

FERTILITY

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In the 2002 Uzbekistan Health Examination Survey (UHES), information on reproductive events was collected in two phases. First, respondents were asked to report separately the aggregate number of live births, stillbirths, abortions, and miscarriages they had experienced. Second, respondents were asked to report individually on the specifics of each of these events in a complete pregnancy history. For each reproductive event, the date of the event was recorded. For each live birth, information was collected on the sex of the child, his or her survival status, and current age or age at death.

This chapter presents the findings on fertility derived from the reported information on live births. The findings pertaining to pregnancy loss are presented in Chapter 6.

4.1 CURRENT FERTILITY

Table 4.1 shows age-specific fertility rates for the three-year period preceding the survey.¹ Rates are expressed per 1,000 women. The sum of the age-specific rates, known as the total fertility rate (TFR), is a summary measure of the level of fertility during a woman's childbearing years. The TFR is 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 observed age-specific rates. Two other summary measures are presented in Table 4.1: the general fertility rate (GFR) and the crude birth rate (CBR). The GFR represents the annual number of births in the population per 1,000 women age 15-44. The crude birth rate is the annual number of births per 1,000 population.²

Table 4.1 indicates that the TFR for the three-year period preceding the survey (2000-2002) was 2.9 children per woman. This level of fertility is notably higher than the TFRs for other Central Asian countries in which surveys were conducted after 1998: Romania, 1.3 children per woman; Ukraine, 1.4; Armenia

Table 4.1 Current fertility

Age-specific and cumulative fertility rates, the general fertility rate, and the crude birth rate for the three years preceding the survey, by urban-rural residence, Uzbekistan 2002

Age group	Residence		Total
	Urban	Rural	
15-19	38	41	40
20-24	201	253	235
25-29	134	199	171
30-34	83	101	94
35-39	34	38	36
40-44	6	10	8
45-49	0	0	0
TFR (15-49)	2.48	3.21	2.92
TFR (15-44)	2.48	3.21	2.92
GFR	86	116	104
CBR	19.8	27.5	24.4

Note: Rates are for the period 1-36 months preceding the survey. Rates for age group 45-49 may be slightly biased due to truncation.

TFR = Total fertility rate expressed per woman

GFR = General fertility rate (births divided by number of women age 15-44) expressed per 1,000 women

CBR = Crude birth rate expressed per 1,000 population

¹ Numerators for age-specific fertility rates are calculated by summing the number of live births that occurred during the period 1-36 months preceding the survey (determined from the date of interview and date of a child's birth) and classifying those events by the mother's age at the time of the birth (in five-year groups). The denominators of the rates are the number of woman-years lived in each five-year age group during the period 1-36 months preceding the survey.

² The CBR is calculated from the births recorded in the pregnancy history during the three-year period preceding the survey and the total population figure recorded in the household schedule.

1.7; Azerbaijan, 2.1; Georgia, 1.7; and Kazakhstan, 2.1; and is the same as the TFR estimate for Turkmenistan, 2.9 children per woman (Sullivan et al., 2003).

The overall level of fertility in Uzbekistan (2.9 children per woman) obscures differentials by urban-rural residence. Age-specific fertility rates are higher among rural women throughout the childbearing years. As a result, the TFR for rural women (3.2 children per woman) is more than half a child greater than the TFR for urban women (2.5 children per woman).

Women in both urban and rural areas experience their peak childbearing years relatively early, that is, at age 20-24 years.

Table 4.2 and Figure 4.1 show TFRs for the three-year period preceding the survey by background characteristics. Fertility levels in the Western, Central, East-Central, and Eastern regions (ranging from 2.7 to 3.4 children per woman) are distinctly higher than in Tashkent City (2.0 children per woman).

Women in Uzbekistan show a pattern of fertility by level of education similar to that observed in many societies, that is, lower fertility among women with higher levels of education. The TFR was highest for women with a primary/middle school education or a secondary school education (3.1 children per woman for both), lower among women with a secondary-special education (2.8 children per woman), and even lower among women with a higher education (2.0 children per woman).

