Myanmar

Demographic and Health Survey

2015-16

Key Indicators

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Demographic and Health Survey 2015-16

Key Indicators Report

Ministry of Health and Sports
Nay Pyi Taw, Myanmar

The DHS Program
ICF International
Rockville, Maryland, USA

September 2016

CONTENTS

TABLES AND FIGURES

FOREWORD

The 2015-16 Myanmar Demographic and Health Survey (MDHS) was implemented by the Ministry of Health and Sports (MOHS) in collaboration with its line ministries. The 2015-16 MDHS was the first DHS survey to be conducted in Myanmar in collaboration with the worldwide Demographic and Health Surveys Program. This report, which presents key findings from the 2015-16 MDHS, is intended to provide policy makers and program managers with a first glimpse of the survey results. A more comprehensive, detailed report is scheduled for early 2017.

The MOHS wishes to acknowledge the efforts of a number of organizations and individuals who contributed substantially to the success of the survey. First, we would like to express our gratitude to the government of the Union of the Republic of Myanmar for granting permission to implement the first DHS in the country. Second, we would like to acknowledge the financial assistance and support of the United States Agency for International Development (USAID) and the Three Millennium Development Goal Fund (3MDG). We would like to thank ICF International for technical backstopping throughout the survey. The MOHS would like to appreciate the invaluable assistance provided by the Department of Population—Ministry of Labor, Immigration and Population for their support in providing the sample frame, household lists and maps of the selected enumeration areas for the survey. The survey also could not have been carried out successfully without the dedication of the staff of the MOHS who planned, participated in, and oversaw the entire MDHS. We would like to extend our gratitude to all the field staff who undertook this vital task to successfully accomplish the data collection of MDHS with commitment, dedication, and hard work.

Finally, we are grateful to the survey respondents who generously gave their time to provide the information that forms the basis of this report. Likewise, we acknowledge the support from the respective local authorities whose support was vital for the successful implementation of the field work.

Dr. Myint Htwe
Union Minister for the Ministry of Health and Sports

1   INTRODUCTION

The 2015-16 Myanmar Demographic and Health Survey (MDHS) is the first Demographic and Health Survey (DHS) conducted in Myanmar. It was implemented by the Ministry of Health and Sports (MOHS). Data collection took place from December 7, 2015, to July 7, 2016. Funding for the MDHS was provided by the United States Agency for International Development (USAID) and the Three Millennium Development Goal Fund (3MDG). ICF International provided technical assistance through The DHS Program, which assists countries in the collection of data to monitor and evaluate population, health, and nutrition programs.

This key indicators report presents a first look at selected findings of the 2015-16 MDHS. A comprehensive analysis of the data will be presented in a final report in early 2017.

1.1   SURVEY OBJECTIVES

The primary objective of the 2015-16 MDHS project is to provide up-to-date estimates of basic demographic and health indicators. Specifically, the MDHS collected information on fertility levels, marriage, fertility preferences, awareness and use of family planning methods, breastfeeding practices, nutrition, maternal and child health and mortality, awareness and behavior regarding HIV/AIDS and other sexually transmitted infections (STIs), and other health-related issues such as smoking and knowledge of tuberculosis. As the 2015-16 MDHS is the first DHS survey in the country, trend analysis is not carried out in this report.

The information collected through the MDHS is intended to assist policymakers and program managers in designing and evaluating programs and strategies for improving the health of the country's population.

2 SURVEY IMPLEMENTATION

2.1 SAMPLE DESIGN

The sampling frame used for the 2015-16 MDHS is the cartographic frame of the Myanmar Population and Housing Census 2014, provided by the Department of Population of the Ministry of Labor, Immigration and Population of Myanmar. The sampling frame included a list of 76,990 primary sampling units (PSUs) throughout the country. A PSU is either an enumeration area (EA) or a ward/village tract for some of the sensitive areas not enumerated during the census. Each PSU had cartographic materials that delineated its geographic locations, boundaries, main access points, and landmarks. The sampling frame contained information about the PSU's administrative subordinations (state/region and district), the type of residence (urban or rural), and the estimated number of residential households for each. The sampling frame excluded institutional populations, such as persons in hotels, barracks, and prisons, but included the internally-displaced population (IDP) camps.

A master sample was created under the aegis of the Department of Population. The sample was based on the census frame used for coordinating different household-based surveys conducted in Myanmar, including the current 2015-16 MDHS. The master sample is a large, nationally representative sample consisting of 4,000 PSUs drawn from the entire census frame; these can be used for sub-selecting multi-stage household-based survey samples. The master sample is large enough to provide design flexibility for the various household-based surveys in Myanmar. The master sample is a stratified sample selected with probability proportional to size (PPS). Stratification is achieved by separating each state/region into urban and rural areas; the urban and rural areas of each state/region form a sampling stratum. Implicit stratification and proportional allocation was achieved at each of the lower administrative unit levels by taking into account the sampling procedure used in the master sample selection. In total, 30 sampling strata have been created. Samples have been selected independently in each sampling stratum. Implicit stratification and proportional allocation have been achieved at each of the lower administrative unit levels. This is done by sorting the sampling frame within the explicit stratum according to administrative unit in different levels before sample selection and by using a PPS selection procedure.

The 2015-16 MDHS followed a stratified two-stage sample design and was intended to allow estimates of key indicators at the national level, in urban and rural areas, and for each of the 15 states/regions of Myanmar. The first stage involved selecting sample points (clusters) consisting of EAs or ward/village tracts. A total of 442 clusters (123 urban and 319 rural) were selected from the master sample. This was done with equal probability systematic sampling and independent selection in each sampling stratum.

At the second stage, a fixed number of households (30 in this case) was selected from each of the selected clusters (a total of 13,260 households), using equal probability systematic sampling. For the clusters which were completely enumerated during the population census, the census household listings were taken as the base and updated in the field by the household listing teams. These updated lists were used for selecting the sample households. For the clusters that were not enumerated or partially enumerated during the census, an independent household listing operation was carried out. Because of the non-proportional sample allocation, the sample was not a self-weighting sample. Weighting factors have been calculated, added to the data file, and applied so that results are representative at the national as well as regional level.

All women age 15-49 who were either permanent residents of the selected households or visitors who stayed in the households the night before the survey were eligible to be interviewed. In half of the households (every second household) selected, all men age 15-49 who were either residents of the selected households or visitors who stayed in the household the night before the survey were eligible to be interviewed.

During the course of the fieldwork, selected clusters (rural) were identified as insecure, and a decision was made to replace these clusters. In addition, 1 urban cluster had to be dropped due to worsening security. Overall, the survey was successfully carried out in 441 clusters.

2.2 QUESTIONNAIRES

Three questionnaires were used for the 2015-16 MDHS: the Household Questionnaire, the Woman's Questionnaire, and the Man's Questionnaire. These questionnaires, based on The DHS Program's standard Demographic and Health Survey questionnaires, were adapted to reflect the population and health issues relevant to Myanmar. Input was solicited from various stakeholders representing government ministries and agencies, nongovernmental organizations, and international donors. After all questionnaires were finalized in English, the questionnaires were translated into Myanmar.

The Household Questionnaire was used to list all members of and visitors to selected households. Basic demographic information was collected on the characteristics of each person listed, including his or her age, sex, marital status, education, and relationship to the head of the household. For children under age 18, parents' survival status was determined. The data on age and sex of household members obtained in the Household Questionnaire were used to identify women and men who were eligible for individual interviews. In addition, interviewers randomly selected one child between age 2 and age 14 in each household and asked the child's parent or guardian a series of questions regarding discipline of that child. The Household Questionnaire also collected information on characteristics of the household's dwelling unit, such as source of water, type of toilet facilities, materials used for the floor of the dwelling unit, and ownership of various durable goods. The Household Questionnaire was also used to record anthropometric measurements (height, weight, and arm circumference) and anemia testing of eligible women and children.

The Woman's Questionnaire was used to collect information from all eligible women age 15-49. These women were asked questions on the following topics:

- Background characteristics (including age, education, and media exposure)
- Birth history and child mortality
- Knowledge and use of family planning methods
- Fertility preferences
- Antenatal, delivery, and postnatal care
- Breastfeeding and infant feeding practices
- Vaccinations and childhood illnesses
- Women's work and husbands' background characteristics
- Knowledge, awareness, and behavior regarding HIV/AIDS and other sexually transmitted infections (STIs)
- Adult mortality, including maternal mortality
- Knowledge, attitudes, and behavior related to other health issues (e.g., tuberculosis)

The Man's Questionnaire was administered to all eligible men age 15-49 in the subsample of households selected for the male survey. The Man's Questionnaire collected much of the same information as found in the Woman's Questionnaire but was shorter because it did not contain a detailed reproductive history or questions on maternal and child health.

2.3 TRAINING OF TRAINERS

The training of trainers was conducted from October 18 to November 3, 2014, for the master trainers, nine of whom were from the Department of Public Health. The purpose of the training was to familiarize the participants with some key components of the Demographic and Health Survey (DHS), as it was the first such survey in the country. The DHS Program survey manager facilitated the sessions, highlighting the concept of adult learning principles and guidelines on conducting effective training.

The training focused on key components like age probing; interview techniques and procedures for completing the MDHS questionnaires; birth history, family planning, and contraceptive calendar; completing the vaccination section; and standardization procedures for anthropometry. The participants

worked in groups to develop teach-backs on these topics using various training techniques, for example, slide presentation, use of flip charts, interactive question-and-answer session, case study, and role play. They were encouraged to develop participatory methods for the training. These participants were trained to be involved during the pretest, lead the sessions during the main training, and also monitor the fieldwork of the survey.

2.4   PRETEST

Nineteen women and three men participated in a training to pretest the MDHS survey protocol over a 3-week period in January 2015. Most of the participants were staff of the various divisions of the Department of Public Health such as Health Information, HIV, TB, and Maternal and Reproductive Health. One representative from the Central Statistical Organization also participated. Twelve days of classroom training were provided at the training hall of the MOHS. The training was led by The DHS Program staff, supported by the in-country MDHS core team that translated the sessions into Myanmar. Further, resource persons from the Child Health Department, Expanded Immunization Program, and Maternal and Reproductive Health Department of MOHS attended the sessions to provide technical background on topics such as family planning, reproductive health, child health, and nutrition.

The fieldwork for the pretest was carried out in one urban and two rural locations of Mandalay, using the Myanmar language questionnaires. Following the field practice, a debriefing session was held with the pretest field staff, and modifications to the questionnaires were made based on lessons drawn from the exercise.

2.5   TRAINING OF FIELD STAFF

Fourteen trainers, who were previously trained during the training of trainers in October/November 2014, and in the pretest training in January 2015, participated in a 5-day refresher training held from September 14 to September 18, 2015, which was conducted in preparation for the main training. Because the main training was carried out 8 months after the pretest, a refresher course for the trainers was held so that they could facilitate the main training efficiently.

The MOHS recruited 148 people, including 108 candidates from the government and 40 candidates from the nongovernment sector, for the main fieldwork. They served as supervisors, field editors, interviewers, and reserve interviewers. The field staff main training took place from September 28 to October 23, 2015, at the Shwe Pyi Taw Hotel in Nay Pyi Taw. The training course consisted of instructions regarding interviewing techniques and field procedures, a detailed review of questionnaire content, instruction on how to administer the paper questionnaires, measuring height and weight, anemia testing of eligible women and children, and training on the computer-assisted field editing (CAFE) procedures.

The main fieldwork training was led by the master trainers of the MOHS and by The DHS Program trainers. The sessions included discussing concepts, procedures, and methodology of conducting the survey. Participants were guided through the questionnaires. Further, resource persons from the MOHS and UNICEF attended the sessions to provide technical input. The master trainers used various techniques they had learned to facilitate the training sessions. These included presentations, lectures, hands-on exercises, mock interviews, role plays, group work, and quizzes. In-class exercises included probing for age, checking age consistency, filling out vaccination dates, completing the reproductive calendar, and practicing interviews. The trainees were taken for field practice in nonsampled areas near the training site, where they had an opportunity to implement the survey in a real world situation. Additional practice for anemia testing among children was carried out in the Outpatient Department of the General Hospital, run under the aegis of the MOHS.

Participants were evaluated through in-class exercises, quizzes, and observations made during field practice. Ultimately, 19 supervisors and 19 field editors were identified based on their performance. Similarly, 110 participants were selected to serve as interviewers, while the rest were kept as reserves. The

supervisors received additional training in data quality control procedures, fieldwork coordination, and management, while the field editors received additional training on editing the questionnaires.

2.6 FIELDWORK

Though the training of the field staff was completed on October 23, 2015, there was no permission to carry out the field practice and to launch the fieldwork due to the sensitivity around the general election. The election was held peacefully on November 8, 2015. After approval for conducting the fieldwork was received, a refresher training was carried out on November 30 in three locations: Yangon, Mawlamyine, and Mandalay. A field practice was carried out for 2 days with review sessions in between. The fieldwork was launched in these three locations under close supervision on December 7, 2015.

Data collection was carried out by 19 field teams, each consisting of one team supervisor, one field editor, three to four female interviewers, and one male interviewer. However, the team composition had to be adjusted during the different phases of the fieldwork operation. Data collection took place from December 7, 2015, through July 7, 2016, though most of the teams completed the fieldwork by April 2015. The extension of fieldwork in some states/regions reflects sensitivity toward ethnic groups and occurred in non-state controlled areas where additional advocacy strategies had to be implemented. Despite substantial challenges in the field, the MDHS field teams successfully completed the fieldwork.

Fieldwork monitoring was an integral part of the MDHS, and five rounds of monitoring were carried out by the MDHS core team. Two levels of monitoring strategies were identified. These were technical monitoring and coverage monitoring. The technical monitoring was carried out by the MDHS core team and the master trainers, while the coverage monitoring was carried out by the state health officers under the leadership of the state health directors. The monitors were provided with guidelines for overseeing the fieldwork.

2.7 DATA PROCESSING

The processing of the 2015-16 MDHS data began simultaneously with the fieldwork. All completed questionnaires were entered into portable laptops while in the field by the field editors through the computer-assisted field editing (CAFE) procedure. Entries were checked by the supervisors before being dispatched to the data processing center at the MOHS central office in Nay Pyi Taw. These completed questionnaires were reviewed and re-entered by 13 data processing personnel specially trained for this task. All data were entered twice for 100 percent verification, once in the field by the field editors and then in the data processing center in Nay Pyi Taw. Data were entered using the CSPro computer package. The concurrent processing of the data offered a distinct advantage, because it maximized the likelihood of the data being error-free and accurate. Moreover, the double entry of data enabled easy comparison and identification of errors and inconsistencies. Inconsistencies were resolved by tallying with the paper questionnaire entries.

The secondary editing of the data was completed in the second week of July 2016. The final cleaning of the data set was carried out by The DHS Program data processing specialist by the end of July 2016.

Throughout this report, numbers in the tables reflect weighted numbers. Percentages based on 25 to 49 unweighted cases are shown in parentheses, and percentages based on fewer than 25 unweighted cases are suppressed and replaced with an asterisk, to caution readers when interpreting data that a percentage based on fewer than 50 cases may not be statistically reliable.

3   KEY FINDINGS

3.1   RESPONSE RATES

Table 3.1 shows response rates for the 2015-16 MDHS. A total of 13,238 households were selected for the sample, of which 12,780 were occupied. Of the occupied households, 12,500 were successfully interviewed, yielding a response rate of 98 percent.

In the interviewed households, 13,454 women age 15-49 were identified for individual interviews; interviews were completed with 12,885 women, yielding a response rate of 96 percent. In the subsample of households selected for the male survey, 5,218 men age 15-49 were identified and 4,737 men were successfully interviewed, yielding a response rate of 91 percent. The lower response rate for men was likely due to their more frequent and longer absences from the household.

Table 3.1 Results of the household and individual interviews

Number of households, number of interviews, and response rates, according to residence (unweighted), Myanmar 2015-16

	Residence		
Result	Urban	Rural	Total
Household interviews			
Households selected	3,672	9,566	13,238
Households occupied	3,524	9,256	12,780
Households interviewed	3,399	9,101	12,500
Household response rate[1]	96.5	98.3	97.8
Interviews with women age 15-49			
Number of eligible women	4,039	9,415	13,454
Number of eligible women interviewed	3,785	9,100	12,885
Eligible women response rate[2]	93.7	96.7	95.8
Interviews with men age 15-49			
Number of eligible men	1,512	3,706	5,218
Number of eligible men interviewed	1,321	3,416	4,737
Eligible men response rate[2]	87.4	92.2	90.8

[1] Households interviewed/households occupied
[2] Respondents interviewed/eligible respondents

The response rates are lower in the urban areas than in the rural areas. The difference is slightly more prominent for men than women, as men in the urban areas are often away from their households for work.

