

*İsmet Koç and Erhan Özdemir*

This chapter looks at a number of fertility indicators including levels, patterns, and trends in both current and cumulative fertility; the length of birth intervals; and the age at which women initiate childbearing. Information on current and cumulative fertility is essential in monitoring the progress and evaluating the impact of the population program in Turkey. The data on birth intervals are important since short intervals are strongly associated with childhood mortality. The age at which childbearing begins may also have a major impact on the health and well-being of both the child and the mother.

Data on childbearing patterns were collected in the TDHS-2003 in several ways. First, each woman was asked a series of questions on the number of her sons and daughters living with her, the number living elsewhere, and the number who may have died. Next, a complete history of all of the woman's births was obtained, including the name, sex, month and year of birth, age, and survival status for each of the births. For living children, a question was asked about whether the child was living in the household or away. For dead children, the age at death was recorded.

#### **4.1 Current Fertility**

The level of current fertility is one of the most important topics in this report because of its direct relevance to population policies and programs. Measures of current fertility presented in this chapter include age-specific fertility rates, the total fertility rate, the general fertility rate, and the crude birth rate. These rates are generally presented for the three-year period preceding the survey. The three-year period was chosen for calculating these rates (rather than a longer or a shorter period) to provide the most current information, to reduce sampling error, and to avoid problems of the displacement of births.

Age-specific fertility rates are useful in understanding the age pattern of fertility. Numerators of age-specific fertility rates are calculated by identifying live births that occurred in the 1 to 36 months preceding the survey (determined from the date of interview and date of birth of the child), and classifying them by the age (in five-year age groups) of the mother at the time of the child's birth. The denominators of these rates are the number of woman-years lived in each of the specified five-year age groups during the 1 to 36 months preceding the survey. Although information on fertility was obtained only for ever-married women, the age-specific rates are presented for all women regardless of marital status. Data from the household questionnaire on the age structure of the population of never-married women were used to calculate the all-women rates. This procedure assumes that women who have never been married have had no children.

The total fertility rate (TFR) is a useful measure for examining the overall level of current fertility. TFR is a construct of the age-specific rates computed by summing the age-specific rates and multiplying by five. It can be interpreted as the number of children a woman would have by the end of her childbearing years if she were to pass through those years bearing children at the currently observed age-specific rates. The general fertility rate (GFR) represents the annual number of births in a population per 1,000 women age 15-44. The crude birth rate (CBR) is the annual number of births in a population per 1,000 persons. Both measures are based on the birth history data for the three-year period before the survey and the age-sex distribution of the household population.

Current estimates of fertility levels by residence are presented in Table 4.1. The total fertility rate indicates that if fertility rates were to remain constant at the level prevailing during the three-year period before the TDHS-2003 (approximately June 2001 to May 2004), a woman in Turkey would bear 2.23 children during her lifetime. In rural areas, the TFR is 2.65 births per woman, and decreases around two children (2.06) in urban areas. When compared with evidence from previous demographic surveys, the urban-rural gap in fertility levels appears to be closing in Turkey.

Table 4.1 Current fertility			
Age-specific and cumulative fertility rates, general fertility rate, and crude birth rate for the three years preceding the survey, by urban-rural residence, Turkey 2003			
Age group	Urban	Rural	Total
15-19	44	47	46
20-24	126	161	136
25-29	126	158	134
30-34	71	94	78
35-39	33	48	38
40-44	11	16	12
45-49	0	6	2
TFR 15-49	2.06	2.65	2.23
TFR 15-44	2.06	2.62	2.22
GFR 15-44	74	90	79
CBR	19	21.1	19.7

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 15-44), expressed per 1,000 women  
CBR: Crude birth rate, expressed per 1,000 population

Table 4.1 and Figure 4.1 show that women in Turkey experience their prime reproductive years during their twenties. According to current age schedule of fertility, the average woman in Turkey will have one child by age 25 and two children by age 30. At every age rural women bear more children than urban women. The rural age-specific fertility rates rise sharply from age 15-19 to the peak at age 20-24, and then gradually decline. On the other hand, the urban age-specific fertility rates assume a more gradual pattern, an indication both

of delayed marriage and some deliberate attempt to postpone or terminate births by urban women.