Ethnic differences in fertility are as expected for the region. The TFR for women who are ethnically Uzbek (3.0 children per woman) is similar to that for women of other Asian ethnic groups (Karakalpak, Tajik, and Kazakh women; between 2.7 and 3.2 children per woman) and distinctly higher than the TFR for Russian or Tatar women (1.4 and 2.0 children per woman, respectively).

Table 4.2 shows the percentage of women who were pregnant at the time of the survey (4 percent). This is an underestimate of the true percentage who were pregnant because women at the early stages of pregnancy may not know they are pregnant and some women who know they are pregnant may not wish to declare

Table 4.2 Fertility by background characteristics

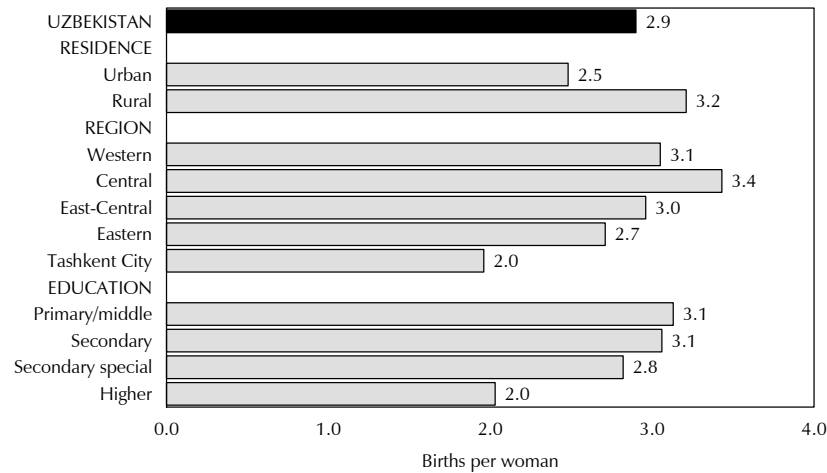
Total fertility rate for the three years preceding the survey, percentage of women age 15-49 currently pregnant, and mean number of children ever born to women age 40-49, by background characteristics, Uzbekistan 2002

Background characteristic	Total fertility rate ¹	Percentage currently pregnant	Mean number of children ever born to women age 40-49
Residence			
Urban	2.48	3.3	3.4
Rural	3.21	4.8	5.1
Region			
Western	3.05	4.8	4.8
Central	3.43	3.8	4.7
East-Central	2.96	5.3	4.6
Eastern	2.71	4.2	4.2
Tashkent City	1.96	1.9	2.6
Oversampled areas			
Karakalpakstan	2.90	4.8	4.8
Ferghana	2.73	4.9	4.0
Education			
Primary/middle	3.13	3.9	5.1
Secondary	3.06	4.5	4.8
Secondary special	2.82	4.4	3.6
Higher	2.03	3.0	3.2
Ethnicity			
Uzbek	2.99	4.5	4.5
Russian	1.35	0.9	1.8
Karakalpak	2.69	4.5	4.6
Tajik	3.19	2.4	3.7
Kazakh	2.95	4.1	4.7
Tatar	(2.05)	0.0	2.6
Other	2.53	4.4	3.3
Difficulty making ends meet			
Great difficulty	2.90	4.3	4.5
Some difficulty	2.93	4.6	4.2
A little difficulty	2.90	4.1	4.3
Easily	3.02	2.9	3.9
Total	2.92	4.2	4.3

Note: Figures in parentheses are based on 125 to 249 person-years of exposure.

¹ Women age 15-49

Figure 4.1 Total Fertility Rate by Background Characteristics



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that they are. Nevertheless, the differentials in pregnancy status between women in Tashkent City and women in other regions show the same pattern as the fertility differentials.

4.2 FERTILITY TRENDS

An indication of the trend in fertility can be seen by comparing TFRs for 2000-2002 (a measure of current fertility) with the mean number of children ever born (CEB) to women age 40-49 (a measure of past fertility of older women). At the national level, the TFR (2.9 children per woman) is lower than the number of children ever born to women age 40-49 (4.3 children per woman)—an indication that fertility has declined in Uzbekistan over the past three decades.

