepting attitudes toward people living with HIV among women							
Percentage of women age 15-49 years who have heard of AIDS who express an accepting attitude towards people living with HIV, Sudan MICS, 2014							
	Percent of women who:						Number of women who have heard of AIDS
	Are willing to care for a family member with AIDS in own home	Would buy fresh vegetables from a shopkeeper or vendor who is HIV-positive	Believe that a female teacher who is HIV-positive and is not sick should be allowed to continue teaching	Would not want to keep secret that a family member is HIV-positive	Agree with at least one accepting attitude	Express accepting attitudes on all four indicators [1]	
<b>Sudan</b>	85.9	29.2	44.1	40.2	93.9	7.9	13,698
<b>State</b>							
Northern	95.7	24.3	46.7	43.9	97.9	9.4	406
River Nile	94.2	36.2	53.0	37.3	97.3	13.8	598
Red Sea	83.6	38.4	46.9	47.6	87.9	16.9	344
Kassala	74.6	30.4	40.7	26.5	77.1	8.3	423
Gadarif	79.1	27.1	42.1	41.1	96.0	6.4	642
Khartoum	88.9	33.3	53.0	31.3	95.5	7.1	2,674
Gezira	94.3	31.0	48.8	37.6	97.0	7.7	2,271
White Nile	96.7	30.4	43.6	45.7	99.2	7.7	712

	Percent of women who:						Number of women who have heard of AIDS
	Are willing to care for a family member with AIDS in own home	Would buy fresh vegetables from a shopkeeper or vendor who is HIV-positive	Believe that a female teacher who is HIV-positive and is not sick should be allowed to continue teaching	Would not want to keep secret that a family member is HIV-positive	Agree with at least one accepting attitude	Express accepting attitudes on all four indicators [1]	
Sinnar	96.0	33.3	45.3	32.8	99.2	8.9	477
Blue Nile	89.2	23.9	40.0	39.1	96.1	5.3	488
North Kordofan	70.4	20.9	33.2	47.3	87.2	5.6	819
South Kordofan	82.2	25.1	39.1	50.4	93.1	8.1	384
West Kordofan	62.4	21.0	25.6	59.2	87.4	5.4	649
North Darfur	78.9	20.6	34.8	36.0	86.0	6.0	831
West Darfur	80.7	40.2	51.0	23.4	92.5	2.5	435
South Darfur	85.0	26.1	39.3	57.7	95.9	11.9	1,024
Central Darfur	68.6	13.4	20.9	52.8	89.5	2.3	133
East Darfur	88.2	31.9	40.1	46.9	97.1	10.1	388
<b>Area</b>							
Urban	89.5	34.7	51.9	38.2	95.9	9.4	5,457
Rural	83.6	25.5	39.0	41.6	92.6	6.9	8,240
<b>Age</b>							
15-24 [1]	86.6	30.2	47.0	40.4	94.2	8.7	5,095
15-19	86.6	29.8	46.4	40.8	94.4	8.9	2,674
20-24	86.7	30.7	47.6	40.1	94.0	8.5	2,421
25-29	83.4	29.5	42.6	41.9	93.5	8.9	2,567
30-39	85.6	27.5	41.7	40.3	93.6	6.6	3,825
40-49	87.8	29.0	43.5	37.6	94.2	6.9	2,211
<b>Marital status</b>							
Ever married	84.5	27.6	40.7	40.8	93.1	7.3	9,344
Never married	89.0	32.5	51.4	38.9	95.6	9.0	4,354
<b>Education</b>							
None	74.9	18.3	26.6	40.7	87.6	4.1	3,050
Primary	84.0	25.3	38.0	41.4	92.7	6.7	4,582
Secondary	91.8	35.0	54.9	41.1	97.5	10.5	4,128
Higher	95.3	42.8	63.4	34.9	99.1	11.1	1,933
Missing/DK	*	*	*	*	*	*	4
<b>Wealth index quintile</b>							
Poorest	72.6	17.6	26.8	45.7	86.9	5.1	1,828
Second	76.0	22.1	30.8	43.1	88.6	5.1	2,107
Middle	84.5	26.8	39.1	43.8	94.4	7.6	2,529
Fourth	90.5	31.7	49.4	38.9	95.9	8.9	3,136
Richest	94.3	37.5	57.8	35.2	97.9	9.9	4,099

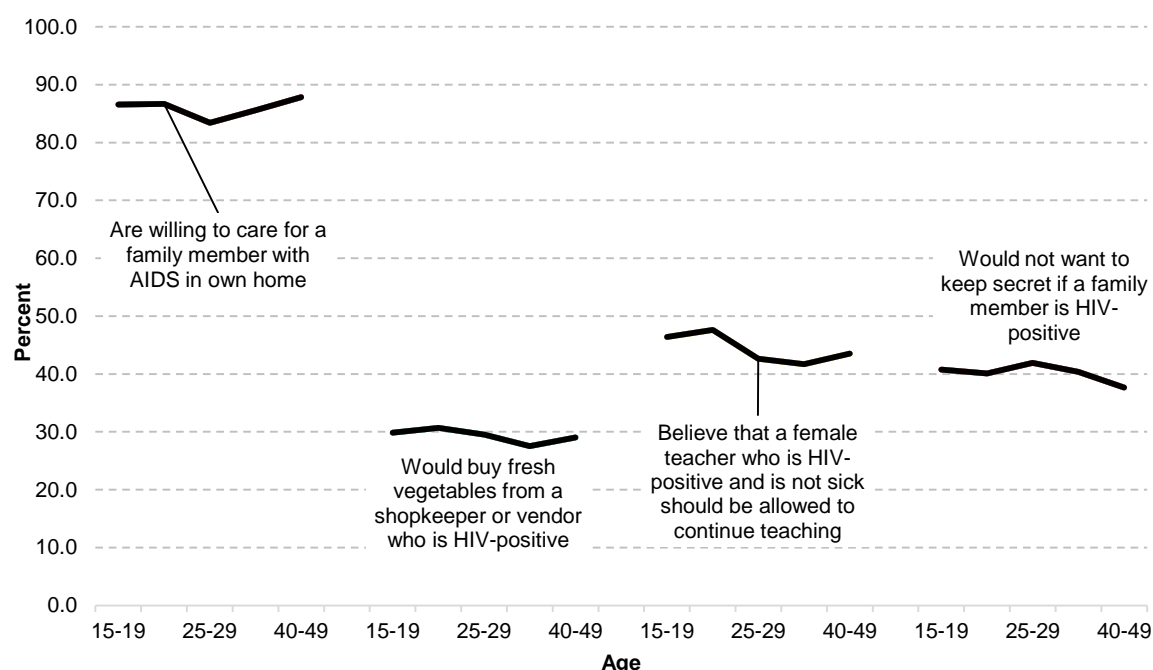
[1] MICS indicator 9.3 - Accepting attitudes towards people living with HIV

[\*] Based on less than 25 unweighted cases and has been suppressed



Table HA.3 presents the attitudes of women towards people living with HIV. Interestingly, 93.9 percent of women who have heard of AIDS agree with at least one accepting statement in Sudan. The most common accepting attitude is willing to care for a family member with AIDS in own home (85.9 percent). However, only 29.2 percent of the women would buy fresh vegetables from a shopkeeper or vendor who is HIV-positive. Higher educated individuals (99.1 percent) and those from richest households (97.9 percent) have more accepting attitudes (i.e., agree with at least one accepting attitude) than the ones with no education (87.6 percent) and poorest households (86.9 percent).

**Figure HA.2: Accepting attitudes toward people living with HIV/AIDS in Sudan MICS, 2014**



### 12.3 Knowledge of a Place for HIV Testing, Counselling and Testing during Antenatal Care

Another important indicator is the knowledge of where to be tested for HIV and use of such services. In order to protect themselves and to prevent infecting others, it is important for individuals to know their HIV status. Knowledge of own status is also a critical factor in the decision to seek treatment. Questions related to knowledge of a facility for HIV testing and whether a person has ever been tested are presented in Tables HA.4.

**Table HA.4: Knowledge of a place for HIV testing among women**

Percentage of women age 15-49 years who know where to get an HIV test, percentage who have ever been tested, percentage who have ever been tested and know the result of the most recent test, percentage who have been tested in the last 12 months, and percentage who have been tested in the last 12 months and know the result, Sudan MICS, 2014

Background characteristics	Percent of women who:					Number of women age 15-49
	Know a place to get tested [1]	Have ever been tested	Have ever been tested and know the result of the most recent test	Have been tested in the last 12 months	Have been tested in the last 12 months and know the result [2, 3]	
<b>Sudan</b>	17.0	5.2	4.3	1.9	1.6	18,302
<b>State</b>						
Northern	19.2	4.1	3.2	1.8	1.3	457
River Nile	18.1	6.7	6.0	2.7	2.3	701
Red Sea	24.9	6.7	5.4	2.5	2.3	493
Kassala	9.0	3.6	2.6	1.4	1.2	747
Gadarif	14.2	3.7	3.0	1.1	0.8	879
Khartoum	35.3	10.5	9.2	2.6	2.3	2,821
Gezira	7.1	1.2	1.0	0.7	0.5	3,176
White Nile	12.6	4.7	4.0	1.7	1.5	889
Sinnar	21.8	6.2	5.0	2.0	1.9	698
Blue Nile	26.0	5.8	4.1	2.3	1.6	729
North Kordofan	14.9	5.3	4.4	1.9	1.8	1,173
South Kordofan	21.1	6.8	4.6	3.2	2.2	525
West Kordofan	9.3	2.8	1.8	0.7	0.4	965
North Darfur	9.6	3.3	2.5	1.7	1.3	1,317
West Darfur	25.7	14.2	11.9	8.2	7.2	555
South Darfur	13.3	4.6	3.6	1.6	1.3	1,363
Central Darfur	13.5	5.1	4.0	2.6	2.4	272
East Darfur	9.9	2.4	2.2	0.7	0.7	542
<b>Area</b>						
Urban	31.2	10.4	8.8	3.6	3.2	6,029
Rural	10.1	2.7	2.1	1.1	0.8	12,273
<b>Age</b>						
15-24 [1]	15.2	3.3	2.7	1.4	1.2	6,871
15-19	13.0	2.1	1.5	0.9	0.6	3,709
20-24	17.8	4.8	4.1	2.0	1.8	3,162
25-29	17.4	7.3	5.9	3.1	2.6	3,359
30-39	18.9	6.7	5.6	2.2	1.9	5,099
40-49	17.7	4.8	3.8	1.1	0.9	2,972
<b>Marital status</b>						
Ever married	16.4	6.1	5.1	2.1	1.8	12,754
Never married	18.5	3.3	2.5	1.4	1.2	5,547
Missing	*	*	*	*	*	1
<b>Education</b>						
None	6.0	2.1	1.6	1.0	0.8	5,843
Primary	13.8	4.6	3.8	1.8	1.6	6,128
Secondary	25.3	7.7	6.5	2.5	2.1	4,361
Higher	41.6	11.1	9.0	3.5	2.9	1,965

Background characteristics	Percent of women who:					Number of women age 15-49
	Know a place to get tested [1]	Have ever been tested	Have ever been tested and know the result of the most recent test	Have been tested in the last 12 months	Have been tested in the last 12 months and know the result [2, 3]	
Missing/DK	*	*	*	*	*	5
<b>Wealth index quintile</b>						
Poorest	5.4	1.4	.9	0.6	0.3	3,246
Second	9.2	2.9	2.4	1.4	1.3	3,380
Middle	14.5	5.4	4.4	2.3	1.9	3,646
Fourth	20.6	6.5	5.5	2.6	2.2	3,759
Richest	31.2	8.7	7.2	2.4	2.1	4,271

[1] MICS indicator 9.4 - Women who know where to be tested for HIV

[2] MICS indicator 9.5 - Women who have been tested for HIV and know the results

[3] MICS indicator 9.6 - Sexually active young women who have been tested for HIV and know the results [\*] Based on less than 25 unweighted cases and has been suppressed

Seventeen percent of women know a place where to be tested, while 5.2 percent, have actually been tested, fewer, 4.3 percent of the women, know the result of their most recent test. A very small proportion has been tested within the last 12 months prior to the survey (1.9 percent), while a somewhat smaller proportion has been tested within the last 12 months and know the result (1.6 percent).

Knowledge of a place to be tested is higher among women from wealthier households, fourth quintile (20.6 percent) and richest quintile (31.2 percent); among women with secondary (25.3 percent) and higher education (41.6 percent) levels; among women resident in urban areas (31.2 percent) than among women who live in rural areas (10.1 percent); and among women in Khartoum (35.3 percent), Blue Nile (26.0 percent), West Darfur ( 25.7 percent), Red Sea (24.9 percent), Sinnar (21.8 percent), and South Kordofan (21.1 percent) states.

Table HA.5 presents the percentage distribution of women who had given birth within the two years preceding the survey and who received counselling and HIV testing during antenatal care.

About sixty (59.9 percent) received antenatal care from a health professional but only 4.2 percent received HIV counselling during antenatal care while 3.6 percent were offered an HIV test and were tested for HIV during antenatal care and received the results. The percentage of women who were offered an HIV test and were tested for HIV during antenatal care and received the results is much higher in the West Darfur state (12.8 percent) than in the next highest state (7.6 percent in Khartoum). Higher levels of this indicator are associated with urban residence (9.2 percent) and higher levels of women's education (9.0 percent).

**Table HA.5: HIV counselling and testing during antenatal care**

Percentage of women age 15-49 with a live birth in the last 2 years who received antenatal care from a health professional during the last pregnancy, percentage who received HIV counselling, percentage who were offered and tested for HIV, percentage who were offered, tested and received the results of the HIV test, and percentage who received counselling and were offered, accepted and received the results of the HIV test, Sudan MICS, 2014

Background characteristics	Percentage of women who:					Number of women age 15-49 with a live birth in the last 2 years
	Received antenatal care from a health care professional for last pregnancy	Received HIV counselling during antenatal care [1]	Were offered an HIV test and were tested for HIV during antenatal care	Were offered an HIV test and were tested for HIV during antenatal care, and received the results [2]	Received HIV counselling, were offered an HIV test, accepted and received the results	
<b>Sudan</b>	59.9	4.2	4.1	3.6	2.6	5,622
<b>State</b>						
Northern	94.7	0.4	0.7	0.7	0.4	92
River Nile	90.0	5.2	3.5	3.5	3.2	151
Red Sea	67.3	7.5	6.6	5.9	4.3	92
Kassala	65.6	4.2	4.0	4.0	3.6	199
Gadarif	63.9	2.6	2.5	2.5	1.9	307
Khartoum	90.8	8.4	9.5	7.6	4.7	684
Gezira	78.3	0.3	0.9	0.9	0.3	852
White Nile	71.3	2.1	2.8	2.8	1.6	273
Sinnar	64.4	1.5	1.0	0.8	0.6	226
Blue Nile	48.4	3.6	4.1	3.3	2.8	287
North Kordofan	68.8	7.1	7.4	6.9	5.2	352
South Kordofan	47.4	9.8	7.1	5.5	3.6	194
West Kordofan	44.0	2.1	0.7	0.7	0.7	341
North Darfur	43.5	3.1	3.2	2.5	2.2	525
West Darfur	18.8	13.7	13.8	12.8	10.8	179
South Darfur	29.9	5.1	2.9	2.7	2.0	556
Central Darfur	17.9	4.0	4.9	4.1	2.8	99
East Darfur	26.1	0.8	0.7	0.7	0.5	211
<b>Area</b>						
Urban	75.7	10.4	10.5	9.2	6.5	1,488
Rural	54.2	2.0	1.8	1.5	1.1	4,134
<b>Age</b>						
15-24 [1]	61.7	2.8	3.4	3.2	2.1	1,515
15-19	62.0	1.3	1.9	1.7	0.7	385
20-24	61.6	3.3	3.9	3.8	2.6	1,130
25-29	61.2	4.6	4.7	3.9	2.8	1,608
30-39	59.0	4.9	4.1	3.7	2.9	2,108
40-49	51.9	4.7	3.7	2.7	1.8	390
<b>Marital status</b>						
Ever married/union	59.9	4.2	4.1	3.6	2.6	5,620
Missing	100.0	0.0	0.0	0.0	0.0	1
<b>Education</b>						
None	39.9	1.8	1.7	1.4	1.1	2,247
Primary	64.5	3.9	3.3	3.0	2.5	2,022
Secondary	82.6	8.7	8.5	7.6	5.5	942

Background characteristics	Percentage of women who:					Number of women age 15-49 with a live birth in the last 2 years
	Received antenatal care from a health care professional for last pregnancy	Received HIV counselling during antenatal care [1]	Were offered an HIV test and were tested for HIV during antenatal care	Were offered an HIV test and were tested for HIV during antenatal care, and received the results [2]	Received HIV counselling, were offered an HIV test, accepted and received the results	
Higher	94.4	8.9	10.5	9.0	4.3	410
<b>Wealth index quintile</b>						
Poorest	31.0	1.3	0.9	0.6	0.6	1,251
Second	46.1	2.7	2.0	1.7	1.1	1,232
Middle	60.1	4.7	5.3	4.7	3.6	1,192
Fourth	82.7	6.3	6.2	5.4	4.4	1,096
Richest	92.6	7.3	7.3	6.6	3.8	851

[1] MICS indicator 9.7 - HIV counselling during antenatal care

[2] MICS indicator 9.8 - HIV testing during antenatal care

[\*] Based on less than 25 unweighted cases and has been suppressed

## 12.4 HIV Indicators for Young Women

In many countries, over half of new adult HIV infections are among young people age 15-24 years thus a change in behaviour among members of this age group is especially important to reduce new infections. The next tables present specific information on this age group.

Table HA.7 summarizes information on key HIV indicators for young women. Results with respect to comprehensive knowledge (8.5 percent of young women), knowledge of mother to child transmission (28.0 percent of young women), and knowledge of a place to get tested (15.2 percent of young women) are generally worse in this age group than the population age 15-49 years as a whole. Accepting attitudes towards people living with HIV with respect to the same four indicators that were previously discussed are fairly similar in this age group (8.7 percent of young women compared to 7.9 percent in the general population of women 15-49 years). Overall, 2.7 percent of young women in this age group, who are sexually active, have been tested for HIV in the last 12 months and know the result. Higher levels on this indicator are found among young women who are from the top two wealth quintile households (3.4 and 3.9 percent respectively); secondary and higher levels of education (4.1 percent and 4.9 percent respectively); women ever married (3.6 percent); and in West Darfur (10.9 percent), River Nile (6.7 percent), Sinnar (5.4 percent), Northern (5.0 percent), and South Kordofan (4.0 percent)

Table HA.7: Key HIV and AIDS indicators among young women

Percentage of women age 15-24 years by key HIV and AIDS indicators, Sudan MICS, 2014

Background characteristics	Percentage of women age 15-24 years who:					Number of women age 15-24 years	Percentage who express accepting attitudes towards people living with HIV on all four indicators [a]	Number of women age 15-24 years who have heard of AIDS
	Have comprehensive knowledge [1]	Know all three means of HIV transmission from mother to child	Know a place to get tested for HIV	Have been tested for HIV in the last 12 months and know the result	Have been tested in the last 12 months and know the result			
<b>Sudan</b>	8.5	28.0	15.2	2.7	1.2	6,871	8.7	5,095
<b>State</b>								
Northern	14.7	32.1	18.3	5.0	3.5	146	10.1	129
River Nile	16.7	44.8	17.7	6.7	2.9	253	14.3	219
Red Sea	5.3	20.2	25.3	2.1	1.5	150	21.6	113
Kassala	6.9	17.8	3.8	1.1	0.6	272	10.6	157
Gadarif	5.7	31.0	12.3	1.9	0.8	327	6.2	243
Khartoum	15.6	31.2	27.7	3.0	0.4	1,053	7.5	986
Gezira	9.4	21.0	7.0	0.9	0.4	1,231	7.0	837
White Nile	3.6	33.4	10.8	1.6	1.3	312	10.3	247
Sinnar	9.6	21.9	24.4	5.4	2.4	257	11.2	180
Blue Nile	9.0	24.2	25.4	1.9	0.6	297	7.3	201
North Kordofan	2.2	36.8	14.5	3.2	2.1	471	6.1	314
South Kordofan	9.9	35.8	22.6	4.0	1.9	197	7.3	143
West Kordofan	4.4	25.7	6.7	0.6	0.0	341	5.3	219
North Darfur	3.5	26.2	8.7	2.4	1.2	479	8.7	314
West Darfur	15.9	30.0	26.9	10.9	6.3	214	3.6	179
South Darfur	5.5	27.3	11.6	2.4	0.5	567	14.0	416
Central Darfur	2.5	26.3	16.4	2.7	2.6	104	2.0	53
East Darfur	1.4	29.4	10.0	2.3	0.5	201	11.2	145
<b>Area</b>								
Urban	12.3	35.3	26.1	4.6	2.0	2,262	10.3	2,041
Rural	6.6	24.4	9.9	1.7	0.8	4,609	7.7	3,054
<b>Age</b>								
15-19	7.7	27.5	13.0	1.5	0.6	3,709	8.9	2,674
15-17	6.7	26.9	12.1	1.4	0.6	2,152	9.3	1,524
18-19	9.1	28.3	14.3	1.5	0.6	1,558	8.5	1,150
20-24	9.5	28.6	17.8	4.1	1.8	3,162	8.5	2,421
20-22	8.2	29.3	16.5	3.4	1.5	2,175	8.5	1,641
23-24	12.3	26.9	20.8	5.7	2.5	987	8.4	780
<b>Marital status</b>								
Ever married	7.1	25.0	12.7	3.6	1.6	2,636	7.4	1,829
Never married	9.4	29.8	16.8	2.1	0.9	4,236	9.5	3,266
<b>Education</b>								
None	1.6	13.0	4.0	0.9	0.3	1,321	5.8	559
Primary	4.7	26.5	11.0	1.8	0.8	2,662	5.6	1,799

Background characteristics	Percentage of women age 15-24 years who:					Number of women age 15-24 years	Percentage who express accepting attitudes towards people living with HIV on all four indicators [a]	Number of women age 15-24 years who have heard of AIDS
	Have comprehensive knowledge [1]	Know all three means of HIV transmission from mother to child	Know a place to get tested for HIV	Have been tested for HIV in the last 12 months and know the result	Have been tested in the last 12 months and know the result			
Secondary	11.9	36.9	20.0	4.1	1.6	2,180	11.4	2,044
Higher	25.3	34.2	37.4	4.9	2.6	708	10.9	693
<b>Wealth index quintile</b>								
Poorest	2.2	19.6	5.5	0.9	0.3	1,165	7.6	625
Second	3.3	23.8	8.8	1.8	1.0	1,338	6.0	839
Middle	4.9	29.2	13.3	2.9	1.7	1,385	8.7	972
Fourth	10.9	31.1	21.5	3.4	1.4	1,483	9.4	1,224
Richest	19.1	34.0	24.0	3.9	1.4	1,500	10.1	1,434

[1] MICS indicator 9.1; MDG indicator 6.3 - Knowledge about HIV prevention among young women

[a] Refer to Table HA.3 for the four indicators

Table HA.9 presents information on the orphanhood status of children age 10-14 years, and their school attendance. Less than one (0.3 percent) of children age 10-14 years in Sudan are orphans. Of these, 66.1 percent are attending school, as compared with a 80.2 percent attendance amongst non-orphan children of the same age group who are living with at least one parent. This results in an orphans to non-orphans school attendance ratio of 0.82 which suggests that orphans are not disadvantaged in relation to non-orphans. The ratio is 0.71 for girls and 1.0 for boys. The ratio is 0.92 for children in urban areas compared to 0.78 for children in rural areas.

Table HA.9: School attendance of orphans and non-orphans								
School attendance of children age 10-14 years by orphanhood, Sudan MICS, 2014								
Background characteristics	Percentage of children whose mother and father have died (orphans)	Percentage of children whose parents are still alive and who are living with at least one parent (non-orphans)	Number of children age 10-14 years	Percentage of children whose mother and father have died (orphans) and are attending school	Sudan number of orphan children age 10-14 years	Percentage of children whose parents are still alive, who are living with at least one parent (non-orphans), and who are attending school	Sudan number of non-orphan children age 10-14 years	Orphans to non-orphans school attendance ratio [1]
<b>Sudan</b>	0.3	88.9	13,447	66.1	46	80.2	11,949	.82
<b>Sex</b>								
Male	0.3	89.6	6,540	82.9	18	82.5	5,862	1.00
Female	0.4	88.1	6,905	55.7	28	78.0	6,086	.71
Missing	*	*	1			*	1	
<b>Area</b>								
Urban	0.3	87.4	3,947	86.4	13	93.5	3,450	.92
Rural	0.3	89.5	9,499	58.1	33	74.8	8,499	.78

[1] MICS indicator 9.16; MDG indicator 6.4 - Ratio of school attendance of orphans to school attendance of non-orphans

See Table CP.14 for further overall results related to children's living arrangements and orphanhood [\*] Based on less than 25 unweighted cases and has been suppressed

### **XIII: Household Food Security**

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Sudan continues to struggle with the macro-economic after-effects of the 2011 separation of South Sudan. Sudan's Gross Domestic Product (GDP) contracted significantly as a result of the loss of 75 percent of oil output and 60 percent of fiscal revenue<sup>51</sup>, but returned to growth in 2013 and 2014, with a real growth rate of 2.1 and 3.6 percent, respectively. Concerns remain around declining oil production, spill-over effects of state crises, inflation, subsidiary reform and high external debt.<sup>52</sup>

Inflation slowed in recent months, from an annualized rate of approximately 40 percent in the first three quarters of 2014, to between 20 to 25 percent in the first few months of 2015. The expectation of a good agricultural season helped bring the rate of inflation down, helped by the stabilization of macro-economic conditions. The Sudanese Pound was devalued considerably during 2014 and 2015, but the informal market's exchange rate of 9 SDG continues to be far above the official exchange rate 6 SDG (to 1 USD).

Household food security in Sudan is strongly linked with the performance of the agricultural sector of the economy. Directly, the agricultural sector provides household-level food production for domestic consumption and wage labour opportunities on farms. According to Sudan Central Bureau of Statistics, the agricultural sector account for 27 percent of the active labour force. Indirectly, the level of agricultural production influences the price of food, which helps determine household economic access, as most households are net consumer of food, relying on markets as their main food source.

In the 2014/2015 agricultural season, the quantity and distribution of rainfall was generally good, resulting in a high level of national production of sorghum and other cash and food crops such as millet, groundnut and sesame. According to the 2014/2015 Annual Crop and Food Supply Assessment Mission (A-CFSAM) of the Food Security Technical Secretariat (FSTS), the national cereal production in 2014/15 was estimated at a record level of 7.84 million tons. A total of 6.3 million tons of sorghum, 1.1 million tons of millet and 0.5 million tons of wheat was expected to be harvested. Production was about 176 percent above the previous season's poor harvest and 86 percent above the 5-years average (2008/09 to 2012/13)

Cash crop production in the 2014 summer season improved as a results of high food prices at the beginning of 2014, stimulating supply creation. Sesame recovered from last year's low production levels, mainly due to a significant increase in the extent of area planted. The production was estimated to increase by 231 percent compared to the previous year. Groundnut production followed a similar pattern: As a result of the sharp increased groundnut prices during early 2014, the area planted with groundnut had doubled compared to the previous year and the 5 years average.

#### **Measuring food security**

The 2014 MICS 2014 survey included a module on two important proxy measures of household food security: the household food consumption score (FCS) and the coping strategies that households use when they don't have enough food or money to buy food.

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<sup>51</sup> Ibid.

<sup>52</sup> IMF 2014, April. *World Economic Outlook 2014*.



### Household food consumption score (FCS)

The Household Food Consumption Score (FCS) is a food consumption indicator that is used as a proxy for household food security. Food consumption indicators are designed to reflect the quantity and quality of people's diet. The FCS is a measure of dietary diversity, food frequency and the relative nutritional importance of the food consumed. A high food consumption score increases the possibility that a household achieves nutrient adequacy. Data are collected at household level on the number of days in the past week the household members have consumed any of 8 food or food groups. The score is calculated by multiplying the number of days by the weight assigned to the food/food group, based upon its relative nutritional importance.

The food consumption score is used to classify households into three groups: poor, borderline or acceptable food consumption. **The food consumption groups put together households (HH) that have similar dietary patterns and access to food.**

The food consumption groups can be described as follows:

- **Poor food consumption:** Households that are consuming only cereals and vegetables every day and never or very seldom are consuming protein rich food such as meat and dairy.
- **Borderline food consumption:** Households that are consuming cereals and vegetables every day, accompanied by oil and pulses a few times a week.
- **Acceptable food consumption:** Households that are consuming cereals and vegetables every day, frequently accompanied by oil and pulses and occasionally meat and dairy.

The table below outlines the weights and their justification for each food/food group used to calculate the food consumption score.

#### Weights and justification for food consumption score

Food group	Weight	Justification
Main staples	2	Energy dense, protein content lower and poorer quality than legumes, micronutrients, including sorghum, millet, wheat, bread and maize.
Pulses	3	Energy dense, high amounts of protein but of lower quality than meats, micronutrients, low fat, including groundnuts, pulses, beans and lentils.
Vegetables	1	Low energy, low protein, no fat, micronutrients. Dried vegetables constitute an important part of the diet in Sudan, especially okra, tomatoes and <i>kawal</i> (fermented leaves), but fresh vegetables are also consumed (tomatoes, cucumber, onions, chili, okra, salad leaves).
Fruit	1	Low energy, low protein, no fat, micronutrients.
Meat and fish	4	Highest quality protein, easily absorbable micronutrients, energy dense, fat. Even when consumed in small quantities, improvements to the quality of diet are large. Commonly eaten meats in Sudan include beef, chicken, fish, bush meat and dried meat ( <i>sharmout</i> ). Eggs are also included in this category.
Milk	4	Highest quality protein, micronutrients, vitamin A, energy. Dairy products eaten in Sudan includes milk powder, fresh milk, yoghurt and cheese.
Sugar	0.5	Empty calories. Usually consumed in small quantities.
Oil	0.5	Energy dense but usually no other micronutrients.

This section will include the percentage of households in each consumption category, by state, plus the median number of days per week each food is consumed, by state.

### Coping strategies

The module on coping strategies was added to measure behavior of households when they have difficulties covering their food needs. Households were first asked if they had experienced difficulties accessing enough food or money to buy food in the previous week. Then they were asked which coping strategies they used to manage the shortage and the number of days in the past week each coping strategy was used. Below are the six strategies included in the survey:

1. How often does your household rely on less preferred and less expensive foods?
2. How often does your household eat borrowed food or borrow money to purchase food?
3. How often does your household rely on help from friends or relatives?
4. How often does your household limit portion size at mealtimes?
5. How often does your household restrict consumption for adults in order for small children to eat?
6. How often does your household reduce number of meals eaten in a day?

In the analysis and reporting for MICS 2014, the findings are presented according to the percentage of households that reported using each of the strategies by state.

## 13.1 Household Food Consumption

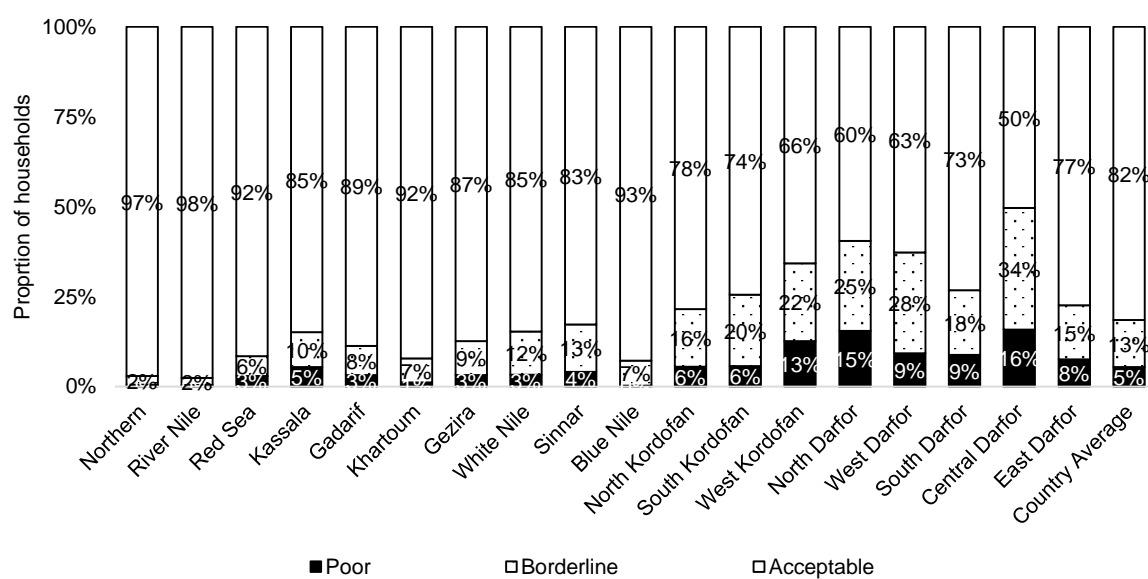
Table HFS.1 shows the result of the analysis of the household food consumption data from MICS5. Overall, over eighty percent (81.5 percent) of households have acceptable food consumption levels. In Sudan, 18.5% of households are in food consumption insecurity. The table shows that households in Central Darfur are the least to have acceptable consumption (50.4 percent), followed by North Darfur (59.4 percent), West Darfur (62.7 percent) in terms of dietary diversity and food frequency. Very good levels of acceptable food consumption are found in River Nile (97.6 percent), Northern (97.1 percent) and Red sea (91.5 percent).

Poor levels of food consumption are especially found in Central Darfur (15.8 percent), North Darfur (12.6 percent), and West Kordofan (12.6 percent) states.

Table HFS.1: Household Food Consumption Score				
Percentage of households with poor, borderline and acceptable food consumption, Sudan MICS, 2014				
Background characteristics	Household food consumption score			
	Poor	Borderline	Acceptable	Total
<b>Sudan</b>	5.4%	13.1%	81.5%	100%
<b>State</b>				
Northern	0.5%	2.4%	97.1%	100%
River Nile	0.4%	1.9%	97.6%	100%
Red Sea	2.9%	5.5%	91.5%	100%
Kassala	5.4%	9.7%	84.9%	100%
Gadarif	3.1%	8.2%	88.7%	100%
Khartoum	1.1%	6.6%	92.2%	100%
Gezira	3.2%	9.4%	87.4%	100%
White Nile	3.3%	12.0%	84.7%	100%
Sinnar	4.0%	13.3%	82.7%	100%
Blue Nile	0.3%	6.9%	92.8%	100%
North Kordofan	5.5%	16.0%	78.5%	100%

Background characteristics	Household food consumption score			
	Poor	Borderline	Acceptable	Total
South Kordofan	5.7%	19.9%	74.5%	100%
West Kordofan	12.6%	21.6%	65.8%	100%
North Darfur	15.4%	25.0%	59.6%	100%
West Darfur	9.2%	28.1%	62.7%	100%
South Darfur	8.8%	18.1%	73.2%	100%
Central Darfur	15.8%	33.8%	50.4%	100%
East Darfur	7.5%	15.0%	77.5%	100%
<b>Area</b>				
Urban	2.4%	8.5%	89.1%	100%
Rural	6.7%	15.0%	78.3%	100%
<b>Education of household head</b>				
None	7.9%	16.6%	75.5%	100%
Primary	4.5%	12.0%	83.5%	100%
Secondary	2.2%	8.7%	89.1%	100%
Higher	0.4%	4.0%	95.7%	100%
Missing/DK	6.3%	18.2%	75.5%	100%
<b>Wealth index quintile</b>				
Poorest	11.9%	21.3%	66.8%	100%
Second	8.6%	19.2%	72.3%	100%
Middle	3.7%	13.3%	83.0%	100%
Fourth	2.1%	8.3%	89.6%	100%
Richest	0.2%	2.4%	97.4%	100%

**Figure HFS.1: Household food consumption score, by states, Sudan MICS, 2014**

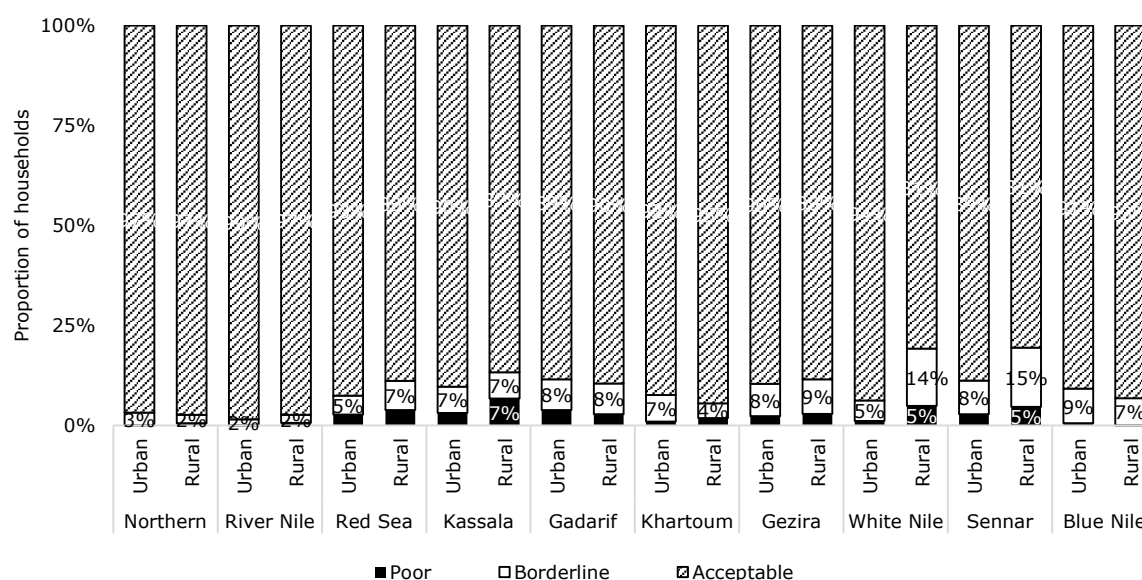


## Household food consumption – urban and rural differences

The data were also analysed to compare the food consumption of households in urban areas to those in rural areas. There was a lot of variation between states but in general, the states with better food consumption tend to have less of a difference between rural and urban households. The findings are presented in the following two graphs.

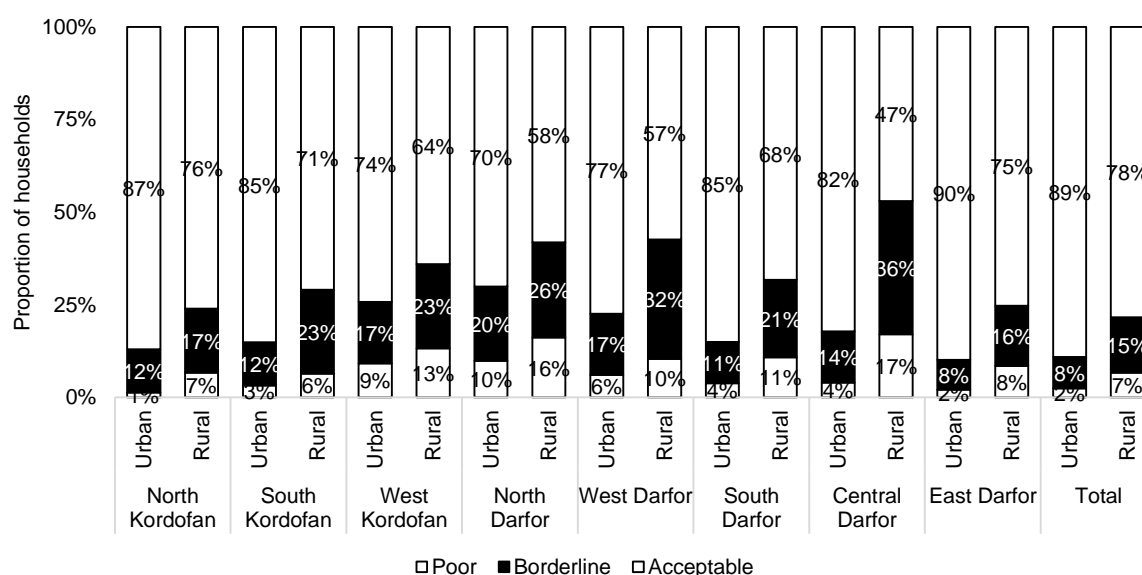
Figure HFS. 2a shows that for households in Northern, River Nile, Garadif, and Gezira there was little or no difference in consumption between urban and rural households. Urban households in Red Sea and Kassala states have slightly better consumption than those in rural areas while those in Khartoum and Kassala have slightly worse consumption compared to rural households. However, in both White Nile and Sennar states, the consumption of urban households is quite a bit better than rural households.

**Figure HFS.2a: Household food consumption, by urban and rural (part one), Sudan MICS, 2014**



The urban/rural comparisons for households in Central and Western Sudan are quite different as shown in the below graph. For the Kordofan and Darfur regions, rural households are less likely to have acceptable consumption than households in urban areas. The difference is greatest in Central Darfur where only 48 percent of the rural households have acceptable consumption, compared to 75 percent of urban households. In South Kordofan, 69 percent of rural households have acceptable consumption compared to 83 percent of those in urban areas.

**Figure HFS.2b: Household food consumption, by urban and rural (part two), Sudan MICS, 2014**



As is evident from table HFS.1, households' food consumption is positively correlated both with the level of education of the household head and with household wealth. Twenty-four percent of households whose head has no education has either poor or borderline food consumption, compared to only 11 percent for those whose head had completed secondary education. The corresponding percentages for households in the bottom wealth quintile is 33 percent, compared to 3 percent in the top wealth quintile.

### Comparison of household consumption habits

The 7-day recall data were used to determine the 'typical' weekly household consumption for each state and the following graphs are used to show the differences and similarities across the country.

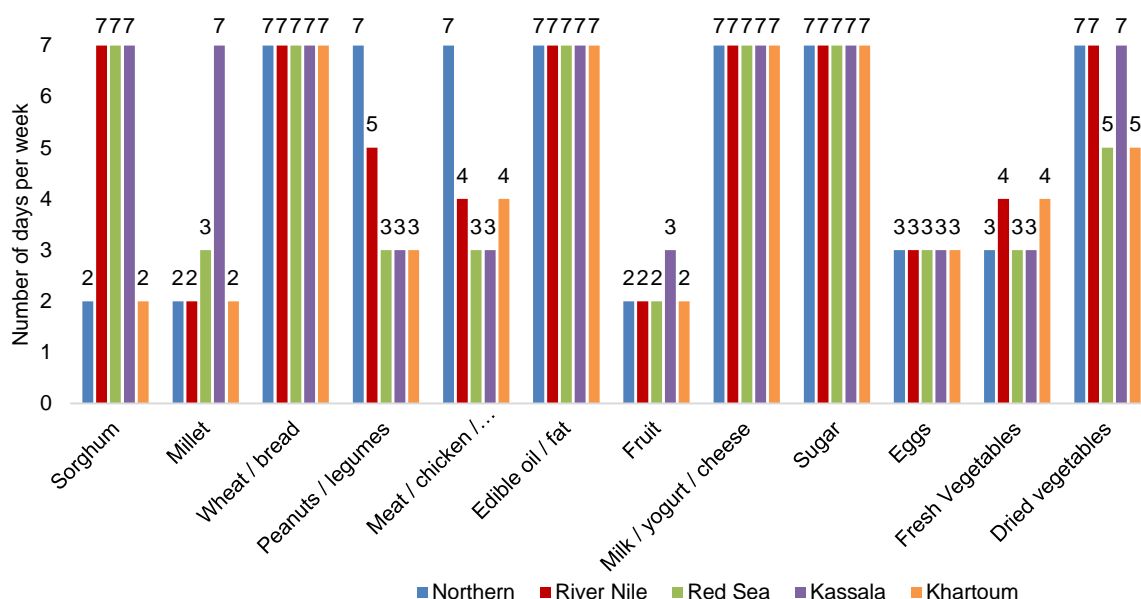
Households in Northern state typically consume wheat/bread, legumes, meat, oil/fat, dairy, sugar and dried vegetables on a daily basis with consumption of eggs, fresh vegetables, fruit, sorghum and millet occasionally.

Households in River Nile state consume sorghum, wheat/bread, oil/fat, dairy, sugar and dried vegetables on a daily basis with regular consumption of legumes, meat and fresh vegetables and occasional consumption of millet, fruits and eggs.

In Red Sea state, household consumption is characterized by daily consumption of sorghum, wheat/bread, oil/fat, dairy, and sugar with regular consumption of dried vegetables and occasional consumption of millet, legumes, meat, fruit, eggs and fresh vegetables.

Consumption in Khartoum state is characterized by daily consumption of wheat/bread, oil, dairy and sugar with regular consumption of meat, fresh vegetables and dried vegetables and occasional consumption of sorghum, millet, legumes, fruits and eggs.