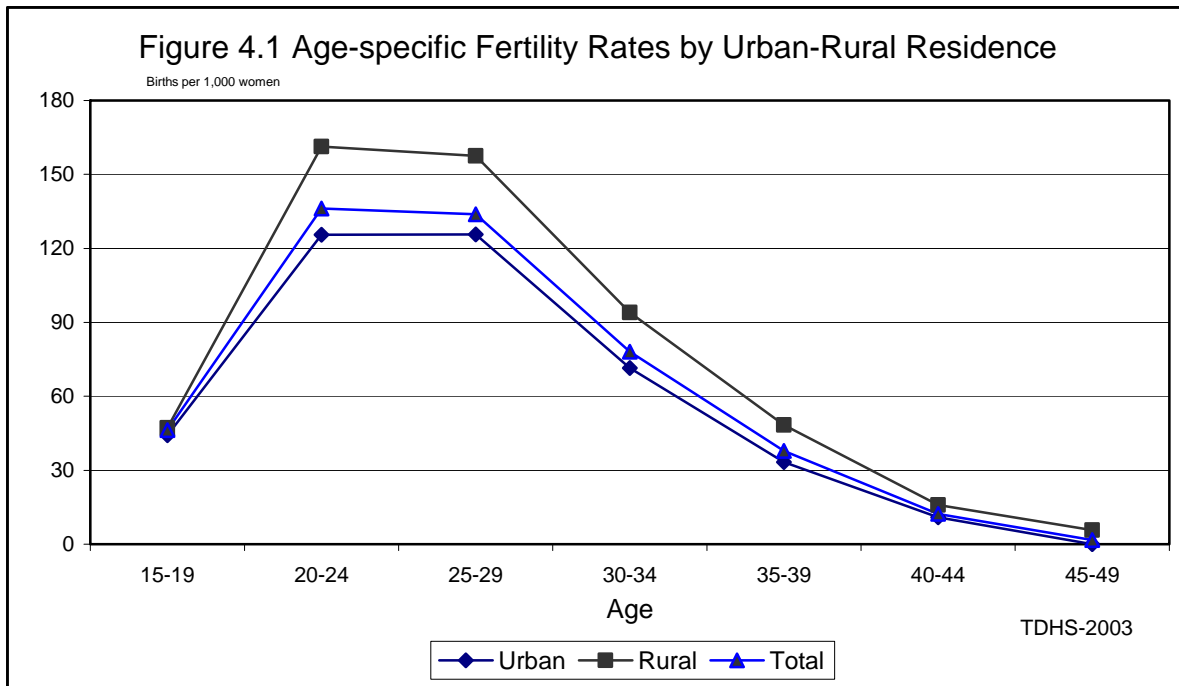


Table 4.1 also presents two other summary measures of fertility: the crude birth rate and the general fertility rate. The crude birth rate in Turkey is 19.7 births per 1,000 population. As with TFR, there is a slight differential in this rate by residence: 19 births per 1000 in urban areas versus 21.1 births per 1,000 in rural areas. The general fertility rate of 79 indicates that 1,000 women age 15-44 would have 79 live births per year. The GFR also indicates a significant urban-rural difference.

#### 4.2 Fertility Differentials

Table 4.2 highlights TFRs for the three years preceding the survey by background characteristics. The greatest regional variation in fertility is seen between East region and the rest of Turkey. With a TFR of 3.65, women in eastern part of Turkey have a TFR that is about one and a half births more than women elsewhere in Turkey who exhibit TFRs below 2.1, known as replacement level, with the exception of South region, which exhibits slightly over replacement fertility. Among the NUTS 1 regions, the fertility is below the replacement level (1.83) in İstanbul, while in the Southeast Anatolia it is twice the level of replacement fertility.

Table 4.2 also shows the mean number of children ever born (CEB) to women age 40-49. Trends in fertility can be inferred by comparing the TFR (a measure of current fertility) with the number of CEB (a measure of completed fertility). If fertility is stable over time in a population, the TFR and the mean CEB for women 40-49 will be similar. If fertility levels have been falling, the TFR will be substantially lower than the mean CEB among women age 40-49. The comparison of the TFR with the mean CEB among women 40-49 in Table 4.2

suggests that fertility has fallen sharply in Turkey over the past several decades. Women age 40-49 had an average of 3.5 births during their lifetime, over one birth more than women bearing children will have at the current rates. The decline in fertility implied by a comparison of the TFR with completed fertility has been greater in rural than in urban areas. The largest implied decline in fertility by region is observed in East region, where the TFR was approximately 2 and a half births lower than the mean number of children ever born to women 40-49.

**Table 4.2 Fertility by background characteristics**

Total fertility rate for the three years preceding the survey, percentage of women 15-49 currently pregnant, and mean number of children ever born to women age 40-49, by background characteristics, Turkey 2003

Background characteristic	Total fertility rate <sup>1</sup>	Percentage currently pregnant	Mean number of children ever born to women age 40-49
<b>Region</b>			
West	1.88	3.1	2.90
South	2.30	4.1	3.72
Central	1.86	3.9	3.43
North	1.94	2.9	3.41
East	3.65	6.9	6.07
<b>Selected NUTS 1 Regions</b>			
İstanbul	1.83	2.9	3.09
Southeast Anatolia	4.19	6.7	6.61
<b>Education</b>			
No educ./Prim. incomp.	3.65	5.6	4.98
First level primary	2.39	4.1	3.21
Second level primary	1.77	2.3	2.54
High school and higher	1.39	3.8	1.96
<b>Total</b>	<b>2.23</b>	<b>4.1</b>	<b>3.54</b>

<sup>1</sup> Women age 15-49 years

Table 4.2 presents marked differences in fertility levels and trends by education. The TFR decreases rapidly with increasing educational level, from 3.7 births among women with no education to 1.4 births among women who had completed high school or higher. The differentials in completed fertility across educational groups are even more striking. The mean number of children ever born is 5 among women age 40-49 with no education, compared with 2 among women who have completed high school or higher. With regard to the trend in fertility, the decline in fertility implied by a comparison of the TFR with the mean CEB is substantial for women with no education.