Fertility trends can be examined directly from the 2002 UHES data by calculating fertility rates for various periods preceding the survey. Table 4.3 shows fertility rates for four three-year periods preceding the survey.³ The TFRs in the table are also broken down by age-specific rates for the four periods.

For most ages, there is a consistent decline in age-specific rates between each of the four time periods from 1991 to 2002 (see Figure 4.2). The TFRs indicate a 31 percent decline in fertility (1.33 children per woman), from 4.25 to 2.92 children per woman.

Also shown in Table 4.3 are TFRs from the 1996 Uzbekistan Demographic and Health Survey (UDHS). Comparing fertility estimates from the 1996 UDHS and the 2002 UHES indicates a decline in fertility of 27 percent between 1991-1993 and 2000-2002 (from 4.0 children per woman to 2.9 children per woman).

³ Women age 15-49 were interviewed in the 2002 UHES. As a result, age-specific fertility rates for women in the older age intervals cannot be calculated for time periods well before the date of the survey. For example, rates cannot be calculated for women age 44-49 for the period 9 to 11 years before the survey because those women were older than 50 years at the time of the survey and were not interviewed. Rates based on fully or partially observed exposure for women as old as 40 to 44 years can be calculated for all time periods shown in Table 4.3.

Table 4.3 Fertility trends

Age-specific and total fertility rates for three-year periods preceding the survey, 2002 UHES, 1996 UDHS, and Ministry of Health

Age	Three-year periods preceding the survey			
	2000-2002	1997-1999	1994-1996	1991-1993
2002 UHES				
15-19	40.2	55.0	70.8	54.3
20-24	234.6	267.7	277.9	303.8
25-29	171.4	163.5	194.4	254.5
30-34	93.6	99.1	106.3	156.0
35-39	36.4	40.6	49.9	57.7
40-44	8.3	11.7	[14.3]	[24.1]
45-49	[0.0]	[0.0]	-	-
TFR 15-44	2.9	3.2	3.6	4.3
1996 UDHS				
TFR 15-44	u	u	3.3	4.0
Ministry of Health				
TFR 15-49	2.5	3.0	3.5	3.7

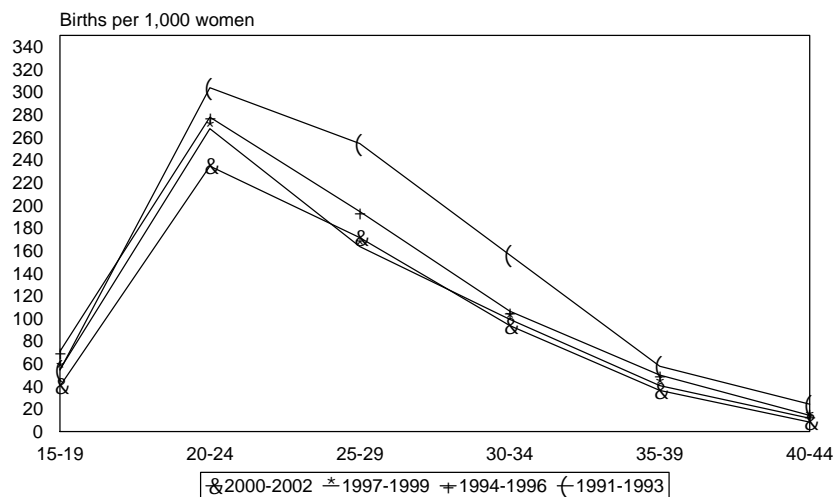
Note: Age-specific fertility rates are per 1,000 women. Estimates in brackets may be biased due to truncation.

TFR = Total fertility rate expressed per woman

u = Unknown (not available)

Source for Ministry of Health Statistics: WHO, 2003

Figure 4.2 Trends in Age-Specific Fertility Rates among Women Age 15-44



Fertility estimates reported by the Ministry of Health over the twelve-year period are also useful for examining fertility trends. For comparable time periods, the Ministry of Health rates are lower than those from the 2002 UHES, especially for the most recent period, 2000-2001.⁴ Nevertheless, the Ministry of Health rates indicate a similar pace of fertility decline between 1991-1993 and 2000-2001 (31 percent), from 3.7 children per woman to 2.5 children per woman.

