Tajikistan

Demographic and Health Survey 2017

Key Indicators

Republic of Tajikistan

Demographic and Health Survey 2017

Key Indicators Report

Statistical Agency under the President of the Republic of Tajikistan
Dushanbe, Republic of Tajikistan

Ministry of Health and Social Protection of Population of the Republic of Tajikistan
Dushanbe, Republic of Tajikistan

The DHS Program
ICF
Rockville, Maryland, USA

March 2018

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The 2017 Tajikistan Demographic and Health Survey (TjDHS) was implemented by the Statistical Agency under the President of the Republic of Tajikistan from August 8 to November 11, 2017. The funding for the 2017 TjDHS was provided by the United States Agency for International Development (USAID). Additional funding for the survey was provided by the United Nations Children's Fund (UNICEF) and the United Nations Population Fund (UNFPA). ICF provided technical assistance through The DHS Program, a USAID-funded project providing support and technical assistance in the implementation of population and health surveys in countries worldwide.

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Suggested citation:

Statistical Agency under the President of the Republic of Tajikistan, Ministry of Health and Social Protection of Population of the Republic of Tajikistan [Tajikistan], and ICF. 2018. *Tajikistan Demographic and Health Survey 2017: Key Indicators*. Rockville, Maryland, USA: Statistical Agency under the President of the Republic of Tajikistan (SA), Ministry of Health and Social Protection of Population of the Republic of Tajikistan (MOHSP), and ICF.

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FOREWORD

The Statistical Agency under the President of the Republic of Tajikistan is pleased to present the results of the 2017 Tajikistan Demographic and Health Survey (TjDHS). The Statistical Agency wishes to express its appreciation to those involved in the implementation of the 2017 TjDHS and the preparation of this Key Indicators report.

Particular thanks go to the following:

- U.S. Agency for International Development in Tajikistan, for providing the funding for organizing and conducting the 2017 Tajikistan DHS
- ICF, for providing technical support, training of fieldwork staff, consultations, recommendations, and analyses of the data collected
- The United Nations Children's Fund (UNICEF) and the United Nations Population Fund (UNFPA) in Tajikistan, for providing additional funds

The survey would not have been possible without the good work and dedication of hundreds of people. In particular, we wish to express our appreciation to the field coordinators, supervisors, interviewers, health investigators, and drivers for their active participation in and contribution to this work.

Above all, we appreciate the cooperation of all of the survey respondents who have made the 2017 TjDHS a success.

Mrs. Hasanzoda Gulnora Kenja
Director, Statistical Agency under the President of the
Republic of Tajikistan

1 INTRODUCTION

The 2017 Tajikistan Demographic and Health Survey (TjDHS) is the second Demographic and Health Survey conducted in Tajikistan. It was implemented by the Statistical Agency under the President of the Republic of Tajikistan (SA) in collaboration with the Ministry of Health and Social Protection of Population of the Republic of Tajikistan (MOHSP). Data collection took place from August 8 to November 11, 2017. Funding was provided by the U.S. Agency for International Development (USAID). The United Nations Population Fund (UNFPA) and the United Nations Children's Fund (UNICEF) in Tajikistan provided additional funds for the survey. ICF provided technical assistance through The DHS Program, a USAID-funded project providing support and technical assistance in the implementation of population and health surveys in countries worldwide.

This Key Indicators report presents a first look at selected findings of the 2017 TjDHS. A comprehensive analysis of the data will be presented in a final report in 2018.

1.1 SURVEY OBJECTIVES

The primary objective of the 2017 TjDHS is to provide up-to-date estimates of key demographic and health indicators. Specifically, the TjDHS collected information on fertility and contraceptive use, maternal and child health and nutrition, childhood mortality, domestic violence against women, child discipline, awareness and behavior regarding HIV/AIDS and other sexually transmitted infections (STIs), and other health-related issues such as smoking and high blood pressure. The 2017 TjDHS follows the 2012 TjDHS survey and provides updated estimates of key demographic and health indicators.

The information collected through the TjDHS is intended to assist policy makers and program managers in evaluating and designing 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 2017 TjDHS is the 2010 Tajikistan Population and Housing Census (TPHC) conducted by the Statistical Agency under the President of the Republic of Tajikistan (SA). Administratively, Tajikistan is divided into five regions: Dushanbe, Districts of Republican Subordination (DRS), Sughd, Khatlon, and Gorno-Badakhshan Autonomous Oblast (GBAO). Each region is subdivided into urban and rural areas. The country is divided into districts distributed over the country's regions. Each district is further divided into census divisions, which are subdivided into instruction areas. Each instruction area is divided into urban enumeration areas (EAs) or rural villages.

The sampling frame of the 2017 TjDHS is a list of EAs and natural villages covering all urban and rural areas of the country, with the primary sampling units (PSUs) being EAs in urban areas and natural villages in rural areas. An EA is a geographical area, usually a city block, consisting of the minimum number of households required for efficient counting; each EA serves as a counting unit for the population census.

The sample was designed to yield representative results for the urban and rural areas separately, and for each of the four administrative regions and Dushanbe. In addition, as in the previous TjDHS survey, the sample was designed to allow certain variables to be presented for the 12 districts in the Khatlon region covered under the Feed the Future program (FTF); these 12 districts will be combined as a single FTF domain. The sampling frame excluded institutional populations such as persons in hotels, barracks, and prisons.

The 2017 TjDHS followed a stratified two-stage sample design. The first stage involved selecting sample points (clusters) consisting of EAs. EAs were drawn with a probability proportional to their size within each sampling stratum. A total of 366 clusters were selected, 166 in urban areas and 200 in rural areas.

The second stage involved systematic sampling of households. A household listing operation was undertaken in all of the selected clusters, and a fixed number of 22 households per cluster was selected with an equal probability systematic selection process, for a total sample size of approximately 8,052 households.

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. Hemoglobin testing was performed in each household, among eligible women age 15-49 who consented to being tested. With the parent's or guardian's consent, children age 6-59 months were also tested for anemia in each household. Height and weight information was collected from eligible women age 15-49 and children age 0-59 months in all households. In addition, a subsample of one eligible woman in each household was randomly selected to be asked additional questions about domestic violence.

2.2 QUESTIONNAIRES

Four questionnaires were used for the 2017 TjDHS: the Household Questionnaire, Woman's Questionnaire, Biomarker Questionnaire, and Fieldworker Questionnaire. These questionnaires, based on The DHS Program's standard questionnaires, were adapted to reflect the population and health issues relevant to Tajikistan. Suggestions were solicited from various stakeholders representing government ministries and agencies, nongovernmental organizations, and international donors. After all questionnaires were finalized in English, they were translated into Russian and Tajik.

The Household Questionnaire listed all members of and visitors to selected households. Basic demographic information was collected on each person listed, including age, sex, marital status, education, and relationship to head of household. For children under age 18, survival status of parents was determined. The data on age and sex of household members were used to identify women who were

eligible for individual interviews. The Household Questionnaire also collected information on child discipline about one randomly selected child age 1-14 per household, as well as characteristics of the household's dwelling unit, such as source of water, type of toilet facilities, materials used for flooring, external walls and roofing, and ownership of various durable goods.

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)
- Pregnancy history, reasons for abortion, and child mortality
- Contraception
- Antenatal, delivery, and postnatal care
- Vaccinations and childhood illnesses
- Maternal and child health and nutrition
- Marriage and sexual activity
- Fertility preferences
- Women's work and husbands' background characteristics
- Knowledge, awareness, and behavior regarding HIV/AIDS and other sexually transmitted infections (STIs)
- Knowledge, attitudes, and behavior related to other health issues (e.g., injections, smoking, childhood illnesses, and pregnancy and childbirth)
- History of high blood pressure and blood pressure measurement
- Domestic violence

In addition, the Biomarker Questionnaire was used to record the results of the anthropometry measurements and hemoglobin testing, and was signed and dated by the health investigator.

For the first time, the Fieldworker Questionnaire was also used in the TjDHS. The questionnaire was created to serve as a tool in conducting analyses of data quality. Distribution and collection by the SA after final selection of fieldworkers was done before the fieldworkers entered the field. Fieldworkers filled out a 2-page self-administered questionnaire on their general background characteristics. No personal identifiers will be attached to the Tajikistan DHS fieldworkers' data file.

2.3 ANTHROPOMETRY AND HEMOGLOBIN TESTING

In addition to adult blood pressure measures, the 2017 TjDHS incorporated two more biomarkers: anthropometry and hemoglobin testing. Data related to the coverage of the anthropometric measures and the result of the hemoglobin testing were recorded in the Biomarker Questionnaire. The protocol for anemia testing was reviewed and approved by MOHSP and the Institutional Review Board of ICF. The 2017 TjDHS survey methodology and all instruments were approved by the Institutional Review Board of ICF.

Anthropometry Measurements

In all households, height and weight measurements were recorded for children age 0-59 months and women age 15-49. Weight measurements were obtained using lightweight, electronic SECA 878 scales with a digital screen and the mother and child function. Height measurements were carried out with measuring boards made by Shorr Productions. Children younger than age 24 months were measured while lying down (recumbent) on the board, while standing height was measured for older children.

Anemia Testing

Blood specimens were collected from all children age 6-59 months and women age 15-49 who consented to testing for anemia. A consent statement was read to all eligible respondents or to the parent or adult

responsible for children and young women age 15-17. This statement explained the purpose of the test, informed them that the results would be made available as soon as the test was completed, and requested permission for the test to be carried out.

Blood samples were drawn from a drop of blood taken from a finger prick (or a heel prick for young children with small fingers) and collected in a microcuvette. Hemoglobin analysis was carried out on-site using a battery-operated portable HemoCue 201+ analyzer, which produces a result in less than 1 minute. 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, non-pregnant 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.

Lancets and other supplies and equipment used during sample collections (a HemoCue microcuvette, gloves, gauze, alcohol swab, bandage packaging, and waste collection bag) were disposed of safely, usually by taking the materials to a nearby health facility that uses proper protocols for the disposal of bio-hazardous waste.

2.4 PRETEST

Eleven women participated in a training to pretest the TjDHS survey questionnaires over a 4-week period from May 10 through June 5, 2017. From May 10 through May 23, 2017, the classroom training focused on questionnaire content as well as on how to take blood pressure measurements, how to test household salt for the presence of iodine, and how to report results back to the respondents. From May 24 through May 28, 2017, participants were instructed on using the computer-assisted personal interviewing (CAPI) system, an electronic data capture system programmed on tablet computers that the participants used to implement the survey. The DHS Program staff led training in Russian, with support from SA personnel in Tajik. Further, senior subject specialists from the MOHSP attended the sessions to provide technical background on topics such as family planning and reproductive health, HIV/AIDS and other STIs, childhood immunization, and child health and nutrition. A guest speaker from the Committee on Women's and Family Affairs under the Government of Tajikistan was also invited to deliver a lecture on gender-based violence in Tajikistan.

The biomarker classroom portion of the training commenced on May 23 and continued through May 27, 2017. The classroom training of the health investigators (three women and three men), all physicians, was led by DHS Program staff. The training included classroom instruction on the anthropometry measurements, anemia testing, appropriate procedures for obtaining informed consent, recording of biomarker information in the Biomarker Questionnaire, and reporting of test results back to the respondents and referrals. The training was divided into three sessions following the DHS biomarker curriculum: classroom training on anthropometry and anemia testing, in-class standardization of the tests and outdoor practice sessions, and field practice with interviewers.

The pretest fieldwork was conducted from May 29 until June 5, 2017. Interviewers and health investigators were divided into two teams and worked in Korgar (urban area) and Kosibon (rural area). A total of 66 women's interviews and 52 household interviews were conducted, and 37 Biomarker Questionnaires were completed. Most interviews were conducted in Tajik. After receiving informed consent, 55 women were measured and tested; among children, 32 were measured and 29 were tested for anemia. At the end of each day, both during and after the pretest fieldwork, debriefing sessions were held, and questionnaires were modified based on lessons drawn from the exercise.

2.5 TRAINING OF FIELD STAFF

Seventy-nine people (75 women and 4 men) participated in the 4-week main training course on interviewing, which consisted of lectures, demonstrations, and practice interviews. Eighteen health investigators (12 women and 6 men) attended a parallel training course on conducting biomarker tests.

The training of trainers (TOT) was conducted on July 5-7, 2017, prior to the main training. The purpose of the TOT was to prepare master trainers for the main training course. Four trainers (all women) were selected, based on performance, from the 11 participants in the pretest. The trainers were recruited through the SA regional offices; they later served as the team supervisors during the Tajikistan DHS data collection.

The main fieldwork training was conducted from July 10 until August 4, 2017, and led by the master trainers, with assistance from the two senior TjDHS staff hired by SA and backstopped by The DHS Program staff. The interviewer training was conducted in Tajik, and sessions discussed concepts, procedures, and methodology of conducting the survey. Participants were guided through the questionnaires. In addition, senior subject specialists from the MOHSP attended the sessions to provide background on topics such as family planning and reproductive health, HIV/AIDS and other STIs, childhood immunization, and child health and nutrition. A guest speaker from the Committee on Women's and Family Affairs under the Government of Tajikistan was also invited to deliver a lecture on gender-based violence in Tajikistan. The training included presentations, lectures, hands-on exercises, mock interviews, role plays, group work, and quizzes. In-class exercises included probing for age, checking age consistencies, copying information from the vaccination cards, completing the reproductive calendar, and practicing interviews. All participants also received training on how to test household salt for iodine and how to take adult blood pressure measurements using a digital blood pressure measuring device with automatic upper-arm inflation and automatic pressure release.

Once training on use of paper questionnaires concluded, The DHS Program data processing staff and an ICF consultant based in Dushanbe conducted a weeklong training on computer-assisted personal interviewing (CAPI). The two information technology (IT) specialists from SA facilitated the training. From July 24 through July 29, 2017, participants learned about features of the data collection system, different scenarios and technical issues typically encountered during fieldwork, and ways to resolve issues.

The biomarker classroom portion of the training commenced on July 24 and continued through August 5, 2017. This training was led by The DHS Program staff with assistance from the two health investigators who excelled during the pretest in both the classroom training and the field practice. Biomarker training included classroom instruction that focused on anthropometry measurements, anemia testing, appropriate procedures for obtaining informed consent, recording of biomarker information in the Biomarker Questionnaire, and reporting test results back to the respondents with referrals as needed. The training was divided into three sections in accord with the DHS biomarker curriculum: classroom training in anthropometry and anemia testing, in-class standardization of the tests and outdoor practice sessions, and field practice with interviewers.

To give the biomarker training participants hands-on experience prior to field practice, the health investigators practiced skills on each other and other staff of the SA, The DHS Program, and interviewers. Before going for field practice, to make sure that the health investigators had enough practical experience in measuring women and children, a standardization exercise was twice organized in the classroom. The standardization exercise was conducted indoors on 10 mother and child pairs invited to the SA. The results of inter-observer and intra-observer variations of the same measurements as well as the concepts of accuracy and precision were explained to the participants. In addition, a special session on anthropometry was held with all team supervisors. All supervisors received hands-on training on how to measure height/length and weight of eligible children and adults. Although the team health investigator is

responsible for measuring height/length and weight, it was necessary to train supervisors to assist the health investigators during the measurement of the children.

To improve team coordination, a joint classroom session of the health investigators was also organized with the interviewers at SA before going for field practice. All training participants and SA staff were given an overview of biomarker collection in the 2017 TjDHS. This overview described eligibility for biomarker collection, use of the Household and Biomarker Questionnaires to record data, appropriate procedures for obtaining informed consent, and supply packing and transportation logistics. Collecting data of high quality was emphasized.

Throughout the training participants were evaluated through in-class exercises, quizzes, and observations made during field practice. At the end of the training, the teams were formed by selecting supervisors, interviewers, and health investigators. The supervisors received additional training in data quality control procedures, fieldwork coordination, and management. On July 21, all supervisors and editors participated in a half-day practice held in a children's polyclinic in Dushanbe. In the polyclinic, they copied immunization records from the MOHSP form 63 and children's health cards directly to the tablet computers.

The trainees were taken for field practice twice in the nonsampled areas surrounding Hissar, a small town about 30 km outside of Dushanbe, where they had an opportunity to implement the survey in a real world situation. Field practice took place over 2 days (July 31 and August 1, 2017). For the field experience, each interviewer visited a minimum of two households per day. During the field practice, a total of 169 woman's interviews and 124 household interviews were completed. To practice biomarker collection, after receiving informed consent, approximately 127 women were measured and 123 were tested for anemia. Among children, 136 were measured and 102 were tested for anemia.

2.6 FIELDWORK

Data collection was carried out by 14 field teams, each consisting of one female team supervisor, four female interviewers, and one health investigator. Fieldwork started in most regions by August 8, 2017, and ended on November 11, 2017.

Fieldwork monitoring was an integral part of the TjDHS. Senior TjDHS technical staff from SA, including the biomarker quality control field supervisor, visited teams regularly to review the work and monitor data quality. The DHS Program representatives also visited teams to monitor data collection and to observe the anemia testing and height and weight measurements of women and children under age 5. During field visits, staff provided teams they visited (supervisor, interviewers, and health investigator) with critical feedback to improve their performance. In addition, they used the TjDHS field-check tables based on data from the completed clusters to illustrate problems specific to each team visited.

2.7 DATA PROCESSING

All electronic data files were transferred via a secure internet file streaming system (IFSS) to the SA central office in Dushanbe, where they were stored on a password-protected computer. The data processing operation included secondary editing, which required resolution of computer-identified inconsistencies and coding of open-ended questions. The data were processed by two IT specialists and one secondary editor who took part in the main fieldwork training; they were supervised remotely by The DHS Program staff. Data editing was accomplished using CSPro software. During the fieldwork, field-check tables were generated to check various data quality parameters, and specific feedback was given to the teams to improve performance. Secondary editing and data processing were initiated in August 2017 and completed in February 2018.

3 KEY FINDINGS

3.1 RESPONSE RATES

Table 1 shows response rates for the 2017 TjDHS. All 8,064 households in the selected housing units were eligible for the survey, of which 7,915 were occupied. Of the occupied households, 7,843 were successfully interviewed, yielding a response rate of 99%.

In the interviewed households, 10,799 women age 15-49 were identified for individual interviews; interviews were completed with 10,718 women, yielding a response rate of 99%, which is the same response rate achieved in the 2012 survey.

Table 1 Results of the household and individual interviews

Number of households, number of interviews, and response rates, according to residence (unweighted), Tajikistan DHS 2017

	Residence		
Result	Urban	Rural	Total
Household interviews			
Households selected	3,654	4,410	8,064
Households occupied	3,559	4,356	7,915
Households interviewed	3,517	4,326	7,843
Household response rate[1]	98.8	99.3	99.1
Interviews with women age 15-49			
Number of eligible women	4,243	6,556	10,799
Number of eligible women interviewed	4,212	6,506	10,718
Eligible women response rate[2]	99.3	99.2	99.2

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

3.2 CHARACTERISTICS OF RESPONDENTS

Table 2 shows the distribution of women age 15-49 interviewed in the 2017 TjDHS, by background characteristics. For the most part, the female populations represented in the sample are evenly distributed by age, but there are some noticeable exceptions. For example, there are higher proportions of women in their teens and 20s, and lower proportions of women in their 30s and 40s.

Nearly three quarters of women (72 percent) are married or living together, while only 6 percent of women are divorced, separated, or widowed. Compared with the results of the 2012 TjDHS, the proportion of women married or living together has increased over the last 5 years (67%).

The majority of the 2017 TjDHS respondents live in rural areas. Only one-quarter of respondents live in urban areas. This is essentially the same distribution found in 2012. There is considerable variation in the distribution of respondents by region. Over one-third (37%) of women age 15-49 live in Khatlon region compared with only 2% in GBAO. However, these percentages are largely unchanged since 2012.

Women in Tajikistan are generally well educated. Eight percent of women have attained a professional primary or professional middle education, and 9% of women have some higher education. Among the remaining women, most have either general basic (34%) or secondary education (43%); only 2% of women have never attended school and 4% have attended only primary school.