3.2   CHARACTERISTICS OF RESPONDENTS

Table 3.2 shows, by background characteristics, the weighted and unweighted numbers and the weighted percent distributions of women and men age 15-49 interviewed in the 2015 MDHS. Forty-three percent of women and 44 percent of men in the sample are under age 30.

The vast majority of respondents (60 percent or more) are currently married, while one third of women and men have never married (33 percent and 35 percent, respectively).Three percent of women report that they are widowed, as compared with 1 percent of men. Similarly, 3 percent of women and 2 percent of men are divorced or separated. A majority of respondents (71 percent) live in rural areas. With respect to educational status, 13 percent of women and 12 percent of men report that they have never attended school. Forty-one percent of women and 36 percent of men have completed primary school without continuing to secondary education. Forty-six percent of women and 52 percent of men have secondary or higher education.

Table 3.2 Background characteristics of respondents

Percent distribution of women and men age 15-49 by selected background characteristics, Myanmar 2015-16

Background characteristic	Women			Men		
	Weighted percent	Weighted number	Unweighted number	Weighted percent	Weighted number	Unweighted number
Age						
15-19	14.0	1,810	1,835	15.4	731	768
20-24	14.5	1,867	1,893	14.6	692	690
25-29	14.5	1,867	1,880	14.3	677	687
30-34	15.8	2,037	1,971	14.7	698	674
35-39	15.2	1,954	1,918	14.3	679	671
40-44	13.5	1,733	1,746	14.5	689	681
45-49	12.6	1,617	1,642	12.1	571	566
Marital status						
Never married	33.2	4,278	4,146	34.7	1,646	1,695
Married	60.2	7,759	7,870	62.4	2,957	2,916
Divorced/separated	3.3	431	448	2.1	100	94
Widowed	3.2	417	421	0.7	35	32
Residence						
Urban	29.2	3,768	3,785	28.5	1,350	1,321
Rural	70.8	9,117	9,100	71.5	3,387	3,416
States/Regions						
Kachin	2.9	374	804	3.4	161	328
Kayah	0.5	65	757	0.5	23	264
Kayin	2.4	303	751	2.4	115	300
Chin	0.8	102	750	0.8	39	296
Sagaing	10.9	1,410	1,039	10.9	514	394
Taninthayi	2.2	283	717	2.2	103	249
Bago	9.7	1,244	939	9.6	454	346
Magway	8.4	1,081	947	6.8	320	291
Mandalay	12.0	1,541	963	12.7	601	372
Mon	3.6	463	789	3.4	162	269
Rakhine	6.0	777	911	4.7	222	261
Yangon	15.0	1,927	1,065	14.8	703	404
Shan	10.6	1,368	778	11.4	542	286
Ayeyarwaddy	12.8	1,650	919	13.8	653	364
Nay Pyi Taw	2.3	300	756	2.7	126	313
Education						
No education	12.5	1,606	1,592	12.1	575	559
Primary	41.2	5,305	5,129	35.5	1,684	1,630
Secondary	36.1	4,646	4,838	45.2	2,139	2,224
More than secondary	10.3	1,325	1,324	7.2	339	324
Wealth quintile						
Lowest	17.7	2,274	2,364	18.8	890	904
Second	18.7	2,408	2,451	19.3	916	933
Middle	20.4	2,633	2,633	20.7	979	1,016
Fourth	21.0	2,702	2,739	20.8	986	995
Highest	22.3	2,868	2,698	20.4	966	889
Total	100.0	12,885	12,885	100.0	4,737	4,737

Note: Education categories refer to the highest level of education attended, whether or not that level was completed.

3.3 FERTILITY

To generate data on fertility, all women who were interviewed were asked to report the total number of sons and daughters to whom they had ever given birth. To ensure that all information was reported, women were asked separately about children still living at home, those living elsewhere, and those who had died. A complete birth history was then obtained, including information on the sex, date of birth, and survival status of each child; age at death for children who had died was also recorded.

Table 3.3 shows age-specific fertility rates (ASFRs) among women by 5-year age groups for the 3-year period preceding the survey. Age-specific and total fertility rates were calculated directly from the birth history data[1]. The sum of age-specific fertility rates (known as the total fertility rate, or TFR) is a summary measure of the level of fertility. It can be interpreted as the number of children a woman would have by the end of her childbearing years if she were to pass through those years bearing children at the currently observed age-specific rates. If fertility were to remain constant at current levels, a woman from Myanmar would bear an average of 2.3 children in her lifetime. Fertility is notably higher among rural women than among urban women; on average, rural women will give birth to about half a child more during their reproductive years than urban women (2.4 and 1.9, respectively). As the ASFRs show, the pattern of higher rural fertility is particularly evident in the 20-24 age group and also somewhat in the 25-29 age group (Figure 3.1).

Table 3.3 Current fertility

Age-specific and total fertility rates, the general fertility rate, and the crude birth rate for the 3 years preceding the survey, by residence, Myanmar 2015-16

Age group	Residence		Total
	Urban	Rural	
15-19	36	37	36
20-24	88	122	112
25-29	115	133	128
30-34	85	96	93
35-39	47	68	62
40-44	12	26	22
45-49	0	4	3
TFR (15-49)	1.9	2.4	2.3
GFR	64	83	77
CBR	16.0	18.8	18.0

Notes: Age-specific fertility rates are per 1,000 women. Rates for age group 45-49 may be slightly biased due to truncation. Rates are for the period 1-36 months prior to interview.
TFR: Total fertility rate expressed per woman
GFR: General fertility rate expressed per 1,000 women age 15-44
CBR: Crude birth rate, expressed per 1,000 population

Figure 3.1 Age-specific fertility rates by urban-rural residence

MDHS 2015-16
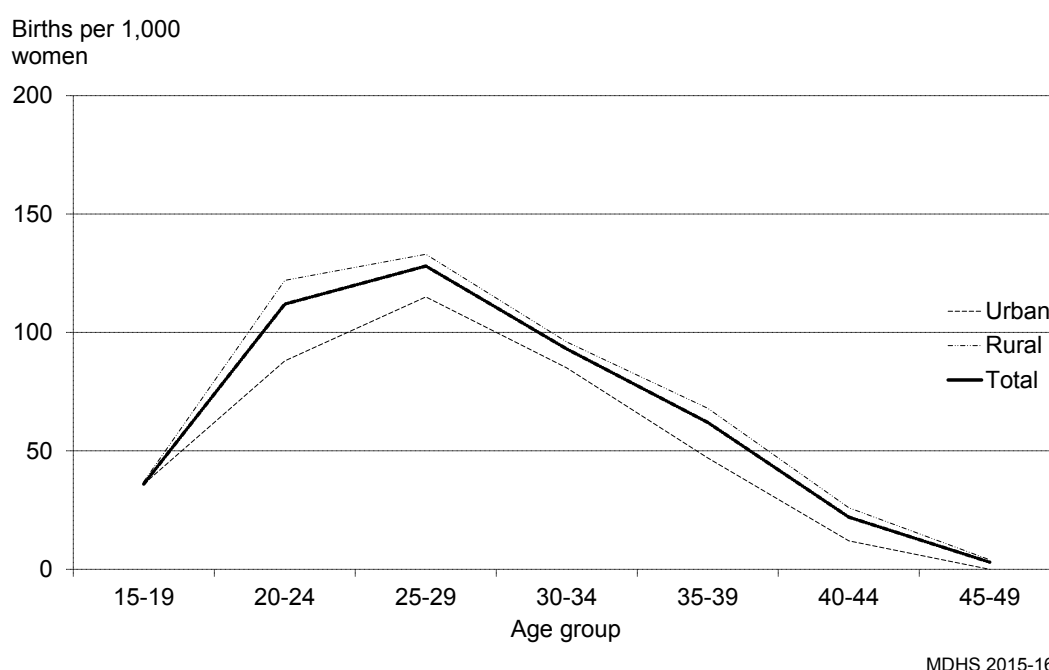
3.4 TEENAGE PREGNANCY AND MOTHERHOOD

The issue of adolescent fertility is important for both health and social reasons. Children born to very young mothers are at increased risk of sickness and death. Teenage mothers are more likely to experience adverse pregnancy outcomes and are more constrained in their ability to pursue educational opportunities than young women who delay childbearing.

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[1] Numerators for the age-specific rates are calculated by summing the births that occurred during the 1-36 months preceding the survey, classified by the 5-year age group of the mother at the time of the birth. The denominators are the numbers of woman-years lived in each five-year age group during the 1-36 months preceding the survey.

Table 3.4 shows the percentage of women age 15-19 who had given birth or were pregnant with their first child at the time of the survey, according to background characteristics. Overall, 6 percent of women age 15-19 had begun childbearing: 5 percent had had a live birth and 1 percent were pregnant at the time of the interview. The proportion of teenagers who had begun childbearing rises rapidly with age, from 1 percent at age 15 to 18 percent at age 19. Rural teenagers and those with no education tend to start childbearing earlier than other teenagers. Eleven percent of the teenagers in Kachin, Chin, and Shan had begun childbearing compared with 4 percent of those in Yangon and 2 percent of those in Mandalay. Teenagers in the highest wealth quintile tend to start childbearing later than those in other quintiles.

Table 3.4 Teenage pregnancy and motherhood

Percentage of women age 15-19 who have had a live birth or who are pregnant with their first child, and percentage who have begun childbearing, by background characteristics, Myanmar 2015-16

Background characteristic	Percentage of women age 15-19 who:		Percentage who have begun childbearing	Number of women
	Have had a live birth	Are pregnant with first child		
Age				
15	0.7	0.1	0.8	340
16	1.0	0.8	1.8	390
17	1.9	1.3	3.2	366
18	5.4	1.2	6.5	357
19	16.1	1.4	17.5	357
Residence				
Urban	3.7	0.7	4.3	591
Rural	5.6	1.1	6.7	1,219
States/Regions				
Kachin	7.3	3.8	11.1	59
Kayah	6.5	1.0	7.5	9
Kayin	6.2	1.1	7.3	41
Chin	5.9	4.7	10.5	17
Sagaing	4.0	0.9	4.8	164
Taninthayi	4.9	0.9	5.8	41
Bago	4.8	0.0	4.8	180
Magway	4.0	0.9	5.0	133
Mandalay	1.8	0.0	1.8	188
Mon	6.2	1.0	7.1	66
Rakhine	6.2	2.0	8.2	128
Yangon	2.9	0.5	3.5	316
Shan	9.0	2.1	11.1	233
Ayeyarwaddy	5.9	0.0	5.9	195
Nay Pyi Taw	3.8	1.9	5.7	39
Education				
No education	18.1	1.0	19.1	125
Primary	8.8	1.9	10.7	425
Secondary	2.5	0.6	3.1	1,189
More than secondary	0.0	0.5	0.5	71
Wealth quintile				
Lowest	7.6	1.6	9.1	321
Second	7.3	1.6	9.0	329
Middle	3.3	0.3	3.6	382
Fourth	5.6	0.3	5.9	389
Highest	1.8	1.1	2.9	388
Total	5.0	0.9	5.9	1,810

3.5 FERTILITY PREFERENCES

Information on fertility preferences is used to assess the potential demand for family planning services for the purposes of spacing or limiting future childbearing. To elicit information on fertility preferences, several questions were asked of currently married women (pregnant or not) regarding whether they wanted to have another child and, if so, how soon.

Table 3.5 shows that 13 percent of women want to have another child soon (within the next 2 years), and 18 percent want to have another child later (in 2 or more years). Fifty-six percent of women want no more children, while 5 percent have already been sterilized. Three percent have not decided if they want another child or not.

Fertility preferences are closely related to number of living children. Fifty-three percent of women with no living children want a child soon, as compared with only 3 percent of women with four or more children. In general, the more children a woman has, the higher is the likelihood that she does not want another child.

Table 3.5 Fertility preferences by number of living children

Percent distribution of currently married women age 15-49 by desire for children, according to number of living children, Myanmar 2015-16

Desire for children	Number of living children[1]							Total
	0	1	2	3	4	5	6+	
Have another soon[2]	52.5	17.6	7.3	5.6	2.6	2.5	3.1	13.2
Have another later[3]	19.0	40.5	16.1	5.0	5.0	1.9	2.5	18.4
Have another, undecided when	1.9	2.0	1.9	1.2	0.6	0.7	2.0	1.6
Undecided	10.5	3.6	2.9	1.8	1.8	2.1	1.2	3.4
Want no more	10.1	33.7	63.9	73.2	78.7	81.6	81.7	55.5
Sterilized[4]	0.2	0.7	5.9	10.8	8.4	5.6	4.4	5.0
Declare infecund	5.7	1.7	2.0	2.3	2.9	5.5	5.1	2.7
Missing	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	756	2,025	2,134	1,402	738	356	349	7,759

[1] The number of living children includes current pregnancy
[2] Wants next birth within 2 years
[3] Wants to delay next birth for 2 or more years
[4] Includes both female and male sterilization

3.6 FAMILY PLANNING

Family planning refers to a conscious effort by a couple to limit or space the number of children they have through the use of contraceptive methods. Contraceptive methods are classified as modern or traditional. Modern methods include female sterilization, male sterilization, intrauterine contraceptive device (IUD), implants, injectables, the pill, condoms, and lactational amenorrhea (LAM). Methods such as rhythm, withdrawal, and folk methods are grouped as traditional.

Table 3.6 shows the percent distribution of currently married women by the contraceptive method they currently use. Overall, 52 percent of currently married women use a method of family planning, with 51 percent using a modern method and 1 percent using a traditional method. This indicates that Myanmar is on track for meeting the commitment endorsed for Family Planning 2020, a global partnership for women on reproductive rights, stating that Myanmar aims to increase modern contraceptive use (mCPR) from 41 percent to 50 percent by 2015 and over 60 percent by 2020 (Family Planning 2020, 2013).

Among currently married women, the most popular methods are injectables (used by 28 percent), the pill (used by 14 percent), and female sterilization (used by 5 percent). The contraceptive prevalence rate (CPR) among married women varies with age, rising from 54 percent among women age 15-19, peaking at 63 percent of women age 35-39, and then declining to 24 percent among women age 45-49.

Women in urban areas are more likely to use a contraceptive method than women in rural areas (60 percent and 50 percent, respectively). Use of contraception is highest in Yangon (63 percent), followed by Bago (61 percent) and Nay Pyi Taw (59 percent), and is lowest in Chin, where only 25 percent of married women reported using any method. Use of contraception increases with increasing education and wealth. Women with 1-4 living children are more likely than women without living children to use contraception.