4.3 CHILDREN EVER BORN AND CHILDREN SURVIVING

Table 4.4 shows statistics on the number of children ever born to women by five-year age groups at the time of the survey. Statistics are shown for all women and for currently married women.

Among all women, the mean number of children ever born increases steadily with age. Relatively few women age 15-19 have given birth, and the mean number of children ever born for this age group is 0.03. On average, women age 20-24 have had slightly less than one child (0.84). The mean number of children ever born continues to increase with each older age group and peaks at 4.49 children ever born among women age 44-49.

The mean number of children ever born is higher at all ages for currently married women than for all women. Differences are greatest at the younger ages, where a large percentage of women are unmarried and have not begun childbearing. Differences between all women and currently married women at the older ages are relatively small, and the differences that do exist reflect the fertility-reducing effect of marital disruption (divorce and widowhood).

Table 4.4 Children ever born and living

Percent distribution of all women and currently married women by number of children ever born (CEB), and mean number of CEB, mean number of living children, and proportion dead among children ever born, according to age group, Uzbekistan 2002

Age	Number of children ever born											Total	Number of women	Mean number of children ever born	Mean number of living children	Proportion dead of CEB
	0	1	2	3	4	5	6	7	8	9	10+					
ALL WOMEN																
15-19	97.5	2.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	1,091	0.027	0.027	0.000
20-24	45.5	30.1	19.6	4.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	100.0	1,049	0.843	0.795	0.057
25-29	10.2	14.1	39.7	28.9	6.2	1.0	0.0	0.0	0.0	0.0	0.0	100.0	809	2.097	1.950	0.070
30-34	4.9	7.9	24.5	34.2	19.6	5.9	2.3	0.5	0.2	0.0	0.0	100.0	734	2.860	2.626	0.082
35-39	4.2	4.7	12.2	28.6	26.2	16.1	5.2	1.8	0.8	0.0	0.2	100.0	687	3.518	3.285	0.066
40-44	3.4	4.6	9.8	19.1	21.5	20.3	10.2	6.6	3.0	0.9	0.7	100.0	626	4.160	3.752	0.098
45-49	3.9	4.7	11.6	14.6	15.8	16.3	15.4	8.8	5.6	1.0	2.3	100.0	466	4.494	3.992	0.112
Total	31.6	10.9	16.6	16.7	10.8	6.7	3.4	1.8	0.9	0.2	0.3	100.0	5,463	2.165	1.984	0.084
CURRENTLY MARRIED WOMEN																
15-19	64.1	32.6	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	76	0.391	0.391	0.000
20-24	20.6	43.5	28.7	6.3	0.9	0.0	0.0	0.0	0.0	0.0	0.0	100.0	696	1.233	1.160	0.059
25-29	4.9	12.8	42.6	31.8	6.9	1.1	0.0	0.0	0.0	0.0	0.0	100.0	726	2.263	2.106	0.069
30-34	2.1	6.8	24.5	36.3	20.8	6.3	2.5	0.5	0.2	0.0	0.0	100.0	666	2.996	2.749	0.082
35-39	2.0	2.0	12.1	29.6	28.2	17.3	5.7	2.1	0.9	0.0	0.2	100.0	605	3.720	3.487	0.063
40-44	1.4	2.7	8.0	19.5	23.2	21.7	11.3	7.1	3.2	1.0	0.8	100.0	552	4.404	3.958	0.101
45-49	3.3	4.0	11.2	13.0	15.1	17.0	16.9	9.7	5.7	1.1	2.7	100.0	398	4.659	4.134	0.113
Total	7.4	13.7	22.5	23.0	14.9	9.2	4.9	2.5	1.3	0.3	0.4	100.0	3,720	2.974	2.725	0.084

⁴ The most recent estimates of the TFR from the MOH are for 2000 and 2001. Because fertility has been steadily declining in Uzbekistan, the MOH rate for 2002 may continue that trend, in which case the MOH estimate for the three-year period 2000-2002 would be lower than the 2.5 rate shown in Table 4.3 (column entitled 2000-2002). Nevertheless, the MOH estimate of 2.5 is less than the survey estimate of 2.9.