The proportion of women with higher education increased slightly over the past 5 years, from 6% in 2012 to 9% in 2017.

Table 2 Background characteristics of respondents

Percent distribution of women age 15-49 by selected background characteristics, Tajikistan DHS 2017

Background characteristic	Women		
	Weighted percent	Weighted number	Unweighted number
Age			
15-19	17.8	1,911	1,898
20-24	19.0	2,031	1,952
25-29	17.9	1,921	1,893
30-34	14.5	1,551	1,548
35-39	11.6	1,240	1,251
40-44	10.0	1,068	1,130
45-49	9.3	996	1,046
Marital status			
Never married	22.3	2,388	2,514
Married	71.9	7,709	7,499
Living together	0.4	38	46
Divorced/separated	3.9	416	471
Widowed	1.6	167	188
Employment abroad (past 3 years)[1]			
Yes	3.4	364	407
No	96.6	10,354	10,311
Residence			
Urban	25.1	2,694	4,212
Rural	74.9	8,024	6,506
Region			
Dushanbe	8.9	955	1,814
GBAO[2]	2.0	209	973
Sughd	30.7	3,292	2,235
DRS[3]	21.8	2,342	2,479
Khatlon	36.6	3,920	3,217
FTF districts[4]	19.6	2,096	1,578
Education			
No education	2.1	220	193
Primary	3.7	399	408
General basic	33.7	3,615	3,468
General secondary	43.1	4,624	4,364
Professional primary	1.7	183	207
Professional middle	6.3	677	704
Higher	9.3	994	1,363
Graduate	0.1	5	11
Wealth quintile			
Lowest	19.6	2,101	1,970
Second	19.7	2,116	1,723
Middle	19.7	2,108	1,746
Fourth	20.2	2,168	1,944
Highest	20.8	2,226	3,335
Total	100.0	10,718	10,718

Note: Education categories refer to the highest level of education attended, whether or not that level was completed.
[1] Employment abroad refers to working abroad during the past 3 years before the survey for 3 or more months at a time.
[2] Gorno-Badakhshan Autonomous Oblast
[3] Districts of Republican Subordination
[4] Data are based on information collected in the households selected in 44 clusters in the 12 districts included in the Feed the Future Initiative (FTF) pilot areas in the Khatlon region.

3.3 FERTILITY

All women who were interviewed in the 2017 TjDHS were asked to give a complete reproductive history. As the history was collected, each woman was asked about the number of children living at home, children living elsewhere, and children who had died, by sex, in order to obtain the total number of live births that women had experienced in their lifetime. In addition to information on live births, all women were then asked questions on all pregnancies that did not result in a live birth to obtain the number of induced abortions, miscarriages, and stillbirths that women had experienced in their lifetime.

After obtaining these aggregate data, an event-by-event pregnancy history was collected. Information was collected about all pregnancies in chronological order from the first pregnancy to the most recent. For each live birth, information was collected on the child's sex, survival status, date of birth, current age (for surviving children) or age at death (for deceased children). For all pregnancies that did not result in a live birth, information was collected on the month and year the pregnancy ended. For births and terminations that occurred during the 5 years preceding the survey (i.e., in January 2012 or later), the pregnancy duration was recorded in the Calendar[1].

Current Fertility Rates

Table 3 shows age-specific fertility rates 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 pregnancy history data. 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 current observed age-specific rates. If fertility were to remain constant at current levels, a woman from Tajikistan would bear an average of 3.8 children in her lifetime. The TFR for rural areas (4.0 births per woman) is one child higher than that for urban areas (3.0 births). Across the various age groups, fertility is consistently higher among rural than urban women, with the exception of women in their 40s, where the two fertility rates converge.

Table 3 Current fertility

Age-specific and total fertility rates, general fertility rate, and the crude birth rate for the 3 years preceding the survey, according to residence, Tajikistan DHS 2017

	Residence		
Age group	Urban	Rural	Total
15-19	41	59	54
20-24	237	323	303
25-29	168	219	207
30-34	105	129	123
35-39	44	59	55
40-44	12	11	11
45-49	1	0	0
TFR (15-49)	3.0	4.0	3.8
GFR	110	151	141
CBR	25.6	36.1	33.4

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

In addition to urban-rural residence, fertility also varies by region (Table 4). The TFR is lowest in Dushanbe (2.7 births per woman), followed by the GBAO and Sughd regions at 3.5 births per woman, and highest in Khatlon (4.1 births per woman) and DRS (4.0 births per woman) regions.

[1] The Calendar, which is included at the end of the Woman's Questionnaire, provides a record of the timing of all live births, pregnancies, and periods of contraceptive use. The Calendar covers the survey year up to the last month of fieldwork, plus the full 5 years prior to the survey year. For the 2017 TjDHS, the Calendar begins with year 2012.

Table 4 Fertility by background characteristics

Total fertility rate for the 3 years preceding the survey, percentage of women age 15-49 currently pregnant, and mean number of children ever born to women age 40-49, according to background characteristics, Tajikistan DHS 2017

Background characteristic	Total fertility rate	Percentage of women age 15-49 currently pregnant	Mean number of children ever born to women age 40-49
Residence			
Urban	3.0	5.9	3.3
Rural	4.0	7.9	4.0
Region			
Dushanbe	2.7	5.2	3.1
GBAO	3.5	4.6	3.3
Sughd	3.5	7.2	3.4
DRS	4.0	8.5	4.0
Khatlon	4.1	7.6	4.3
FTF districts	4.1	8.1	4.2
Education			
None/primary	4.0	9.1	3.1
General basic	3.9	7.7	4.0
General secondary	4.0	7.0	4.0
Professional primary/ middle	3.6	8.9	3.3
Higher	2.8	6.0	2.9
Wealth quintile			
Lowest	4.0	6.2	4.1
Second	4.1	8.2	4.1
Middle	3.8	8.0	4.0
Fourth	3.9	8.8	3.6
Highest	3.0	6.0	3.2
Total	3.8	7.4	3.8

Note: Total fertility rates are for the period 1-36 months preceding the interview.
FTF = Feed the Future

Women's education is strongly associated with fertility. The TFR decreases from 4.0 births for women with no education or only primary schooling to 2.8 births for women with higher education. Fertility is also negatively associated with wealth; the difference in fertility between women in the lowest and highest wealth quintiles amounts to one child per woman.

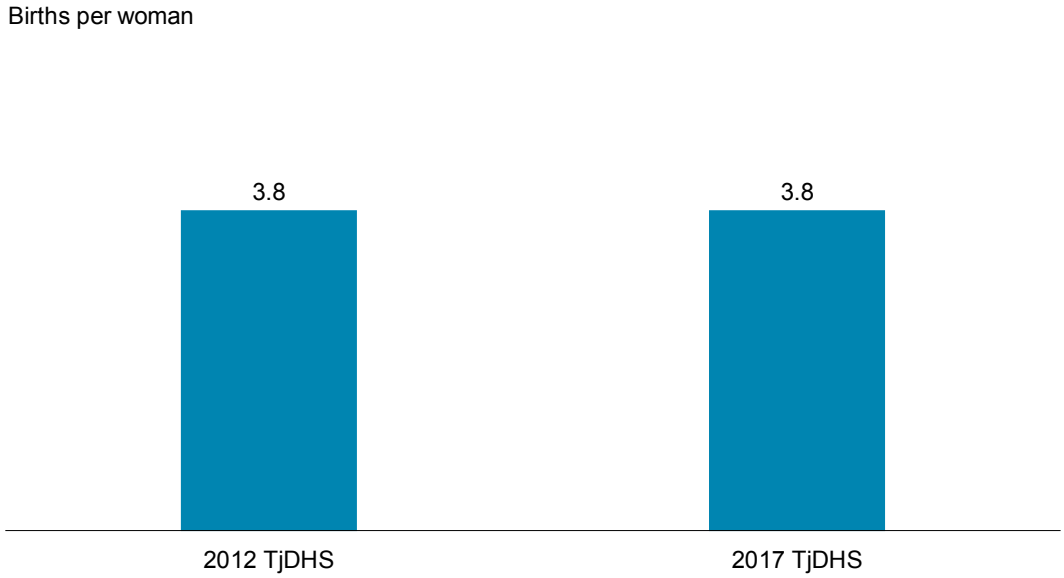
The percentage of women who reported being pregnant at the time of the survey is also presented in Table 4. This percentage may be underreported because some women may not be aware of a pregnancy, especially at the early stages, and some women who are early in their pregnancy may not want to reveal that they are pregnant. At the time of the survey, 7% of women age 15-49 reportedly were pregnant. Rural women are slightly more likely to be currently pregnant than urban women (8% and 6%, respectively).

Among the regions, the proportion of women who are currently pregnant is highest in DRS (9%) and Khatlon (8%) and lowest in Dushanbe and GBAO (5% each). The relationship between the percentage currently pregnant and education is not uniform, but generally decreases as education increases. Women in the highest and lowest wealth quintiles are less likely to be currently pregnant (6%) than women in other quintiles (8%-9%).

Table 4 also presents data on the mean number of children ever born to women age 40-49, which allows for a crude assessment of trends in fertility. The TFR is a measure of current fertility, while the mean number of children ever born is a measure of past or completed fertility. Although comparing completed fertility among women age 40-49 with the TFR can provide an indication of fertility change, this change is subject to bias resulting from an understatement of parity by older women. Unless there is evidence of increased age at marriage and/or increased use of contraception, it is unlikely that fertility would decline. The comparison of past and current fertility indicators suggests no difference (3.8 children) at the national level. However, there has been a decline in fertility in Dushanbe (0.4 births), and an increase in fertility for women with no education or only primary schooling (0.9 births).

Figure 1 presents trends in the TFR since the 2012 TjDHS. The overall fertility rate in Tajikistan has remained relatively stable over the past 5 years. The 2017 TjDHS rate of 3.8 is the same as the rate estimated by the 2012 TjDHS.

Figure 1 **Trends in total fertility rate, 2012-2017**



Rates of induced abortion

Table 5 shows age-specific abortion rates and total abortion rates (TARs) from the 2017 TjDHS. These rates are calculated in a manner analogous to the calculation of fertility rates. The reported rates refer to the 3-year period prior to the survey. The TAR is interpreted as the number of abortions a woman would have in her lifetime if she experienced the currently observed age-specific abortion rates during her childbearing years.

Table 5 Induced abortion rates

Age-specific induced abortion rates (per 1,000 women), total abortion rates (TAR), and general abortion rates (GAR) for the 3-year period preceding the survey, by residence, Tajikistan DHS 2017

	Residence		
Age group	Urban	Rural	Total
15-19	0	1	1
20-24	9	15	14
25-29	22	24	24
30-34	28	28	28
35-39	15	19	18
40-44	10	11	10
45-49	3	1	1
TAR (15-49)	0.4	0.5	0.5
TAR (15-44)	0.4	0.5	0.5
GAR	14	16	15

TAR: Total abortion rate for ages 15-49, expressed per woman.
GAR: General abortion rate (abortions divided by number of women 15-44) expressed per 1,000 women.

The total abortion rate for Tajikistan is 0.5 abortions per woman. This means that the average number of abortions a Tajik woman will have according to current abortion rates is roughly 13% of the number of births she will have (3.8). The age-specific rates of induced abortion peak among women age 30-34 and decline among women in older age groups. Abortion rates between urban and rural areas are largely the same, at 0.4 and 0.5, respectively. The TAR remained consistent since the 2012 Tajikistan DHS at 0.5 abortions per women.

3.4 TEENAGE PREGNANCY AND MOTHERHOOD

The issue of adolescent fertility is important on both health and social grounds. 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.

Table 6 shows the percentage of women age 15-19 who have given birth or were pregnant with their first child at the time of the survey, according to background characteristics. Overall, 7% of women age 15-19 have begun childbearing: 3% had had a live birth, and 4% were pregnant at the time of the interview. Young women do not start childbearing until age 17, but the proportion having children increases rapidly

with age to reach 26% among women age 19. Rural teenagers tend to start childbearing earlier than other teenagers. Early childbearing among teenagers is slightly more common in DRS (9%) than in other regions, especially GBAO (2%). Teenagers with with no education or only primary schooling (13%) are more likely to have started childbearing compared with the 7% national average or 2% among teenagers with higher education. Childbearing is also somewhat more common among women in the fourth wealth quintile (10%).

In terms of trends, at the national level there is little difference overall in adolescent fertility between the 2012 and 2017 TjDHS surveys (7% in both 2012 and 2017).

Table 6 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, according to background characteristics, Tajikistan DHS 2017

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	0.0	0.0	0.0	302
16	0.0	0.0	0.0	416
17	0.0	0.3	0.3	416
18	2.1	5.6	7.7	400
19	14.0	11.7	25.7	377
Residence				
Urban	2.6	2.8	5.4	461
Rural	3.4	3.8	7.2	1,450
Region				
Dushanbe	1.3	1.9	3.2	185
GBAO	1.4	0.8	2.1	29
Sughd	2.8	3.9	6.7	500
DRS	3.7	4.7	8.5	455
Khatlon	3.7	3.1	6.9	743
FTF districts	4.1	3.6	7.7	372
Education				
None/primary	4.3	8.8	13.1	53
General basic	3.3	2.8	6.0	808
General secondary	3.5	4.0	7.5	871
Professional primary/ middle	2.7	4.4	7.1	90
Higher	0.0	1.9	1.9	89
Wealth quintile				
Lowest	2.9	2.0	4.9	391
Second	2.8	2.8	5.7	408
Middle	3.4	4.0	7.4	370
Fourth	4.2	5.4	9.6	352
Highest	2.8	3.7	6.5	391
Total	3.2	3.6	6.8	1,911

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

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 7 shows that the majority of married Tajik women express a desire to control their future fertility. Nearly half of respondents (44%) do not want to have any more children or are sterilized. The desire to limit fertility markedly increases by number of living children. For example, most married women with no children want to have a child; 65% say that they want to have a child soon. On the other hand, nearly 6 in 10 women with three children say that they want no more, as do 7 in 10 women with four or more children.

Table 7 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, Tajikistan DHS 2017

	Number of living children[1]							
Desire for children	0	1	2	3	4	5	6+	Total
Have another soon[2]	65.0	40.8	20.1	8.9	4.2	1.8	1.4	18.0
Have another later[3]	0.1	12.0	11.1	3.0	1.0	0.1	0.0	5.3
Have another, undecided when	4.0	14.4	9.3	3.1	1.7	1.3	0.6	5.7
Undecided	4.7	16.7	24.4	21.1	16.7	10.3	11.8	18.3
Want no more	1.1	4.8	26.8	57.5	69.5	75.3	70.5	43.2
Sterilized[4]	0.0	0.3	0.3	1.0	0.6	2.3	3.2	0.8
Declared infecund	25.2	11.1	8.0	5.4	6.2	8.8	12.4	8.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	504	1,088	1,834	2,039	1,428	584	271	7,747

[1] The number of living children includes the 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

The proportion of women who say that they want to stop childbearing or are sterilized has remained constant at 44% since the 2012 TjDHS. An increase is seen in the percentage of women who say that they cannot conceive, from 6% in 2012 to 9% in 2017, which is especially evident among those with no children (13% in 2012 and 25% in 2017); and among those who are undecided about whether they want to have another child (12% in 2012 and 18% in 2017). While the number of women who want to have another child soon has remained relatively consistent (17% in 2012 and 18% in 2017), there has been a large decrease in the number of women who want to wait 2 or more years before having a child, from 19% in 2012 to 5% in 2017.

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 method (LAM). Other methods such as rhythm, withdrawal, and folk methods are grouped as traditional.

Table 8 shows the percent distribution of currently married women by the family planning method they use, according to background characteristics. Almost 3 in 10 married women of reproductive age are using a method of contraception (29%). Among married women, use of modern methods (27%) is more common than use of traditional methods (2%). The most widely used method is, by far, the IUD (18%), followed by the male condom (4%), and withdrawal and the pill (2% each).

The use of any contraceptive rises with age, peaking at 46% among currently married women age 35-39, and then declining to 23% among women age 45-49.

In general, women in Tajikistan do not begin to use contraception until they have had at least one child. Thirty-four percent of married women residing in urban areas use contraception compared with 28% of women in rural areas. There is considerable variation in contraceptive use by region. Women from the DRS and Khatlon regions are the least likely to use any method of contraception (25% and 21%, respectively). The Sughd and GBAO regions have the highest rates of use of any method (40% and 37%, respectively). As expected, contraceptive use increases with educational attainment. Women with a higher level of education are more likely to use a method than women with primary only or no education (35% compared with 20%).

The IUD dominates the method mix in all subgroups; whatever their background, almost two-thirds of current users rely on an IUD to prevent pregnancy. Injectables are most popular among users with five or more children, users in the GBAO region, and users in the lowest wealth quintile. Users in Dushanbe, users

with higher education, and users in the highest wealth quintile are most likely to report relying on the male condom.

Use of any contraceptive method has not changed much in the past 5 years; 28% of currently married women age 15-49 reported using a method in the 2012 TjDHS compared with 29% in the 2017 TjDHS. Similarly, the proportion of currently married women who use modern contraceptive methods remains stable at 27% compared with 26% in 2012. The percentage of women using male condoms has increased somewhat, from 2% in 2012 to 4% in 2017.