Table 3.6 Current use of contraception by background characteristics

Percent distribution of currently married women age 15-49, by contraceptive method currently used, according to background characteristics, Myanmar 2015-16

Background characteristic	Any method	Any modern method	Modern method									Any traditional method	Traditional method			Not currently using	Total	Number of women
			Female sterili-zation	Male sterili-zation	IUD	Implants	Inject-ables	Pill	Male condom	LAM	Other		Rhythm	With-drawal	Other			
Age																		
15-19	54.0	53.2	0.0	0.0	0.5	0.0	38.5	14.2	0.0	0.0	0.0	0.8	0.0	0.8	0.0	46.0	100.0	227
20-24	59.5	59.3	0.4	0.0	1.0	0.8	34.7	22.0	0.3	0.0	0.1	0.1	0.0	0.1	0.0	40.5	100.0	834
25-29	58.7	57.9	1.2	0.0	3.0	1.1	34.1	17.4	0.9	0.0	0.0	0.8	0.3	0.4	0.1	41.3	100.0	1,258
30-34	57.8	57.1	2.9	0.0	3.5	1.5	32.8	15.0	1.4	0.0	0.0	0.7	0.2	0.4	0.0	42.2	100.0	1,505
35-39	63.1	61.8	6.2	0.1	4.2	1.3	33.0	15.3	1.4	0.1	0.1	1.3	0.4	0.9	0.0	36.9	100.0	1,482
40-44	47.9	46.6	9.7	0.5	2.8	0.5	21.8	10.5	0.9	0.0	0.0	1.3	0.5	0.8	0.0	52.1	100.0	1,283
45-49	23.7	22.3	7.9	1.0	1.8	0.0	6.4	4.3	1.0	0.0	0.0	1.3	0.4	0.6	0.3	76.3	100.0	1,169
Residence																		
Urban	59.6	57.3	9.6	0.4	4.3	1.3	21.4	18.1	2.1	0.0	0.1	2.3	0.8	1.3	0.1	40.4	100.0	2,022
Rural	49.6	49.1	3.1	0.2	2.3	0.7	29.8	12.3	0.6	0.0	0.0	0.5	0.1	0.3	0.1	50.4	100.0	5,737
States/Regions																		
Kachin	43.5	41.6	4.0	0.3	0.9	0.9	17.1	15.0	3.0	0.1	0.3	1.9	0.9	1.0	0.0	56.5	100.0	238
Kayah	54.5	50.6	10.2	2.1	4.0	0.7	22.1	10.2	1.1	0.0	0.2	3.9	1.7	2.2	0.0	45.5	100.0	40
Kayin	40.5	39.5	6.9	0.1	1.8	0.8	13.9	14.7	1.3	0.0	0.0	1.0	0.4	0.6	0.0	59.5	100.0	201
Chin	25.4	25.2	5.1	0.0	4.0	5.6	4.8	5.7	0.0	0.0	0.0	0.2	0.2	0.0	0.0	74.6	100.0	66
Sagaing	51.2	51.1	6.4	0.2	2.2	1.0	31.4	9.4	0.5	0.0	0.0	0.1	0.0	0.1	0.0	48.8	100.0	828
Taninthayi	44.0	43.3	9.3	1.1	0.2	0.9	20.8	10.9	0.0	0.0	0.0	0.7	0.0	0.7	0.0	56.0	100.0	174
Bago	60.7	60.1	3.5	0.6	2.2	1.0	36.7	15.8	0.4	0.0	0.0	0.5	0.0	0.4	0.2	39.3	100.0	780
Magway	47.3	45.4	2.6	0.2	4.2	1.6	26.2	8.9	1.5	0.0	0.1	1.9	0.5	1.4	0.0	52.7	100.0	642
Mandalay	55.7	55.3	4.7	0.5	4.0	1.0	32.1	11.8	1.1	0.0	0.2	0.4	0.2	0.2	0.0	44.3	100.0	838
Mon	45.0	44.6	5.8	0.0	1.3	1.1	21.8	14.3	0.5	0.0	0.0	0.4	0.0	0.4	0.0	55.0	100.0	278
Rakhine	37.1	36.9	0.8	0.0	0.0	0.0	22.9	13.2	0.0	0.0	0.0	0.2	0.2	0.0	0.0	62.9	100.0	454
Yangon	62.7	60.2	7.4	0.0	3.1	1.1	26.0	21.3	1.2	0.0	0.0	2.5	1.1	1.2	0.2	37.3	100.0	1,042
Shan	47.0	46.1	6.5	0.0	4.9	0.4	22.2	9.5	2.5	0.2	0.0	0.9	0.0	0.6	0.2	53.0	100.0	901
Ayeyarwaddy	55.6	55.4	2.6	0.3	2.7	0.6	31.0	17.9	0.3	0.0	0.0	0.2	0.0	0.2	0.0	44.4	100.0	1,083
Nay Pyi Taw	58.6	54.7	2.0	0.6	1.8	0.2	37.7	11.0	1.4	0.0	0.0	3.9	1.8	1.9	0.2	41.4	100.0	195
Education																		
No education	38.2	37.5	2.8	0.4	2.1	0.4	22.1	9.1	0.5	0.2	0.0	0.7	0.1	0.4	0.2	61.8	100.0	1,193
Primary	51.1	50.6	3.6	0.3	2.7	0.7	29.8	13.0	0.4	0.0	0.0	0.5	0.1	0.4	0.0	48.9	100.0	3,656
Secondary	59.0	58.0	6.1	0.1	3.0	1.0	29.2	17.1	1.4	0.0	0.1	1.0	0.2	0.7	0.1	41.0	100.0	2,285
More than secondary	61.3	57.2	10.6	0.4	4.2	3.0	19.3	15.9	3.8	0.0	0.0	4.1	2.3	1.5	0.3	38.7	100.0	621
Wealth quintile																		
Lowest	46.8	46.2	1.2	0.1	2.0	0.7	30.5	11.6	0.0	0.1	0.0	0.6	0.2	0.3	0.1	53.2	100.0	1,623
Second	50.5	50.2	2.8	0.0	2.1	0.4	31.5	13.2	0.1	0.0	0.1	0.3	0.0	0.2	0.0	49.5	100.0	1,585
Middle	50.2	49.8	3.7	0.3	2.9	0.8	29.1	12.2	0.8	0.0	0.0	0.5	0.1	0.4	0.0	49.8	100.0	1,558
Fourth	55.8	54.8	5.0	0.4	2.1	0.9	29.5	15.7	1.1	0.0	0.1	1.0	0.2	0.8	0.0	44.2	100.0	1,506
Highest	58.6	55.9	11.9	0.4	5.2	1.7	16.8	16.6	3.2	0.0	0.0	2.7	1.1	1.3	0.2	41.4	100.0	1,487
Number of living children																		
0	31.3	29.9	0.1	0.1	0.4	0.1	14.8	14.1	0.2	0.0	0.1	1.4	0.5	0.7	0.2	68.7	100.0	916
1-2	59.0	58.1	3.3	0.1	3.4	1.2	31.9	16.9	1.3	0.0	0.0	0.9	0.4	0.5	0.0	41.0	100.0	4,061
3-4	54.9	53.9	9.7	0.5	3.2	0.8	28.1	10.6	1.0	0.0	0.1	1.0	0.1	0.7	0.2	45.1	100.0	2,098
5+	31.8	31.2	4.8	0.3	1.9	0.3	18.0	5.2	0.3	0.3	0.0	0.6	0.2	0.4	0.0	68.2	100.0	684
Total	52.2	51.3	4.8	0.3	2.8	0.9	27.6	13.8	1.0	0.0	0.0	1.0	0.3	0.6	0.1	47.8	100.0	7,759

Note: If more than one method is used, only the most effective method is considered in this tabulation.
LAM = Lactational amenorrhea method

3.7 NEED AND DEMAND FOR FAMILY PLANNING

The proportion of women who want to stop childbearing or who want to space their next birth is a crude measure of the extent of the need for family planning, given that not all of these women are exposed to the risk of pregnancy, and some may already be using contraception. This section discusses a more refined extent of need and the potential demand for family planning services. Women who want to postpone their next birth for 2 or more years, or who want to stop childbearing altogether but are not using a contraceptive method, are said to have an unmet need for family planning. Pregnant women are considered to have an unmet need for spacing or limiting if their pregnancy was mistimed or unwanted, respectively. Similarly, amenorrheic women are categorized as having an unmet need if their last birth was mistimed or unwanted. Women who are currently using a family planning method are said to have a met need for family planning. Total demand for family planning services comprises those who fall in the met need and unmet need categories.

Table 3.7 presents data on unmet need, met need, and total demand for family planning among currently married women. These indicators help evaluate the extent to which family planning programs in Myanmar meet the demand for services.

Table 3.7 Need and demand for family planning among currently married women

Percentage of currently married women age 15-49 with unmet need for family planning, percentage with met need for family planning, percentage with met need for family planning who are using modern methods, percentage with demand for family planning, percentage of the demand for family planning that is satisfied, and percentage of the demand for family planning that is satisfied with modern methods, by background characteristics, Myanmar 2015-16

Background characteristic	Unmet need	Met need for family planning (currently using)		Total demand for family planning[3]	Percentage of demand satisfied[1]		Number of women
		All methods	Modern methods[2]		All methods	Modern methods[2]	
Age							
15-19	18.9	54.0	53.2	72.9	74.1	73.0	227
20-24	13.5	59.5	59.3	73.0	81.5	81.3	834
25-29	13.6	58.7	57.9	72.2	81.2	80.1	1,258
30-34	14.7	57.8	57.1	72.5	79.7	78.7	1,505
35-39	13.6	63.1	61.8	76.7	82.3	80.6	1,482
40-44	20.6	47.9	46.6	68.5	70.0	68.1	1,283
45-49	21.2	23.7	22.3	44.8	52.8	49.8	1,169
Residence							
Urban	12.8	59.6	57.3	72.4	82.3	79.2	2,022
Rural	17.4	49.6	49.1	67.1	74.0	73.2	5,737
States/Regions							
Kachin	17.9	43.5	41.6	61.4	70.9	67.8	238
Kayah	15.3	54.5	50.6	69.8	78.1	72.6	40
Kayin	21.5	40.5	39.5	62.0	65.3	63.7	201
Chin	23.3	25.4	25.2	48.7	52.2	51.7	66
Sagaing	15.3	51.2	51.1	66.5	77.0	76.7	828
Taninthayi	20.5	44.0	43.3	64.5	68.2	67.1	174
Bago	13.7	60.7	60.1	74.4	81.6	80.9	780
Magway	22.3	47.3	45.4	69.6	68.0	65.3	642
Mandalay	12.9	55.7	55.3	68.6	81.2	80.7	838
Mon	17.2	45.0	44.6	62.2	72.3	71.7	278
Rakhine	23.0	37.1	36.9	60.1	61.7	61.4	454
Yangon	11.9	62.7	60.2	74.5	84.1	80.8	1,042
Shan	20.7	47.0	46.1	67.7	69.4	68.1	901
Ayeyarwaddy	13.6	55.6	55.4	69.2	80.3	80.1	1,083
Nay Pyi Taw	11.8	58.6	54.7	70.4	83.3	77.8	195
Education							
No education	24.0	38.2	37.5	62.2	61.4	60.4	1,193
Primary	16.5	51.1	50.6	67.6	75.6	74.8	3,656
Secondary	13.8	59.0	58.0	72.8	81.0	79.6	2,285
More than secondary	8.4	61.3	57.2	69.7	87.9	82.1	621
Wealth quintile							
Lowest	19.9	46.8	46.2	66.8	70.1	69.3	1,622
Second	16.5	50.5	50.2	67.0	75.3	74.9	1,586
Middle	16.2	50.2	49.8	66.4	75.6	74.9	1,556
Fourth	15.5	55.7	54.7	71.2	78.2	76.8	1,509
Highest	12.6	58.6	55.9	71.2	82.3	78.5	1,487
Total	16.2	52.2	51.3	68.5	76.3	74.9	7,759

Note: Numbers in this table correspond to the revised definition of unmet need described in Bradley et al., 2012.
[1] Percentage of demand satisfied is met need divided by total demand.
[2] Modern methods include female sterilization, male sterilization, IUD, implants, injectables, pill, male condom, and lactational amenorrhea method (LAM).
[3] Total demand is the sum of unmet need and met need (with all methods).

Table 3.7 shows that 16 percent of currently married women have an unmet need for family planning services. Fifty-two percent of married women are currently using a contraceptive method. Therefore, 69 percent of currently married women have a demand for family planning. At present, 76 percent of the potential demand for family planning is being met. Thus, if all married women who said they want to space or limit their children were to use family planning methods, the CPR would increase from 52 percent to 69 percent.

The results indicate that Myanmar is slightly behind in its commitment to reduce the unmet need for family planning to less than 10 percent and to increase the percentage of demand satisfied to 80 percent by 2015 (Family Planning 2020, 2013).

The unmet need for family planning is highest in Chin and Rakhine (23 percent in both states) and lowest in Yangon and Nay Pyi Taw (12 percent each). Similarly, the unmet need is highest among women living in rural areas, those with no education, and those belonging to the lowest wealth quintile.

3.8   EARLY CHILDHOOD MORTALITY

Infant and child mortality rates are basic indicators of a country's socioeconomic situation and quality of life (UNDP 2007). Estimates of child mortality are based on information collected in the birth history section of the Woman's Questionnaire, which includes questions about aggregate childbearing experience (that is, the number of sons and daughters who live with their mother, the number who live elsewhere, and the number who have died). Table 3.8 presents estimates for three successive 5-year periods prior to the 2015-16 MDHS. The rates are estimated directly from the information in the birth history on a child's birth date, survivorship status, and age at death for children who died. This information is used to directly estimate the following five mortality rates:

Neonatal mortality: the probability of dying within the first month of life
Postneonatal mortality: the difference between infant and neonatal mortality
Infant mortality: the probability of dying before the first birthday
Child mortality: the probability of dying between the first and the fifth birthday
Under-5 mortality: the probability of dying between birth and the fifth birthday

All rates are expressed per 1,000 live births, except for child mortality, which is expressed per 1,000 children surviving to age 12 months.

As shown in Table 3.8, during the 5 years immediately preceding the survey, the infant mortality rate was 40 deaths per 1,000 live births. The child mortality rate was 10 deaths per 1,000 children surviving to age 12 months, while the overall under-5 mortality rate was 50 deaths per 1,000 live births. Eighty percent of all deaths among children under age 5 in Myanmar take place before a child's first birthday, with 50 percent occurring during the first month of life.

Table 3.8 Early childhood mortality rates

Neonatal, postneonatal, infant, child, and under-5 mortality rates for 5-year periods preceding the survey, Myanmar 2015-16

Period preceding survey	Mortality rates				
	Neonatal mortality (NN)	Post-neonatal mortality (PNN)[1]	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under-5 mortality ($_5q_0$)
0-4	25	16	40	10	50
5-9	39	36	75	18	92
10-14	38	46	84	20	103

[1] Computed as the difference between the infant and neonatal mortality rates

14

The 2015-16 MDHS documents a pattern of decreasing under-5 mortality during the 15 years prior to the survey (Figure 3.2). Nevertheless, the country had Millennium Development Goal targets of reducing under-5 mortality to 36 deaths per 1,000 live births and infant mortality to 24 deaths per 1,000 live births, indicating that there is still a long way to achieve these targets (United Nation Country Team in Myanmar 2011).

Figure 3.2 Trends in childhood mortality, 2001-2015

Deaths per
1,000 live births

Legend: □ 2001-2005 ■ 2006-2010 ■ 2011-2015

Categories: Infant mortality (84, 75, 40); Child mortality (20, 18, 10); Under-5 mortality (103, 92, 50)
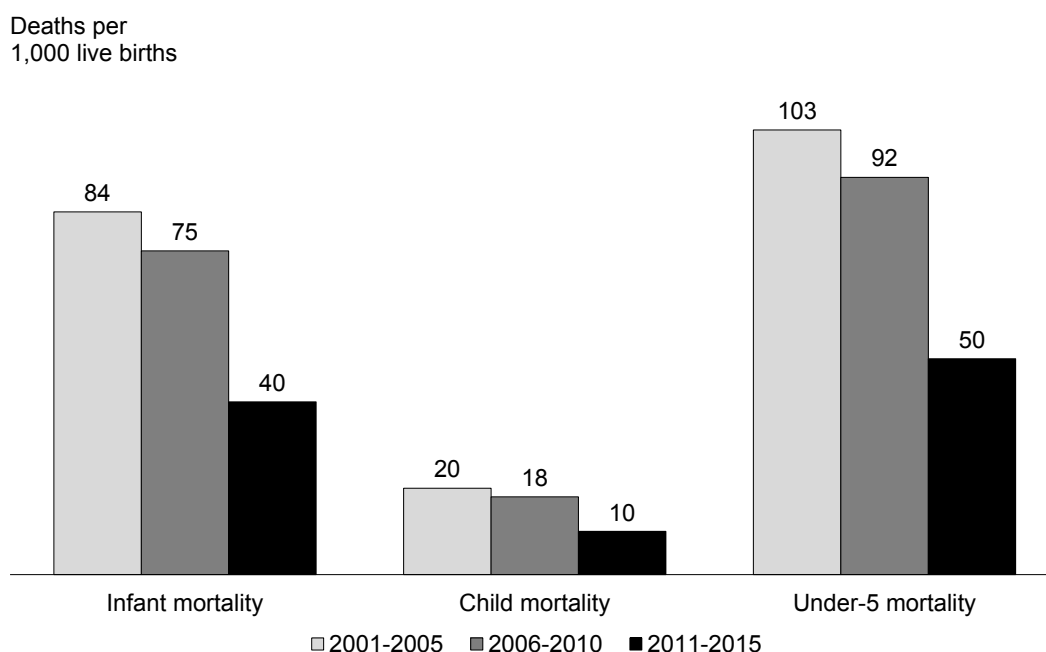
3.9   MATERNAL CARE

Proper care during pregnancy and delivery is important for the health of both the mother and the baby and is the fifth Millennium Development Goal (MDG). In the 2015-16 MDHS, women who had given birth in the 5 years preceding the survey were asked a number of questions about maternal care. Mothers were asked whether they had obtained antenatal care during the pregnancy for their most recent live birth in the 5 years preceding the survey and whether they had received tetanus toxoid injections while pregnant. For each live birth over the same period, mothers were also asked what type of assistance they received at the time of delivery. Finally, women who had a live birth in the 2 years before the survey were asked if they received a postnatal checkup within 2 days of delivery. Table 3.9 summarizes information on the coverage of these maternal health services.

3.9.1 Antenatal Care

Antenatal care (ANC) from a skilled provider is important to monitor pregnancy and reduce morbidity and mortality risks for the mother and child during pregnancy, at delivery, and during the postnatal period (within 42 days after delivery). The 2015-16 MDHS results show that 81 percent of women who gave birth in the 5 years preceding the survey received antenatal care from a skilled provider at least once for their last birth. Fifty-nine percent of women had four or more ANC visits.