4.4 BIRTH INTERVALS

The length of time between consecutive births can have important effects on the health of mothers and their children. Research has shown that children born too soon after a previous birth have an increased risk of dying, particularly when the interval between births is less than 24 months. Table 4.5 shows the percent distribution of non-first births (i.e., second- and higher-order births) occurring in the five years preceding the survey, by the number of months since the preceding live birth.

Table 4.5 Birth intervals

Percent distribution of non-first births in the five years preceding the survey by number of months since preceding live birth, according to background characteristics, Uzbekistan 2002

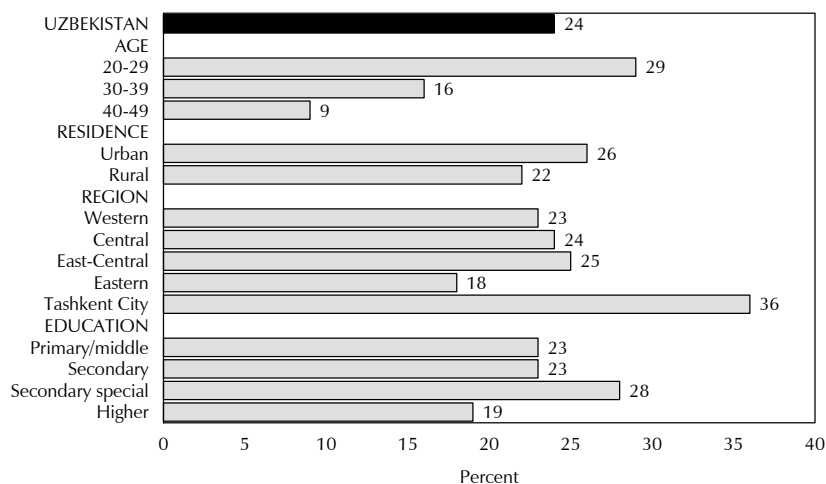
Background characteristic	Number of months since preceding live birth					Total	Number of non-first births	Median number of months since preceding birth
	7-17	18-23	24-35	36-47	48+			
Age								
15-19	*	*	*	*	*	*	2	*
20-29	12.2	17.0	36.6	18.9	15.3	100.0	963	29.8
30-39	7.1	9.0	17.1	15.8	51.1	100.0	636	48.8
40-49	3.2	5.9	19.7	12.9	58.3	100.0	72	59.3
Birth order								
2-3	11.2	14.9	30.9	17.1	25.9	100.0	1,232	32.9
4-6	7.2	9.2	22.2	18.4	43.0	100.0	400	41.6
7+	(2.4)	(10.7)	(14.9)	(17.5)	(54.6)	100.0	41	(54.4)
Survival of preceding birth								
Living	7.7	12.9	29.3	18.4	31.7	100.0	1,531	36.1
Dead	35.1	19.3	19.2	6.8	19.6	100.0	141	23.1
Residence								
Urban	12.0	14.0	23.0	16.8	34.2	100.0	601	36.5
Rural	8.9	13.1	31.5	17.7	28.8	100.0	1,072	34.6
Region								
Western	10.9	12.3	25.8	17.1	33.8	100.0	213	37.1
Central	11.5	12.6	30.2	19.7	26.0	100.0	446	33.9
East-Central	10.1	14.9	28.9	16.8	29.3	100.0	459	33.6
Eastern	6.3	11.6	27.6	18.1	36.3	100.0	439	37.7
Tashkent City	16.2	20.2	27.4	8.9	27.3	100.0	116	29.8
Oversampled areas								
Karakalpakstan	8.6	11.5	23.2	18.4	38.3	100.0	120	39.8
Ferghana	8.1	12.5	24.9	20.8	33.6	100.0	219	37.6
Education								
Primary/middle	12.8	9.9	41.8	13.0	22.4	100.0	170	31.0
Secondary	9.6	12.9	30.2	17.3	29.9	100.0	1,032	35.0
Secondary special	11.2	17.2	19.1	19.2	33.3	100.0	336	36.8
Higher	6.4	12.5	21.0	19.3	40.8	100.0	135	40.8
Difficulty making ends meet								
Great difficulty	8.8	11.0	28.4	17.6	34.2	100.0	484	37.4
Some difficulty	10.2	14.7	30.2	16.7	28.2	100.0	565	33.7
A little difficulty	12.1	13.8	26.6	14.8	32.8	100.0	491	34.9
Easily	5.9	15.9	27.8	29.0	21.4	100.0	131	36.1
Total	10.0	13.5	28.4	17.4	30.7	100.0	1,673	35.1