**Figure HFS.3a: Number of days foods are consumed (part one), Sudan MICS, 2014**



Consumption for households in Gadarif state is characterized by daily consumption of sorghum, oil/fat, dairy, sugar and dried vegetables with regular consumption of wheat/bread and meat and occasional consumption of millet, legumes, fruits, eggs and fresh vegetables.

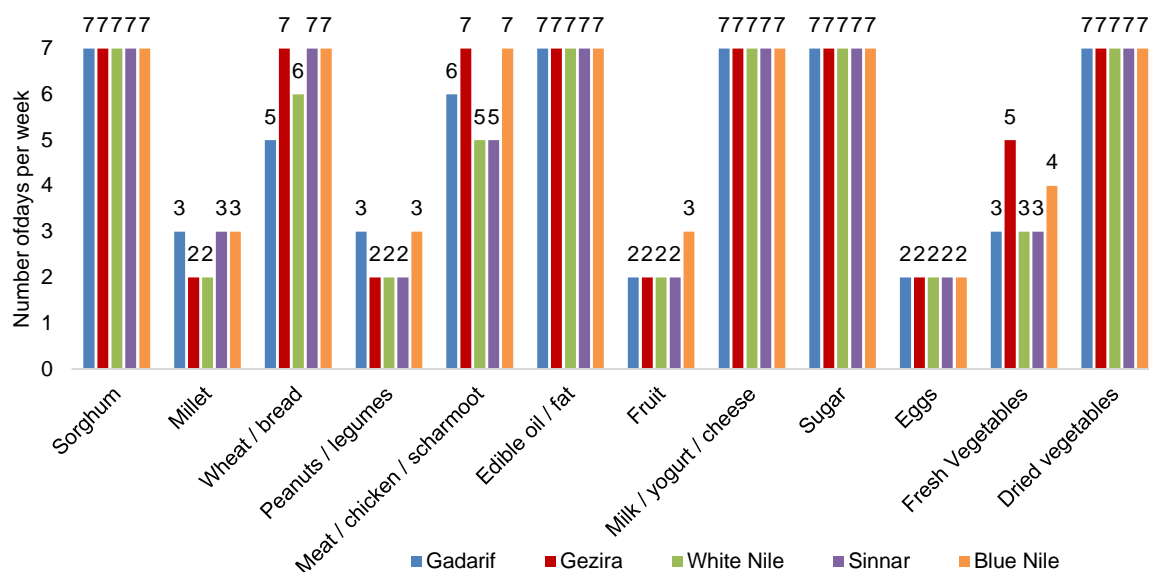
In Gezira state, households consume sorghum, wheat/bread, oil/fat, dairy, sugar and dried vegetables on a daily basis with regular consumption of fresh vegetables and only occasional consumption of millet, legumes, fruits and eggs.

Households in White Nile consume sorghum, oil/fat, dairy, sugar and dried vegetables on a daily basis accompanied with wheat/bread and meat on a regular basis and occasional consumption of millet, legumes, fruits, eggs and fresh vegetables.

In Sinnar state, household food consumption is characterized by daily consumption of sorghum, wheat/bread, oil/fat, dairy, sugar and dried vegetables, as well as regular consumption of meat and occasional consumption of millet, legumes, fruit, eggs and fresh vegetables.

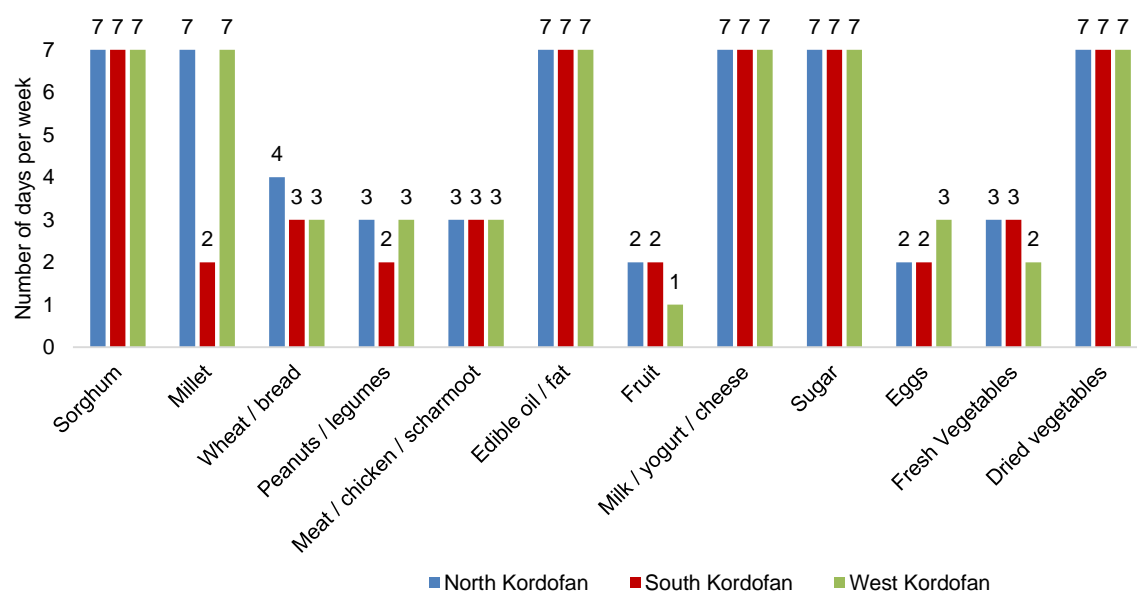
Blue Nile households have daily consumption of sorghum, wheat/bread, meat, oil/fat, dairy, sugar and dried vegetables and regular consumption of fresh vegetables and occasionally consume millet, legumes, fruits and eggs.

**Figure HFS.3b: Number of days foods are consumed (part two), Sudan MICS, 2014**



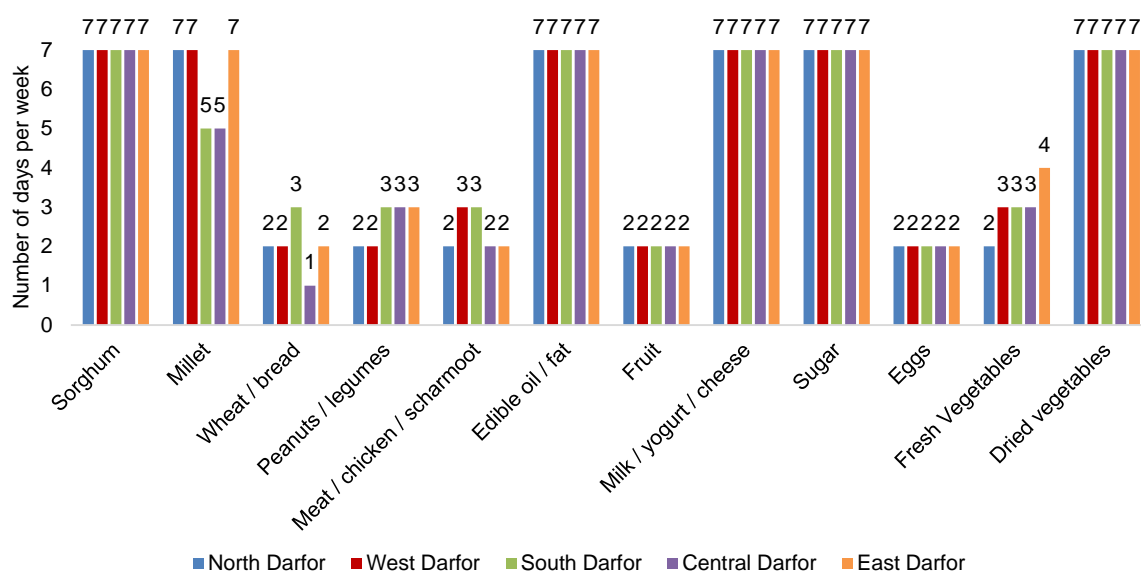
Household food consumption across the Kordofan states is similar and is characterized by daily consumption of sorghum, millet (except South Kordofan), oil/fat, dairy, sugar and dried vegetables, and occasional consumption of wheat, legumes, meat, fruits, eggs and fresh vegetables.

**Figure HFS.3c: Number of days foods are consumed (part three), Sudan MICS, 2014**



Consumption for households in the Darfur region is characterized by daily consumption of sorghum and millet (except South and Central Darfur), oils/fats, dairy, sugar and dried vegetables, with occasional consumption of wheat/bread, legumes, meat, fruits, eggs and fresh vegetables.

**Figure HFS.3d: Number of days foods are consumed (part four), Sudan MICS, 2014**



### 13.2 Food Coping Strategies

The following section presents by state the percentage of households using different coping strategies when they don't have enough food or money to buy food for their families.

Households in Northern state rarely need to use food coping strategies but when they do, they will borrow food or money to buy food or rely on less preferred or less expensive foods.

When faced with food shortages, households in River Nile state will rely on less preferred or less expensive foods or borrowing money or food. This is the same for households in Red Sea and Kassala states.

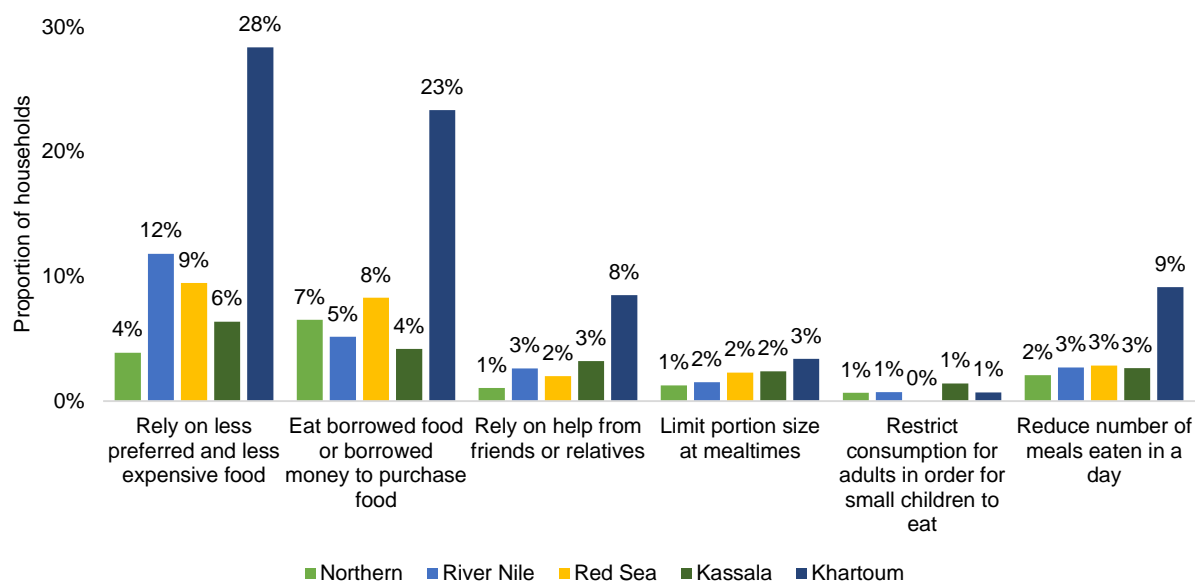
Households in Khartoum state were much more likely to report difficulties in accessing enough food or money to buy food compared to the other states. To cope, they mostly rely on less preferred or less expensive foods or on borrowing money or food. They also will rely on friends and relatives or reduce the number of meals.



**Table HFS.2: Food Coping Strategies**

Background characteristics	Rely on less preferred and less expensive food	Eat borrowed food or borrowed money to purchase food	Rely on help from friends or relatives	Limit portion size at mealtimes	Restrict consumption for adults in order for small children to eat	Reduce number of meals eaten in a day
<b>Sudan</b>	15.1%	16.1%	6.4%	3.4%	1.3%	4.8%
<b>State</b>						
Northern	3.9%	6.5%	1.1%	1.3%	0.7%	2.1%
River Nile	11.8%	5.2%	2.6%	1.5%	0.7%	2.7%
Red Sea	9.5%	8.3%	2.0%	2.3%	0.0%	2.8%
Kassala	6.4%	4.2%	3.2%	2.4%	1.4%	2.6%
Gadarif	28.4%	23.3%	8.5%	3.4%	0.7%	9.1%
Khartoum	7.2%	8.6%	3.1%	1.0%	0.4%	2.3%
Gezira	14.0%	19.6%	8.0%	4.3%	1.2%	5.1%
White Nile	19.3%	21.6%	4.5%	3.9%	1.3%	3.4%
Sinnar	23.2%	19.9%	4.3%	2.7%	0.6%	2.4%
Blue Nile	20.1%	19.2%	4.8%	3.9%	0.5%	4.9%
North Kordofan	11.8%	22.7%	5.1%	4.4%	1.6%	4.6%
South Kordofan	12.8%	14.2%	4.6%	1.9%	1.7%	4.6%
West Kordofan	6.3%	12.4%	7.5%	2.9%	2.6%	5.2%
North Darfur	12.8%	11.7%	9.3%	2.1%	1.8%	3.6%
West Darfur	6.4%	7.8%	6.0%	3.5%	1.8%	3.6%
South Darfur	16.7%	13.4%	6.8%	5.3%	1.4%	5.0%
Central Darfur	22.0%	17.8%	11.7%	7.8%	3.4%	7.4%
East Darfur	16.3%	26.2%	10.9%	4.4%	1.8%	5.4%
<b>Area</b>						
Urban	20.2%	17.8%	6.2%	3.6%	1.0%	6.2%
Rural	13.0%	15.4%	6.4%	3.3%	1.4%	4.2%
<b>Education of household head</b>						
None	15.5%	15.9%	7.4%	4.0%	1.3%	4.8%
Primary	15.2%	16.3%	5.9%	3.4%	1.5%	5.6%
Secondary	15.6%	17.1%	5.1%	2.4%	1.0%	4.4%
Higher	11.2%	12.6%	4.3%	1.6%	0.5%	2.7%
Missing/DK	11.3%	18.6%	5.8%	1.3%	1.3%	3.1%
<b>Wealth index quintile</b>						
Poorest	12.6%	14.7%	7.6%	3.4%	1.6%	4.1%
Second	13.9%	16.5%	6.4%	3.7%	1.5%	5.1%
Middle	17.2%	18.0%	6.5%	3.7%	1.2%	4.8%
Fourth	16.9%	17.8%	6.6%	3.8%	1.4%	5.3%
Richest	15.3%	13.5%	4.6%	2.3%	0.5%	4.7%

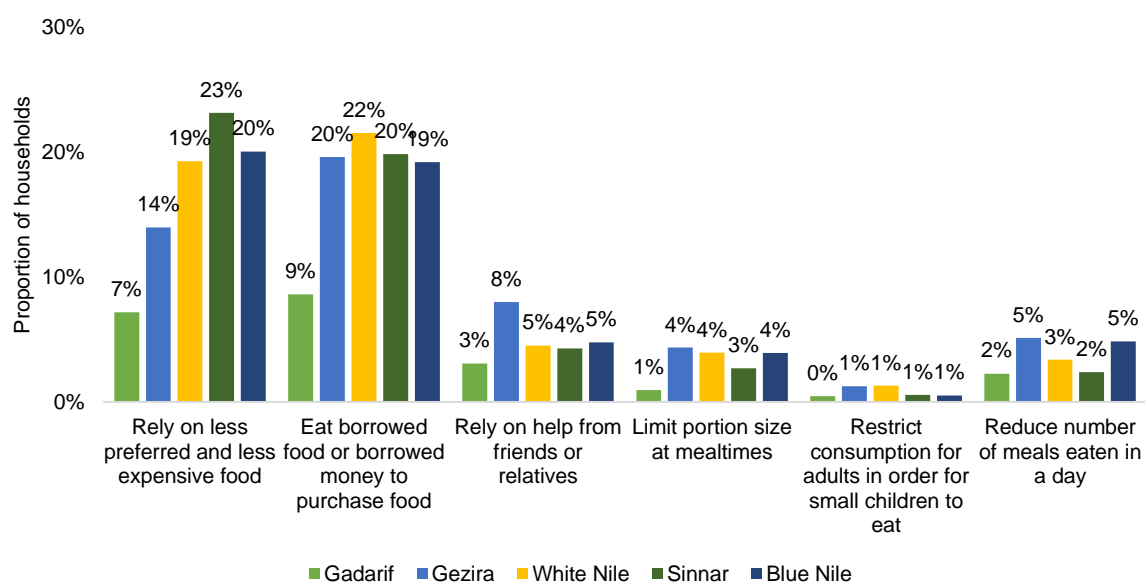
**Figure HFS.4a: Food coping strategies (Part one), Sudan MICS, 2014**



Households in Gadarif were also not likely to face difficulties in accessing enough food for their families but if necessary will borrow money or food or rely on less preferred or expensive foods.

The situation was similar for households in Gezira, White Nile, Sinnar and Blue Nile states where 20-25 percent reported facing difficulties in accessing enough food for their needs and then relying on borrowing or consuming less preferred or less expensive foods.

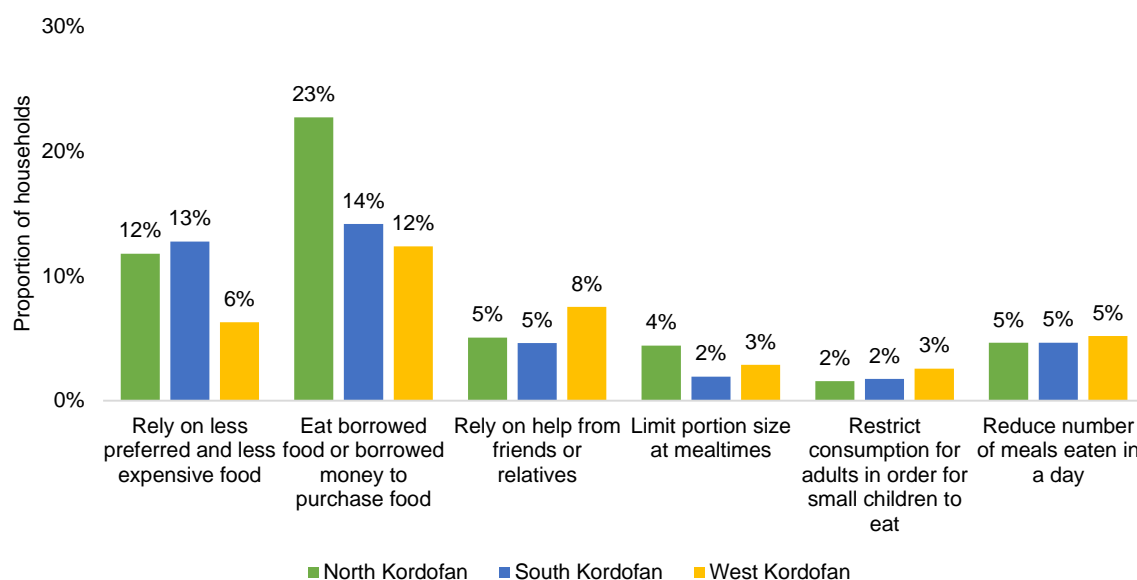
**Figure HFS.4b: Food coping strategies (Part two), Sudan MICS, 2014**



Households in the Kordofan region have similar levels of difficulties accessing enough food or money to buy food with those in North Kordofan most likely to face these difficulties. The primary responses

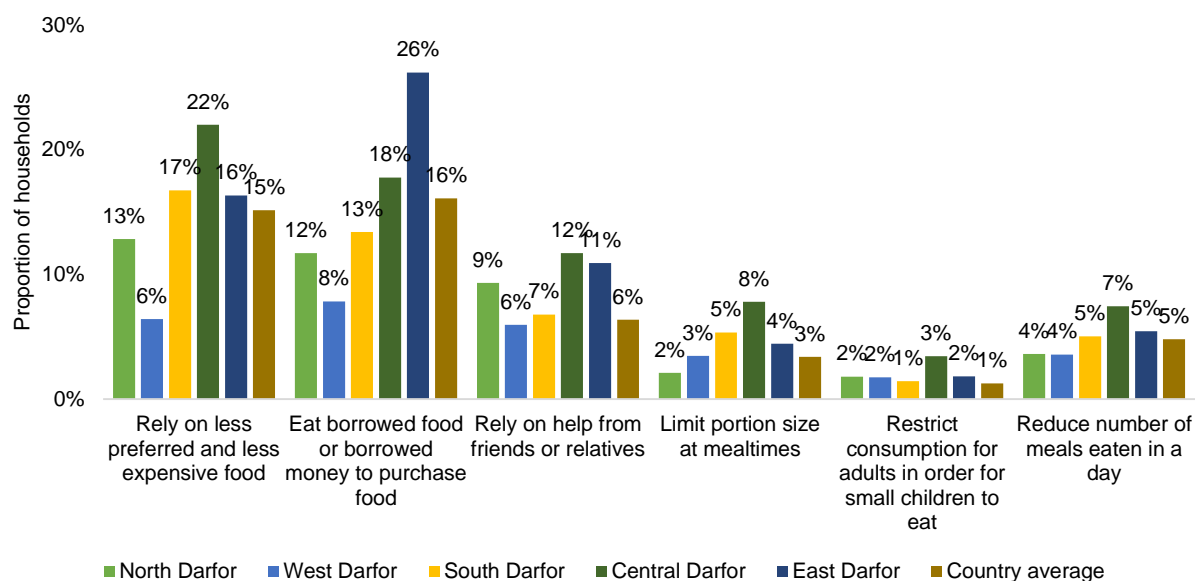
are similar with borrowing or changing consumption to less preferred or less expensive foods with those in West Kordofan slightly more likely to rely on help from friends or relatives.

**Figure HFS.4c: Food coping strategies (Part three), Sudan MICS, 2014**



Households in the Darfur region face similar challenges in accessing enough food or money to buy food with those in East and Central Darfur the most likely to borrow money or food or to rely on less preferred or expensive foods. The Darfur households are more likely to rely on help from friends or relatives than households in the other states and slightly more likely in South and Central Darfur to limit portion size at mealtimes.

**Figure HFS.4d: Food coping strategies (Part four), Sudan MICS, 2014**



Several of the food coping strategies do not correlate significantly with the level of education of the head of household, nor with the household wealth status, arguably illustrating the relative nature of the perception of coping with food access problems. Households whose head is better educated was found to be less likely to rely on help from friends and relatives, and to limit portion size at mealtimes.

## Appendix A: Sample Design

The major features of the sample design are described in this appendix. Sample design features include target sample size, sample allocation, sampling frame and listing, choice of domains, sampling stages, stratification, and the calculation of sample weights.

The primary objective of the sample design for the Sudan MICS 2014 was to produce statistically reliable estimates for a large number of indicators, at the national level, for urban and rural areas, and for the eighteen states of the country: Northern, River Nile, Red Sea, Kassala, Gadaraf, Khartoum, Gezira, Sinnar, Blue Nile, White Nile, North Kordofan, South Kordofan, North Darfur, West Darfur, South Darfur, and the recent established West Kordofan, Eastern Darfur and Central Darfu. In order to produce State-level estimates of moderate precision, a minimum of 30 enumeration areas (EAs) were selected in each State, resulting in a sample that was not self-weighting. Urban and rural areas in each of the eighteen states were defined as the sampling strata and a multistage, stratified cluster sampling approach was used for the selection of the survey sample. In the first stage, within each stratum, a specified number of EAs were selected systematically with probability proportional to size. In the second stage, after a household listing was carried out within the selected enumeration areas, a systematic sample of 25 households was drawn in each selected EA.

### Sample Size and Sample Allocation

The sample size for the Sudan MICS 2014 was calculated as 18,000 households. For the calculation of the sample size, the key indicator used was the breast feeding. The following formula was used to estimate the required sample size for this indicator:

$$n = \frac{z^2 * r * (1-r) * deff}{(RME * r)^2 * p_b * AveSize * RR}$$

where:

- n = the required sample size, (number of HHs)
- z = the value in the normal distribution that gives level of confidence 95% (z = 2)
- r=predicted value of indicator (in target/base population), (r=0.41)
- deff = the design effect, ( deff = 1.7)
- RME=relative margin of error at 95% confidence (RME=0.11).
- p<sub>b</sub> = proportion of target/base population in total population, (p<sub>b</sub> = 0.16).
- AveSize=Average household size (AveSize=6).
- RR = response rate (RR =0.9)

By substitution:

$$n = \frac{2^2 * (0.41) * (1-0.41) * 1.7}{(0.11 * 0.41)^2 * (0.16) * 6 * 0.9}$$

n = 936 = 1000 HHs from each state.  
Total sample for all Sudan = 1000\*18=18000 HHs.

For the calculation,  $r$  (underweight prevalence) was assumed to be 25 percent. The value of  $deff$  (design effect) was taken as 1.5 based on estimates from previous surveys,  $pb$  (percentage of children age 0-4 years in the total population) was taken as 13 percent,  $AveSize$  (average household size) was taken as 6.2 households, and the response rate was assumed to be 90 percent, based on experience from previous surveys.

The resulting number of households from this exercise was 1,000 households which is the sample size needed in each state – thus yielding 18,000 in total.

The number of households selected per cluster for the Sudan MICS 2014 was determined as 25 households, based on a number of considerations, including the design effect, the budget available, and the time that would be needed per team to complete one cluster. Dividing the total number of households by the number of sample households per cluster, it was calculated that 86 sample clusters would need to be selected in each state.

Equal allocation of the total sample size to the eighteen states was used. Therefore, 40 clusters were allocated to each state, with the final sample size calculated as 18,000 households (40 clusters \* 18 states \* 25 sample households per cluster). In each state, the clusters (primary sampling units) were distributed to the urban and rural domains proportionally to the size of urban and rural populations in that state. The table below shows the allocation of clusters to the sampling strata.

**Table SD.1: Allocation of Sample households and Clusters (Primary Sampling Units) to Sampling Strata**

		Number Households			Number of Clusters		
		Total	Urban	Rural	Total	Urban	Rural
	<b>Sudan</b>	<b>18,000</b>	<b>5,125</b>	<b>12,875</b>	<b>720</b>	<b>205</b>	<b>515</b>
<b>No.</b>	<b>State</b>						
1	Northern	1,000	200	800	40	8	32
2	River Nile	1,000	300	700	40	12	28
3	Red Sea	1,000	500	500	40	20	20
4	Kassala	1,000	325	675	40	13	27
5	Gadarif	1,000	250	750	40	10	30
6	Khartoum	1,000	800	200	40	32	8
7	Gezira	1,000	175	825	40	7	33
8	White Nile	1,000	300	700	40	12	28
9	Sinnar	1,000	225	775	40	9	31
10	Blue Nile	1,000	225	775	40	9	31
11	North Kordofan	1,000	200	800	40	8	32
12	South Kordofan	1,000	250	750	40	10	30
13	West Kordofan	1,000	250	750	40	10	30
14	North Darfur	1,000	175	825	40	7	33
15	West Darfur	1,000	100	900	40	4	36
16	South Darfur	1,000	375	625	40	15	25
17	Central Darfur	1,000	175	825	40	7	33
18	East Darfur	1,000	300	700	40	12	28

### Sampling Frame and Selection of Clusters

The 2008 census frame was used for the selection of clusters. Census enumeration areas were defined as primary sampling units (PSUs), and were selected from each of the sampling strata by using systematic pps (probability proportional to size) sampling procedures, based on the number of households in each enumeration area from the 2008 Population and Housing Census frame. The first stage of sampling was thus completed by selecting the required number of enumeration areas from each of the eighteen states, separately for the urban and rural strata.

### Listing Activities

Since the sampling frame (the 2008 census) was not up-to-date, a new listing of households was conducted in all the sample enumeration areas prior to the selection of households. For this purpose, listing teams were formed who visited all of the selected enumeration areas and listed all households in the enumeration areas. A separate manual was provided that described the listing organization, dates, teams, procedures of the listing exercise that was to be carried out. This manual was written in Arabic.

### Selection of Households

Lists of households were prepared by the listing teams in the field for each enumeration area. The households were then sequentially numbered from 1 to n (the total number of households in each enumeration area) at the Central Bureau of Statistics Office, where the selection of 25 households in each enumeration area was carried out using random systematic selection procedures.

### Calculation of Sample Weights

The Sudan MICS 2014 sample is not self-weighting. Essentially, by allocating equal numbers of households to each of the states, different sampling fractions were used in each state since the sizes of the states varied. For this reason, sample weights were calculated and these were used in the subsequent analyses of the survey data.

The major component of the weight is the reciprocal of the sampling fraction employed in selecting the number of sample households in that particular sampling stratum ( $h$ ) and PSU ( $i$ ):

$$W_{hi} = \frac{1}{f_{hi}}$$

The term  $f_{hi}$ , the overall probability for selecting the sample households in the  $i$ -th sample PSU in the  $h$ -th stratum, is the product of probabilities of selection at every stage in each sampling stratum:

$$f_{hi} = p_{1hi} \times p_{2hi} \times p_{3hi}$$

where  $p_{shi}$  is the probability of selection of the sampling unit at stage  $s$  for the  $i$ -th sample PSU in the  $h$ -th sampling stratum. Based on the sample design, these probabilities were calculated as follows:

$$p_{1hi} = \frac{n_h \times M_{hi}}{M_h},$$

$n_h$  = number of sample PSUs selected in stratum  $h$

$M_{hi}$  = number of households in the 2008 Census frame for the  $i$ -th sample PSU in stratum  $h$

$M_h$  = total number of households in the 2008 Census frame for stratum  $h$

$p_{2hi}$  = proportion of the PSU listed for the  $i$ -th sample PSU in stratum  $h$  (in the case of PSUs that were segmented); for non-segmented PSUs,  $p_{2hi} = 1$

$$p_{3hi} = \frac{25}{M'_{hi}}$$

$M'_{hi}$  = number of households listed in the  $i$ -th sample PSU in stratum  $h$

Since the number of households in each enumeration area (PSU) from the 2008 Census frame used for the first stage selection and the updated number of households in the enumeration area from the listing are generally different, individual overall probabilities of selection for households in each sample enumeration area (cluster) were calculated.

A final component in the calculation of sample weights takes into account the level of non-response for the household and individual interviews. The adjustment for household non-response in each stratum is equal to:

$$\frac{1}{RR_h}$$

where  $RR_h$  is the response rate for the sample households in stratum  $h$ , defined as the proportion of the number of interviewed households in stratum  $h$  out of the number of selected households found to be occupied during the fieldwork in stratum  $h$ .

Similarly, adjustment for non-response at the individual level (women, men, and under-5 children) for each stratum is equal to:

$$\frac{1}{RR_h}$$

where  $RR_h$  is the response rate for the individual questionnaires in stratum  $h$ , defined as the proportion of eligible individuals (women, men, and under-5 children) in the sample households in stratum  $h$  who were successfully interviewed.

After the completion of the fieldwork, response rates were calculated for each sampling stratum. These were used to adjust the sample weights calculated for each cluster. Response rates in the Sudan MICS 2014 are shown in Table HH.1 in this report.

The non-response adjustment factors for the individual women, men, and under-5 questionnaires were applied to the adjusted household weights. Numbers of eligible women, men, and under-5



children were obtained from the roster of household members in the Household Questionnaire for households where interviews were completed.

The design weights for the households were calculated by multiplying the inverse of the probabilities of selection by the non-response adjustment factor for each enumeration area. These weights were then standardized (or normalized), one purpose of which is to make the weighted sum of the interviewed sample units equal to the unweighted number of observations the national level. Normalization is achieved by dividing the full sample weights (adjusted for nonresponse) by the average of these weights across all households at the national level. This is performed by multiplying the sample weights by a constant factor equal to the unweighted number of households at the national level divided by the weighted total number of households (using the full sample weights adjusted for nonresponse). A similar standardization procedure was followed in obtaining standardized weights for the individual women, men, and under-5 questionnaires. Adjusted (normalized) weights varied between lowest weight and highest weight in the 720 sample enumeration areas (clusters).

Sample weights were appended to all data sets and analyses were performed by weighting households, women, men, or under-5s with these sample weights.

## Appendix B: List of Personnel Involved in the Survey

---

### A. Steering committee members:

Director General Central Bureau of Statistics	Chairperson
Survey Technical Coordinator	Reporter
Under Secretary, Federal Ministry of Health	Member
Under Secretary Ministry of Education	Member
Under Secretary Ministry of Welfare and S. Security	Member
Under Secretary, Ministry of Environment and Public	Member
UNICEF Representative	Member
UNFPA Representative	Member
WHO Representative	Member
WFP Representative	Member
Secretary General of National population Council	Member

### B. Technical Committee Members

Director General Central Bureau of Statistics - Chairman

Representatives from:

- Federal Ministry of Health
- Ministry of Welfare and Social Security
- Ministry Education
- National population Council
- National Council for Child Welfare
- Ministry of Environment and Urban Development
- Ministry of Human Resources Development and Labour
- Public Water Corporation
- UNFPA
- UNICEF
- WHO
- WFP

Survey Administrative Coordinator

Survey National Consultants (4)

Experts and Technical persons from CBS

### C. National Survey Team Members

Dr. Yassin El-haj Abdin	National survey coordinator
Kamal Ahmed Ismael	National survey technical coordinator
El-Tag Awad Aburas	Administrative Coordinator
Somia Khalid El-Khier	Field Work coordinator
Amin Ahmed Doud	Data processing coordinator
Intsar El-hadi	Administrative assistant
Maha Elhaj	Administrative assistant
Amani Abdelwhaab	Accountant
Amira Gaber)	Administrative assistant
Isam Idriss Elkhas	Assistant National Administrator

Hassan Morkaz  
Amin Ahmed Doud  
Magda Mohamed  
Habab Abdallah

Computer programmer  
Data processing coordinator  
Secretary  
Secretary

#### **D. MIC5 National Consultants**

Prof Siddig Mohamed A. Shahein  
Ibrahim Abbas  
Siddig Mohamed Osman  
Abdel Bari Hassan Nasr

Sample design expert  
Household Consultant  
Data Processing Expert  
MIC5 Consultant/UNICEF

#### **E. UNICEF Staff Supporting the Survey**

Robert Ndamobissi  
Walaa Kordofani  
Alaa Mahmoud  
Siddig Musa Abaker

Chief of Section Planning, Monitoring & Evaluation  
ex- Monitoring and Evaluation officer  
Monitoring and Evaluation Officer

#### **F. Report Writing Team**

Kamal M. Ismail: Chapters 1 & 2  
Robert Ndamobissi: Chapters 4 & 5  
Ibrahim Abbas Seif Elnasr: Chapter 3  
Abdel Bari H Nasr: Chapters 7 & 9  
Siddig M. Osman: Chapter 10  
Dr. Faisal: Chapters 6 & 9  
Anders Petersson: Chapter 13  
Alaa Mahmoud: Review/Editing  
Dina Ali: Review & Editing  
Paul A. Sengeh (UNICEF Consultant): Chapter 12 & Executive Summary

#### **G. Field Personnel**

State	State Manager	National supervisor	Field supervisor	Filed editors :	Interviewers :	Measurers
Northern	Houda Mohamed Goma	Magda Khalaf Allah Mohamed	Awad Mohame Awad Adel Ali Noraldein Ashraf Ahmed Almogamer	Nagla Abdelnoor Abdelraheem Somia Taha Abdallah Hanya Mahmoud Shamat	Hajer Osman Yasin Amjad Ahmed El-Haj Hanan Hashim Mohamed Rawya Musa Mohamed Mashaaer Abdelteif Mohamed Afraa Awad Ahmed Dawla Ibrahim El-Hassan Mymona Ali Ahmed Sara Mahjoub Abdelraheem	Noor Alhuda Goma El-Sadig Mohamed Goma Kawser Mohamed El-Khier

State	State Manager	National supervisor	Field supervisor	Filed editors :	Interviewers :	Measurers
River Nile	Mohamed Yousif	Fardos Mohamed Salih	Siefeldeem Osman Idrees Ashraf Tajelsir Bakry Nada Alnoor Ahmed	Rehab Ahmed Elkhalfa Omniah Alfaky  Siham Gareeballah	Sumaiah Gareeballah Thigah Surajaldeen  Adwa Nasr eldeen  Marwa Alnoor Ayah Abdallah Magzoob Marwa Yahia Aml Ahmed Osman Ghadah Babker Altieb Hanaa Mahmoud	Amnah Ahmed Hussain Hind Sallah Abdallah Najwa Alawad
Red Sea	FATIMA SAID ALAMIN	AMNA OMER	FATIMA SAID ALAMIN TAHANI OSMAN IBRAHIM  FAKI OMER AHMED	RASHA ABDALLA IBRAHIM  KHADIGA GAFFER AL MOTALEB IBRAHIM MAHMUD MOHMED	AMINA MHJOOB AHMED  FATIMA MAHMUD MOHMED  AMENA IDRES MOHMED SEHAM AWAD IBRAHEM BADRIA SALAH MOHMED NADA HASSEN RAMADAN BOSINA AHMED MOHAMED NADREEN AWAD FADUL AL MOULA WEDAD SAID ALAMIN	SAFYA MOHMED AHMED  AMAL MOHAMED ALI  FATIMA MOHMED ABEED TAHANI OSMAN IBRAHIM
Kassala	Yousif Hesein Abdelmageid	Mustafa Hassan Ali Basha	Rihab Mohamed Ali Eman Abasher El-Shiekh Abdellah El-Bokhary Osman	Nor Moahmed Osman Huda Saad Ahmed  Amel Adam Mohamed	Sara Hassan Almahel Magda Mahjob Ibrahim Hanan Abdellah Saad  Fatima Ahmed Byerag Tayseer Tahier Nayer Arfat Hasaballah Ahmed Nawal Elsir Idries Nagla Abdelfatah Mohamed Salih Aasma Ibrahim Idriss	Eman Musa El-Shikh  Thorya Osman Hassan Amiera Abdein Hassan
Gadarif	Um salma Gubara Ibrahim.	Ali suliman ali	Abd Razig Rahama Mustafa	Amgad Abdalwahab Ebrahim	Manahel Mahadi Musa	Elham Alamin Ebrahim

State	State Manager	National supervisor	Field supervisor	Filed editors :	Interviewers :	Measurers
			Alzaki Altaher Ali Faiz Mohammed Abd alrahman	Majda Mohammed saleh Saadia Mohammed Alhassan	Bedour Mohammed Alhassan  Ebetahj Mohammed Alnour Hager Ahmed Abd eldin Khadega Saleh Hamed  Rehab Musa Aljak Maisoun Abdalwahab Ebrahim Marem Mutasim Mohammed Thouwiba Ezz Eldin Osman	Khadega Adem Abd allh Fataheia Mohammed Abdallh
Khartoum	Abdelgader Mohamed Ahmed	Husien Hassan Husien	Tarieg Mohamed El- Hassan Noon Mohamed Osman Suaad Dafallah	Sana Mohamed Sati  Faiza Mohamed Ahmed Amel Eabyedi	Nadia Hassan  Ezdehar Mohamed Osman Rasha Musa Asrar Eshag Amal Ezeldien Alwya Ali Esia Hanan Abdallah Manal Fadul Hanan Mohamed Osman	Amer Khider  Bielges Suliman Mai Samri
Gezira	AWADELSYE D ABDALLA ADAM	MUSTAFA ELJACK MUSTAFA	RAJYA MUSA ELAWAD  ELRAYAH MOHAMED ZAROUG ELZAIN ABDALLA MOHAMED	SAWSAN ABDALLA AHMED  REHAB HASSAN ABDELGADIR  IHLAM MOHAMED ALI	NASHWA ABDELRAHIM ADAM HOAYDA SHARAFELDEEN ELTAHIR HAFIZA IBRAHIM AHMED  HADEEL HASHIM MOHAMED LIMYA BASHIR ABDELRAZIG WISAL ABDALLA HAMID ABIR SHAMSALDINE MUSA ALZINA DAFALLAH AHMED SAFA SALA KHODLY	SALMA MAHAJOUR AWAD  RAJA HASSAN ABDALLA  WIGDAN OMER ABDELGAFAR
White Nile		Fadwa Sied Ahmed	Mubarak Haj Musa	Huda Tagelsier Mohamed	Eman Rahmtallah Gomaa	Habiba Bashier El- Haj

State	State Manager	National supervisor	Field supervisor	Filed editors :	Interviewers :	Measurers
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Sinnar	Mohamed Ahmed Asaker	Mahaseen Abdelgani	Mohamed Yagoup Khalifa  Ibrahim Ahmed Hassan Ibtsam Omer Osman	Hanim Slman Yousif  Hanan Ibrahim  Heba El-Tayeb Abdelrazaag	Hajer Mustafa  Sulafa Hassan El- Safi Zeinb Attallah Almnaan Nazik Salih  Samah Mohyeldaien Suhaier Adam Ahmed Shahed Abubaker Mohamed Afraa osman Intsar Omer Mohamed	Abeer musa Mohamed  Rasha Hassan mahmoud Hawa Abdelrahman Idrees
Blue Nile	Idres Omer Idres	Hanan Ali El-Shikh	Khalid Osman Ahmed Mustafa Khalid Mustafa Khalied Yousif El-Awad	Mariam Mohamed Abaker Amani Ibrahim  Hekmat Hamaad	Malka Mohamed Adam Nada Hassan Koko  Hala Mohamed Mustafa Awadia Abu Elhassan Elham Abdelgader Suliman Hajwa Abdelaziz Mubark Manahel El-haj Muser Ayat Omer Mariam Mohamed Abakar	Rogaya Osman Hassan Heba Mohyeldain Ahmed Huda Hamed Mohamed
North Kordofan	Ali Turo Mosa	Hanan Abass Sediq	Izaldeen Altigani Hamad Manal Mohammed Abdalla Mehasin Alsmeni Altaib	Shaza Tarig Alshazaly  Fatima Gamar Alasha Emam Albagir Kamal Albagir	Fatuma Osman Dgash  Ilham Farah Abdalrhman Rihab Aljaily zian Alabdeen	Amna Abdalla Ahmed Adil  Zehra Gibril Mohammed Halima Ibrahim Alddy

State	State Manager	National supervisor	Field supervisor	Filed editors :	Interviewers :	Measurers
					Rihab Omer Idriss Marim Babekr Abusara Eatizaz Ali Gesm Alla Mwahib Alsmani Rahma Reem Altaj Mohammed Rania Ibrahim Bakhit	
South Kordofan	Abaas Mohamdeen Hamouda Abugamah	Omer Osman Mohamed Ayoub	Faisal Mohamed Elamin Faisal Mohamed Adam Basher konona abdellah	Gaidum arees omer  Romya mohammdny ebrahim Nemaat Musa Bringi	Hua Ibrahim Hamed  Myada Abdelaziz Omer  Zamzam El-haj Mohamed Egbal rodwan Mohamed Fathia abdelmotaieb Malak haggat Mohamed Mariam Abdallah trtoor Siham Fathi Mohamed Latifa Hamed Ibrahim	Hajer Ismael Fadellah  Bedoor Hasien El-balabi  Aaisha Gomaa Obied
West Kordofan	ELTAYEB GOMMA MOHAMED	KHEIRALLAH MOHAMMED KHAMEI	KHEIRALLAH MOHAMMED KHAMEI AHMED ANKOSH AHMED ALI AHMED EISA	ISLAM JABER ALMAKI  MARIAM SOBAHI ELIAN  SOMIA IBRAHIM OMER	HANAN ABDALRAHMAN SELIMAN NAGWA MERGANI AHMED  MONA AHMED HAMDAN WAFI ALI HAMED  EHLAM SAEED ADAM ALTOUMA IBRAHIM HOMIDAN SHAZA AHMED ALDAW YASMIN MOHAMMED HOMIDAN SALMA YOSEF MAHADI	MONIRA AHMED IBRAHIM  AWDIA AHMED MOHAMMED  SAHAR ADAM SELIMAN
North Darfur			Khalda Abdallah Imam	Mahasin Ibrahim El-Haj	Suha Gaber Atem	Najla Hamed Mohamed

State	State Manager	National supervisor	Field supervisor	Filed editors :	Interviewers :	Measurers
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West Darfur	Wafa Hassan Mansour	Salah Abdelrahman Maged	Hasim Husien Togol Mubark Mohamed Abdallah Mohamed Ahmed Bader	El-Tayeb Musa Hasab Allah Gada Musa Abdallah Rania Adam Abdallah	Rawda Mohamed Adam Shama Suliman Abdelkarem Zeinab Hashim Ibrahim Egbal Hassan Ramdan Manal Mohamed Bader Mahasin Musa Abdallah Tagreed Adam Haroun Amani Fadul Hassan Nagat Hassan Mansour	Mariam Yahya Ismael Asma Abdelrahman Hamed Sadeya Adam Yagoub
South Darfur	El-Magboul Abdallah Abaker	Eisaa Ali Abaker	Tarieg Hesabo Adam Ahmed Abdallah Abugoula Mustafa Abdelrahman Yagoub	Muna Moahmed Ahmed Nemaat Moahmed Ahmed Amani Eisaa ali	Dalia Salaheldien Muna Mohamed Adam Haja Gameel Allah Ahmed Tasabieh Mohamed Adam Eman Mohamed Abugola Sara Mubarak Mohamed Muzdalefa Omer Abaker Munera Yahya Abdelrahman Intsar Adam Senien	Abubaker Hassan Ibrahim El-Hafez Musa Suliman Ahmed Adam Mohamed
Central Darfur	El-Hafez Ibrahim Ahmed	Ismael Abaker Banda	Mohamed Mustafa Ogal Hayder Ides Yahya	Zubida Adam Hamed Siham Idres Arbab	Hanan Musa Badalh Manahel Abdallah Ishag	Nagat Abuker Mohamed Tsabih Mohamed Aldoma



State	State Manager	National supervisor	Field supervisor	Filed editors :	Interviewers :	Measurers
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## Appendix C: Estimates of Sampling Errors

### C1. Replacement of Clusters in Conflict affected areas

MICS 2014 have been realized in a very challenging context of ongoing long term armed conflicts and many displacements of populations prevailing in Darfur and Kordofan states Sudan in addition to the outstanding high risk mining areas. A very large sample design has been defined for MICS 2014 in Sudan which comprises 720 Clusters (40 per state), 18,000 Households (1,000 per state) in order to ensure adequate representativity of statistical estimation by each State.