Urban women were more likely than rural women to have received ANC from a skilled provider (94 percent and 77 percent, respectively) and to have had four or more ANC visits (84 percent and 51 percent, respectively). By states and regions, women in Yangon (95 percent), Kayah (93 percent), and Mon (93 percent) were more likely to receive ANC from a skilled provider than women from other states/regions. Women in Rakhine and Shan were least likely to receive ANC from a skilled provider. Women who have more education are more likely than those who have less education to receive ANC from a skilled provider.

For instance, 56 percent of women with no education received ANC from a skilled provider, compared with almost all women with more than a secondary level education. The proportion of women who receive ANC from a skilled provider increases steadily as wealth quintile increases.

3.9.2 Tetanus Toxoid

Tetanus toxoid injections are given during pregnancy to prevent neonatal tetanus, a major cause of early infant death in many developing countries, often due to failure to observe hygienic procedures during delivery. Table 3.9 shows that 72 percent of women with a birth in the 5 years before the survey received sufficient doses of tetanus toxoid to protect their last birth against neonatal tetanus. The percentage of women whose last birth was protected from tetanus varies with the age of mother at birth, urban-rural residence, level of education, and wealth. Women who are less than age 20 at the birth of the child, those living in rural areas, those with no education, and those belonging to the lowest wealth quintile are substantially less likely to have had their last birth protected from tetanus. For instance, only 56 percent of women with no education had their last birth protected from tetanus compared with 84 percent of women with more than a secondary level of education.

3.9.3 Delivery Care

Access to proper medical attention and hygienic conditions during delivery can reduce the risk of complications and infections that may lead to death or serious illness for the mother and/or baby (Van Lerberghe and De Brouwere 2001; WHO 2006). Survey data show that in Myanmar, 60 percent of the births in the 5 years preceding the survey were delivered by a skilled provider and 37 percent were delivered in a health facility (Table 3.9).

Urban women are far more likely to benefit from skilled delivery care than rural women. Eighty-eight percent of births to urban mothers were assisted by a skilled provider, and 70 percent were delivered in a health facility, as compared with 52 percent and 28 percent, respectively, of births to rural women (Figure 3.3). Seventy-nine percent of births in Mandalay and 83 percent of births in Yangon were assisted by a skilled provider, compared with only 30 percent in Rakhine, indicating a sizeable disparity by states/regions.

Mothers' educational status is highly correlated with whether their delivery is assisted by a skilled provider and whether the birth is delivered in a health facility. For example, 28 percent of births to mothers with no education were assisted by a skilled provider, and 13 percent were delivered in a health facility, as compared with 95 percent and 83 percent, respectively, of births to mothers with more than a secondary education. A similar relationship is observed with wealth.

3.9.4 Postnatal Care for the Mother

A large proportion of maternal and neonatal deaths occur during the first 48 hours after delivery. Thus, prompt postnatal care (PNC) for both the mother and the child is important to treat any complications arising from the delivery, as well as to provide the mother with important information on how to care for herself and her child. Safe motherhood programs recommend that all women receive a check of their health within 2 days after delivery.

To assess the extent of postnatal care utilization, respondents were asked, for their last birth in the 2 years preceding the survey, whether they had received a checkup after delivery and the timing of the first checkup. As shown in Table 3.9, 71 percent of women reported having received a PNC checkup in the first 2 days after birth.

The proportion of women receiving a postnatal checkup within 2 days of delivery is higher in urban areas than rural areas (81 percent and 68 percent, respectively) and increases with increasing education and wealth.

Table 3.9 Maternal care indicators

Among women age 15-49 who had a live birth in the 5 years preceding the survey, percentage who received antenatal care from a skilled provider for the last live birth, percentage with four or more ANC visits for the last live birth, and percentage whose last live birth was protected against neonatal tetanus; among all live births in the 5 years before the survey, percentage delivered by a skilled provider and percentage delivered in a health facility; and among women age 15-49 who had a live birth in the 2 years preceding the survey, percentage who received a postnatal checkup in the first 2 days after the last live birth, by background characteristics, Myanmar 2015-16

Background characteristic	Women who had a live birth in the 5 years preceding the survey				Live births in the 5 years preceding the survey			Women who had a live birth in the 2 years preceding the survey	
	Percentage with antenatal care from a skilled provider[1]	Percentage with 4+ ANC visits	Percentage whose last live birth was protected against neonatal tetanus[2]	Number of women	Percentage delivered by a skilled provider[1]	Percentage delivered in a health facility	Number of births	Percentage of women who had a postnatal checkup in the first 2 days after birth	Number of women
Mother's age at birth									
<20	77.0	46.2	63.1	249	57.4	31.4	345	66.6	125
20-34	81.4	60.5	72.4	2,614	60.5	37.3	3,153	71.0	1,226
35-49	79.3	56.1	73.0	720	60.3	38.7	789	73.8	318
Residence									
Urban	94.4	84.2	80.5	838	87.8	70.1	953	81.1	419
Rural	76.5	50.8	69.2	2,744	52.3	27.6	3,333	67.8	1,250
States/Regions									
Kachin	80.0	58.3	80.2	133	63.7	29.5	168	61.9	56
Kayah	93.3	68.8	75.9	24	53.2	29.0	32	69.7	12
Kayin	71.7	52.7	67.3	113	49.6	36.8	147	65.2	66
Chin	73.5	39.9	69.1	43	35.6	14.7	65	21.0	24
Sagaing	84.8	54.4	67.7	398	65.3	33.9	474	74.4	172
Taninthayi	80.6	60.3	68.9	102	65.3	37.6	133	86.9	48
Bago	79.5	58.1	72.6	329	62.9	39.3	373	80.0	135
Magway	82.5	57.1	66.5	274	68.4	37.5	310	92.3	119
Mandalay	85.4	67.0	78.6	383	78.7	46.8	431	79.1	183
Mon	93.2	63.4	83.5	121	66.8	37.0	144	75.2	59
Rakhine	71.1	40.3	74.1	238	29.7	19.2	303	54.2	121
Yangon	94.6	84.6	84.6	387	82.5	65.4	435	78.8	193
Shan	68.1	46.9	57.9	459	46.7	27.6	607	52.7	232
Ayeyarwaddy	78.3	57.2	71.0	497	50.0	34.0	567	70.8	217
Nay Pyi Taw	78.9	56.1	72.2	83	66.5	35.8	96	83.9	32
Mother's education									
No education	56.1	31.2	55.5	587	28.0	12.8	789	47.6	264
Primary	80.1	52.4	69.8	1,629	56.0	29.3	1,963	72.2	730
Secondary	89.8	74.1	80.7	1,069	78.7	53.4	1,212	76.5	532
More than secondary	99.5	90.6	84.1	298	94.8	82.6	322	89.2	143
Wealth quintile									
Lowest	67.1	38.5	62.3	981	36.3	16.8	1,277	58.0	444
Second	75.0	51.2	70.1	787	50.7	25.5	965	66.5	367
Middle	83.8	60.5	74.2	624	64.7	37.2	722	77.1	286
Fourth	90.4	70.6	78.5	638	79.6	50.1	714	74.7	303
Highest	98.1	88.7	81.3	552	97.0	82.5	608	89.0	270
Total	80.7	58.6	71.9	3,583	60.2	37.1	4,286	71.2	1,669

[1] Skilled provider includes doctor, nurse, midwife, or Lady Health Volunteer.
[2] Includes mothers with two injections during the pregnancy of her last live birth, or two or more injections (the last within 3 years of the last live birth), or three or more injections (the last within 5 years of the last live birth), or four or more injections (the last within 10 years of the last live birth), or five or more injections at any time prior to the last live birth

Figure 3.3 Maternal health care by residence

Percent

	ANC by a skilled provider	Birth occurred in a health facility	Birth attended by a skilled provider
Urban	94	70	88
Rural	77	28	52
Total	81	37	60

□ Urban ■ Rural ■ Total
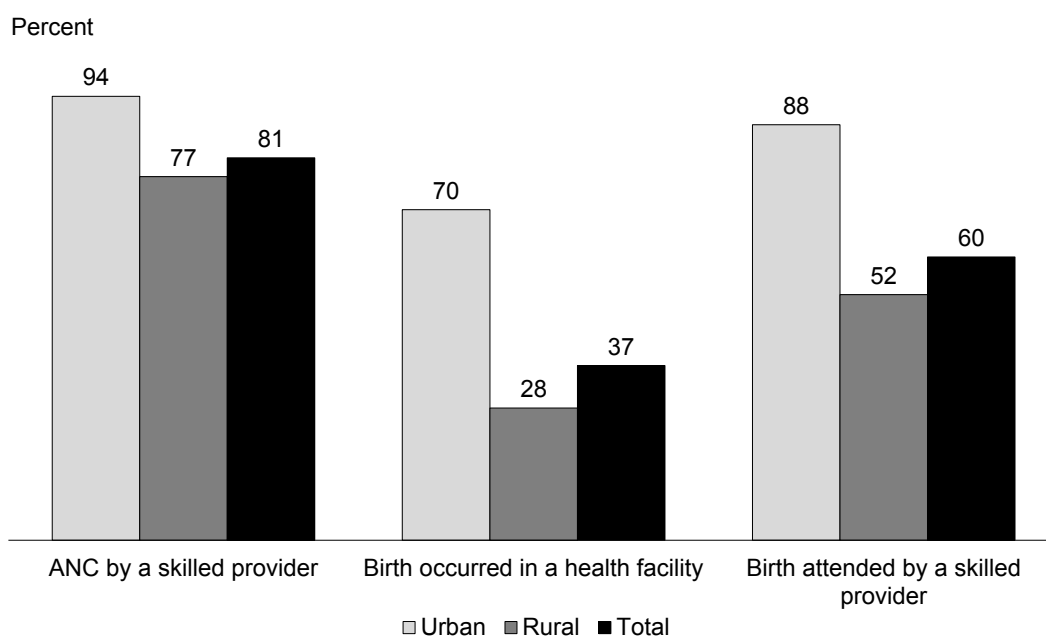
MDHS 2015-16

3.10   CHILD HEALTH AND NUTRITION

The 2015-16 MDHS collected data on a number of key child health indicators, including vaccinations of young children, nutritional status as assessed by anthropometry and mid-upper arm circumference, infant feeding practices, and treatment practices when a child is ill.

3.10.1 Vaccination of Children

In DHS surveys, a child is considered to have received all basic vaccinations if he or she has received a BCG vaccination against tuberculosis; three doses of DPT vaccine to prevent diphtheria, pertussis, and tetanus; at least three doses of polio vaccine; and one dose of measles vaccine. These vaccinations should be received during the first year of life. The 2015-16 MDHS collected information on the coverage of these vaccinations among all children born in the 5 years preceding the survey. Since November 2012, DPT has been combined with other antigens that protect against hepatitis B and *Haemophilus influenzae* type b, and this vaccine (DPT-HepB-Hib) is known as the pentavalent vaccine. The 2015-16 MDHS reports on pentavalent vaccine coverage, as opposed to DPT coverage. A second dose of measles vaccine was also introduced since November 2012 with support from the Global Alliance for Vaccines and Immunization (Ministry of Health 2013).

Myanmar has established a schedule for the administration of all basic childhood vaccines. BCG should be given shortly after birth. Polio vaccine should be given at approximately age 6, 10, and 14 weeks. Pentavalent/DPT vaccine should also be given at approximately age 6, 10, and 14 weeks. Measles vaccine should be given at or soon after the child reaches age 9 months. A measles booster dose is given at or soon after the child reaches age 18 months. It is also recommended that the vaccinations be recorded on a vaccination card that is given to the parents or guardians (Ministry of Health 2014).

In the 2015-16 MDHS, information on vaccination coverage was obtained in two ways—from health cards and from mothers' verbal reports. All mothers were asked to show the interviewer the vaccination cards in which vaccination dates are recorded for all children born since January 2010. If the card was available, the interviewer then recorded from the card the dates of each vaccination received. In cases in which the card indicated the child had not received all basic vaccinations, the mother was asked whether the child had received other vaccinations that were not recorded on the card, and, if so, they too

were recorded. If there was no card, or if the mother was unable to show the card to the interviewer, the child's vaccination information was based on the mother's recall. The mother was asked to recall whether the child had received BCG, polio, pentavalent/DPT, hepatitis B, and measles vaccines. If she indicated that the child had received the polio, pentavalent/DPT, hepatitis B or measles vaccines, she was asked about the number of doses that the child received. The results presented here are based on the vaccination card and, for those children without a card, information provided by the mother.

Table 3.10 pertains to children age 12-23 months, the age by which children should have received all basic vaccinations. Forty-five percent of these children have a vaccination card that was seen by the interviewer. Overall, 55 percent of children have received all basic vaccinations. Eighty-eight percent of children have received BCG, 87 percent have received the first dose of pentavalent, and 90 percent have received polio 1. Sixty-two percent and 67 percent of children have received the third dose of the pentavalent and polio vaccines, respectively. Coverage of vaccination against measles is 77 percent for the first dose. Eight percent of children in Myanmar have not received any vaccinations.

Table 3.10 Vaccinations by background characteristics

Percentage of children age 12-23 months who received specific vaccines at any time before the survey (according to a vaccination card or the mother's report), and percentage with a vaccination card seen, by background characteristics, Myanmar 2015-16

Background characteristic	BCG	Pentavalent[1]			Polio			Measles-1	All basic vaccina-tions[2]	No vaccina-tions	Percentage with a vaccination card seen	Number of children
		1	2	3	1	2	3					
Sex												
Male	89.1	88.1	79.5	63.5	92.0	82.9	68.7	79.4	57.9	6.8	44.6	475
Female	86.1	85.2	74.4	60.7	88.2	79.8	64.9	74.1	50.9	9.3	45.4	377
Residence												
Urban	91.8	91.0	85.0	75.2	93.3	88.3	76.0	81.7	67.5	5.0	55.3	220
Rural	86.4	85.4	74.5	57.8	89.3	79.1	63.9	75.5	50.4	8.9	41.3	631
States/Regions												
Kachin	91.2	98.4	84.1	73.6	96.8	85.7	70.4	81.9	59.4	1.6	55.3	26
Kayah	100.0	100.0	97.0	84.8	100.0	98.5	84.8	95.6	80.3	0.0	47.0	6
Kayin	88.4	86.9	78.8	70.9	90.0	83.7	72.5	82.6	65.0	6.9	65.8	28
Chin	92.7	91.5	82.8	64.7	93.9	90.3	69.9	73.0	53.0	4.9	15.7	11
Sagaing	86.5	86.5	82.0	71.5	86.5	82.0	71.5	76.9	66.4	13.5	58.9	79
Taninthayi	98.1	98.1	81.6	61.8	92.5	85.0	67.3	84.9	52.4	1.9	44.4	22
Bago	94.5	83.4	75.3	56.3	88.2	80.0	59.0	77.6	46.7	3.9	44.1	75
Magway	(97.8)	(93.3)	(86.6)	(61.8)	(100.0)	(93.3)	(68.2)	(91.0)	(58.2)	(0.0)	(43.0)	55
Mandalay	93.4	93.4	91.2	88.2	93.4	93.4	90.1	86.5	81.3	6.6	59.9	89
Mon	(95.4)	(95.4)	(88.6)	(68.7)	(97.7)	(90.8)	(75.3)	(84.4)	(64.4)	(2.3)	(46.1)	26
Rakhine	88.1	90.6	78.7	48.3	95.6	90.2	72.2	73.4	41.0	4.4	13.3	66
Yangon	96.4	96.4	88.0	76.0	98.1	90.0	78.0	79.7	67.4	1.9	66.8	99
Shan	76.1	74.7	64.8	53.9	78.5	67.4	52.7	63.7	45.7	18.7	36.4	127
Ayeyarwaddy	74.5	76.7	58.5	40.8	86.5	66.0	51.6	70.6	33.8	11.9	33.6	125
Nay Pyi Taw	(97.7)	(91.0)	(77.6)	(59.9)	(90.8)	(81.7)	(59.6)	(85.8)	(49.4)	(2.3)	(25.1)	18
Education												
No education	71.6	70.1	59.8	43.7	74.1	65.0	51.5	60.7	41.0	23.2	27.6	124
Primary	89.2	88.3	76.7	60.4	92.9	81.9	66.3	79.6	53.6	4.8	44.4	391
Secondary	91.0	90.1	81.7	68.0	92.5	84.7	69.2	77.1	56.4	6.4	50.4	266
More than secondary	96.0	96.0	93.7	83.7	96.0	96.0	90.0	91.3	79.6	4.0	58.0	71
Wealth quintile												
Lowest	86.1	81.9	68.5	49.1	87.4	74.4	56.4	75.1	41.2	8.3	31.5	240
Second	77.1	81.1	66.8	49.4	83.2	70.5	54.6	61.0	40.5	15.9	40.7	187
Middle	86.4	81.7	77.0	67.3	89.3	80.1	70.7	80.1	64.2	8.6	46.5	135
Fourth	95.7	97.8	89.1	74.0	97.8	93.7	78.9	83.5	64.9	1.9	51.6	147
Highest	97.8	96.3	93.7	84.4	97.8	96.7	85.4	92.0	77.1	2.2	64.6	144
Total	87.8	86.9	77.3	62.3	90.3	81.5	67.0	77.1	54.8	7.9	44.9	852

Note: Figures in parentheses are based on 25-49 unweighted cases.
[1] Pentavalent is DPT-HepB-Hib
[2] BCG, measles, and three doses each of pentavalent and polio vaccine

Basic vaccination coverage differs slightly by the sex of the child, with male children more likely to receive all of the basic vaccines than female children. Similarly, urban children are more likely to receive all basic vaccinations than rural children. Large differences are observed in the states/regions; the percentage of children fully vaccinated ranges from a high of 80 percent in Kayah to a low of 34 percent in Ayeyarwaddy. Importantly, however, the numbers of cases at the state/regional level are small, meaning that

the standard errors surrounding these values are large. Vaccination coverage improves substantially with mother's education and wealth.