Another indicator of current fertility, the percentage of women who are currently pregnant, is included in Table 4.2. Overall, slightly more than 4 percent of the TDHS-2003 respondents were pregnant at the time of the survey. Women living in the eastern part of Turkey have the highest percentage currently pregnant (7 percent), while the percentage is

lowest in the West and North regions (3 percent). Surprisingly, the percentage of women who were pregnant is higher for women with a high school or higher education than for women with a secondary education. This may be due at least in part to the fact that, on average, highly-educated women are younger than women in the other education categories and thus more likely to be in the family-building stage than other women.

### 4.3 Fertility Trends

Trends in fertility can be assessed in several other ways. TFR estimates from the TDHS-2003 can be compared with estimates obtained in earlier surveys. Fertility changes can also be examined by using data from the birth histories obtained from the TDHS-2003 respondents to look at the trend in age-specific fertility rates for successive five-year periods before the survey.

#### 4.3.1 Comparison with Previous Surveys

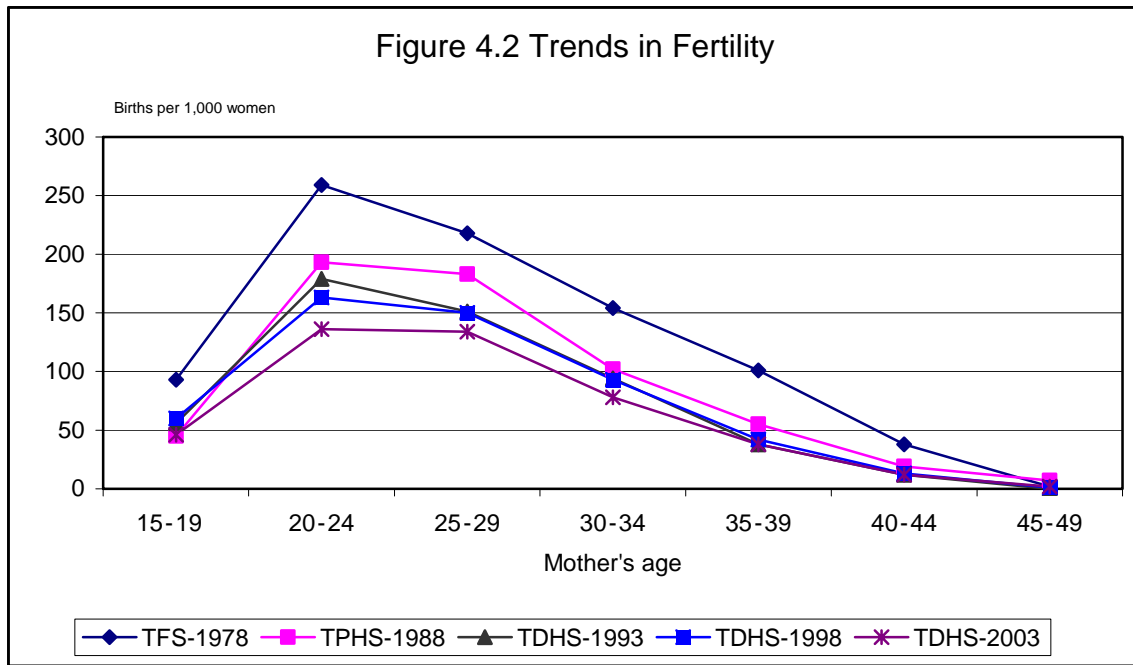
Table 4.3 shows the TFR estimates from a series of surveys conducted in Turkey during the period 1978 through 2003. The surveys vary in the timeframes for which the TFR estimates are available. For example, the rates from the 1978, 1988 and 1993 surveys are based on births in a one-year period before the survey, while the rates for the TDHS-1998 and TDHS-2003 surveys are based on a three-year period before the interview date.

Age	TFS-1978	TPHS-1988	TDHS-1993	TDHS-1998	TDHS-2003
15-19	93	45	56	60	46
20-24	259	193	179	163	136
25-29	218	183	151	150	134
30-34	154	102	94	93	78
35-39	101	55	38	42	38
40-44	38	19	12	13	12
45-49	2	7	0	1	2
TFR 15-49	4.33	3.02	2.65	2.61	2.23

Note: 1978, 1988 and 1993 rates refer to the year before the survey; 1998 and 2003 rates refer to the 3-year period before the survey.