During the implementation of the field data collection, the Central Bureau of Statistics (CBS) has been constrained to proceed to the replacement of 22 clusters (enumeration area) among 720 sampled for the survey (which represent 3%). The maximum number of clusters that have been replaced within state is four (4) clusters in Red Sea; West Kordofan; East Darfur; central Darfur. This in addition to two Clusters in Kassala ; and one cluster in each of South Darfur; West Darfur; Khartoum and Gedaref. The main reason of replacement of clusters are as follow: i) insecurity in Darfur states, ii) Mine area in Kassala state, iii) the displacements of population in Red Sea and iv) the Rainy Season in Gadaref state. The Central Bureau of Statistics benefiting of solid expertise of Consultant in Sampling has developed adequate technical measures by providing to the field work team leader (technical expert), clear instructions that has enabled to perform the replacement in close compliance to the statistical practice of replacement of enumeration area by choosing the nearest accessible area using list of frame in respect of urban and rural areas. Taking into account the provisional measure of sample design which has included 10% of “non-respondents rate” and the expansion of initial calculated required sample from 930 clusters to 1,000, any anticipated error which may merge from the replacements has been fully absorbed. Indicators measured for MICS 2014 in Sudan is not affected by the replacement of 22 clusters (from 1 to maximum 4 into some states).

Table below indicates the geographic distribution of replaced 22 samples of cluster implemented during the survey.

State	Area	Locality Name	AU	Cluster No.	PAU_Name	HHS
RED SEA	RURAL	GANIB	El Aoleeb	201	Giadet	83
	RURAL	GANIB	El Aoleeb	202	Ashtake	100
	RURAL	SAWAKIN	Rifi Sawakin	202	Merkeb	150
	RURAL	HAYA	Rifi Haya	201	Rahedet	367
KASSALA	RURAL	HAMASHKORAIB	Hamashkoraib	202	Teshaier I	99
	RURAL	TALKOOK	Talkook	201	Tm Kafar	239
GADAREF	RURAL	RAHAD	Wad El Shaair	201	Barbar	131
KHARTOUM	URBAN	JEBEL AULIA	Nasr	101	Al mansora Moraba wahed	223
WEST KORDOFAN	RURAL	LAGAWA	Rifi Sinoot	201	Algasabo	124
	RURAL	ESSALAM	Rifi Kigaira	201	Bagara	149
	RURAL	ABIAE	Rifi Muglad	203	Om Al bashar	123
	RURAL	ABIAE	Rifi Mairam	202	Abo betek	137

State	Area	Locality Name	AU	Cluster No.	PAU_Name	HHS
CENTRAL DAFUR	RURAL	AZOOM	Um Shalaya	201	Muaskr Lagen	150
	RURAL	WADI SALIH	Rifi Um Khair	201	Helat Al goz	163
	RURAL	WADI SALIH	Rifi Bendisi	203	Gander	45
	RURAL	WADI SALIH	Rifi Bendisi	204	Batat Rasol	113
SOUTH DAFUR	RURAL	RIHAID BURDI	Um Dagoog	201	Al mased	114
EAST DAFUR	RURAL	SHIAIRIYA	Rifi Yassin	201	Kelal Mogo	186
	RURAL	ADILA	Abu Karinka	201	Baket Hai al wehda	138
	RURAL	ADILA	Rifi Sharif	201	Om Nalala	297
	RURAL	ADILA	Rifi Sharif	201	Al Gora	256
WEST DAFUR	URBAN	GINAINA	Ginaina Town	123	Hai Al Kobre	146

Benefiting of the international expertise of the Global MICS Consultant of Sampling, the probability of selection of the 22 replaced clusters have been recalculated taking into account the initial population size from 2008 population census and the enumerated population in 2014. This has been integrated into the calculation of weight factor of measurement of indicators. Test has been performed to compare indicators generated without or including the revised probability which resulted to the positive conclusion of no difference of estimations: **the replacement of 22 clusters due to the conflicts didn't affect the accuracy of indicators.**

## C2. Sampling Errors

The sample of respondents selected in the Sudan Multiple Indicator Cluster Survey (MICS5) is only one of the samples that could have been selected from the same population, using the same design and size. Each of these samples would yield results that differ somewhat from the results of the actual sample selected. Sampling errors are a measure of the variability between the estimates from all possible samples. The extent of variability is not known exactly, but can be estimated statistically from the survey data.

The following sampling error measures are presented in this appendix for each of the selected indicators:

- *Standard error (se)*: Standard error is the square root of the variance of the estimate. For survey indicators that are means, proportions or ratios, the Taylor series linearization method is used for the estimation of standard errors. For more complex statistics, such as fertility and mortality rates, the Jackknife repeated replication method is used for standard error estimation.
- *Coefficient of variation (se/r)* is the ratio of the standard error to the value (*r*) of the indicator, and is a measure of the relative sampling error.
- *Design effect (deff)* is the ratio of the actual variance of an indicator, under the sampling method used in the survey, to the variance calculated under the assumption of simple random sampling based on the same sample size. The *square root of the design effect (deft)* is used to show the efficiency of the sample design in relation to the precision. A *deft* value of 1.0 indicates that the sample design of the survey is as efficient as a simple random sample for a particular indicator,

while a *deft* value above 1.0 indicates an increase in the standard error due to the use of a more complex sample design.

- *Confidence limits* are calculated to show the interval within which the true value for the population can be reasonably assumed to fall, with a specified level of confidence. For any given statistic calculated from the survey, the value of that statistic will fall within a range of plus or minus two times the standard error ( $r + 2.se$  or  $r - 2.se$ ) of the statistic in 95 percent of all possible samples of identical size and design.

For the calculation of sampling errors from MICS data, programs developed in CPro Version 5.0, SPSS Version 21 Complex Samples module and CMRJack<sup>53</sup> have been used.

The results are shown in the tables that follow. In addition to the sampling error measures described above, the tables also include weighted and unweighted counts of denominators for each indicator. Given the use of normalized weights, by comparing the weighted and unweighted counts it is possible to determine whether a particular domain has been under-sampled or over-sampled compared to the average sampling rate. If the weighted count is smaller than the unweighted count, this means that the particular domain had been over-sampled. As explained later in the footnote of Table SE.1, there is an exception in the case of indicators 4.1 and 4.3, for which the unweighted count represents the number of sample households, and the weighted counts reflect the total population.

Sampling errors are calculated for indicators of primary interest, for the national level. Three of the selected indicators are based on households members, 7 are based on women, and 2 are based on children under 5. Table SE.1 shows the list of indicators for which sampling errors are calculated, including the base population (denominator) for each indicator.

Table SE.1: Indicators selected for sampling error calculations	
List of indicators selected for sampling error calculations, and base populations (denominators) for each indicator, Sudan MICS, 2014	
MICS5 Indicator	Base Population
<b>Household members</b>	
4.1 Use of improved drinking water sources	All household members <sup>a</sup>
4.3 Use of improved sanitation	All household members <sup>a</sup>
7.4 Primary school net attendance ratio (adjusted)	Children of primary school age
<b>Women</b>	
5.3 Contraceptive prevalence rate	Women age 15-49 years who are currently married
5.4 Unmet need	Women age 15-49 years who are currently married
5.5a Antenatal care coverage (1+ times, skilled provider)	Women age 15-49 years with a live birth in the last 2 years
5.5b Antenatal care coverage (4+ times, any provider)	Women age 15-49 years with a live birth in the last 2 years
5.7 Skilled attendant at delivery	Women age 15-49 years with a live birth in the last 2 years
7.1 Literacy rate (young women)	Women age 15-24 years
9.1 Knowledge about HIV prevention (young women)	Women age 15-24 years
<b>Under-5s</b>	
2.1a Underweight prevalence (moderate and severe)	Children under age 5 years
2.1b Underweight prevalence (severe)	Children under age 5 years
<sup>a</sup> To calculate the weighted results of MICS Indicators 4.1 and 4.3, the household weight is multiplied by the number of household members in each household. Therefore the unweighted base population presented in the SE tables reflect the unweighted number of households, whereas the weighted numbers reflect the household population	

<sup>53</sup> CMRJack is a software developed by FAFO, an independent and multidisciplinary research foundation. CMRJack produces mortality estimates and standard errors for surveys with complete birth histories or summary birth histories. See [http://www.fafo.no/ais/child\\_mortality/index.html](http://www.fafo.no/ais/child_mortality/index.html)

**Table SE.2: Sampling errors: Total Sample - Sudan**Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deff*) and confidence intervals for selected indicators, Sudan, 2014

for selected indicators, Sudan, 2014										
		Value	Stand ard error (se)	Coeffici ent of variatio n (se/r)	Design effect (deff)	Square root of design effect (deff)	Weight ed count	Unweight ed count	Confidence limits	
	Table	(r)							r - 2se	r + 2se
<b>Household members</b>										
Use of improved drinking water sources	WS.1	.6804	.01432	.021	15.846	3.981	98,883	16,801	0.652	0.709
Use of improved sanitation	WS.5	.3286	.01206	.037	11.070	3.327	98,883	16,801	0.304	0.353
Primary school net attendance ratio (adjusted)	ED.4	.7642	.00796	.010	8.065	2.840	22,977	22,924	0.748	0.780
<b>Women</b>										
Contraceptive prevalence rate	RH.5	.1223	.00562	.046	3.533	1.880	11,867	12,023	0.111	0.134
Unmet need	RH.6	.2658	.00579	.022	2.068	1.438	11,867	12,023	0.254	0.277
Antenatal care coverage (1+ times, skilled provider)	RH.7	.7909	.01034	.013	3.673	1.917	5,622	5,684	0.770	0.812
Antenatal care coverage (4+ times, any provider)	<b>RH.8</b>	.5073	.01132	.022	2.912	1.706	5,622	5,684	0.485	0.530
Skilled attendant at delivery	RH.10	.7773	.01278	.016	5.363	2.316	5,622	5,684	0.752	0.803
Literacy rate (young women)	ED.1	.5978	.01344	.022	5.111	2.261	6,871	6,805	0.571	0.625
Knowledge about HIV prevention (young women)	HA.1	.0851	.00752	.088	4.949	2.225	6,871	6,805	0.070	0.100
<b>Under-5s</b>										
Underweight prevalence (moderate and severe)	NU.2	.3305	.00870	.026	3.885	1.971	11,713	11,367	0.313	0.348
Underweight prevalence (severe)	NU.2	.1202	.00561	.047	3.388	1.841	11,713	11,367	0.109	0.131

**Table SE.3: Sampling errors: Urban**

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators, Sudan, 2014

Selected indicators, Sudan, 2014									Confidence limits	
	Table	Value ( <i>r</i> )	Standard error ( <i>se</i> )	Coefficient of variation ( <i>se/r</i> )	Design effect ( <i>deff</i> )	Square root of design effect ( <i>deft</i> )	Weighted count	Unweighted count	<i>r</i> - 2 <i>se</i>	<i>r</i> + 2 <i>se</i>
Household members										
Use of improved drinking water sources	WS.1	.7830	.01843	.024	9.647	3.106	30,476	4825	0.746	0.820
Use of improved sanitation	WS.5	.5704	.01595	.028	5.011	2.239	30,476	4825	0.538	0.602
Primary school net attendance ratio (adjusted)	ED.4	.9141	.00623	.007	3.132	1.770	6,446	6,340	0.902	0.927
Women										
Contraceptive prevalence rate	RH.5	.2005	.00960	.048	1.967	1.403	3,437	3420	0.181	0.220
Unmet need	RH.6	.2443	.01075	.044	2.141	1.463	3,437	3420	0.223	0.266
Antenatal care coverage (1+ times, skilled provider)	RH.7	.9077	.00993	.011	1.768	1.330	1,488	1503	0.888	0.928
Antenatal care coverage (4+ times, any provider)	RH.8	.7178	.01547	.022	1.774	1.332	1,488	1503	0.687	0.749
Skilled attendant at delivery	RH.10	.9322	.01242	.013	3.667	1.915	1,488	1503	0.907	0.957
Literacy rate (young women)	ED.1	.7975	.01818	.023	4.607	1.589	2,262	2,253	0.761	0.834
Knowledge about HIV prevention (young women)	HA.1	.1231	.01381	.112	3.978	1.995	2,262	2253	0.095	0.151
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.2324	.01116	.048	2.249	1.500	3,405	3224	0.210	0.255
Underweight prevalence (severe)	NU.2	.0756	.00626	.083	1.807	1.344	3,405	3224	0.063	0.088

**Table SE.4: Sampling errors: Rural**

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deff*) and confidence intervals for selected indicators, Sudan, 2014

Selected indicators, Sudan, 2014										Confidence limits	
	Table	Value ( <i>r</i> )	Standard error ( <i>se</i> )	Coefficient of variation ( <i>se/r</i> )	Design effect ( <i>deff</i> )	Square root of design effect ( <i>deff</i> )	Weighted count	Unweighted count	<i>r</i> - 2 <i>se</i>	<i>r</i> + 2 <i>se</i>	
Household members											
Use of improved drinking water sources	WS.1	.6347	.01935	.030	19.340	4.398	68,407	11,976	0.596	0.673	
Use of improved sanitation	WS.5	.2209	.01596	.072	17.720	4.209	68,407	11,976	0.189	0.253	
Primary school net attendance ratio (adjusted)	ED.4	.7058	.01052	.015	8.844	2.974	16,531	16,584	0.685	0.727	
Women											
Contraceptive prevalence rate	RH.5	.0905	.00679	.075	4.817	2.195	8,430	8,603	0.077	0.104	
Unmet need	RH.6	.2745	.00683	.025	2.013	1.419	8,430	8,603	0.261	0.288	
Antenatal care coverage (1+ times, skilled provider)	RH.7	.7489	.01357	.018	4.094	2.023	4,134	4,181	0.722	0.776	
Antenatal care coverage (4+ times, any provider)	RH.8	.4315	.01358	.031	3.144	1.773	4,134	4,181	0.404	0.459	
Skilled attendant at delivery	RH.10	.7216	.01700	.024	6.014	2.452	4,134	4,181	0.688	0.756	
Literacy rate (young women)	ED.1	.4997	.01769	.035	5.695	2.386	4,609	4,552	0.464	0.535	
Knowledge about HIV prevention (young women)	HA.1	.0664	.00890	.134	5.811	2.411	4,609	4,552	0.049	0.084	
Under-5s											
Underweight prevalence (moderate and severe)	NU.2	.3706	.01064	.029	3.954	1.988	8,308	8,143	0.349	0.392	
Underweight prevalence (severe)	NU.2	.1385	.00725	.052	3.586	1.894	8,308	8,143	0.124	0.153	

**Table SE.5: Sampling errors: Northern state**

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deff*) and confidence intervals for selected indicators, Sudan, 2014

Selected indicators, Sudan, 2014										
									Confidence limits	
	Table	Value ( <i>r</i> )	Standard error ( <i>se</i> )	Coefficient of variation ( <i>se/r</i> )	Design effect ( <i>deff</i> )	Square root of design effect ( <i>deff</i> )	Weighted count	Unweighted count	<i>r</i> - 2 <i>se</i>	<i>r</i> + 2 <i>se</i>
Household members										
Use of improved drinking water sources	WS.1	.9381	.03308	.035	18.022	4.245	2,181	957	0.872	1.000
Use of improved sanitation	WS.5	.7938	.04120	.052	9.915	3.149	2,181	957	0.711	0.876
Primary school net attendance ratio (adjusted)	ED.4	.9549	.01090	.011	2.482	1.576	404	900	0.933	0.977
Women										
Contraceptive prevalence rate	RH.5	.2289	.02817	.123	2.953	1.718	280	658	0.173	0.285
Unmet need	RH.6	.2993	.02244	.075	1.577	1.256	280	658	0.254	0.344
Antenatal care coverage (1+ times, skilled provider)	RH.7	.9465	.01569	.017	1.046	1.023	92	216	0.915	0.978
Antenatal care coverage (4+ times, any provider)	RH.8	.6646	.03704	.056	1.323	1.150	92	216	0.590	0.739
Skilled attendant at delivery	RH.10	.9903	.00568	.006	.720	.849	92	216	0.979	1.000
Literacy rate (young women)	ED.1	.9149	.02162	.024	2.052	1.432	1,432	343	0.872	0.958
Knowledge about HIV prevention (young women)	HA.1	.1469	.01503	.102	.616	.785	146	343	0.117	0.177
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.2194	.02467	.112	1.720	1.311	214	485	0.170	0.269
Underweight prevalence (severe)	NU.2	.0453	.01471	.325	2.424	1.557	214	485	0.016	0.075



**Table SE.6: Sampling errors: River Nile state**

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators, Sudan, 2014

Selected indicators, Sudan, 2014										
	Table	Value ( <i>r</i> )	Standard error ( <i>se</i> )	Coefficient of variation ( <i>se/r</i> )	Design effect ( <i>deff</i> )	Square root of design effect ( <i>deft</i> )	Weighted count	Unweighted count	Confidence limits	
									<i>r</i> - 2 <i>se</i>	<i>r</i> + 2 <i>se</i>
Household members										
Use of improved drinking water sources	WS.1	.8829	.03686	.042	12.181	3.490	3,715	928	0.809	0.957
Use of improved sanitation	WS.5	.4981	.03861	.078	5.529	2.351	3,715	928	0.421	0.575
Primary school net attendance ratio (adjusted)	ED.4	.9108	.02986	.033	10.600	3.256	665	967	0.851	0.971
Women										
Contraceptive prevalence rate	RH.5	.2133	.02120	.099	1.638	1.280	409	613	0.171	0.256
Unmet need	RH.6	.2476	.02182	.088	1.564	1.251	409	613	0.204	0.291
Antenatal care coverage (1+ times, skilled provider)	RH.7	.9516	.01566	.016	1.231	1.109	151	232	0.920	0.983
Antenatal care coverage (4+ times, any provider)	<b>RH.8</b>	.5292	.04388	.083	1.785	1.336	151	232	0.441	0.617
Skilled attendant at delivery	RH.10	.9710	.01907	.020	2.985	1.728	151	232	0.933	1.000
Literacy rate (young women)	ED.1	.7984	.03635	.046	3.013	1.736	253	368	0.726	0.871
Knowledge about HIV prevention (young women)	HA.1	.1666	.02541	.152	1.706	1.306	253	368	0.116	0.217
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.3217	.03003	.093	2.028	1.424	338	492	0.262	0.382
Underweight prevalence (severe)	NU.2	.1102	.01304	.118	.851	.923	338	492	0.084	0.136

**Table SE.7: Sampling errors: Red Sea state**

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators, Sudan, 2014

Selected indicators, Sudan, 2014									Confidence limits	
	Table	Value ( <i>r</i> )	Standard error ( <i>se</i> )	Coefficient of variation ( <i>se/r</i> )	Design effect ( <i>deff</i> )	Square root of design effect ( <i>deft</i> )	Weighted count	Unweighted count	<i>r</i> - 2 <i>se</i>	<i>r</i> + 2 <i>se</i>
Household members										
Use of improved drinking water sources	WS.1	.3319	.05621	.169	13.208	3.634	2,489	928	0.219	0.444
Use of improved sanitation	WS.5	.5243	.03454	.066	4.435	2.106	2,489	928	0.455	0.593
Primary school net attendance ratio (adjusted)	ED.4	.8443	.02707	.032	5.000	2.236	512	898	0.790	0.898
Women										
Contraceptive prevalence rate	RH.5	.0960	.01300	.135	1.097	1.047	323	564	0.070	0.122
Unmet need	RH.6	.1913	.02213	.116	1.783	1.335	323	564	0.147	0.236
Antenatal care coverage (1+ times, skilled provider)	RH.7	.7237	.03614	.050	.967	.983	92	149	0.651	0.796
Antenatal care coverage (4+ times, any provider)	<b>RH.8</b>	.5342	.03805	.071	.861	.928	92	149	0.458	0.610
Skilled attendant at delivery	RH.10	.7778	.03773	.049	1.219	1.104	92	149	0.702	0.853
Literacy rate (young women)	ED.1	.7190	.04422	.062	2.420	1.555	150	251	0.631	0.807
Knowledge about HIV prevention (young women)	HA.1	.0534	.01620	.304	1.299	1.140	150	251	0.021	0.086
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.3363	.02908	.086	1.122	1.059	182	297	0.278	0.395
Underweight prevalence (severe)	NU.2	.1586	.02327	.147	1.201	1.096	182	297	0.112	0.205

**Table SE.8: Sampling errors: Kassala state**

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators, Sudan, 2014

Selected indicators, Sudan, 2014										
						Squar e root of desig n effect ( <i>deft</i> )			Confidence limits	
Table		Value ( <i>r</i> )	Standar d error ( <i>se</i> )	Coeffic ient of variati on ( <i>se/r</i> )	Design effect ( <i>deff</i> )		Weighted count	Unweig hted count	<i>r</i> - 2 <i>se</i>	<i>r</i> + 2 <i>se</i>
Household members										
Use of improved drinking water sources	WS.1	.5721	.07354	.129	19.840	4.454	4,117	899	0.425	0.719
Use of improved sanitation	WS.5	.2934	.06413	.219	17.816	4.221	4,117	899	0.165	0.422
Primary school net attendance ratio (adjusted)	ED.4	.6833	.06772	.099	26.509	5.149	1,016	1,252	0.548	0.819
Women										
Contraceptive prevalence rate	RH.5	.0791	.02388	.302	5.263	2.294	506	673	0.031	0.127
Unmet need	RH.6	.1666	.01408	.085	.959	.979	506	673	0.138	0.195
Antenatal care coverage (1+ times, skilled provider)	RH.7	.8305	.02294	.028	1.010	1.005	199	271	0.785	0.876
Antenatal care coverage (4+ times, any provider)	<b>RH.8</b>	.5395	.05229	.097	2.972	1.724	199	271	0.435	0.644
Skilled attendant at delivery	RH.10	.7704	.03911	.051	2.335	1.528	199	271	0.692	0.849
Literacy rate (young women)	ED.1	.4842	.05434	.112	3.902	1.975	272	331	0.376	0.593
Knowledge about HIV prevention (young women)	HA.1	.0695	.01968	.283	1.978	1.407	272	331	0.030	0.109
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.4195	.03545	.085	2.772	1.665	409	538	0.349	0.490
Underweight prevalence (severe)	NU.2	.1554	.02106	.135	1.814	1.347	409	538	0.113	0.198

**Table SE.9: Sampling errors: Gadarif state**

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators, Sudan, 2014

Selected indicators, Sudan, 2014										
	Table	Value ( <i>r</i> )	Stand ard error ( <i>se</i> )	Coefficient of variation ( <i>se/r</i> )	Design effect ( <i>deff</i> )	Square root of design effect ( <i>deft</i> )	Weighted count	Unwei ghted count	Confidence limits	
									<i>r</i> - 2 <i>se</i>	<i>r</i> + 2 <i>se</i>
Household members										
Use of improved drinking water sources	WS.1	.2771	.04833	.174	11.030	3.321	5,005	947	0.180	0.374
Use of improved sanitation	WS.5	.0979	.02025	.207	4.393	2.096	5,005	947	0.057	0.138
Primary school net attendance ratio (adjusted)	ED.4	.7232	.03414	.047	7.848	2.801	1,220	1,349	0.655	0.792
Women										
Contraceptive prevalence rate	RH.5	.0949	.01654	.174	2.283	1.511	630	718	0.062	0.128
Unmet need	RH.6	.2400	.02466	.103	2.390	1.546	630	718	0.191	0.289
Antenatal care coverage (1+ times, skilled provider)	RH.7	.8054	.04011	.050	3.552	1.885	307	347	0.725	0.886
Antenatal care coverage (4+ times, any provider)	<b>RH.8</b>	.4479	.03753	.084	1.970	1.404	307	347	0.373	0.523
Skilled attendant at delivery	RH.10	.8267	.04960	.060	5.943	2.438	307	347	0.728	0.926
Literacy rate (young women)	ED.1	.4276	.05778	.135	5.170	2.274	327	380	0.312	0.543
Knowledge about HIV prevention (young women)	HA.1	.0574	.01425	.248	1.422	1.193	327	380	0.029	0.086
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.3766	.03366	.089	3.567	1.889	666	740	0.309	0.444
Underweight prevalence (severe)	NU.2	.1555	.01967	.127	2.178	1.476	666	740	0.116	0.195

**Table SE.10: Sampling errors: Khartoum state**

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators, Sudan, 2014

Indicators, Sudan, 2014

	Table	Value ( <i>r</i> )	Standard error ( <i>se</i> )	Coefficient of variation ( <i>se/r</i> )	Design effect ( <i>deff</i> )	Square root of design effect ( <i>deft</i> )	Weighted count	Unweighted count	Confidence limits	
									<i>r</i> - 2 <i>se</i>	<i>r</i> + 2 <i>se</i>
Household members										
Use of improved drinking water sources	WS.1	.8691	.03497	.040	9.894	3.145	13,830	921	0.799	0.939
Use of improved sanitation	WS.5	.6641	.02698	.041	3.003	1.733	13,830	921	0.610	0.718
Primary school net attendance ratio (adjusted)	ED.4	.9527	.00981	.010	2.312	1.520	2,788	1,083	0.933	0.972
Women										
Contraceptive prevalence rate	RH.5	.2651	.01809	.068	1.117	1.057	1,623	666	0.229	0.301
Unmet need	RH.6	.2125	.01665	.078	1.102	1.050	1,623	666	0.179	0.246
Antenatal care coverage (1+ times, skilled provider)	RH.7	.9715	.01177	.012	1.364	1.168	684	274	0.948	0.995
Antenatal care coverage (4+ times, any provider)	<b>RH.8</b>	.8187	.03116	.038	1.786	1.336	684	274	0.756	0.881
Skilled attendant at delivery	RH.10	.9956	.00441	.004	1.213	1.101	684	274	0.987	1.000
Literacy rate (young women)	ED.1	.8257	.03025	.037	2.747	1.657	1,053	433	0.765	0.886
Knowledge about HIV prevention (young women)	HA.1	.1563	.03122	.200	3.192	1.787	1,053	433	0.094	0.219
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.2319	.02027	.087	1.487	1.220	1,603	646	0.191	0.272
Underweight prevalence (severe)	NU.2	.0645	.01026	.159	1.126	1.061	1,603	646	0.044	0.085

**Table SE.11: Sampling errors: Gizera state**

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators, Sudan, 2014

Indicators, Sudan, 2014

		Value ( <i>r</i> )	Standard error ( <i>se</i> )	Coefficient of variation ( <i>se/r</i> )	Design effect ( <i>deff</i> )	Square root of design effect ( <i>deft</i> )	Weighted count	Unweighted count	Confidence limits	
	Table								<i>r</i> - 2 <i>se</i>	<i>r</i> + 2 <i>se</i>
Household members										
Use of improved drinking water sources	WS.1	.8890	.04486	.050	20.121	4.486	16,270	988	0.799	0.979
Use of improved sanitation	WS.5	.3828	.05045	.132	10.633	3.261	16,270	988	0.282	0.484
Primary school net attendance ratio (adjusted)	ED.4	.7935	.02476	.031	4.437	2.106	1,148	1,187	0.744	0.843
Women										
Contraceptive prevalence rate	RH.5	.1222	.02204	.180	3.627	1.904	1,961	802	0.078	0.166
Unmet need	RH.6	.2872	.01982	.069	1.537	1.240	1,961	802	0.248	0.327
Antenatal care coverage (1+ times, skilled provider)	RH.7	.8325	.02779	.033	1.844	1.358	852	334	0.777	0.888
Antenatal care coverage (4+ times, any provider)	<b>RH.8</b>	.5049	.03393	.067	1.533	1.238	852	334	0.437	0.573
Skilled attendant at delivery	RH.10	.9251	.02595	.028	3.234	1.798	852	334	0.873	0.977
Literacy rate (young women)	ED.1	.6639	.04508	.068	4.744	2.178	1,231	522	0.574	0.754
Knowledge about HIV prevention (young women)	HA.1	.0942	.02607	.277	4.152	2.038	1,231	522	0.042	0.146
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.3236	.03568	.110	4.491	2.119	2,084	773	0.252	0.395
Underweight prevalence (severe)	NU.2	.1232	.02454	.199	4.302	2.074	2,084	773	0.074	0.172

**Table SE.12: Sampling errors: White Nile state**

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators, Sudan, 2014

Indicators, Sudan, 2014										
	Table	Value ( <i>r</i> )	Stand ard error ( <i>se</i> )	Coefficie nt of variation ( <i>se/r</i> )	Design effect ( <i>deff</i> )	Square root of design effect ( <i>deft</i> )	Weighted count	Unwei ghted count	Confidence limits	
									<i>r</i> - 2 <i>se</i>	<i>r</i> + 2 <i>se</i>
Household members										
Use of improved drinking water sources	WS.1	.3274	.04966	.152	10.203	3.194	5,016	912	0.228	0.427
Use of improved sanitation	WS.5	.2979	.03504	.118	5.348	2.313	5,016	912	0.228	0.368
Primary school net attendance ratio (adjusted)	ED.4	.7935	.02476	.031	4.437	2.106	1,148	1,187	0.744	0.843
Women										
Contraceptive prevalence rate	RH.5	.1561	.01671	.107	1.406	1.186	577	664	0.123	0.190
Unmet need	RH.6	.2885	.01906	.066	1.174	1.083	577	664	0.250	0.327
Antenatal care coverage (1+ times, skilled provider)	RH.7	.7880	.02719	.035	1.372	1.171	273	311	0.734	0.842
Antenatal care coverage (4+ times, any provider)	<b>RH.8</b>	.4549	.03547	.078	1.573	1.254	273	311	0.384	0.526
Skilled attendant at delivery	RH.10	.9233	.01677	.018	1.231	1.110	273	311	0.890	0.957
Literacy rate (young women)	ED.1	.6754	.03812	.056	2.399	1.549	312	363	0.599	0.752
Knowledge about HIV prevention (young women)	HA.1	.0361	.01093	.303	1.243	1.115	312	363	0.014	0.058
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.2979	.02380	.080	1.666	1.291	572	616	0.250	0.346
Underweight prevalence (severe)	NU.2	.1111	.01432	.129	1.276	1.130	572	616	0.083	0.140

**Table SE.13: Sampling errors: Sinnar state**

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators, Sudan, 2014

		Value ( <i>r</i> )	Standar d error ( <i>se</i> )	Coeffi cient of variati on ( <i>se/r</i> )	Design effect ( <i>deff</i> )	Square root of design effect ( <i>deft</i> )	Weighted count	Unwei ghted count	Confidence limits	
Table									<i>r</i> - 2 <i>se</i>	<i>r</i> + 2 <i>se</i>
Household members										
Use of improved drinking water sources	WS.1	.8868	.02618	.030	6.512	2.552	3,763	955	0.834	0.939
Use of improved sanitation	WS.5	.1858	.02464	.133	3.827	1.956	3,763	955	0.137	0.235
Primary school net attendance ratio (adjusted)	ED.4	.8159	.03312	.041	8.675	2.945	816	1,189	0.750	0.882
Women										
Contraceptive prevalence rate	RH.5	.1354	.01993	.147	2.303	1.517	450	680	0.096	0.175
Unmet need	RH.6	.2615	.01874	.072	1.235	1.111	450	680	0.224	0.299
Antenatal care coverage (1+ times, skilled rovider)	RH.7	.7531	.03499	.046	2.219	1.490	226	338	0.683	0.823
Antenatal care coverage (4+ times, any provider)	<b>RH.8</b>	.4350	.02942	.068	1.187	1.089	226	338	0.376	0.494
Skilled attendant at delivery	RH.10	.8915	.04175	.047	6.071	2.464	226	338	0.808	0.975
Literacy rate (young women)	ED.1	.5404	.03961	.073	2.394	1.547	257	380	0.461	0.620
Knowledge about HIV prevention (young women)	HA.1	.0963	.01930	.200	1.622	1.274	257	380	0.058	0.135
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.3639	.03956	.109	4.719	2.172	471	699	0.285	0.443
Underweight prevalence (severe)	NU.2	.1463	.01982	.135	2.196	1.482	471	699	0.107	0.186



**Table SE.14: Sampling errors: Blue Nile state**

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators, Sudan, 2014

Indicators, Sudan, 2014										
	Table	Value ( <i>r</i> )	Stand ard error ( <i>se</i> )	Coefficient of variation ( <i>se/r</i> )	Design effect ( <i>deff</i> )	Square root of design effect ( <i>deft</i> )	Weighted count	Unweig hted count	Confidence limits	
									<i>r</i> - 2 <i>se</i>	<i>r</i> + 2 <i>se</i>
<b>Household members</b>										
Use of improved drinking water sources	WS.1	.7129	.04713	.066	10.342	3.216	4,094	954	0.619	0.807
Use of improved sanitation	WS.5	.3967	.07000	.176	19.512	4.417	4,094	954	0.257	0.537
Primary school net attendance ratio (adjusted)	ED.4	.7797	.02373	.030	4.489	2.119	979	1,370	0.732	0.827
<b>Women</b>										
Contraceptive prevalence rate	RH.5	.0710	.01313	.185	1.997	1.413	525	765	0.045	0.097
Unmet need	RH.6	.2584	.02514	.097	2.519	1.587	525	765	0.208	0.309
Antenatal care coverage (1+ times, skilled provider)	RH.7	.7181	.05337	.074	5.938	2.437	287	423	0.611	0.825
Antenatal care coverage (4+ times, any provider)	<b>RH.8</b>	.4268	.03984	.093	2.737	1.655	287	423	0.347	0.506
Skilled attendant at delivery	RH.10	.6099	.07716	.127	10.560	3.250	287	423	0.456	0.764
Literacy rate (young women)	ED.1	.3607	.03833	.106	2.810	1.676	297	442	0.284	0.437
Knowledge about HIV prevention (young women)	HA.1	.0897	.02489	.277	3.346	1.829	297	442	0.040	0.139
<b>Under-5s</b>										
Underweight prevalence (moderate and severe)	NU.2	.3526	.02004	.057	1.707	1.306	668	971	0.313	0.393
Underweight prevalence (severe)	NU.2	.1070	.01120	.105	1.273	1.128	668	971	0.085	0.129

**Table SE.15: Sampling errors: North Kordofan state**

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators, Sudan, 2014

Indicators, Sudan, 2014										
	Table	Value ( <i>r</i> )	Standard error ( <i>se</i> )	Coefficient of variation ( <i>se/r</i> )	Design effect ( <i>deff</i> )	Square root of design effect ( <i>deft</i> )	Weighted count	Unweighted count	Confidence limits	
									<i>r</i> - 2 <i>se</i>	<i>r</i> + 2 <i>se</i>
<b>Household members</b>										
Use of improved drinking water sources	WS.1	.6978	.05574	.080	13.658	3.696	6,359	928	0.586	0.809
Use of improved sanitation	WS.5	.2503	.03373	.135	5.620	2.371	6,359	928	0.183	0.318
Primary school net attendance ratio (adjusted)	ED.4	.7385	.03716	.050	8.651	2.941	1,506	1,211	0.664	0.813
<b>Women</b>										
Contraceptive prevalence rate	RH.5	.1467	.02179	.149	2.276	1.509	743	601	0.103	0.190
Unmet need	RH.6	.3241	.02052	.063	1.153	1.074	743	601	0.283	0.365
Antenatal care coverage (1+ times, skilled provider)	RH.7	.8559	.02484	.029	1.466	1.211	352	294	0.806	0.906
Antenatal care coverage (4+ times, any provider)	<b>RH.8</b>	.5771	.03680	.064	1.626	1.275	352	294	0.503	0.651
Skilled attendant at delivery	RH.10	.8846	.03664	.041	3.852	1.963	352	294	0.811	0.958
Literacy rate (young women)	ED.1	.5879	.05185	.088	4.328	2.080	471	391	0.484	0.692
Knowledge about HIV prevention (young women)	HA.1	.0223	.00693	.311	.859	.927	471	391	0.008	0.036
<b>Under-5s</b>										
Underweight prevalence (moderate and severe)	NU.2	.3241	.02068	.064	1.212	1.101	752	622	0.283	0.365
Underweight prevalence (severe)	NU.2	.1150	.01358	.118	1.125	1.061	752	622	0.088	0.142

**Table SE.16: Sampling errors: South Kordofan state**

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators, Sudan, 2014

Indicators, Sudan, 2014										
	Table	Value ( <i>r</i> )	Standard error ( <i>se</i> )	Coefficient of variation ( <i>se/r</i> )	Design effect ( <i>deff</i> )	Square root of design effect ( <i>deft</i> )	Weighted count	Unweighted count	Confidence limits	
									<i>r</i> - 2 <i>se</i>	<i>r</i> + 2 <i>se</i>
Household members										
Use of improved drinking water sources	WS.1	.6008	.06134	.102	15.058	3.880	2,983	961	0.478	0.723
Use of improved sanitation	WS.5	.1432	.02996	.209	7.020	2.649	2,983	961	0.083	0.203
Primary school net attendance ratio (adjusted)	ED.4	.6945	.05417	.078	21.698	4.658	779	1,570	0.586	0.803
Women										
Contraceptive prevalence rate	RH.5	.0899	.01489	.166	2.094	1.447	355	774	0.060	0.120
Unmet need	RH.6	.3379	.03182	.094	3.498	1.870	355	774	0.274	0.402
Antenatal care coverage (1+ times, skilled provider)	RH.7	.8506	.02691	.032	2.559	1.600	194	450	0.797	0.904
Antenatal care coverage (4+ times, any provider)	<b>RH.8</b>	.5926	.03231	.055	1.941	1.393	194	450	0.528	0.657
Skilled attendant at delivery	RH.10	.8020	.05731	.071	9.287	3.047	194	450	0.687	0.917
Literacy rate (young women)	ED.1	.4917	.04650	.095	4.006	2.002	197	464	0.399	0.585
Knowledge about HIV prevention (young women)	HA.1	.0948	.02539	.268	3.479	1.865	197	464	0.044	0.146
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.3483	.02906	.083	3.299	1.816	431	888	0.290	0.406
Underweight prevalence (severe)	NU.2	.1446	.01504	.104	1.622	1.274	431	888	0.115	0.175

**Table SE.17: Sampling errors: West Kordofan state**

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators, Sudan, 2014

Selected indicators, Sudan, 2014										
	Table	Value ( <i>r</i> )	Standar d error ( <i>se</i> )	Coeffici ent of variatio n ( <i>se/r</i> )	Design effect ( <i>deff</i> )	Square root of design effect ( <i>deft</i> )	Weighted count	Unwei ghted count	Confidence limits	
									<i>r</i> - 2 <i>se</i>	<i>r</i> + 2 <i>se</i>
Household members										
Use of improved drinking water sources	WS.1	.8603	.03154	.037	7.208	2.685	5,745	872	0.797	0.923
Use of improved sanitation	WS.5	.1038	.02301	.222	4.958	2.227	5,745	872	0.058	0.150
Primary school net attendance ratio (adjusted)	ED.4	.5413	.03653	.067	6.940	2.634	1,483	1,292	0.468	0.614
Women										
Contraceptive prevalence rate	RH.5	.0606	.01180	.195	1.473	1.214	687	603	0.037	0.084
Unmet need	RH.6	.2394	.01839	.077	1.118	1.058	687	603	0.203	0.276
Antenatal care coverage (1+ times, skilled provider)	RH.7	.6528	.04488	.069	2.497	1.580	341	282	0.563	0.743
Antenatal care coverage (4+ times, any provider)	<b>RH.8</b>	.2814	.03469	.123	1.673	1.293	341	282	0.212	0.351
Skilled attendant at delivery	RH.10	.6734	.05485	.081	3.843	1.960	341	282	0.564	0.783
Literacy rate (young women)	ED.1	.3287	.04861	.148	3.288	1.813	341	308	0.231	0.426
Knowledge about HIV prevention (young women)	HA.1	.0436	.01619	.371	1.928	1.389	341	308	0.011	0.076
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.3870	.03407	.088	1.708	1.307	388	350	0.319	0.455
Underweight prevalence (severe)	NU.2	.1475	.01668	.113	.772	.879	388	350	0.114	0.181

**Table SE.18: Sampling errors: North Darfor state**

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators, Sudan, 2014

Indicators, Sudan, 2014										
	Table	Value ( <i>r</i> )	Standard error ( <i>se</i> )	Coefficient of variation ( <i>se/r</i> )	Design effect ( <i>deff</i> )	Square root of design effect ( <i>deft</i> )	Weighted count	Unweighted count	Confidence limits	
									<i>r</i> - 2 <i>se</i>	<i>r</i> + 2 <i>se</i>
Household members										
Use of improved drinking water sources	WS.1	.5064	.03806	.075	5.292	2.300	7,776	914	0.430	0.583
Use of improved sanitation	WS.5	.1227	.02094	.171	3.719	1.928	7,776	914	0.081	0.165
Primary school net attendance ratio (adjusted)	ED.4	.7669	.01693	.022	2.332	1.527	1,949	1,455	0.733	0.801
Women										
Contraceptive prevalence rate	RH.5	.0369	.00742	.201	.964	.982	913	623	0.022	0.052
Unmet need	RH.6	.2967	.01880	.063	1.054	1.027	913	623	0.259	0.334
Antenatal care coverage (1+ times, skilled provider)	RH.7	.6866	.03150	.046	1.627	1.276	525	354	0.624	0.750
Antenatal care coverage (4+ times, any provider)	<b>RH.8</b>	.3688	.02850	.077	1.232	1.110	525	354	0.312	0.426
Skilled attendant at delivery	RH.10	.6071	.05101	.084	3.850	1.962	525	354	0.505	0.709
Literacy rate (young women)	ED.1	.5602	.05055	.090	3.444	1.856	479	333	0.459	0.661
Knowledge about HIV prevention (young women)	HA.1	.0351	.01243	.355	1.516	1.231	479	333	0.010	0.060
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.4486	.01842	.041	.867	.931	861	633	0.412	0.485
Underweight prevalence (severe)	NU.2	.1691	.01586	.094	1.132	1.064	861	633	0.137	0.201

**Table SE.19: Sampling errors: West Darfor state**

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators, Sudan, 2014

Indicators, Sudan, 2014										
	Table	Value ( <i>r</i> )	Stand ard error ( <i>se</i> )	Coefficie nt of variation ( <i>se/r</i> )	Design effect ( <i>deff</i> )	Square root of design effect ( <i>deft</i> )	Weighted count	Unwei ghted count	Confidence limits	
									<i>r</i> - 2 <i>se</i>	<i>r</i> + 2 <i>se</i>
Household members										
Use of improved drinking water sources	WS.1	.6753	.04993	.074	10.269	3.205	3,023	904	0.575	0.775
Use of improved sanitation	WS.5	.1598	.04546	.284	13.899	3.728	3,023	904	0.069	0.251
Primary school net attendance ratio (adjusted)	ED.4	.6027	.03358	.056	6.490	2.548	841	1,379	0.536	0.670
Women										
Contraceptive prevalence rate	RH.5	.0411	.01053	.256	1.780	1.334	383	634	0.020	0.062
Unmet need	RH.6	.2116	.01755	.083	1.168	1.081	383	634	0.176	0.247
Antenatal care coverage (1+ times, skilled provider)	RH.7	.7523	.04653	.062	3.450	1.857	179	298	0.659	0.845
Antenatal care coverage (4+ times, any provider)	<b>RH.8</b>	.5611	.05271	.094	3.350	1.830	179	298	0.456	0.666
Skilled attendant at delivery	RH.10	.5775	.05597	.097	3.813	1.953	179	298	0.466	0.689
Literacy rate (young women)	ED.1	.5006	.05521	.110	4.304	2.075	214	354	0.390	0.611
Knowledge about HIV prevention (young women)	HA.1	.1593	.03605	.226	3.425	1.851	214	354	0.087	0.231
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.2937	.02680	.091	1.264	1.124	223	366	0.240	0.347
Underweight prevalence (severe)	NU.2	.0988	.01884	.191	1.455	1.206	223	366	0.061	0.136