3.10.2 Childhood Acute Respiratory Infection, Fever, and Diarrhea

Acute respiratory infection (ARI), fever, and dehydration from diarrhea are important contributing causes of childhood morbidity and mortality in developing countries (WHO 2003). Prompt medical attention when a child has the symptoms of these illnesses is, therefore, crucial in reducing child deaths. In the 2015-16 MDHS, for each child under age 5, mothers were asked if the child had experienced a cough accompanied by short, rapid breathing, or difficulty in breathing as a result of a chest-related problem (symptoms of ARI); a fever; or an episode of diarrhea in the 2 weeks preceding the survey. Respondents were also asked if treatment was sought when the child was ill. Overall, 3 percent of children under age 5 showed symptoms of ARI, 16 percent had a fever, and 10 percent experienced diarrhea in the 2 weeks preceding the survey (data not shown). It should be noted that the morbidity data collected are subjective because they are based on a mother's perception of illnesses without validation by medical personnel.

Table 3.11 shows that treatment from a health facility or provider was sought for 58 percent of children with ARI symptoms and 57 percent of those with a fever. Treatment was sought from a health facility or health provider for 54 percent of children with diarrhea. Sixty-two percent of children with diarrhea received a rehydration solution from an oral rehydration salt (ORS) packet.

Table 3.11 Treatment for acute respiratory infection, fever, and diarrhea

Among children under age 5 who had symptoms of acute respiratory infection (ARI) or had fever in the 2 weeks preceding the survey, percentage for whom advice or treatment was sought from a health facility or provider, and among children under age 5 who had diarrhea during the 2 weeks preceding the survey, percentage for whom advice or treatment was sought from a health facility or provider, and percentage given a fluid made from oral rehydration salt (ORS) packets, by background characteristics, Myanmar 2015-16

Background characteristic	Children with symptoms of ARI[1]		Children with fever		Children with diarrhea		
	Percentage for whom treatment was sought from a health facility/ provider[2]	Number of children	Percentage for whom treatment was sought from a health facility/ provider[2]	Number of children	Percentage for whom treatment was sought from a health facility/ provider[2]	Percentage given fluid from ORS packet	Number of children
Age in months							
<6	*	8	46.2	42	(54.4)	(17.8)	25
6-11	*	7	63.9	90	59.0	55.3	56
12-23	71.1	40	52.8	180	52.9	61.2	145
24-35	66.2	30	63.3	141	55.6	68.8	90
36-47	(47.2)	29	53.8	117	53.4	68.0	69
48-59	(44.4)	17	56.5	87	45.6	74.2	42
Sex							
Male	64.8	81	57.5	330	56.1	68.1	225
Female	47.6	51	56.1	327	51.1	54.9	203
Residence							
Urban	(76.6)	28	59.1	151	48.7	67.1	77
Rural	53.2	103	56.1	505	54.8	60.7	350
States/Regions							
Kachin	(34.2)	12	56.9	35	52.2	63.5	32
Kayah	(61.1)	2	70.6	7	(59.1)	(76.5)	3
Kayin	*	7	64.2	25	47.6	50.9	23
Chin	40.4	9	36.5	19	41.2	62.0	15
Sagaing	*	1	*	30	*	*	28
Taninthayi	*	7	55.7	26	*	*	10
Bago	*	8	(56.0)	59	*	*	25
Magway	*	14	(53.4)	54	*	*	25
Mandalay	*	8	(57.9)	46	*	*	36
Mon	*	3	*	13	*	*	10
Rakhine	(79.1)	24	48.9	71	45.3	61.9	41
Yangon	*	2	*	35	*	*	20
Shan	*	10	(55.1)	80	(34.3)	(39.5)	57
Ayeyarwaddy	*	20	57.4	142	61.2	73.0	93
Nay Pyi Taw	*	2	(38.2)	15	*	*	8

Continued…

20

Table 3.11—*Continued*

| Background characteristic | Children with symptoms of ARI[1] | | Children with fever | | Children with diarrhea | | |
	Percentage for whom treatment was sought from a health facility/ provider[2]	Number of children	Percentage for whom treatment was sought from a health facility/ provider[2]	Number of children	Percentage for whom treatment was sought from a health facility/ provider[2]	Percentage given fluid from ORS packet	Number of children
Mother's education							
No education	(45.3)	24	53.2	114	36.1	54.3	78
Primary	55.3	62	52.6	313	53.0	60.9	197
Secondary	63.0	37	60.7	188	62.3	67.7	134
More than secondary	*	8	(81.5)	41	*	*	19
Wealth quintile							
Lowest	45.3	50	46.5	218	49.6	62.5	148
Second	62.1	32	59.0	175	54.1	61.2	114
Middle	(58.8)	20	51.4	90	49.1	56.6	67
Fourth	(71.4)	19	67.0	95	64.5	66.8	55
Highest	*	11	74.4	80	(60.7)	(63.1)	43
Total	58.2	131	56.8	657	53.7	61.9	427

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.
[1] Symptoms of ARI (cough accompanied by short, rapid breathing that is chest-related and/or by difficulty in breathing that is chest-related)
[2] Excludes pharmacy, shop, market, and traditional practitioner

3.10.3 Nutritional Status of Children

Anthropometric measurements (height and weight) for young children were collected in the 2015-16 MDHS to provide outcome measures of nutritional status. Each team of interviewers carried a scale and measuring board. Measurements were made using lightweight SECA scales (with digital screens) designed and manufactured under the authority of the United Nations Children's Fund (UNICEF). The measuring boards were specially made by Shorr Production for use in survey settings. As recommended by WHO, evaluation of nutritional status in this report is based on a comparison of three indices for the children in this survey with indices reported for a reference population of well-nourished children (WHO Multicentre Growth Reference Study Group 2006). The three indices (height-for-age, weight-for-height, and weight-for-age) are expressed as standard deviation units from the median for the reference group. Children who fall below minus two standard deviations (-2 SD) from the median of the reference population are regarded as moderately malnourished, while those who fall below minus three standard deviations (-3 SD) from the reference population median are considered severely malnourished. Marked differences, especially with regard to height-for-age and weight-for-age, are often seen between different subgroups of children within a country.

Height and weight measurements were obtained for 5,106 (unweighted) children under age 5 who were eligible to be measured in the MDHS sample households at the time of the survey. Table 3.12 and Figure 3.4 focus on the 91 percent for whom complete and credible anthropometric and age data were collected.

Table 3.12 shows nutritional status for children under age 5 according to the three anthropometric indices, by background characteristics. Height-for-age is a measure of linear growth. A child who is below minus two standard deviations from the reference median for height-for-age is considered short for his or her age, or stunted, a condition reflecting the cumulative effect of chronic malnutrition. Twenty-nine percent of children in Myanmar are stunted (below -2 SD), and 8 percent are severely stunted (below -3 SD). Stunting increases with age, peaking at 41 percent among children age 24-35 months. A slightly higher proportion of male (31 percent) than female (27 percent) children are stunted, and stunting is greater among children in rural areas (32 percent) than urban areas (20 percent). Children of women with no education are more likely to be stunted. Stunting is inversely correlated with wealth quintile; 38 percent of children in the lowest wealth quintile are stunted, as compared with 16 percent of children in the highest quintile.

Table 3.12 Nutritional status of children

Percentage of children under age 5 classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, by background characteristics, Myanmar 2015-16

Background characteristic	Height-for-age[1]				Weight-for-height					Weight-for-age				
	Percentage below -3 SD	Percentage below -2 SD[2]	Mean Z-score (SD)	Number of children	Percentage below -3 SD	Percentage below -2 SD[2]	Percentage above +2 SD	Mean Z-score (SD)	Number of children	Percentage below -3 SD	Percentage below -2 SD[2]	Percentage above +2 SD	Mean Z-score (SD)	Number of children
Age in months														
<6	2.7	6.6	-0.3	338	4.5	12.9	3.0	-0.4	340	2.9	9.8	1.6	-0.5	341
6-8	5.7	14.5	-0.5	205	0.3	4.9	2.7	-0.3	202	5.0	15.5	2.0	-0.6	205
9-11	2.7	15.3	-0.8	191	0.4	8.7	2.9	-0.6	192	1.1	10.8	1.3	-0.8	192
12-17	4.2	16.1	-1.0	445	2.5	10.1	1.3	-0.6	444	3.6	16.0	0.8	-0.9	450
18-23	10.8	31.4	-1.6	391	1.6	5.8	1.4	-0.5	386	4.2	17.6	1.1	-1.1	391
24-35	12.1	40.6	-1.7	778	1.1	5.7	0.6	-0.5	780	4.3	21.6	0.0	-1.3	781
36-47	10.3	35.9	-1.6	905	0.5	5.4	0.6	-0.5	896	3.2	21.0	0.2	-1.3	903
48-59	7.4	32.9	-1.6	837	0.9	6.6	1.3	-0.6	835	4.2	22.9	0.6	-1.4	837
Sex														
Male	8.9	31.0	-1.4	2,116	1.5	7.7	1.6	-0.5	2,099	3.7	19.9	0.6	-1.1	2,117
Female	7.6	27.2	-1.3	1,974	1.2	6.3	1.0	-0.5	1,977	3.8	17.9	0.8	-1.1	1,983
Mother's interview status														
Interviewed	8.1	28.9	-1.3	3,751	1.4	7.3	1.3	-0.5	3,739	3.7	19.2	0.6	-1.1	3,762
Not interviewed, but in household	14.6	40.5	-1.4	78	0.0	4.9	2.2	-0.2	78	4.7	15.0	0.0	-0.9	78
Not interviewed, not in household[3]	8.7	29.0	-1.4	261	1.1	3.7	1.5	-0.4	259	4.2	16.2	1.4	-1.1	260
Residence														
Urban	4.7	20.0	-1.0	876	2.0	8.9	2.1	-0.6	874	2.5	15.1	0.9	-0.9	881
Rural	9.2	31.6	-1.4	3,213	1.2	6.5	1.1	-0.5	3,202	4.0	20.0	0.6	-1.2	3,219
States/Regions														
Kachin	10.6	36.1	-1.5	154	0.6	4.0	1.5	-0.2	154	4.3	17.3	0.0	-1.0	154
Kayah	12.2	39.7	-1.6	30	0.6	2.6	2.8	-0.1	30	2.6	17.9	0.3	-1.0	30
Kayin	6.1	25.4	-1.2	177	1.8	5.9	2.6	-0.3	177	2.9	15.2	1.4	-0.9	178
Chin	12.8	41.0	-1.5	61	0.5	3.3	2.6	-0.1	59	4.3	16.7	2.0	-1.0	60
Sagaing	6.4	26.7	-1.3	474	0.9	6.0	1.5	-0.5	474	3.1	13.4	0.3	-1.1	474
Taninthayi	4.7	25.6	-1.1	148	2.4	10.3	1.6	-0.7	148	3.6	19.6	0.3	-1.1	148
Bago	4.3	23.0	-1.2	406	2.2	6.1	0.3	-0.7	407	3.4	17.6	0.0	-1.2	407
Magway	10.1	25.9	-1.4	299	1.3	6.2	0.9	-0.6	295	3.3	21.8	0.4	-1.1	299
Mandalay	6.7	26.1	-1.3	424	0.6	7.1	1.6	-0.5	420	2.4	18.0	0.8	-1.1	424
Mon	6.1	28.1	-1.2	168	0.7	6.8	0.0	-0.6	168	2.4	18.8	0.4	-1.1	168
Rakhine	17.8	37.5	-1.7	269	3.7	13.9	0.2	-0.9	269	11.3	34.3	0.0	-1.6	269
Yangon	5.0	20.3	-0.8	433	2.2	12.6	3.5	-0.7	430	3.6	15.3	2.1	-1.0	436
Shan	12.3	36.5	-1.6	433	1.4	4.7	0.8	-0.2	435	3.4	15.5	0.4	-1.1	438
Ayeyarwaddy	9.1	37.2	-1.7	522	0.0	3.9	0.9	-0.6	516	3.1	24.6	1.1	-1.3	521
Nay Pyi Taw	5.6	22.0	-1.2	93	0.0	6.6	0.0	-0.6	92	2.8	16.3	0.0	-1.1	92
Mother's education[4]														
No education	15.0	39.3	-1.7	645	1.3	7.6	0.4	-0.5	645	6.2	25.5	0.0	-1.4	648
Primary	8.7	31.5	-1.4	1,813	1.3	7.0	1.0	-0.5	1,808	4.0	19.8	0.6	-1.2	1,818
Secondary	4.6	22.5	-1.1	1,081	1.2	7.0	2.0	-0.5	1,074	2.4	15.2	1.1	-1.0	1,085
More than secondary	3.8	16.9	-1.0	289	2.7	9.0	2.6	-0.6	289	1.2	15.4	0.6	-1.0	289
Wealth quintile														
Lowest	12.2	38.0	-1.6	1,179	1.3	7.8	0.7	-0.5	1,169	5.4	24.5	0.5	-1.3	1,176
Second	8.7	31.9	-1.5	916	1.3	5.7	1.2	-0.5	913	4.4	18.8	0.1	-1.2	919
Middle	8.6	29.1	-1.3	738	0.9	7.7	1.3	-0.6	733	3.8	18.4	0.6	-1.1	736
Fourth	4.9	21.1	-1.2	698	1.1	5.1	2.0	-0.5	700	2.0	15.6	1.3	-1.0	706
Highest	2.9	16.0	-0.9	557	2.3	9.0	1.9	-0.5	561	1.2	12.4	1.4	-0.8	563
Total	8.2	29.2	-1.3	4,089	1.3	7.0	1.3	-0.5	4,076	3.7	18.9	0.7	-1.1	4,100

Note: Table is based on children who stayed in the household the night before the interview. Each of the indices is expressed in standard deviation units (SD) from the median of the WHO Child Growth Standards adopted in 2006. The indices in this table are NOT comparable to those based on the previously used 1977 NCHS/CDC/WHO Reference. Table is based on children with valid dates of birth (month and year) and valid measurement of both height and weight.
[1] Recumbent length is measured for children under age 2 or in the few cases when the age of the child is unknown and the child is less than 85 cm; standing height is measured for all other children.
[2] Includes children who are below 3 standard deviations (SD) from the WHO Growth Standards population median
[3] Includes children whose mothers are deceased
[4] For women who are not interviewed, information is taken from the Household Questionnaire. Excludes children whose mothers are not listed in the Household Questionnaire and 2 children with missing information on mother's education.

Weight-for-height describes current nutritional status. A child who is below minus two standard deviations from the reference median for weight-for-height is considered too thin for his or her height, or wasted, a condition reflecting acute or recent nutritional deficits. Overall, 7 percent of children are wasted and 1 percent severely wasted.

Weight-for-age is a composite index of weight-for-height and height-for-age and thus does not distinguish between acute malnutrition (wasting) and chronic malnutrition (stunting). Children can be underweight for their age because they are stunted, wasted, or both. Weight-for-age is an overall indicator of a population's nutritional health. The results show that 19 percent of all children under 5 are underweight, and 4 percent are severely underweight. The proportion of children who are underweight is greater in rural areas (20 percent) than urban areas (15 percent) and correlates inversely with increasing wealth.