Table 8 Current use of contraception according to background characteristics

Percent distribution of currently married women age 15-49, by contraceptive method currently used, according to background characteristics, Tajikistan DHS 2017

			Modern method									Any tradi-	Traditional method		Not cur-		Number
Background characteristic	Any method	Any modern method	Female sterili-zation	Pill	IUD	Inject-ables	Im-plants	Male condom	Female condom	LAM	Other	tional method	Rhythm	With-drawal	rently using	Total	of women
Number of living children																	
0	0.3	0.3	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	99.7	100.0	737
1-2	22.1	20.0	0.3	1.0	13.0	0.6	0.1	3.8	0.0	1.3	0.0	2.1	0.0	2.0	77.9	100.0	2,865
3-4	40.9	38.0	0.9	3.2	26.5	1.5	0.2	4.8	0.0	0.9	0.0	3.0	0.0	2.9	59.1	100.0	3,313
5+	33.3	32.1	2.6	1.8	20.0	3.7	0.0	3.3	0.0	0.6	0.1	1.2	0.0	1.2	66.7	100.0	833
Age																	
15-19	2.9	2.5	0.0	0.0	0.0	0.0	0.0	1.1	0.0	1.3	0.0	0.4	0.0	0.4	97.1	100.0	240
20-24	15.6	14.7	0.0	0.8	9.9	0.2	0.1	2.4	0.0	1.3	0.0	0.9	0.0	0.9	84.4	100.0	1,557
25-29	28.7	27.1	0.2	1.7	18.3	0.7	0.1	4.1	0.0	1.9	0.0	1.5	0.1	1.5	71.3	100.0	1,688
30-34	35.0	32.4	0.7	2.7	21.9	1.3	0.3	5.1	0.0	0.4	0.0	2.6	0.0	2.6	65.0	100.0	1,374
35-39	45.6	42.0	1.8	3.5	28.0	2.4	0.0	5.3	0.0	0.8	0.1	3.6	0.0	3.6	54.4	100.0	1,089
40-44	38.1	34.9	1.5	2.9	23.3	2.8	0.0	4.3	0.0	0.2	0.0	3.2	0.0	3.2	61.9	100.0	953
45-49	22.9	20.5	1.7	0.5	14.8	1.2	0.3	1.9	0.0	0.0	0.0	2.4	0.1	2.3	77.1	100.0	847
Residence of a husband/partner																	
Husband/partner lives with her	30.5	28.3	0.8	2.0	19.0	1.3	0.1	4.1	0.0	0.8	0.0	2.2	0.0	2.2	69.5	100.0	6,886
Husband/partner lives elsewhere	19.6	17.9	0.6	1.0	12.5	0.7	0.0	1.6	0.0	1.6	0.0	1.7	0.1	1.6	80.4	100.0	861
Residence																	
Urban	33.9	31.5	0.6	2.4	21.1	0.4	0.1	5.7	0.0	1.0	0.0	2.4	0.0	2.3	66.1	100.0	1,803
Rural	27.9	25.8	0.8	1.8	17.4	1.5	0.1	3.2	0.0	0.9	0.0	2.1	0.0	2.1	72.1	100.0	5,944
Region																	
Dushanbe	29.9	29.5	0.6	2.3	18.9	0.1	0.1	7.4	0.0	0.2	0.0	0.3	0.1	0.3	70.1	100.0	585
GBAO	36.5	35.6	0.4	2.0	26.1	4.7	0.1	2.3	0.0	0.0	0.0	0.9	0.2	0.7	63.5	100.0	144
Sughd	40.0	34.3	1.2	2.3	21.5	1.1	0.1	6.2	0.0	2.0	0.0	5.7	0.0	5.7	60.0	100.0	2,533
DRS	25.3	24.8	0.7	1.7	18.4	0.7	0.1	3.1	0.0	0.0	0.1	0.6	0.1	0.5	74.7	100.0	1,709
Khatlon	21.4	21.1	0.6	1.7	14.7	1.9	0.2	1.4	0.0	0.6	0.0	0.4	0.0	0.4	78.6	100.0	2,776
FTF districts	18.6	18.3	0.7	1.1	13.0	1.5	0.3	1.2	0.0	0.5	0.0	0.4	0.0	0.4	81.4	100.0	1,548
Education																	
None/primary	19.8	19.8	0.5	0.7	15.7	2.0	0.3	0.8	0.0	0.0	0.0	0.0	0.0	0.0	80.2	100.0	468
General basic	28.9	26.8	0.7	1.5	19.0	1.3	0.1	3.2	0.0	0.9	0.0	2.1	0.0	2.1	71.1	100.0	2,532
General secondary	29.2	26.9	0.9	2.1	18.1	1.4	0.1	3.5	0.0	0.8	0.0	2.3	0.0	2.3	70.8	100.0	3,442
Professional primary/ middle	32.2	30.3	1.1	2.9	18.0	1.1	0.0	5.0	0.0	2.4	0.0	1.9	0.1	1.7	67.8	100.0	626
Higher	35.1	31.7	0.7	2.7	18.6	0.2	0.0	8.6	0.1	0.8	0.0	3.3	0.1	3.2	64.9	100.0	680
Wealth quintile																	
Lowest	26.0	25.5	1.0	1.7	18.0	2.9	0.2	0.8	0.0	0.9	0.0	0.5	0.0	0.5	74.0	100.0	1,454
Second	24.2	22.2	0.7	1.5	14.3	1.6	0.0	2.9	0.0	1.1	0.0	2.0	0.0	2.0	75.8	100.0	1,526
Middle	29.8	28.0	0.5	1.9	19.3	1.0	0.1	4.4	0.0	0.9	0.0	1.8	0.1	1.7	70.2	100.0	1,592
Fourth	32.8	28.9	0.9	2.6	19.8	0.7	0.2	3.8	0.0	0.9	0.0	3.9	0.0	3.9	67.2	100.0	1,681
Highest	33.1	30.8	0.9	1.9	19.7	0.2	0.1	7.1	0.0	0.8	0.0	2.3	0.0	2.3	66.9	100.0	1,494
Total	29.3	27.1	0.8	1.9	18.3	1.3	0.1	3.8	0.0	0.9	0.0	2.2	0.0	2.1	70.7	100.0	7,747

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

3.7 NEED AND DEMAND FOR FAMILY PLANNING

Unmet need for family planning refers to fecund women who are not using contraception, but who wish to postpone their next birth (spacing) or stop childbearing altogether (limiting). An estimate of the size and

composition of the population of women who have an unmet need for family planning services is useful for planning purposes in reproductive health programs.

The criteria used within the DHS program to identify women with an unmet need for family planning have recently been revised (Bradley et al. 2012). The revised definition was employed in determining the percentage of women who have an unmet need for family planning (Table 9).

Specifically, women are considered to have an unmet need for spacing if they are:

- At risk of becoming pregnant, not using contraception, and either do not want to become pregnant within the next 2 years or are unsure if or when they want to become pregnant
- Pregnant with a mistimed pregnancy
- Postpartum amenorrheic for up to 2 years following a mistimed birth and not using contraception

Women are considered to have an unmet need for limiting if they are:

- At risk of becoming pregnant, not using contraception, and want no (more) children
- Pregnant with an unwanted pregnancy
- Postpartum amenorrheic for up to 2 years following an unwanted birth and not using contraception

Women who are classified as infecund have no unmet need because they are not at risk of becoming pregnant.

Women using contraception are considered to have a met need. Women using contraception who say they want no (more) children are considered to have a met need for limiting, and women who are using contraception and say they want to delay having a child or are unsure if or when they want a (another) child are considered to have a met need for spacing.

Finally, total demand, percentage of demand satisfied, and percentage of demand satisfied by modern methods are defined as follows:

- **Total demand for family planning:** the sum of unmet need (for spacing and limiting) and total contraceptive use
- **Percentage of demand satisfied:** total contraceptive use divided by the sum of unmet need and total contraceptive use
- **Percentage of demand satisfied by modern methods:** use of modern contraceptive methods divided by the sum of unmet need and total contraceptive use

Table 9 presents data on unmet need, met need, and total demand for family planning services for currently married women. Overall, 23% of currently married women have an unmet need for family planning. Twenty-nine percent of married women have a met need for family planning—that is, they are currently using a contraceptive method—and this has remained relatively consistent since 2012, when 28% of women had a met need for family planning. The total demand for family planning among currently married women is 52%, and the total demand satisfied is 56%, almost entirely by modern methods (52%). Thus, if all married women who said they want to space or limit their children were to use family planning methods, the contraceptive prevalence rate (CPR) would increase from 29% to 52%.

The level of unmet need varies by background characteristics. Unmet need is highest among married women age 25-34 (27%-29%). Total unmet need is roughly the same among urban and rural married women (22% and 23%, respectively). Across regions, unmet need is highest in DRS (29%) and lowest in GBAO (16%). Women with lower levels of education and wealth, generally have higher levels of unmet need than their more educated and wealthier counterparts.

Table 9 Need and demand for family planning among currently married women

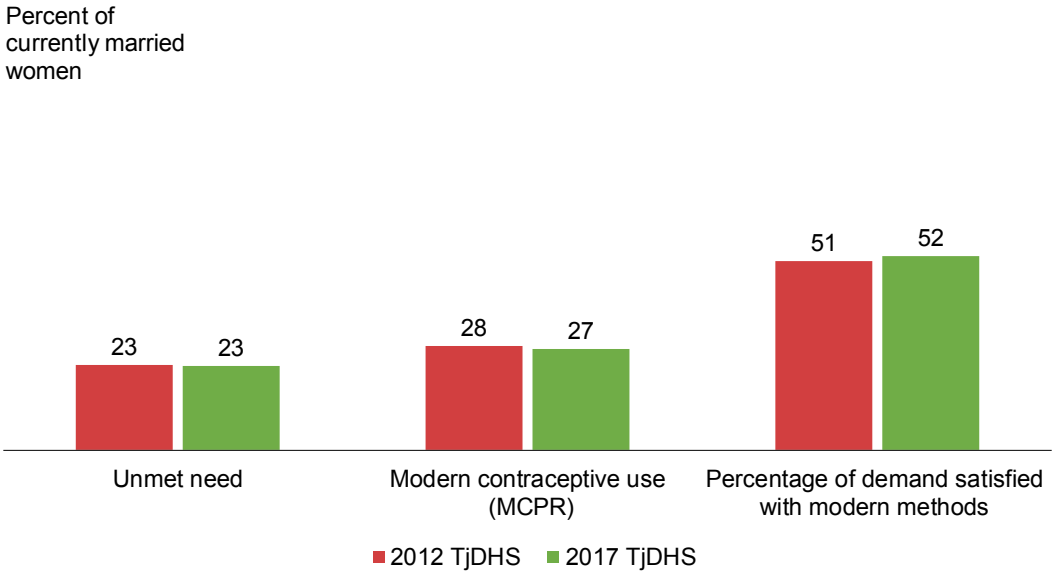
Percentage of currently married women age 15-49 with unmet need for family planning, percentage with met need for family planning, percentage with met need for family planning who are using modern methods, percentage with demand for family planning, percentage of the demand for family planning that is satisfied, and percentage of the demand for family planning that is satisfied with modern methods, according to background characteristics, Tajikistan DHS 2017

Background characteristic	Unmet need for family planning	Met need for family planning (currently using)		Total demand for family planning[3]	Number of women	Percentage of demand satisfied[1]	
		All methods	Modern methods[2]			All methods	Modern methods[2]
Age							
15-19	11.2	2.9	2.5	14.1	240	20.5	17.6
20-24	23.0	15.6	14.7	38.6	1,557	40.3	37.9
25-29	26.6	28.7	27.2	55.3	1,688	51.8	49.2
30-34	28.9	35.0	32.4	63.9	1,374	54.8	50.7
35-39	21.5	45.6	42.0	67.1	1,089	68.0	62.6
40-44	19.3	38.1	34.9	57.4	953	66.4	60.9
45-49	13.2	22.9	20.6	36.1	847	63.5	57.0
Residence							
Urban	21.5	33.9	31.6	55.4	1,803	61.2	57.0
Rural	23.1	27.9	25.8	51.0	5,944	54.7	50.6
Region							
Dushanbe	21.5	29.9	29.6	51.3	585	58.2	57.7
GBAO	16.2	36.5	35.8	52.7	144	69.3	68.0
Sughd	19.1	40.0	34.3	59.1	2,533	67.6	58.0
DRS	28.6	25.3	24.8	54.0	1,709	46.9	46.0
Khatlon	23.0	21.4	21.1	44.4	2,776	48.2	47.4
FTF districts	24.0	18.6	18.3	42.7	1,548	43.7	42.8
Education							
None/primary	27.2	19.8	19.8	47.0	468	42.1	42.1
General basic	25.3	28.9	26.8	54.2	2,532	53.3	49.4
General secondary	21.3	29.2	26.9	50.5	3,442	57.8	53.2
Professional primary/ middle	19.4	32.2	30.5	51.6	626	62.4	59.1
Higher	20.4	35.1	31.9	55.5	680	63.2	57.5
Wealth quintile							
Lowest	25.4	26.0	25.5	51.4	1,454	50.7	49.6
Second	23.2	24.2	22.2	47.3	1,526	51.0	46.8
Middle	24.4	29.8	28.1	54.2	1,592	55.0	51.8
Fourth	20.1	32.8	28.9	52.9	1,681	62.1	54.6
Highest	20.9	33.1	30.8	54.0	1,494	61.2	57.0
Total	22.7	29.3	27.1	52.0	7,747	56.3	52.2

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

Figure 2 shows trends in unmet need, modern contraceptive use, and percentage of demand met with modern methods. Overall, these three indicators have remained relatively constant over the last 5 years.

Figure 2 **Trends in unmet need, modern contraceptive use, and percentage of demand satisfied with modern methods, 2012-2017**



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). Information on infant and child mortality is useful in identifying segments of the population that are at high risk so that programs can be targeted to reduce it.

Data on infant and child mortality in the 2017 TjDHS are derived from the reproductive history section of the Woman's Questionnaire. The section begins with questions about the respondent's childbearing experience, including the number of sons and daughters who live in the household, the number who live elsewhere, and the number who have died. In the pregnancy history, the woman is asked to report the outcome of each pregnancy, that is, whether the pregnancy ended in a live birth, a stillbirth, a miscarriage, or an induced abortion. Using the standard international definition, a live birth was any birth, irrespective of the duration of pregnancy, that, after separation from the mother, showed any sign of life (for example, breathing, beating of the heart, or movement of voluntary muscles) (WHO 1993).

For each live birth reported in the pregnancy history, information was collected on the name, date of birth (month and year), sex, whether the birth was single or multiple, and survivorship. For living children, information was also collected on age at last birthday and whether the child resided with the mother. For children who had died, the respondent was asked to provide the age at death. Mortality rates for specific periods preceding the survey were calculated using direct estimation procedures[2].

[2] The rates are calculated using a synthetic cohort approach in which probabilities of dying are first calculated for small age segments, and the component probabilities are then combined to obtain the rate for the full age segment of interest. The advantage of this approach is that mortality rates can be calculated for time periods close to the survey date while still respecting the principle of correspondence; that is, if a child is included in the exposed-to-risk in the denominator, and he/she dies during the relevant time period, then his/her death must be included in the numerator corresponding to that period of risk. A more detailed explanation of this approach can be found in the Guide to DHS Statistics (Rutstein and Rojas 2006).

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.

Table 10 shows that during the 5 years preceding the survey, the infant mortality rate was 27 deaths per 1,000 live births with a fairly even split between the neonatal and postneonatal period. The child mortality rate was 7 deaths per 1,000 children surviving to age 12 months, while the overall under-5 mortality rate was 33 deaths per 1,000 live births. Eighty-two percent of all deaths among children under age 5 in Tajikistan take place before a child's first birthday, with 39% occurring during the first month of life. The 2017 TjDHS indicates that under-5 mortality rates have declined over time from 51 deaths per 1,000 live births 10-14 years before the survey (2003-2007) to 33 deaths per 1,000 live births in the 0-4 years prior to the survey (2013-2017).

Table 10 Early childhood mortality rates

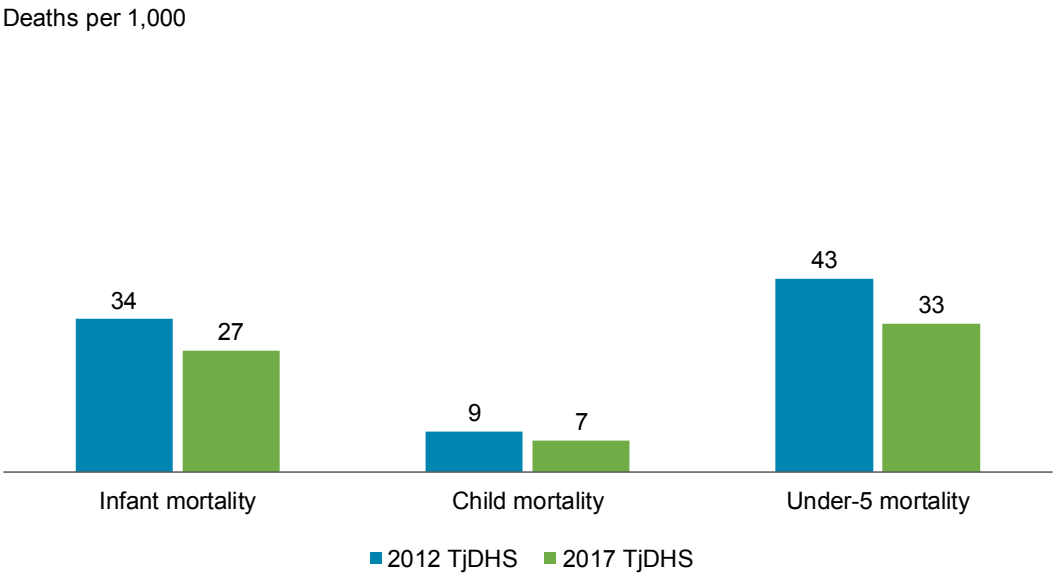
Neonatal, post-neonatal, infant, child and under-5 mortality rates for 5 year periods preceding the survey, Tajikistan DHS 2017

Years preceding the survey	Neonatal mortality (NN)	Post-neonatal mortality (PNN)[1]	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under-5 mortality ($_5q_0$)
0-4	13	14	27	7	33
5-9	17	10	28	6	33
10-14	21	22	43	9	51

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

Figure 3 presents trends in childhood mortality, as assessed through the 2012 and 2017 TjDHS surveys. The data presented in Figure 3 document a steady decline in under-5 mortality rates from 43 deaths per 1,000 live births during the 5 years immediately preceding the 2012 TjDHS to 33 deaths per 1,000 live births in the most recent 5-year period. Infant mortality decreased from 34 deaths per 1,000 live births to 27 deaths per 1,000 live births over the same period.

Figure 3 **Trends in childhood mortality, 2012-2017**



3.9 MATERNAL CARE

Proper care during pregnancy and delivery is important for the health of both the mother and the baby. In the 2017 TjDHS, women who had given live 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. 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 11 summarizes information on the coverage of these maternal health services.

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). In Tajikistan, skilled providers trained to assist during delivery include doctors, nurses, and midwives.

Table 11 shows that 92% of mothers reported seeing a health professional at least once for antenatal care for the most recent birth in the 5-year period before the survey, indicating a substantial increase from the 79% reported in the 2012 TjDHS. This indicator is almost uniformly high among mothers regardless of background characteristics. Nevertheless, older women, those living in the Khatlon region, and those with lowest levels of education and wealth are somewhat less likely to report receiving antenatal care from a skilled provider than other women. Overall, 64% of women had four or more ANC visits, a noticeable increase from the 53% in the 2012 TjDHS. Urban women were substantially more likely than rural women to have made four or more ANC visits (79% and 60%, respectively). Among regions, 92% of women in the Sughd region had four or more ANC visits compared with 40% of women residing in the Khatlon region. The likelihood of having made four or more ANC visits increases with the mother's education level and wealth status. Forty-five percent of mothers with no education or only primary education had four or more ANC visits compared with 82% of mothers with higher education. Similarly, the proportion of women who made four or more ANC visits is lowest among those in the lowest wealth quintile (44 percent) and increases to a high of 83% among women in the highest wealth quintile.

Table 11 also shows that 14% of women had eight or more antenatal care visits for the most recent birth. Eight or more ANC visits are more common among women living in urban areas, as well as among more educated and well-off women. One-third of women from the Sughd region (33%) reported that they made eight or more ANC visits, compared with just 3% of women in the Khatlon region.

Table 11 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 (ANC) from a skilled provider for the most recent live birth, percentage with four or more ANC visits for the most recent live birth, and percentage with eight or more ANC visits for the most recent live birth; 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 with a live birth in the 2 years preceding the survey, percentage who received a postnatal check during the first 2 days after giving birth, according to background characteristics, Tajikistan DHS 2017

	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	
Background characteristic	Percentage receiving antenatal care from a skilled provider[1]	Percentage with 4+ ANC visits	Percentage with 8+ ANC visits	Number of women	Percentage delivered by a skilled provider[1]	Percentage delivered in a health facility	Number of births	Percentage of women with a postnatal check during the first 2 days after birth[2]	Number of women
Mother's age at birth									
<20	93.4	68.5	16.4	241	96.5	92.2	557	91.1	173
20-34	92.3	64.2	14.7	3,812	94.7	88.1	5,549	91.9	2,173
35-49	85.3	60.8	9.5	342	92.8	83.0	380	90.9	135
Residence									
Urban	95.2	79.1	19.9	964	97.6	93.8	1,354	93.7	476
Rural	90.9	60.0	12.8	3,431	94.0	86.7	5,132	91.3	2,005
Region									
Dushanbe	94.3	87.0	16.5	299	98.3	96.5	413	90.9	142
GBAO	94.3	71.5	10.8	76	98.0	76.1	106	88.7	37
Sughd	97.8	91.8	32.6	1,301	99.5	99.1	1,853	97.3	721
DRS	91.7	60.9	10.4	1,041	92.7	79.4	1,534	84.3	594
Khatlon	86.7	40.4	2.5	1,677	91.9	84.7	2,580	92.4	987
FTF districts	81.7	43.7	2.8	951	93.4	90.4	1,444	91.7	542
Mother's education									
None/primary	81.1	44.9	6.7	344	86.8	81.6	541	91.4	193
General basic	89.5	57.1	10.3	1,617	93.3	84.6	2,400	90.0	892
General secondary	93.8	68.3	16.3	1,730	96.1	89.8	2,557	92.2	1,014
Professional primary/ middle	97.3	77.8	22.4	321	98.7	94.7	471	96.1	188
Higher	97.6	81.6	22.9	382	99.8	97.4	517	93.8	195
Wealth quintile									
Lowest	83.8	43.5	6.2	805	90.7	78.7	1,209	87.1	446
Second	91.9	54.5	10.8	903	92.7	85.8	1,356	90.5	514
Middle	92.7	65.2	11.7	956	95.1	89.1	1,412	92.9	560
Fourth	94.8	74.4	21.7	950	97.5	92.2	1,421	93.6	560
Highest	95.4	83.2	21.4	780	97.9	95.1	1,088	94.4	402
Total	91.8	64.2	14.4	4,395	94.8	88.2	6,486	91.8	2,481

Note: If more than one source of assistance was mentioned, only the provider with the highest qualifications is considered in this tabulation.
FTF = Feed the Future
[1] Skilled provider includes doctor, nurse, or midwife.
[2] Includes women who received a check from a doctor, midwife, nurse, or traditional birth attendant

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). Table 11 shows that a large majority of births (95%) in Tajikistan are assisted by a medical professional. Assistance at delivery by a skilled provider is universal in Sughd (100%) compared with 92% in Khatlon region. Also more likely to be assisted by a health professional are births to urban women, women with more education, and women in higher wealth quintiles.