**Table SE.20: Sampling errors: South Darfur state**

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators, Sudan, 2014

Indicators, Sudan, 2014										
	Table	Value ( <i>r</i> )	Standard error ( <i>se</i> )	Coefficient of variation ( <i>se/r</i> )	Design effect ( <i>deff</i> )	Square root of design effect ( <i>deft</i> )	Weighted count	Unweighted count	Confidence limits	
									<i>r</i> - 2 <i>se</i>	<i>r</i> + 2 <i>se</i>
Household members										
Use of improved drinking water sources	WS.1	.4664	.04692	.101	8.359	2.891	7,712	946	0.373	0.560
Use of improved sanitation	WS.5	.2472	.03434	.139	5.990	2.448	7,712	946	0.178	0.316
Primary school net attendance ratio (adjusted)	ED.4	.6620	.03067	.046	6.087	2.467	1,975	1,449	0.601	0.723
Women										
Contraceptive prevalence rate	RH.5	.0543	.01614	.297	3.605	1.899	933	712	0.022	0.087
Unmet need	RH.6	.3181	.01978	.062	1.283	1.133	933	712	0.278	0.358
Antenatal care coverage (1+ times, skilled provider)	RH.7	.6179	.05115	.083	4.555	2.134	556	412	0.516	0.720
Antenatal care coverage (4+ times, any provider)	<b>RH.8</b>	.4087	.03777	.092	2.426	1.557	556	412	0.333	0.484
Skilled attendant at delivery	RH.10	.4869	.04648	.095	3.555	1.885	556	412	0.394	0.580
Literacy rate (young women)	ED.1	.4929	.04974	.101	4.375	2.092	567	443	0.393	0.592
Knowledge about HIV prevention (young women)	HA.1	.0547	.01276	.233	1.391	1.179	567	443	0.029	0.080
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.2936	.02398	.082	2.499	1.581	1,231	902	0.246	0.342
Underweight prevalence (severe)	NU.2	.0986	.01350	.137	1.848	1.359	1,231	902	0.072	0.126

**Table SE.21: Sampling errors: Central Darfur state**

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators, Sudan, 2014

Indicators, Sudan, 2014

	Table	Value ( <i>r</i> )	Stand ard error ( <i>se</i> )	Coeffic ient of variati on ( <i>se/r</i> )	Design effect ( <i>deff</i> )	Square root of design effect ( <i>deft</i> )	Weighted count	Unweig hted count	Confidence limits	
									<i>r</i> - 2 <i>se</i>	<i>r</i> + 2 <i>se</i>
Household members										
Use of improved drinking water sources	WS.1	.5059	.07838	.155	23.444	4.842	1,646	955	0.349	0.663
Use of improved sanitation	WS.5	.1580	.02303	.146	3.803	1.950	1,646	955	0.112	0.204
Primary school net attendance ratio (adjusted)	ED.4	.5415	.05304	.098	16.361	4.045	449	1,445	0.435	0.648
Women										
Contraceptive prevalence rate	RH.5	.0290	.00843	.291	1.532	1.238	188	608	0.012	0.046
Unmet need	RH.6	.2785	.02653	.095	2.126	1.458	188	608	0.225	0.332
Antenatal care coverage (1+ times, skilled provider)	RH.7	.6790	.03503	.052	1.841	1.357	99	328	0.609	0.749
Antenatal care coverage (4+ times, any provider)	<b>RH.8</b>	.4714	.04635	.098	2.819	1.679	99	328	0.379	0.564
Skilled attendant at delivery	RH.10	.3748	.05416	.145	4.094	2.023	99	328	0.266	0.483
Literacy rate (young women)	ED.1	.2742	.04225	.154	2.897	1.702	104	324	0.190	0.359
Knowledge about HIV prevention (young women)	HA.1	.0249	.01168	.470	1.816	1.348	104	324	0.002	0.048
Under-5s										
Underweight prevalence (moderate and severe)	NU.2	.4102	.04413	.108	4.412	2.100	163	549	0.322	0.499
Underweight prevalence (severe)	NU.2	.1848	.03031	.164	3.343	1.828	163	549	0.124	0.245



**Table SE.22: Sampling errors: East Darfur state**

Standard errors, coefficients of variation, design effects (*deff*), square root of design effects (*deft*) and confidence intervals for selected indicators, Sudan, 2014

Indicators, Sudan, 2014										
	Table	Value ( <i>r</i> )	Standar d error ( <i>se</i> )	Coeffici ent of variatio n ( <i>se/r</i> )	Design effect ( <i>deff</i> )	Square root of design effect ( <i>deft</i> )	Weight ed count	Unweig hted count	Confidence limits	
									<i>r</i> - 2 <i>se</i>	<i>r</i> + 2 <i>se</i>
<b>Household members</b>										
Use of improved drinking water sources	WS.1	.4507	.03377	.075	4.290	2.071	3,158	932	0.383	0.518
Use of improved sanitation	WS.5	.1444	.03515	.243	9.307	3.051	3,158	932	0.074	0.215
Primary school net attendance ratio (adjusted)	ED.4	.6205	.03775	.061	9.579	3.095	859	1,584	0.545	0.696
<b>Women</b>										
Contraceptive prevalence rate	RH.5	.0616	.01289	.209	1.909	1.382	378	665	0.036	0.087
Unmet need	RH.6	.3092	.01968	.064	1.204	1.097	378	665	0.270	0.349
Antenatal care coverage (1+ times, skilled provider)	RH.7	.8293	.03000	.036	2.353	1.534	211	371	0.769	0.889
Antenatal care coverage (4+ times, any provider)	<b>RH.8</b>	.4680	.04603	.098	3.149	1.774	211	371	0.376	0.560
Skilled attendant at delivery	RH.10	.6055	.04941	.082	3.781	1.945	211	371	0.507	0.704
Literacy rate (young women)	ED.1	.3998	.03829	.096	2.285	1.512	201	375	0.323	0.476
Knowledge about HIV prevention (young women)	HA.1	.0138	.00802	.579	1.761	1.327	201	375	0.000	0.030
<b>Under-5s</b>										
Underweight prevalence (moderate and severe)	NU.2	.4024	.02869	.071	2.734	1.654	457	800	0.345	0.460
Underweight prevalence (severe)	NU.2	.1658	.01973	.119	2.249	1.500	457	800	0.126	0.205

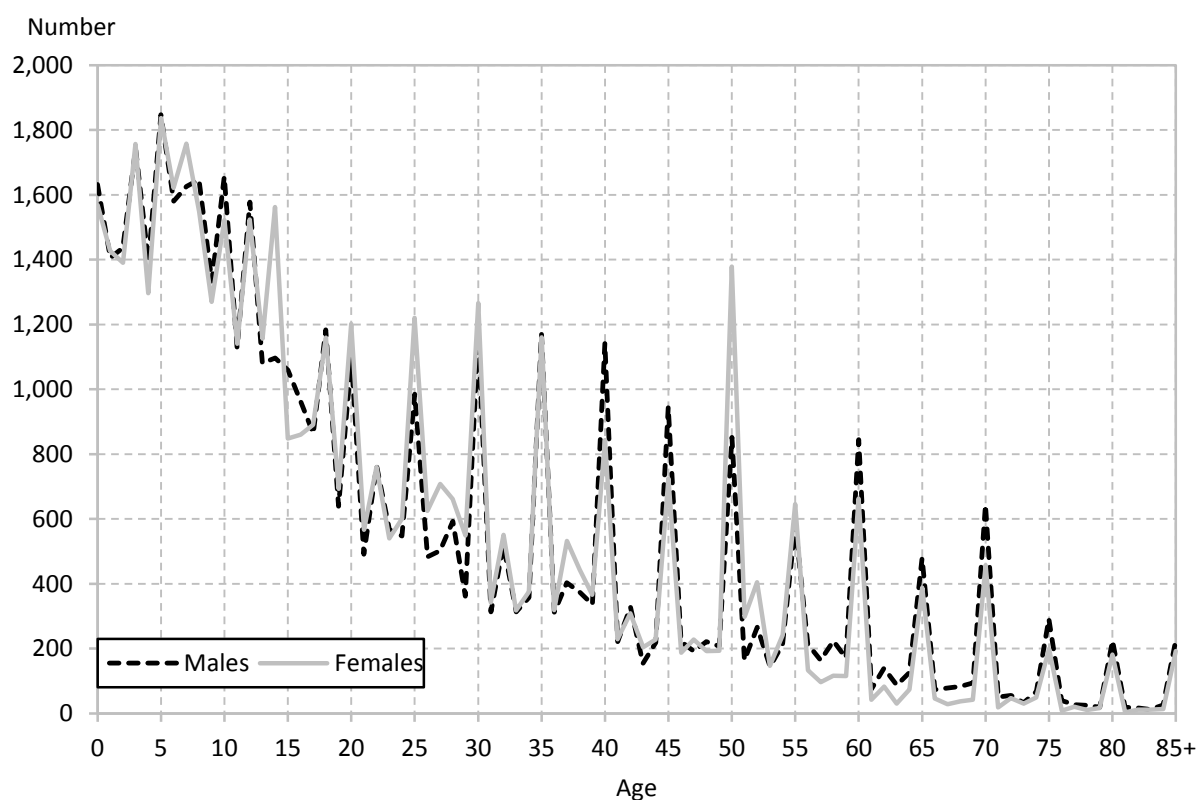
## Appendix D: Data Quality Tables

Table DQ.1: Age distribution of household population						
Single-year age distribution of household population by sex, Sudan MICS, 2014						
Age (Years)	Males		Females		Missing	
	Number	Percent	Number	Percent	Number	Percent
0	1,632	3.3	1568	3.2	0	0.0
1	1,406	2.9	1427	2.9	0	0.0
2	1,436	2.9	1390	2.8	0	0.0
3	1,742	3.5	1757	3.5	0	0.0
4	1,395	2.8	1297	2.6	0	0.0
5	1,847	3.7	1837	3.7	0	0.0
6	1,581	3.2	1622	3.3	0	0.0
7	1,626	3.3	1758	3.5	0	0.0
8	1,647	3.3	1548	3.1	0	0.0
9	1,334	2.7	1270	2.6	0	0.0
10	1,657	3.4	1522	3.1	0	0.0
11	1,128	2.3	1141	2.3	0	0.0
12	1,578	3.2	1524	3.1	1	5.4
13	1,081	2.2	1156	2.3	0	0.0
14	1,097	2.2	1562	3.2	0	0.0
15	1,059	2.1	848	1.7	0	0.0
16	964	2.0	860	1.7	0	0.0
17	864	1.8	891	1.8	0	0.0
18	1,184	2.4	1159	2.3	0	0.0
19	639	1.3	693	1.4	0	0.0
20	1,094	2.2	1202	2.4	1	4.2
21	491	1.0	567	1.1	0	0.0
22	764	1.5	760	1.5	0	2.4
23	566	1.1	540	1.1	0	0.0
24	548	1.1	601	1.2	0	0.0
25	985	2.0	1221	2.5	0	0.0
26	483	1.0	625	1.3	0	0.0
27	502	1.0	708	1.4	0	0.0
28	593	1.2	662	1.3	0	0.0
29	362	0.7	549	1.1	0	0.0
30	1,162	2.4	1266	2.6	0	0.0
31	313	0.6	343	0.7	0	0.0
32	519	1.1	551	1.1	0	0.0
33	313	0.6	318	0.6	0	0.0
34	358	0.7	375	0.8	0	0.0
35	1,172	2.4	1160	2.3	0	0.0
36	312	0.6	319	0.6	0	0.0

Age (Years)	Males		Females		Missing	
	Number	Percent	Number	Percent	Number	Percent
37	403	0.8	532	1.1	0	0.0
38	375	0.8	443	0.9	0	0.0
39	336	0.7	366	0.7	0	0.0
40	1,142	2.3	843	1.7	0	0.0
41	222	0.5	229	0.5	0	0.0
42	328	0.7	309	0.6	0	0.0
43	154	0.3	204	0.4	0	0.0
44	219	0.4	228	0.5	0	0.0
45	946	1.9	725	1.5	0	0.0
46	222	0.4	188	0.4	0	0.0
47	192	0.4	228	0.5	0	0.0
48	222	0.5	192	0.4	0	0.0
49	208	0.4	193	0.4	0	0.0
50	852	1.7	1379	2.8	0	2.1
51	164	0.3	298	0.6	0	0.0
52	266	0.5	405	0.8	0	0.0
53	145	0.3	147	0.3	0	0.0
54	213	0.4	242	0.5	0	0.0
55	583	1.2	646	1.3	0	0.0
56	214	0.4	133	0.3	0	0.0
57	164	0.3	97	0.2	0	0.0
58	224	0.5	116	0.2	0	0.0
59	171	0.3	115	0.2	0	0.0
60	845	1.7	663	1.3	0	0.0
61	75	0.2	42	0.1	0	0.0
62	140	0.3	83	0.2	0	0.0
63	87	0.2	31	0.1	0	0.0
64	126	0.3	74	0.1	0	0.0
65	479	1.0	388	0.8	0	1.6
66	73	0.1	46	0.1	0	0.0
67	78	0.2	29	0.1	0	0.0
68	83	0.2	37	0.1	0	0.0
69	94	0.2	42	0.1	0	0.0
70	643	1.3	457	0.9	0	0.0
71	51	0.1	19	0.0	0	0.0
72	56	0.1	47	0.1	0	0.0
73	33	0.1	31	0.1	0	0.0
74	68	0.1	49	0.1	0	0.0
75	292	0.6	199	0.4	0	0.0
76	40	0.1	9	0.0	0	0.0
77	27	0.1	21	0.0	0	0.0

Age (Years)	Males		Females		Missing	
	Number	Percent	Number	Percent	Number	Percent
78	25	0.1	11	0.0	0	0.0
79	19	0.0	17	0.0	0	0.0
80	225	0.5	182	0.4	0	0.0
81	19	0.0	3	0.0	0	0.0
82	17	0.0	12	0.0	0	0.0
83	12	0.0	12	0.0	0	0.0
84	26	0.1	14	0.0	0	0.0
85+	229	0.5	192	0.4	0	0.0
DK/missing	24	0.0	12	0.0	17	84.3
<b>Sudan</b>	49,286	100.0	49,577	100.0	21	100.0

Figure DQ.1: Household population by single ages, Sudan MICS, 2014



Note: The figure excludes 36 household members with unknown age and/or sex

**Table DQ.2: Age distribution of eligible and interviewed women**

Household population of women age 10-54 years, interviewed women age 15-49 years, and percentage of eligible women who were interviewed, by five-year age groups, Sudan MICS, 2014

Age group (yrs)	Household population of women age 10-54 years		Interviewed women age 15-49 years	Percentage of eligible women interviewed (Completion rate)
	Number	Number	Percent	
10-14	6,905	.	.	.
15-19	4,451	3,842	20.3	86.3
20-24	3,670	3,274	17.3	89.2
25-29	3,765	3,467	18.3	92.1
30-34	2,854	2,645	14.0	92.7
35-39	2,820	2,631	13.9	93.3
40-44	1,812	1,694	8.9	93.4
45-49	1,526	1,389	7.3	91.0
50-54	2,471	.	.	.
Total (15-49)	20,898	18,941	100.0	90.6

**DQ.4: Age distribution of children in household and under-5 questionnaires**

Household population of children age 0-7 years, children age 0-4 years whose mothers/caretakers were interviewed, and percentage of under-5 children whose mothers/caretakers were interviewed, by single years of age, Sudan MICS, 2014

Single years age	Household population of children 0-7 years	Under-5s with completed interviews		Percentage of eligible under-5s interviewed (Completion rate)
	Number	Number	Percent	
0	3,200	3,046	21.2	95.2
1	2,833	2,724	18.9	96.1
2	2,826	2,673	18.6	94.6
3	3,499	3,362	23.4	96.1
4	2,692	2,584	18.0	96.0
5	3,684	.	.	.
6	3,203	.	.	.
7	3,384	.	.	.
Total (0-4)	15,050	14,388	100.0	95.6

Ratio of 5 to 4	1.37
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**DQ.5: Birth date reporting: Household population**

Percent distribution of household population by completeness of date of birth information, Sudan MICS, 2014

Background characteristics	Completeness of reporting of month and year of birth				Total	Number of household members
	Year and month of birth	Year of birth only	Month of birth only	Both missing		
<b>Sudan</b>	53.3	30.6	0.1	16.0	100.0	97,049
<b>Age</b>						
0-4	84.9	12.9	0.1	2.2	100.0	14,752
5-14	65.4	25.7	0.1	8.8	100.0	29,332
15-24	54.4	31.7	0.1	13.9	100.0	15,853
25-49	36.5	40.5	0.1	22.9	100.0	24,480
50-64	22.1	43.5	0.2	34.1	100.0	8,496
65-84	15.3	40.7	0.2	43.8	100.0	3,708
85+	8.4	40.0	0.0	51.6	100.0	370
DK/missing	0.0	24.1	0.0	75.9	100.0	58
<b>State</b>						
Northern	76.1	15.0	0.0	8.9	100.0	4,914
River Nile	73.0	26.3	0.0	0.7	100.0	5,202
Red Sea	57.0	25.6	0.1	17.3	100.0	4,351
Kassala	66.5	32.9	0.0	0.6	100.0	5,026
Gadarif	36.5	19.4	0.1	44.0	100.0	5,522
Khartoum	75.5	17.4	0.1	7.0	100.0	5,452
Gezira	75.6	11.7	0.1	12.6	100.0	6,096
White Nile	42.9	19.1	0.2	37.8	100.0	5,233
Sinnar	50.2	17.1	0.2	32.6	100.0	5,479
Blue Nile	79.0	19.0	0.0	2.0	100.0	5,837
North Kordofan	47.8	51.3	0.0	0.8	100.0	5,220
South Kordofan	61.8	29.8	0.2	8.2	100.0	6,144
West Kordofan	23.4	30.7	0.5	45.5	100.0	5,017
North Darfur	28.9	48.5	0.0	22.6	100.0	5,793
West Darfur	20.6	61.7	0.1	17.7	100.0	4,942
South Darfur	62.4	30.8	0.0	6.8	100.0	5,732
Central Darfur	18.1	81.2	0.0	0.7	100.0	5,244
East Darfur	57.4	19.8	0.1	22.8	100.0	5,845
<b>Area</b>						
Urban	60.7	25.7	0.1	13.5	100.0	29,481
Rural	50.1	32.8	0.1	17.0	100.0	67,568

**DQ.6: Birth date and age reporting: Women**

Percent distribution of women age 15-49 years by completeness of date of birth/age information, Sudan MICS, 2014

Background characteristics	Completeness of reporting of date of birth and age					Total	Number of women age 15-49 years
	Year and month of birth	Year of birth and age	Year of birth only	Age only	Other/DK/Missing		
<b>Sudan</b>	45.0	36.4	0.0	18.3	0.3	100.0	18,302
<b>State</b>							
Northern	80.7	15.9	0.0	3.4	0.0	100.0	1,083
River Nile	76.0	23.8	0.0	.1	0.1	100.0	1,027
Red Sea	56.7	31.0	0.0	12.1	0.2	100.0	826
Kassala	49.9	48.5	0.0	1.2	0.4	100.0	946
Gadarif	20.0	28.7	0.0	51.2	0.2	100.0	1,012
Khartoum	82.2	15.1	0.0	2.6	0.1	100.0	1,171
Gezira	75.9	14.4	0.0	9.4	0.2	100.0	1,347
White Nile	29.8	25.9	0.0	43.6	0.7	100.0	1,027
Sinnar	30.7	20.6	0.0	47.5	1.2	100.0	1,057
Blue Nile	65.8	32.5	0.0	1.6	0.1	100.0	1,079
North Kordofan	35.8	63.2	0.0	.3	0.6	100.0	949
South Kordofan	47.7	44.6	0.0	7.2	0.5	100.0	1,171
West Kordofan	13.1	25.4	0.0	61.0	0.6	100.0	863
North Darfur	15.5	56.2	0.0	28.2	0.1	100.0	901
West Darfur	13.9	62.9	0.0	23.0	0.2	100.0	918
South Darfur	49.1	41.9	0.0	9.0	0.0	100.0	1,065
Central Darfur	4.9	93.5	0.0	1.3	0.3	100.0	878
East Darfur	27.0	34.2	0.0	38.7	0.1	100.0	982
<b>Area</b>							
Urban	59.1	28.7	0.0	11.9	0.3	100.0	5,979
Rural	38.1	40.1	0.0	21.5	0.3	100.0	12,323

**DQ.8: Birth date and age reporting: Under-5s**

Percent distribution children under 5 by completeness of date of birth/age information, Sudan MICS, 2014

Background characteristics	Completeness of reporting of date of birth and age					Total	Number of under-5 children
	Year and month of birth	Year of birth and age	Year of birth only	Age only	Other/DK/ Missing		
<b>Sudan</b>	88.2	11.8	0.0	0.0	.0	100.0	14,081
<b>State</b>							
Northern	99.6	0.4	0.0	0.0	0.0	100.0	532
River Nile	95.6	4.4	0.0	0.0	0.0	100.0	565
Red Sea	94.6	5.2	0.0	0.2	0.0	100.0	404
Kassala	97.9	2.1	0.0	0.0	0.0	100.0	655
Gadarif	92.9	7.1	0.0	0.0	0.0	100.0	858
Khartoum	97.0	3.0	0.0	0.0	0.0	100.0	699
Gezira	98.8	1.3	0.0	0.0	0.0	100.0	800
White Nile	90.8	9.2	0.0	0.0	0.0	100.0	754
Sinnar	96.6	3.3	0.0	0.1	0.0	100.0	814
Blue Nile	99.3	.7	0.0	0.0	0.0	100.0	1,006
North Kordofan	95.5	4.5	0.0	0.0	0.0	100.0	750
South Kordofan	94.0	6.0	0.0	0.0	0.0	100.0	1,092
West Kordofan	49.4	50.6	0.0	0.0	0.0	100.0	741
North Darfur	80.1	19.9	0.0	0.0	0.0	100.0	885
West Darfur	45.4	54.4	0.0	0.1	0.0	100.0	843
South Darfur	96.7	3.3	0.0	0.0	0.0	100.0	975
Central Darfur	71.3	28.7	0.0	0.0	0.0	100.0	837
East Darfur	97.2	2.8	0.0	0.0	0.0	100.0	871
<b>Area</b>							
Urban	92.4	7.6	0.0	0.0	0.0	100.0	3,811
Rural	86.6	13.4	0.0	0.0	0.0	100.0	10,270



**DQ.9: Birth date reporting: Children, adolescents and young people**

Percent distribution of children, adolescents and young people age 5-24 years by completeness of date of birth information, Sudan MICS, 2014

Background characteristics	Completeness of reporting of month and year of birth				Total	Number of children, adolescents and young people age 5-24 years
	Year and month of birth	Year of birth only	Month of birth only	Both missing		
<b>Sudan</b>	61.5	27.8	0.1	10.6	100.0	45,185
<b>State</b>						
Northern	92.5	6.0	0.0	1.5	100.0	2,013
River Nile	85.2	14.8	0.0	0.0	100.0	2,169
Red Sea	74.7	17.4	0.0	7.9	100.0	1,795
Kassala	80.1	19.9	0.0	0.0	100.0	2,387
Gadarif	38.6	21.1	0.2	40.2	100.0	2,622
Khartoum	88.0	10.0	0.0	2.0	100.0	2,363
Gezira	85.6	7.5	0.0	6.8	100.0	2,797
White Nile	55.3	22.1	0.2	22.4	100.0	2,338
Sinnar	62.6	21.8	0.2	15.5	100.0	2,406
Blue Nile	92.6	7.0	0.0	0.4	100.0	2,773
North Kordofan	56.3	43.7	0.0	0.0	100.0	2,420
South Kordofan	71.1	24.7	0.1	4.0	100.0	2,917
West Kordofan	27.0	31.7	0.6	40.7	100.0	2,434
North Darfur	30.2	50.9	0.0	18.9	100.0	2,857
West Darfur	21.4	62.8	0.0	15.7	100.0	2,495
South Darfur	70.2	26.8	0.0	3.0	100.0	2,815
Central Darfur	13.7	86.2	0.0	0.2	100.0	2,645
East Darfur	73.4	16.8	0.0	9.8	100.0	2,939
<b>Area</b>						
Urban	70.9	20.8	0.1	8.2	100.0	13,434
Rural	57.5	30.8	0.1	11.6	100.0	31,751

**DQ.10: Birth date reporting: First and last births**

Percent distribution of first and last births to women age 15-49 years by completeness of date of birth, Sudan MICS, 2014

Background characteristics	Completeness of reporting of date of birth										
	Date of first birth				Total	Number of first births	Date of last birth			Total	Number of last births
	Year and month of birth	Year of birth only	Completed years since first birth only	Other/ DK/ Missing			Both month and year	Year only	Other/ DK/ Missing		
<b>Sudan</b>	76.1	19.1	4.7	0.0	100.0	11,701	84.5	13.0	2.5	100.0	10,075
<b>State</b>											
Northern	99.3	.7	0.0	0.0	100.0	607	99.0	1.0	0.0	100.0	501
River Nile	91.8	8.2	0.0	0.0	100.0	558	94.1	5.9	0.0	100.0	459
Red Sea	83.7	13.7	2.6	0.0	100.0	502	89.8	8.1	2.1	100.0	422
Kassala	92.5	7.5	0.0	0.0	100.0	636	95.7	4.3	0.0	100.0	540
Gadarif	56.5	16.7	26.8	0.0	100.0	701	81.1	9.2	9.7	100.0	597
Khartoum	94.0	5.8	0.2	0.0	100.0	651	95.8	4.0	0.2	100.0	552
Gezira	98.2	1.6	0.1	0.0	100.0	733	99.0	1.0	0.0	100.0	605
White Nile	77.8	17.1	5.1	0.0	100.0	643	87.0	10.0	3.0	100.0	532
Sinnar	73.0	17.7	8.9	0.5	100.0	666	90.1	8.1	1.8	100.0	565
Blue Nile	98.5	1.5	0.0	0.0	100.0	733	99.7	0.3	0.0	100.0	631
North Kordofan	73.4	26.2	0.2	0.2	100.0	602	88.5	11.5	0.0	100.0	521
South Kordofan	94.7	5.1	0.3	0.0	100.0	789	96.3	3.3	0.4	100.0	697
West Kordofan	42.1	29.7	28.2	0.0	100.0	582	49.4	35.4	15.1	100.0	522
North Darfur	54.7	43.5	1.8	0.0	100.0	623	73.4	25.0	1.6	100.0	563
West Darfur	27.1	62.3	10.5	0.2	100.0	657	38.6	51.5	10.0	100.0	581
South Darfur	82.8	17.1	0.1	0.0	100.0	721	93.4	6.1	0.5	100.0	622
Central Darfur	23.4	76.0	0.6	0.0	100.0	624	50.4	49.0	0.5	100.0	569
East Darfur	96.6	2.4	1.0	0.0	100.0	673	97.5	1.5	1.0	100.0	596
<b>Area</b>											
Urban	83.6	12.5	3.9	0.1	100.0	3,398	88.9	8.3	2.8	100.0	2,926
Rural	73.0	21.8	5.1	0.0	100.0	8,303	82.7	14.9	2.4	100.0	7,149

**Table DQ.11: Completeness of reporting**

Percentage of observations that are missing information for selected questions and indicators, Sudan MICS, 2014

Household Missing Information	Percent with missing/incomplete information*	Number of cases
Salt test result	0.6	16,801
Starting time of interview	2.0	16,801
Ending time of interview	1.7	16,801

**Table DQ.11: Completeness of reporting**

Percentage of observations that are missing information for selected questions and indicators, Sudan MICS, 2014

Women (Missing Information)	Percent with missing/incomplete information*	Number of cases
Date of first marriage/union: Only month	30.4	12,755
Date of first marriage/union: Both month and year	25.1	12,755
Age at first marriage/union	0.0	12,755
Starting time of interview	0.0	18,302
Ending time of interview	0.0	18,302

**DQ.12: Completeness of information for anthropometric indicators: Underweight**

Percent distribution of children under 5 by completeness of information on date of birth and weight, Sudan MICS, 2014

Background characteristics	Valid weight and date of birth	Reason for exclusion from analysis				Total	Percent of children excluded from analysis	Number of children under 5
		Weight not measured	Incomplete date of birth	Weight not measured, incomplete date of birth	Flagged cases (outliers)			
<b>Sudan</b>	80.7	7.0	10.6	1.2	0.4	100.0	19.3	14,081
<b>Weight by age</b>								
<6 months	83.3	8.6	5.8	0.3	1.9	100.0	16.7	1,543
6-11 months	88.9	6.7	3.9	0.2	0.3	100.0	11.1	1,423
12-23 months	85.1	5.9	7.5	0.8	0.7	100.0	14.9	2,641
24-35 months	81.6	6.9	10.5	0.8	0.1	100.0	18.4	2,647
36-47 months	75.6	7.4	14.7	2.3	0.0	100.0	24.4	3,217
48-59 months	75.6	7.0	15.3	1.8	0.2	100.0	24.4	2,610

**DQ.13: Completeness of information for anthropometric indicators: Stunting**

Percent distribution of children under 5 by completeness of information on date of birth and length or height, Sudan MICS, 2014

Background characteristics	Valid length/height and date of birth	Reason for exclusion from analysis				Total	Percent of children excluded from analysis	Number of children under 5
		Length/Height not measured	Incomplete date of birth	Length/Height not measured, incomplete date of birth	Flagged cases (outliers)			
<b>Sudan</b>	78.2	8.4	10.5	1.3	1.6	100.0	21.8	14,081
<b>Age</b>								
<6 months	73.8	17.0	5.8	0.4	3.0	100.0	26.2	1,543
6-11 months	86.6	7.2	3.9	0.3	2.0	100.0	13.4	1,423
12-23 months	83.6	6.4	7.5	0.8	1.7	100.0	16.4	2,641
24-35 months	79.7	7.7	10.4	0.9	1.2	100.0	20.3	2,647
36-47 months	74.0	7.7	14.6	2.4	1.2	100.0	26.0	3,217
48-59 months	74.3	7.3	15.1	2.0	1.3	100.0	25.7	2,610

**DQ.14: Completeness of information for anthropometric indicators: Wasting**

Percent distribution of children under 5 by completeness of information on weight and length or height, Sudan MICS, 2014

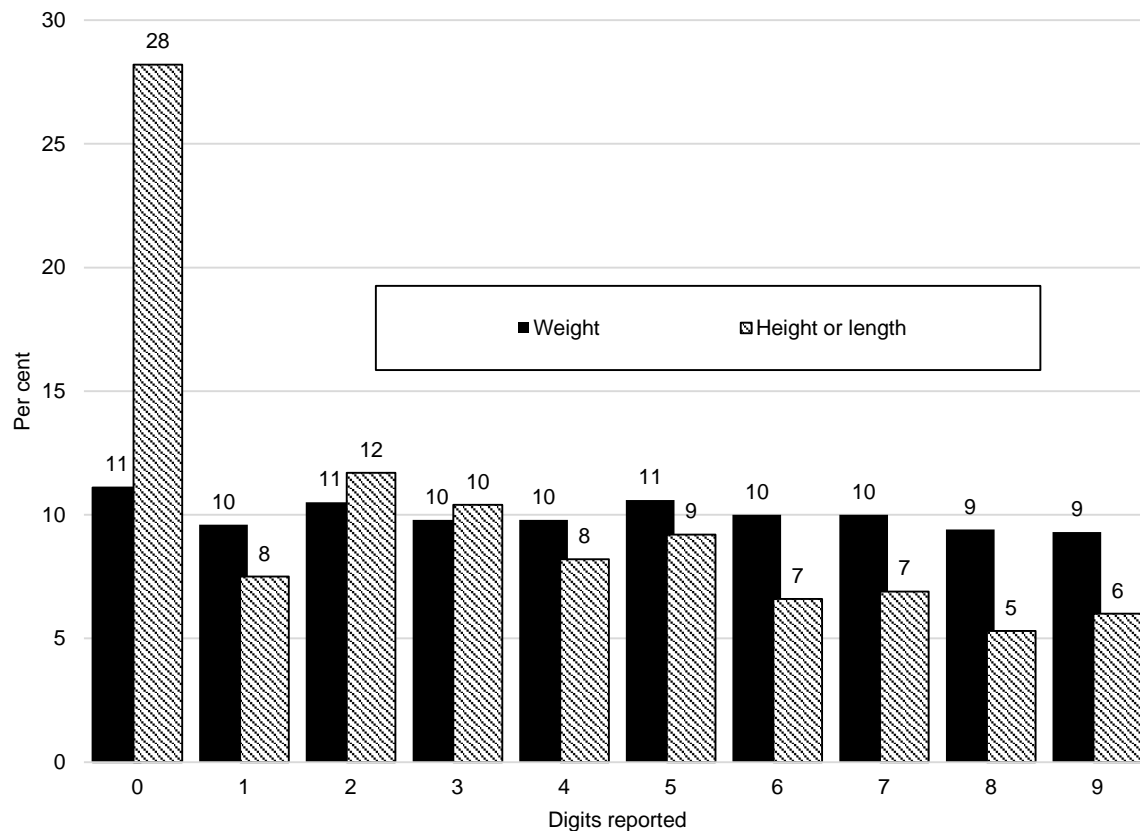
Background characteristics	Valid weight and length/height	Reason for exclusion from analysis				Total	Percent of children excluded from analysis	Number of children under 5
		Weight not measured	Length/Height not measured	Weight and length/height not measured	Flagged cases (outliers)			
<b>Sudan</b>	88.1	0.2	1.7	8.0	2.0	100.0	11.9	14,081
<b>Age</b>								
<6 months	77.7	0.3	8.9	8.6	4.5	100.0	22.3	1,543
6-11 months	90.0	0.4	1.1	6.5	2.1	100.0	10.0	1,423
12-23 months	90.3	0.1	0.6	6.6	2.4	100.0	9.7	2,641
24-35 months	89.8	0.3	1.2	7.5	1.2	100.0	10.2	2,647
36-47 months	88.5	0.2	0.7	9.4	1.2	100.0	11.5	3,217
48-59 months	88.7	0.2	0.7	8.6	1.8	100.0	11.3	2,610

# DQ.15: Heaping in anthropometric measurements

Distribution of weight and height/length measurements by digits reported for the decimal points, Sudan MICS, 2014

Digits	Weight		Height	
	Number	Percent	Number	Percent
Sudan	12,924	100.0	12,959	100.0
0	1,431	11.1	3,657	28.2
1	1,247	9.6	970	7.5
2	1,357	10.5	1,511	11.7
3	1,261	9.8	1,348	10.4
4	1,265	9.8	1,063	8.2
5	1,366	10.6	1,195	9.2
6	1,296	10.0	852	6.6
7	1,291	10.0	899	6.9
8	1,214	9.4	692	5.3
9	1,196	9.3	772	6.0
0 or 5	14,290	110.6	14,154	109.2

Figure DQ.2: Weight and height/length measurements by digits reported for the decimal points, Sudan MICS, 2014



**DQ: 16: Observation of birth certificates**

Percent distribution of children under 5 by presence of birth certificates, and percentage of birth certificates seen, Sudan  
MICS, 2014

Background characteristics	Child has birth certificate		Child does not have birth certificate	Missing/ DK	Total	Percentage of birth certificates seen by the interviewer (1)/(1+2)*100	Number of children under age 5
	Seen by the interviewer (1)	Not seen by the interviewer (2)					
<b>Sudan</b>	21.6	25.9	52.1	0.5	100.0	45.5	14,081
<b>State</b>							
Northern	43.8	41.5	14.7	0.0	100.0	51.3	532
River Nile	26.5	50.4	23.0	0.0	100.0	34.5	565
Red Sea	32.9	33.2	33.7	0.2	100.0	49.8	404
Kassala	23.2	22.7	53.1	0.9	100.0	50.5	655
Gadarif	20.3	32.4	46.9	0.5	100.0	38.5	858
Khartoum	40.3	42.2	17.5	0.0	100.0	48.9	699
Gezira	40.9	24.1	34.6	0.4	100.0	62.9	800
White Nile	21.8	28.8	48.8	0.7	100.0	43.0	754
Sinnar	30.8	28.7	40.4	0.0	100.0	51.8	814
Blue Nile	30.6	14.4	54.6	0.4	100.0	68.0	1,006
North Kordofan	23.9	24.9	51.1	0.1	100.0	48.9	750
South Kordofan	17.6	20.9	61.0	0.5	100.0	45.7	1,092
West Kordofan	5.0	27.9	66.0	1.1	100.0	15.2	741
North Darfur	9.8	27.2	62.4	0.6	100.0	26.5	885
West Darfur	10.9	27.6	61.2	0.2	100.0	28.3	843
South Darfur	12.1	22.1	65.3	0.5	100.0	35.4	975
Central Darfur	7.5	12.2	79.5	0.8	100.0	38.2	837
East Darfur	10.9	9.0	79.1	1.0	100.0	54.9	871
<b>Area</b>							
Urban	37.6	35.8	26.2	0.3	100.0	51.2	3,811
Rural	15.6	22.2	61.7	0.5	100.0	41.3	10,270
<b>Child's age</b>							
0-5 months	10.8	15.6	73.2	0.5	100.0	41.0	1,543
6-11 months	21.8	22.6	55.4	0.2	100.0	49.1	1,423
12-23 months	19.5	25.3	54.7	0.5	100.0	43.6	2,641
24-35 months	24.9	27.2	47.3	0.6	100.0	47.9	2,647
36-47 months	23.3	29.3	46.8	0.6	100.0	44.4	3,217
48-59 months	24.3	28.9	46.5	0.3	100.0	45.7	2,610

**DQ.17: Observation of vaccination cards**

Percent distribution of children age 0-35 months by presence of a vaccination card, and the percentage of vaccination cards seen by the interviewers, Sudan MICS, 2014

Background characteristics	Child does not have vaccination card		Child has vaccination card		Missing /DK	Total	Percent of vaccination cards seen by the interviewer (1)/(1+2)*100	Number of children age 0-35 months
	Had vaccination card previously	Never had vaccination card	Seen by the interviewer (1)	Not seen by the interviewer (2)				
<b>Sudan</b>	2.7	20.0	36.7	39.4	1.2	100.0	48.2	8,254
<b>State</b>								
Northern	1.3	7.2	53.1	38.4	0.0	100.0	58.0	320
River Nile	2.5	11.1	29.7	56.7	0.0	100.0	34.4	323
Red Sea	1.7	30.5	17.6	48.1	2.1	100.0	26.8	233
Kassala	3.1	28.4	33.2	34.8	0.5	100.0	48.9	391
Gadarif	5.7	14.8	36.1	43.0	0.4	100.0	45.7	526
Khartoum	0.7	5.1	47.4	46.2	0.5	100.0	50.7	409
Gezira	2.6	20.6	42.8	34.0	0.0	100.0	55.7	470
White Nile	1.7	16.6	29.1	50.9	1.7	100.0	36.4	464
Sinnar	2.7	12.8	44.1	39.8	.6	100.0	52.6	483
Blue Nile	1.8	7.6	65.4	25.0	.2	100.0	72.4	616
North Kordofan	3.6	19.2	32.9	42.0	2.6	100.0	43.9	417
South Kordofan	4.0	15.7	37.5	40.6	2.2	100.0	48.1	626
West Kordofan	1.9	36.0	14.6	46.2	1.4	100.0	24.0	431
North Darfur	3.6	19.0	39.0	35.4	3.0	100.0	52.4	505
West Darfur	2.5	23.7	19.7	51.9	2.3	100.0	27.5	472
South Darfur	2.9	32.6	27.5	36.1	1.0	100.0	43.3	596
Central Darfur	1.5	33.7	39.9	23.2	2.1	100.0	63.3	466
East Darfur	2.4	27.5	36.2	33.4	0.8	100.0	52.0	506
<b>Area</b>								
Urban	1.8	11.1	44.2	41.4	1.5	100.0	51.6	2,252
Rural	3.0	23.4	33.9	38.7	1.1	100.0	46.7	6,002
<b>Child's age</b>								
0-5 months	0.9	47.3	33.8	17.3	0.8	100.0	66.2	1,543
6-11 months	1.5	14.9	48.6	34.6	0.4	100.0	58.4	1,423
12-23 months	2.2	14.1	42.5	40.7	0.6	100.0	51.1	2,641
24-35 months	4.7	12.8	26.3	53.7	2.5	100.0	32.8	2,647

**DQ.18: Observation of women's health cards**

Percent distribution of women with a live birth in the last 2 years by presence of a health card, and the percentage of health cards seen by the interviewers, Sudan MICS, 2014

Background characteristics	Woman does not have health card	Woman has health card		Missing/ DK	Total	Percent of health cards seen by the interviewer (1)/(1+2)*100	Number of women with a live birth in the last two years
		Seen by the interviewer (1)	Not seen by the interviewer (2)				
<b>Sudan</b>	53.3	9.2	35.6	1.9	100.0	20.6	5,684
<b>State</b>							
Northern	44.9	8.3	46.3	0.5	100.0	15.3	216
River Nile	30.2	6.9	61.2	1.7	100.0	10.1	232
Red Sea	54.4	11.4	30.9	3.4	100.0	27.0	149
Kassala	62.0	9.2	27.3	1.5	100.0	25.3	271
Gadarif	63.7	4.6	30.8	0.9	100.0	13.0	347
Khartoum	45.6	5.1	47.8	1.5	100.0	9.7	274
Gezira	56.3	13.5	29.6	0.6	100.0	31.3	334
White Nile	59.5	5.5	34.1	1.0	100.0	13.8	311
Sinnar	53.3	6.5	39.3	0.9	100.0	14.2	338
Blue Nile	60.5	13.0	25.1	1.4	100.0	34.2	423
North Kordofan	58.5	5.8	32.3	3.4	100.0	15.2	294
South Kordofan	53.1	9.8	35.8	1.3	100.0	21.5	450
West Kordofan	68.8	6.0	21.3	3.9	100.0	22.1	282
North Darfur	46.6	8.2	43.2	2.0	100.0	15.9	354
West Darfur	47.0	8.4	41.3	3.4	100.0	16.9	298
South Darfur	47.8	9.5	40.0	2.7	100.0	19.1	412
Central Darfur	39.0	22.0	36.9	2.1	100.0	37.3	328
East Darfur	60.6	9.7	27.2	2.4	100.0	26.3	371
<b>Area</b>							
Urban	40.2	12.7	45.1	2.0	100.0	22.0	1,503
Rural	58.0	8.0	32.2	1.8	100.0	19.8	4,181



**DQ.20: Respondent to the under-5 questionnaire**

Distribution of children under five by whether the mother lives in the same household, and the person who was interviewed for the under-5 questionnaire, Sudan MICS, 2014

Age of children	Mother in the household	Mother not in the household and primary caretaker identified:			Total	Number of children under 5
		Father	Other adult female	Other adult male		
<b>Sudan</b>	98.0	0.1	1.9	0.0	100.0	15,050
<b>Age (yrs)</b>						
0	99.5	0.0	0.5	0.0	100.0	3,200
1	98.6	0.0	1.4	0.0	100.0	2,833
2	97.6	0.2	2.2	0.0	100.0	2,826
3	97.2	0.0	2.7	0.1	100.0	3,499
4	97.2	0.1	2.6	0.0	100.0	2,692

**DQ.21: Selection of children age 1-17 years for the child labour and child discipline modules**

Percent distribution of households by the number of children age 1-17 years, and the percentage of households with at least two children age 1-17 years where correct selection of one child for the child labour and child discipline modules was performed, Sudan MICS, 2014

Background characteristics	Number of children age 1-17 years				Number of households	Percent of households where correct selection was performed	Number of households with 2 or more children age 1-17 years
	None	One	Two or more	Total			
<b>Sudan</b>	18.8	15.1	66.1	100.0	16,801	94.5	11,100
<b>State</b>							
Northern	30.6	17.6	51.8	100.0	957	98.6	496
River Nile	27.2	17.3	55.5	100.0	928	95.9	515
Red Sea	32.5	18.2	49.2	100.0	928	95.6	457
Kassala	19.4	17.0	63.6	100.0	899	95.8	572
Gadarif	17.8	14.7	67.5	100.0	947	94.7	639
Khartoum	21.4	15.9	62.8	100.0	921	96.7	578
Gezira	19.5	12.9	67.6	100.0	988	97.2	668
White Nile	20.6	17.8	61.6	100.0	912	94.7	562
Sinnar	22.5	15.3	62.2	100.0	955	95.1	594
Blue Nile	15.5	13.8	70.6	100.0	954	96.9	674
North Kordofan	21.6	13.6	64.9	100.0	928	90.7	602
South Kordofan	12.9	13.4	73.7	100.0	961	92.9	708
West Kordofan	17.8	15.1	67.1	100.0	872	90.8	585
North Darfur	11.3	12.0	76.7	100.0	914	95.3	701
West Darfur	13.6	15.7	70.7	100.0	904	93.3	639
South Darfur	10.8	15.9	73.4	100.0	946	95.4	694
Central Darfur	13.8	13.5	72.7	100.0	955	89.5	694
East Darfur	10.2	12.3	77.5	100.0	932	94.3	722
<b>Area</b>							
Urban	19.9	14.8	65.3	100.0	4,825	94.4	3,151