As Table 4.3 and Figure 4.2 show, fertility levels have declined almost continuously in Turkey over the past 25 years, from a level of 4.3 births per woman at the time of the TFS-1978 to 2.2 births per woman at the time of the TDHS-2003. The decline in fertility was especially rapid during the period between the 1970s and the 1980s. After the TFR reached a level of below 3 births per woman at the time of the TDHS-1993, the pace of fertility decline slowed somewhat, and stabilized around 2.6 births on average in the 1990s. However after a stabilization period in fertility during the 1990s, TDHS-2003 puts forward a fertility decline by

15 percent in the period of 1998 and 2003. The fertility level reached by Turkey in 2000s is slightly over the replacement level of fertility.

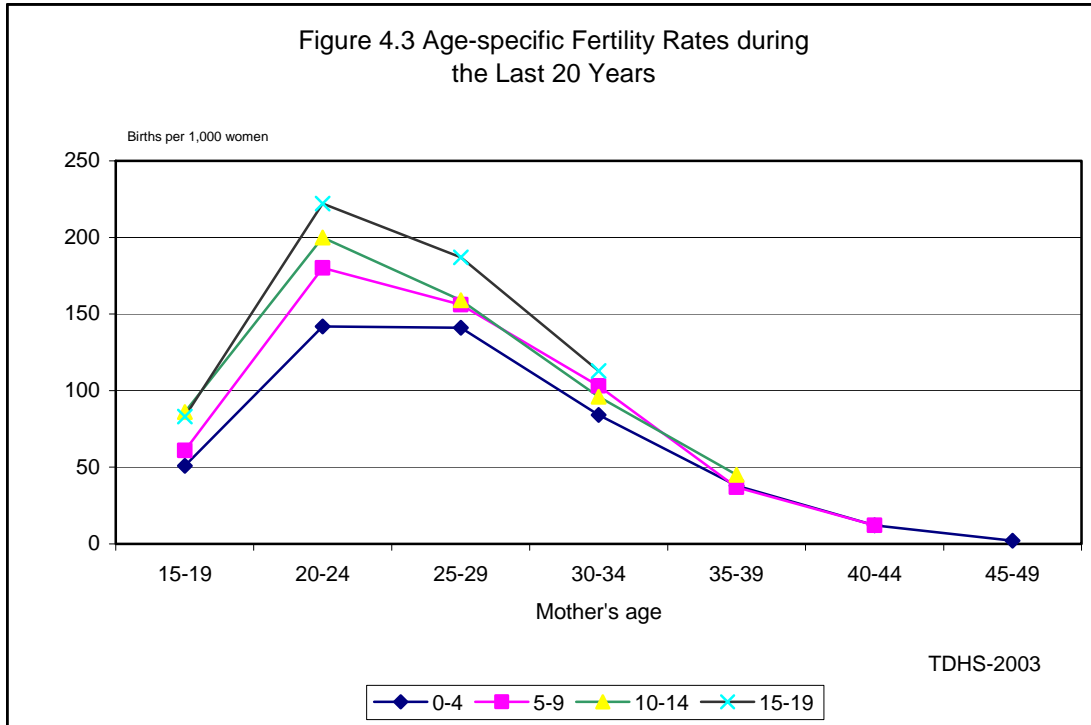


### 4.3.2 Retrospective Data from TDHS-2003 Birth Histories

Fertility trends can also be investigated using retrospective data from the birth histories collected from respondents in a single survey. The age-specific fertility rates shown in Table 4.4 and Figure 4.3 were generated from the birth history data collected in the TDHS-2003. The numerators of the rates are classified by five-year segments of time preceding the survey and the mother's age at the time of birth. Because women age 50 years and over were not interviewed in the TDHS-2003, the rates for older age groups become progressively more truncated for periods more distant from the survey date. For example, rates cannot be calculated for women age 45-49 for the period 5-9 years and more prior to the survey, because women in that age group would have been 50 years or older at the time of the survey.

Mother's age	Number of years preceding the survey			
	0-4	5-9	10-14	15-19
15-19	51	61	86	83
20-24	142	180	200	222
25-29	141	156	159	187
30-34	84	103	96	[113]
35-39	38	37	[45]	
40-44	12	[12]		
45-49	[2]			

Note: Age-specific fertility rates are per 1,000 women. Estimates in brackets are truncated.



The results in Table 4.4 and Figure 4.3 confirm that fertility has fallen substantially among all age groups, with the most rapid relative decline occurring in the 15-19 age group. Overall, the cumulative fertility rate for women age 15-34 decreased by one birth, from 3.0 births per woman during the period 15-19 years before the survey to 2.1 births per woman in the five-year period preceding the survey.