While assistance at delivery is nearly universal, Table 11 shows that only 88% of births occur in health facilities, meaning there remains a significant number of home deliveries. There is variation in percentage of facility deliveries across residence and region. Overall, urban areas have a greater percentage of facility deliveries than rural areas (94% compared with 87%, respectively). Looking at specific regions, facility deliveries are least common in GBAO (76%) and most common in Sughd (99%). Mother's level of education is directly related to the likelihood that a birth is delivered in a health facility. A relatively low 82% of births to women with no education or only a primary education take place in a health facility compared with 97% of those to women with higher education. Place of delivery is also highly correlated

with wealth quintile; 79% of births to women in the lowest quintile take place in a health facility compared with over 95% of births to women in the highest quintile.

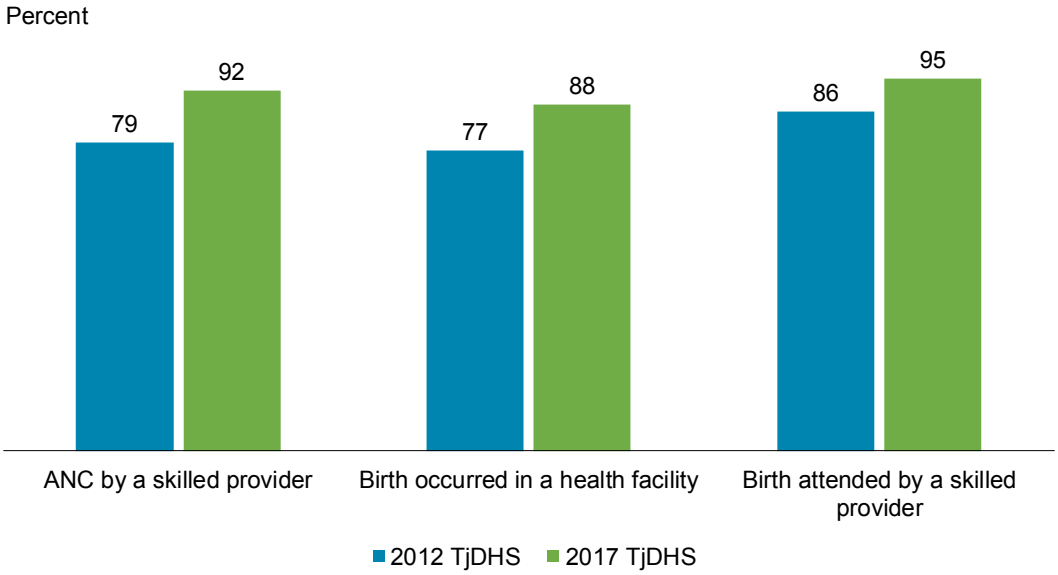
Postnatal Care for the Mother

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 11, 92% of women reported having received a PNC checkup in the first 2 days after birth. Overall, 8% of women did not receive postnatal care within the recommended period (2 days after delivery). There are only small variations across groups of women, except by region and wealth. There is variation in the proportion of women who received a timely postnatal check by region, ranging from a low of 84% in the DRS region to a high of 97% in the Sughd region. The proportion of women who received a postnatal check during the first 2 days after delivery increases with wealth, from 87% in the lowest wealth quintile to 94% in the fourth and the highest quintiles.

Figure 4 shows trends in maternal health care. These indicators have greatly changed between the 2012 TjDHS and the 2017 TjDHS. The percentage of women receiving ANC from a skilled provider has increased from 79% in 2012 to 92% in 2017. The proportion of women whose births occurred in a health facility has increased from 77% in 2012 to 88% in 2017. Similarly, the proportion of women whose births were attended by a skilled provider has risen from 86% to 95% over the same period.

Figure 4 **Trends in maternal health care, 2012-2017**



3.10 CHILD HEALTH AND NUTRITION OF CHILDREN AND WOMEN

The 2017 Tajikistan DHS collected data on a number of key child health indicators, including vaccinations of young children, infant feeding practices, and treatment practices when a child is ill.

Vaccination of Children

Universal immunization of children against common vaccine-preventable diseases is crucial to reducing infant and child mortality. In Tajikistan, routine childhood vaccines protect against tuberculosis (BCG vaccine), hepatitis B (HepB monovaccine), diphtheria, tetanus, pertussis, hepatitis B and *Haemophilus influenzae* type b (DPT-HepB-Hib or pentavalent vaccine), poliomyelitis (oral polio vaccine or OPV), rotavirus (RV vaccine), and measles and rubella (MR vaccine).

In Tajikistan, the BCG vaccine is usually given within 3 days after birth. The first dose of the oral polio vaccine (polio-0) and birth dose of the hepatitis B monovaccine are given within 24 hours after birth, while the DPT-HepB-Hib and polio vaccines (excluding polio vaccine given at birth) are given at approximately age 2, 3, and 4 months. A first measles and rubella vaccination should have been given at or soon after age 12 months. The fifth dose of the polio vaccine (polio-4) is given at age 12 months, and the fourth dose of the DPT vaccine (DPT-4) is given at age 16-23 months.

The 2017 TjDHS collected information on the coverage of all of these vaccines among children born in the 3 years preceding the survey. The information obtained in the survey on differences in vaccination coverage among subgroups of children is useful for program planning and targeting resources towards areas most in need.

Information on vaccination coverage was obtained in two ways in the 2017 TjDHS: from written vaccination records, including child health cards (MOHSP forms 112 or 024), immunization cards (MOHPS form 63), immunization passports or other documents, and from mothers' verbal reports. In the 2017 TjDHS, for each child born in the 3 years before the survey, mothers were asked to show the interviewer the health card or any other documents used for recording the child's immunizations. If the health card, MOHPS form 63, immunization passport, or any other document was available, the interviewer copied the dates of each vaccination received. If a vaccination was not recorded in the card as being given, the mother was asked to recall whether that particular vaccination had been given. If the mother was not able to present the card for a child, she was asked to recall whether the child had received BCG, polio, DPT-HepB-Hib, hepatitis B, rotavirus, and measles vaccines. If she indicated that the child had received any of these vaccines, she was asked the number of doses that the child received.

In Tajikistan, child health cards (MOHSP forms 112 or 024) and immunization cards (MOHSP form 63) are maintained in the local health care facilities, or on rare occasions, kept by the guardian at home. In the event that the mother did not have either document, she was asked to recall her child's immunizations as described earlier. She was also asked for consent for survey personnel to obtain vaccination records for the child from the health facility where he/she received the vaccinations. After all interviews in a cluster were completed, the supervisor visited the local clinic to record information from the health cards of the children in the sample for whom permission was granted. In this survey, data were collected from both sources, when available.

Table 12 presents data on vaccination coverage among children age 12-23 months and 24-35 months, by background information. In the 2017 TjDHS, the immunization card or child health card, kept at home or in the health facility, was observed for 90% of the children age 12-23 months and 89% of the children age 24-35 months for whom vaccination data were obtained (data not shown). Thus, while most of the data in Table 12 are based on these medical records, in the case of children for whom a health card or immunization card was not located, the data are based on the mother's recall.

Tajikistan's Ministry of Health and Social Protection has adopted the World Health Organization (WHO) guidelines for childhood immunizations. These call for all children to receive all "basic" vaccinations. Children are considered to have received "all basic" vaccinations when they have received BCG vaccine, three doses of the DPT-HepB-Hib, three doses of the polio vaccines (excluding polio vaccine given at birth), and a single dose of measles vaccine. In the 2017 TjDHS, data on all basic vaccinations are

presented only for children age 24-35 months[3]. Since the measles-containing vaccine is given at 12 months, children eligible for the measles vaccination would be too young to be part of the 12-23 months age cohort that is presented in Table 12.

A second critical measure of vaccination coverage is the proportion of children age 12-23 months and 24-35 months who have received "all age-appropriate" vaccinations.

The Tajikistan immunization program considers a child age 12-23 months to have received all age-appropriate vaccinations if the child has received a BCG vaccination against tuberculosis, one dose of the hepatitis B vaccine at birth, three doses of the DPT-HepB-Hib vaccine (given at age 2, 3, and 4 months), four doses of oral polio vaccine (given at birth (polio-0) and at age 2, 3, and 4 months), and two doses of the rotavirus vaccine (given at age 2 months and at age 3 months).

A child who is age 24-35 months has received all age-appropriate vaccinations if they have received a fourth dose of the DPT vaccine given at 16-23 months, a fifth dose of the oral polio vaccine (polio-4) and a first dose of measles vaccine (both given at 12 months) in addition to all of the age-appropriate vaccinations relevant for a child age 12-23 months[4].

Children age 12-23 months are the youngest cohort to have reached the age by which a child should have received all age-appropriate vaccinations. All basic vaccinations are not presented for the age group 12-23 months, because children eligible for the measles vaccination would be too young to be part of the 12-23 months age cohort that is presented in Table 12. Table 12 shows that 79% of children age 12-23 months received all age-appropriate vaccinations. Coverage for Dushanbe, GBAO, and DRS regions are below the national average. In addition, the proportion of children who received all age-appropriate vaccinations is lower for those living in urban areas compared with rural areas (68% versus 81%). Only 3% of children had not received any vaccinations. Ninety-five percent of children received the BCG vaccination, 94% the birth dose of polio, 94% of the birth dose of hepatitis B, 92% the first dose of DPT-HepB-Hib, 92% the first dose of oral polio vaccine (OPV), and 89% the first dose of rotavirus vaccine (RV). Coverage rates decline for subsequent doses, with 87% of children receiving the third dose OPV, 87% receiving the recommended three doses of DPT-HepB-Hib vaccines, and 86% the two doses of RV.

[3] In the 2012 TjDHS, data on all basic vaccinations were presented for children age 18-29 months, since the measles containing vaccine was given at 12 months. The 18-29 months age cohort is no longer recommended for countries where the measles-containing vaccine is given at 12 months and has been replaced with the 24-35 months age cohort.
[4] Effective 1 January 2015, the recommended schedule of childhood vaccinations changed, and children born after that date should receive the first dose of the rotavirus vaccine at 2 months and the second dose at 3 months. However, given the timing of the TjDHS fieldwork, children eligible for the new vaccination schedule would be too young to be part of the 24-35 months cohorts that are presented in Table 12.

Table 12 Vaccinations by background characteristics

Percentage of children age 12-23 months and children age 24-35 months who received specific vaccines at any time before the survey (according to a vaccination or a health card or the mother's report), percentage with all basic vaccinations, and percentage with all age-appropriate vaccinations, according to background characteristics, Tajikistan DHS 2017

	Children age 12-23 months														Children age 24-35 months					
Background characteristic	BCG	HepB (birth dose)[1]	DPT-HepB-Hib[2] 1	DPT-HepB-Hib[2] 2	DPT-HepB-Hib[2] 3	Polio[3] 0	Polio[3] 1	Polio[3] 2	Polio[3] 3	Rotavirus 1	Rotavirus 2	All age-appropriate vaccinations[4]	No vaccinations	Number of children	Measles and rubella (MR)	DPT4	Polio4	All basic vaccinations[5]	All age-appropriate vaccinations[6]	Number of children
Sex																				
Male	95.2	93.8	92.0	89.4	86.5	93.8	92.5	90.8	86.7	89.4	85.2	79.2	3.4	724	87.1	74.1	83.3	81.5	69.9	615
Female	95.3	93.6	92.9	90.0	87.4	93.9	92.4	91.1	87.5	89.4	86.0	78.1	2.5	670	87.5	75.3	84.3	82.8	70.5	654
Birth order																				
1	95.4	93.4	91.7	89.9	87.6	92.9	92.8	91.3	88.1	89.7	86.3	78.5	3.0	388	88.6	72.3	83.9	82.3	68.6	384
2-3	94.6	93.0	91.9	88.7	85.8	93.1	91.5	89.8	86.6	88.6	84.8	78.2	3.5	678	86.9	74.9	84.1	82.3	70.8	602
4-5	96.4	95.9	93.8	90.9	87.6	96.8	93.9	92.6	86.4	90.4	85.7	78.4	1.6	265	84.7	77.2	81.6	79.4	71.3	223
6+	96.7	94.6	95.2	94.0	91.9	95.1	94.0	94.0	88.8	92.4	89.0	85.9	2.9	63	92.3	79.7	87.9	88.9	70.3	61
Residence																				
Urban	93.3	91.2	88.1	83.3	78.7	91.6	88.2	86.2	80.8	84.0	77.1	68.2	3.4	269	86.1	69.5	81.0	76.3	62.6	265
Rural	95.7	94.3	93.4	91.2	88.9	94.4	93.4	92.1	88.6	90.7	87.6	81.2	2.9	1,125	87.6	76.1	84.5	83.7	72.2	1,004
Region																				
Dushanbe	95.3	92.2	88.9	79.4	71.5	88.3	87.0	83.8	74.3	78.6	65.9	56.3	4.7	80	86.8	66.9	75.3	70.5	61.9	80
GBAO	92.4	82.9	89.0	81.3	76.1	92.2	89.2	83.7	73.3	89.5	77.2	58.8	3.0	19	80.8	60.6	74.0	69.7	53.0	24
Sughd	99.7	98.9	98.5	97.1	95.8	99.4	98.2	98.2	94.4	97.4	95.0	91.3	0.0	383	95.3	82.9	92.1	91.8	79.4	361
DRS	88.0	85.0	83.6	78.6	73.8	87.3	84.6	81.3	75.1	79.8	74.4	61.5	7.7	326	78.1	63.0	72.8	68.8	55.1	324
Khatlon	96.5	95.8	93.9	92.7	91.0	94.7	93.9	92.8	91.2	91.0	88.5	83.7	2.0	585	87.9	78.5	86.8	86.4	75.7	479
FTF districts	96.1	96.1	94.6	94.6	94.2	93.2	94.6	94.6	94.6	93.7	93.4	89.3	3.1	326	91.7	83.0	89.1	90.3	80.7	278
Education																				
None/primary	94.4	95.8	92.5	90.5	89.2	91.0	93.3	91.8	90.3	90.1	86.7	80.8	2.7	123	85.8	69.8	82.6	80.1	65.1	103
General basic	94.2	91.1	90.5	87.3	82.8	92.5	90.5	88.9	83.9	87.3	83.1	74.0	4.3	507	84.5	69.6	79.2	78.0	63.4	470
General secondary	96.1	94.9	93.1	90.3	89.1	95.1	92.8	91.1	88.3	90.1	86.7	81.3	2.1	563	88.9	80.9	87.5	86.0	77.7	510
Professional primary/middle	99.0	97.7	97.9	96.6	93.6	99.0	96.6	96.6	93.7	95.3	89.1	85.9	1.0	102	89.7	77.1	90.0	84.0	72.4	96
Higher	93.2	93.8	92.3	90.2	86.4	92.2	94.4	93.4	85.8	89.1	86.5	77.6	3.7	99	92.1	69.8	81.5	82.1	66.6	90
Wealth quintile																				
Lowest	94.0	93.8	91.0	90.8	89.1	93.1	92.1	91.0	88.0	88.8	85.5	81.6	4.1	257	84.3	72.0	80.7	78.0	68.1	243
Second	95.5	93.5	93.0	91.0	88.5	94.6	93.5	92.6	89.6	89.7	87.2	80.6	3.3	316	90.5	77.4	87.5	88.4	73.4	274
Middle	95.9	93.7	94.3	92.5	90.3	93.8	93.4	92.2	89.6	91.3	88.8	80.7	2.0	326	83.6	75.3	82.7	80.3	71.7	261
Fourth	95.2	94.0	92.8	88.7	86.3	94.5	92.7	90.8	85.9	89.9	85.7	78.1	2.2	282	90.5	76.6	85.8	85.6	70.5	279
Highest	95.6	93.6	89.8	83.3	77.8	92.9	89.4	86.6	79.9	86.2	77.9	69.9	3.5	213	87.1	71.1	81.1	76.4	66.4	212
Total	95.3	93.7	92.4	89.7	87.0	93.9	92.4	90.9	87.1	89.4	85.6	78.7	3.0	1,394	87.3	74.7	83.8	82.1	70.2	1,269

BCG = Bacille Calmette-Guérin
DPT = Diphtheria-pertussis-tetanus
HepB = Hepatitis B
Hib = *Haemophilus influenzae* type b
FTF = Feed the Future

Note: Children are considered to have received the vaccine if it was either written on the child's immunization or health cards or reported by the mother. For children whose vaccination information is based on the mother's report, date of vaccination is not collected. The proportions of vaccinations given during the first and second years of life are assumed to be the same as for children with a written record of vaccination.

[1] For children whose vaccination information is based on the mother's report, children reported to have received HepB (birth dose) received the vaccine within 24 hours after birth. For children whose vaccination information is based on the written record of vaccination, children are considered to have received hepatitis B (birth dose) if this vaccine is recorded on their card, regardless of when the dose was administered.

[2] DPT-HepB-Hib is sometimes referred to as pentavalent.

[3] Polio-0 is the polio vaccination given at birth.

[4] Age-appropriate vaccinations for those age 12-23 months: BCG, hepatitis B (birth dose), three doses of DPT-HepB-Hib, four doses of oral polio vaccine (including polio vaccine given at birth), and two doses of rotavirus vaccine.

[5] Basic vaccinations are defined as BCG, three doses of DPT-HepB-Hib, three doses of oral polio vaccine (excluding polio vaccine given at birth), and one dose of measles and rubella (MR) vaccine.

[6] Age-appropriate vaccinations for those age 24-35 months are BCG, hepatitis B (birth dose), three doses of DPT-HepB-Hib, a fourth dose of DPT vaccine, five doses of oral polio vaccine (including polio-0 vaccine given at birth and polio-4 dose), and one dose of measles and rubella (MR) vaccine. The rotavirus vaccination is excluded because it was introduced in the routine immunizations for children in Tajikistan in January 2015, thus children eligible for the new vaccination schedule would be too young to be part of the 24-35-month age cohorts that are presented in Table 12.

Among children age 24-35 months, 87% have received the first dose of measles vaccine, 75% have received the fourth dose of DPT and 84% have received the fifth dose of polio vaccine (polio-4 dose).

Table 12 also presents data on vaccination coverage among children age 24-35 months who have received all basic vaccinations. Overall, the data show that 82% of children age 24-35 months had received all basic WHO-recommended vaccinations by the date of the interview.

Table 12 also presents data on vaccination coverage among children age 24-35 months who have received all age-appropriate vaccinations. Given the timing of the Tajikistan DHS fieldwork, the rotavirus vaccine that was introduced in January 2015 to the routine schedule of childhood vaccinations was not included to calculation of all age-appropriate vaccinations for the 24-35-month age cohort. Children eligible for the new vaccination schedule would be too young to be part of the 24-35 month age cohort presented in Table 12. Overall, only 70% of children in this older cohort have received all age-appropriate vaccinations. The proportion with all age-appropriate vaccinations is lower for those living in urban areas than in rural areas (63% versus 72%). Coverage is lowest in GBAO (53%) and DRS (55%) regions.