Background characteristics	Number of children age 1-17 years				Number of households	Percent of households where correct selection was performed	Number of households with 2 or more children age 1-17 years
	None	One	Two or more	Total			
Rural	18.4	15.2	66.4	100.0	11,976	94.6	7,949
<b>Wealth index quintile</b>							
Poorest	14.1	13.7	72.2	100.0	3,543	94.2	2,557
Second	18.2	15.8	66.0	100.0	4,304	93.3	2,841
Middle	18.8	14.4	66.8	100.0	3,502	94.5	2,340
Fourth	21.0	14.8	64.3	100.0	2,750	95.6	1,767
Richest	24.0	17.0	59.0	100.0	2,702	96.1	1,595

#### DQ.22: School attendance by single age

Distribution of household population age 5-24 years by educational level and and grade attended in the current (or most recent) school year, Sudan MICS, 2014

Single age (yrs)	Not attending school	Khalwa	Assas	vocational training	University	Above University	Not able to determine	DK/ Missing	Missing	Total	Number of household members
Age at beginning of school year											
5	65.0	9.2	25.2	0.0	-	0.0	-	0.4	0.3	100.0	3,561
6	32.2	7.4	60.0	0.0	-	0.0	-	0.3	0.0	100.0	3,142
7	19.8	5.4	74.6	0.0	-	0.0	-	0.0	0.1	100.0	3,311
8	15.2	5.5	79.1	0.0	-	.0	-	0.0	0.2	100.0	3,204
9	10.6	5.3	83.9	0.0	-	0.0	-	0.0	0.1	100.0	2,640
10	11.8	4.4	83.8	0.0	-	0.0	-	0.1	0.0	100.0	3,063
11	9.5	4.0	86.3	0.0	0	0.0	-	0.1	0.1	100.0	2,289
12	12.9	4.4	81.6	0.0	0	0.0	-	1.0	0.0	100.0	3,051
13	16.1	3.6	73.1	0.0	-	.0	-	7.2	0.0	100.0	2,277
14	20.8	3.4	53.9	0.1	0	0.0	-	21.6	0.0	100.0	2,593
15	28.1	2.4	37.0	0.2	1	0.0	-	31.6	0.0	100.0	1,873
16	34.4	2.1	23.7	0.3	1	0.0	-	37.8	0.1	100.0	1,835
17	41.3	1.8	14.9	0.8	4	0.0	-	36.9	0.0	100.0	1,790
18	51.4	2.1	9.6	0.3	8	0.0	-	28.3	0.1	100.0	2,230
19	54.4	1.5	5.0	0.1	16	0.0	-	22.8	0.0	100.0	1,415
20	70.0	1.0	3.9	0.1	14	0.0	-	10.9	0.3	100.0	2,201
21	65.5	.8	1.7	0.2	21	0.2	-	10.7	0.1	100.0	1,094
22	77.3	.7	2.2	0.0	12	0.3	-	7.9	0.0	100.0	1,491
23	78.8	.8	1.8	0.1	14	0.0	-	4.9	0.0	100.0	1,106
24	76.3	1.0	1.6	0.2	6	0.1	9.3	5.4	0.0	100.0	1,165

**DQ.23: Sex ratio at birth among children ever born and living**

Sex ratio (number of males per 100 females) among children ever born (at birth), children living, and deceased children, by age of women, Sudan MICS, 2014

Age group	Children Ever Born			Children Living			Children Deceased			Number of women
	Sons	Daughters	Sex ratio at birth	Sons	Daughters	Sex ratio	Sons	Daughters	Sex ratio	
Sudan	27,074	25,171	1.08	24,425	23,134	1.06	2,649	2037	1.30	18,302
Age										
15-19	317	307	1.03	296	294	1.01	21	13	1.62	3,655
20-24	1,773	1,596	1.11	1,652	1,505	1.10	121	91	1.33	3,150
25-29	4,487	4,201	1.07	4,133	3,925	1.05	354	276	1.28	3,415
30-34	5,166	4,931	1.05	4,740	4,572	1.04	426	359	1.19	2,593
35-39	6,575	6,107	1.08	5,921	5,621	1.05	654	486	1.35	2,527
40-44	4,651	4,227	1.10	4,133	3,830	1.08	518	397	1.30	1,639
45-49	4,105	3,802	1.08	3,550	3,387	1.05	555	415	1.34	1,323

**DQ.24: Births by periods preceding the survey**

Number of births, percentage with complete birth date, sex ratio at birth, and calendar year ratio by calendar year, according to living, deceased, and total children (weighted, imputed), as reported in the birth histories, Sudan MICS, 2014

Background characteristics	Number of births			Percent with complete birth date [a]			Sex ratio at birth [b]			Period ratio [c]		
	Living	Dead	Total	Living	Dead	Total	Living	Dead	Total	Living	Dead	Total
Sudan	46,821	4,245	51,066	78.3	64.4	77.2	104.4	131.2	106.3	na	na	na
Years												
0	2,935	147	3,082	93.3	79.2	92.6	105.3	157.2	107.3	na	na	na
1	2,601	161	2,762	91.7	77.9	90.9	101.5	113.1	102.2	95.2	102.7	95.6
2	2,528	167	2,695	89.0	64.4	87.5	105.7	139.3	107.5	88.4	90.9	88.6
3	3,116	206	3,323	83.3	69.0	82.4	98.7	117.7	99.8	124.2	118.4	123.8
4	2,490	182	2,671	83.4	68.1	82.3	105.5	204.5	110.1	78.8	89.6	79.4
5	3,205	199	3,404	78.6	68.8	78.1	98.9	138.6	100.8	121.6	102.8	120.3
6	2,781	205	2,986	80.1	70.1	79.4	98.4	139.5	100.8	92.1	102.0	92.7
7	2,836	203	3,039	75.3	66.3	74.7	94.4	178.5	98.4	104.9	100.1	104.5
8	2,628	201	2,829	73.5	65.8	72.9	108.0	96.1	107.1	105.5	96.1	104.7
9	2,147	215	2,362	77.2	65.8	76.2	103.4	99.2	103.0	19.4	16.8	19.1
10+	19,555	2,358	21,913	72.4	60.5	71.1	108.2	129.7	110.3	na	na	na
Five year periods												
0-4	13,670	864	14,533	88.1	71.3	87.1	103.1	141.8	105.1	na	na	na
5-9	13,596	1,023	14,619	77.0	67.4	76.4	100.2	126.2	101.8	na	na	na
10-14	9,829	932	10,761	73.9	61.4	72.8	98.3	118.7	99.9	na	na	na
15-19	5,386	658	6,044	72.4	60.9	71.2	115.3	142.7	118.0	na	na	na
20+	4,341	767	5,108	68.9	59.1	67.4	124.4	133.2	125.7	na	na	na

na: not applicable

[a] Both month and year of birth given. The inverse of the percent reported is the percent with incomplete and therefore imputed date of birth

[b]  $(B_m/B_f) \times 100$ , where  $B_m$  and  $B_f$  are the numbers of male and female births, respectively

[c]  $(2 \times B_t/(B_{t-1} + B_{t+1})) \times 100$ , where  $B_t$  is the number of births in year  $t$  preceding the survey

**DQ.25: Reporting of age at death in days**

Distribution of reported deaths under one month of age by age at death in days and the percentage of neonatal deaths reported to occur at ages 0-6 days, by 5-year periods preceding the survey (weighted, imputed), Sudan MICS, 2014

Age at death (days)	Number of years preceding the survey				Total 0-19
	0-4	5-9	10-14	15-19	
0	49	32	20	11	112
1	170	147	99	73	488
2	39	46	28	17	130
3	46	43	44	23	155
4	28	28	18	15	89
5	14	12	6	8	40
6	21	3	6	5	36
7	35	44	40	36	154
8	8	10	5	4	27
9	11	7	2	3	23
10	4	6	7	2	19
11	2	2	1	4	10
12	7	5	8	4	24
13	3	2	2	0	7
14	6	4	3	4	17
15	16	7	3	4	30
16	0	0	2	0	2
17	0	0	1	1	3
18	0	0	0	2	2
19	0	0	1	0	1
20	5	1	3	4	13
21	2	1	2	0	6
22	0	4	1	3	8
23	1	0	0	0	1
24	3	2	0	1	6
25	1	1	0	3	5
26	0	2	0	0	2
27	1	2	0	0	2
29	1	0	0	0	1
30	0	0	0	0	1
Total 0-30	476	410	301	228	1,415
Percent early neonatal*	77.2	75.5	73.5	67.0	74.3

\* Deaths during the first 7 days (0-6), divided by deaths during the first month (0-30 days)

**DQ.26: Reporting of age at death in months**

Distribution of reported deaths under two years of age by age at death in months and the percentage of infant deaths reported to occur at age under one month, by 5-year periods preceding the survey (weighted, imputed), Sudan MICS, 2014

Age at death (months)	Number of years preceding the survey				Total 0-19
	0-4	5-9	10-14	15-19	
0	476	410	301	228	1,415
1	62	35	37	25	159
2	28	29	27	16	101
3	28	32	27	19	107
4	22	19	24	6	71
5	29	35	17	11	92
6	23	32	24	9	87
7	20	42	25	23	110
8	21	18	30	11	81
9	15	25	52	8	100
10	4	6	9	7	26
11	4	7	3	2	17
12	68	124	118	80	390
13	3	1	2	0	6
14	2	3	2	0	8
15	0	0	3	3	6
16	2	2	1	2	6
17	0	3	0	2	5
18	2	6	7	8	24
19	3	0	0	0	4
20	3	0	3	0	5
21	0	2	1	0	2
23	1	1	-	0	2
Reported as 1 year	0	0	1	0	1
Total 0-11	684	660	552	340	2,236
Percent neonatal [b]	65.0	59.4	52.0	62.3	60.0

a) Includes deaths under one month reported in days

[b] Deaths under one month, divided by deaths under one year

## Appendix E: Sudan MICS 2014 Indicators: Numerators and Denominators

MICS INDICATOR		Module <sup>54</sup>	Numerator	Denominator	MDG Indicator Reference <sup>55</sup>
<b>MORTALITY</b>					
1.1	Neonatal mortality rate	BH	Probability of dying within the first month of life		
1.2	Infant mortality rate	BH	Probability of dying between birth and the first birthday		MDG 4.2
1.3	Post-neonatal mortality rate	BH	Difference between infant and neonatal mortality rates		
1.4	Child mortality rate	BH	Probability of dying between the first and the fifth birthdays		
1.5	Under-five mortality rate	BH	Probability of dying between birth and the fifth birthday		MDG 4.1
<b>NUTRITION</b>					
2.1a 2.1b	Underweight prevalence	AN	Number of children under age 5 who fall below (a) minus two standard deviations (moderate and severe) (b) minus three standard deviations (severe) of the median weight for age of the WHO standard	Total number of children under age 5	MDG 1.8
2.2a 2.2b	Stunting prevalence	AN	Number of children under age 5 who fall below (a) minus two standard deviations (moderate and severe) (b) below minus three standard deviations (severe) of the median height for age of the WHO standard	Total number of children under age 5	
2.3a 2.3b	Wasting prevalence	AN	Number of children under age 5 who fall below (a) minus two standard deviations (moderate and severe) (b) minus three standard deviations (severe) of the median weight for height of the WHO standard	Total number of children under age 5	

<sup>54</sup>Some indicators are constructed by using questions in several modules in the MICS questionnaires. In such cases, only the module(s) which contains most of the necessary information is indicated.

<sup>55</sup>Millennium Development Goals (MDG) indicators, effective 15 January 2008 - <http://mdgs.un.org/unsd/mdg/Host.aspx?Content=Indicators/OfficialList.htm>, accessed 10 June 2013.

MICS INDICATOR		Module <sup>54</sup>	Numerator	Denominator	MDG Indicator Reference <sup>55</sup>
2.4	Overweight prevalence	AN	Number of children under age 5 who are above two standard deviations of the median weight for height of the WHO standard	Total number of children under age 5	
2.5	Children ever breastfed	MN	Number of women with a live birth in the last 2 years who breastfed their last live-born child at any time	Total number of women with a live birth in the last 2 years	
2.6	Early initiation of breastfeeding	MN	Number of women with a live birth in the last 2 years who put their last newborn to the breast within one hour of birth	Total number of women with a live birth in the last 2 years	
2.7	Exclusive breastfeeding under 6 months	BD	Number of infants under 6 months of age who are exclusively breastfed <sup>56</sup>	Total number of infants under 6 months of age	
2.8	Predominant breastfeeding under 6 months	BD	Number of infants under 6 months of age who received breast milk as the predominant source of nourishment <sup>57</sup> during the previous day	Total number of infants under 6 months of age	
2.9	Continued breastfeeding at 1 year	BD	Number of children age 12-15 months who received breast milk during the previous day	Total number of children age 12-15 months	
2.10	Continued breastfeeding at 2 years	BD	Number of children age 20-23 months who received breast milk during the previous day	Total number of children age 20-23 months	
2.11	Duration of breastfeeding	BD	The age in months when 50 percent of children age 0-35 months did not receive breast milk during the previous day		
2.12	Age-appropriate breastfeeding	BD	Number of children age 0-23 months appropriately fed <sup>58</sup> during the previous day	Total number of children age 0-23 months	
2.13	Introduction of solid, semi-solid or soft foods	BD	Number of infants age 6-8 months who received solid, semi-solid or soft foods during the previous day	Total number of infants age 6-8 months	
2.14	Milk feeding frequency for non-breastfed children	BD	Number of non-breastfed children age 6-23 months who received at least 2 milk feedings during the previous day	Total number of non-breastfed children age 6-23 months	

<sup>56</sup>Infants receiving breast milk, and not receiving any other fluids or foods, with the exception of oral rehydration solution, vitamins, mineral supplements and medicines

<sup>57</sup>Infants who receive breast milk and certain fluids (water and water-based drinks, fruit juice, ritual fluids, oral rehydration solution, drops, vitamins, minerals, and medicines), but do not receive anything else (in particular, non-human milk and food-based fluids)

<sup>58</sup>Infants age 0-5 months who are exclusively breastfed, and children age 6-23 months who are breastfed and ate solid, semi-solid or soft foods



MICS INDICATOR		Module <sup>54</sup>	Numerator	Denominator	MDG Indicator Reference <sup>55</sup>
2.15	Minimum meal frequency	BD	Number of children age 6-23 months who received solid, semi-solid and soft foods (plus milk feeds for non-breastfed children) the minimum number of times <sup>59</sup> or more during the previous day	Total number of children age 6-23 months	

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<sup>59</sup>Breastfeeding children: Solid, semi-solid, or soft foods, two times for infants age 6-8 months, and three times for children 9-23 months; Non-breastfeeding children: Solid, semi-solid, or soft foods, or milk feeds, four times for children age 6-23 months

MICS INDICATOR		Module <sup>54</sup>	Numerator	Denominator	MDG Indicator Reference <sup>55</sup>
2.16	Minimum dietary diversity	BD	Number of children age 6–23 months who received foods from 4 or more food groups <sup>60</sup> during the previous day	Total number of children age 6–23 months	
2.17a 2.17b	Minimum acceptable diet	BD	(a) Number of breastfed children age 6–23 months who had at least the minimum dietary diversity and the minimum meal frequency during the previous day (b) Number of non-breastfed children age 6–23 months who received at least 2 milk feedings and had at least the minimum dietary diversity not including milk feeds and the minimum meal frequency during the previous day	(a) Number of breastfed children age 6–23 months (b) Number of non-breastfed children age 6–23 months	
2.18	Bottle feeding	BD	Number of children age 0-23 months who were fed with a bottle during the previous day	Total number of children age 0-23 months	
2.19	Iodized salt consumption	SI	Number of households with salt testing 15 parts per million or more of iodide/iodate	Total number of households in which salt was tested or where there was no salt	
2.20	Low-birthweight infants	MN	Number of most recent live births in the last 2 years weighing below 2,500 grams at birth	Total number of most recent live births in the last 2 years	
2.21	Infants weighed at birth	MN	Number of most recent live births in the last 2 years who were weighed at birth	Total number of most recent live births in the last 2 years	

CHILD HEALTH					
3.1	Tuberculosis immunization coverage	IM	Number of children age 12-23 months who received BCG vaccine by their first birthday	Total number of children age 12-23 months	
3.2	Polio immunization coverage	IM	Number of children age 12-23 months who received the third dose of OPV vaccine (OPV3) by their first birthday	Total number of children age 12-23 months	
3.3 3.5 3.6	Pentavalent (DPT+HepB+Hib) immunization coverage	IM	Number of children age 12-23 months who received the third dose of Pentavalent (DPT+HepB+Hib) vaccine by their first birthday	Total number of children age 12-23 months	
3.4	Measles immunization coverage <sup>61</sup>	IM	Number of children age 12-23 months who received measles vaccine by their first birthday	Total number of children age 12-23 months	MDG 4.3

<sup>60</sup>The indicator is based on consumption of any amount of food from at least 4 out of the 7 following food groups: 1) grains, roots and tubers, 2) legumes and nuts, 3) dairy products (milk, yogurt, cheese), 4) flesh foods (meat, fish, poultry and liver/organ meats), 5) eggs, 6) vitamin-A rich fruits and vegetables, and 7) other fruits and vegetables

<sup>61</sup>In countries where measles vaccination is administered at or after 12 months of age according to the vaccination schedule, the indicator is calculated as the proportion of children age 24-35 months who received the measles vaccine by 24 months of age

MICS INDICATOR		Module <sup>54</sup>	Numerator	Denominator	MDG Indicator Reference <sup>55</sup>
3.8	Full immunization coverage	IM	Number of children age 12-23 months who received all vaccinations recommended in the national immunization schedule by their first birthday	Total number of children age 12-23 months	
3.9	Neonatal tetanus protection	MN	Number of women age 15-49 years with a live birth in the last 2 years who were given at least two doses of tetanus toxoid vaccine within the appropriate interval <sup>62</sup> prior to the most recent birth	Total number of women age 15-49 years with a live birth in the last 2 years	
3.10	Care-seeking for diarrhoea	CA	Number of children under age 5 with diarrhoea in the last 2 weeks for whom advice or treatment was sought from a health facility or provider	Total number of children under age 5 with diarrhoea in the last 2 weeks	
3.11	Diarrhoea treatment with oral rehydration salts (ORS) and zinc	CA	Number of children under age 5 with diarrhoea in the last 2 weeks who received ORS and zinc	Total number of children under age 5 with diarrhoea in the last 2 weeks	
3.12	Diarrhoea treatment with oral rehydration therapy (ORT) and continued feeding	CA	Number of children under age 5 with diarrhoea in the last 2 weeks who received ORT (ORS packet, pre-packaged ORS fluid, recommended homemade fluid or increased fluids) and continued feeding during the episode of diarrhoea	Total number of children under age 5 with diarrhoea in the last 2 weeks	
3.13	Care-seeking for children with acute respiratory infection (ARI) symptoms	CA	Number of children under age 5 with ARI symptoms in the last 2 weeks for whom advice or treatment was sought from a health facility or provider	Total number of children under age 5 with ARI symptoms in the last 2 weeks	
3.14	Antibiotic treatment for children with ARI symptoms	CA	Number of children under age 5 with ARI symptoms in the last 2 weeks who received antibiotics	Total number of children under age 5 with ARI symptoms in the last 2 weeks	
3.15	Use of solid fuels for cooking	HC	Number of household members in households that use solid fuels as the primary source of domestic energy to cook	Total number of household members	

<sup>62</sup>See the MICS tabulation plan for a detailed description

MICS INDICATOR		Module <sup>54</sup>	Numerator	Denominator	MDG Indicator Reference <sup>55</sup>
<b>WATER AND SANITATION</b>					
4.1	Use of improved drinking water sources	WS	Number of household members using improved sources of drinking water	Total number of household members	MDG 7.8
4.2	Water treatment	WS	Number of household members in households using unimproved drinking water who use an appropriate treatment method	Total number of household members in households using unimproved drinking water sources	
4.3	Use of improved sanitation	WS	Number of household members using improved sanitation facilities which are not shared	Total number of household members	MDG 7.9
4.4	Safe disposal of child's faeces	CA	Number of children age 0-2 years whose last stools were disposed of safely	Total number of children age 0-2 years	
4.5	Place for handwashing	HW	Number of households with a specific place for hand washing where water and soap or other cleansing agent are present	Total number of households	
4.6	Availability of soap or other cleansing agent	HW	Number of households with soap or other cleansing agent	Total number of households	

<b>REPRODUCTIVE HEALTH</b>					
5.1	Adolescent birth rate <sup>63</sup>	BH	Age-specific fertility rate for women age 15-19 years		MDG 5.4
5.2	Early childbearing	BH	Number of women age 20-24 years who had at least one live birth before age 18	Total number of women age 20-24 years	
5.3	Contraceptive prevalence rate	CP	Number of women age 15-49 years currently married or in union who are using (or whose partner is using) a (modern or traditional) contraceptive method	Total number of women age 15-49 years who are currently married or in union	MDG 5.3
5.4	Unmet need <sup>64</sup>	UN	Number of women age 15-49 years who are currently married or in union who are fecund and want to space their births or limit the number of children they have and who are not currently using contraception	Total number of women age 15-49 years who are currently married or in union	MDG 5.6

<sup>63</sup>The indicator is calculated for the last 3-year period.

<sup>64</sup>See the MICS tabulation plan for a detailed description <http://mics.unicef.org/tools#analysis>

MICS INDICATOR		Module <sup>54</sup>	Numerator	Denominator	MDG Indicator Reference <sup>55</sup>
5.5a 5.5b	Antenatal care coverage	MN	Number of women age 15-49 years with a live birth in the last 2 years who were attended during their last pregnancy that led to a live birth (a) at least once by skilled health personnel (b) at least four times by any provider	Total number of women age 15-49 years with a live birth in the last 2 years	MDG 5.5
5.6	Content of antenatal care	MN	Number of women age 15-49 years with a live birth in the last 2 years who had their blood pressure measured and gave urine and blood samples during the last pregnancy that led to a live birth	Total number of women age 15-49 years with a live birth in the last 2 years	
5.7	Skilled attendant at delivery	MN	Number of women age 15-49 years with a live birth in the last 2 years who were attended by skilled health personnel during their most recent live birth	Total number of women age 15-49 years with a live birth in the last 2 years	MDG 5.2
5.8	Institutional deliveries	MN	Number of women age 15-49 years with a live birth in the last 2 years whose most recent live birth was delivered in a health facility	Total number of women age 15-49 years with a live birth in the last 2 years	
5.9	Caesarean section	MN	Number of women age 15-49 years whose most recent live birth in the last 2 years was delivered by caesarean section	Total number of women age 15-49 years with a live birth in the last 2 years	
5.10	Post-partum stay in health facility	PN	Number of women age 15-49 years who stayed in the health facility for 12 hours or more after the delivery of their most recent live birth in the last 2 years	Total number of women age 15-49 years with a live birth in the last 2 years	
5.11	Post-natal health check for the newborn	PN	Number of last live births in the last 2 years who received a health check while in facility or at home following delivery, or a post-natal care visit within 2 days after delivery	Total number of last live births in the last 2 years	
5.12	Post-natal health check for the mother	PN	Number of women age 15-49 years who received a health check while in facility or at home following delivery, or a post-natal care visit within 2 days after delivery of their most recent live birth in the last 2 years	Total number of women age 15-49 years with a live birth in the last 2 years	

CHILD DEVELOPMENT					
6.1	Attendance to early childhood education	EC	Number of children age 36-59 months who are attending an early childhood education programme	Total number of children age 36-59 months	

MICS INDICATOR		Module <sup>54</sup>	Numerator	Denominator	MDG Indicator Reference <sup>55</sup>
6.5	Availability of children's books	EC	Number of children under age 5 who have three or more children's books	Total number of children under age 5	
6.6	Availability of playthings	EC	Number of children under age 5 with two or more types of playthings	Total number of children under age 5	

LITERACY AND EDUCATION					
7.1	Literacy rate among young women <sup>[M]</sup>	WB	Number of women age 15-24 years who are able to read a short simple statement about everyday life or who attended secondary or higher education	Total number of women age 15-24 years	MDG 2.3
7.2	School readiness	ED	Number of children in first grade of primary school who attended pre-school during the previous school year	Total number of children attending the first grade of primary school	
7.3	Net intake rate in primary education	ED	Number of children of school-entry age who enter the first grade of primary school	Total number of children of school-entry age	
7.4	Primary school net attendance ratio (adjusted)	ED	Number of children of primary school age currently attending primary or secondary school	Total number of children of primary school age	MDG 2.1
7.5	Secondary school net attendance ratio (adjusted)	ED	Number of children of secondary school age currently attending secondary school or higher	Total number of children of secondary school age	
7.6	Children reaching last grade of primary	ED	Proportion of children entering the first grade of primary school who eventually reach last grade		MDG 2.2
7.7	Primary completion rate	ED	Number of children attending the last grade of primary school (excluding repeaters)	Total number of children of primary school completion age (age appropriate to final grade of primary school)	
7.8	Transition rate to secondary school	ED	Number of children attending the last grade of primary school during the previous school year who are in the first grade of secondary school during the current school year	Total number of children attending the last grade of primary school during the previous school year	
7.9	Gender parity index (primary school)	ED	Primary school net attendance ratio (adjusted) for girls	Primary school net attendance ratio (adjusted) for boys	MDG 3.1
7.10	Gender parity index (secondary school)	ED	Secondary school net attendance ratio (adjusted) for girls	Secondary school net attendance ratio (adjusted) for boys	MDG 3.1

#### CHILD PROTECTION

MICS INDICATOR		Module <sup>54</sup>	Numerator	Denominator	MDG Indicator Reference <sup>55</sup>
8.1	Birth registration	BR	Number of children under age 5 whose births are reported registered	Total number of children under age 5	
8.2	Child labour	CL	Number of children age 5-17 years who are involved in child labour <sup>65</sup>	Total number of children age 5-17 years	
8.3	Violent discipline	CD	Number of children age 1-14 years who experienced psychological aggression or physical punishment during the last one month	Total number of children age 1-14 years	
8.4	Marriage before age 15 <sup>[M]</sup>	MA	Number of women age 15-49 years who were first married before age 15	Total number of women age 15-49 years	
8.5	Marriage before age 18 <sup>[M]</sup>	MA	Number of women age 20-49 years who were first married before age 18	Total number of women age 20-49 years	
8.6	Young women age 15-19 years currently married	MA	Number of women age 15-19 years who are married	Total number of women age 15-19 years	
8.7	Polygyny <sup>[M]</sup>	MA	Number of women age 15-49 years who are in a polygynous	Total number of women age 15-49 years who are married or in union	
8.8a 8.8b	Spousal age difference	MA	Number of women who are married and whose spouse is 10 or more years older, (a) among women age 15-19 years, (b) among women age 20-24 years	Total number of women who are married or in union (a) age 15-19 years, (b) age 20-24 years	
8.9	Approval for female genital mutilation/cutting (FGM/C)	FG	Number of women age 15-49 years who state that FGM/C should be continued	Total number of women age 15-49 years who have heard of FGM/C	
8.10	Prevalence of FGM/C among women	FG	Number of women age 15-49 years who report to have undergone any form of FGM/C	Total number of women age 15-49 years	
8.11	Prevalence of FGM/C among girls	FG	Number of daughters age 0-14 years who have undergone any form of FGM/C, as reported by mothers age 15-49 years	Total number of daughters age 0-14 years of mothers age 15-49 years	
8.12	Attitudes towards domestic violence <sup>[M]</sup>	DV	Number of women who state that a husband is justified in hitting or beating his wife in at least one of the following circumstances: (1) she goes out without telling him, (2) she neglects the children, (3) she argues with him, (4) she refuses sex with him, (5) she burns the food	Total number of women age 15-49 years	

<sup>65</sup>Children involved in child labour are defined as children involved in economic activities above the age-specific thresholds, children involved in household chores above the age-specific thresholds, and children involved in hazardous work. See the MICS tabulation plan for more detailed information on thresholds and classifications

MICS INDICATOR		Module <sup>54</sup>	Numerator	Denominator	MDG Indicator Reference <sup>55</sup>
8.13	Children's living arrangements	HL	Number of children age 0-17 years living with neither biological parent	Total number of children age 0-17 years	
8.14	Prevalence of children with one or both parents dead	HL	Number of children age 0-17 years with one or both biological parents dead	Total number of children age 0-17 years	
8.15	Children with at least one parent living abroad	HL	Number of children 0-17 years with at least one biological parent living abroad	Total number of children 0-17 years	

HIV/AIDS					
9.1	Knowledge about HIV prevention among young women <sup>[M]</sup>	HA	Number of women age 15-24 years who correctly identify ways of preventing the sexual transmission of HIV <sup>66</sup> , and who reject major misconceptions about HIV transmission	Total number of women age 15-24 years	MDG 6.3
9.2	Knowledge of mother-to-child transmission of HIV <sup>[M]</sup>	HA	Number of women age 15-49 years who correctly identify all three means <sup>67</sup> of mother-to-child transmission of HIV	Total number of women age 15-49 years	
9.3	Accepting attitudes towards people living with HIV <sup>[M]</sup>	HA	Number of women age 15-49 years expressing accepting attitudes on all four questions <sup>68</sup> toward people living with HIV	Total number of women age 15-49 years who have heard of HIV	
9.4	Women who know where to be tested for HIV <sup>[M]</sup>	HA	Number of women age 15-49 years who state knowledge of a place to be tested for HIV	Total number of women age 15-49 years	
9.5	Women who have been tested for HIV and know the results <sup>[M]</sup>	HA	Number of women age 15-49 years who have been tested for HIV in the last 12 months and who know their results	Total number of women age 15-49 years	
9.6	Sexually active young women who have been tested for HIV and know the results <sup>[M]</sup>	HA	Number of women age 15-24 years who have had sex in the last 12 months, who have been tested for HIV in the last 12 months and who know their results	Total number of women age 15-24 years who have had sex in the last 12 months	
9.7	HIV counselling during antenatal care	HA	Number of women age 15-49 years who had a live birth in the last 2 years and received antenatal care during the pregnancy of their most recent birth, reporting that they received counselling on HIV during antenatal care	Total number of women age 15-49 years who had a live birth in the last 2 years	

<sup>66</sup>Using condoms and limiting sex to one faithful, uninfected partner

<sup>67</sup>Transmission during pregnancy, during delivery, and by breastfeeding

<sup>68</sup>Women (1) who think that a female teacher with the AIDS virus should be allowed to teach in school, (2) who would buy fresh vegetables from a shopkeeper or vendor who has the AIDS virus, (3) who would not want to keep it as a secret if a family member became infected with the AIDS virus, and (4) who would be willing to care for a family member who became sick with the AIDS virus



MICS INDICATOR		Module <sup>54</sup>	Numerator	Denominator	MDG Indicator Reference <sup>55</sup>
9.8	HIV testing during antenatal care	HA	Number of women age 15-49 years who had a live birth in the last 2 years and received antenatal care during the pregnancy of their most recent birth, reporting that they were offered and accepted an HIV test during antenatal care and received their results	Total number of women age 15-49 years who had a live birth in the last 2 years	
9.16	Ratio of school attendance of orphans to school attendance of non-orphans	HL - ED	Proportion attending school among children age 10-14 years who have lost both parents	Proportion attending school among children age 10-14 years whose parents are alive and who are living with one or both parents	MDG 6.4

FOOD SECURITY					
CS.1	Food Consumption Score	FS	Number of households with poor/borderline/acceptable food consumption	Total number of households	
CS.2	Dietary Diversity Score	FS	Number of household with average dietary diversity score (calculated on the entire population and on sub-groups)	Total number of households	
CS.3	Coping strategy index	FS	Number of households using negative coping strategy	Total number of households	

## Appendix F1: Household Questionnaire



## HOUSEHOLD QUESTIONNAIRE

*Sudan Multiple Indicator Survey 2014*

HOUSEHOLD INFORMATION PANEL		HH
<b>HH0.</b> state code		
<b>HH1.</b> Cluster number:	___ ___	<b>HH2.</b> Household number: ___ ___
<b>HH3.</b> Interviewer's name and number: Name _____	___ ___	<b>HH4.</b> Supervisor's name and number: Name_____
<b>HH5.</b> Day / Month / Year of interview:  ___ __/___ __/ 2 0 1 4		
<b>HH6.</b> AREA: Urban..... 1 Rural ..... 2		
<p>WE ARE FROM THE <b>Central Bureau of Statistics</b>. WE ARE CONDUCTING A SURVEY ABOUT THE SITUATION OF CHILDREN, FAMILIES AND HOUSEHOLDS. I WOULD LIKE TO TALK TO YOU ABOUT THESE SUBJECTS. THE INTERVIEW WILL TAKE ABOUT <b>35</b> MINUTES. ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND ANONYMOUS. MAY I START NOW?</p> <p><input type="checkbox"/> Yes, permission is given ⇒ Go to HH18 to record the time and then begin the interview.</p> <p><input type="checkbox"/> No, permission is not given ⇒ Circle 04 in HH9. Discuss this result with your supervisor.</p>		

<b>HH9.</b> Result of household interview:	
Completed .....	01
No household member or no competent respondent at home at time of visit .....	02
Entire household absent for extended period of time .....	03
Refused.....	04
Dwelling vacant / Address not a dwelling.....	05
Dwelling destroyed.....	06
Dwelling not found.....	07
Other ( <i>specify</i> ) .....	96

<i>After the household questionnaire has been completed, fill in the following information:</i>	
<b>HH10.</b> Respondent to Household Questionnaire: Name _____	
<b>HH11.</b> Total number of household members: _____	<i>After all questionnaires for the household have been completed, fill in the following information:</i>
<b>HH12.</b> Number of women age 15-49 years: _____	
<b>HH14.</b> Number of children under age 5: _____	
	<b>HH13.</b> Number of women's questionnaires completed: _____
	<b>HH15.</b> Number of under-5 questionnaires completed: _____

<b>HH16.</b> Field editor's name and number: Name _____	<b>HH17.</b> Main data entry clerk's name and number: Name _____
<b>Respondent mobile</b> _____	<b>Researcher mobile</b> _____

**HH18. Record the time.**  
Morning ..... 1  
Afternoon ..... 2

Hour .....  
Minutes .....

LIST OF HOUSEHOLD MEMBERS										HL	
<p>FIRST, PLEASE TELL ME THE NAME OF EACH PERSON WHO USUALLY LIVES HERE, STARTING WITH THE HEAD OF THE HOUSEHOLD.</p> <p><i>List the head of the household in line 01. List all household members (HL2), their relationship to the household head (HL3), and their sex (HL4)</i></p> <p>Then ask: ARE THERE ANY OTHERS WHO LIVE HERE, EVEN IF THEY ARE NOT AT HOME NOW?</p> <p><i>If yes, complete listing for questions HL2-HL4. Then, ask questions starting with HL5 for each person at a time.</i></p> <p><i>Use an additional questionnaire if all rows in the List of Household Members have been used.</i></p>											

								For women age 15-49	For children age 0-4	For children age 0-17 years						For Children age 0-14
HL1 Line no.	HL2. Name	HL3. WHAT IS THE RELATIONSHIP OF (name) TO THE HEAD OF HOUSEHOLD?	HL4. IS (name) MALE OR FEMALE?		HL5. WHAT IS (name)'S DATE OF BIRTH?		HL6. HOW OLD IS (name)?	HL7. HL7.	HL7B. HL7B.	HL11. IS (name)'S NATURAL MOTHER ALIVE?	HL12. DOES (name)'S NATURAL MOTHER LIVE IN THIS HOUSEHOLD?	HL12A. WHERE DOES (ame)'S NATURAL MOTHER LIVE? 1 In another household in this country 2 Institution in this country 3 Abroad 8 DK	HL13. IS (name)'S NATURAL FATHER ALIVE?	HL14. DOES (name)'S NATURAL FATHER LIVE IN THIS HOUSEHOLD?	HL14A. WHERE DOES (name)'S NATURAL FATHER LIVE? 1 In another household in this country 2 Institution in this country 3 Abroad 8 DK	HL15. Record line no. of mother from HL12 if indicated. If HL12 is blank or '00' ask: WHO IS THE PRIMARY CARETAKER OF (name)?
			1 Male 2 Female		98 DK	9998 DK	Record in completed years. If age is 95 or above, record '00'.	Circle line no. if woman age 15-49.	Circle line no. if age 0-4.	1 Yes 2 No 8 DK HL13 HL13	If "Yes", record line no. of mother and go to HL13. If "No", record 00.		1 Yes 2 No 8 DK HL15 HL15	If "Yes", record line no. of father and go to HL15. If "No", record 00.		
Line	Name	Relation*	M	F	Month	Year	Age	15-49	0-4	Y N DK	Mother	Y N DK	Y N DK	Father		Mother
01		01	1	2	___	___	___	01	01	1 2 8	___	1 2 3 8	1 2 8	___	1 2 3 8	___
02		___	1	2	___	___	___	02	02	1 2 8	___	1 2 3 8	1 2 8	___	1 2 3 8	___
03		___	1	2	___	___	___	03	03	1 2 8	___	1 2 3 8	1 2 8	___	1 2 3 8	___
04		___	1	2	___	___	___	04	04	1 2 8	___	1 2 3 8	1 2 8	___	1 2 3 8	___
05		___	1	2	___	___	___	05	05	1 2 8	___	1 2 3 8	1 2 8	___	1 2 3 8	___

								For women age 15-49	For children age 0-4	For children age 0-17 years						For Children age 0-14
HL1 Line no.	HL2. Name	HL3. WHAT IS THE RELATIONSHIP OF (name) TO THE HEAD OF HOUSEHOLD?	HL4. IS (name) MALE OR FEMALE?  1 Male 2 Female		HL5. WHAT IS (name)'S DATE OF BIRTH?  98 DK    9998 DK		HL6. HOW OLD IS (name)?  Record in completed years. If age is 95 or above, record '00'.	HL7.  Circle line no. if woman age 15-49.	HL7B.  Circle line no. if age 0-4.	HL11. IS (name)'S NATURAL MOTHER ALIVE?  1 Yes 2 No 8 DK	HL12. DOES (name)'S NATURAL MOTHER LIVE IN THIS HOUSEHOLD? If "Yes", record line no. of mother and go to HL13. If "No", record 00.	HL12A. WHERE DOES (name)'S NATURAL MOTHER LIVE? 1 In another household in this country 2 Institution in this country 3 Abroad 8 DK	HL13. IS (name)'S NATURAL FATHER ALIVE?  1 Yes 2 No 8 DK	HL14. DOES (name)'S NATURAL FATHER LIVE IN THIS HOUSEHOLD? If "Yes", record line no. of father and go to HL15. If "No", record 00.	HL14A. WHERE DOES (name)'S NATURAL FATHER LIVE? 1 In another household in this country 2 Institution in this country 3 Abroad 8 DK	HL15. Record line no. of mother from HL12 if indicated.  If HL12 is blank or '00' ask:  WHO IS THE PRIMARY CARETAKER OF (name)?
Line	Name	Relation*	M	F	Month	Year	Age	15-49	0-4	Y N DK	Mother	Y N DK	Y N DK	Father		Mother
06		___	1	2	___	___	___	06	06	1 2 8	___	1 2 3 8	1 2 8	___	1 2 3 8	___
07		___	1	2	___	___	___	07	07	1 2 8	___	1 2 3 8	1 2 8	___	1 2 3 8	___
08		___	1	2	___	___	___	08	08	1 2 8	___	1 2 3 8	1 2 8	___	1 2 3 8	___
09		___	1	2	___	___	___	09	09	1 2 8	___	1 2 3 8	1 2 8	___	1 2 3 8	___
10		___	1	2	___	___	___	10	10	1 2 8	___	1 2 3 8	1 2 8	___	1 2 3 8	___
11		___	1	2	___	___	___	11	11	1 2 8	___	1 2 3 8	1 2 8	___	1 2 3 8	___
12		___	1	2	___	___	___	12	12	1 2 8	___	1 2 3 8	1 2 8	___	1 2 3 8	___
13		___	1	2	___	___	___	13	13	1 2 8	___	1 2 3 8	1 2 8	___	1 2 3 8	___

Tick here if additional questionnaire used ☐

*Probe for additional household members.*

*Probe especially for any infants or small children not listed, and others who may not be members of the family (such as servants, friends) but who usually live in the household.*

*Insert names of additional members in the household list and complete form accordingly.*

*Now for each woman age 15-49 years, write her name and line number and other identifying information in the information panel of a separate Individual Women's Questionnaire.*

*For each child under age 5, write his/her name and line number AND the line number of his/her mother or caretaker in the information panel of a separate Under-5 Questionnaire.*

*You should now have a separate questionnaire for each eligible woman, each eligible man, and each child under five in the household.*

*\* Codes for **HL3**:*

*Relationship to head of  
household:*

01 Head

02 Spouse /

Partner

03 Son / Daughter

04 Son-In-Law / Daughter-In-

Law

05 Grandchild

06 Parent

07 Parent-In-Law

08 Brother / Sister

09 Brother-In-Law / Sister-In-

Law

10 Uncle / Aunt

11 Niece /

Nephew

12 Other relative

13 Adopted / Foster/

Stepchild

14 Other (Not related)

98 DK

EDUCATION						ED						
		For household members age 4 and above				For household members age 4-24 years						
ED1. Line number	ED2. Name and age  Copy from HL2 and HL6.	ED3. HAS (name) EVER ATTENDED SCHOOL OR PRE-SCHOOL OR KHALWA ?	ED3.A WHAT WAS THE MAIN REASON FOR NOT ATTENDING SCHOOL?  1 FINANCIAL BURDEN OF SCHOOL EXPENSES 2 UNAVAILABILITY OF EDUCATION SERVICES 3 DISABILITY/ILLNESS 4 WORK TO SUPPORT FAMILY 5 SCHOOL TOO FAR AWAY 6 MIXED EDUCATION 7 OTHER 8 DK Next Line	ED4A. WHAT IS THE HIGHEST EDUCATIONAL LEVEL (name) HAS ATTENDED?  00 KHALWA 01 PRESCHOOL 02 PRELIMINARY 03 PRIMARY 04 BASIC 05 VOCATIONAL TRAINING 06 INTERMEDIATE 07 SECONDARY SCHOOL (3 YEARS) 09 HIGH SCHOOL (4 YEARS) 10 INTERMEDIATE DIPLOMA 11 UNIVERSITY 12 POST GRADUATE 98 DON'T KNOW	ED4B. WHAT IS THE HIGHEST GRADE (name) COMPLETED AT THIS LEVEL?  Grade:  98 DK  If the first grade at this level is not completed, enter "00".	ED5. DURING THE CURRENT SCHOOL YEAR, THAT IS 2014-2015, DID (name) ATTEND SCHOOL OR PRESCHOOL OR KHALWA AT ANY TIME?  1 Yes:ED6 2 No ED5A	ED5A WHAT WAS THE MAIN REASON FOR NOT ATTENDING SCHOOL?  1 FINANCIAL BURDEN OF SCHOOL EXPENSES 2 UNAVAILABILITY OF EDUCATION SERVICES 3 DISABILITY/ILLNESS 4 WORK TO SUPPORT FAMILY 5 SCHOOL TOO FAR AWAY 6 MIXED EDUCATION 7 UNAVAILABILITY OF DRINKING WATER AND TOILET. 8 EARLY MARRIAGE 96 OTHERS  AFTER EACH ANSWER GO TO ED7	ED6. DURING THIS/THAT SCHOOL YEAR, WHICH LEVEL AND GRADE IS/WAS (name) ATTENDING?  LEVEL: 00 KHALWA 01 PRESCHOOL 04 BASIC 05 VOCATIONAL TRAINING 08 HIGH SCHOOL 11 UNIVERSITY 12 POST GRADUATE  98 DON'T KNOW  If level=00,01 or 12 go to ED7		ED7. DURING THE PREVIOUS SCHOOL YEAR, THAT IS 2013-2014, DID (name) ATTEND SCHOOL OR PRESCHOOL OR KHALWA AT ANY TIME?  1 Yes 2 No Next Line 8 DK Next Line	ED8. DURING THAT PREVIOUS SCHOOL YEAR, WHICH LEVEL AND GRADE DID (name) ATTEND?  LEVEL: 00 KHALWA 01 PRESCHOOL 04 BASIC 05 VOCATIONAL TRAINING 08 HIGH SCHOOL 11 UNIVERSITY 12 POST GRADUATE  98 DON'T KNOW If level=00 or 01,12 go to next line.	