Figure 3.4 **Nutritional status of children by age**
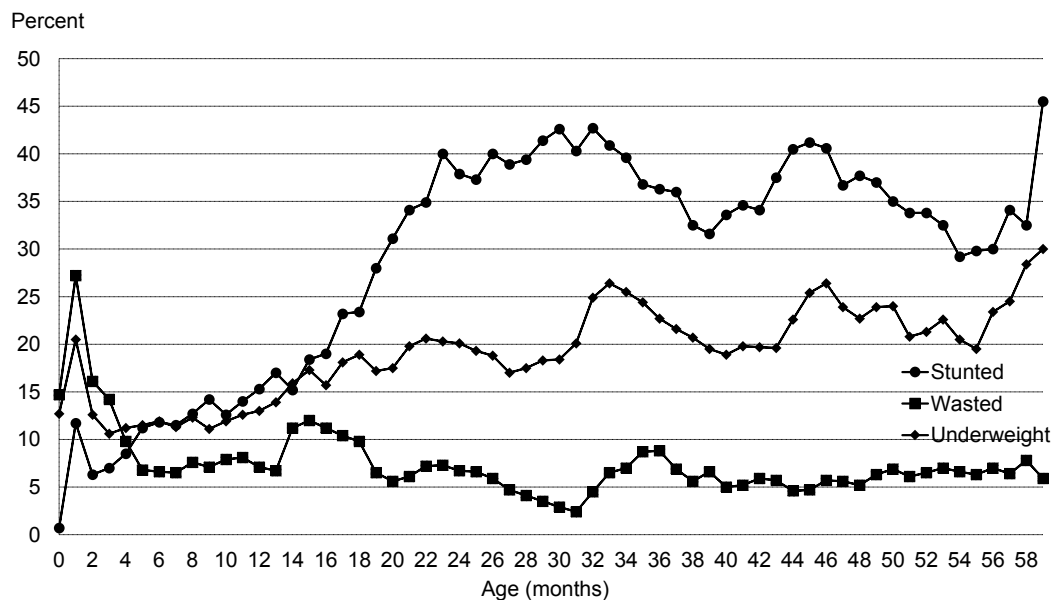
Note: *Stunting* reflects chronic malnutrition; *wasting* reflects acute malnutrition; *underweight* reflects chronic or acute malnutrition or a combination of both.
Plotted values are smoothed by a five-month moving average.

MDHS 2015-16

Among the state/regions, children in Rakhine are more likely to be stunted (38 percent), wasted (14 percent) and underweight (34 percent). The other states/regions where stunting is high are Chin (41 percent) and Kayah (40 percent), followed by Ayeyarwaddy and Shan (both 37 percent).

Z-score means are calculated as summary statistics representing the nutritional status of children in a population. These mean scores describe the nutritional status of the entire population without the use of a cut-off. A mean Z-score of less than 0 (that is, a negative value for stunting, wasting, or underweight) suggests that the distribution of an index has shifted downward and, on average, children in the population are less well-nourished than children in the WHO Multicentre Growth Reference Study. As shown in Table 3.12, the mean stunting, wasting, and underweight Z-scores for children under age 5 are -1.3, -0.5, and -1.1, respectively.

3.10.4 Infant and Young Child Feeding Practices

Breastfeeding is sufficient and beneficial for infant nutrition in the first 6 months of life. Breastfeeding immediately after birth also helps the uterus contract, hence reducing the mother's postpartum blood loss. Giving any other foods and water (in addition to breast milk) before the child is age 6 months is discouraged because it may inhibit breastfeeding and expose the infant to illness. Infants older than 6 months need other food and drink while they continue to breastfeed until age 2 or older. Breastmilk still is an important source of energy, protein, and other nutrients such as vitamin A and iron. The food should include a variety of options, such as peeled, cooked, and mashed vegetables, grains, pulses and fruit, some oil, and also meat, eggs, chicken, and dairy products to provide adequate nourishment (Pan American Health Organization 2002).

The 2015-16 MDHS collected data on infant and young child feeding (IYCF) practices for all children born in the 2 years preceding the survey. Table 3.13 shows breastfeeding practices by child's age. Contrary to the recommendation that children under age 6 months be exclusively breastfed, only 51 percent of the infants under age 6 months were found to be exclusively breastfed. In addition to breast milk, 19 percent of these young infants consume plain water, 3 percent consume non-milk liquids, 5 percent consume other milk, and 21 percent consume complementary foods. Eight percent of infants under age 6 months are fed using a bottle with a nipple, a practice that is discouraged because of the risk of illness to the child.

Seventy-two percent of children age 6-8 months receive timely complementary foods, and about one-third (32 percent) of children age 18-23 months have been weaned.

Table 3.13 Breastfeeding status by age

Percent distribution of youngest children under age 2 who are living with their mother, by breastfeeding status and the percentage currently breastfeeding; and the percentage of all children under 2 using a bottle with a nipple, according to age in months, Myanmar 2015-16

| Age in months | Breastfeeding status | | | | | | | Percentage currently breast-feeding | Number of youngest children under 2 living with the mother | Percentage using a bottle with a nipple | Number of all children under 2 |
	Not breast-feeding	Exclusively breast-feeding	Breast-feeding and consuming plain water only	Breast-feeding and consuming non-milk liquids[1]	Breast-feeding and consuming other milk	Breast-feeding and consuming comple-mentary foods	Total				
0-1	0.0	70.7	16.0	0.1	4.4	8.8	100.0	100.0	91	8.4	94
2-3	2.8	52.7	24.2	1.1	7.0	12.2	100.0	97.2	155	9.6	155
4-5	1.9	38.2	14.1	5.3	3.5	36.9	100.0	98.1	153	4.9	155
6-8	3.9	5.2	11.6	1.0	6.0	72.4	100.0	96.1	201	13.9	201
9-11	2.1	2.5	1.9	0.2	0.4	92.9	100.0	97.9	198	10.1	202
12-17	12.9	0.5	2.0	0.8	0.3	83.6	100.0	87.1	454	13.9	468
18-23	32.1	0.0	0.4	0.5	1.4	65.5	100.0	67.9	369	13.4	383
0-3	1.8	59.3	21.1	0.8	6.0	11.0	100.0	98.2	246	9.2	249
0-5	1.8	51.2	18.5	2.5	5.1	20.9	100.0	98.2	399	7.5	404
6-9	3.1	5.0	8.7	0.8	4.5	77.9	100.0	96.9	283	12.4	283
12-15	12.1	0.6	2.0	0.6	0.4	84.4	100.0	87.9	340	15.0	347
12-23	21.5	0.3	1.3	0.6	0.8	75.5	100.0	78.5	823	13.7	852
20-23	36.2	0.1	0.6	0.1	0.0	63.1	100.0	63.8	237	13.6	250

Note: Breastfeeding status refers to a "24-hour" period (yesterday and last night). Children who are classified as breastfeeding and consuming plain water only consumed no liquid or solid supplements. The categories of not breastfeeding, exclusively breastfeeding, breastfeeding and consuming plain water, non-milk liquids, other milk, and complementary foods (solids and semi-solids) are hierarchical and mutually exclusive, and their percentages add to 100 percent. Thus children who receive breast milk and non-milk liquids and who do not receive other milk and who do not receive complementary foods are classified in the non-milk liquid category even though they may also get plain water. Any children who get complementary food are classified in that category as long as they are breastfeeding as well.
[1] Non-milk liquids are juice, juice drinks, clear broth, or other liquids.

The minimum acceptable diet indicator is used to assess the proportion of children age 6-23 months who meet minimum standards with respect to IYCF practices. Specifically, children age 6-23 months who have a minimum acceptable diet meet all three IYCF criteria below:

- Breastfeeding, or not breastfeeding and receiving two or more feedings of commercial infant formula; fresh, tinned, or powdered animal milk; or yogurt.

- Fed with foods from four or more of the following groups: (a) infant formula, milk other than breast milk, and cheese or yogurt or other milk products; (b) foods made from grains, roots, and tubers, including porridge and fortified baby food from grains; (c) vitamin A-rich fruits and vegetables (and red palm oil); (d) other fruits and vegetables; (e) eggs; (f) meat, poultry, fish, and shellfish (and organ meats); and (g) legumes and nuts.

- Fed the minimum recommended number of times per day, according to their age and breastfeeding status:

- For breastfed children, minimum meal frequency is receiving solid or semisolid food at least twice a day for infants age 6-8 months and at least three times a day for children age 9-23 months.

- For nonbreastfed children age 6-23 months, minimum meal frequency is receiving solid or semisolid food or milk feeds at least four times a day.

Figure 3.5 shows the percentage of children being fed the minimum acceptable diet, by age. Among children 6-23 months, only 16 percent are fed in accordance with the criteria for a minimum acceptable diet.

Figure 3.5 Minimum acceptable diet by age, in months

Percent
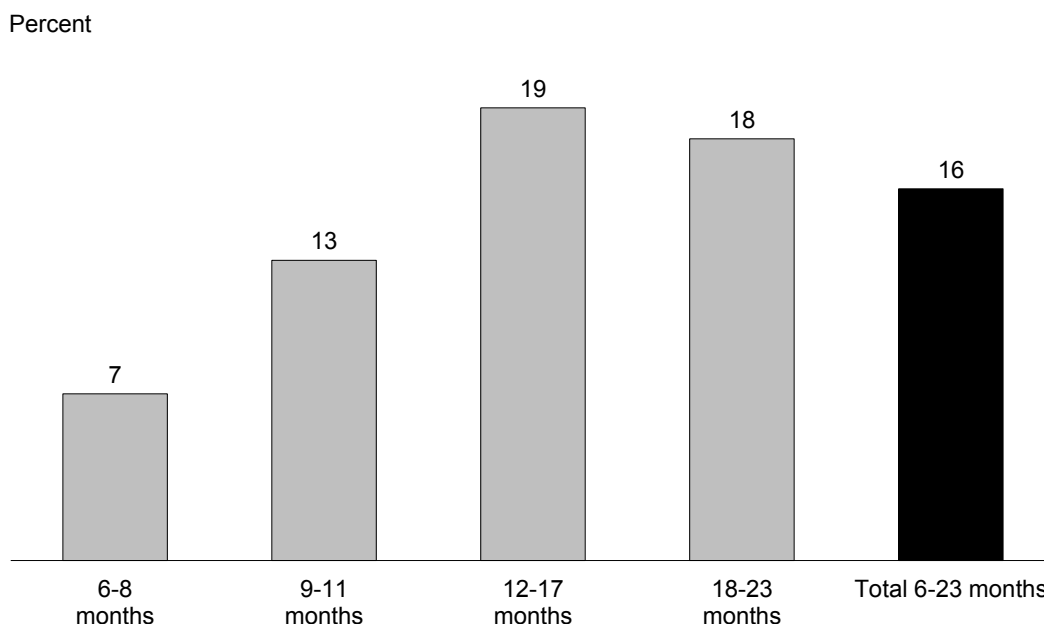
MDHS 2015-16

3.11 ANEMIA PREVALENCE IN CHILDREN AND WOMEN

Anemia is a condition that is marked by low levels of hemoglobin in the blood. Iron is a key component of hemoglobin, and iron deficiency is estimated to be responsible for half of all anemia globally. Other causes of anemia include hookworm and other helminths, other nutritional deficiencies, chronic infections, and genetic conditions. Anemia is a serious concern for children because it can impair cognitive development, stunt growth, and increase morbidity from infectious diseases.

The 2015-16 MDHS included direct measurement of hemoglobin levels using the HemoCue system. This system consists of a battery-operated photometer and a disposable microcuvette coated with a dried reagent that serves as the blood collection device. For the test, a drop of capillary blood taken from a child's fingertip or heel is drawn into the microcuvette. The blood in the microcuvette is analyzed using the photometer, which displays the hemoglobin concentration. Hemoglobin levels among women were measured using procedures similar to those used for children, except that capillary blood was collected exclusively from a finger prick. Hemoglobin levels were successfully measured for 85 percent of the children eligible for testing and 97 percent of the women eligible for testing (data not shown). Results were given verbally and in writing. Parents of children with a hemoglobin level below 7 g/dl were instructed to take the child to a health facility for follow-up care. Likewise, nonpregnant women and pregnant women were referred for follow-up care if their hemoglobin level was below 7 g/dl and 9 g/dl, respectively. All households in which anthropometry and/or anemia testing was conducted were given a brochure explaining the causes and prevention of anemia.

Table 3.14 presents anemia prevalence for children age 6-59 months and women age 15-49, by background characteristics. Hemoglobin levels for children and women were adjusted for altitude and, for women only, smoking status. Children and pregnant women with hemoglobin levels below 11.0 g/dl and nonpregnant women with hemoglobin levels below 12.0 g/dl were defined as anemic.

Overall, 57 percent of children suffered from some degree of anemia: 32 percent were classified as mildly anemic, 25 percent were moderately anemic, and less than 1 percent were severely anemic. The prevalence of anemia decreases with age, ranging from a high of 76 percent among children age 6-11 months to a low of 42 percent among children age 48-59 months. Anemia prevalence varies by states/regions, from a low of 36 percent in Shan to a high of 72 percent in Sagaing.

Table 3.14 Anemia among children and women

Percentage of children age 6-59 months and women age 15-49 years classified as having anemia, by background characteristics, Myanmar 2015-16

| Background characteristic | Any anemia | Percentage with anemia | | | Number |
		Mild anemia	Moderate anemia	Severe anemia	
		CHILDREN			
Sex					
Male	57.8	31.5	25.7	0.6	878
Female	57.0	32.8	24.0	0.2	862
Age in months					
6-11	76.4	38.3	37.4	0.7	145
12-23	74.8	34.8	39.5	0.5	381
24-35	57.3	31.2	25.7	0.3	373
36-47	50.6	32.7	17.3	0.5	428
48-59	41.7	27.6	13.9	0.1	412
Residence					
Urban	59.7	40.1	19.5	0.2	370
Rural	56.8	30.0	26.3	0.5	1,370
States/Regions					
Kachin	42.6	21.8	19.8	1.1	80
Kayah	41.0	23.4	17.6	0.0	12
Kayin	43.9	24.6	18.7	0.6	78
Chin	40.6	21.4	18.2	1.1	26
Sagaing	72.1	39.0	33.1	0.0	157
Taninthayi	64.7	40.3	22.9	1.5	58
Bago	53.5	32.1	21.4	0.0	197
Magway	64.3	30.8	32.6	1.0	129
Mandalay	58.0	35.6	22.4	0.0	174
Mon	53.9	24.4	27.0	2.5	69
Rakhine	59.9	29.8	29.7	0.5	132
Yangon	66.8	42.1	24.8	0.0	205
Shan	35.8	26.1	9.7	0.0	136
Ayeyarwaddy	60.2	31.6	28.6	0.0	246
Nay Pyi Taw	60.1	22.2	35.9	2.0	41
Wealth quintile					
Lowest	56.7	28.3	28.0	0.4	543
Second	59.9	31.7	27.9	0.3	392
Middle	60.4	35.2	24.3	1.0	300
Fourth	51.1	33.3	17.6	0.2	285
Highest	58.7	36.9	21.8	0.0	220
Total	57.4	32.1	24.9	0.4	1,740

Continued…

Table 3.14—*Continued*

| Background characteristic | Any anemia | Percentage with anemia | | | Number |
		Mild anemia	Moderate anemia	Severe anemia	
		WOMEN			
Residence					
Urban	46.3	38.3	7.8	0.2	1,737
Rural	46.7	37.7	8.4	0.5	4,457
States/Regions					
Kachin	34.9	26.9	7.5	0.5	174
Kayah	30.9	23.5	6.3	1.0	32
Kayin	44.0	36.7	6.1	1.2	153
Chin	37.7	28.1	9.4	0.2	49
Sagaing	50.5	41.2	8.5	0.8	713
Taninthayi	54.6	46.9	7.7	0.0	133
Bago	47.5	39.5	7.8	0.2	640
Magway	49.4	37.3	11.1	1.0	526
Mandalay	40.7	30.4	9.9	0.4	739
Mon	37.1	31.9	5.2	0.0	218
Rakhine	57.2	44.4	12.8	0.0	382
Yangon	53.6	45.8	7.4	0.4	888
Shan	38.1	31.4	6.4	0.3	617
Ayeyarwaddy	45.5	38.3	6.6	0.6	782
Nay Pyi Taw	43.1	36.1	6.8	0.3	146
Wealth quintile					
Lowest	48.8	38.5	9.8	0.5	1,164
Second	47.0	35.9	10.1	1.0	1,174
Middle	46.9	39.8	6.7	0.3	1,286
Fourth	44.6	36.5	7.9	0.2	1,216
Highest	45.7	38.5	6.9	0.3	1,353
Total	46.6	37.9	8.2	0.5	6,193

Note: Table is based on children and women who stayed in the household the night before the interview. Prevalence of anemia, based on hemoglobin levels, is adjusted for altitude (for children and women) and smoking (for women) using CDC formulas (CDC 1998). Women and children with <7.0 g/dl of hemoglobin have severe anemia; women and children with 7.0-9.9 g/dl have moderate anemia; and nonpregnant women with 10.0-11.9 g/dl and children and pregnant women with 10.0-10.9 g/dl have mild anemia.