Basic vaccination coverage among children age 24-35 months from the 2017 TjDHS cannot be directly compared with the same indicators from the 2012 Tajikistan DHS. The 2012 TjDHS data on all basic vaccinations were presented for children age 18-29 months because the measles containing vaccine was given at 12 months. The 18-29 months age cohort is no longer recommended for countries where the measles vaccine is given at 12 months and has been replaced with the 24-35 months age cohort.

Treatment of Childhood Illnesses

Pneumonia and other acute respiratory infections (ARIs), 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. To obtain information on health-seeking behaviors surrounding these common childhood illnesses, mothers were asked if any of their children under age 5 had experienced the following symptoms in the 2 weeks preceding the survey: a cough accompanied by short, rapid breathing or difficulty breathing as a result of a chest-related problem (symptoms of an acute respiratory infection); a fever, or an episode of diarrhea. Mothers who indicated their child had experienced such symptoms were then asked if treatment or advice was sought from a health facility or provider. For children with diarrhea, the mother was asked additional questions about treatment given to the child. Overall, 1% of children under age 5 showed symptoms of an ARI, 9% exhibited fever, and 13% 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 13 shows that treatment from a health facility or provider was sought for 44% of the children with fever symptoms, and 49% of the children with diarrhea. Sixty-two percent of children with diarrhea received fluid from an oral rehydration salt (ORS) packet, 20% were given zinc supplements, and 15% were given both ORS and zinc supplements.

Table 13 Treatment for fever and diarrhea

Among children under age 5 who had a fever in the 2 weeks preceding the survey, percentage for whom advice or treatment was sought, and among children under age 5 who had diarrhea during the 2 weeks preceding the survey, percentage for whom advice or treatment was sought, percentage given a fluid made from oral rehydration salt (ORS) packets, percentage given zinc, and percentage given ORS and zinc, according to background characteristics, Tajikistan DHS 2017

	Children with fever		Children with diarrhea				
Background characteristic	Percentage for whom advice or treatment was sought[1]	Number of children	Percentage for whom advice or treatment was sought[1]	Percentage given fluid from ORS packet	Percentage given zinc	Percentage given ORS and zinc	Number of children
Age in months							
<6	51.9	51	64.5	41.8	8.2	5.5	70
6-11	44.7	99	55.9	68.6	21.9	17.6	138
12-23	53.1	178	53.9	68.3	17.7	13.1	288
24-35	43.4	102	41.3	56.9	22.1	16.8	171
36-47	30.5	93	32.3	62.5	25.4	18.8	102
48-59	29.6	65	41.3	50.5	20.6	12.3	63
Sex							
Male	44.1	305	49.5	60.3	18.6	13.5	455
Female	43.4	283	48.3	63.4	20.9	15.9	378
Residence							
Urban	54.3	119	53.4	65.9	25.6	19.9	169
Rural	41.1	469	47.8	60.6	18.2	13.3	664
Region							
Dushanbe	44.2	27	48.8	71.0	36.5	25.8	39
GBAO	29.9	17	45.9	64.0	32.3	29.4	12
Sughd	49.0	72	46.7	66.9	18.4	16.3	122
DRS	44.1	143	47.9	64.2	18.0	11.8	197
Khatlon	43.1	328	50.1	58.4	19.0	14.0	463
FTF districts	57.1	88	52.9	43.9	29.3	22.7	152
Mother's education							
None/primary	(40.9)	55	44.5	52.0	30.1	19.7	80
General basic	44.8	233	49.8	63.8	17.4	12.6	307
General secondary	43.0	225	49.2	60.7	19.6	14.7	337
Professional primary/ middle	(52.8)	30	46.0	76.8	19.1	17.7	56
Higher	39.4	44	52.4	54.1	18.2	14.7	52
Wealth quintile							
Lowest	36.1	153	42.1	55.8	13.7	8.9	186
Second	45.9	136	47.7	59.7	15.3	9.4	209
Middle	35.9	119	55.2	64.0	22.8	17.8	171
Fourth	57.7	96	54.6	68.4	22.4	18.6	146
Highest	49.4	84	45.8	62.9	28.7	23.0	121
Total	43.7	588	48.9	61.7	19.7	14.6	833

Note: Figures in parentheses are based on 25-49 unweighted cases.
FTF = Feed the Future
[1] Excludes advice or treatment from a traditional practitioner

Children under age 2 were more likely than older children to visit a health professional or a health facility to treat the fever or diarrhea. Children of urban mothers were more likely than children of rural mothers to receive treatment from a health facility or health provider when they were sick with a fever or diarrhea. Use of ORS and zinc supplements increases with wealth of the mother and is more widespread among children in Dushanbe and GBAO than in other regions. However, differences by background characteristics for some categories should be interpreted with caution as the estimates are based on very small numbers of children who were sick with symptoms of fever or diarrhea. Because few children were sick with symptoms of an ARI, treatment practices for ARIs were not presented in the table.

Nutritional Status of Children

Anthropometric indicators for young children based on weight (kg) and height/length (cm) were collected in the 2017 TjDHS to provide outcome measures of nutritional status. 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 2 standard deviations (-2 SD) from the reference median include those that are moderately and severely (-3 SD) malnourished. Children who fall above 2 standard deviations (+2 SD) from the reference median are considered heavy for their height or overweight.

A total of 6,167 children (unweighted) under age 5 were eligible for weight and height measurements. For 98% of these children, complete and credible data on height, weight, and age were obtained. Measurements were missing for 1% of the children because a child was not present, the parents refused or the child was ill, or for some other reason. Another 1% of the children were considered to have implausibly high or low values for their height or weight measures.

Table 14 and Figure 5 show nutritional status for children under age 5, according to the three anthropometric indices. Height-for-age is a measure of linear growth. A child who is below -2 SD from the reference median for height-for-age is considered short for his or her age, or stunted, which is a condition that reflects the cumulative effects of chronic malnutrition. The data show that 17% of children under age 5 are considered to be short for their age or stunted (below -2 SD), and 5% are severely stunted (below -3 SD). Female and male children are equally likely to be stunted. Children residing in urban areas are as likely to be stunted as children living in rural areas. There are some regional variations. Stunting ranges from a high of 32% in GBAO region to a low of 15% in DRS region. The prevalence of stunting generally decreases with increasing levels of the mother's education. Similarly, stunting generally decreases with increasing wealth quintiles, from 21% among children in the lowest wealth quintile to 14%-17% of children in the fourth and highest wealth quintiles.

Children whose weight-for-height is below minus 2 standard deviations (-2 SD) from the median of the reference population are considered wasted (or thin). Wasting represents the failure to receive adequate nutrition in the period immediately before the survey, and typically is the result of recent illness episodes, especially diarrhea, or of a rapid deterioration in food supplies. Six percent of Tajik children are wasted, and 2% are severely wasted. Wasting levels are highest for children under age 6 months (14%) and lowest for children age 36-47 months (2%). Wasting is slightly greater among children in urban areas (9%) than in rural areas (5%). By region, wasting ranges from a high of 17% in Dushanbe to a low of 4% in Sughd region. The proportion of children who are wasted increases with increasing levels of the mother's education and increasing wealth quintile.

Table 14 also shows the proportion of children who are more than 2 SD above the reference median. These children are considered to be overweight. Three percent of children under age 5 fall into this category. The proportion of children who are heavy for their height is highest in Dushanbe (8%), followed by GBAO (7%), and is lowest in Khatlon region (2%).

Children whose weight-for-age is below minus 2 standard deviations (-2 SD) from the median of the reference population are considered underweight. The measure reflects the effects of both acute and chronic malnutrition. As shown in Table 14, 8% of Tajik children are underweight, with 2% classified as severely underweight. Peak levels of low weight-for-age are found among children age 6-8 and 9-11 months (11% each). Weight-for-age below -2 SD does not vary greatly by sex, residence, mothers' education, or wealth. By region, underweight ranges from a high of 16% in GBAO region to a low of 5% in Sughd region.

Comparing data on anthropometric measures in the 2012 and 2017 TjDHS surveys, data show a downward trend and reveal that all three nutritional status indices (stunting, wasting, and underweight) have improved in the last 5 years. Stunting decreased from 26% in 2012 to 17% in 2017, and the proportion of underweight children has decreased from 12% in 2012 to 8% in 2017. Wasting also decreased in this period from 10% in 2012 to 6% in 2017. However, the proportion of overweight (weight-for-height above +2 SD) children has increased from 1% in 2012 to 3% in 2017. Overall, the 2017 TjDHS shows that Tajik children are more likely to experience stunting than to be wasted, overweight, or underweight.

Table 14 Nutritional status of children

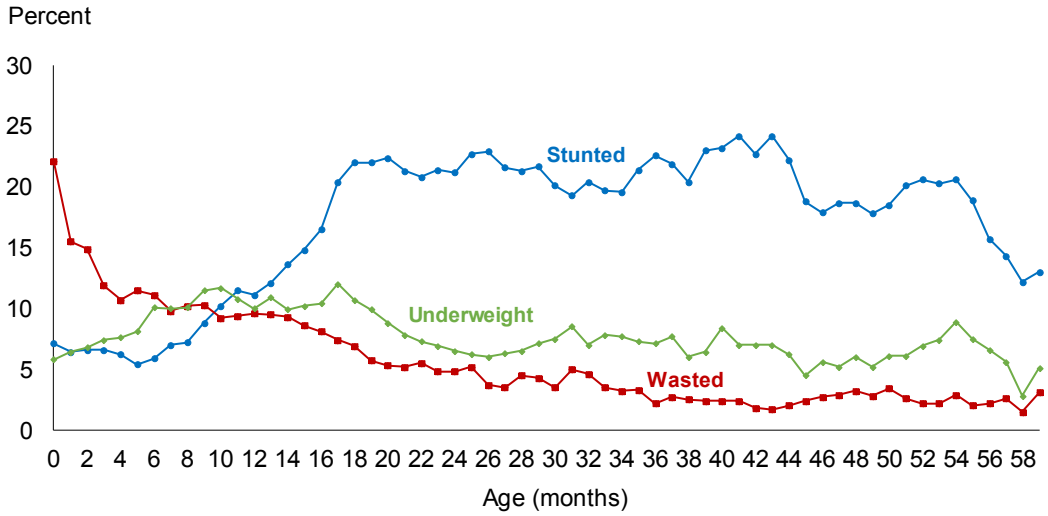
Percentage of children under age 5 classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, according to background characteristics, Tajikistan DHS 2017

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	1.3	6.7	0.3	620	5.7	13.7	4.3	-0.4	620	2.7	7.2	2.8	-0.1	625
6-8	2.0	5.3	-0.0	316	4.2	11.2	4.4	-0.4	322	3.4	10.8	3.5	-0.4	324
9-11	3.4	10.8	-0.4	323	2.3	9.0	2.9	-0.3	323	2.8	11.1	1.9	-0.4	323
12-17	4.5	14.2	-0.6	703	2.1	8.7	2.1	-0.3	700	2.8	10.1	1.1	-0.5	704
18-23	6.6	21.1	-0.9	769	2.1	5.8	3.3	-0.1	768	1.8	8.4	1.3	-0.5	773
24-35	5.1	21.8	-1.1	1,357	1.3	3.9	3.4	0.1	1,355	0.9	7.1	0.4	-0.5	1,359
36-47	5.2	21.3	-1.1	1,383	0.7	2.2	4.3	0.1	1,381	1.2	6.2	0.2	-0.6	1,384
48-59	4.5	17.8	-1.1	1,215	0.7	2.7	2.3	0.0	1,214	1.3	6.4	0.5	-0.7	1,216
Sex														
Male	5.0	17.7	-0.8	3,364	2.1	6.1	3.5	-0.1	3,359	2.0	8.2	1.0	-0.5	3,375
Female	4.1	17.1	-0.8	3,323	1.6	5.0	3.2	-0.1	3,325	1.5	7.1	1.1	-0.5	3,332
Mother's interview status														
Interviewed	4.5	17.5	-0.8	6,544	1.8	5.5	3.3	-0.1	6,541	1.7	7.6	1.0	-0.5	6,563
Not interviewed, but in household	1.7	9.1	-0.5	53	4.5	12.8	6.8	-0.1	52	5.5	11.7	4.6	-0.4	53
Not interviewed, not in household[3]	6.7	15.7	-0.8	91	1.9	6.6	1.7	0.1	91	1.4	5.7	0.5	-0.4	91
Residence														
Urban	5.8	17.3	-0.7	1,397	3.0	8.6	5.3	-0.1	1,390	2.3	8.9	1.8	-0.5	1,404
Rural	4.2	17.4	-0.8	5,290	1.5	4.8	2.8	-0.1	5,294	1.6	7.3	0.8	-0.5	5,303
Region														
Dushanbe	9.0	18.0	-0.5	409	7.6	16.6	8.0	-0.4	401	4.1	13.1	3.6	-0.6	414
GBAO	16.5	31.6	-1.2	116	3.2	9.8	6.7	-0.1	116	4.3	15.5	0.6	-0.8	119
Sughd	4.1	16.4	-0.7	1,929	1.1	3.5	4.5	0.2	1,931	0.9	4.8	1.0	-0.3	1,933
DRS	4.1	15.3	-0.8	1,579	1.2	4.6	2.6	-0.1	1,581	1.6	7.1	0.9	-0.5	1,583
Khatlon	3.9	18.6	-0.9	2,655	1.8	5.8	2.1	-0.2	2,655	1.9	8.8	0.7	-0.6	2,658
FTF districts	3.4	17.6	-0.9	1,473	2.3	6.2	2.6	-0.1	1,475	1.6	7.7	0.7	-0.6	1,477
Mother's education[4]														
None/primary	4.5	17.8	-0.9	559	1.9	4.1	2.1	-0.1	555	0.8	6.3	0.7	-0.6	560
General basic	4.8	18.5	-0.9	2,422	2.0	5.8	2.7	-0.1	2,425	2.2	8.0	0.8	-0.6	2,431
General secondary	4.3	18.0	-0.8	2,607	1.6	5.4	3.7	-0.0	2,606	1.5	8.1	1.2	-0.5	2,615
Professional primary/ middle	2.2	11.6	-0.6	486	1.0	4.1	3.8	0.0	486	1.3	3.8	0.7	-0.3	487
Higher	6.1	14.3	-0.5	523	3.1	7.9	5.3	-0.0	521	2.4	9.0	1.8	-0.3	523
Wealth quintile														
Lowest	5.7	21.3	-1.0	1,227	1.6	5.2	1.6	-0.2	1,228	1.9	8.7	0.9	-0.7	1,233
Second	4.0	18.4	-0.9	1,394	1.3	4.7	3.7	-0.0	1,397	1.9	7.4	0.5	-0.6	1,394
Middle	5.1	17.0	-0.8	1,466	1.8	6.0	2.6	-0.1	1,467	2.3	8.7	0.6	-0.5	1,471
Fourth	2.9	13.8	-0.7	1,496	1.3	4.3	3.2	0.1	1,492	0.7	5.5	1.1	-0.3	1,494
Highest	5.4	17.2	-0.6	1,105	3.5	8.3	6.0	-0.0	1,101	1.9	8.1	2.2	-0.4	1,114
Total	4.5	17.4	-0.8	6,688	1.8	5.6	3.3	-0.1	6,684	1.7	7.6	1.0	-0.5	6,707

Note: Each of the indices is expressed in standard deviation units (SD) from the median of the WHO Child Growth Standards.
FTF = Feed the Future
[1] Recumbent length is measured for children under age 2; 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.

The nutritional status of children varies with age, as shown in Figure 5. After being fairly stable in the first 6 months of life, the prevalence of stunting sharply increases from age 7 months through the first year and a half of life before declining in the third through fifth year of life. The level of stunting oscillates between 20% and 25%, from age 17 to 43 months, after which it declines.

Figure 5 **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.

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. Food should include a variety of options, such as peeled, cooked, and mashed vegetables, grains, lentils, and fruit, some oil, and also meat, eggs, chicken, and dairy products to provide adequate nourishment (Pan American Health Organization 2002).

The 2017 TjDHS collected data on infant and young child feeding (IYCF) practices for all children born in the 2 years preceding the survey. Table 15 shows breastfeeding practices by child's age. Contrary to the recommendation that children under age 6 months be exclusively breastfed, only 36% of the infants under age 6 months were found to be exclusively breastfed. In addition to breast milk, 32% of infants consume plain water, 3% consume nonmilk liquids, 12% consume other milk, and 12% consume complementary foods.

Fifty-seven percent of children age 6-8 months and 65% of children age 6-11 months receive timely complementary foods, and 56% of children age 18-23 months have been weaned.

Twenty-nine 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. This practice starts early, almost one-third of infants age 2-3 months are already using a bottle with a nipple, and this proportion is even higher among those age 4-5 months (43%).

Exclusive breastfeeding among children younger than age 6 months has increased just slightly over the last 5 years, from the 34% in the 2012 TjDHS to the current 36% in the 2017 TjDHS. The proportion of children under 6 months receiving complementary foods in addition to breast milk has increased from 5% in 2012 to 12% in this survey.

Table 15 Breastfeeding status by age

Percent distribution of youngest children under age 2 who are living with their mother, by breastfeeding status; the percentage currently breastfeeding; and the percentage of all children under age 2 using a bottle with a nipple, according to age in months, Tajikistan DHS 2017

	Breastfeeding status										
Age in months	Not breast-feeding	Exclusively breast-feeding	Breast-feeding and consuming plain water only	Breast-feeding and consuming nonmilk liquids[1]	Breast-feeding and consuming other milk	Breast-feeding and consuming comple-mentary foods	Total	Percentage currently breast-feeding	Number of youngest children under age 2 living with the mother	Percentage using a bottle with a nipple	Number of all children under age 2
0-1	5.7	55.2	25.8	0.8	6.4	6.1	100.0	94.3	196	12.3	197
2-3	4.5	37.5	33.1	1.7	14.6	8.6	100.0	95.5	195	32.9	197
4-5	5.9	14.8	35.6	5.6	16.0	22.0	100.0	94.1	197	42.8	197
6-8	8.0	7.2	17.0	3.9	7.2	56.7	100.0	92.0	307	56.7	309
9-11	11.7	2.0	5.8	2.1	5.3	73.2	100.0	88.3	301	51.3	305
12-17	30.8	1.0	0.9	1.6	2.0	63.7	100.0	69.2	642	51.6	667
18-23	55.9	0.0	0.7	0.3	0.9	42.2	100.0	44.1	594	32.3	727
0-3	5.1	46.4	29.5	1.2	10.5	7.3	100.0	94.9	391	22.6	393
0-5	5.4	35.8	31.5	2.7	12.4	12.3	100.0	94.6	588	29.3	590
6-9	9.3	5.8	14.5	3.5	7.3	59.6	100.0	90.7	394	56.3	397
6-11	9.8	4.6	11.4	3.0	6.2	64.9	100.0	90.2	608	54.0	614
12-15	27.8	1.5	1.4	1.8	2.0	65.6	100.0	72.2	436	53.6	450
12-23	42.9	0.5	0.8	1.0	1.5	53.4	100.0	57.1	1,237	41.5	1,394
20-23	62.4	0.0	0.2	0.5	0.7	36.2	100.0	37.6	393	29.5	503

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, no-milk liquids, other milk, and complementary foods (solids and semisolids) are hierarchical and mutually exclusive, and their percentages add to 100%. Thus children who receive breast milk and nonmilk liquids and who do not receive other milk and who do not receive complementary foods are classified in the nonmilk 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] Nonmilk liquids include 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:

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

2. 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.