					If level=00,01 or 12, skip to ED5.												
Line	Name	Age	Yes	No		Level	Grade	Yes	No		Level	Grade	Yes	No	DK	Level	Grade
01		___ ___	1	2		___ ___	___ ___	1	2		___ ___	___ ___	1	2	8	___ ___	___ ___
02		___ ___	1	2		___ ___	___ ___	1	2		___ ___	___ ___	1	2	8	___ ___	___ ___
03		___ ___	1	2		___ ___	___ ___	1	2		___ ___	___ ___	1	2	8	___ ___	___ ___
04		___ ___	1	2		___ ___	___ ___	1	2		___ ___	___ ___	1	2	8	___ ___	___ ___
05		___ ___	1	2		___ ___	___ ___	1	2		___ ___	___ ___	1	2	8	___ ___	___ ___
06		___ ___	1	2		___ ___	___ ___	1	2		___ ___	___ ___	1	2	8	___ ___	___ ___
07		___ ___	1	2		___ ___	___ ___	1	2		___ ___	___ ___	1	2	8	___ ___	___ ___
					For household members age 4 and above			For household members age 4-24 years									





08		—	1 2		— —	— —	1	2		— —	— —	1 2 8	— —	—
09		—	1 2		— —	— —	1	2		— —	— —	1 2 8	— —	—
10		—	1 2		— —	— —	1	2		— —	— —	1 2 8	— —	—
11		—	1 2		— —	— —	1	2		— —	— —	1 2 8	— —	—
12		—	1 2		— —	— —	1	2		— —	— —	1 2 8	— —	—
13		—	1 2		— —	— —	1	2		— —	— —	1 2 8	— —	—

**SELECTION OF ONE CHILD FOR CHILD LABOUR/CHILD DISCIPLINE**
**SL**

**SL1.** Check HL6 in the List of Household Members and write the total number of children age 1-17 years.

Total number ..... —

**SL2.** Check the number of children age 1-17 years in SL1:

☐ Zero ⇒ Go to HOUSEHOLD CHARACTERISTICS module.

☐ One ⇒ Go to SL9 and record the rank number as '1', enter the line number, child's name and age.

☐ Two or more ⇒ Continue with SL2A.

**SL2A.** List each of the children age 1-17 years below in the order they appear in the List of Household Members. Do not include other household members outside of the age range 1-17 years. Record the line number, name, sex, and age for each child.

SL3. Rank number	SL4. Line number from HL1	SL5. Name from HL2	SL6. Sex from HL4		SL7. Age from HL6
Rank	Line	Name	M	F	Age
1	— —		1	2	— —
2	— —		1	2	— —
3	— —		1	2	— —
4	— —		1	2	— —
5	— —		1	2	— —
6	— —		1	2	— —
7	— —		1	2	— —

**SL8.** Check the last digit of the household number (HH2) from the cover page. This is the number of the row you should go to in the table below.

Check the total number of children age 1-17 years in SL1 above. This is the number of the column you should go to in the table below.

Find the box where the row and the column meet and circle the number that appears in the box. This is the rank number (SL3) of the selected child.

Last Digit of Household Number (from HH2)	Total Number of Eligible Children in the Household (from SL1)						
	2	3	4	5	6	7	8+
0	2	2	4	3	6	5	4
1	1	3	1	4	1	6	5
2	2	1	2	5	2	7	6
3	1	2	3	1	3	1	7
4	2	3	4	2	4	2	8
5	1	1	1	3	5	3	1
6	2	2	2	4	6	4	2
7	1	3	3	5	1	5	3
8	2	1	4	1	2	6	4
9	1	2	1	2	3	7	5

**SL9.** Record the rank number (SL3), line number (SL4), name (SL5) and age (SL7) of the selected child.

Rank number —

Line number — —

Name \_\_\_\_\_

Age — —

CHILD LABOUR		CL														
<b>CL1. Check selected child's age from SL9:</b>  <input type="checkbox"/> 1-4 years ⇒ Go to Next Module (Child discipline)  <input type="checkbox"/> 5-17 years ⇒ Continue with CL2.																
<b>CL2. NOW I WOULD LIKE TO ASK ABOUT ANY WORK CHILDREN IN THIS HOUSEHOLD MAY DO.</b>  SINCE LAST ( <i>day of the week</i> ), DID ( <i>name</i> ) DO ANY OF THE FOLLOWING ACTIVITIES, EVEN FOR ONLY ONE HOUR?  [A] DID ( <i>name</i> ) DO ANY WORK OR HELP ON HIS/HER OWN OR THE HOUSEHOLD'S PLOT/FARM/FOOD GARDEN OR LOOKED AFTER ANIMALS? FOR EXAMPLE, GROWING FARM PRODUCE, HARVESTING, OR FEEDING, GRAZING, MILKING ANIMALS?  [B] DID ( <i>name</i> ) HELP IN FAMILY BUSINESS OR RELATIVE'S BUSINESS WITH OR WITHOUT PAY, OR RUN HIS/HER OWN BUSINESS?  [C] DID ( <i>name</i> ) PRODUCE OR SELL ARTICLES, HANDICRAFTS, CLOTHES, FOOD OR AGRICULTURAL PRODUCTS?  [D] SINCE LAST ( <i>day of the week</i> ), DID ( <i>name</i> ) ENGAGE IN ANY OTHER ACTIVITY IN RETURN FOR INCOME IN CASH OR IN KIND, EVEN FOR ONLY ONE HOUR? <i>If "No", Probe:</i> PLEASE INCLUDE ANY ACTIVITY ( <i>name</i> ) PERFORMED AS A REGULAR OR CASUAL EMPLOYEE, SELF-EMPLOYED OR EMPLOYER; OR AS AN UNPAID FAMILY WORKER HELPING OUT IN HOUSEHOLD BUSINESS OR FARM.	<table border="0"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>Worked on plot / farm / food garden / looked after animals .....</td> <td>1</td> <td>2</td> </tr> <tr> <td>Helped in family / relative's business/ran own business .....</td> <td>1</td> <td>2</td> </tr> <tr> <td>Produce / sell articles / handicrafts / clothes / food or agricultural products .....</td> <td>1</td> <td>2</td> </tr> <tr> <td>Any other activity .....</td> <td>1</td> <td>2</td> </tr> </tbody> </table>		Yes	No	Worked on plot / farm / food garden / looked after animals .....	1	2	Helped in family / relative's business/ran own business .....	1	2	Produce / sell articles / handicrafts / clothes / food or agricultural products .....	1	2	Any other activity .....	1	2
	Yes	No														
Worked on plot / farm / food garden / looked after animals .....	1	2														
Helped in family / relative's business/ran own business .....	1	2														
Produce / sell articles / handicrafts / clothes / food or agricultural products .....	1	2														
Any other activity .....	1	2														
<b>CL3. Check CL2, A to D</b>  <input type="checkbox"/> There is at least one 'Yes' ⇒ continue with CL4  <input type="checkbox"/> All answers are 'No' ⇒ Go to CL8																
<b>CL4. SINCE LAST (<i>day of the week</i>) ABOUT HOW MANY HOURS DID (<i>name</i>) ENGAGE IN THIS ACTIVITY/THESE ACTIVITIES, IN TOTAL?</b>  <i>If less than one hour, record "00"</i>	Number of hours..... ____															
<b>CL5. DOES THE ACTIVITY/DO THESE ACTIVITIES REQUIRE CARRYING HEAVY LOADS?</b>	Yes ..... 1 No ..... 2	1⇒ CL8														
<b>CL6. DOES THE ACTIVITY/DO THESE ACTIVITIES REQUIRE WORKING WITH DANGEROUS TOOLS (KNIVES ETC.) OR OPERATING HEAVY MACHINERY?</b>	Yes ..... 1 No ..... 2	1⇒ CL8														

<b>CL7. HOW WOULD YOU DESCRIBE THE WORK ENVIRONMENT OF (name)?</b>  [A] IS (name) EXPOSED TO DUST, FUMES OR GAS?  [B] IS (name) EXPOSED TO EXTREME COLD, HEAT OR HUMIDITY?  [C] IS (name) EXPOSED TO LOUD NOISE OR VIBRATION?  [D] IS (name) REQUIRED TO WORK AT HEIGHTS?  [E] IS (name) REQUIRED TO WORK WITH CHEMICALS (PESTICIDES, GLUES, ETC.) OR EXPLOSIVES?  [F] IS (name) EXPOSED TO OTHER THINGS, PROCESSES OR CONDITIONS BAD FOR (name)'S HEALTH OR SAFETY?	Yes ..... 1 No ..... 2  Yes ..... 1 No ..... 2  Yes ..... 1 No ..... 2  Yes ..... 1 No ..... 2  Yes ..... 1 No ..... 2  Yes ..... 1 No ..... 2																									
<b>CL8. SINCE LAST (day of the week), DID (name) FETCH WATER OR COLLECT FIREWOOD FOR HOUSEHOLD USE?</b>	Yes ..... 1 No ..... 2	2⇒ CL10																								
<b>CL9. IN TOTAL, HOW MANY HOURS DID (name) SPEND ON FETCHING WATER OR COLLECTING FIREWOOD FOR HOUSEHOLD USE, SINCE LAST (day of the week)?</b>  <i>If less than one hour, record "00"</i>	Number of hours..... ____																									
<b>CL10. SINCE LAST (day of the week), DID (name) DO ANY OF THE FOLLOWING FOR THIS HOUSEHOLD?</b>  [A] SHOPPING FOR HOUSEHOLD? [B] REPAIR ANY HOUSEHOLD EQUIPMENT? [C] COOKING OR CLEANING UTENSILS OR THE HOUSE? [D] WASHING CLOTHES? [E] CARING FOR CHILDREN? [F] CARING FOR THE OLD OR SICK? [G] OTHER HOUSEHOLD TASKS?	<table border="0"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>Shopping for household .....</td> <td>1</td> <td>2</td> </tr> <tr> <td>Repair household equipment .....</td> <td>1</td> <td>2</td> </tr> <tr> <td>Cooking / cleaning utensils /house ...</td> <td>1</td> <td>2</td> </tr> <tr> <td>Washing clothes .....</td> <td>1</td> <td>2</td> </tr> <tr> <td>Caring for children .....</td> <td>1</td> <td>2</td> </tr> <tr> <td>Caring for old / sick .....</td> <td>1</td> <td>2</td> </tr> <tr> <td>Other household tasks .....</td> <td>1</td> <td>2</td> </tr> </tbody> </table>		Yes	No	Shopping for household .....	1	2	Repair household equipment .....	1	2	Cooking / cleaning utensils /house ...	1	2	Washing clothes .....	1	2	Caring for children .....	1	2	Caring for old / sick .....	1	2	Other household tasks .....	1	2	
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<b>CL11. Check CL10, A to G</b>  <input type="checkbox"/> There is at least one 'Yes' ⇒ Continue with CL12  <input type="checkbox"/> All answers are 'No' ⇒ Go to Next Module																										
<b>CL12. SINCE LAST (day of the week), ABOUT HOW MANY HOURS DID (name) ENGAGE IN THIS ACTIVITY/THESE ACTIVITIES, IN TOTAL?</b>	Number of hours ..... ____																									

<i>If less than one hour, record "00"</i>		
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CHILD DISCIPLINE		CD																																				
<b>CD1.</b> Check selected child's age from SL9: <input type="checkbox"/> 1-14 years ⇒ Continue with CD2 <input type="checkbox"/> 15-17 years ⇒ Go to Next Module																																						
<b>CD2.</b> Write the line number and name of the child from SL9.	Line number    __ __ Name _____																																					
<b>CD3.</b> ADULTS USE CERTAIN WAYS TO TEACH CHILDREN THE RIGHT BEHAVIOUR OR TO ADDRESS A BEHAVIOUR PROBLEM. I WILL READ VARIOUS METHODS THAT ARE USED. PLEASE TELL ME IF <u>YOU OR ANYONE ELSE IN YOUR HOUSEHOLD</u> HAS USED THIS METHOD WITH <u>(name)</u> IN THE PAST MONTH.	<table border="0"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>[A] TOOK AWAY PRIVILEGES, FORBADE SOMETHING <u>(name)</u> LIKED OR DID NOT ALLOW HIM/HER TO LEAVE THE HOUSE.</td> <td>1</td> <td>2</td> </tr> <tr> <td>[B] EXPLAINED WHY <u>(name)</u>'S BEHAVIOUR WAS WRONG.</td> <td>1</td> <td>2</td> </tr> <tr> <td>[C] SHOOK HIM/HER.</td> <td>1</td> <td>2</td> </tr> <tr> <td>[D] SHOUTED, YELLED AT OR SCREAMED AT HIM/HER.</td> <td>1</td> <td>2</td> </tr> <tr> <td>[E] GAVE HIM/HER SOMETHING ELSE TO DO.</td> <td>1</td> <td>2</td> </tr> <tr> <td>[F] SPANKED, HIT OR SLAPPED HIM/HER ON THE BOTTOM WITH BARE HAND.</td> <td>1</td> <td>2</td> </tr> <tr> <td>[G] HIT HIM/HER ON THE BOTTOM OR ELSEWHERE ON THE BODY WITH SOMETHING LIKE A BELT, HAIRBRUSH, STICK, SLIPPER OR OTHER HARD OBJECT.</td> <td>1</td> <td>2</td> </tr> <tr> <td>[H] CALLED HIM/HER DUMB, LAZY, OR ANOTHER NAME LIKE THAT.</td> <td>1</td> <td>2</td> </tr> <tr> <td>[I] HIT OR SLAPPED HIM/HER ON THE FACE, HEAD OR EARS.</td> <td>1</td> <td>2</td> </tr> <tr> <td>[J] HIT OR SLAPPED HIM/HER ON THE HAND, ARM, OR LEG.</td> <td>1</td> <td>2</td> </tr> <tr> <td>[K] BEAT HIM/HER UP, THAT IS HIT HIM/HER OVER AND OVER AS HARD AS ONE COULD.</td> <td>1</td> <td>2</td> </tr> </tbody> </table>		Yes	No	[A] TOOK AWAY PRIVILEGES, FORBADE SOMETHING <u>(name)</u> LIKED OR DID NOT ALLOW HIM/HER TO LEAVE THE HOUSE.	1	2	[B] EXPLAINED WHY <u>(name)</u> 'S BEHAVIOUR WAS WRONG.	1	2	[C] SHOOK HIM/HER.	1	2	[D] SHOUTED, YELLED AT OR SCREAMED AT HIM/HER.	1	2	[E] GAVE HIM/HER SOMETHING ELSE TO DO.	1	2	[F] SPANKED, HIT OR SLAPPED HIM/HER ON THE BOTTOM WITH BARE HAND.	1	2	[G] HIT HIM/HER ON THE BOTTOM OR ELSEWHERE ON THE BODY WITH SOMETHING LIKE A BELT, HAIRBRUSH, STICK, SLIPPER OR OTHER HARD OBJECT.	1	2	[H] CALLED HIM/HER DUMB, LAZY, OR ANOTHER NAME LIKE THAT.	1	2	[I] HIT OR SLAPPED HIM/HER ON THE FACE, HEAD OR EARS.	1	2	[J] HIT OR SLAPPED HIM/HER ON THE HAND, ARM, OR LEG.	1	2	[K] BEAT HIM/HER UP, THAT IS HIT HIM/HER OVER AND OVER AS HARD AS ONE COULD.	1	2	
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<b>CD4.</b> DO YOU BELIEVE THAT IN ORDER TO BRING UP, RAISE, OR EDUCATE A CHILD PROPERLY, THE CHILD NEEDS TO BE PHYSICALLY PUNISHED?	Yes ..... 1 No ..... 2 DK/ No opinion.....8																																					





	Stone with lime / cement 32 Bricks 33 Cement blocks 34 Covered adobe (Bayad) 35 Wood planks / shingles 36 Other ( <i>specify</i> ) _____ 96																																		
<b>HC6.</b> WHAT TYPE OF FUEL DOES YOUR HOUSEHOLD <u>MAINLY</u> USE FOR COOKING?	Electricity 01 Liquefied Petroleum Gas (LPG) 02 Kerosene 05  Coal / Lignite 06 Charcoal 07 Wood 08 Straw / Shrubs / Grass 09 Animal dung 10 Agricultural crop residue 11 Solar energy.....12 .....,,.....12 Wood dust.....,,.....13  No food cooked in household.....95 Other ( <i>specify</i> ) _____ 96	01⇒HC8 02⇒HC8 05⇒HC8       95⇒HC8																																	
<b>HC7.</b> IS THE COOKING USUALLY DONE IN THE HOUSE, IN A SEPARATE BUILDING, OR OUTDOORS?  <i>If 'In the house', probe: IS IT DONE IN A  SEPARATE ROOM USED AS A KITCHEN?</i>	In the house In a separate room used as kitchen/tukul 1 Elsewhere in the house 2 In a separate building 3 Outdoors 4 Other ( <i>specify</i> ) _____ 6																																		
<b>HC8.</b> DOES YOUR HOUSEHOLD HAVE:	<table> <thead> <tr> <th></th><th>Yes</th><th>No</th></tr> </thead> <tbody> <tr> <td>[A] ELECTRICITY?</td><td>Electricity .....1</td><td>2</td></tr> <tr> <td>[B] A RADIO?</td><td>Radio .....1</td><td>2</td></tr> <tr> <td>[C] A TELEVISION?</td><td>Television.....1</td><td>2</td></tr> <tr> <td>[D] A NON-MOBILE TELEPHONE?</td><td>Non-mobile telephone.....1</td><td>2</td></tr> <tr> <td>[E] A REFRIGERATOR?</td><td>Refrigerator .....1</td><td>2</td></tr> <tr> <td>[F] A DIGITAL RECEIVER?</td><td>Digital receiver.....1</td><td>2</td></tr> <tr> <td>[G] A FLAT SCREEN TV</td><td>Flat screen TV .....1</td><td>2</td></tr> <tr> <td>[H] AN INTERNET CONNECTION?</td><td>Internet connection.....1</td><td>2</td></tr> <tr> <td>[I] DESKTOP COMPUTER</td><td>Desktop computer .....1</td><td>2</td></tr> <tr> <td>[J] Washing machine</td><td>Washing machine .....1</td><td>2</td></tr> </tbody> </table>		Yes	No	[A] ELECTRICITY?	Electricity .....1	2	[B] A RADIO?	Radio .....1	2	[C] A TELEVISION?	Television.....1	2	[D] A NON-MOBILE TELEPHONE?	Non-mobile telephone.....1	2	[E] A REFRIGERATOR?	Refrigerator .....1	2	[F] A DIGITAL RECEIVER?	Digital receiver.....1	2	[G] A FLAT SCREEN TV	Flat screen TV .....1	2	[H] AN INTERNET CONNECTION?	Internet connection.....1	2	[I] DESKTOP COMPUTER	Desktop computer .....1	2	[J] Washing machine	Washing machine .....1	2	
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<p><b>HC9. DOES ANY MEMBER OF YOUR HOUSEHOLD OWN:</b></p> <p>[B] A MOBILE PHONE?</p> <p>[C] A BICYCLE?</p> <p>[D] A MOTORCYCLE OR SCOOTER?</p> <p>[E] AN ANIMAL-DRAWN CART (KARO)?</p> <p>[F] A CAR OR TRUCK?</p> <p>[G] A BOAT WITH A MOTOR?</p> <p>[H] A RAKSHA</p> <p>[I] A SMART PHONE</p> <p>[J] A LAPTOP COMPUTER/ TABLET</p> <p>[K] THORAYA PHONE</p>	<table border="0"> <thead> <tr> <th></th> <th>No</th> <th>Yes</th> </tr> </thead> <tbody> <tr> <td>Mobile telephone.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>Bicycle.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>Motorcycle / Scooter .....</td> <td>1</td> <td>2</td> </tr> <tr> <td>Animal-drawn cart (Karo).....</td> <td>1</td> <td>2</td> </tr> <tr> <td>Car / Truck .....</td> <td>1</td> <td>2</td> </tr> <tr> <td>Boat with motor.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>Raksha .....</td> <td>1</td> <td>2</td> </tr> <tr> <td>Smart phone .....</td> <td>1</td> <td>2</td> </tr> <tr> <td>Laptop/ tablet .....</td> <td>1</td> <td>2</td> </tr> <tr> <td>Thoraya phone.....</td> <td>1</td> <td>2</td> </tr> </tbody> </table>		No	Yes	Mobile telephone.....	1	2	Bicycle.....	1	2	Motorcycle / Scooter .....	1	2	Animal-drawn cart (Karo).....	1	2	Car / Truck .....	1	2	Boat with motor.....	1	2	Raksha .....	1	2	Smart phone .....	1	2	Laptop/ tablet .....	1	2	Thoraya phone.....	1	2	
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<p><b>HC10. DO YOU OR SOMEONE LIVING IN THIS HOUSEHOLD OWN THIS DWELLING?</b></p> <p><i>If “No”, then ask: DO YOU RENT THIS DWELLING FROM SOMEONE NOT LIVING IN THIS HOUSEHOLD?</i></p> <p><i>If “Rented from someone else”, circle “2”. For other responses, circle “6”.</i></p>	<table border="0"> <tbody> <tr> <td>Own</td> <td>1</td> </tr> <tr> <td>Rent</td> <td>2</td> </tr> <tr> <td>Other (specify) _____</td> <td>6</td> </tr> </tbody> </table>	Own	1	Rent	2	Other (specify) _____	6																												
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<p><b>HC11. DOES ANY MEMBER OF THIS HOUSEHOLD OWN ANY LAND THAT CAN BE USED FOR AGRICULTURE?</b></p>	<table border="0"> <tbody> <tr> <td>Yes</td> <td>1</td> </tr> <tr> <td>No</td> <td>2</td> </tr> </tbody> </table>	Yes	1	No	2	2⇒HC13																													
Yes	1																																		
No	2																																		
<p><b>HC12. HOW MANY FEDDANS OF AGRICULTURAL LAND DO MEMBERS OF THIS HOUSEHOLD OWN?</b></p> <p><i>If less than 1, record “00”. If 95 or more, record “95”. If unknown, record “98”.</i></p>	<p>Feddans      ____ ____</p>																																		
<p><b>HC13. DOES THIS HOUSEHOLD OWN ANY LIVESTOCK, HERDS, OTHER FARM ANIMALS, OR POULTRY?</b></p>	<table border="0"> <tbody> <tr> <td>Yes</td> <td>1</td> </tr> <tr> <td>No</td> <td>2</td> </tr> </tbody> </table>	Yes	1	No	2	2⇒HC15																													
Yes	1																																		
No	2																																		
<p><b>HC14. HOW MANY OF THE FOLLOWING ANIMALS DOES THIS HOUSEHOLD HAVE?</b></p> <p>[A] CATTLE, MILK COWS, OR BULLS?</p> <p>[B] HORSES, DONKEYS, OR MULES?</p> <p>[C] GOATS?</p> <p>[D] SHEEP?</p> <p>[E] CHICKENS?</p>	<p>Cattle, milk cows, or bulls      ____ ____</p> <p>Horses, donkeys, or mules      ____ ____</p> <p>Goats      ____ ____</p> <p>Sheep      ____ ____</p>																																		



WATER AND SANITATION		WS
WS1. WHAT IS THE <u>MAIN</u> SOURCE OF DRINKING WATER FOR MEMBERS OF YOUR HOUSEHOLD?	Piped water	
	Piped into dwelling 11	11⇒WS6
	Piped into compound, yard or plot 12	12⇒WS6
	Piped to neighbour 13	13⇒WS6
	Public tap / standpipe 14	14⇒WS3
	Elevated tank, handpump (Kharjaka) 15	15⇒WS3
	Dug well	
	Protected well 31	31⇒WS3
	Unprotected well 32	32⇒WS3
	Water from spring	
	Protected spring 41	41⇒WS3
	Unprotected spring 42	42⇒WS3
	Surface water (river, stream, dam, hafeer, lake, pond, canal, irrigation channel) filtered 52	52⇒WS3
	Surface water (river, stream, dam, hafeer, lake, pond, canal, irrigation channel) unfiltered 53	53⇒WS3
	Tanker-truck/ Cart with tank	
	Transported from sources ( 11, 12,13, 14, 15,31, 41,52) 61	61⇒WS3
	Transported from sources ( 32, 42, 53) 62	62⇒WS3
	Unknown source 63	63⇒WS3
	Bottled water 91	91⇒WS3
	Other ( <i>specify</i> ) 96	96⇒WS3
WS2. WHAT IS THE <u>MAIN</u> SOURCE OF WATER USED BY YOUR HOUSEHOLD FOR OTHER PURPOSES SUCH AS COOKING AND HANDWASHING?	Piped water	
	Piped into dwelling 11	11⇒WS6
	Piped into compound, yard or plot 12	12⇒WS6
	Piped to neighbour 13	13⇒WS6
	Public tap / standpipe 14	
	Elevated tank, handpump (Kharjaka) 15	
	Dug well	
	Protected well 31	
	Unprotected well 32	
	Water from spring	
	Protected spring 41	
	Unprotected spring 42	61⇒WS6
	Surface water (river, stream, dam, hafeer, lake, pond, canal, irrigation channel) filtered 52	62⇒WS
	Surface water (river, stream, dam, hafeer, lake, pond, canal, irrigation channel) unfiltered 53	63⇒WS6

	Tanker-truck/ Cart with tank Transported from sources ( 11, 12,13, 14, 15,31, 41,52).....61 Transported from sources ( 32, 42, 53) 62  Unknown source..... 63 Other ( <i>specify</i> )_____ 96	
<b>WS3. WHERE IS THAT WATER SOURCE LOCATED?</b>	In own dwelling 1 In own yard / plot 2 Elsewhere 3	1⇒WS6 2⇒WS6
<b>WS4. HOW LONG DOES IT TAKE TO GO THERE, GET WATER, AND COME BACK?</b>	Number of minutes    — — —  DK    998	
<b>WS5. WHO USUALLY GOES TO THIS SOURCE TO COLLECT THE WATER FOR YOUR HOUSEHOLD?</b>  <i>Probe:</i> IS THIS PERSON UNDER AGE 15? WHAT SEX?	Adult woman (age 15+ years) 1 Adult man (age 15+ years) 2 Female child (under 15) 3 Male child (under 15) 4  DK 8	
<b>WS6. DO YOU DO ANYTHING TO THE WATER TO MAKE IT SAFER TO DRINK?</b>	Yes 1 No 2  DK 8	2⇒WS8  8⇒WS8
<b>WS7. WHAT DO YOU USUALLY DO TO MAKE THE WATER SAFER TO DRINK?</b>  <i>Probe:</i> ANYTHING ELSE?  <i>Record all items mentioned.</i>	Boil A Add bleach / chlorine B Strain it through a cloth C Use water filter (ceramic, sand, composite, etc.) D  Solar disinfection E Let it stand and settle (e.g. zeer) F  Other ( <i>specify</i> )_____ X DK Z	
<b>WS8. WHAT KIND OF TOILET FACILITY DO MEMBERS OF YOUR HOUSEHOLD USUALLY USE?</b>  <i>If “flush” or “pour flush”, probe:</i> WHERE DOES IT FLUSH TO?  <i>If not possible to determine, ask permission to observe the facility.</i>	Flush / Pour flush Flush to piped sewer system 11 Flush to septic tank 12 Flush to pit (latrine) 13 Flush to somewhere else 14 Flush to unknown place / Not sure / DK where 15 Pit latrine Ventilated Improved Pit latrine (VIP) 21 Pit latrine with slab 22 Pit latrine without slab / Open pit 23	

	Composting toilet 31 Bucket 41  No facility, Bush, Field 95  Other ( <i>specify</i> ) _____ 96	95⇒WS11A
<b>WS9.</b> DO YOU SHARE THIS FACILITY WITH OTHERS WHO ARE NOT MEMBERS OF YOUR HOUSEHOLD?	Yes 1 No 2	2⇒WS11A
<b>WS10.</b> DO YOU SHARE THIS FACILITY ONLY WITH MEMBERS OF OTHER HOUSEHOLDS THAT YOU KNOW, OR IS THE FACILITY OPEN TO THE USE OF THE GENERAL PUBLIC?	Other households only (not public) 1 Public facility 2	2⇒WS11A
<b>WS11.</b> HOW MANY HOUSEHOLDS IN TOTAL USE THIS TOILET FACILITY, INCLUDING YOUR OWN HOUSEHOLD?	Number of households (if less than 10) 0 ____  Ten or more households 10  DK 98	
<b>WS11A.</b> WHAT IS THE MAIN METHOD USED FOR DISPOSING GARBAGE?	Removed by garbage vehicles 1 Thrown away from living areas 2 Thrown out of the house 3 Burned 4 Buried 5  Others ( <i>specify</i> ) _____ 6	

HANDWASHING		HW
<b>HW1.</b> WE WOULD LIKE TO LEARN ABOUT THE PLACES THAT HOUSEHOLDS USE TO WASH THEIR HANDS.  CAN YOU PLEASE SHOW ME WHERE MEMBERS OF YOUR HOUSEHOLD <u>MOST OFTEN</u> WASH THEIR HANDS?	Observed 1  Not observed Not in dwelling / plot / yard 2 No permission to see 3 /Other reason (specify) _____ 6	2 ⇨ HW4 3 ⇨ HW4  6 ⇨ HW4
<b>HW2.</b> <i>Observe presence of water at the place for handwashing.</i>  <i>Verify by checking the tap/pump, or basin, bucket, water container or similar objects for presence of water.</i>	Water is available 1  Water is not available 2	
<b>HW3A.</b> <i>Is soap, detergent or mud/sand present at the place for handwashing?</i>	Yes, present ..... 1  No, not present..... 2	2 ⇨ HW4
<b>HW3B.</b> <i>Record your observation.</i>  <i>Circle all that apply.</i>	Bar soap A  Detergent (Powder / Liquid / Paste) B  Liquid soap C  Mud / Sand D	A ⇨ next module  B ⇨ next module  C ⇨ next module  D ⇨ next module
<b>HW4.</b> DO YOU HAVE ANY SOAP OR DETERGENT OR MUD/SAND IN YOUR HOUSE FOR WASHING HANDS?	Yes ..... 1  No ..... 2	2 ⇨ next module
<b>HW5A.</b> CAN YOU PLEASE SHOW IT TO ME?	Yes, shown..... 1  No, not shown..... 2	2 ⇨ NEXT MODULE
<b>HW5B.</b> <i>Record your observation.</i>  <i>Circle all that apply.</i>	Bar soap A  Detergent (Powder / Liquid / Paste) B  Liquid soap C  Ash / Mud / Sand D	

FOOD CONSUMPTION & SOURCES		FC
<b>FC1: NOW I WOULD LIKE TO TALK ABOUT YOUR FOOD ITEMS &amp; CONSUMPTION;</b> <b>DID YOUR FAMILY CONSUME (FOOD ITEM) <u>IN THE LAST 7 DAYS?</u></b>		
[A] SORGHUM?	Yes.....1 No.....2	2⇒ FC1[B]
HOW MANY DAYS DID YOUR FAMILY EAT THIS FOOD ITEM?  WHAT WAS THE MAIN SOURCE? <i>Use codes below for the food sources - If there are several sources for a same food, indicate the <b>main</b> source</i>	Number of days.....  Main source.....	
[B] MILLET?	Yes.....1 No.....2	2⇒ FC1[C]
HOW MANY DAYS DID YOUR FAMILY EAT THIS FOOD ITEM?  WHAT WAS THE MAIN SOURCE? <i>Use codes below for the food sources - If there are several sources for a same food, indicate the <b>main</b> source</i>	Number of days.....  Main source.....	
[C] WHEAT/ BREAD?	Yes.....1 No.....2	2⇒ FC1[D]
HOW MANY DAYS DID YOUR FAMILY EAT THIS FOOD ITEM?  WHAT WAS THE MAIN SOURCE? <i>Use codes below for the food sources - If there are several sources for a same food, indicate the <b>main</b> source</i>	Number of days.....  Main source.....	
[D] GROUNDNUTS, PULSES (BEANS, LENTILS)?	Yes.....1 No.....2	2⇒ FC1[E]
HOW MANY DAYS DID YOUR FAMILY EAT THIS FOOD ITEM?  WHAT WAS THE MAIN SOURCE? <i>Use codes below for the food sources - If there are several sources for a same food, indicate the <b>main</b> source</i>	Number of days.....  Main source.....	
[E] MEAT/CHICKEN, BUSH MEAT, ETC.	Yes.....1 No.....2	2⇒ FC1[F]
HOW MANY DAYS DID YOUR FAMILY EAT THIS FOOD ITEM?  WHAT WAS THE MAIN SOURCE? <i>Use codes below for the food sources - If there are several sources for a same food, indicate the <b>main</b> source</i>	Number of days.....  Main source.....	
[F] COOKING OIL/FATS	Yes.....1 No.....2	2⇒ FC1[G]
HOW MANY DAYS DID YOUR FAMILY EAT THIS FOOD ITEM?  WHAT WAS THE MAIN SOURCE? <i>Use codes below for the food sources - If there are several sources for a same food, indicate the <b>main</b> source</i>	Number of days.....  Main source.....	
<b>Food source codes</b>		
1 Own production (crops, animals)	5 Borrowed	
2 Purchased on market, shop etc.	6 Gift from family/ friends / relatives	
3 Hunting, fishing, gathering	7 Food aid (NGOs, WFP)	
4 Received in-kind against labour or other items		



[G] FRUITS?	Yes.....1 No.....2	2⇒ FC1[H]
HOW MANY DAYS DID YOUR FAMILY EAT THIS FOOD ITEM?  WHAT WAS THE MAIN SOURCE? <i>Use codes below for the food sources - If there are several sources for a same food, indicate the <b>main</b> source</i>	Number of days.....  Main source.....	
[H] MILK, YOGHURT, CHEESE, ETC ?	Yes.....1 No.....2	2⇒ FC1[I]
HOW MANY DAYS DID YOUR FAMILY EAT THIS FOOD ITEM?  WHAT WAS THE MAIN SOURCE? <i>Use codes below for the food sources - If there are several sources for a same food, indicate the <b>main</b> source</i>	Number of days.....  Main source.....	
[I] SUGAR?	Yes.....1 No.....2	2⇒ FC1[J]
HOW MANY DAYS DID YOUR FAMILY EAT THIS FOOD ITEM?  WHAT WAS THE MAIN SOURCE? <i>Use codes below for the food sources - If there are several sources for a same food, indicate the <b>main</b> source</i>	Number of days.....  Main source.....	
[J] EGG?	Yes.....1 No.....2	2⇒ FC1[K]
HOW MANY DAYS DID YOUR FAMILY EAT THIS FOOD ITEM?  WHAT WAS THE MAIN SOURCE? <i>Use codes below for the food sources - If there are several sources for a same food, indicate the <b>main</b> source</i>	Number of days.....  Main source.....	
[K] FRESH VEGETABLES?	Yes.....1 No.....2	2⇒ FC1[L]
HOW MANY DAYS DID YOUR FAMILY EAT THIS FOOD ITEM?  WHAT WAS THE MAIN SOURCE? <i>Use codes below for the food sources - If there are several sources for a same food, indicate the <b>main</b> source</i>	Number of days.....  Main source.....	
[L] DRY VEGETABLES (OKRA, TOMATOES, ONION , ETC?)	Yes.....1 No.....2	2⇒next module
HOW MANY DAYS DID YOUR FAMILY EAT THIS FOOD ITEM?  WHAT WAS THE MAIN SOURCE? <i>Use codes below for the food sources - If there are several sources for a same food, indicate the <b>main</b> source</i>	Number of days.....  Main source.....	

<b>Food source codes</b>		5 Borrowed
1 Own production (crops, animals)		6 Gift from family/ friends / relatives
2 Purchased on market, shop etc.		7 Food aid (NGOs, WFP)
3 Hunting, fishing, gathering		
4 Received in-kind against labour or other items		

COPING STRATEGIES		CS
..CS1: IN THE PAST 7 DAYS, WERE THERE TIMES WHEN YOU DID NOT HAVE ENOUGH FOOD OR MONEY TO BUY FOOD FOR YOUR FAMILY?	Yes.....1 No.....2	2⇒HH19

<b>CS2: WHAT WAS THE COPING STRATEGY THAT YOU ADOPTED DURING THAT TIMES?</b> <i>Probe (Don't read answers)</i>		
	Rely on less preferred and less expensive food [A]  <i>If If the respondent mentioned this option ask:</i> HOW MANY DAYS DID YOU ADOPT THAT STRATEGY?	Number of days... .....
	Eat borrowed food or borrow money to purchase food ..... [B]  <i>If If the respondent mentioned this option ask;</i> HOW MANY DAYS DID YOU ADOPT THAT STRATEGY?	Number of days..... —
	Rely on help from friends or relatives (musaada) ..... [C]  <i>If If the respondent mentioned this option ask;</i> HOW MANY DAYS DID YOU ADOPT THAT STRATEGY?	Number of days..... —
	Limit portion size at mealtimes ..... [D]  <i>If If the respondent mentioned this option ask;</i> HOW MANY DAYS DID YOU ADOPT THAT STRATEGY?	Number of days..... —
	Restrict consumption for adults in order for small children to eat ..... [E]  <i>If If the respondent mentioned this option ask;</i> HOW MANY DAYS DID YOU ADOPT THAT STRATEGY?	Number of days..... —
	Reduce number of meals eaten in a day ..... [F]  <i>If the respondent mentioned this option ask:</i> HOW MANY DAY DID YOU ADOPT THAT STRATEGY?	Number of days..... —

<b>HH19.</b> <i>Record the time.</i>	Morning ..... 1 Afternoon ..... 2 Hour and minutes ..... : .....	
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<b>SALT IODIZATION</b>		<b>SI</b>
<b>SI1.</b> THERE ARE TYPES OF SALT THAT CONTAIN IODINE WHICH IS AN IMPORTANT NUTRIENT.  WE WOULD LIKE TO CHECK WHETHER THE SALT USED IN YOUR HOUSEHOLD IS IODIZED. MAY I HAVE A SAMPLE OF THE SALT USED <u>TO COOK MEALS</u> IN YOUR HOUSEHOLD?  <i>If salt not tested, please mention the reasons.</i>	Not iodized - 0 PPM 1 More than 0 PPM & less than 15 PPM 2 15 PPM or more 3  No salt in the house 4  Salt not tested (specify reason) _____ 5	

**HH20.** *Thank the respondent for his/her cooperation and check the List of Household Members:*

☐ *A separate QUESTIONNAIRE FOR INDIVIDUAL WOMEN has been issued for each woman age 15-49 years in the List of Household Members (HL7).*

☐ *A separate QUESTIONNAIRE FOR CHILDREN UNDER FIVE has been issued for each child under age 5 years in the List of Household Members (HL7B).*

*Return to the cover page and make sure that the result of the household interview (HH9), the name and line number of the respondent to the household questionnaire (HH10), and the number of eligible women (HH12), and under-5s (HH14) are entered.*

*Make arrangements for the administration of the remaining questionnaire(s) in this household.*

**Interviewer's Observations**

**Field Editor's Observations**

**Supervisor's Observations**

## Appendix F2: Questionnaire for Individual Women



### QUESTIONNAIRE FOR INDIVIDUAL WOMEN Sudan Multiple Indicator Survey 2014

WOMAN'S INFORMATION PANEL		WM
<i>This questionnaire is to be administered to all women age 15 through 49 (see List of Household Members, column HL7). A separate questionnaire should be used for each eligible woman.</i>		
<b>WM0</b> State code	_____	
<b>WM1.</b> Cluster number:	_____	
<b>WM2.</b> Household number:	_____	
<b>WM3.</b> Woman's name:	<b>WM4.</b> Woman's line number:	
Name _____	_____	
<b>WM5.</b> Interviewer's name and number:	<b>WM6.</b> Day / Month / Year of interview:	
Name _____	____ / ____ / 2014	

<p><i>Repeat greeting if not already read to this woman:</i></p> <p>WE ARE FROM THE CENTRAL BUREAU OF STATISTICS. WE ARE CONDUCTING A SURVEY ABOUT THE SITUATION OF CHILDREN, FAMILIES AND HOUSEHOLDS. I WOULD LIKE TO TALK TO YOU ABOUT THESE SUBJECTS. THE INTERVIEW WILL TAKE ABOUT <b>45</b> MINUTES. ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND ANONYMOUS.</p>	<p><i>If greeting at the beginning of the household questionnaire has already been read to this woman, then read the following:</i></p> <p>NOW I WOULD LIKE TO TALK TO YOU MORE ABOUT YOUR HEALTH AND OTHER TOPICS. THIS INTERVIEW WILL TAKE ABOUT <b>45</b> MINUTES. AGAIN, ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND ANONYMOUS.</p>
<p>MAY I START NOW?</p> <p><input type="checkbox"/> Yes, permission is given ⇒ Go to WM10 to record the time and then begin the interview.</p> <p><input type="checkbox"/> No, permission is not given ⇒ Circle "03" in WM7. Discuss this result with your supervisor.</p>	

<b>WM7.</b> Result of woman's interview	Completed ..... 01 Not at home ..... 02 Refused ..... 03 Partly completed ..... 04 Incapacitated ..... 05 Other (specify) _____ 96
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<b>WM8.</b> Field editor's name and number:	<b>WM9.</b> Main data entry clerk's name and number:
Name _____	Name _____

<b>WM10.</b> <i>Record the time.</i>	Morning ..... 1 Afternoon ..... 2  Hour and minutes ..... : .....	
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WOMAN'S BACKGROUND		WB
<b>WB1.</b> IN WHAT MONTH AND YEAR WERE YOU BORN?  <i>Probe: HOW OLD WERE YOU AT YOUR LAST BIRTHDAY?</i>  <i>Compare and correct WB1 and/or WB2 if inconsistent.</i>	Date of birth Month ..... DK month ..... 98  Year ..... DK year ..... 9998	
<b>WB2.</b> HOW OLD ARE YOU?  <i>Probe: HOW OLD WERE YOU AT YOUR LAST BIRTHDAY?</i>  <i>Compare and correct WB1 and/or WB2 if inconsistent.</i>	Age (in completed years) .....	
<b>WB3.</b> HAVE YOU EVER ATTENDED SCHOOL OR KHALWA OR PRESCHOOL?	Yes ..... 1 No ..... 2	2⇒WB7
<b>WB4.</b> WHAT IS THE HIGHEST LEVEL OF EDUCATION YOU ATTAINED?	KHALWA .....00 PRESCHOOL .....01 PRELIMINARY .....02 PRIMARY ..... 03 BASIC .....04 VOCATIONAL TRAINING .....05 INTERMEDIATE .....06 SECONDARY .....07 HIGH SCHOOL (3 YEARS) .....08 HIGH SCHOOL...(4 YEARS) .....09  INTERMEDIATE DIPLOMA .....10 UNIVERSITY .....11 POST GRADUATE .....12	00⇒WB7 01⇒WB7           12⇒NEXT MODULE
<b>WB5.</b> WHAT IS THE HIGHEST GRADE YOU COMPLETED AT THAT LEVEL?  <i>If the first grade at this level is not completed, enter "00".</i>	Grade .....	
<b>WB6.</b> Check WB4:  <input type="checkbox"/> Vocational training or higher (WB4=05, 06, 07, 08,09,10,11) ⇒ Go to Next Module.  <input type="checkbox"/> Primary (WB4=02, 03 or 04) ⇒ Continue with WB7.		