Forty-seven percent of women age 15-49 are anemic. The majority of these women are mildly anemic (38 percent of all women); 8 percent are moderately anemic, and less than 1 percent are severely anemic. Women in urban areas are as likely to be anemic as those in the rural areas (46 percent and 47 percent, respectively). Anemia levels vary by state/region; for example, 57 percent of women residing in Rakhine are anemic compared with only 31 percent of women in Kayah. There is little variation in prevalence of anemia by wealth.

3.12 MALARIA

This section presents data that are useful for assessing the implementation of malaria control strategies, including the availability and use of mosquito nets by household members. Malaria is a major public health problem in Myanmar, with more than two-thirds of its population living in high risk areas. The peak season for malaria transmission is during the monsoon and post-monsoon season that falls from June to December. The fieldwork of the 2015-16 MDHS was carried out in the low transmission season from December to April/May.

Data presented show the percentage of households owning mosquito nets and the percentages of household members, pregnant women, and children under age 5 who slept under a net the night before the survey. Additionally, among children under age 5, information is provided on the percentage of children who experienced an episode of fever in the 2 weeks preceding the survey, and for these children, whether advice or treatment was sought, whether blood was taken for testing, and whether they were treated with antimalarial drugs.

3.12.1 Ownership and Use of Mosquito Nets

Table 3.15 presents information on the percentage of households that have at least one insecticide-treated net (ITN) and the average number of ITNs per household, by background characteristics. Twenty-seven percent of households own at least one ITN and, on average, households own 0.6 ITN. More rural (31 percent) than urban (15 percent) households own at least one ITN. While 85 percent of households in Kayah owned at least one ITN, the proportion is only 6 percent in Yangon and 8 percent in Nay Pyi Taw. Interestingly, the proportion of households with at least one ITN decreases as wealth increases.

Table 3.15 Household possession of insecticide-treated nets

Percentage of households with at least one insecticide-treated net (ITN); average number of ITNs per household; and percentage of households with at least one ITN per two persons who stayed in the household last night, by background characteristics, Myanmar 2015-16

Background characteristic	Percentage of households with at least one insecticide-treated net (ITN)[1]	Average number of insecticide-treated nets (ITN)[1] per household	Number of households	Percentage of households with at least one insecticide-treated net (ITN)[1] for every two persons who stayed in the household last night (Universal Coverage)[2]	Number of households with at least one person who stayed in the household last night
Residence					
Urban	14.7	0.3	3,315	8.3	3,302
Rural	31.1	0.6	9,185	16.2	9,109
States/Regions					
Kachin	44.0	1.0	365	26.8	360
Kayah	85.2	2.2	65	58.6	65
Kayin	35.5	0.6	335	12.5	333
Chin	80.2	2.1	105	51.9	105
Sagaing	31.9	0.8	1,295	18.7	1,291
Taninthayi	77.5	1.8	306	47.4	303
Bago	13.4	0.2	1,269	3.8	1,249
Magway	27.1	0.5	1,062	13.3	1,057
Mandalay	10.1	0.2	1,461	5.1	1,458
Mon	64.2	1.5	466	41.0	458
Rakhine	67.0	1.5	695	35.5	692
Yangon	5.7	0.1	1,730	3.0	1,730
Shan	38.6	0.8	1,339	20.4	1,333
Ayeyarwaddy	15.9	0.3	1,705	6.4	1,679
Nay Pyi Taw	7.5	0.1	303	2.8	300
Wealth quintile					
Lowest	34.8	0.7	2,583	16.4	2,535
Second	31.5	0.6	2,593	17.1	2,575
Middle	26.8	0.6	2,503	13.9	2,493
Fourth	23.3	0.5	2,424	13.2	2,417
Highest	16.6	0.4	2,397	9.6	2,392
Total	26.8	0.6	12,500	14.1	12,411

[1] An insecticide-treated net (ITN) is (1) a factory-treated net that does not require any further treatment or (2) a net that has been soaked with insecticide within the past 12 months
[2] De facto household members

The data in Table 3.15 also indicate that 14 percent of households in Myanmar own at least one ITN for every two persons who stayed in the household the night before the survey (considered to be universal coverage). Figure 3.6 highlights that 21 percent of the de facto household population could sleep under an ITN if each ITN in the household were used by up to two people.

Figure 3.6 Household access to an ITN

	Percent
Total	21
Residence	
Urban	12
Rural	25
States/Regions	
Kachin	34
Kayah	73
Kayin	23
Chin	67
Sagaing	28
Taninthayi	63
Bago	9
Magway	20
Mandalay	8
Mon	54
Rakhine	51
Yangon	4
Shan	29
Ayeyarwaddy	11
NayPyi Taw	4
Wealth quintile	
Lowest	28
Second	25
Middle	21
Fourth	18
Highest	14
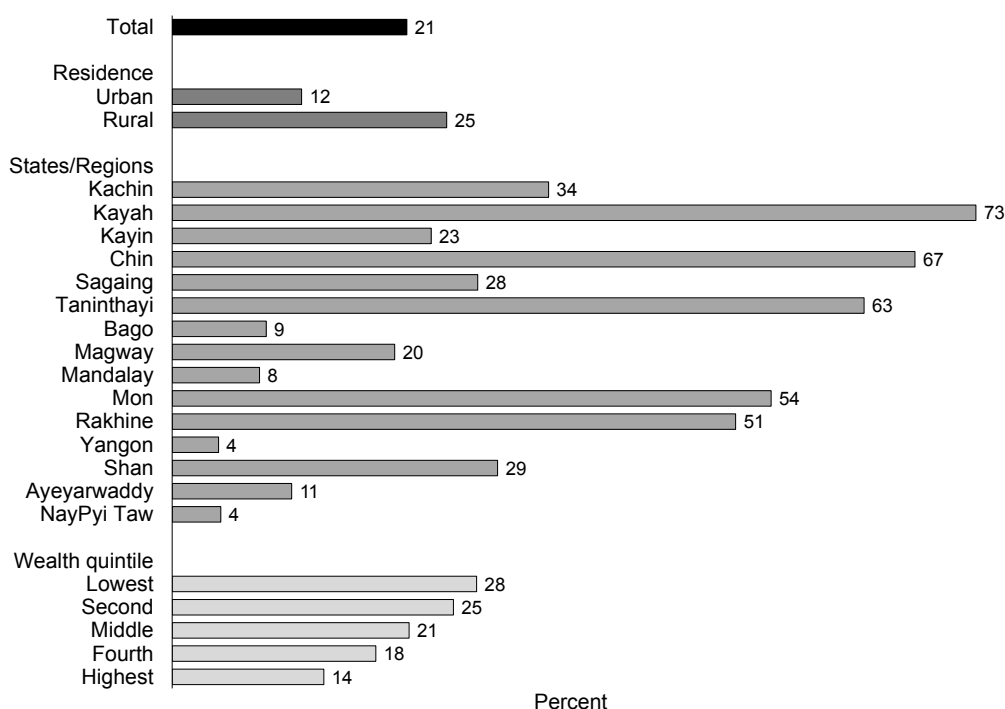
Note: Percentage of de facto household population who could sleep under an ITN if each ITN in the household were used by up to two people

MDHS 2015-16

Table 3.16 shows the use of nets by children and pregnant women, by background characteristics. Overall, only 19 percent of children under age 5 slept under an ITN the night before the survey. As might be expected, the figure is higher for children in households that have ITNs; 56 percent of those in households with at least one ITN slept under an ITN the night before the survey.

Eighteen percent of pregnant women age 15-49 in all households slept under an ITN the night before the survey. In households with at least one ITN, 62 percent of pregnant women slept under an ITN the night before the survey.

Table 3.16 Use of insecticide-treated nets by children and pregnant women

Percentage of children under age 5 who, the night before the survey, slept under an insecticide-treated net (ITN); and among children under age 5 in households with at least one ITN, percentage who slept under an ITN the night before the survey; percentage of pregnant women age 15-49 who, the night before the survey, slept under an ITN; and among pregnant women age 15-49 in households with at least one ITN, percentage who slept under an ITN the night before the survey, by background characteristics, Myanmar 2015-16

Background characteristic	Children under age 5 in all households		Children under age 5 in households with at least one ITN[1]		Pregnant women age 15-49 in all households		Pregnant women age 15-49 in households with at least one ITN[1]	
	Percentage who slept under an ITN[1] last night	Number of children	Percentage who slept under an ITN[1] last night	Number of children	Percentage who slept under an ITN[1] last night	Number of pregnant women	Percentage who slept under an ITN[1] last night	Number of pregnant women
Residence								
Urban	8.3	1,025	53.7	158	10.4	105	*	15
Rural	21.5	3,570	56.6	1,357	20.7	367	60.5	125
States/Regions								
Kachin	25.7	171	54.4	81	(33.2)	22	*	12
Kayah	44.5	33	52.5	28	(40.6)	3	(45.4)	3
Kayin	25.3	188	66.7	71	(27.4)	15	*	5
Chin	42.2	63	49.9	53	(53.0)	7	(60.2)	6
Sagaing	25.1	497	58.2	215	(20.5)	35	*	14
Taninthayi	46.7	153	55.2	129	(56.2)	11	(62.9)	10
Bago	3.9	423	23.9	68	(3.1)	36	*	2
Magway	15.3	323	58.8	84	(16.4)	33	*	5
Mandalay	7.2	445	(67.8)	47	(9.1)	46	*	6
Mon	43.4	183	63.4	125	(52.6)	17	*	12
Rakhine	46.0	308	63.9	222	(55.3)	38	(73.7)	29
Yangon	2.8	473	*	32	(10.7)	51	*	7
Shan	21.3	656	53.3	262	(12.2)	57	*	21
Ayeyarwaddy	8.3	581	(52.8)	91	(3.6)	91	*	8
Nay Pyi Taw	4.6	98	*	6	*	8	*	0
Wealth quintile								
Lowest	23.8	1,328	59.2	535	20.7	141	62.6	47
Second	21.4	995	57.2	373	24.6	95	60.5	39
Middle	18.2	792	54.1	266	23.1	78	71.3	25
Fourth	13.8	801	51.5	215	12.2	76	(46.2)	20
Highest	10.1	680	54.4	126	8.5	82	*	10
Total	18.6	4,595	56.3	1,516	18.4	472	61.9	140

Note: Table is based on children who stayed in the household the night before the interview. Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.
[1] An insecticide-treated net (ITN) is (1) a factory-treated net that does not require any further treatment, or (2) a net that has been soaked with insecticide within the past 12 months.

3.12.2 Treatment of Children with Fever

Prompt and effective treatment for malaria is crucial to prevent the disease from becoming severe and complicated. The first line of treatment for *Plasmodium falciparum* malaria in Myanmar is artemisinin-based combination therapy (ACT) of which artemether-lumefantrine, atesunate-mefloquine and dihydroartemisinin-piperaquine are common. There has been evidence of artemisinin resistance in Myanmar, which gave rise to the Myanmar Artemisinin Resistance Containment (MARC) project that sought to address the issue of artemisinin-resistant parasites (Ministry of Health 2011). The 2015-16 MDHS asked mothers whether their children under age 5 had a fever in the 2 weeks preceding the survey and, if so, what treatment was given. Table 3.17 shows treatment behaviors for children with fever in the 2 weeks preceding the survey, by background characteristics.

In the 2 weeks preceding the survey, 16 percent of children under age 5 had a fever. Treatment or advice was sought for 65 percent of children with fever, while 3 percent had blood taken from a finger or heel for testing (considered a proxy for malaria testing). None of the children who had fever were given ACT (data not shown).

Table 3.17 Prevalence, diagnosis, and prompt treatment of children with fever

Percentage of children under age 5 with fever in the two weeks preceding the survey; among children under age 5 with fever, percentage for whom advice or treatment was sought, percentage who had blood taken from a finger or heel, by background characteristics, Myanmar 2015-16

Background characteristic	Children under age 5		Children under age 5 with fever		
	Percentage with fever in the two weeks preceding the survey	Number of children	Percentage for whom advice or treatment was sought[1]	Percentage who had blood taken from a finger or heel for testing	Number of children
Residence					
Urban	16.4	925	64.6	0.1	151
Rural	15.9	3,174	65.1	3.9	505
States/Regions					
Kachin	21.8	162	64.9	2.3	35
Kayah	22.0	31	74.2	7.4	7
Kayin	18.0	140	72.6	1.8	25
Chin	32.2	60	40.7	17.0	19
Sagaing	6.6	456	*	*	30
Taninthayi	20.9	125	76.3	6.4	26
Bago	16.3	360	(61.0)	(0.0)	59
Magway	18.2	299	(54.9)	(2.3)	54
Mandalay	11.1	411	(65.3)	(0.0)	46
Mon	9.1	140	*	*	13
Rakhine	24.1	294	78.9	11.5	71
Yangon	8.2	423	*	*	35
Shan	14.1	564	(57.2)	(0.0)	80
Ayeyarwaddy	26.1	542	63.4	0.0	142
Nay Pyi Taw	16.7	92	(61.4)	(2.6)	15
Wealth quintile					
Lowest	18.0	1,211	60.6	5.3	218
Second	19.3	906	64.3	1.6	175
Middle	13.0	691	57.7	1.9	90
Fourth	13.6	699	74.0	3.5	95
Highest	13.4	593	75.8	0.5	80
Total	16.0	4,099	65.0	3.0	657

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.
[1] Excludes advice or treatment from a traditional practitioner

3.12.3 Prevalence of Severe Anemia among Children

Anemia is one of the complications of malaria infection, especially in children. Other causes of anemia are nutritional deficiencies, helminth infestation, damage to bone marrow through heavy metal or other toxins, and genetically acquired disease like sickle cell anemia. The prevalence of anemia has been discussed earlier (section 3.11) in relation to nutritional deficiency. This section addresses anemia in relation to malaria. In endemic countries, a hemoglobin concentration of less than 8.0 g/dl indicates that an individual may have malaria.

Table 3.18 shows that 3 percent of children age 6-59 months have hemoglobin levels below 8.0 g/dl. The state of Mon has the highest proportion of children with hemoglobin levels below 8.0 g/dl (8 percent), while Shan has none. There is hardly any difference in the proportion of children with hemoglobin levels below 8.0 g/dl in urban (4 percent) and rural (3 percent) areas. Differences in the percentage of children with hemoglobin levels below 8.0 g/dl by wealth are also small.

Table 3.18 Hemoglobin <8.0 g/dl in children

Percentage of children age 6-59 months with hemoglobin lower than 8.0 g/dl, by background characteristics, Myanmar 2015-16

Background characteristic	Hemoglobin <8.0 g/dl	Number of children
Residence		
Urban	3.7	370
Rural	2.7	1,370
States/Regions		
Kachin	5.0	80
Kayah	3.5	12
Kayin	1.7	78
Chin	2.7	26
Sagaing	0.9	157
Taninthayi	3.5	58
Bago	1.8	197
Magway	4.4	129
Mandalay	1.7	174
Mon	7.6	69
Rakhine	3.2	132
Yangon	3.2	205
Shan	0.0	136
Ayeyarwaddy	4.3	246
Nay Pyi Taw	5.7	41
Wealth quintile		
Lowest	2.4	543
Second	4.7	392
Middle	3.4	300
Fourth	0.5	285
Highest	3.7	220
Total	2.9	1,740

3.13   HIV/AIDS Awareness, Knowledge, and Behavior

The 2015-16 MDHS included a series of questions asked of both women and men that addressed respondents' knowledge of HIV prevention, their awareness of modes of HIV transmission, and behaviors that can prevent the spread of HIV.

Ninety-two percent of women and men have heard of AIDS (data not shown). Table 3.19 shows that 59 percent of women and 71 percent of men age 15-49 know that consistent use of condoms is a means of preventing the spread of HIV. Seventy percent of women and 75 percent of men know that limiting sexual intercourse to one faithful, uninfected partner can reduce the chance of contracting HIV. The proportions of women and men who know that both using condoms and limiting sexual intercourse to one uninfected partner are means of preventing HIV are 54 percent and 62 percent, respectively.