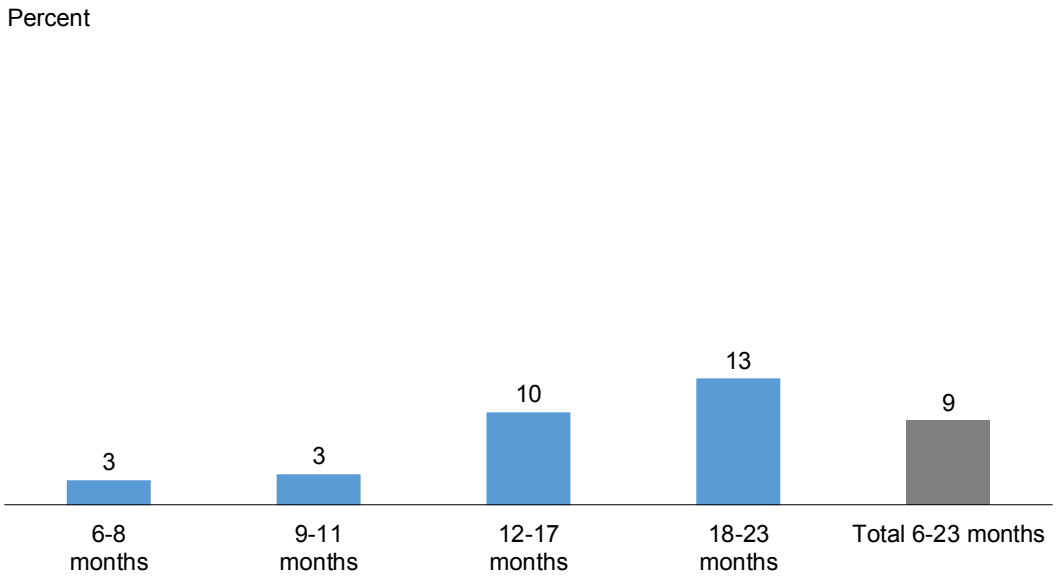
3. Fed the minimum recommended number of times per day, according to their age and breastfeeding status:

    a) 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.

    b) 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 6 shows the percentage of children being fed the minimum acceptable diet, by age. In total, only 9% of children age 6-23 months have met the criteria for a minimum acceptable diet. Children age 6-8 months and 9-11 months (3% each) are much less likely than children in other age groups to consume an acceptable diet (10%-13%). The proportion of children 6-23 months who are fed the minimal acceptable diet has declined over the last 5 years from 20% in the 2012 TjDHS to 9% in the 2017 TjDHS.

Figure 6 **Minimum acceptable diet according to age, in months**



Micronutrient Intake among Children

Micronutrient deficiency is a major contributor to childhood morbidity and mortality. Children can receive micronutrients from foods, fortified food, and direct supplementation. The 2017 TjDHS collected information on consumption of foods rich in vitamin A and iron, vitamin A and iron supplementation (sprinkles or other forms), and deworming status for children age 6-59 months. Household salt samples were also tested for iodine levels.

Table 16 presents data regarding the intake of key micronutrients among children age 6-59 months. The table shows, by background characteristics, the percentage of youngest children age 6-23 months who are living with their mother and who consumed foods rich in vitamin A and iron on the day or night preceding the survey; and among all children age 6-23 months percentage given micronutrient containing sprinkles in the 7 days preceding the survey. In addition, the table shows the proportion of all children age 6-59 months who received vitamin A supplements or deworming medication in the 6 months preceding the survey and iron supplements in the week before the survey. The table also presents information on children age 6-59 months who live in households with iodized salt.

Table 16 shows that more than 4 in 10 children age 6-23 months living with their mother consumed foods rich in vitamin A in the 24 hours preceding the survey (46%), and over one-third (38%) consumed foods rich in iron. The proportion of children who eat foods rich in vitamin A and iron steadily increases with age. With respect to foods rich in vitamin A, the proportion rises from 13% of children age 6-8 months to 66% of those age 18-23 months. A similar pattern is observed for foods rich in iron, with consumption highest among children age 18-23 months (57%). Children who are not breastfeeding are more likely to receive vitamin A-rich and iron-rich foods than breastfeeding children. There is no major difference in the percentages of children who consumed foods rich in vitamin A or iron in the past 24 hours, by gender. However, children living in urban areas are more likely to consume vitamin A-rich foods (51%) than children living in rural areas (45%). Mother's education is generally positively associated with children consuming these foods that provide important micronutrients.

Table 16 also shows that among all children age 6-23 months, only 17% were given micronutrient-containing sprinkles in the 7 days preceding the survey. The proportion of children who were given sprinkles increases with age. The difference between urban and rural areas is small, although rural children are slightly more likely to be given sprinkles. Children born to mothers with no education or with only primary education are more likely to be given sprinkles in the week before the survey. By region, the proportion of children who were given sprinkles ranges from a high of 29% in Khatlon to a low of 6% in Sughd region.

Table 16 Micronutrient intake among children

Among youngest children age 6-23 months who are living with their mother, percentages who consumed vitamin A-rich and iron-rich foods in the 24 hours preceding the survey; among all children age 6-23 months, percentage given micronutrient-containing sprinkles in the 7 days preceding the survey; among all children age 6-59 months, percentages who were given iron supplements in the 7 days preceding the survey, who were given vitamin A supplements in the 6 months preceding the survey, and who were given deworming medication in the 6 months preceding the survey; and among all children age 6-59 months who live in households in which salt was tested for iodine, percentage who live in households with iodized salt, according to background characteristics, Tajikistan DHS 2017

	Among youngest children age 6-23 months living with the mother:			Among all children age 6-23 months:		Among all children age 6-59 months:				Among children age 6-59 months living in households tested for iodized salt:	
Background characteristic	Percentage who consumed foods rich in vitamin A in last 24 hours[1]	Percentage who consumed foods rich in iron in last 24 hours[2]	Number of children	Percentage given micro-nutrient-containing sprinkles in past 7 days	Number of children	Percentage given iron supple-ments in past 7 days[3]	Percentage given vitamin A supple-ments in past 6 months[4]	Percentage given deworming medication in past 6 months[3,5]	Number of children	Percentage living in households with iodized salt[6]	Number of children
Age in months											
6-8	13.0	9.5	307	12.9	309	22.6	54.7	4.1	309	93.6	308
9-11	26.8	19.1	301	17.1	305	22.5	74.1	8.0	305	93.1	305
12-17	51.5	41.8	642	17.4	667	25.4	86.1	10.3	667	90.3	665
18-23	66.3	57.4	594	18.9	727	26.4	86.3	14.2	727	89.6	726
24-35	na	na	na	na	na	27.9	85.8	14.8	1,269	90.8	1,267
36-47	na	na	na	na	na	25.7	79.6	19.1	1,294	90.3	1,292
48-59	na	na	na	na	na	23.7	64.3	17.8	1,135	90.6	1,128
Sex											
Male	46.6	39.0	964	17.5	1,040	25.6	78.3	15.3	2,889	90.5	2,880
Female	45.0	36.4	881	16.9	967	25.5	77.5	14.4	2,817	90.9	2,811
Breastfeeding status											
Breastfeeding	38.2	31.1	1,255	17.4	1,255	25.1	78.6	9.3	1,360	91.4	1,358
No breastfeeding	62.0	52.0	590	16.9	752	25.6	77.7	16.6	4,346	90.5	4,333
Mother's age at birth											
<20	45.2	33.9	117	19.3	143	22.6	77.1	14.1	476	90.1	476
20-29	46.5	38.4	1,368	16.8	1,495	25.5	78.3	14.9	4,191	90.7	4,181
30-39	43.5	36.6	345	16.9	354	26.3	76.6	15.2	988	91.3	983
40-49	*	*	15	*	16	38.9	77.5	11.0	52	86.9	52
Residence											
Urban	50.7	38.9	354	13.5	381	25.8	72.5	10.7	1,211	95.3	1,203
Rural	44.7	37.5	1,491	18.1	1,626	25.4	79.4	15.9	4,494	89.5	4,488
Region											
Dushanbe	44.1	31.7	109	15.3	118	31.9	60.2	11.0	378	97.3	376
GBAO	59.5	43.2	27	21.4	29	30.6	60.8	11.6	93	93.0	92
Sughd	64.2	51.8	535	6.4	564	10.3	80.0	7.8	1,621	96.3	1,619
DRS	37.2	30.2	434	9.4	471	19.0	72.7	22.9	1,348	86.9	1,344
Khatlon	37.4	32.7	740	29.2	825	39.0	83.2	15.8	2,266	87.8	2,260
FTF districts	36.5	31.3	418	28.7	450	35.6	83.9	15.8	1,275	91.9	1,271
Mother's education											
None/primary	37.8	30.9	159	26.3	170	28.4	81.8	14.1	493	89.5	493
General basic	41.5	32.5	669	18.3	731	26.1	77.4	18.9	2,120	87.7	2,115
General secondary	49.0	41.2	738	16.5	798	24.6	77.8	12.3	2,224	92.4	2,218
Professional primary/ middle	53.5	46.4	139	9.1	155	24.2	81.3	12.1	417	92.2	415
Higher	51.5	44.1	139	13.6	154	25.3	73.2	11.5	451	96.3	449
Wealth quintile											
Lowest	37.3	30.9	332	14.8	363	30.1	75.7	16.0	1,052	84.7	1,049
Second	44.3	36.9	402	19.8	445	25.1	79.2	15.3	1,210	88.1	1,210
Middle	51.2	44.0	421	21.2	456	25.3	79.7	17.1	1,240	91.4	1,238
Fourth	44.4	36.2	401	15.4	434	22.1	82.4	13.5	1,245	93.6	1,241
Highest	52.0	39.9	289	13.0	310	25.8	70.6	11.8	959	95.9	953
Total	45.8	37.8	1,845	17.2	2,008	25.5	77.9	14.8	5,706	90.7	5,691

Note: An asterisk denotes a figure based on fewer than 25 unweighted cases that has been suppressed.
na = Not applicable
FTF = Feed the Future
[1] Includes red sweet pepper, pumpkin, yellow squash, carrots, dark green leafy vegetables, ripe or dried apricots, dried peaches, persimmon, and other locally grown fruits and vegetables that are rich in vitamin A
[2] Includes meat (including organ meat), fish, poultry, and eggs
[3] Based on mother's recall
[4] Based on both mother's recall and the vaccination card (where available)
[5] Deworming for intestinal parasites is commonly done for helminths.
[6] Excludes children in households in which salt was not tested

The 2017 TjDHS also collected information on iron and vitamin A supplementation, as well as consumption of deworming medication. Among children age 6-59 months, 26% had taken an iron tablet in the 7 days preceding the survey. Consumption of iron supplements is highest in Khatlon region at 39% and lowest in Sughd region at 10%. Differences in iron supplementation by other background characteristics are small. Vitamin A supplements were much more frequently used than iron, with 78% of children age 6-59 months having consumed such supplements in the last 6 months. By and large, there was little variation across background characteristics, with the exception of age. Age has a curved relationship with the consumption of vitamin A supplements, rising from 55% among children age 6-8 months to a peak of 86% among children age 12-17 months and remaining at that level until age 24-35 months before falling back to 64% among children age 48-59 months.

Use of deworming medication presents a different pattern. Only 15% of children age 6-59 months used such medication in the last 6 months, but use varies across many background characteristics. It generally has a positive relationship with age, rising from 4% among children age 6-8 months to 19% among those age 36-47 months. Use also varies according to breastfeeding status, with only 9% of breastfeeding children consuming deworming medication, versus 17% among non-breastfeeding children. Rural children are more likely to consume such medication than their urban peers (16% compared with 11%, respectively). Use also varies dramatically across region, from a low of 8% in Sughd region to a high of 23% in DRS region.

Table 16 also presents information about the proportion of children age 6-59 months who live in households that use iodized salt. Fortified salt that contains 15 parts of iodine per million of salt (15 ppm) is considered adequate for the prevention of iodine deficiency (ICCIDD, UNICEF, and WHO 2001). To assess the use of iodized salt in Tajikistan, the 2017 TjDHS included salt testing at the household level using two types of the MBI rapid test kits, one for salt fortified with potassium iodate and another for salt fortified with potassium iodide. The MBI rapid test kit provides a qualitative indication of the presence or absence of iodine. To perform the test, interviewers asked households to provide a teaspoon of the salt that the household used for cooking. A recheck solution was used when the salt showed no change in color. Because salt in Tajikistan is commonly iodized with potassium iodate, the first test was performed using the MBI rapid test kit for salt fortified with potassium iodate. If the first test did not show the presence of iodine, a new salt sample was obtained and tested with the rapid testing kit for salt fortified with potassium iodide.

Table 16 shows that at the national level, 91% of children live in households that use iodized salt: 95% in urban areas and 90% in rural areas. The percentage of children living in households that use iodized salt ranges from 87% in DRS region to 97% in Dushanbe. Mother's education and household wealth are positively associated with the likelihood of children living in households that use iodized salt.

Household Iodized Salt Consumption

Salt used in the household is the most common vehicle for iodine fortification to prevent the public health concerns of iodine deficiency disorders. Since 1997, the government and donor community have addressed these disorders through the National Programme for Elimination of Iodine Deficiency Disorders, which requires that salt be iodized to 45 parts per million (ppm) (SCS 2007). A subsequent law (№ 344) regulating the production, distribution, and consumption of iodized salt in Tajikistan was adopted in 2002 (SCS 2007). According to the World Health Organization, a country's salt iodization program is considered to be on track to eliminate iodine deficiency when 90% of households use iodized salt.

Table 17 shows the proportion of households with iodized salt according to background characteristics. Salt was tested in all households, and 92% of the tested households were found to use salt with at least some iodine. While use of iodized salt was generally high across background characteristics, there were some notable differences. The region with the highest percent of iodized salt use was Dushanbe (97%), while Khatlon had the lowest (87%). There were also clear positive relationships between presence of iodized salt and household wealth. These results show some improvement in use of iodized salt over the last 5 years, an increase from 84% of households in 2012 to 92% of households in 2017.

Table 17 Presence of iodized salt in household

Among all households, percentage with salt tested for iodine content, percentage with salt in the household but the salt was not tested, and percentage with no salt in the household; and among households with salt tested, percentage with iodized salt, according to background characteristics, Tajikistan DHS 2017

	Among all households, percentage				Among households with tested salt:	
Background characteristic	With salt tested	With salt, but salt not tested[1]	With no salt in the household	Number of households	Percentage with iodized salt	Number of households
Residence						
Urban	99.3	0.1	0.7	2,390	95.8	2,373
Rural	99.6	0.1	0.3	5,453	90.0	5,433
Region						
Dushanbe	98.9	0.2	0.9	882	97.0	872
GBAO	98.9	0.0	1.1	204	94.6	201
Sughd	99.7	0.1	0.2	2,648	96.7	2,640
DRS	99.6	0.0	0.4	1,654	87.5	1,647
Khatlon	99.6	0.1	0.4	2,456	87.1	2,446
FTF districts	99.6	0.1	0.3	1,313	91.0	1,308
Wealth quintile						
Lowest	99.4	0.0	0.6	1,550	84.8	1,541
Second	99.8	0.1	0.1	1,396	90.0	1,393
Middle	99.6	0.1	0.3	1,397	92.4	1,392
Fourth	99.7	0.0	0.3	1,467	93.5	1,462
Highest	99.3	0.1	0.7	2,034	96.5	2,019
Total	99.5	0.1	0.4	7,843	91.7	7,806

FTF = Feed the Future
[1] Includes households in which salt could not be tested for technical or logistical reasons, including availability of test kits

Nutritional Status of Women

Low pre-pregnancy body mass index (BMI) and short stature of women are known risk factors for poor maternal and birth outcomes. In developing countries, maternal underweight is a leading risk factor for preventable death and diseases. The prevalence of overweight adults is also a growing concern. Overweight individuals are predisposed to a wide range of health problems such as diabetes and heart disease as well as poor birth outcomes for women. In many countries, though, chronic energy deficiency, characterized by a BMI of less than 18.5 among adults remains the predominant problem, leading to low work productivity and reduced resistance to illness.

The 2017 TjDHS includes measures of the height and weight of women age 15-49. These data are used to derive two measures of nutritional status: height and body mass index (BMI). Given the relationship between maternal stature and pelvic size, women's height can be useful in predicting the risk of difficulties in delivery. The risk of giving birth to low-weight babies is also higher among women of small stature. The cut-off point at which mothers are considered at risk because of short stature normally falls between 140 and 150 centimeters. The BMI is also used to measure thinness or obesity. It is defined as weight in kilograms divided by height in meters squared (kg/m^2). A BMI of less than 18.5 is used to define thinness or acute undernutrition. A BMI of 25 or higher usually indicates overweight, and a BMI of 30 or higher indicates obesity.

Table 18 presents the height analysis for 10,665 women age 15-49, while the analysis of BMI is based on 9,677 women. The table excludes women for whom there was no information on height and/or weight and women for whom a BMI could not be estimated because they were pregnant or had given birth in the preceding 2 months.

Overall, only 1 percent of women fall below the cut-off of 145 centimeters in height. The proportion below the cut-off for women's height is only very slightly higher among women age 15-19 and among those in the lowest education group and wealth quintile.

Table 18 Nutritional status of women

Among women age 15-49, percentage with height under 145 cm, mean body mass index (BMI), and percentage with specific BMI levels, according to background characteristics, Tajikistan DHS 2017

	Height		Body Mass Index[1]								
Background characteristic	Percentage below 145 cm	Number of women	Mean Body Mass Index (BMI)	18.5-24.9 (Total normal)	<18.5 (Total thin)	17.0-18.4 (Mildly thin)	<17 (Moderately and severely thin)	≥25.0 (Total overweight or obese)	25.0-29.9 (Overweight)	≥30.0 (Obese)	Number of women
Age											
15-19	1.1	1,898	21.2	73.9	16.2	12.1	4.1	10.0	8.8	1.2	1,813
20-29	1.3	3,937	22.9	66.6	8.8	6.4	2.4	24.6	19.3	5.4	3,203
30-39	1.1	2,776	25.5	48.0	4.0	3.0	1.0	48.0	30.1	17.9	2,612
40-49	1.0	2,055	27.7	31.8	1.6	1.2	0.4	66.5	35.5	31.0	2,049
Residence											
Urban	0.9	2,671	24.6	51.6	7.6	5.6	2.0	40.8	26.1	14.7	2,483
Rural	1.2	7,993	24.2	57.0	7.3	5.4	1.9	35.8	22.8	12.9	7,195
Region											
Dushanbe	0.3	945	24.3	54.3	6.8	5.0	1.8	38.9	28.2	10.7	888
GBAO	0.7	208	22.9	63.8	10.8	7.8	3.0	25.4	18.9	6.5	197
Sughd	1.4	3,283	24.7	52.9	5.9	4.3	1.6	41.2	27.2	14.1	2,981
DRS	1.0	2,318	24.5	55.0	7.2	5.6	1.5	37.8	21.6	16.2	2,075
Khatlon	1.2	3,911	23.9	58.1	8.6	6.3	2.3	33.3	21.1	12.2	3,536
FTF districts	1.2	2,092	24.0	56.8	8.7	6.2	2.6	34.5	22.5	12.0	1,888
Education											
No education/primary	1.6	613	24.4	57.2	5.8	5.1	0.8	36.9	25.2	11.8	547
General basic	1.4	3,601	23.9	56.9	9.1	6.9	2.2	34.0	22.4	11.6	3,249
General secondary	1.1	4,604	24.5	54.4	6.6	4.8	1.8	39.0	24.4	14.6	4,200
Professional primary/ middle	0.6	858	24.7	54.6	6.2	4.6	1.7	39.2	22.5	16.7	771
Higher	0.3	988	24.3	56.2	6.6	4.5	2.1	37.2	24.8	12.3	910
Wealth quintile											
Lowest	1.3	2,092	23.8	59.3	7.6	5.6	2.0	33.0	22.0	11.0	1,927
Second	1.4	2,107	23.9	58.7	7.1	5.5	1.6	34.2	23.2	11.0	1,908
Middle	1.3	2,103	24.2	58.6	7.3	5.3	2.0	34.1	21.2	12.9	1,884
Fourth	0.8	2,158	24.8	50.1	6.9	5.1	1.8	43.0	26.1	16.9	1,915
Highest	0.8	2,205	24.7	51.5	7.8	5.7	2.0	40.8	25.6	15.1	2,043
Total	1.1	10,665	24.3	55.6	7.4	5.5	1.9	37.1	23.7	13.4	9,677

Note: The body mass index (BMI) is expressed as the ratio of weight in kilograms to the square of height in meters (kg/m^2).
FTF = Feed the Future
[1] Excludes pregnant women and women with a birth in the preceding 2 months

The mean BMI for women age 15-49 is 24.3 (Table 18), which falls in the normal BMI classification. Over half of women age 15-49 have a normal BMI (56%), 7% are undernourished or thin (BMI less than 18.5), and 37% are overweight or obese (BMI 25 or higher). Variations are apparent by background characteristics. Women age 15-19 are more likely to be thin or undernourished (16%) than women in other age cohorts (2%-9%). On the other hand, the proportion of women who are overweight increases with age; 36% of women age 40-49 are overweight, and another 31% are obese. Urban women are more likely to be overweight or obese than rural women (41% and 36%, respectively). By region, the proportion of undernourished women does not vary much; however, the proportion of overweight or obese women ranges from 25% in GBAO region to 41% in Sughd region. There is no clear relationship between women's nutritional status and education. However, as household wealth rises, the proportion of women who are overweight increases.