<p><b>WB7. NOW I WOULD LIKE YOU TO READ THIS SENTENCE TO ME.</b></p> <p><i>Show sentence on the card to the respondent. If respondent cannot read whole sentence, probe:</i></p> <p>CAN YOU READ PART OF THE SENTENCE TO ME?</p>	<p>Cannot read at all ..... 1</p> <p>Able to read only parts of sentence ..... 2</p> <p>Able to read whole sentence ..... 3</p> <p>No sentence in required language ..... 4 <i>(specify language)</i></p> <p>Blind / visually impaired ..... 5</p>	
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MARRIAGE		MA
<b>MA1.</b> ARE YOU CURRENTLY MARRIED?	Yes, currently married ..... 1 Not currently married ..... 2	2⇒MA5
<b>MA2.</b> HOW OLD IS YOUR HUSBAND?  <i>Probe:</i> HOW OLD WAS YOUR HUSBAND ON HIS LAST BIRTHDAY?	Age in years ..... __ __ DK ..... 98	
<b>MA3.</b> BESIDES YOURSELF, DOES YOUR HUSBAND HAVE ANY OTHER WIVES?	Yes ..... 1 No ..... 2	2⇒MA7
<b>MA4.</b> HOW MANY OTHER WIVES DOES HE HAVE CURRENTLY?	Number ..... __ __ DK ..... 98	⇒MA7 98⇒MA7
<b>MA5.</b> HAVE YOU EVER BEEN MARRIED?	Yes, formerly married ..... 1 No ..... 2	2⇒FGM module
<b>MA6.</b> WHAT IS YOUR MARITAL STATUS NOW: ARE YOU WIDOWED, DIVORCED OR SEPARATED?	Widowed ..... 1 Divorced ..... 2 Separated ..... 3	
<b>MA7.</b> HAVE YOU BEEN MARRIED ONLY ONCE OR MORE THAN ONCE?	Only once ..... 1 More than once ..... 2	1⇒MA8A 2⇒MA8B
<b>MA8A.</b> IN WHAT MONTH AND YEAR DID YOU MARRY?  <b>MA8B.</b> IN WHAT MONTH AND YEAR DID YOU <u>FIRST</u> MARRY?	Date of (first) marriage Month ..... __ __ DK month ..... 98  Year ..... __ __ __ __ DK year ..... 9998	⇒Next Module
<b>MA9.</b> HOW OLD WERE YOU WHEN YOU FIRST STARTED LIVING WITH YOUR ( <u>FIRST</u> ) HUSBAND?	Age in years ..... __ __	



FERTILITY/BIRTH HISTORY		CM
<b>CM1.</b> NOW I WOULD LIKE TO ASK ABOUT ALL THE BIRTHS YOU HAVE HAD DURING YOUR LIFE. HAVE YOU EVER GIVEN BIRTH?	Yes .....1 No .....2	2⇒CM8
<b>CM4.</b> DO YOU HAVE ANY SONS OR DAUGHTERS TO WHOM YOU HAVE GIVEN BIRTH WHO ARE NOW LIVING WITH YOU?	Yes .....1 No .....2	2⇒CM6
<b>CM5.</b> HOW MANY SONS LIVE WITH YOU?  HOW MANY DAUGHTERS LIVE WITH YOU?  <i>If none, record "00".</i>	Sons at home .....  Daughters at home.....	
<b>CM6.</b> DO YOU HAVE ANY SONS OR DAUGHTERS TO WHOM YOU HAVE GIVEN BIRTH WHO ARE ALIVE BUT DO NOT LIVE WITH YOU?	Yes .....1 No .....2	2⇒CM8
<b>CM7.</b> HOW MANY SONS ARE ALIVE BUT DO NOT LIVE WITH YOU?  HOW MANY DAUGHTERS ARE ALIVE BUT DO NOT LIVE WITH YOU?  <i>If none, record "00".</i>	Sons elsewhere.....  Daughters elsewhere .....	
<b>CM8.</b> HAVE YOU EVER GIVEN BIRTH TO A BOY OR GIRL WHO WAS BORN ALIVE BUT LATER DIED?  <i>If "No" probe by asking: I MEAN, TO A CHILD WHO EVER BREATHED OR CRIED OR SHOWED OTHER SIGNS OF LIFE – EVEN IF HE OR SHE LIVED ONLY A FEW MINUTES OR HOURS?</i>	Yes .....1 No .....2	2⇒CM10
<b>CM9.</b> HOW MANY BOYS HAVE DIED?  HOW MANY GIRLS HAVE DIED?  <i>If none, record "00".</i>	Boys dead .....  Girls dead .....	
<b>CM10.</b> Sum answers to CM5, CM7, and CM9.	Sum .....	
<b>CM11.</b> JUST TO MAKE SURE THAT I HAVE THIS RIGHT, YOU HAVE HAD IN TOTAL ( <i>total number in CM10</i> ) LIVE BIRTHS DURING YOUR LIFE. IS THIS CORRECT?  <input type="checkbox"/> <i>Yes. Check below:</i> <div style="margin-left: 40px;"> <input type="checkbox"/> <i>No live births ⇒ Go to ILLNESS SYMPTOMS Module.</i>  <input type="checkbox"/> <i>One or more live births ⇒ Continue with the BIRTH HISTORY module.</i> </div> <input type="checkbox"/> <i>No. ⇒ Check responses to CM1-CM10 and make corrections as necessary before proceeding to the BIRTH HISTORY Module or ILLNESS SYMPTOMS Module.</i>		

BIRTH HISTORY														BH				
NOW I WOULD LIKE TO RECORD THE NAMES OF ALL OF YOUR BIRTHS, WHETHER STILL ALIVE OR NOT, STARTING WITH THE FIRST ONE YOU HAD. <i>Record names of all of the births in BH1. Record twins and triplets on separate lines. If there are more than 14 births, use an additional questionnaire.</i>																		
BH Line No.	BH1. WHAT NAME WAS GIVEN TO YOUR (first/next) BABY?	BH2. WERE ANY OF THESE BIRTHS TWINS?		BH3. IS (name) A BOY OR A GIRL?	BH4. IN WHAT MONTH AND YEAR WAS (name) BORN?  Probe: WHAT IS HIS/HER BIRTHDAY?		BH5. IS (name) STILL ALIVE?		BH6. HOW OLD WAS (name) AT HIS/HER LAST BIRTHDAY?	BH7. IS (name) LIVING WITH YOU?		BH8. Record household line number of child (from HLI)  Record "00" if child is not listed.	BH9. If dead: HOW OLD WAS (name) WHEN HE/SHE DIED?  Record days if less than 1 month; record months if less than 2 years; or years		BH10. WERE THERE ANY OTHER LIVE BIRTHS BETWEEN (name of previous birth) AND (name), INCLUDING ANY CHILDREN WHO DIED AFTER BIRTH?			
		S	M	B	G	Month	Year		Y	N	Age	Y	N	Line No	Unit	Number	Y	N
01		1	2	1	2	___	___		1	2	___	1	2	___	Days ..... 1 Months ..... 2 Years ..... 3	___		
									⇒ BH9					⇒ Next Line				
02		1	2	1	2	___	___		1	2	___	1	2	___	Days ..... 1 Months ..... 2 Years ..... 3	___	1	2
									⇒ BH9					⇒ BH10				
03		1	2	1	2	___	___		1	2	___	1	2	___	Days ..... 1 Months ..... 2 Years ..... 3	___	1	2
									⇒ BH9					⇒ BH10				
04		1	2	1	2	___	___		1	2	___	1	2	___	Days ..... 1 Months ..... 2 Years ..... 3	___	1	2
									⇒ BH9					⇒ BH10				
05		1	2	1	2	___	___		1	2	___	1	2	___	Days ..... 1 Months ..... 2 Years ..... 3	___	1	2
									⇒ BH9					⇒ BH10				
06		1	2	1	2	___	___		1	2	___	1	2	___	Days ..... 1 Months ..... 2 Years ..... 3	___	1	2
									⇒ BH9					⇒ BH10				
07		1	2	1	2	___	___		1	2	___	1	2	___	Days ..... 1 Months ..... 2 Years ..... 3	___	1	2
									⇒ BH9					⇒ BH10				

BH Line No.	BH1. WHAT NAME WAS GIVEN TO YOUR (first/next) BABY?	BH2. WERE ANY OF THESE BIRTHS TWINS?  1 Single 2 Multiple	BH3. IS (name) A BOY OR A GIRL?  1 Boy 2 Girl	BH4. IN WHAT MONTH AND YEAR WAS (name) BORN?  <i>Probe: WHAT IS HIS/HER BIRTHDAY?</i>		BH5. IS (name) STILL ALIVE?  1 Yes 2 No	BH6. HOW OLD WAS (name) AT HIS/HER LAST BIRTHDAY?  <i>Record age in completed years.</i>	BH7. IS (name) LIVING WITH YOU?  1 Yes 2 No	BH8. <i>Record household line number of child (from HLI)</i>  <i>Record "00" if child is not listed.</i>	BH9. <i>If dead:</i> HOW OLD WAS (name) WHEN HE/SHE DIED?  <i>Record days if less than 1 month; record months if less than 2 years; or years</i>		BH10. WERE THERE ANY OTHER LIVE BIRTHS BETWEEN (name of previous birth) AND (name), INCLUDING ANY CHILDREN WHO DIED AFTER BIRTH?  1 Yes 2 No
		S   M	B   G	Month	Year	Y   N	Age	Y   N	Line No	Unit	Number	Y   N
08		1   2	1   2	___	___	1   2 ⇒ BH9	___	1   2	___ ⇒ BH10	Days ..... 1 Months ..... 2 Years ..... 3	___	1   2
09		1   2	1   2	___	___	1   2 ⇒ BH9	___	1   2	___ ⇒ BH10	Days ..... 1 Months ..... 2 Years ..... 3	___	1   2
10		1   2	1   2	___	___	1   2 ⇒ BH9	___	1   2	___ ⇒ BH10	Days ..... 1 Months ..... 2 Years ..... 3	___	1   2
11		1   2	1   2	___	___	1   2 ⇒ BH9	___	1   2	___ ⇒ BH10	Days ..... 1 Months ..... 2 Years ..... 3	___	1   2
12		1   2	1   2	___	___	1   2 ⇒ BH9	___	1   2	___ ⇒ BH10	Days ..... 1 Months ..... 2 Years ..... 3	___	1   2
13		1   2	1   2	___	___	1   2 ⇒ BH9	___	1   2	___ ⇒ BH10	Days ..... 1 Months ..... 2 Years ..... 3	___	1   2
14		1   2	1   2	___	___	1   2 ⇒ BH9	___	1   2	___ ⇒ BH10	Days ..... 1 Months ..... 2 Years ..... 3	___	1   2

BH Line No.	BH1. WHAT NAME WAS GIVEN TO YOUR (first/next) BABY?	BH2. WERE ANY OF THESE BIRTHS TWINS?	BH3. IS (name) A BOY OR A GIRL?	BH4. IN WHAT MONTH AND YEAR WAS (name) BORN?  <i>Probe: WHAT IS HIS/HER BIRTHDAY?</i>		BH5. IS (name) STILL ALIVE?	BH6. HOW OLD WAS (name) AT HIS/HER LAST BIRTHDAY?	BH7. IS (name) LIVING WITH YOU?	BH8. <i>Record household line number of child (from HLI)</i>	BH9. <i>If dead:</i> HOW OLD WAS (name) WHEN HE/SHE DIED?  <i>Record days if less than 1 month; record months if less than 2 years; or years</i>		BH10. WERE THERE ANY OTHER LIVE BIRTHS BETWEEN (name of previous birth) AND (name), INCLUDING ANY CHILDREN WHO DIED AFTER BIRTH?	
		S    M	B    G	Month	Year	Y    N	Age	Y    N	Line No	Unit	Number	Y    N	
BH11. HAVE YOU HAD ANY LIVE BIRTHS SINCE THE BIRTH OF (name of last birth in BIRTH HISTORY Module)?							Yes ..... 1 No ..... 2					1⇒Record birth(s) in Birth History	

**CM12A.** Compare number in CM10 with number of births in the BIRTH HISTORY Module above and check:

- ☐ Numbers are same ⇒ Continue with CM13.
- ☐ Numbers are different ⇒ Probe and reconcile.

**CM13.** Check BH4 in BIRTH HISTORY Module: Last birth occurred within the last 2 years, that is, since (month of interview) in **2012** (if the month of interview and the month of birth are the same, and the year of birth is **2012**, consider this as a birth within the last 2 years)

- ☐ No live birth in last 2 years. ⇒ Go to ILLNESS SYMPTOMS Module.
- ☐ One or more live births in last 2 years. ⇒ Record name of last born child and continue with Next Module.

Name of last-born child \_\_\_\_\_

*If child has died, take special care when referring to this child by name in the following modules.*

DESIRE FOR LAST BIRTH		DB
<p><i>This module is to be administered to all women with a live birth in the 2 years preceding the date of interview.</i></p> <p><i>Record name of last-born child from CM13 here _____.</i></p> <p><i>Use this child's name in the following questions, where indicated.</i></p>		
<b>DB1.</b> WHEN YOU GOT PREGNANT WITH (name), DID YOU WANT TO GET PREGNANT AT THAT TIME?	Yes ..... 1 No ..... 2	1⇒Next Module
<b>DB2.</b> DID YOU WANT TO HAVE A BABY LATER ON, OR DID YOU NOT WANT ANY (MORE) CHILDREN?	Later ..... 1 No more..... 2	2⇒Next Module
<b>DB3.</b> HOW MUCH LONGER DID YOU WANT TO WAIT?  <i>Record the answer as stated by respondent.</i>	Months..... 1 ____ Years ..... 2 ____ DK..... 998	

MATERNAL AND NEWBORN HEALTH		MN												
<p><i>This module is to be administered to all women with a live birth in the 2 years preceding the date of interview. Record name of last-born child from CM13 here _____. Use this child's name in the following questions, where indicated.</i></p>														
<b>MN1.</b> DID YOU SEE ANYONE FOR ANTENATAL CARE DURING YOUR PREGNANCY WITH (name)?	Yes ..... 1 No ..... 2	2⇒MN5												
<b>MN2.</b> WHOM DID YOU SEE?  <i>Probe:</i> ANYONE ELSE?  <i>Probe for the type of person seen and circle all answers given.</i>	Health professional: Doctor ..... A Nurse midwife ..... B Health visitor ..... C Certified midwife ..... D Medical assistant ..... E Other person Traditional birth attendant/Daya habil .... F Community health worker ..... G  Other (specify) ..... X													
<b>MN2A.</b> HOW MANY WEEKS OR MONTHS PREGNANT WERE YOU WHEN YOU FIRST RECEIVED ANTENATAL CARE FOR THIS PREGNANCY?  <i>Record the answer as stated by respondent.</i>	Weeks ..... 1 ____ Months ..... 2 0 ____ DK ..... 998													
<b>MN3.</b> HOW MANY TIMES DID YOU RECEIVE ANTENATAL CARE DURING THIS PREGNANCY?  <i>Probe to identify the number of times antenatal care was received. If a range is given, record the minimum number of times antenatal care received.</i>	Number of times ..... ____ DK ..... 98													
<b>MN4.</b> AS PART OF YOUR ANTENATAL CARE DURING THIS PREGNANCY, WERE ANY OF THE FOLLOWING DONE AT LEAST ONCE:  [A] WAS YOUR BLOOD PRESSURE MEASURED? [B] DID YOU GIVE A URINE SAMPLE? [C] DID YOU GIVE A BLOOD SAMPLE?	<table border="0"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>Blood pressure .....</td> <td>1</td> <td>2</td> </tr> <tr> <td>Urine sample .....</td> <td>1</td> <td>2</td> </tr> <tr> <td>Blood sample .....</td> <td>1</td> <td>2</td> </tr> </tbody> </table>		Yes	No	Blood pressure .....	1	2	Urine sample .....	1	2	Blood sample .....	1	2	
	Yes	No												
Blood pressure .....	1	2												
Urine sample .....	1	2												
Blood sample .....	1	2												
<b>MN4D.</b> WHILE YOU WERE RECEIVING ANTENATAL CARE, WAS THE TYPE OF YOUR DELIVERY DISCUSSED (NORMAL OF CAESAREAN SECTION) WITH YOU?	Yes ..... 1 No ..... 2													
<b>MN4E.</b> WHILE YOU WERE RECEIVING ANTENATAL CARE, WAS THE PLACE OF YOUR DELIVERY DISCUSSED WITH YOU?	Yes ..... 1 No ..... 2													
<b>MN4F.</b> DURING YOUR PREGNANCY WITH (name) DID YOU USE IRON OR FEFOL TABLETS OR SYRUP LIKE THESE? <i>Show the tablets</i>	Yes ..... 1 No ..... 2 DK ..... 8													
<b>MN5.</b> DO YOU HAVE AN IMMUNIZATION CARD OR OTHER DOCUMENT WITH YOUR OWN IMMUNIZATIONS LISTED? MAY I SEE IT PLEASE? <i>If a card is presented, use it to assist with answers to the following questions.</i>	Yes (card seen) ..... 1 Yes (card not seen) ..... 2 No ..... 3 DK ..... 8													





<b>MN18A.</b> WHAT WAS THE MODE OF DELIVERY OF (name)?	Vaginal delivery ..... 1 Assisted delivery (vacuum or forceps) ..... 2 Caesarean section ..... 3	1⇒MN20 2⇒MN20
<b>MN19A.</b> WHEN WAS THE DECISION MADE TO HAVE THE CAESAREAN SECTION?  WAS IT BEFORE OR AFTER YOUR LABOUR PAINS STARTED?	Before ..... 1 After ..... 2	
<b>MN20.</b> WHEN (name) WAS BORN, WAS HE/SHE VERY LARGE, LARGER THAN AVERAGE, AVERAGE, SMALLER THAN AVERAGE, OR VERY SMALL?	Very large ..... 1 Larger than average ..... 2 Average ..... 3 Smaller than average ..... 4 Very small ..... 5  DK ..... 8	
<b>MN21.</b> WAS (name) WEIGHED AT BIRTH?	Yes ..... 1 No ..... 2  DK ..... 8	2⇒MN23  8⇒MN23
<b>MN22.</b> HOW MUCH DID (name) WEIGH?  <i>If a card is available, record weight from card.</i>	From card ..... 1 (kg) ____ . ____ ____ From recall ..... 2 (kg) ____ . ____ ____  DK ..... 99998	
<b>MN23.</b> HAS YOUR MENSTRUAL PERIOD RETURNED SINCE THE BIRTH OF (name)?	Yes ..... 1 No ..... 2	
<b>MN24.</b> DID YOU EVER BREASTFEED (name)?	Yes ..... 1 No ..... 2	2⇒Next Module (Post-natal health checks)
<b>MN25.</b> HOW LONG AFTER BIRTH DID YOU FIRST PUT (name) TO THE BREAST?  <i>If less than 1 hour, record "00" hours. If less than 24 hours, record hours. Otherwise, record days.</i>	Immediately ..... 000  Hours ..... 1 ____ Days ..... 2 ____  DK / Don't remember ..... 998	
<b>MN26.</b> IN THE FIRST THREE DAYS AFTER DELIVERY, WAS (name) GIVEN ANYTHING TO DRINK OTHER THAN BREAST MILK?	Yes ..... 1 No ..... 2	2⇒Next Module (Post-natal health checks)
<b>MN27.</b> WHAT WAS (name) GIVEN TO DRINK?  <i>Probe:</i> ANYTHING ELSE?	Milk (other than breast milk) ..... A Plain water ..... B Sugar or glucose water ..... C Gripe water ..... D Sugar-salt-water solution ..... E Fruit juice ..... F Infant formula ..... G Tea / herbal Infusions ..... H Honey ..... I Other (specify) ..... X	

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POST-NATAL HEALTH CHECKS		PN
<p><i>This module is to be administered to all women with a live birth in the 2 years preceding the date of interview. Record name of last-born child from CM13 here _____. Use this child's name in the following questions, where indicated.</i></p>		
<p><b>PN1.</b> Check MN18: Was the child delivered in a health facility?</p> <p><input type="checkbox"/> Yes, the child was delivered in a health facility (MN18=21-26 or 31-32) ⇒ Continue with PN2.</p> <p><input type="checkbox"/> No, the child was not delivered in a health facility (MN18=11-12 or 96) ⇒ Go to PN6.</p>		
<p><b>PN2.</b> NOW I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT WHAT HAPPENED IN THE HOURS AND DAYS AFTER THE BIRTH OF (name).</p> <p>YOU HAVE SAID THAT YOU GAVE BIRTH IN (name or type of facility in MN18). HOW LONG DID YOU STAY THERE AFTER THE DELIVERY?</p> <p><i>If less than one day, record hours. If less than one week, record days. Otherwise, record weeks.</i></p>	<p>Hours..... 1 ____</p> <p>Days ..... 2 ____</p> <p>Weeks ..... 3 ____</p> <p>DK / Don't remember ..... 998</p>	
<p><b>PN3.</b> I WOULD LIKE TO TALK TO YOU ABOUT CHECKS ON (name)'S HEALTH AFTER DELIVERY – FOR EXAMPLE, SOMEONE EXAMINING (name), CHECKING THE CORD, OR SEEING IF (name) IS OK.</p> <p>BEFORE YOU LEFT THE (name or type of facility in MN18), DID ANYONE CHECK ON (name)'S HEALTH?</p>	<p>Yes ..... 1</p> <p>No..... 2</p>	
<p><b>PN4.</b> AND WHAT ABOUT CHECKS ON <u>YOUR</u> HEALTH – I MEAN, SOMEONE ASSESSING YOUR HEALTH, FOR EXAMPLE ASKING QUESTIONS ABOUT YOUR HEALTH OR EXAMINING YOU?</p> <p>DID ANYONE CHECK ON <u>YOUR</u> HEALTH BEFORE YOU LEFT (name or type of facility in MN18)?</p>	<p>Yes ..... 1</p> <p>No..... 2</p>	
<p><b>PN5.</b> NOW I WOULD LIKE TO TALK TO YOU ABOUT WHAT HAPPENED AFTER YOU LEFT (name or type of facility in MN18).</p> <p>DID ANYONE CHECK ON (name)'S HEALTH AFTER YOU LEFT (name or type of facility in MN18)?</p>	<p>Yes ..... 1</p> <p>No..... 2</p>	<p>1⇒PN11</p> <p>2⇒PN16</p>
<p><b>PN6.</b> Check MN17: Did a health professional, traditional birth attendant, or community health worker assist with the delivery?</p> <p><input type="checkbox"/> Yes, delivery assisted by a health professional, traditional birth attendant, or community health worker (MN17=A-G) ⇒ Continue with PN7.</p> <p><input type="checkbox"/> No, delivery not assisted by a health professional, traditional birth attendant, or community health worker (A-G not circled in MN17) ⇒ Go to PN10.</p>		

<p><b>PN7.</b> YOU HAVE ALREADY SAID THAT (<i>person or persons in MN17</i>) ASSISTED WITH THE BIRTH. NOW I WOULD LIKE TO TALK TO YOU ABOUT CHECKS ON (<i>name</i>)'S HEALTH AFTER DELIVERY, FOR EXAMPLE EXAMINING (<i>name</i>), CHECKING THE CORD, OR SEEING IF (<i>name</i>) IS OK.</p> <p>AFTER THE DELIVERY WAS OVER AND BEFORE (<i>person or persons in MN17</i>) LEFT YOU, DID (<i>person or persons in MN17</i>) CHECK ON (<i>name</i>)'S HEALTH?</p>	<p>Yes ..... 1 No ..... 2</p>	
<p><b>PN8.</b> AND DID (<i>person or persons in MN17</i>) CHECK ON <u>YOUR</u> HEALTH BEFORE LEAVING?</p> <p>BY CHECK ON YOUR HEALTH, I MEAN ASSESSING YOUR HEALTH, FOR EXAMPLE ASKING QUESTIONS ABOUT YOUR HEALTH OR EXAMINING YOU.</p>	<p>Yes ..... 1 No ..... 2</p>	
<p><b>PN9.</b> AFTER THE (<i>person or persons in MN17</i>) LEFT YOU, DID ANYONE CHECK ON THE HEALTH OF (<i>name</i>)?</p>	<p>Yes ..... 1 No ..... 2</p>	<p>1⇒PN11 2⇒PN18</p>
<p><b>PN10.</b> I WOULD LIKE TO TALK TO YOU ABOUT CHECKS ON (<i>name</i>)'S HEALTH AFTER DELIVERY – FOR EXAMPLE, SOMEONE EXAMINING (<i>name</i>), CHECKING THE CORD, OR SEEING IF THE BABY IS OK.</p> <p>AFTER (<i>name</i>) WAS DELIVERED, DID ANYONE CHECK ON HIS/HER HEALTH?</p>	<p>Yes ..... 1 No ..... 2</p>	<p>2⇒PN19</p>
<p><b>PN11.</b> DID SUCH A CHECK HAPPEN ONLY ONCE, OR MORE THAN ONCE?</p>	<p>Once ..... 1 More than once ..... 2</p>	<p>1⇒PN12A 2⇒PN12B</p>
<p><b>PN12A.</b> HOW LONG AFTER DELIVERY DID THAT CHECK HAPPEN?</p> <p><b>PN12B.</b> HOW LONG AFTER DELIVERY DID THE FIRST OF THESE CHECKS HAPPEN?</p> <p><i>If less than one day, record hours. If less than one week, record days. Otherwise, record weeks.</i></p>	<p>Hours ..... 1   __ __</p> <p>Days ..... 2   __ __</p> <p>Weeks ..... 3   __ __</p> <p>DK / Don't remember ..... 998</p>	

<b>PN13. WHO CHECKED ON (name)'S HEALTH AT THAT TIME?</b>	Health professional Doctor ..... A Nurse midwife ..... B Health visitor ..... C Certified midwife ..... D Medical assistant ..... E  Other person Traditional birth attendant /Dayat habel . F Community health worker ..... G  Other (specify) ..... X	
<b>PN14. WHERE DID THIS CHECK TAKE PLACE?</b>  <i>Probe to identify the type of source.</i>  <i>If unable to determine whether public or private, write the name of the place.</i>  <hr/> (Name of place)	Home Respondent's home ..... 11 Other home ..... 12  Public sector Government hospital ..... 21 Government clinic / health centre ..... 22 Government health post ..... 23 Other public (specify) ..... 26  Private medical sector Private hospital ..... 31 Private clinic ..... 32  Other private medical (specify) ..... 36  Other (specify) ..... 96	
<b>PN15. Check MN18: Was the child delivered in a health facility?</b>  <input type="checkbox"/> Yes, the child was delivered in a health facility (MN18=21-26 or 31-36) ⇒ Continue with PN16.  <input type="checkbox"/> No, the child was not delivered in a health facility (MN18=11-12 or 96) ⇒ Go to PN17.		
<b>PN16. AFTER YOU LEFT (name or type of facility in MN18), DID ANYONE CHECK ON <u>YOUR</u> HEALTH?</b>	Yes ..... 1 No ..... 2	1 ⇒ PN20 2 ⇒ Next Module (Illness symptoms)
<b>PN17. Check MN17: Did a health professional, traditional birth attendant, or community health worker assist with the delivery?</b> <input type="checkbox"/> Yes, delivery assisted by a health professional, traditional birth attendant, or community health worker (MN17=A-G) ⇒ Continue with PN18  <input type="checkbox"/> No, delivery not assisted by a health professional, traditional birth attendant, or community health worker (A-G not circled in MN17) ⇒ Go to PN19		
<b>PN18. AFTER THE DELIVERY WAS OVER AND (person or persons in MN17) LEFT, DID ANYONE CHECK ON <u>YOUR</u> HEALTH?</b>	Yes ..... 1 No ..... 2	1 ⇒ PN20 2 ⇒ Next Module (Illness symptoms)

<p><b>PN19.</b> AFTER THE BIRTH OF (<i>name</i>), DID ANYONE CHECK ON <u>YOUR</u> HEALTH?</p> <p>I MEAN SOMEONE ASSESSING YOUR HEALTH, FOR EXAMPLE ASKING QUESTIONS ABOUT YOUR HEALTH OR EXAMINING YOU.</p>	<p>Yes ..... 1 No..... 2</p>	<p>2⇒Next Module (Illness symptoms)</p>
<p><b>PN20.</b> DID SUCH A CHECK HAPPEN ONLY ONCE, OR MORE THAN ONCE?</p>	<p>Once..... 1 More than once ..... 2</p>	<p>1⇒PN21A 2⇒PN21B</p>
<p><b>PN21A.</b> HOW LONG AFTER DELIVERY DID THAT CHECK HAPPEN?</p> <p><b>PN21B.</b> HOW LONG AFTER DELIVERY DID THE FIRST OF THESE CHECKS HAPPEN?</p> <p><i>If less than one day, record hours. If less than one week, record days. Otherwise, record weeks.</i></p>	<p>Hours..... 1 _ _ Days ..... 2 _ _ Weeks ..... 3 _ _ DK / Don't remember ..... 998</p>	
<p><b>PN22.</b> WHO CHECKED ON <u>YOUR</u> HEALTH AT THAT TIME?</p>	<p>Health professional Doctor.....A Nurse midwife .....B Health visitor .....C Certified midwife.....D Medical assistant.....E</p> <p>Other person Traditional birth attendant (Dayat habel).F Community health worker ..... G Other (<i>specify</i>) .....X</p>	
<p><b>PN23.</b> WHERE DID THIS CHECK TAKE PLACE?</p> <p><i>Probe to identify the type of source.</i></p> <p><i>If unable to determine whether public or private, write the name of the place.</i></p> <p>_____</p> <p>(<i>Name of place</i>)</p>	<p>Home Respondent's home ..... 11 Other home ..... 12</p> <p>Public sector Government hospital ..... 21 Government clinic / health centre ..... 22 Government health post..... 23 Other public (<i>specify</i>) ..... 26</p> <p>Private medical sector Private hospital..... 31 Private clinic ..... 32 Private maternity home ..... 33 Other private medical (<i>specify</i>) ..... 36</p> <p>Other (<i>specify</i>) ..... 96</p>	

**ILLNESS SYMPTOMS**
**IS**

**IS1.** Check List of Household Members, columns HL7B and HL15:

Is the respondent the mother or caretaker of any child under age 5?

☐ Yes ⇒ Continue with IS2.

☐ No ⇒ Go to Next Module.

**IS2.** SOMETIMES CHILDREN HAVE SEVERE ILLNESSES AND SHOULD BE TAKEN IMMEDIATELY TO A HEALTH FACILITY. WHAT TYPES OF SYMPTOMS WOULD CAUSE YOU TO TAKE A CHILD UNDER THE AGE OF 5 TO A HEALTH FACILITY RIGHT AWAY?

*Probe:*

ANY OTHER SYMPTOMS?

*Keep asking for more signs or symptoms until the mother/caretaker cannot recall any additional symptoms.*

*Circle all symptoms mentioned, but do not prompt with any suggestions*

Child not able to drink or breastfeed ..... A  
 Child becomes sicker ..... B  
 Child develops a fever ..... C  
 Child has fast breathing ..... D  
 Child has difficulty breathing ..... E  
 Child has blood in stool ..... F  
 Child is drinking poorly ..... G

Other (specify) ..... X

Other (specify) ..... Y

Other (specify) ..... Z

CONTRACEPTION		CP
<b>CP0: Check MA1: respondent is currently married?</b>  <input type="checkbox"/> No, ⇒ Go to FGM module  <input type="checkbox"/> Yes, currently married ⇒ Continue with CP1		
<b>CP1.</b> I WOULD LIKE TO TALK WITH YOU ABOUT ANOTHER SUBJECT – FAMILY PLANNING.  ARE YOU PREGNANT NOW?	Yes, currently pregnant..... 1  No..... 2  Unsure or DK ..... 8	1⇒CP2A
<b>CP2.</b> COUPLES USE VARIOUS WAYS OR METHODS TO DELAY OR AVOID A PREGNANCY.  ARE YOU CURRENTLY DOING SOMETHING OR USING ANY METHOD TO DELAY OR AVOID GETTING PREGNANT?	Yes ..... 1  No..... 2	1⇒CP3
<b>CP2A.</b> HAVE YOU EVER DONE SOMETHING OR USED ANY METHOD TO DELAY OR AVOID GETTING PREGNANT?	Yes ..... 1  No..... 2	1⇒Next Module (Unmet need)  2⇒Next Module (Unmet need)
<b>CP3.</b> WHAT ARE YOU DOING TO DELAY OR AVOID A PREGNANCY?  <i>Do not prompt.</i> <i>If more than one method is mentioned, circle each one.</i>	IUD ..... C Injectables ..... D Implants..... E Pill ..... F Male condom..... G Female condom ..... H Diaphragm..... I Foam / Jelly ..... J Lactational amenorrhoea method (LAM) ..... K Periodic abstinence / Rhythm ..... L Withdrawal ..... M  Other ( <i>specify</i> ) ..... X	



UNMET NEED		UN
<b>UN1. Check CP1: Currently pregnant?</b>  <input type="checkbox"/> <i>Yes, currently pregnant ⇒ Continue with UN2.</i>  <input type="checkbox"/> <i>No, unsure or DK ⇒ Go to UN6.</i>		
<b>UN2. NOW I WOULD LIKE TO TALK TO YOU ABOUT YOUR CURRENT PREGNANCY. WHEN YOU GOT PREGNANT, DID YOU WANT TO GET PREGNANT AT THAT TIME?</b>	Yes..... 1  No ..... 2	1⇒UN4
<b>UN3. DID YOU WANT TO HAVE A BABY LATER ON OR DID YOU NOT WANT ANY (MORE) CHILDREN?</b>	Later..... 1  No more ..... 2	
<b>UN4. NOW I WOULD LIKE TO ASK SOME QUESTIONS ABOUT THE FUTURE. AFTER THE CHILD YOU ARE NOW EXPECTING, WOULD YOU LIKE TO HAVE ANOTHER CHILD, OR WOULD YOU PREFER NOT TO HAVE ANY MORE CHILDREN?</b>	Have another child..... 1  No more / None..... 2  Undecided / DK..... 8	1⇒UN7  2⇒UN13  8⇒UN13
<b>UN6. NOW I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT THE FUTURE. WOULD YOU LIKE TO HAVE (A/ANOTHER) CHILD, OR WOULD YOU PREFER NOT TO HAVE ANY (MORE) CHILDREN?</b>	Have (a/another) child ..... 1  No more / None..... 2  Says she cannot get pregnant ..... 3 Undecided / DK..... 8	2⇒UN9  3⇒UN11 8⇒UN9
<b>UN7. HOW LONG WOULD YOU LIKE TO WAIT BEFORE THE BIRTH OF (A/ANOTHER) CHILD?</b>  <i>Record the answer as stated by respondent.</i>	Months ..... 1 ____  Years..... 2 ____  Does not want to wait (soon/now)..... 993 Says she cannot get pregnant ..... 994 Other ..... 996  DK ..... 998	994⇒UN11
<b>UN8. Check CP1: Currently pregnant?</b>  <input type="checkbox"/> <i>Yes, currently pregnant ⇒ Go to UN13.</i>  <input type="checkbox"/> <i>No, unsure or DK ⇒ Continue with UN9.</i>		

<b>UN9. Check CP2: Currently using a method?</b>  <input type="checkbox"/> <i>Yes ⇒ Go to UN13.</i>  <input type="checkbox"/> <i>No ⇒ Continue with UN10.</i>		
<b>UN10. DO YOU THINK YOU ARE PHYSICALLY ABLE TO GET PREGNANT AT THIS TIME?</b>	Yes ..... 1  No ..... 2  DK ..... 8	1 ⇒ UN13   8 ⇒ UN13
<b>UN11. WHY DO YOU THINK YOU ARE NOT PHYSICALLY ABLE TO GET PREGNANT?</b>	Infrequent sex / No sex ..... A Menopausal ..... B Never menstruated ..... C Hysterectomy (surgical removal of uterus) ..... D Has been trying to get pregnant for 2 years or more without result ..... E Postpartum amenorrheic ..... F Breastfeeding ..... G Too old ..... H Fatalistic ..... I  Other ( <i>specify</i> ) ..... X  DK ..... Z	
<b>UN12. Check UN11: “Never menstruated” mentioned?</b>  <input type="checkbox"/> <i>Mentioned ⇒ Go to Next Module.</i>  <input type="checkbox"/> <i>Not mentioned ⇒ Continue with UN13.</i>		
<b>UN13. WHEN DID YOUR LAST MENSTRUAL PERIOD START?</b>  <i>Record the answer using the same unit stated by the respondent.</i>	Days ago ..... 1 ____  Weeks ago ..... 2 ____  Months ago ..... 3 ____  Years ago ..... 4 ____  In menopause / Has had hysterectomy ..... 994 Before last birth ..... 995 Never menstruated ..... 996	

FEMALE GENITAL MUTILATION/CUTTING		FG
<b>FG1.</b> HAVE YOU EVER HEARD OF FEMALE CIRCUMCISION?	Yes ..... 1 No..... 2	2⇒Next Module (Domestic violence)
<b>FG3.</b> HAVE YOU YOURSELF EVER BEEN CIRCUMCISED?	Yes ..... 1 No..... 2	2⇒FG8C
<b>FG4.</b> NOW I WOULD LIKE TO ASK YOU WHAT WAS DONE TO YOU AT THAT TIME.  WAS ANY FLESH REMOVED FROM THE GENITAL AREA?	Yes ..... 1 No..... 2  DK ..... 8	1⇒FG6
<b>FG5.</b> WAS THE GENITAL AREA JUST NICKED WITHOUT REMOVING ANY FLESH?	Yes ..... 1 No..... 2 DK ..... 8	
<b>FG6.</b> WAS THE GENITAL AREA SEWN CLOSED? <i>If necessary, probe: Was it sealed?</i>	Yes ..... 1 No..... 2 DK ..... 8	
<b>FG7.</b> HOW OLD WERE YOU WHEN YOU WERE CIRCUMCISED?  <i>If the respondent does not know the exact age, probe to get an estimate</i>	Age at circumcision ..... ____  DK / Don't remember / Not sure ..... 98	
<b>FG8.</b> WHO PERFORMED THE CIRCUMCISION?	Health professional Doctor..... 11 Nurse Midwife ..... 12 Health visitor ..... 13 Certified midwife..... 14 Medical assistant..... 15 Other health professional ( <i>specify</i> ) ..... 16  Traditional persons Traditional birth attendant ..... 22 Other traditional ( <i>specify</i> ) ..... 26  DK ..... 98	
<b>FG8A.</b> Check MA1 and MA5: Is the respondent currently married or ever married?  <input type="checkbox"/> No ⇒ Go to FG22  <input type="checkbox"/> Yes ⇒ Continue with FG8B		
<b>FG8B.</b> DID YOU PERFORM RE CIRCUMCISION (ADAL) ?	Yes ..... 1 No..... 2  DK ..... 8	
<b>FG8C.</b> Check MA1 and MA5: Is the respondent currently married or ever married?  <input type="checkbox"/> No ⇒ Go to FG22 <input type="checkbox"/> Yes ⇒ Continue with FG9		
<b>FG9.</b> Check CM5 for Number of daughters at home and CM7 for Number of daughters elsewhere, and sum the answers here	Total number of living daughters ..... ____	

**FG10.** JUST TO MAKE SURE THAT I HAVE THIS RIGHT, YOU HAVE (total number in FG9) LIVING DAUGHTERS.  
IS THIS CORRECT?

☐ Yes

☐ One or more living daughters ⇒ Continue with FG11

☐ Does not have any living daughters ⇒ Go to FG22

☐ No ⇒ Check responses to CM1 – CM10 and make corrections as necessary, until FG10 = Yes

**FG11.** Ask the respondent to tell you the name(s) of her daughter(s), beginning with the youngest daughter (if more than one daughter). Write down the name of each daughter in FG12. Then, ask questions FG13 to FG20 for each daughter at a time.