Note: First-order births are excluded. The interval for multiple births is the number of months since the preceding pregnancy that ended in a live birth. Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Overall, 24 percent of non-first births occurred within 24 months of the preceding birth (Figure 4.3). This is fewer than the 30 percent found in the 1996 UDHS. As was the case with the 1996 UDHS, women age 20-29 have a greater propensity for closely spaced births than older women. Twenty-nine percent of non-first births among these women followed a birth interval of less than 24 months. The occurrence of closely spaced births was more likely if the preceding child had died than if that child was alive at the time of the survey.

The percentage of births following a short birth interval is lowest in the East region (18 percent) and highest in Tashkent City (36 percent). This is consistent with the regional differentials reported in the 1996 UDHS.

Figure 4.3 Percentage of Non-first Births Born Within 24 Months of a Preceding Birth Interval



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4.5 AGE AT FIRST BIRTH

The age at which childbearing begins has important demographic consequences for society as a whole as well as for the health and welfare of the mother and her child. Early initiation of childbearing is generally associated with large family size and rapid population growth in populations where family planning is not widely practiced.

Table 4.6 shows the percentage of women who had a first birth by exact ages and the median age at first birth according to current age. The median age at first birth cannot be computed for women age 15-19 and 20-24 because less than half had a live birth before the beginning of the age group. However, recent trends in the initiation of childbearing among young women can be assessed by comparing the overall proportions that had given birth in the 1996 UDHS and the 2002 UHES. In the 1996 UDHS, 7 percent of women age 15-19 and 60 percent of women age 20-24 had given birth. In the 2002 UHES, the comparable figures are 2 percent for women age 15-19 and 54 percent for women age 20-24. The decline indicates a delay in the initiating of childbearing among women during the period from 1996 to 2002.

Table 4.6. Age at first birth

Among all women, percentage who gave birth by specific exact age, and median age at first birth, by current age, Uzbekistan 2002

Current age	Percentage who gave birth by exact age:				Percentage who have never given birth	Number of women	Median age at first birth
	18	20	22	25			
15-19	na	na	na	na	97.5	1,091	a
20-24	3.8	23.3	na	na	45.5	1,049	a
25-29	2.5	30.1	64.3	85.4	10.2	809	21.0
30-34	0.8	19.2	59.2	83.8	4.9	734	21.5
35-39	0.8	18.3	52.8	81.2	4.2	687	21.8
40-44	1.4	19.7	53.9	80.8	3.4	626	21.8
45-49	4.4	28.3	54.4	79.8	3.9	466	21.6

na = Not applicable

^a Median was not calculated because less than 50 percent of women in the age group x to $x+4$ have married by age x .

Table 4.7 shows the median age at first birth, according to current age and background characteristics. As expected, urban women have their first birth later than rural women (a median of 22.0 years compared with 21.3 years). The median age at first birth is about one year older among women in Tashkent City than among women in the other regions. The largest differentials in median age at first birth are associated with education, where the median age is as much as three years older among women with a higher education than women with less education. For women age 25-29, the median age at first birth is 23.5 years among those with a higher education and 20.1 years among those with less than a secondary education.