Table 3.19 Knowledge of HIV prevention methods

Percentage of women and men age 15-49 who, in response to prompted questions, say that people can reduce the risk of getting HIV by using condoms every time they have sexual intercourse and by having one sex partner who is not infected and has no other partners, by background characteristics, Myanmar 2015-16

	Percentage of women who say HIV can be prevented by:				Percentage of men who say HIV can be prevented by:			
Background characteristic	Using condoms[1]	Limiting sexual intercourse to one uninfected partner[2]	Using condoms and limiting sexual intercourse to one uninfected partner[2]	Number of women	Using condoms[1]	Limiting sexual intercourse to one uninfected partner[2]	Using condoms and limiting sexual intercourse to one uninfected partner[2]	Number of men
Age								
15-24	54.2	65.7	48.2	3,677	68.2	68.8	58.8	1,423
15-19	49.8	62.9	44.3	1,810	62.5	64.7	53.0	731
20-24	58.5	68.4	52.0	1,867	74.3	73.2	64.9	692
25-29	62.5	73.6	56.9	1,867	74.9	76.9	66.1	677
30-39	64.4	74.2	59.2	3,990	72.3	77.6	64.4	1,377
40-49	57.5	69.0	52.0	3,351	68.8	76.8	61.8	1,259
Marital status[3]								
Never married	56.6	68.9	50.6	4,278	69.4	69.5	59.0	1,644
Ever had sex	*	*	*	11	87.9	78.2	75.1	178
Never had sex	56.5	69.0	50.6	4,267	67.2	68.4	57.0	1,466
Married	61.4	71.6	56.1	7,759	71.3	78.1	64.6	2,957
Divorced/separated/ widowed	55.7	65.5	49.2	848	65.8	61.6	49.6	135
Residence								
Urban	72.3	78.5	66.0	3,768	84.9	85.3	77.0	1,350
Rural	54.1	66.9	48.8	9,117	64.8	70.4	56.4	3,387
States/Regions								
Kachin	70.1	74.8	61.6	374	77.6	78.7	67.1	161
Kayah	68.2	77.4	62.5	65	69.6	74.3	60.5	23
Kayin	56.7	71.8	52.4	303	56.4	24.6	15.7	115
Chin	41.5	38.7	27.2	102	60.7	50.2	37.6	39
Sagaing	69.1	86.4	67.0	1,410	76.4	70.4	62.8	514
Taninthayi	61.7	78.7	59.5	283	79.6	88.1	76.7	103
Bago	64.1	80.2	60.8	1,244	70.5	86.2	66.5	454
Magway	59.7	70.3	50.4	1,081	80.1	79.7	70.6	320
Mandalay	57.5	70.8	49.5	1,541	69.3	81.3	63.5	601
Mon	60.0	70.2	53.3	463	79.7	79.8	70.6	162
Rakhine	37.8	45.1	31.5	777	70.3	74.4	67.6	222
Yangon	63.5	69.4	56.8	1,927	84.0	86.4	78.1	703
Shan	35.2	40.3	29.6	1,368	52.5	52.6	43.6	542
Ayeyarwaddy	73.3	84.3	70.0	1,650	60.6	72.2	54.0	653
Nay Pyi Taw	58.3	76.3	52.8	300	70.1	78.9	64.6	126
Education								
No education	27.3	35.8	22.0	1,606	40.7	45.4	31.9	575
Primary	52.6	67.3	47.2	5,305	61.4	69.7	53.3	1,684
Secondary	69.7	79.8	64.0	4,646	82.3	83.6	73.8	2,139
More than secondary	89.8	90.8	83.5	1,325	91.7	92.5	85.1	339
Wealth quintile								
Lowest	45.2	55.9	39.2	2,274	54.8	61.8	46.8	890
Second	50.8	65.0	46.3	2,408	58.6	66.5	51.0	916
Middle	57.2	71.0	51.6	2,633	70.4	78.8	63.5	979
Fourth	64.0	74.9	58.7	2,702	79.4	78.3	69.2	986
Highest	75.6	81.3	69.3	2,868	87.3	86.3	78.9	966
Total	59.4	70.3	53.8	12,885	70.5	74.7	62.3	4,737

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.
[1] Using condoms every time they have sexual intercourse
[2] Partner who has no other partners
[3] Total excludes 2 unmarried men with missing information on ever having sex.

By marital status, women and men who are currently married are more likely to know that using condoms and limiting sexual intercourse to one uninfected partner reduces the risk of HIV transmission than those women and men who have never married and those who are divorced/separated/widowed. Those residing in urban areas are more likely to be knowledgeable about HIV prevention methods than their counterparts residing in rural areas. Better-educated respondents and those in the higher wealth quintiles are considerably more knowledgeable of HIV prevention methods than other respondents.

Table 3.20 shows information about knowledge of HIV prevention among young people age 15-24. Knowledge of HIV prevention is defined as knowing that both condom use and limiting sexual intercourse to one uninfected partner are HIV prevention methods, knowing that a healthy-looking person can have HIV, and rejecting the two most common local misconceptions about HIV transmission: that HIV can be transmitted by mosquito bites and by sharing food with a person who has HIV. Knowledge of how HIV is transmitted is crucial to enabling people to avoid HIV infection.

Table 3.20 Knowledge of HIV prevention among young people

Percentage of young women and young men age 15-24 with knowledge about HIV prevention, by background characteristics, Myanmar 2015-16

Background characteristic	Women age 15-24		Men age 15-24	
	Percentage with knowledge about HIV prevention[1]	Number of women	Percentage with knowledge about HIV prevention[1]	Number of men
Age				
15-19	13.4	1,810	14.3	731
15-17	12.2	1,096	11.0	452
18-19	15.2	714	19.7	279
20-24	18.9	1,867	21.5	692
20-22	16.1	1,133	19.4	426
23-24	23.2	734	25.0	266
Marital status				
Never married	18.1	2,533	17.8	1,143
Ever had sex	*	3	34.4	78
Never had sex	18.1	2,530	16.6	1,065
Ever married	12.0	1,144	18.1	280
Residence				
Urban	27.6	1,121	29.6	442
Rural	11.2	2,556	12.5	981
States/Regions				
Kachin	19.2	112	23.9	49
Kayah	25.1	19	15.5	7
Kayin	15.3	83	2.6	30
Chin	7.0	33	9.7	13
Sagaing	15.3	361	15.9	170
Taninthayi	20.4	82	17.1	33
Bago	17.1	372	19.9	122
Magway	10.6	272	17.7	79
Mandalay	11.0	392	14.5	173
Mon	22.3	132	21.9	69
Rakhine	7.4	278	20.7	82
Yangon	28.1	582	35.7	226
Shan	8.4	449	5.7	155
Ayeyarwaddy	18.8	424	8.5	177
Nay Pyi Taw	17.7	84	16.2	38
Education				
No education	1.2	264	0.8	109
Primary	4.2	1,013	5.2	337
Secondary	19.3	2,084	22.0	894
More than secondary	47.0	314	46.8	83
Wealth quintile				
Lowest	4.6	662	5.7	247
Second	9.2	657	9.2	259
Middle	14.1	777	15.8	321
Fourth	21.1	796	23.0	305
Highest	28.8	785	32.6	291
Total 15-24	16.2	3,677	17.8	1,423

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.
[1] Knowledge about HIV prevention means knowing that consistent use of condoms during sexual intercourse and having just one uninfected faithful partner can reduce the chance of getting HIV, knowing that a healthy-looking person can have HIV, and rejecting the two most common local misconceptions about transmission or prevention of HIV (that HIV can be transmitted by mosquito bites and by sharing food with a person who has HIV).

Table 3.20 shows that 16 percent of young women and 18 percent of young men have knowledge of HIV prevention. Young women who have never married are more likely to be knowledgeable about HIV prevention than young married women. However, this does not hold for men. Among both sexes, the proportion with knowledge generally increases with age, educational attainment, and wealth. Urban young people are more likely than rural young people to have knowledge of HIV prevention.

3.14 COVERAGE OF HIV TESTING SERVICES

Knowledge of HIV status helps HIV-negative individuals make specific decisions to reduce risk and increase safer sex practices so that they can remain disease-free. Among those who are HIV-positive, knowledge of their status allows them to take action to protect their sexual partners, to access treatment, and to plan for the future.

To assess awareness and coverage of HIV testing services, MDHS respondents were asked whether they had ever been tested for HIV. If they said that they had been tested, they were asked whether they had received the results of their last test and where they had been tested. If they had never been tested, they were asked whether they knew a place where they could go to be tested.

Tables 3.21.1 and 3.21.2 show that 64 percent of women and 63 percent of men know of a place where they could get an HIV test. Age of the respondent, for both women and men, does not seem to be related to the likelihood of knowing a place to get an HIV test, except among the youngest respondents for whom knowledge is lower. Knowledge of a place to get an HIV test increases steadily with increasing education and wealth quintile among women and men. It is also higher among urban than rural respondents.

Tables 3.21.1 and 3.21.2 also show coverage of HIV testing services. Men are slightly more likely than women to have been tested for HIV. Overall, 18 percent of women and 21 percent of men had ever been tested and had received the results of their last test. Among men, the likelihood of having ever had an HIV test and receiving the results was highest in the 30-39 age group (27 percent) while among women, it was highest in the 25-29 age group (26 percent). Urban women and men were much more likely than rural women and men to have been tested and to have received the results. Among women and men, testing coverage increases with increasing education and wealth.

Five percent of women and men age 15-49 had been tested in the 12-month period preceding the survey and had been told the results of the last test they took.

Table 3.21.1 Coverage of prior HIV testing: Women

Percentage of women age 15-49 who know where to get an HIV test, percent distribution of women age 15-49 by testing status and by whether they received the results of the last test, percentage ever tested, and percentage who were tested in the past 12 months and received the results of the last test, according to background characteristics, Myanmar 2015-16

| Background characteristic | Percentage who know where to get an HIV test | Percent distribution of women by testing status and by whether they received the results of the last test | | | Total | Percentage ever tested | Percentage who have been tested for HIV in the past 12 months and received the results of the last test | Number of women |
		Ever tested and received results	Ever tested, did not receive results	Never tested[1]				
Age								
15-24	60.5	9.2	1.2	89.6	100.0	10.4	3.5	3,677
15-19	56.1	3.0	0.4	96.7	100.0	3.3	0.9	1,810
20-24	64.8	15.2	2.0	82.8	100.0	17.2	6.0	1,867
25-29	67.8	25.7	2.8	71.4	100.0	28.6	8.1	1,867
30-39	67.8	24.6	2.5	73.0	100.0	27.0	6.2	3,990
40-49	61.5	14.3	1.1	84.7	100.0	15.3	2.9	3,351
Marital status								
Never married	62.7	6.6	0.5	93.0	100.0	7.0	1.9	4,278
Ever had sex	*	*	*	*	100.0	*	*	11
Never had sex	62.7	6.5	0.5	93.0	100.0	7.0	1.9	4,267
Married	65.2	24.0	2.6	73.4	100.0	26.6	6.6	7,759
Divorced/separated/ widowed	61.0	15.3	1.4	83.3	100.0	16.7	3.6	848
Residence								
Urban	79.7	28.0	1.7	70.3	100.0	29.7	7.6	3,768
Rural	57.6	13.4	1.8	84.8	100.0	15.2	3.7	9,117
States/Regions								
Kachin	80.7	33.3	5.5	61.2	100.0	38.8	6.9	374
Kayah	73.8	26.1	7.5	66.4	100.0	33.6	7.8	65
Kayin	59.7	26.0	3.9	70.1	100.0	29.9	7.5	303
Chin	53.0	15.2	2.5	82.3	100.0	17.7	5.3	102
Sagaing	71.5	11.1	1.7	87.2	100.0	12.8	2.9	1,410
Taninthayi	71.2	19.4	1.5	79.1	100.0	20.9	4.2	283
Bago	68.2	15.6	1.5	82.8	100.0	17.2	4.1	1,244
Magway	60.0	13.5	2.3	84.2	100.0	15.8	4.1	1,081
Mandalay	63.8	24.6	1.3	74.1	100.0	25.9	6.2	1,541
Mon	69.3	22.8	4.1	73.1	100.0	26.9	6.5	463
Rakhine	43.2	7.6	0.8	91.6	100.0	8.4	2.6	777
Yangon	76.4	22.4	1.0	76.6	100.0	23.4	6.1	1,927
Shan	43.4	18.5	1.7	79.8	100.0	20.2	4.7	1,368
Ayeyarwaddy	66.3	13.0	1.5	85.4	100.0	14.6	4.7	1,650
Nay Pyi Taw	55.9	14.9	2.0	83.1	100.0	16.9	2.6	300
Education								
No education	31.5	8.7	0.8	90.5	100.0	9.5	2.5	1,606
Primary	57.5	13.9	2.1	84.0	100.0	16.0	4.0	5,305
Secondary	74.4	19.5	1.7	78.8	100.0	21.2	5.1	4,646
More than secondary	93.6	37.4	1.9	60.7	100.0	39.3	10.2	1,325
Wealth quintile								
Lowest	44.4	9.2	2.2	88.6	100.0	11.4	3.0	2,274
Second	55.9	12.8	1.7	85.5	100.0	14.5	3.5	2,408
Middle	62.5	14.0	1.4	84.5	100.0	15.5	4.1	2,633
Fourth	71.2	19.7	2.2	78.1	100.0	21.9	5.5	2,702
Highest	81.4	29.9	1.5	68.6	100.0	31.4	7.4	2,868
Total	64.1	17.7	1.8	80.5	100.0	19.5	4.8	12,885

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.
[1] Includes "don't know/missing"

Table 3.21.2 Coverage of prior HIV testing: Men

Percentage of men age 15-49 who know where to get an HIV test, percent distribution of men age 15-49 by testing status and by whether they received the results of the last test, percentage ever tested, and percentage who were tested in the past 12 months and received the results of the last test, according to background characteristics, Myanmar 2015-16

Background characteristic	Percentage who know where to get an HIV test	Percent distribution of men by testing status and by whether they received the results of the last test			Total	Percentage ever tested	Percentage who have been tested for HIV in the past 12 months and received the results of the last test	Number of men
		Ever tested and received results	Ever tested, did not receive results	Never tested[1]				
Age								
15-24	56.1	10.5	1.8	87.8	100.0	12.2	4.1	1,423
15-19	49.1	6.1	1.1	92.8	100.0	7.2	2.0	731
20-24	63.6	15.1	2.5	82.4	100.0	17.6	6.3	692
25-29	69.7	22.8	2.0	75.2	100.0	24.8	8.5	677
30-39	65.1	26.9	2.6	70.5	100.0	29.5	6.3	1,377
40-49	63.2	24.0	2.0	73.9	100.0	26.1	3.5	1,259
Marital status[2]								
Never married	59.1	14.5	1.5	84.0	100.0	16.0	4.2	1,644
Ever had sex	77.5	37.4	1.4	61.2	100.0	38.8	10.4	178
Never had sex	56.9	11.8	1.5	86.8	100.0	13.2	3.4	1,466
Married	64.4	23.8	2.5	73.7	100.0	26.3	5.8	2,957
Divorced/separated/ widowed	64.6	26.0	1.5	72.6	100.0	27.4	5.8	135
Residence								
Urban	81.0	36.7	1.8	61.5	100.0	38.5	10.0	1,350
Rural	55.2	14.2	2.2	83.6	100.0	16.4	3.3	3,387
States/Regions								
Kachin	63.8	22.3	2.6	75.0	100.0	25.0	3.7	161
Kayah	57.2	24.9	2.3	72.8	100.0	27.2	5.3	23
Kayin	40.0	15.4	2.3	82.3	100.0	17.7	4.1	115
Chin	48.8	13.4	2.4	84.2	100.0	15.8	3.3	39
Sagaing	62.3	18.2	2.1	79.7	100.0	20.3	3.7	514
Taninthayi	76.2	24.2	2.3	73.5	100.0	26.5	7.1	103
Bago	82.0	21.3	7.9	70.8	100.0	29.2	5.9	454
Magway	60.7	21.7	1.1	77.2	100.0	22.8	4.6	320
Mandalay	66.5	25.6	1.1	73.2	100.0	26.8	6.0	601
Mon	58.4	19.9	3.7	76.5	100.0	23.5	5.6	162
Rakhine	52.0	10.1	0.3	89.6	100.0	10.4	2.5	222
Yangon	81.7	31.0	1.8	67.3	100.0	32.7	7.6	703
Shan	41.5	14.6	1.3	84.1	100.0	15.9	5.0	542
Ayeyarwaddy	50.6	15.4	0.6	84.0	100.0	16.0	4.1	653
Nay Pyi Taw	61.6	16.6	1.8	81.7	100.0	18.3	6.3	126
Education								
No education	32.9	9.3	2.1	88.6	100.0	11.4	1.9	575
Primary	51.9	13.6	2.2	84.3	100.0	15.7	4.1	1,684
Secondary	73.9	23.7	2.1	74.2	100.0	25.8	5.8	2,139
More than secondary	94.5	55.1	2.2	42.7	100.0	57.3	13.0	339
Wealth quintile								
Lowest	44.5	8.6	1.9	89.5	100.0	10.5	2.4	890
Second	48.6	13.9	1.9	84.2	100.0	15.8	3.1	916
Middle	62.0	14.7	2.5	82.7	100.0	17.3	3.1	979
Fourth	70.9	22.2	2.1	75.7	100.0	24.3	6.7	986
Highest	84.5	42.5	2.0	55.5	100.0	44.5	10.4	966
Total	62.6	20.6	2.1	77.3	100.0	22.7	5.2	4,737

[1] Includes "don't know/missing"
[2] Total excludes 2 unmarried men with missing information on ever having sex.

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