*The total number of daughters in FG12 should be equal to the number in FG9.*

*If more than 4 daughters, use additional questionnaires.*

	Daughter #1	Daughter #2	Daughter #3	Daughter #4
<b>FG12.</b> Name of daughter	_____	_____	_____	_____
<b>FG13.</b> HOW OLD IS (name)?	Age ..... ____	Age ..... ____	Age ..... ____	Age ..... ____
<b>FG14.</b> IS (name) YOUNGER THAN 15 YEARS OF AGE?	Yes..... 1 No ..... 2 <i>If "No", go to FG13 for next daughter. If no more daughters, go to FG22.</i>	Yes..... 1 No ..... 2 <i>If "No", go to FG13 for next daughter. If no more daughters, go to FG22.</i>	Yes..... 1 No ..... 2 <i>If "No", go to FG13 for next daughter. If no more daughters, go to FG22.</i>	Yes..... 1 No ..... 2 <i>If "No", go to FG13 for next daughter in an additional questionnaire. If no more daughters, go to FG22.</i>
<b>FG15.</b> IS (name) CIRCUMCISED?	Yes..... 1 No ..... 2 <i>If "No", go to FG13 for next daughter. If no more daughters, go to FG22.</i>	Yes..... 1 No ..... 2 <i>If "No", go to FG13 for next daughter. If no more daughters, go to FG22.</i>	Yes..... 1 No ..... 2 <i>If "No", go to FG13 for next daughter. If no more daughters, go to FG22.</i>	Yes..... 1 No ..... 2 <i>If "No", go to FG13 for next daughter in an additional questionnaire. If no more daughters, go to FG22.</i>
<b>FG16.</b> HOW OLD WAS (name) WHEN THIS OCCURRED?  <i>If the respondent does not know the age, probe to get an estimate.</i>	Age ..... ____ DK..... 98	Age ..... ____ DK..... 98	Age ..... ____ DK..... 98	Age ..... ____ DK..... 98

<b>FG20. WHO PERFORMED THE CIRCUMCISION?</b>	Health professional Doctor..... 11 Nurse midwife. 12 Health visitor... 13 Certified midwife . ..... 14 Medical assistant ..... 15 Other health professional (specify) ____ 16  Traditional persons Traditional birth attendant ..... 22 Other traditional (specify) ____ 26  DK 98	Health professional Doctor..... 11 Nurse midwife. 12 Health visitor... 13 Certified midwife . ..... 14 Medical assistant ..... 15 Other health professional (specify) ____ 16  Traditional persons Traditional birth attendant ..... 22 Other traditional (specify) ____ 26  DK..... 98	Health professional Doctor..... 11 Nurse midwife. 12 Health visitor... 13 Certified midwife . ..... 14 Medical assistant ..... 15 Other health professional (specify) ____ 16  Traditional persons Traditional birth attendant ..... 22 Other traditional (specify) ____ 26  DK..... 98	Health professional Doctor..... 11 Nurse midwife. 12 Health visitor... 13 Certified midwife . ..... 14 Medical assistant ..... 15 Other health professional (specify) ____ 16  Traditional persons Traditional birth attendant ..... 22 Other traditional (specify) ____ 26  DK..... 98
<b>FG21.</b>	<i>Go back to FG13 for next daughter. If no more daughters, continue with FG22.</i>	<i>Go back to FG13 for next daughter. If no more daughters, continue with FG22.</i>	<i>Go back to FG13 for next daughter. If no more daughters, continue with FG22.</i>	<i>Go back to FG13 in first column of additional questionnaire for next daughter. If no more daughters, continue with FG22.</i>
				Tick here if additional questionnaire used. <input type="checkbox"/>

<b>FG22 DO YOU THINK THIS PRACTICE SHOULD BE CONTINUED OR SHOULD IT BE DISCONTINUED</b>	Continued ..... 1 Discontinued..... 2 Depends ..... 3 DK..... 8	
<b>FG23 WHAT DO YOU NAME GIRL WHO IS NOT CIRCUMCISED ?</b>	Not circumcised ..... 1 Intact (Salema) ..... 2 Not sanitized/unclean (Ma mutahara) ..... 3 Other (specify) _____ 8	

ATTITUDES TOWARD DOMESTIC VIOLENCE				DV
<b>DV1.</b> SOMETIMES A HUSBAND IS ANNOYED OR ANGERED BY THINGS THAT HIS WIFE DOES. IN YOUR OPINION, IS A HUSBAND JUSTIFIED IN HITTING OR BEATING HIS WIFE IN THE FOLLOWING SITUATIONS:		Yes	No	DK
[A] IF SHE GOES OUT WITHOUT TELLING HIM?	Goes out without telling .....	1	2	8
[B] IF SHE NEGLECTS THE CHILDREN?	Neglects children .....	1	2	8
[C] IF SHE ARGUES WITH HIM?	Argues with him .....	1	2	8
[D] IF SHE REFUSES TO HAVE SEX WITH HIM?	Refuses sex .....	1	2	8
[E] IF SHE BURNS THE FOOD?	Burns food .....	1	2	8

HIV/AIDS		HA																
<b>HA1.</b> NOW I WOULD LIKE TO TALK WITH YOU ABOUT SOMETHING ELSE.  HAVE YOU EVER HEARD OF AN ILLNESS CALLED AIDS?	Yes ..... 1  No ..... 2  DK ..... 8	2⇒WM11																
<b>HA2.</b> CAN PEOPLE REDUCE THEIR CHANCE OF GETTING THE AIDS VIRUS BY HAVING JUST ONE UNINFECTED SEX PARTNER WHO HAS NO OTHER SEX PARTNERS?	Yes ..... 1 No ..... 2  DK ..... 8																	
<b>HA3.</b> CAN PEOPLE GET THE AIDS VIRUS BECAUSE OF WITCHCRAFT OR OTHER SUPERNATURAL MEANS?	Yes ..... 1 No ..... 2  DK ..... 8																	
<b>HA4.</b> CAN PEOPLE REDUCE THEIR CHANCE OF GETTING THE AIDS VIRUS BY USING A CONDOM EVERY TIME THEY HAVE SEX?	Yes ..... 1 No ..... 2  DK ..... 8																	
<b>HA5.</b> CAN PEOPLE GET THE AIDS VIRUS FROM MOSQUITO BITES?	Yes ..... 1 No ..... 2  DK ..... 8																	
<b>HA6.</b> CAN PEOPLE GET THE AIDS VIRUS BY SHARING FOOD WITH A PERSON WHO HAS THE AIDS VIRUS?	Yes ..... 1 No ..... 2  DK ..... 8																	
<b>HA7.</b> IS IT POSSIBLE FOR A HEALTHY-LOOKING PERSON TO HAVE THE AIDS VIRUS?	Yes ..... 1 No ..... 2  DK ..... 8																	
<b>HA8.</b> CAN THE VIRUS THAT CAUSES AIDS BE TRANSMITTED FROM A MOTHER TO HER BABY:  [A] DURING PREGNANCY? [B] DURING DELIVERY? [C] BY BREASTFEEDING?	<table><tr><td></td><td>Yes</td><td>No</td><td>DK</td></tr><tr><td>During pregnancy.....</td><td>1</td><td>2</td><td>8</td></tr><tr><td>During delivery .....</td><td>1</td><td>2</td><td>8</td></tr><tr><td>By breastfeeding .....</td><td>1</td><td>2</td><td>8</td></tr></table>		Yes	No	DK	During pregnancy.....	1	2	8	During delivery .....	1	2	8	By breastfeeding .....	1	2	8	
	Yes	No	DK															
During pregnancy.....	1	2	8															
During delivery .....	1	2	8															
By breastfeeding .....	1	2	8															
<b>HA9.</b> IN YOUR OPINION, IF A FEMALE TEACHER HAS THE AIDS VIRUS BUT IS NOT SICK, SHOULD SHE BE ALLOWED TO CONTINUE TEACHING IN SCHOOL?	Yes ..... 1 No ..... 2  DK / Not sure / Depends ..... 8																	
<b>HA10.</b> WOULD YOU BUY FRESH VEGETABLES FROM A SHOPKEEPER OR VENDOR IF YOU KNEW THAT THIS PERSON HAD THE AIDS VIRUS?	Yes ..... 1 No ..... 2  DK / Not sure / Depends ..... 8																	
<b>HA11.</b> IF A MEMBER OF YOUR FAMILY GOT INFECTED WITH THE AIDS VIRUS, WOULD YOU WANT IT TO REMAIN A SECRET?	Yes ..... 1 No ..... 2  DK / Not sure / Depends ..... 8																	
<b>HA12.</b> IF A MEMBER OF YOUR FAMILY BECAME SICK WITH AIDS, WOULD YOU BE WILLING TO CARE FOR HER OR HIM IN YOUR OWN HOUSEHOLD?	Yes ..... 1 No ..... 2  DK / Not sure / Depends ..... 8																	

<b>HA13. Check CM13: Any live birth in last 2 years?</b>  <input type="checkbox"/> No live birth in last 2 years (CM13= "No" or blank) ⇒ Go to HA24.  <input type="checkbox"/> One or more live births in last 2 years ⇒ Continue with HA14.																						
<b>HA14. Check MN1: Received antenatal care?</b>  <input type="checkbox"/> Received antenatal care ⇒ Continue with HA15.  <input type="checkbox"/> Did not receive antenatal care ⇒ Go to HA24.																						
<b>HA15. DURING ANY OF THE ANTENATAL VISITS FOR YOUR PREGNANCY WITH (name),</b>  WERE YOU GIVEN ANY INFORMATION ABOUT: [A] BABIES GETTING THE AIDS VIRUS FROM THEIR MOTHER?  [B] THINGS THAT YOU CAN DO TO PREVENT GETTING THE AIDS VIRUS?  [C] GETTING TESTED FOR THE AIDS VIRUS?  WERE YOU: [D] OFFERED A TEST FOR THE AIDS VIRUS?	<table border="1"> <thead> <tr> <th></th> <th>Y</th> <th>N</th> <th>DK</th> </tr> </thead> <tbody> <tr> <td>AIDS from mother .....</td> <td>1</td> <td>2</td> <td>8</td> </tr> <tr> <td>Things to do .....</td> <td>1</td> <td>2</td> <td>8</td> </tr> <tr> <td>Tested for AIDS.....</td> <td>1</td> <td>2</td> <td>8</td> </tr> <tr> <td>Offered a test .....</td> <td>1</td> <td>2</td> <td>8</td> </tr> </tbody> </table>		Y	N	DK	AIDS from mother .....	1	2	8	Things to do .....	1	2	8	Tested for AIDS.....	1	2	8	Offered a test .....	1	2	8	
	Y	N	DK																			
AIDS from mother .....	1	2	8																			
Things to do .....	1	2	8																			
Tested for AIDS.....	1	2	8																			
Offered a test .....	1	2	8																			
<b>HA16. I DON'T WANT TO KNOW THE RESULTS, BUT WERE YOU TESTED FOR THE AIDS VIRUS AS PART OF YOUR ANTENATAL CARE?</b>	Yes ..... 1 No ..... 2  DK ..... 8	2⇒HA19  8⇒HA19																				
<b>HA17. I DON'T WANT TO KNOW THE RESULTS, BUT DID YOU GET THE RESULTS OF THE TEST?</b>	Yes ..... 1 No ..... 2  DK ..... 8	2⇒HA22  8⇒HA22																				
<b>HA18. REGARDLESS OF THE RESULT, ALL WOMEN WHO ARE TESTED ARE SUPPOSED TO RECEIVE COUNSELLING AFTER GETTING THE RESULT.</b>  AFTER YOU WERE TESTED, DID YOU RECEIVE COUNSELLING?	Yes ..... 1 No ..... 2  DK ..... 8	1⇒HA22 2⇒HA22  8⇒HA22																				
<b>HA19. Check MN17: Birth delivered by health professional (A, B, C, D or E)?</b>  <input type="checkbox"/> Yes, birth delivered by health professional (MN17 = A, B, C, D or E) ⇒ Continue with HA20.  <input type="checkbox"/> No, birth not delivered by health professional (MN17 = else) ⇒ Go to HA24.																						
<b>HA20. I DON'T WANT TO KNOW THE RESULTS, BUT WERE YOU TESTED FOR THE AIDS VIRUS BETWEEN THE TIME YOU WENT FOR DELIVERY BUT BEFORE THE BABY WAS BORN?</b>	Yes ..... 1 No ..... 2	2⇒HA24																				
<b>HA21. I DON'T WANT TO KNOW THE RESULTS, BUT DID YOU GET THE RESULTS OF THE TEST?</b>	Yes ..... 1 No ..... 2																					
<b>HA22. HAVE YOU BEEN TESTED FOR THE AIDS VIRUS SINCE THAT TIME YOU WERE TESTED DURING YOUR PREGNANCY?</b>	Yes ..... 1 No ..... 2	1⇒HA25																				



<b>HA23.</b> WHEN WAS THE MOST RECENT TIME YOU WERE TESTED FOR THE AIDS VIRUS?	Less than 12 months ago..... 1	1⇒WM11
	12-23 months ago ..... 2	2⇒WM11
	2 or more years ago ..... 3	3⇒WM11
<b>HA24.</b> I DON'T WANT TO KNOW THE RESULTS, BUT HAVE YOU EVER BEEN TESTED TO SEE IF YOU HAVE THE AIDS VIRUS?	Yes ..... 1	2⇒HA27
	No ..... 2	
<b>HA25.</b> WHEN WAS THE MOST RECENT TIME YOU WERE TESTED?	Less than 12 months ago ..... 1	
	12-23 months ago ..... 2	
	2 or more years ago ..... 3	
<b>HA26.</b> I DON'T WANT TO KNOW THE RESULTS, BUT DID YOU GET THE RESULTS OF THE TEST?	Yes ..... 1	1⇒WM11
	No ..... 2	2⇒WM11
	DK ..... 8	8⇒WM11
<b>HA27.</b> DO YOU KNOW OF A PLACE WHERE PEOPLE CAN GO TO GET TESTED FOR THE AIDS VIRUS?	Yes ..... 1	
	No ..... 2	

<b>WM11.</b> RECORD THE TIME.	Morning ..... 1	
	Afternoon ..... 2	
	Hour and minutes ..... : ____	

**WM11A.**  
*Indicate to the respondent that you will need to take a blood sample for anaemia and explain that the results will be provided to her immediately.*

*Ask the respondent for permission?*

☐ Yes, permission is given

☐ No, permission is not given

**WM12.** Check List of Household Members, columns HL7 and HL15:  
*Is the respondent the mother or caretaker of any child age 0-4 living in this household?*

☐ Yes ⇒ *Proceed to complete the result of woman's interview (WM7) on the cover page and then go to QUESTIONNAIRE FOR CHILDREN UNDER FIVE for that child and start the interview with this respondent.*

☐ No ⇒ *End the interview with this respondent by thanking her for her cooperation and proceed to Complete the result of woman's interview (WM7) on the cover page.*

MID UPPER ARM CIRCUMFERENCE(MUAC)		MU
After questionnaires for all women and children are complete, then measurer takes the MUAC measures from the respondent .(women and children)		
MU1. Measurer's name and number:	Name _____	
MU2. Mid upper arm circumference (MUAC)	Circumference (cm) _____ Circumference not measured 999.9	

HAEMOGLOBIN TESTING (ANAEMIA)		HT
After questionnaires for all women and children are complete, the measurer measures draws a sample of blood for testing the Haemoglobin.		
<b>HT1. Check WM11A: Permission given?</b> <input type="checkbox"/> Yes ⇒ Continue with HT2. <input type="checkbox"/> No ⇒ Go to HT4.		
<b>HT2. Result of the HB measurement</b>	HB measured ..... 1 Women not present..... 2 Other (specify)..... 6	2⇒HT4 6⇒HT4
<b>HT3. HB measurements</b>	.....	
<b>HT4. Is there another woman in the household who is eligible for the blood test?</b> <input type="checkbox"/> Yes ⇒ Go to the Haemoglobin testing module in the next woman questionnaire. <input type="checkbox"/> No ⇒ End the testing procedure.		

**Interviewer's Observations**

**Field Editor's Observations**

**Supervisor's Observations**



## Appendix F3: Questionnaire for Children Under-Five



### QUESTIONNAIRE FOR CHILDREN UNDER FIVE Sudan Multiple Indicator Survey 2014

UNDER-FIVE CHILD INFORMATION PANEL		UF
<p><i>This questionnaire is to be administered to all mothers or caretakers (see List of Household Members, column HL15) who care for a child that lives with them and is under the age of 5 years (see List of Household Members, column HL7B).</i></p> <p><i>A separate questionnaire should be used for each eligible child.</i></p>		
UF0. State code		
UF1. Cluster number :	UF2. Household number:	
UF3. Child's name:	UF4. Child's line number:	
Name		
UF5. Mother's / Caretaker's name:	UF6. Mother's / Caretaker's line number:	
Name		
UF7. Interviewer's name and number:	UF8. Day / Month / Year of interview:	
Name		

<p><i>Repeat greeting if not already read to this respondent:</i></p> <p>WE ARE FROM THE CENTRAL BUREAU OF STATISTICS. WE ARE CONDUCTING A SURVEY ABOUT THE SITUATION OF CHILDREN, FAMILIES AND HOUSEHOLDS. I WOULD LIKE TO TALK TO YOU ABOUT (child's name from UF3)'S HEALTH AND WELL-BEING. THE INTERVIEW WILL TAKE ABOUT <b>35</b> MINUTES. ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND ANONYMOUS.</p>	<p><i>If greeting at the beginning of the household questionnaire has already been read to this person, then read the following:</i></p> <p>NOW I WOULD LIKE TO TALK TO YOU MORE ABOUT (child's name from UF3)'S HEALTH AND OTHER TOPICS. THIS INTERVIEW WILL TAKE ABOUT <b>35</b> MINUTES. AGAIN, ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND ANONYMOUS.</p>
<p>MAY I START NOW?</p> <p><input type="checkbox"/> Yes, permission is given ⇒ Go to UF12 to record the time and then begin the interview.</p> <p><input type="checkbox"/> No, permission is not given ⇒ Circle 03 in UF9. Discuss this result with your supervisor.</p>	

<p>UF9. Result of interview for children under 5</p> <p><i>Codes refer to mother/caretaker.</i></p>	<p>Completed .....01</p> <p>Not at home .....02</p> <p>Refused .....03</p> <p>Partly completed.....04</p> <p>Incapacitated .....05</p> <p>Other (specify) ..... 96</p>
---	--

<b>UF10.</b> Field editor's name and number: Name _____	<b>UF11.</b> Main data entry clerk's name and number: Name _____
--	---

UF12. Record the time.	Morning .....	1
	Afternoon.....	2
	Hour and minutes.....	__ __ : __ __

AGE		AG
<p><b>AG1.</b> NOW I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT THE DEVELOPMENT AND HEALTH OF <i>(name)</i>.</p> <p>ON WHAT DAY, MONTH AND YEAR WAS <i>(name)</i> BORN?</p> <p><i>Probe:</i> WHAT IS HIS / HER BIRTHDAY?</p> <p><i>If the mother/caretaker knows the exact birth date, also enter the day; otherwise, circle 98 for day.</i></p> <p><i>Month and year must be recorded.</i></p>	<p>Date of birth</p> <p>Day .....</p> <p>DK day.....98</p> <p>Month.....</p> <p>Year ..... 2 0 .....</p>	
<p><b>AG2.</b> HOW OLD IS <i>(name)</i>?</p> <p><i>Probe:</i> HOW OLD WAS <i>(name)</i> AT HIS / HER LAST BIRTHDAY?</p> <p><i>Record age in completed years.</i></p> <p><i>Record '0' if less than 1 year.</i></p> <p><i>Compare and correct AG1 and/or AG2 if inconsistent.</i></p>	<p>Age (in completed years) .....</p>	

BIRTH REGISTRATION MODULE		BR
<b>BR1. DOES (name) HAVE A BIRTH CERTIFICATE?</b>  <i>If yes, ask:</i> <b>MAY I SEE IT?</b>	Yes, seen..... 1  Yes, not seen.....2 No .....3 DK.....8	1⇒Next <b>Module</b> (Early Childhood development )  2⇒Next <b>Module</b> (Early Childhood development )
<b>BR2. HAS (name)'S BIRTH BEEN REGISTERED WITH THE CIVIL AUTHORITIES?</b>	Yes ..... 1 No .....2 DK.....8	1⇒Next <b>Module</b> (Early Childhood development) 8⇒BR3
<b>BR2A. WHY WASN'T (NAME) REGISTERED?</b>	Very expensive ..... 1 Too far .....2 Did not know that a birth certificate is supposed to be registered .....3 Other ( <i>specify</i> ) ..... 6	
<b>BR3. DO YOU KNOW HOW TO REGISTER (name)'S BIRTH?</b>	Yes ..... 1 No .....2	



EARLY CHILDHOOD DEVELOPMENT MODULE		EC																
<b>EC1.</b> HOW MANY CHILDREN'S BOOKS OR PICTURE BOOKS DO YOU HAVE FOR <i>(name)</i> ?	None .....00 Number of children's books.....0 ____ Ten or more books .....10																	
<b>EC2.</b> I AM INTERESTED IN LEARNING ABOUT THE THINGS THAT <i>(name)</i> PLAYS WITH WHEN HE/SHE IS AT HOME.  DOES HE/SHE PLAY WITH:  [A] HOMEMADE TOYS (SUCH AS DOLLS, CARS, OR OTHER TOYS MADE AT HOME)?  [B] TOYS FROM A SHOP OR MANUFACTURED TOYS?  [C] HOUSEHOLD OBJECTS (SUCH AS BOWLS OR POTS) OR OBJECTS FOUND OUTSIDE (SUCH AS STICKS, ROCKS, ANIMAL SHELLS OR LEAVES)?  <i>If the respondent says "YES" to the categories above, then probe to learn specifically what the child plays with to ascertain the response.</i>	<table border="0"> <thead> <tr> <th></th> <th>Y</th> <th>N</th> <th>DK</th> </tr> </thead> <tbody> <tr> <td>Homemade toys .....</td> <td>1</td> <td>2</td> <td>8</td> </tr> <tr> <td>Toys from a shop.....</td> <td>1</td> <td>2</td> <td>8</td> </tr> <tr> <td>Household objects or outside objects .....</td> <td>1</td> <td>2</td> <td>8</td> </tr> </tbody> </table>		Y	N	DK	Homemade toys .....	1	2	8	Toys from a shop.....	1	2	8	Household objects or outside objects .....	1	2	8	
	Y	N	DK															
Homemade toys .....	1	2	8															
Toys from a shop.....	1	2	8															
Household objects or outside objects .....	1	2	8															
<b>EC4.</b> Check AG2: Age of child.  <input type="checkbox"/> Child age: Newborn (less than a year, 1 or 2 ⇒ Go to Next Module.  <input type="checkbox"/> Child age 3 or 4 ⇒ Continue with EC5.																		
<b>EC5.</b> DOES <i>(name)</i> ATTEND ANY ORGANIZED LEARNING OR EARLY CHILDHOOD EDUCATION PROGRAMME, SUCH AS A PRIVATE OR GOVERNMENT FACILITY, INCLUDING KINDERGARTEN OR COMMUNITY CHILD CARE?	Yes .....1 No .....2  DK.....8	2⇒IM20  8⇒IM20																
<b>EC5A.</b> DURING THE LAST SEVEN DAYS OF THE PREVIOUS SCHOOL YEAR (2013-2014), HOW MANY DAYS DID <i>(name)</i> ATTEND THIS PROGRAM?	Number of days _____ DK 8																	

BREASTFEEDING AND DIETARY INTAKE		BD
<b>BD1. Check AG2: Age of child</b> <input type="checkbox"/> Child age 0, 1 or 2 ⇒ Continue with BD2. <input type="checkbox"/> Child age 3 or 4 ⇒ Go to IM20 in the immunization module.		
<b>BD2. HAS (name) EVER BEEN BREASTFED?</b>	Yes ..... 1 No ..... 2 DK ..... 8	2⇒BD4 8⇒BD4
<b>BD3. IS (name) STILL BEING BREASTFED?</b>	Yes ..... 1 No ..... 2 DK ..... 8	
<b>BD4. YESTERDAY, DURING THE DAY OR NIGHT, DID (name) DRINK ANYTHING FROM A BOTTLE WITH A NIPPLE?</b>	Yes ..... 1 No ..... 2 DK ..... 8	
<b>BD5. DID (name) DRINK ORS (ORAL REHYDRATION SOLUTION) YESTERDAY, DURING THE DAY OR NIGHT?</b>	Yes ..... 1 No ..... 2 DK ..... 8	
<b>BD6. DID (name) DRINK OR EAT VITAMIN OR MINERAL SUPPLEMENTS OR ANY MEDICINES YESTERDAY, DURING THE DAY OR NIGHT?</b>	Yes ..... 1 No ..... 2 DK ..... 8	
<b>BD7. NOW I WOULD LIKE TO ASK YOU ABOUT (OTHER) LIQUIDS THAT (name) MAY HAVE HAD YESTERDAY DURING THE DAY OR THE NIGHT. I AM INTERESTED TO KNOW WHETHER (name) HAD THE ITEM EVEN IF COMBINED WITH OTHER FOODS.</b>  PLEASE INCLUDE LIQUIDS CONSUMED OUTSIDE OF YOUR HOME.  DID (NAME) DRINK (NAME OF ITEM) YESTERDAY DURING THE DAY OR THE NIGHT:	<div> <div>Yes</div> <div>No</div> <div>DK</div> </div>	
[A] PLAIN WATER?	Plain water <div> <div>1</div> <div>2</div> <div>8</div> </div>	
[B] JUICE OR JUICE DRINKS?	Juice or juice drinks <div> <div>1</div> <div>2</div> <div>8</div> </div>	
[C] BROTH / CLEAR SOUP (SALEGA/ MARAGA)?	Soup <div> <div>1</div> <div>2</div> <div>8</div> </div>	
[D] MILK SUCH AS TINNED, POWDERED, OR FRESH ANIMAL MILK?	Milk <div> <div>1</div> <div>2</div> <div>8</div> </div>	
<i>If yes: HOW MANY TIMES DID (name) DRINK MILK?</i> <i>If 7 or more times, record '7'.</i> <i>If unknown, record '8'.</i>	Number of times drank milk .....	
[E] INFANT FORMULA?	Infant formula <div> <div>1</div> <div>2</div> <div>8</div> </div>	
<i>If yes: HOW MANY TIMES DID (name) DRINK INFANT FORMULA?</i> <i>If 7 or more times, record '7'.</i> <i>If unknown, record '8'.</i>	Number of times drank infant formula .....	
[F] ANY OTHER LIQUIDS?  (Specify) _____	Other liquids <div> <div>1</div> <div>2</div> <div>8</div> </div>	

<b>BD8. NOW I WOULD LIKE TO ASK YOU ABOUT (OTHER) FOODS THAT (name) MAY HAVE HAD YESTERDAY DURING THE DAY OR THE NIGHT. AGAIN, I AM INTERESTED TO KNOW WHETHER (name) HAD THE ITEM EVEN IF COMBINED WITH OTHER FOODS.</b>  PLEASE INCLUDE FOODS CONSUMED OUTSIDE OF YOUR HOME.  DID (name) EAT (Name of food) YESTERDAY DURING THE DAY OR THE NIGHT:				
		Yes	No	DK
[A] YOGURT?	Yogurt	1	2	8
<i>If yes: HOW MANY TIMES DID (name) DRINK OR EAT YOGURT? If 7 or more times, record '7'. If unknown, record '8'.</i>		Number of times drank/ate yogurt .....__		
[B] ANY CERELAC?	Cerelac....	1	2	8
[C] BREAD, RICE, MACARONA, PORRIDGE (ASYDA), OR OTHER FOODS MADE FROM GRAINS?	Foods made from grains...	1	2	8
[D] PUMPKIN, CARROTS, SWEET POTATOES?	Pumpkin, carrots....	1	2	8
[E] POTATOES, MANIOC, CASSAVA, OR ANY OTHER FOODS MADE FROM ROOTS?	Potatoes, manioc, cassava, etc.....	1	2	8
[F] ANY GREEN, LEAFY VEGETABLES LIKE SPINACH OR MOLAOKHIYA/ WARAG/ THALIG/ ROCKET?	Green, leafy vegetables...	1	2	8
[G] MANGOES, PAPAYAS OR DALEB?	Mangoes.....	1	2	8
[H] ANY OTHER FRUITS OR VEGETABLES?	Other fruits or vegetables...	1	2	8
[I] LIVER, KIDNEY, HEART, INTESTINES, SPLEEN OR OTHER ORGAN MEATS?	Liver, kidney.....	1	2	8
[J] ANY MEAT, SUCH AS BEEF, LAMB, GOAT, CAMEL, PORK CHICKEN, OR DUCK?	Meat, such as beef, lamb, goat, etc.....	1	2	8
[K] EGGS?	Eggs...	1	2	8
[L] FRESH OR DRIED FISH / KAJEED, SARDEEN/ FASEEKH OR SHELLFISH?	Fresh or dried fish....	1	2	8
[M] ANY FOODS MADE FROM BEANS, LENTILS, CHICKPEAS, FAVA BEANS, LEMA BEANS, ADASEEYA OR LUBYA?	Foods made from lentils....	1	2	8
[N] CHEESE OR OTHER FOOD MADE FROM MILK (MULAH ALROOB, MOLAH ALLABAN, MISH?	Cheese .....	1	2	8
[O] ANY OTHER SOLID, SEMI-SOLID, OR SOFT FOOD THAT I HAVE NOT MENTIONED?  (Specify).....	Other food.....	1	2	8
<b>BD9. Check BD8 (Categories "A" through "O").</b> <input type="checkbox"/> If you circle "Yes" at least once or all answers where "DK ⇒ Go to BD11. <input type="checkbox"/> Else ⇒ Continue with BD10.				
<b>BD10. Probe to determine whether the child ate any solid, semi-solid or soft foods yesterday during the day or night.</b> <input type="checkbox"/> The child did not eat or the respondent does not know ⇒ Go to Next Module. <input type="checkbox"/> The child ate at least one solid, semi-solid or soft food item mentioned by the respondent ⇒ Go back to BD8 and record food eaten yesterday [A to O]. When finished, continue with BD11.				
<b>BD11. HOW MANY TIMES DID (name) EAT ANY SOLID, SEMI-SOLID OR SOFT FOODS YESTERDAY DURING THE DAY OR NIGHT?</b>  <i>If 7 or more times, record '7'.</i>	Number of times.....__  DK .....8			

IMMUNIZATION MODULE										IM																																																																																								
<i>If an immunization (child health) card is available, copy the dates in IM3 for each type of immunization recorded on the card. IM6-IM16A will only be asked if a card is not available.</i>																																																																																																		
<b>IM1.</b> DO YOU HAVE A CARD WHERE (name)'S VACCINATIONS ARE WRITTEN DOWN?  <i>If yes: MAY I SEE IT PLEASE?</i>					Yes, seen ..... 1 Yes, not seen ..... 2 No card ..... 3					1⇒IM3 2⇒IM6																																																																																								
<b>IM2.</b> DID YOU EVER HAVE A VACCINATION (child health) CARD FOR (name)?					Yes ..... 1 No ..... 2					1⇒IM6 2⇒IM6																																																																																								
<b>IM3.</b> (a) Copy dates for each vaccination from the card. (b) Write '44' in day column if card shows that vaccination was given but no date recorded.					<div style="text-align: center;">Date of Immunization</div> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">Day</th> <th colspan="2">Month</th> <th colspan="4">Year</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>					Day		Month		Year																																																																																				
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MEASLES SECOND DOSE (OR MMR OR MR)		MEASLES 2																																																																																																
<b>IM4.</b> Check IM3. Are all vaccines (BCG to Measles) recorded?  <input type="checkbox"/> Yes ⇒ Go to IM19A.  <input type="checkbox"/> No ⇒ Continue with IM5.																																																																																																		
<b>IM5.</b> IN ADDITION TO WHAT IS RECORDED ON THIS CARD, DID (name) RECEIVE ANY OTHER VACCINATIONS?  <input type="checkbox"/> Yes ⇒ Go back to IM3 and probe for these vaccinations and write '66' in the corresponding day column for each vaccine mentioned. When finished, skip to IM19A.  <input type="checkbox"/> No/DK ⇒ Go to IM19.																																																																																																		
<b>IM6.</b> HAS (name) EVER RECEIVED ANY VACCINATIONS TO PREVENT HIM/HER FROM GETTING DISEASES INCLUDING VACCINATIONS RECEIVED IN A CAMPAIGN OR IMMUNIZATION DAY OR CHILD HEALTH DAY?					Yes ..... 1  No ..... 2 DK ..... 8					2⇒IM19A 8⇒IM19A																																																																																								

<b>IM7.</b> HAS ( <i>name</i> ) EVER RECEIVED A BCG VACCINATION AGAINST TUBERCULOSIS – THAT IS, AN INJECTION IN THE ARM?	Yes..... 1 No ..... 2 DK ..... 8	
<b>IM8.</b> HAS ( <i>name</i> ) EVER RECEIVED ANY VACCINATION DROPS IN THE MOUTH TO PROTECT HIM/HER FROM POLIO?	Yes..... 1 No ..... 2 DK ..... 8	2⇒IM11 8⇒IM11
<b>IM9.</b> WAS THE FIRST POLIO VACCINE RECEIVED IN THE FIRST TWO WEEKS AFTER BIRTH?	Yes..... 1 No ..... 2	
<b>IM10.</b> HOW MANY TIMES WAS THE POLIO VACCINE RECEIVED?  <i>Count only those take during routine immunization</i>	Number of times ..... ____	
<b>IM11.</b> HAS ( <i>name</i> ) EVER RECEIVED A PENTA VACCINATION – THAT IS, AN INJECTION IN THE LEFT THIGH TO PREVENT HIM/HER FROM GETTING TETANUS, WHOOPING COUGH, DIPHTHERIA, MENINGITIS AND HEPATITIS?  <i>Probe by indicating that PENTA vaccination is sometimes given at the same time as Polio.</i>	Yes..... 1 No ..... 2 DK ..... 8	2⇒IM16 8⇒IM16
<b>IM12.</b> HOW MANY TIMES WAS THE PENTA VACCINE RECEIVED?	Number of times ..... ____	
<b>IM16.</b> HAS ( <i>name</i> ) EVER RECEIVED A MEASLES INJECTION (OR AN MMR OR MR) – THAT IS, A SHOT IN THE LEFT ARM AT THE AGE OF 9 MONTHS OR OLDER - TO PREVENT HIM/HER FROM GETTING MEASLES?	Yes..... 1 No ..... 2 DK ..... 8	2 19A 8 19A
<b>IM16A.</b> HOW MANY TIMES ( <i>name</i> ) RECEIVED MEASLES DOSES?	Measles doses received ..... ____	
<b>IM19A.</b> PLEASE TELL ME IF ( <i>name</i> ) HAS PARTICIPATED IN ANY OF THE POLIO CAMPAIGNS, POLIO NATIONAL IMMUNIZATION DAYS AND/ OR POLIO CHILD HEALTH DAYS?	Yes ..... 1 No ..... 2 DK ..... 8	
<b>IM19B.</b> PLEASE TELL ME IF ( <i>NAME</i> ) HAS PARTICIPATED IN ANY OF THE MEASLES CAMPAIGNS, MEASLES NATIONAL IMMUNIZATION DAYS AND/ OR MEASLES CHILD HEALTH DAYS?	Yes ..... 1 No ..... 2 DK ..... 8	
<b>IM20.</b> Check AG2: Age of child.  <input type="checkbox"/> 6 month or more ⇒ Continue to IM21. <input type="checkbox"/> 0-5 month ⇒ Go to next module (Care of illness).		
<b>IM21.</b> DID THE ( <i>name</i> ) TAKE ANY VITAMIN A LIKE THIS IN THE LAST 6 MONTH?  <i>Display the capsules &amp; different containers to the respondent</i> <i>100,000 unit (blue) for 6-11 month</i> <i>200,000 unit (red) for 12-59 month</i>	Yes..... 1 No ..... 2 DK ..... 8	2⇒ IM24 8⇒ IM24
<b>IM22.</b> WHEN DID ( <i>name</i> ) RECEIVE THE LAST DOES?	Less than 6 month ..... 1 More than 6 month..... 2 DK ..... 8	

<b>IM23.</b> HOW DID YOU GET THE LAST DOSE?	Routine visit to health center .....1 Visit to the health center while child is sick. 2 National campaign ..... 3  Other ( <i>specify</i> ) .....6  DK ..... 8	
<b>IM24.</b> DID THE (NAME) SUFFER FROM VISION DIFFICULTY AFTER SUN SET (NIGHT BLINDNESS)?	Yes..... 1  No ..... 2 DK ..... 8	

CARE OF ILLNESS MODULE		CA
<b>CA1.</b> IN THE LAST TWO WEEKS, HAS ( <i>name</i> ) HAD DIARRHOEA?	Yes ..... 1 No ..... 2 DK..... 8	2⇒CA7 8⇒CA7
<b>CA2.</b> I WOULD LIKE TO KNOW HOW MUCH ( <i>name</i> ) WAS GIVEN TO DRINK DURING THE DIARRHOEA (INCLUDING BREASTMILK).  DURING THE TIME ( <i>name</i> ) HAD DIARRHOEA, WAS HE/SHE GIVEN LESS THAN USUAL TO DRINK, ABOUT THE SAME AMOUNT, OR MORE THAN USUAL?  <i>If 'less', probe:</i> WAS HE/SHE GIVEN MUCH LESS THAN USUAL TO DRINK, OR SOMEWHAT LESS?	Much less ..... 1 Somewhat less ..... 2 About the same ..... 3 More ..... 4 Nothing to drink ..... 5 DK..... 8	
<b>CA3.</b> DURING THE TIME ( <i>name</i> ) HAD DIARRHOEA, WAS HE/SHE GIVEN LESS THAN USUAL TO EAT, ABOUT THE SAME AMOUNT, MORE THAN USUAL, OR NOTHING TO EAT?  <i>If 'less', probe:</i> WAS HE/SHE GIVEN MUCH LESS THAN USUAL TO EAT OR SOMEWHAT LESS?	Much less ..... 1 Somewhat less ..... 2 About the same ..... 3 More ..... 4 Stopped food ..... 5 Never gave food ..... 6 DK..... 8	
<b>CA3A.</b> DID YOU SEEK ANY ADVICE OR TREATMENT FOR THE DIARRHOEA FROM ANY SOURCE?	Yes ..... 1 No ..... 2 DK..... 8	2⇒CA4 8⇒CA4
<b>CA3B.</b> FROM WHERE DID YOU SEEK ADVICE OR TREATMENT?  <i>Probe:</i> ANYWHERE ELSE?  <i>Circle all providers mentioned, but do NOT prompt with any suggestions.</i>  <i>Probe to identify each type of source.</i>  <i>If unable to determine if public or private sector, write the name of the place.</i>  _____ ( <i>Name of place</i> )	Public sector Government hospital ..... A Government health centre..... B Primary healthcare unit ..... C Community health worker..... D Mobile / Outreach clinic ..... E Other public ( <i>specify</i> ) ..... H  Private medical sector Private hospital / clinic..... I Private physician ..... J Private pharmacy ..... K Mobile clinic ..... L Other private medical ( <i>specify</i> ) ..... O  Other source Relative / Friend ..... P Shop ..... Q Traditional practitioner ..... R  Other ( <i>specify</i> ) ..... X	

<p><b>CA4.</b> During the time (<i>name</i>) had diarrhoea, was (<i>name</i>) given to drink:</p> <p>[A] A fluid made from a special packet called <i>amlah mualajat aljafaf</i> for ORS packet solution?</p> <p>[B] A pre-packaged ORS fluid for diarrhoea for pre-packaged ORS fluid?</p>	<p style="text-align: right;">Y N DK</p> <p>Fluid from ORS packet..... 1 2 8</p> <p>Pre-packaged ORS fluid ..... 1 2 8</p>	
<p><b>CA4A.</b> Check CA4: ORS.</p> <p><input type="checkbox"/> Child was given ORS ('Yes' circled in 'A' or 'B' in CA4) ⇒ Continue with CA4B.</p> <p><input type="checkbox"/> Child was not given ORS ⇒ Go to CA4C.</p>		
<p><b>CA4B.</b> WHERE DID YOU GET THE ORS?</p> <p><i>Probe to identify the type of source.</i></p> <p><i>If unable to determine whether public or private, write the name of the place.</i></p> <p>_____</p> <p style="text-align: center;">(<i>Name of place</i>)</p>	<p>Public sector</p> <p>Government hospital ..... 11</p> <p>Government health centre..... 12</p> <p>Government health post ..... 13</p> <p>Community health worker..... 14</p> <p>Mobile / Outreach clinic ..... 15</p> <p>Other public (<i>specify</i>) ..... 16</p> <p>Private medical sector</p> <p>Private hospital / clinic..... 21</p> <p>Private physician ..... 22</p> <p>Private pharmacy ..... 23</p> <p>Mobile clinic ..... 24</p> <p>Other private medical (<i>specify</i>) ..... 26</p> <p>Other source</p> <p>Relative / Friend ..... 31</p> <p>Shop ..... 32</p> <p>Traditional practitioner ..... 33</p> <p>Already had at home ..... 40</p> <p>Other (<i>specify</i>) ..... 96</p>	
<p><b>CA4C.</b> DURING THE TIME (<i>name</i>) HAD DIARRHOEA, WAS (<i>name</i>) GIVEN:</p> <p>[A] ZINC TABLETS?</p> <p>[B] ZINC SYRUP?</p>	<p style="text-align: right;">Y N DK</p> <p>Zinc tablets ..... 1 2 8</p> <p>Zinc syrup ..... 1 2 8</p>	
<p><b>CA4D.</b> Check CA4C: Any zinc?</p> <p><input type="checkbox"/> Child given any zinc ('Yes' circled in 'A' or 'B' in CA4C) ⇒ Continue with CA4E.</p> <p><input type="checkbox"/> Child was not given any zinc ⇒ Go to CA4F.</p>		



<p><b>CA4E. WHERE DID YOU GET THE ZINC?</b></p> <p><i>Probe to identify the type of source.</i></p> <p><i>If unable to determine whether public or private, write the name of the place.</i></p> <p>_____</p> <p>(Name of place)</p>	<p>Public sector</p> <p>Government hospital ..... 11</p> <p>Government health centre..... 12</p> <p>Government health post ..... 13</p> <p>Community health worker..... 14</p> <p>Mobile / Outreach clinic ..... 15</p> <p>Other public (<i>specify</i>) ..... 16</p> <p>Private medical sector</p> <p>Private hospital / clinic..... 21</p> <p>Private physician ..... 22</p> <p>Private pharmacy ..... 23</p> <p>Mobile clinic ..... 24</p> <p>Other private medical (<i>specify</i>) ..... 26</p> <p>Other source</p> <p>Relative / Friend ..... 31</p> <p>Shop ..... 32</p> <p>Traditional practitioner ..... 33</p> <p>Present at home..... 40</p> <p>Other (<i>specify</i>) ..... 96</p>	
<p><b>CA4F. DURING THE TIME (name) HAD DIARRHOEA, WAS (name) GIVEN TO DRINK ANY OF THE FOLLOWING:</b></p> <p><i>Read each item aloud and record response before proceeding to the next item.</i></p> <p>[A] <i>Fresh juice (lemon, karkade, gongoliz)?</i></p> <p>[B] <i>Rice water or starch?</i></p> <p>[C] <i>Water?</i></p>	<p style="text-align: right;">Y N DK</p> <p><i>Fresh juice</i> ..... 1 2 8</p> <p><i>Rice water or starch</i> ..... 1 2 8</p> <p><i>Water</i>..... 1 2 8</p>	
<p><b>CA5. WAS ANYTHING (ELSE) GIVEN TO TREAT THE DIARRHOEA?</b></p>	<p>Yes ..... 1</p> <p>No ..... 2</p> <p>DK..... 8</p>	<p>2⇒CA7</p> <p>8⇒CA7</p>
<p><b>CA6. WHAT (ELSE) WAS GIVEN TO TREAT THE DIARRHOEA?</b></p> <p><i>Probe:</i></p> <p><b>ANYTHING ELSE?</b></p> <p><i>Record all treatments given. Write brand name(s) of all medicines mentioned.</i></p> <p>_____</p> <p>(Name)</p>	<p>Pill or Syrup</p> <p>Antibiotic ..... A</p> <p>Antimotility ..... B</p> <p>Other pill or syrup (Not antibiotic, antimotility or zinc)..... G</p> <p>Unknown pill or syrup ..... H</p> <p>Injection</p> <p>Antibiotic ..... L</p> <p>Non-antibiotic ..... M</p> <p>Unknown injection ..... N</p> <p>Intravenous..... O</p> <p>Home remedy / Herbal medicine..... Q</p> <p>Other (<i>specify</i>) ..... X</p>	

<b>CA7.</b> AT ANY TIME IN THE LAST TWO WEEKS, HAS (name) HAD AN ILLNESS WITH A COUGH?	Yes ..... 1 No ..... 2  DK..... 8	2⇒CA14  8⇒CA14
<b>CA8.</b> WHEN (name) HAD AN ILLNESS WITH A COUGH, DID HE/SHE BREATHE FASTER THAN USUAL WITH SHORT, RAPID BREATHS OR HAVE DIFFICULTY BREATHING?	Yes ..... 1 No ..... 2  DK..... 8	
<b>CA10.</b> DID YOU SEEK ADVICE OR TREATMENT FOR THE ILLNESS FROM ANY SOURCE?	Yes ..... 1 No ..... 2  DK..... 8	2⇒CA12  8⇒CA12
<b>CA11.</b> FROM WHERE DID YOU SEEK CARE (ADVICE OR TREATMENT?  <i>Probe: ANYWHERE ELSE?</i>  <i>Circle all providers mentioned, but do NOT prompt with any suggestions.</i>  <i>Probe to identify the type of source and circle the appropriate code.</i>  <i>If unable to determine if public or private sector, write the name of the place.</i>  _____ (Name of place)	<b>Public sector:</b> Govt. hospital ..... A Govt. health centre ..... B Govt. health Unit..... C Village health worker ..... D Mobile/outreach clinic..... E Other public sector(specify) ..... H  <b>Private medical sector:</b> Private hospital/clinic..... I Private physician ..... J Private pharmacy ..... K Mobile clinic (private)..... L Other private sector(specify) ..... O  <b>Other source:</b> Relative or friend ..... P Shop ..... Q Traditional healer..... R  Other (specify) ..... X	
<b>CA12.</b> AT ANY TIME DURING THE ILLNESS, WAS (name) GIVEN ANY MEDICINE FOR THE ILLNESS?	Yes ..... 1 No ..... 2  DK..... 8	2⇒CA14  8⇒CA14
<b>CA13.</b> WHAT MEDICINE WAS (name) GIVEN?  <i>Probe:</i> ANY OTHER MEDICINE?  <i>Circle all medicines given. Write brand name(s) of all medicines mentioned.</i>  _____ (Names of medicines)	<b>Antibiotics:</b> Pill / Syrup ..... I Injection ..... J  <b>Other medications:</b> Paracetamol/ Panadol /Acetaminophen . P Aspirin..... Q Ibuprofen ..... R  Other (specify) ..... X DK..... Z	
<b>CA14.</b> Check AG2: Is child under age 3?  <input type="checkbox"/> Yes ⇒ Continue with CA15.  <input type="checkbox"/> No ⇒ Go to UF13.		

<b>CA15.</b> THE LAST TIME ( <i>name</i> ) PASSED STOOLS, WHAT WAS DONE TO DISPOSE OF THE STOOLS?	Child used toilet / latrine .....01 Put / Rinsed into toilet or latrine .....02 Put / Rinsed into drain or ditch .....03 Thrown into garbage (solid waste) .....04 Buried .....05 Left in the open.....06  Other ( <i>specify</i> ) ..... 96 DK.....98	
---	--	--

<b>UF13.</b> Record the time.	Morning .....1 Afternoon.....2  Hour and minutes .....__ __ : __ __	
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**UF13A** Indicate to the respondent that you will need to measure the weight and height of the child and the haemoglobin test later, ask her if she agree :

☐ Yes

☐ No

**UF14.** Is the respondent the mother or caretaker of another child age 0-4 living in this household?

☐ Yes ⇒Go to the next **QUESTIONNAIRE FOR CHILDREN UNDER FIVE** to be administered to the same respondent.

☐ No ⇒ End the interview with this respondent by thanking her/him for her/his cooperation . before you leave the household.

*Check to see if there are other woman's, or under-5 questionnaires to be administered in this household*

ANTHROPOMETRY MODULE		AN
<p>After questionnaires for all children are complete, the measurer weighs and measures each child. Record weight and length/height below, taking care to record the measurements on the correct questionnaire for each child. Check the child's name and line number in the List of Household Members before recording measurements.</p>		
AN1. Measurer's name and number:	Name _____	
AN2. Result of height / length and weight measurement:	Either or both measured..... 1	
	Child not present ..... 2	2⇒AN6
	Child or mother/caretaker refused..... 3	3⇒AN6
	Other (specify) _____ 6	6⇒AN6
AN3. Child's weight:	Kilograms (kg) ..... _ _ . _	
	Weight not measured ..... 99.9	⇒AN3B
<p>AN3A. Was the child undressed to the minimum?  <input type="checkbox"/> Yes ..... 1  <input type="checkbox"/> No, the child could not be undressed to the minimum ..... 2</p>		
<p>AN3B. Check age of child in AG2:  <input type="checkbox"/> Child under 2 years old ⇒ Measure length (lying down).  <input type="checkbox"/> Child age 2 or more years ⇒ Measure height (standing up).</p>		
AN4. Child's length or height:	Length / Height (cm)..... _ _ _ . _	
	Length / Height not measured ..... 999.9	⇒ AN4B
AN4A. How was the child actually measured? Lying down or standing up?	Lying down ..... 1 Standing up ..... 2	
AN4B. Mid upper arm circumference (MUAC)	Circumference (cm)..... _ _ . _	
	Circumference not measured ..... 99.9	
AN5. Check both child legs for oedema and record the result  Observe and record	Child has odema:	
	Yes ..... 1	
	No ..... 2	
	Child not present ..... 3	
	Refused ..... 4	

<p>AN6. Is there another child in the household who is eligible for measurement?</p> <p><input type="checkbox"/> Yes ⇒ Record measurements for next child.</p> <p><input type="checkbox"/> No ⇒ Go to next module.</p>
--

HAEMOGLOBIN TESTING (ANAEMIA)		HT
After questionnaires for all women and children are complete, the measurer measures the Haemoglobin.		
<b>HT1.</b> Check AUF14: Permission given? <input type="checkbox"/> Yes ⇒ Continue with HT2. <input type="checkbox"/> No ⇒ Go to HT4.		
<b>HT2.</b> Result of the HB measurement	HB measured .....1 Child not present.....2 Other (specify) .....6	2⇒HT4 6⇒HT4
<b>HT3.</b> HB measurements	____ ____ . ____	
<b>HT4.</b> Is there another child in the household who is eligible for the blood test? <input type="checkbox"/> Yes ⇒ Go to the Haemoglobin testing module in the next child questionnaire. <input type="checkbox"/> No ⇒ End the testing procedure.		

**Field Editor's Observations**

**Supervisor's Observations**

**Measurer's Observations**