Compared with data from the 2012 TjDHS, the percentage of nonpregnant women age 15-49 who are thin (BMI <18.5) has declined from 11% in 2012 to 7% in 2017; the percentage of women who are overweight or obese (BMI ≥25) has increased, from 30% in 2012 to 37% in 2017.

Dietary Diversity for Women

Adequate micronutrient intake is important for women of reproductive age. They have high requirements for several micronutrients that can increase during pregnancy and lactation (WHO 2004). Poor micronutrient intake can affect women and their children. The Minimum Dietary Diversity for Women (MDD-W) is an indicator of micronutrient adequacy of diet, which is one dimension of overall diet quality

(FAO and FHI 360 2016). Achieving minimum dietary diversity means a woman consumes food from 5 or more of 10 food groups: (1) grains, tubers, roots, starchy foods; (2) legumes; (3) nuts, seeds; (4) cheese, yogurt, other milk products; (5) eggs; (6) meat, fish, poultry; (7) dark green leafy vegetables; (8) fruits and vegetables rich in Vitamin A; (9) other vegetables; and (10) other fruits. Having a cut-off of 5 or more food groups means a woman has a high likelihood of consuming at least one animal source of food and either legumes or nuts/seeds and food items from two or more of the fruit or vegetable groups (Martin-Preval et al. 2015).

This survey for the first time collected data from all women age 15-49 on foods and liquids consumed in the 24 hours before the interview (i.e., yesterday during the day or night). Table 19 shows that almost all women have consumed food made from grains (99%), and most consumed tubers/roots/starchy foods (85%). Animal sources of food in the meat/fish/poultry category are consumed by 78% of women; 69% consume milk and milk products, including cheese and yogurt, churgot, and chakka; and fewer than half of women consume eggs (45%). Over one-third of women eat foods made from nuts and seeds (39%), and fewer than half of women consume legumes (45%). Consumption of fruits and vegetables is 76% and 73%, respectively; 60% of women ate vitamin A-rich fruits and vegetables; and only 19% consumed dark green leafy vegetables. Consumption of savory and fried snack foods is 15%, and over half of women consumed sugary foods (62%) and sugar-sweetened beverages (53%).

Overall, 80% of women achieved minimum dietary diversity (consumed food from five or more food groups), and they are more likely to have higher micronutrient intakes than the 20% of women who did not achieve minimum dietary diversity (consumed food from fewer than 5 food groups).

Patterns by background characteristics show that achieving minimum dietary diversity is more common in urban (86%) than in rural (79%) areas. The proportion of women achieving minimum dietary diversity is highest in Sughd (92%) and Dushanbe (87%) regions and lowest in the FTF districts (70%) and DRS (71%) regions. Achieving minimum dietary diversity is slightly higher in female gender households (84%) than in female and male gender households (80%). The proportion of women achieving minimum dietary diversity increases with increasing level of education and increasing wealth quintile. Conversely, the proportion of women achieving minimum dietary diversity decreases with increasing household size.

Table 19 Women's dietary diversity

Percentage of women age 15-49 who consumed specific foods and liquids in the 24 hours preceding the survey, percentage of women age 15-49 not achieving minimum dietary diversity for women, and percentage of women age 15-49 achieving minimum dietary diversity for women, according to background characteristics, Tajikistan DHS 2017

Background characteristic	Foods made from grains	Foods made from white tubers and roots or other starchy foods	Food made from legumes	Food made from nuts and seeds	Milk, cheese, yogurt, other milk products[1]	Eggs	Meat, fish, shellfish, poultry	Vitamin A-rich dark green leafy vege-tables	Fruits and vege-tables rich in vitamin A[2]	Other vege-tables	Other fruits	Oil and fats	Savory and fried snacks	Sugary foods[3]	Sugar-sweet-ened bever-ages	Other bever-ages and foods[4]	Condi-ments for flavor	Not achieving minimum dietary diversity for women[5]	Achieving minimum dietary diversity for women[5]	Number of women
Age																				
15-19	98.4	83.6	42.6	42.1	68.0	41.5	75.2	16.0	57.4	72.0	77.5	74.3	15.0	64.8	51.8	65.1	35.4	21.0	79.0	1,911
20-24	98.4	85.1	46.5	42.0	70.0	47.3	79.6	18.3	58.7	71.5	75.9	76.6	17.2	65.3	53.2	64.3	35.6	18.9	81.1	2,031
25-29	98.6	86.4	46.2	36.3	68.6	44.6	77.9	19.9	60.1	72.3	73.7	72.5	16.0	60.5	51.7	66.3	38.6	20.0	80.0	1,921
30-34	98.9	86.4	46.2	34.3	66.4	45.4	75.7	19.0	58.6	71.3	74.2	72.6	14.4	57.9	54.3	67.3	41.0	22.0	78.0	1,551
35-39	98.7	85.3	44.0	38.3	72.5	46.1	77.6	17.2	62.8	76.2	75.2	77.7	13.9	59.1	54.3	70.2	40.1	18.8	81.2	1,240
40-44	99.2	83.4	44.9	37.1	71.0	46.6	78.4	18.6	59.8	74.5	76.5	77.1	15.1	62.9	53.0	68.1	42.2	17.9	82.1	1,068
45-49	98.4	85.2	43.1	40.6	71.6	46.9	81.7	23.8	65.9	75.6	76.8	74.9	14.3	64.7	49.3	66.9	43.7	16.2	83.8	996
Household head gender																				
Male	98.6	85.1	44.8	38.8	69.2	44.8	77.8	18.7	59.1	72.9	75.9	75.0	14.8	62.2	51.7	65.8	37.9	19.8	80.2	8,715
Female	98.5	85.1	45.3	38.8	70.5	47.1	77.8	18.7	63.5	73.0	74.3	74.4	17.4	62.4	56.6	69.6	42.9	18.8	81.2	2,003
Gendered household type																				
Male and female adults	98.6	85.1	45.0	38.8	69.0	44.9	77.5	18.7	59.6	72.9	75.7	75.3	15.4	62.1	52.2	66.2	38.7	19.8	80.2	10,189
Female adult(s) only	98.6	84.3	42.9	39.0	77.4	51.5	82.6	17.3	67.2	72.9	74.9	67.6	14.1	65.1	59.5	73.4	40.4	15.6	84.4	526
Male adult(s) only	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	3
Household size																				
Small (1-5) members	98.8	85.6	42.7	38.7	70.1	48.4	81.1	19.7	63.0	73.5	76.9	74.4	15.5	65.8	55.1	67.7	39.4	17.5	82.5	3,489
Medium (6-10 members)	98.7	85.3	45.0	39.0	69.1	44.6	77.5	18.8	58.9	72.6	75.3	75.2	15.1	61.7	52.4	66.3	39.5	19.8	80.2	5,520
Large (11+ members)	98.1	83.5	49.4	38.7	69.1	41.1	72.1	16.2	57.0	72.7	73.9	74.8	15.5	56.7	48.0	64.9	35.3	22.9	77.1	1,709
Residence																				
Urban	97.5	84.4	45.5	40.6	72.5	51.7	85.1	21.5	64.3	72.9	78.2	71.2	18.5	66.2	55.3	68.1	43.3	13.9	86.1	2,694
Rural	99.0	85.4	44.7	38.3	68.4	43.1	75.3	17.7	58.5	72.9	74.7	76.1	14.3	60.9	51.7	66.0	37.3	21.5	78.5	8,024
Region																				
Dushanbe	94.7	80.1	48.0	29.8	75.1	58.4	86.8	29.2	65.1	69.2	72.8	57.6	18.0	60.0	47.6	62.7	44.8	12.6	87.4	955
GBAO	99.3	83.9	27.6	20.5	88.9	34.6	81.3	24.5	70.4	51.9	74.0	84.0	5.1	65.4	38.9	48.5	48.8	20.9	79.1	209
Sughd	99.8	91.9	41.6	39.5	75.2	53.6	91.9	20.7	74.9	83.5	83.1	83.1	12.8	69.6	59.9	75.7	35.9	7.9	92.1	3,292
DRS	99.4	88.4	44.9	35.0	55.9	36.7	65.4	24.1	53.5	63.9	72.5	53.0	18.4	60.0	51.9	56.7	39.0	29.2	70.8	2,342
Khatlon	98.1	78.8	47.9	43.8	70.2	40.8	70.9	10.8	49.4	71.5	72.0	84.8	15.4	57.8	48.8	66.6	39.1	25.2	74.8	3,920
FTF districts	97.8	81.4	53.6	39.1	66.8	37.0	70.4	15.8	55.0	66.6	60.9	80.1	19.8	58.6	55.6	71.9	48.7	30.5	69.5	2,096

Continued…

Table 19—*Continued*

Background characteristic	Foods made from grains	Foods made from white tubers and roots or other starchy foods	Food made from legumes	Food made from nuts and seeds	Milk, cheese, yogurt, other milk products[1]	Eggs	Meat, fish, shellfish, poultry	Vitamin A-rich dark green leafy vege-tables	Fruits and vege-tables rich in vitamin A[2]	Other vege-tables	Other fruits	Oil and fats	Savory and fried snacks	Sugary foods[3]	Sugar-sweet-ened bever-ages	Other bever-ages and foods[4]	Condi-ments for flavor	Not achieving minimum dietary diversity for women[5]	Achieving minimum dietary diversity for women[5]	Number of women
Education																				
No education/primary	96.4	80.8	48.3	34.6	61.8	35.4	69.0	23.1	55.2	66.4	64.9	69.8	14.9	52.8	48.4	58.5	40.9	28.3	71.7	619
General basic	98.3	85.5	44.1	35.3	64.6	41.9	72.9	17.7	56.4	69.3	73.1	70.9	16.2	57.3	49.8	64.1	36.4	25.0	75.0	3,615
General secondary	99.0	84.8	45.7	39.8	71.9	46.3	79.8	17.9	61.5	75.7	76.5	77.8	14.1	63.2	53.1	68.6	39.0	16.9	83.1	4,624
Professional primary/ middle	99.1	85.4	43.9	44.6	72.2	50.6	82.8	22.3	64.2	76.0	81.9	79.5	15.1	72.6	56.0	66.9	40.7	13.3	86.7	860
Higher	99.0	87.5	43.1	45.1	77.6	54.3	87.3	19.8	65.2	74.7	82.2	75.0	18.3	72.9	59.7	70.6	44.0	12.4	87.6	1,000
Wealth quintile																				
Lowest	99.0	85.3	43.6	32.0	68.8	38.6	62.5	16.3	51.5	71.3	69.7	77.7	9.8	50.9	48.7	61.1	29.5	27.8	72.2	2,101
Second	98.6	85.0	46.3	36.9	68.7	38.7	71.8	15.0	59.2	73.3	73.0	75.3	11.7	57.5	49.4	65.0	35.3	23.7	76.3	2,116
Middle	99.1	84.2	47.2	41.4	67.7	46.0	79.4	19.4	56.5	71.8	76.4	72.5	17.1	65.3	50.6	67.5	41.4	18.7	81.3	2,108
Fourth	99.3	87.0	44.3	44.3	67.0	48.9	86.1	19.3	65.7	76.3	79.5	78.2	17.2	69.1	55.7	69.4	41.1	14.8	85.2	2,168
Highest	97.1	84.0	43.4	39.3	74.6	53.6	88.2	23.1	66.2	71.8	79.1	70.8	20.4	68.0	58.1	69.3	46.2	13.3	86.7	2,226
Total	98.6	85.1	44.9	38.8	69.4	45.3	77.8	18.7	59.9	72.9	75.6	74.9	15.3	62.3	52.6	66.5	38.8	19.6	80.4	10,718

Note: Consumption of foods and liquids refers to a "24-hour" period (yesterday and last night). An asterisk denotes a figure based on fewer than 25 unweighted cases that has been suppressed.
FTF=Feed the Future
[1] Includes churgot and chakka
[2] Includes pumpkin, carrots, sweet bell peppers, ripe persimmons, ripe and dried apricots, dried peaches and other locally grown fruits and vegetables that are rich in vitamin A
[3] Includes chocolates, sweets, candies, pastries, cakes, biscuits
[4] Includes unsweetened tea and coffee, clear broth, alcohol, pickles, olives
[5] Minimum Dietary Diversity for Women (MDD-W) uses 10 food groups to calculate minimum diversity. Women of reproductive age that consume foods from 5 or more of the 10 food groups are considered to have a diet achieving micronutrient adequacy compared with women consuming foods from fewer than 5 food groups (http://www.fao.org/3/a-i5486e.pdf).

Micronutrient Intake among Mothers

Adequate micronutrient intake by women has important benefits for women and their children. Breastfeeding children benefit from micronutrient supplementation that mothers receive, especially vitamin A. Iron supplementation during pregnancy can reduce the likelihood of anemia. Iodine deficiency is related to a number of adverse pregnancy outcomes including abortion and stillbirth, as well as fetal brain damage and congenital malformation.

The 2017 TjDHS collected information from women age 15-49 who had given birth during the 5 years preceding the survey on their use of iron supplements during pregnancy. To obtain the information on iron supplementation, women were asked if they had been given or bought iron tablets or syrup during pregnancy for their most recent birth. If they responded affirmatively, they were asked about the number of days that they took the tablets or syrup.

Table 20 shows that just over half of the women (55%) did not take any iron tablets or syrup during pregnancy for their most recent birth in the 5 years before the survey. Most of the women who took iron supplements did so for fewer than 60 days (37%); only 2% of women said they took iron supplements for 90 days or more. Iron supplementation during pregnancy is more common among women age 15-19, women in urban areas, and women in GBAO region. Furthermore, there is a clear positive relationship between both education and wealth and taking iron supplements.

Table 20 Micronutrient intake among mothers

Among women age 15-49 with a child born in the 5 years preceding the survey, percent distribution by number of days they took iron tablets or syrup during the pregnancy of the last child, and percentage who took deworming medication during the pregnancy of the last child; and among women age 15-49 with a child born in the 5 years preceding the survey and who live in households that were tested for iodized salt, percentage who live in households with iodized salt, according to background characteristics, Tajikistan DHS 2017

	Among women with a child born in the past 5 years, number of days women took iron tablets or syrup during pregnancy of last birth						Percentage of women who took deworming medication during pregnancy of last birth	Number of women	Among women with a child born in the last 5 years, who live in households that were tested for iodized salt:	
Background characteristic	None	<60	60-89	90+	Don't know/ missing	Total			Percentage living in house-holds with iodized salt[1]	Number of women
Age										
15-19	48.7	45.5	2.5	0.0	3.3	100.0	5.2	61	82.2	61
20-29	52.3	38.1	3.5	2.3	3.8	100.0	1.7	2,793	90.8	2,786
30-39	58.7	33.9	2.1	2.2	3.1	100.0	1.7	1,354	88.7	1,351
40-49	59.6	33.0	2.5	0.7	4.2	100.0	1.1	165	91.2	162
Residence										
Urban	47.6	38.8	4.6	3.7	5.3	100.0	2.2	959	94.9	953
Rural	56.5	36.2	2.5	1.8	3.0	100.0	1.5	3,414	88.8	3,407
Region										
Dushanbe	44.8	35.3	6.6	5.0	8.3	100.0	4.2	297	96.5	296
GBAO	40.7	47.7	7.3	4.1	0.3	100.0	2.3	76	93.3	76
Sughd	48.9	38.4	4.9	4.8	3.1	100.0	1.0	1,292	96.2	1,289
DRS	64.1	28.8	0.5	0.8	5.7	100.0	2.4	1,037	86.1	1,034
Khatlon	55.3	40.2	2.2	0.4	1.9	100.0	1.3	1,671	86.6	1,665
FTF districts	48.4	47.3	1.4	0.5	2.4	100.0	1.2	947	91.3	942
Education										
None/primary	61.5	33.3	1.2	1.4	2.6	100.0	1.8	342	88.1	342
General basic	57.6	34.1	2.3	1.7	4.3	100.0	1.5	1,607	86.8	1,603
General secondary	53.4	39.0	3.0	1.9	2.8	100.0	1.6	1,726	91.9	1,721
Professional primary/ middle	51.4	37.7	5.2	2.6	3.0	100.0	2.2	321	92.2	319
Higher	42.6	40.2	5.6	6.4	5.2	100.0	2.3	378	95.8	376
Wealth quintile										
Lowest	65.7	27.8	2.3	1.3	2.8	100.0	0.6	804	83.1	802
Second	59.4	35.3	1.8	1.2	2.4	100.0	1.8	895	88.4	895
Middle	55.8	38.7	1.5	1.9	2.0	100.0	1.7	952	90.9	950
Fourth	47.9	40.9	3.9	2.5	4.8	100.0	1.4	946	92.5	942
Highest	43.8	40.2	5.8	4.2	6.0	100.0	3.0	776	95.4	772
Total	54.5	36.8	3.0	2.2	3.5	100.0	1.7	4,373	90.1	4,360

FTF = Feed the Future
[1] Excludes women in households where salt was not tested

Table 20 also shows that 90% of women age 15-49 with a child born in the past 5 years live in a household with iodized salt. However, differences by background characteristics in the proportion of women living in households with iodized salt are sizable. Women 15-19 are less likely than their older counterparts to be living in households with iodized salt. There is also an urban-rural divide (95% contrasted with 89%, respectively). The region with the lowest percentage of women in households with iodized salt is DRS (86%), while the highest is Dushanbe (97%). There is also a strong positive association between presence of iodized salt and both education and wealth among mothers. These numbers show improvement from the 65% of women who did not take any iron supplements in the 2012 TjDHS compared with the 55% who did not in the 2017 TjDHS. Similarly, the proportion of women with a child born in the last 5 years who also live in a household with iodized salt has increased from 83% in 2012 to 90% in 2017.

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 malaria, 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. In addition to causing weakness, frequent tiredness, and lowered resistance to disease, anemia can be a particularly serious problem for pregnant women, leading to premature delivery and low birth weight.

The 2017 TjDHS includes 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 electronically displays the hemoglobin concentration.

Hemoglobin testing was carried out among children age 6-59 months. During the fieldwork, parents or guardians were immediately given the results of their child's test. In cases where the hemoglobin reading was below 7.0 g/dl, the parent or guardian was referred to MOHSP facilities for follow-up. Ninety-seven percent of eligible children were tested for anemia (data not shown).

Table 21 presents anemia levels for children 6-59 months, by selected background characteristics. Prevalence of anemia, based on hemoglobin levels, is adjusted for altitude using CDC formulas (CDC 1998). Children with <7.0g/dl of hemoglobin are classified as having severe anemia, those with 7.0-9.9 g/dl as having moderate anemia, and those with 10.0-10.9 g/dl as having mild anemia. Children with <11.0g/dl are classified as having any anemia. Overall, 42% of children suffered from some degree of anemia. Twenty-four percent of children were classified as mildly anemic, 17% were moderately anemic, and 1% were severely anemic. Anemia is more prevalent among children less than age 24 months than among older children, with it being most prevalent among children age 12-17 months (66%). Anemia prevalence varies by region, from a low of 25% in Dushanbe to a high of 62% in GBAO. There is little variation across other background characteristics; however, children in urban areas were less likely to have anemia than those in rural areas (34% and 44%, respectively). Also, those in the highest wealth quintile were far less likely to suffer from anemia than those in lower quintiles (31% compared with a range of 40%-45%, respectively).