**Table 4.5 Fertility by marital duration**

Fertility rates for ever-married women by duration since first marriage in years, for five-year periods preceding the survey, Turkey 2003

Marriage duration at birth	Number of years preceding the survey			
	0-4	5-9	10-14	15-19
0-4	278	293	324	334
5-9	154	177	170	213
10-14	89	99	110	153
15-19	41	56	78	[111]
20-24	17	27	[49]	[117]
25-29	9	[16]	[38]	

Note: Age-specific fertility rates are per 1,000 women. Estimates enclosed in brackets are truncated.

Table 4.5 presents fertility rates for ever-married women by duration since first marriage for five-year periods preceding the survey. The decline in fertility has occurred at all marital durations; however, the decline is greatest among women with longer marital durations. Fertility within the first several years of marriage typically remains resistant to change, even when fertility is declining, because fertility decline usually begins among older

women who want to stop childbearing, not among young couples postponing births. Table 4.5 indicates rapid declines in fertility for all marital durations of five or more years, and a 17 percent decline for marriages of less than five years.

#### 4.4 Children Ever Born and Living

Table 4.6 presents the distribution of all women and of currently married women by the total number of children ever born. The distribution is the outcome of each woman's lifetime fertility. It reflects the accumulation of births over the past 30 years and therefore its relevance to the current situation is limited. However, the information is useful in looking at how average family size varies across age groups and for looking at the level of primary infertility.

Since only ever-married women were interviewed in the TDHS-2003, information on the reproductive histories of never-married women is not available. However, virtually all births in Turkey occur within marriage; thus, in calculating these fertility measures for all women, never-married women were assumed to have had no births. The marked differences between the results for currently married women and for all women at the younger ages are due to the comparatively large numbers of never-married women in those age groups who, as noted, are assumed to have had no births.

Table 4.6 Children ever born and living															
Percent distribution of all women and of currently married women by number of children ever born (CEB) and mean number of children ever born and living, according to five-year age groups, Turkey 2003															
Age of mother	Number of children ever born											Total percent	Number of women	Mean number of CEB	Mean number of living children
	0	1	2	3	4	5	6	7	8	9	10+				
ALL WOMEN															
15-19	94.3	4.8	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	2,003	0.07	0.07
20-24	61.8	22.5	11.5	3.1	0.8	0.3	0.0	0.0	0.0	0.0	0.0	100.0	2,101	0.59	0.57
25-29	27.9	24.0	28.8	11.2	4.5	2.1	0.5	0.4	0.5	0.0	0.0	100.0	1,849	1.54	1.48
30-34	13.4	14.8	32.4	20.4	9.2	3.7	2.4	2.0	0.8	0.7	0.2	100.0	1,622	2.39	2.25
35-39	8.3	9.6	30.4	23.5	12.9	6.0	3.5	2.2	1.3	1.0	1.3	100.0	1,481	2.93	2.69
40-44	5.3	5.6	28.5	23.3	13.6	8.7	6.1	2.8	2.2	1.3	2.5	100.0	1,371	3.44	3.11
45-49	4.3	5.8	25.2	21.7	16.5	10.1	5.5	3.7	2.1	1.6	3.7	100.0	1,089	3.67	3.23
Total	36.1	13.4	21.1	13.1	7.0	3.7	2.1	1.3	0.8	0.5	0.8	100.0	11,517	1.84	1.69
CURRENTLY MARRIED WOMEN															
15-19	51.5	40.8	5.5	1.7	0.5	0.0	0.0	0.0	0.0	0.0	0.0	100.0	237	0.59	0.56
20-24	23.4	44.9	23.2	6.2	1.7	0.6	0.0	0.0	0.0	0.0	0.0	100.0	1,019	1.20	1.15
25-29	9.4	29.6	36.5	14.2	5.7	2.7	0.7	0.5	0.2	0.0	0.0	100.0	1,435	1.95	1.87
30-34	4.9	15.1	36.1	22.8	10.4	4.0	2.6	2.6	1.1	0.8	0.2	100.0	1,423	2.65	2.49
35-39	3.8	8.4	32.2	25.0	13.9	6.5	3.8	2.4	0.4	1.1	1.4	100.0	1,333	3.13	3.88
40-44	2.3	4.7	29.2	24.8	14.4	9.4	5.8	3.1	5.0	1.4	2.6	100.0	1,223	3.59	3.25
45-49	2.6	5.6	25.8	22.4	16.5	10.4	5.7	3.7	4.9	1.7	3.5	100.0	1,001	3.75	3.30
Total	8.7	18.5	30.4	19.0	10.1	5.3	3.0	1.9	1.9	0.8	1.2	100.0	7,671	2.64	2.43

Table 4.6 shows that on the average a woman in Turkey has given birth to 1.84 children. Out of that number, 1.69 children are still alive, indicating that 6 percent of the children ever born to TDHS-2003 respondents have died. The number of children that women have borne increases directly with age, reflecting the natural family-building process. Women age 45-49, who are approaching the end of their childbearing period, have had an average of 3.8 births. Reflecting the high levels of fertility prevailing during the 30-year period when those women were bearing children, approximately 4 percent of women in the cohort have had 10 or more births. As expected, the proportion surviving declines with increasing age of mother. Among women age 45-49, the mean number of children ever born is almost a half child greater than the mean number of surviving children.