Table 4.7 Median age at first birth by background characteristics

Median age at first birth among women 25-49, by current age and background characteristics, Uzbekistan 2002

Background characteristic	Current age					Women age 25-49
	25-29	30-34	35-39	40-44	45-49	
Residence						
Urban	21.3	21.9	22.0	22.5	22.5	22.0
Rural	20.9	21.3	21.7	21.4	21.1	21.3
Region						
Western	21.6	21.8	22.8	21.7	20.7	21.8
Central	20.8	21.8	21.9	21.9	22.2	21.7
East-Central	20.8	21.2	22.0	22.0	21.0	21.4
Eastern	20.9	21.2	21.4	21.3	21.2	21.2
Tashkent City	22.2	22.9	22.4	22.7	23.8	22.7
Oversampled areas						
Karakalpakstan	21.8	22.2	23.1	21.9	20.8	22.0
Ferghana	20.6	21.0	21.5	21.3	21.1	21.1
Education						
Primary/middle	20.1	21.4	21.6	21.3	20.6	21.0
Secondary	20.7	21.0	21.3	21.2	20.7	21.0
Secondary special	21.7	21.8	22.3	22.5	23.1	22.1
Higher	23.5	23.2	23.8	23.7	24.7	23.7
Ethnicity						
Uzbek	21.0	21.5	21.8	21.7	21.5	21.5
Russian	24.2	22.2	21.4	23.6	23.3	23.0
Karakalpak	21.6	22.4	22.8	22.7	20.9	22.0
Tajik	20.3	20.0	21.8	22.0	22.1	21.2
Kazakh	20.5	22.5	23.2	22.6	21.9	22.3
Tatar	22.4	27.4	23.7	23.6	24.7	23.8
Other	24.9	21.2	23.2	21.3	22.6	22.1
Difficulty making ends meet						
Great difficulty	21.2	21.6	21.9	21.8	21.2	21.6
Some difficulty	21.1	21.8	22.0	22.0	21.4	21.7
A little difficulty	20.8	21.1	21.7	21.5	21.9	21.3
Easily	20.9	21.5	21.5	21.8	21.8	21.5
Total	21.0	21.5	21.8	21.8	21.6	21.5

Note: The medians for cohorts 15-19 and 20-24 could not be determined because less than 50 percent of the women had given birth by exact ages 15 and 20, respectively.

4.6 ADOLESCENT FERTILITY

Fertility among women age 15-19 warrants special attention because motherhood at these young ages has been found in many societies to be associated with social and health problems for both the mother and her child. Children born to teenage mothers, especially those less than 18 years of age, have higher levels of morbidity and mortality than children born to older mothers.

Table 4.8 shows the percentage of women age 15-19 who had a first birth or who were pregnant with their first child at the time of the survey. Early childbearing is not the cultural norm in Uzbekistan, and only 4 percent of women age 15-19 had begun childbearing by the time of the survey. This is a decline from the 1996 UDHS, where 10 percent of women age 15-19 had begun childbearing.

As expected, the proportion of women who have begun childbearing increases rapidly during the teenage years, reaching 17 percent among women age 19.

Table 4.8 Teenage pregnancy and motherhood				
Percentage of women age 15-19 who are mothers or pregnant with their first child, by background characteristics, Uzbekistan 2002				
Background characteristic	Percentage who are:		Percentage who have begun child-bearing	Number of women
	Mothers	Pregnant with first child		
Age				
15	0.0	0.0	0.0	214
16	0.0	0.0	0.0	231
17	0.6	0.6	1.2	237
18	2.9	0.6	3.5	190
19	9.4	7.3	16.7	218
Residence				
Urban	2.5	2.5	5.0	378
Rural	2.5	1.3	3.8	713
Region				
Western	2.0	2.0	4.0	147
Central	3.3	0.5	3.8	280
East-Central	2.8	2.5	5.3	279
Eastern	1.7	2.0	3.8	299
Tashkent City	2.6	1.5	4.1	85
Oversampled areas				
Karakalpakstan	2.2	1.5	3.7	79
Ferghana	4.3	2.0	6.3	122
Education				
No education, Primary/middle	2.2	0.9	3.1	213
Secondary	3.1	2.2	5.3	654
Secondary special	1.1	1.2	2.3	179
Higher	(1.4)	(0.0)	(1.4)	45
Difficulty making ends meet				
Great difficulty	3.6	2.0	5.6	283
Some difficulty	1.2	1.6	2.8	387
A little difficulty	2.4	1.6	4.0	349
Easily	6.0	1.9	7.9	68
Total	2.5	1.7	4.2	1,091

Note: Figures in parentheses are based on 25-49 unweighted cases.