Compared with estimates from recent Demographic and Health Surveys, the prevalence of any anemia among children age 6-59 months in the Republic of Tajikistan in 2017 (42%) is similar to that in the 2012 Kyrgyz Republic DHS (43 percent), but is higher than that in the 2015-16 Armenia DHS (16%) (NSC [Kyrgyz Republic] et al. 2013; NSS [Armenia] at al. 2017).

Table 21 Prevalence of anemia in children

Percentage of children age 6-59 months classified as having anemia, according to background characteristics, Tajikistan DHS 2017

Background characteristic	Anemia status by hemoglobin level				Number of children age 6-59 months
	Any anemia (<11.0 g/dl)	Mild anemia (10.0-10.9 g/dl)	Moderate anemia (7.0-9.9 g/dl)	Severe anemia (<7.0 g/dl)	
Age in months					
6-8	39.0	27.2	11.6	0.3	317
9-11	49.7	27.1	20.3	2.4	321
12-17	66.2	31.2	34.3	0.7	697
18-23	57.7	30.9	25.9	0.9	767
24-35	43.4	23.6	18.9	1.0	1,346
36-47	33.6	22.0	11.1	0.6	1,379
48-59	22.8	15.6	6.6	0.6	1,209
Sex					
Male	43.1	24.2	17.7	1.2	3,044
Female	40.1	23.4	16.3	0.4	2,992
Residence					
Urban	33.8	20.6	11.8	1.4	1,265
Rural	43.7	24.7	18.4	0.6	4,771
Region					
Dushanbe	25.4	15.3	6.4	3.6	381
GBAO	61.8	24.2	36.2	1.4	106
Sughd	42.2	27.0	14.7	0.4	1,701
DRS	35.5	20.9	14.2	0.4	1,423
Khatlon	46.4	24.5	21.1	0.8	2,424
FTF districts	50.8	24.9	24.6	1.3	1,362
Mother's education					
None/primary	40.2	23.2	15.8	1.2	524
General basic	40.1	22.8	16.5	0.7	2,209
General secondary	44.2	25.2	18.3	0.8	2,320
Professional primary/ middle	41.4	24.9	15.1	1.3	435
Higher	37.3	20.7	16.6	0.0	459
Wealth quintile					
Lowest	45.3	23.6	20.3	1.4	1,121
Second	44.6	25.1	18.8	0.7	1,288
Middle	45.1	25.6	18.9	0.7	1,321
Fourth	39.8	23.9	15.6	0.3	1,315
Highest	31.2	19.9	10.3	1.0	991
Total	41.6	23.8	17.0	0.8	6,036

Notes: Table is based on children who stayed in the household on the night before the interview and who were tested for anemia. Prevalence of anemia, based on hemoglobin levels, is adjusted for altitude using CDC formulas (CDC 1998). Hemoglobin in grams per deciliter (g/dl).
FTF = Feed the Future

Table 22 presents anemia levels for women age 15-49 by selected background characteristics. Levels of anemia were classified as severe, moderate, and mild based on the hemoglobin concentration in the blood, according to criteria developed by WHO (DeMaeyer et al. 1989). Women with <7.0 g/dl of hemoglobin are classified as having severe anemia, those with 7.0-9.9 g/dl as having moderate anemia, and nonpregnant women with 10.0-11.9 g/dl and pregnant women with 10.0-10.9 g/dl as having mild anemia. Pregnant women with hemoglobin levels below 11.0 g/dl and nonpregnant women with hemoglobin levels below 12.0 g/dl were defined as having anemia. Overall, 99% of eligible women age 15-49 were tested for anemia (data not shown). Prevalence of anemia, based on hemoglobin levels, is adjusted for altitude and smoking using CDC formulas (CDC 1998). Overall, 41% of women in Tajikistan suffer from anemia. The majority (32%) are classified as mildly anemic, 8% are moderately anemic, and 1% are severely anemic. By region, the prevalence of any anemia ranges from 33% in DRS to 55% in GBAO. There does seem to be a negative association between wealth and anemia, with anemia affecting 43% of women in the lowest wealth quintile but only 38% of those in the highest.

Compared with estimates from recent Demographic and Health Surveys, the prevalence of any anemia among women age 15-49 in the Republic of Tajikistan in 2017 (41%), is higher than that in the Kyrgyz Republic in 2012 (35 %) and is substantially higher than that in Armenia (13% in 2015-16) (NSS [Armenia] at al. 2017; NSC [Kyrgyz Republic] et al. 2013).

Table 22 Prevalence of anemia in women

Percentage of women age 15-49 with anemia, according to background characteristics, Tajikistan DHS 2017

Background characteristic	Nonpregnant / Pregnant	Anemia status by hemoglobin level: Any	Mild	Moderate	Severe	Number of women
			<12.0 g/dl / <11.0 g/dl	10.0-11.9 g/dl / 10.0-10.9 g/dl	7.0-9.9 g/dl / 7.0-9.9 g/dl	<7.0 g/dl / <7.0 g/dl	
Age						
15-19		33.4	27.8	5.1	0.5	1,892
20-29		43.4	34.1	8.4	0.9	3,930
30-39		43.7	33.8	9.1	0.8	2,768
40-49		41.3	30.1	9.7	1.6	2,046
Number of living children						
0		34.6	28.1	5.8	0.6	3,145
1		41.8	31.8	9.2	0.8	1,239
2-3		45.6	35.0	9.6	1.0	3,772
4-5		42.5	33.1	8.3	1.1	2,025
6+		45.3	32.5	11.5	1.3	455
Maternity status						
Pregnant		42.1	22.9	18.9	0.3	792
Breastfeeding		46.2	37.4	8.0	0.8	1,859
Neither		40.1	31.8	7.3	1.0	7,986
Residence						
Urban		39.8	31.2	7.2	1.5	2,665
Rural		41.8	32.5	8.6	0.7	7,972
Region						
Dushanbe		37.9	30.0	4.8	3.2	939
GBAO		54.9	36.7	16.6	1.6	206
Sughd		39.9	32.1	7.2	0.5	3,262
DRS		33.3	25.2	7.3	0.8	2,315
Khatlon		47.3	36.5	10.1	0.7	3,915
FTF districts		54.3	40.9	12.6	0.8	2,095
Education						
None/primary		44.1	32.5	10.9	0.7	618
General basic		41.0	31.9	7.7	1.4	3,593
General secondary		42.3	33.3	8.3	0.8	4,586
Professional primary/ middle		39.8	31.0	8.5	0.4	855
Higher		37.3	28.5	8.5	0.3	985
Wealth quintile						
Lowest		43.3	32.8	9.3	1.2	2,089
Second		43.0	34.0	8.4	0.6	2,098
Middle		41.8	32.3	8.6	0.9	2,097
Fourth		40.4	30.8	8.6	1.0	2,157
Highest		38.3	31.0	6.4	0.8	2,195
Total		41.3	32.1	8.3	0.9	10,637

Note: Prevalence is adjusted for altitude and for smoking status, if known, using CDC formulas (CDC 1998).
FTF = Feed the Future

3.12 HIV/AIDS AWARENESS, KNOWLEDGE, AND BEHAVIOR

Knowledge of ways to reduce HIV transmission is important in the fight against HIV/AIDS. HIV prevention programs focus their messages and efforts on several important aspects of behavior to avoid the spread of HIV, which include using condoms and limiting the number of sexual partners to one uninfected partner. To ascertain the depth of knowledge about modes of HIV prevention, the 2017 TjDHS respondents were asked questions about these specific behaviors.

Knowledge of HIV prevention methods among women age 15-49 is presented in Table 23. The results show that knowledge is generally low in Tajikistan; only 38% of women know that HIV can be prevented by using condoms during sexual intercourse. Forty-three percent of women say that limiting sexual intercourse to one uninfected partner can reduce the chances of getting HIV. Overall, 36% of women believe both methods are protective.

Women age 15-19 have lower levels of knowledge of these HIV prevention methods than people age 20 and older. Urban women were more knowledgeable about each of these prevention methods than their

rural counterparts. As expected, there is a positive relationship between increasing levels of both education and wealth with knowledge of HIV prevention methods.

Given the generally low levels of knowledge of HIV, it is unsurprising that some misconceptions about HIV transmission are still common in Tajikistan. For instance, 13% of women age 15-49 say HIV can be transmitted by mosquito bites. In addition, 9% say a person can become infected by sharing food with a person who has HIV (data not shown). These are the two most common local misconceptions about HIV in the country.

Table 23 Knowledge of HIV prevention methods

Percentage of women 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, according to background characteristics, Tajikistan DHS 2017

	Percentage of women 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[1,2]	Number of women
Age				
15-24	30.1	34.5	28.4	3,942
15-19	20.1	22.9	18.5	1,911
20-24	39.4	45.4	37.6	2,031
25-29	38.4	43.3	35.7	1,921
30-39	42.2	46.9	38.9	2,791
40-49	49.3	55.8	46.9	2,064
Employment abroad (past 3 years)[3]				
Yes	50.9	56.5	46.1	364
No	38.0	42.9	35.6	10,354
Spousal employment abroad reported by currently married women[4]				
Respondent worked abroad herself	44.8	51.0	42.6	109
Spouse worked abroad	40.2	44.5	37.4	2,779
Both worked abroad	56.9	61.0	50.4	207
None worked abroad	43.4	48.8	41.0	4,653
Not currently married	27.5	32.4	25.6	2,971
Residence				
Urban	47.3	53.9	45.0	2,694
Rural	35.4	39.9	33.0	8,024
Region				
Dushanbe	47.8	54.9	45.7	955
GBAO	57.3	70.7	55.8	209
Sughd	56.6	60.9	54.0	3,292
DRS	19.4	26.4	17.1	2,342
Khatlon	31.2	34.5	28.7	3,920
FTF districts	24.0	27.3	22.5	2,096
Education				
None/primary	19.1	21.5	17.0	619
General basic	25.6	29.5	23.6	3,615
General secondary	38.6	43.6	35.9	4,624
Professional primary/middle	69.6	77.5	67.7	860
Higher	69.1	76.9	65.7	1,000
Wealth quintile				
Lowest	29.3	32.6	27.2	2,101
Second	32.2	34.7	29.4	2,116
Middle	33.9	38.6	31.3	2,108
Fourth	45.6	52.1	43.2	2,168
Highest	50.2	57.9	48.0	2,226
Total	38.4	43.4	36.0	10,718

FTF = Feed the Future
[1] Using condoms every time they have sexual intercourse
[2] Partner who has no other partners
[3] *Employment abroad* refers to working abroad during the past 3 years before the survey for 3 or more months at a time.
[4] Information is based on currently married women's reports of their own and their husband's employment abroad for a period of 3 or more months.

3.13 COMPREHENSIVE KNOWLEDGE OF HIV PREVENTION AMONG YOUNG PEOPLE

Table 24 shows 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 or by sharing food with a person with HIV. Knowledge of how HIV is transmitted is crucial to enabling people to avoid HIV infection, and this is especially true for young people, who are often at greater risk because they may have shorter relationships with more partners or engage in other risky behaviors.

Table 24 shows that 14% of young women have comprehensive knowledge of HIV prevention. The proportion with comprehensive knowledge generally increases with age, educational attainment, and wealth. However, it is worth noting that those with a professional primary or middle education are more likely to have comprehensive HIV knowledge than those with a higher education (45% to 37%, respectively). Across regions, GBAO has the highest level of comprehensive knowledge about HIV, while DRS has the lowest level (31% and 5%, respectively).

Information on sexual behavior is important in designing and monitoring intervention programs to control the spread of HIV. The 2017 survey included questions on respondents' sexual partners during the 12 months preceding the survey and during their lifetime. Information was also collected on use of condoms at respondents' last sexual intercourse. These questions are sensitive, and it is recognized that some respondents may have been reluctant to provide information on recent sexual behavior. The data for women are not presented because close to 0 percent of women age 15-49 reported having had more than one partner in the past 12 months. The mean number of lifetime partners among all women who have ever had sexual intercourse is 1.3.

Table 24 Comprehensive knowledge about HIV prevention among young women

Percentage of young women age 15-24 with comprehensive knowledge about HIV prevention, according to background characteristics, Tajikistan DHS 2017

Background characteristic	Women age 15-24	
	Percentage with comprehensive knowledge about HIV prevention[1]	Number of women
Age		
15-19	9.3	1,911
15-17	5.6	1,134
18-19	14.8	777
20-24	18.0	2,031
20-22	16.7	1,254
23-24	20.0	777
Marital status		
Never married	11.1	2,078
Ever had sex	*	11
Never had sex	11.2	2,067
Ever married	16.7	1,865
Employment abroad (past 3 years)[2]		
Yes	25.3	84
No	13.5	3,859
Spousal employment abroad reported by currently married women[3]		
Respondent worked abroad herself	(35.9)	26
Spouse worked abroad	15.8	747
Both worked abroad	(26.6)	36
None worked abroad	17.0	987
Not currently married	11.1	2,145
Residence		
Urban	16.1	925
Rural	13.1	3,017
Region		
Dushanbe	19.1	349
GBAO	30.9	56
Sughd	20.9	1,120
DRS	4.5	903
Khatlon	12.2	1,515
FTF districts	6.3	794
Education		
None/primary	1.0	163
General basic	6.3	1,432
General secondary	10.9	1,697
Professional primary/middle	45.1	315
Higher	37.2	335
Wealth quintile		
Lowest	9.8	699
Second	9.9	764
Middle	9.6	803
Fourth	18.7	868
Highest	19.7	808
Total 15-24	13.8	3,942

Note: An asterisk denotes a figure based on fewer than 25 unweighted cases that has been suppressed. Figures in parentheses are based on 25-49 unweighted cases.
FTF = Feed the Future
[1] Comprehensive 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.
[2] *Employment abroad* refers to working abroad during the past 3 years before the survey for 3 or more months at a time.
[3] Information is based on currently married women's report of their own and their husband's employment abroad for a period of 3 or more months.

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 infected, 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, Tajikistan DHS 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.

Table 25 shows that 29% of women knew of a place where they could get an HIV test. Younger respondents were less likely than those age 25 and older to know a place where they could go to be tested. Never-married respondents were less likely than others to know a place to get an HIV test. Knowledge of a place to get an HIV test increases consistently with wealth. There is also a positive association with education; however, those with a professional primary/middle education are more likely than those with a higher education to know where they could get tested (62% to 58%).

Table 25 also shows coverage of HIV testing services. Among respondents age 15-49, a large proportion of women (79%) had never been tested. Nineteen percent of women had ever been tested and had received the results of their last test. The likelihood of having ever had an HIV test and receiving the results was highest in the 25-29 age group (28%), among respondents who are currently married (24%), and among women in urban areas (26% of women). Women who worked abroad in the last 3 years were more likely to have been tested than those who did not work abroad (31% and 19%, respectively). Women from GBAO were most likely to have been tested and received the results of their last test (41%). Women in DRS were least likely to have been tested and received their results (10%) than women in other regions. Among women 15-49, testing coverage generally increases with education and wealth.

Looking at HIV testing in the past 12 months, one finds similar trends. Women in their 20s are more likely to have been tested in the last 12 months and received their results than women from other age groups. GBAO has the highest coverage (21%) and DRS has the lowest (6%). Furthermore, the positive relationship between HIV testing coverage and both education and wealth remains. Urban areas continue to have higher coverage than rural areas (11% versus 8%) and women who worked abroad also continued to have a greater likelihood of being tested than those who did not work abroad (19% versus 8%).

Coverage of prior HIV testing has somewhat improved since the 2012 TjDHS. The percentage of women who were tested for HIV and received their results increased from 13% in 2012 to 19% in 2017, while those who had received an HIV test and received the results in the last 12 months increased from 5% to 9% during the same time period.

Table 25 Coverage of prior HIV testing

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 of women ever tested, and percentage of women who were tested in the past 12 months and received the results of the last test, according to background characteristics, Tajikistan DHS 2017

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	22.3	14.4	1.2	84.4	100.0	15.6	8.8	3,942
15-19	9.0	2.8	0.3	96.9	100.0	3.1	2.1	1,911
20-24	34.8	25.3	2.1	72.6	100.0	27.4	15.2	2,031
25-29	35.7	28.4	2.7	68.8	100.0	31.2	12.2	1,921
30-39	32.7	22.6	1.8	75.6	100.0	24.4	8.0	2,791
40-49	32.2	14.5	1.8	83.7	100.0	16.3	5.6	2,064
Marital status								
Never married	10.5	2.3	0.0	97.7	100.0	2.3	1.3	2,388
Ever had sex	16.5	4.9	0.0	95.1	100.0	4.9	0.3	48
Never had sex	10.4	2.2	0.0	97.8	100.0	2.2	1.3	2,340
Married or living together	34.8	24.3	2.3	73.4	100.0	26.6	10.9	7,747
Divorced/separated/widowed	32.7	19.0	1.1	79.9	100.0	20.1	7.9	583
Employment abroad (past 3 years)[2]								
Yes	46.2	30.9	3.0	66.0	100.0	34.0	18.8	364
No	28.7	18.7	1.7	79.6	100.0	20.4	8.2	10,354
Spousal employment abroad reported by currently married women[3]								
Respondent worked abroad herself	42.1	26.9	2.3	70.8	100.0	29.2	19.6	109
Spouse worked abroad	33.2	23.6	2.4	74.0	100.0	26.0	11.0	2,779
Both worked abroad	50.5	35.1	3.3	61.7	100.0	38.3	20.5	207
None worked abroad	34.9	24.2	2.2	73.6	100.0	26.4	10.2	4,653
Not currently married	14.9	5.5	0.2	94.2	100.0	5.8	2.6	2,971
Residence								
Urban	39.9	25.9	1.8	72.3	100.0	27.7	11.0	2,694
Rural	25.8	16.8	1.7	81.5	100.0	18.5	7.8	8,024
Region								
Dushanbe	42.6	28.8	1.4	69.8	100.0	30.2	10.4	955
GBAO	54.7	40.8	1.3	57.9	100.0	42.1	20.6	209
Sughd	43.1	27.0	3.7	69.2	100.0	30.8	12.2	3,292
DRS	14.1	9.9	0.7	89.4	100.0	10.6	5.6	2,342
Khatlon	22.2	14.4	0.8	84.9	100.0	15.1	6.3	3,920
FTF districts	20.0	13.3	0.7	86.0	100.0	14.0	5.5	2,096
Education								
None/primary	13.2	9.6	0.8	89.6	100.0	10.4	2.9	619
General basic	18.6	12.5	1.1	86.4	100.0	13.6	4.9	3,615
General secondary	27.7	17.4	1.8	80.9	100.0	19.1	7.4	4,624
Professional primary/middle	61.6	40.0	4.1	56.0	100.0	44.0	22.6	860
Higher	57.6	38.9	2.4	58.7	100.0	41.3	18.8	1,000
Wealth quintile								
Lowest	16.6	10.2	0.4	89.4	100.0	10.6	4.2	2,101
Second	21.1	12.9	1.4	85.7	100.0	14.3	5.1	2,116
Middle	26.4	17.6	2.4	80.0	100.0	20.0	8.1	2,108
Fourth	36.7	24.1	2.5	73.4	100.0	26.6	12.0	2,168
Highest	44.6	29.9	1.9	68.2	100.0	31.8	13.1	2,226
Total	29.3	19.1	1.7	79.2	100.0	20.8	8.6	10,718

FTF = Feed the Future

[1] Includes *don't know/missing*

[2] *Employment abroad* refers to working abroad during the 3 years before the survey for 3 or more months at a time.

[3] Information is based on currently married women's reports of their own and their husband's employment abroad for a period of 3 or more months.

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