The percentage of women in their forties who have never had children provides an indicator of the level of primary infertility –the proportion of women who are unable to bear children at all. Since voluntary childlessness is rare in Turkey, it is likely that married women with no birth are unable to bear children. The TDHS-2003 results suggest that primary fertility is low; less than 3 percent of married women age 45-49 report that they have had no children.

#### **4.5 Birth Intervals**

A birth interval is the period between two successive live births. Research has shown that children born soon after a previous birth (i.e., within 24 months) are at greater risk of illness and death than those born after a longer interval. In addition, short birth intervals may have consequences for other children in the family. The occurrence of closely spaced births gives the mother insufficient time to restore her health, which may limit her ability to take care of her children. The duration of breastfeeding for the older child may also be shortened if the mother becomes pregnant.

Table 4.7 shows the percent distribution of non-first births in the five years preceding the survey by length of the previous birth interval. Birth intervals are relatively long, with about three-quarters of all non-first births occurring at least two years after the previous birth. Approximately a half of births took place at least three years after a prior birth. The median interval is approximately 36 months, which is about a year longer than the minimum interval considered safe. Although the majority of non-first births are appropriately spaced, 27 percent were born too soon after a prior birth, i.e., within 24 months of a previous birth.

Younger women have shorter birth intervals than older women. The median interval varies from 23 months among the small number of births to women age 15-19 to 45 months among births to women age 30-39. Birth intervals vary significantly with the child's birth order. The lowest birth orders (2-3 births) show the least likelihood of being born soon after the previous birth. Birth intervals are markedly different depending on the survival status of the prior birth; the average interval is about 8 months longer in cases where the prior birth is alive than when that child has died (36 months and 28 months, respectively).

Table 4.7 Birth intervals

Percent distribution of non-first births in the five years preceding the survey by number of months since previous birth, according to demographic and socioeconomic characteristics, Turkey 2003

Background characteristic	Number of months since previous birth					Total	Number of births	Median number of months since previous birth
	7-17	18-23	24-35	36-47	48+			
<b>Age of mother</b>								
15-19	(32.0)	(28.8)	(35.7)	(3.5)	(0.0)	100.0	23	22.8
20-29	16.8	17.6	27.7	13.7	24.3	100.0	1,333	30.2
30-39	9.0	9.9	19.9	13.2	48.0	100.0	1,194	44.6
40+	9.8	7.9	16.6	10.7	55.1	100.0	169	56.1
<b>Birth order</b>								
2-3	12.5	12.3	22.0	13.6	39.6	100.0	1,780	38.8
4-6	13.7	15.4	24.0	12.6	34.2	100.0	656	33.0
7+	15.6	18.6	33.2	11.5	21.2	100.0	283	28.0
<b>Sex of prior birth</b>								
Male	13.7	13.7	22.2	13.6	36.8	100.0	1,352	36.2
Female	12.4	13.7	25.1	12.7	36.0	100.0	1,368	35.4
<b>Survival of prior birth</b>								
Living	12.1	13.6	23.9	13.1	37.3	100.0	2,565	36.2
Dead	29.0	15.5	19.5	14.8	21.2	100.0	154	27.6
<b>Residence</b>								
Urban	11.2	12.1	22.6	12.9	41.1	100.0	1,704	39.4
Rural	16.2	16.3	25.3	13.6	28.5	100.0	1,016	31.4
<b>Region</b>								
West	9.5	12.1	20.1	10.5	47.8	100.0	782	45.0
South	12.8	10.1	24.6	14.8	37.7	100.0	362	38.0
Central	11.3	12.0	18.9	13.2	44.5	100.0	497	41.2
North	12.3	12.9	22.1	14.7	38.1	100.0	175	37.8
East	17.5	17.5	29.2	14.5	21.3	100.0	903	29.3
<b>NUTS 1 Region</b>								
Istanbul	6.8	10.7	24.2	11.0	47.3	100.0	362	45.0
West Marmara	5.9	8.3	16.5	11.9	57.5	100.0	67	56.3
Aegean	13.8	11.1	12.3	9.3	53.6	100.0	215	50.4
East Marmara	14.4	18.1	18.8	12.7	36	100.0	202	34.4
West Anatolia	9.0	10.8	22.2	13.1	44.8	100.0	231	42.4
Mediterranean	12.8	10.1	24.6	14.8	37.7	100.0	362	38.0
Central Anatolia	10.3	12.4	19.8	11.6	46	100.0	149	41.6
West Black Sea	14.7	10.9	20.2	11.1	43	100.0	132	39.3
East Black Sea	9.1	15.5	20.4	18.4	36.6	100.0	96	39.0
Northeast Anatolia	16.3	15.4	24.4	15.6	28.3	100.0	142	32.4
Central East Anatolia	18.0	19.2	26.4	11.4	25	100.0	233	29.0
Southeast Anatolia	17.6	17.4	31.7	15.6	17.7	100.0	529	28.6
<b>Education</b>								
No educ./Prim. inc.	18.4	18.0	29.5	12.8	21.3	100.0	925	28.0
First level primary	11.3	12.2	21.7	12.6	42.2	100.0	1,389	39.7
Second level primary	3.9	9.2	19.2	16.3	51.4	100.0	151	48.7
High school and higher	8.6	9.1	15.5	15.7	51.1	100.0	254	48.6
Total	13.1	13.7	23.6	13.2	36.4	100.0	2,720	35.8

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.

Note: Parentheses indicate that a figure is based on 25-49 unweighted cases.

As Table 4.7 shows, the median birth interval in urban areas is 39 months, compared with 31 months in rural areas. There is 16-month difference between women in the western part of Turkey, who have the longest birth interval, and those in the eastern part of Turkey who have the shortest birth interval (45 months and 29 months respectively). Consistent with this finding, in all the NUTS 1 regions of the eastern part of Turkey, the median birth interval is nearly 30 months. There exists a clear association between the woman's educational level and the average birth interval. The median birth interval is slightly over four years for women with high school or higher education as opposed to just over than the interval considered minimum safe for women with no education.

#### 4.6. 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 mother and child. In many countries, postponement of first births has contributed greatly to overall fertility decline.

Table 4.8 presents the distribution of women by age at first birth, according to their current age. For women under age 25 the median age at first birth is not shown because less than 50 percent of women in those ages had given birth at the time of the survey. The results in Table 4.8 suggest that there has been a steady rise in the age at first birth among women in Turkey. Women in younger cohorts are much less likely than older women to have given birth to their first child while they were in their teens. For example, among women age 45-49, 38 percent had become a mother before age 20, while only 28 percent of women age 25-29 had given birth to their first child before age 20. Overall, Table 4.8 shows that the median age at first birth ranges from a low of 21 years among women age 45-49 to 23 years among women age 25-29. These cohort changes that parallel with the increase in the median age at first marriage took place during the same period (see Chapter 7).

Current age	Percentage who gave birth by exact age					Percentage who have never given birth	Number of women	Median age at first birth
	15	18	20	22	25			
15-19	0.2	NA	NA	NA	NA	94.3	2,003	a
20-24	0.4	7.8	21.1	NA	NA	61.8	2,101	a
25-29	1.0	12.2	27.5	42.9	63.5	27.9	1,849	22.9
30-34	0.9	13.5	30.0	50.0	69.9	13.4	1,622	22.0
35-39	1.4	14.0	32.2	52.1	71.7	8.3	1,481	21.7
40-44	2.7	19.7	39.7	58.9	79.3	5.3	1,371	20.9
45-49	2.2	17.3	37.5	59.1	79.4	4.3	1,089	21.1

NA = Not applicable  
a = Omitted because less than 50 percent of women had a birth before reaching the beginning of the age group

Table 4.9 presents trends in the median age at first birth across age cohorts for key sub-groups. The measures are presented for women age 25-49 years to ensure that half of the

women have already had a birth. Overall, the median age at first birth is approximately 22 years for women 25-49. However, there are wide differences in the age at which women first gave birth among the various sub-groups. Urban women started childbearing one year later than their rural counterparts. On average, women in Eastern region had their first birth one and a half years earlier than women in the West region. Looking at the patterns by education within age groups, highly educated women had their first birth about two years later than women with less than a primary education.

Background characteristic	Current age					All women age 25-49
	25-29	30-34	35-39	40-44	45-49	
<b>Residence</b>						
Urban	23.2	22.2	22.1	21.1	21.4	22.1
Rural	22.2	21.7	21.0	20.6	20.4	21.1
<b>Region</b>						
West	23.3	22.3	22.3	21.4	21.4	22.2
South	23.0	22.3	22.9	22.2	22.2	22.4
Central	22.7	21.8	20.8	20.5	20.5	21.2
North	23.4	22.5	22.4	20.9	20.9	22.2
East	22.0	21.0	20.4	19.9	19.9	20.8
<b>NUTS 1 Region</b>						
Istanbul	23.5	22.8	22.0	21.0	21.5	22.3
West Marmara	24.0	22.0	21.5	21.8	21.0	22.0
Aegean	23.7	22.4	22.3	21.2	20.8	22.1
East Marmara	22.4	21.7	22.2	20.6	21.5	21.7
West Anatolia	23.0	21.7	21.5	22.1	21.2	22.0
Mediterranean	23.0	22.3	22.9	21.6	22.2	22.4
Central Anatolia	22.0	21.6	20.4	19.8	21.2	20.6
West Black Sea	22.7	22.6	22.0	21.5	20.2	21.8
East Black Sea	23.4	22.4	21.5	21.0	20.9	21.9
Northeast Anatolia	21.8	21.0	21.0	20.9	20.4	21.1
Central East Anatolia	22.7	21.4	19.9	20.4	20.1	20.9
Southeast Anatolia	21.7	20.7	20.4	19.5	19.2	20.6
<b>Education</b>						
No educ./Pri. incomp.	20.4	20.3	20.6	20.2	20.2	20.1
First level primary	21.6	21.4	21.1	20.9	20.9	20.2
Second level primary	22.2	22.8	22.3	22.1	22.1	22.3
High school and higher	a	26.9	25.3	24.5	24.5	a
Total	22.9	21.9	21.7	20.9	21.1	21.8

Note: The medians for cohorts 15-19 and 20-24 could not be determined because some women may still have a birth before reaching age 20 or 25, respectively.

<sup>a</sup>Median ages at first birth for women with high school and higher education in the age groups 25-29 and 25-49 cannot be calculated because less than half of these women had a first birth before age 25.

## 4.7 Teenage Pregnancy and Motherhood

Teenage fertility is a major health concern because teenage mothers and their children are at high risk of illness and death. Childbearing during the teenage years also frequently has adverse social consequences, particularly on female educational attainment since women who become mothers in their teens are more likely to curtail education.

Using information from the TDHS-2003, Table 4.10 shows the percentage of women age 15-19 who are mothers or who are pregnant with their first child. The overall level of teenage childbearing is approximately 8 percent, of which 6 percent already have given birth and 2 percent are pregnant with their first child. This percentage is slightly lower than that recorded in the TDHS-1998 when the proportion of teenagers who had begun childbearing was 10 percent.

Table 4.10 shows that the proportion of women who have begun childbearing rises rapidly throughout the teenage years, from 1 percent among 16-year-olds to 3 percent among 17-year-olds, 8 percent among 18-year-olds, and 17 percent among 19-year-olds. There is no clear association between teenage childbearing and urban-rural residence. In terms of region, East region has the highest level of teenage childbearing (9 percent), while the North region has the lowest (3 percent). Surprisingly, Aegean region has the highest level of teenage childbearing with 13 percent. The level of teenage fertility is strongly associated with women's educational level. The proportion of women age 15-19 who are pregnant or who have already given birth decreases from about 15 percent among women with less than primary education to 3 percent among women with at least high school education.

**Table 4.10 Teenage pregnancy and motherhood**

Percentage of teenagers 15-19 who are mothers or pregnant with their first child, by background characteristics, Turkey 2003

Background characteristic	Percentage who are:		Percentage who have begun childbearing	Number of teenagers
	Mothers	Pregnant with first child		
<b>Age</b>				
15	0.0	0.2	0.2	388
16	0.9	0.4	1.3	425
17	3.5	1.8	5.3	410
18	8.2	3.2	11.4	412
19	17.2	3.5	20.7	368
<b>Residence</b>				
Urban	5.6	2.0	7.7	1,302
Rural	5.9	1.3	7.2	712
<b>Region</b>				
West	5.7	1.4	7.1	572
South	6.6	1.3	7.9	286
Central	6.1	1.4	7.5	501
North	2.0	0.7	2.7	147
East	6.0	3.1	9.1	505
<b>NUTS 1 Region</b>				
Istanbul	5.2	2.3	7.5	262
West Marmara	5.8	0.0	5.8	61
Aegean	11.5	1.2	12.7	195
East Marmara	2.8	0.9	3.7	166
West Anatolia	4.9	1.6	6.4	209
Mediterranean	6.6	1.3	7.9	286
Central Anatolia	4.0	0.6	4.7	129
West Black Sea	4.6	2.1	6.8	127
East Black Sea	0.5	0.0	0.5	75
Northeast Anatolia	3.8	2.3	6.1	98
Central East Anatolia	6.5	3.0	9.4	139
Southeast Anatolia	6.6	3.5	10.1	270
<b>Education</b>				
No educ./Pri. incomp.	10.6	3.9	14.5	302
First level primary	11.4	2.5	13.9	559
Second level primary	1.6	0.7	2.3	888
High school and higher	1.6	1.4	3.0	313
<b>Total</b>	<b>5.7</b>	<b>1.8</b>	<b>7.5</b>	<b>2,003</b>

Note: The sum of the absolute values does not add up to the total value in the last four variables due to use of the ever-married factors.