

## FERTILITY

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 child-bearing. Data on fertility were collected in the 2003 NDHS in several ways. First, each woman was asked a series of questions on the number of sons and daughters who were living with her, the number living elsewhere, and the number who had died. Next, a complete history of all of the women's births was obtained, including the month and year each child was born; the name and sex; if deceased, the age at death; and if alive, the current age and whether the child was living with the mother. The information from those questions was used to calculate measures of current and completed fertility, i.e., the number of children ever born.

### 4.1 CURRENT FERTILITY

Measures of current fertility presented in this chapter include age-specific fertility rates (ASFRs), the total fertility rate (TFR), the general fertility rate (GFR), and the crude birth rate (CBR). These rates are generally presented for the three-year period preceding the survey. The three-year period was chosen as a compromise among three criteria: to get the most current information, to reduce sampling error, and to avoid problems noted in the 1999 NDHS of the displacement of births from five to six years before the survey.

ASFRs are useful in understanding the age pattern of fertility. Table 4.1 shows that Nigerian women experience their prime reproductive years during their twenties and early thirties. At every age, rural women bear more children than urban women. The rural ASFRs rise sharply from age 15-19 years to age 20-24, peak at age 25-29 and then decline. On the other hand, the urban ASFRs assume a more gradual pattern, an indication both of delayed marriage and some deliberate attempt to postpone or terminate births by urban women. Figure 4.1 shows that whereas the urban ASFR pattern depicts a narrow peak at age 25-29, the rural ASFR depicts a broad peak that extends from age 20-24 to 30-34.

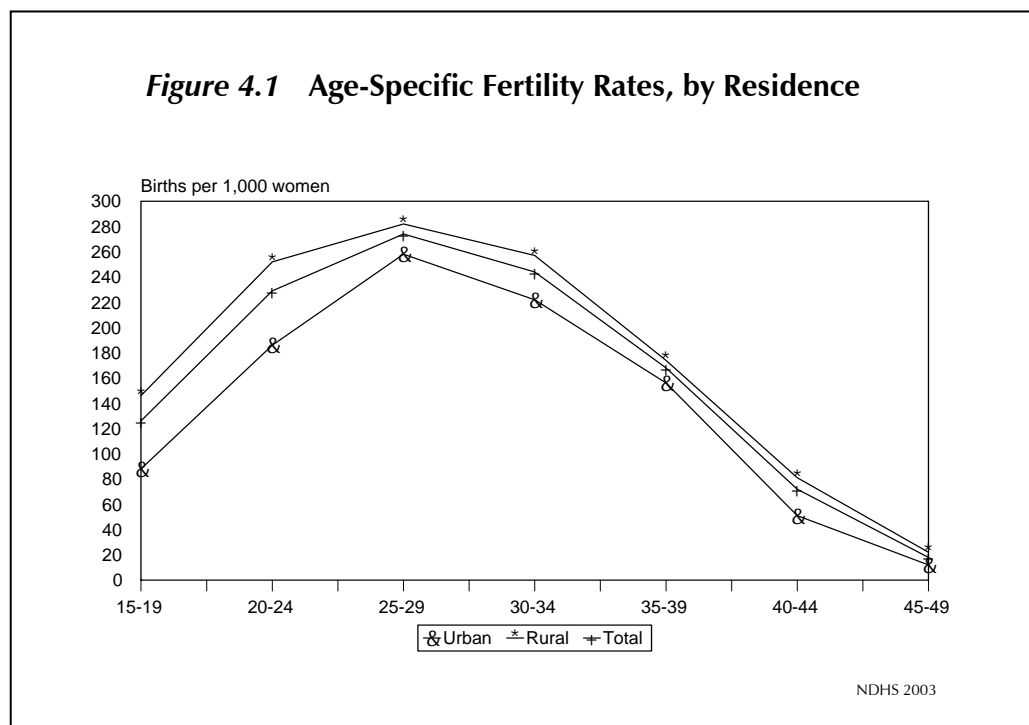
The total fertility rate is a useful measure for examining the overall level of fertility. It is interpreted as the number of children the average woman would bear in her lifetime if she experienced the currently-observed age-specific fertility rates throughout her reproductive years. According to the results of the 2003 NDHS, the total fertility rate for Nigeria is 5.7. As expected, the TFR for rural women is significantly higher than that of urban women. On average, rural women will give birth to one more child during their reproductive years than urban women (6.1 and 4.9, respectively).

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, Nigeria 2003

Age group	Residence		Total
	Urban	Rural	
15-19	88	146	126
20-24	186	252	229
25-29	258	282	274
30-34	222	257	244
35-39	156	174	168
40-44	51	81	72
45-49	12	22	18
TFR	4.9	6.1	5.7
GFR	164	204	190
CBR	36.3	44.5	41.7

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 for ages 15-49, 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



The TFR of 5.7 computed in the 2003 NDHS is significantly higher than the 1999 NDHS rate of 5.2. This confirms the analysis in the Data Quality Chapter of the 1999 NDHS final report that detailed evidence of an underreporting of births during the five years preceding the survey. Indeed, the results of that analysis indicated that the TFR was closer to 6.0 (NPC, 2000). On the other hand, there is no evidence of omission or transference of births in the 2003 NDHS (see Table C.4).

The crude birth rate in Nigeria is 42 births per 1,000 population. As with the TFR, there is a clear differential in this rate by residence: 45 births per 1,000 in rural areas versus 36 births per 1,000 in urban areas. The GFR of 190 indicates that 1,000 women age 15-44 would have 190 live births per year and also indicates a significant urban-rural difference. Higher rural than urban fertility has been explained with respect to the underlying socioeconomic differences and the changing proximate determinants of fertility, especially delayed marriage and higher use of modern contraceptives in urban areas (Isiugo Abanihe, 1996).

## 4.2 FERTILITY DIFFERENTIALS

Table 4.2 shows total fertility rates, the percentage of women who are currently pregnant, and the mean number of children ever born (CEB) to women age 40-49, by residence, region, education, and wealth quintile.

The large urban-rural differentials in fertility have already been noted. Region of residence also shows considerable variation in fertility. Table 4.2 shows a pattern of lower rates in the south and higher rates in the north. The TFR is lowest in the South West and South East (4.1), followed closely by the South South (4.6). The North Central shows a rate corresponding to the national average of 5.7. The rates for the North West and North East are significantly higher at 6.7 and 7.0, respectively (Figure 4.2).

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, Nigeria 2003

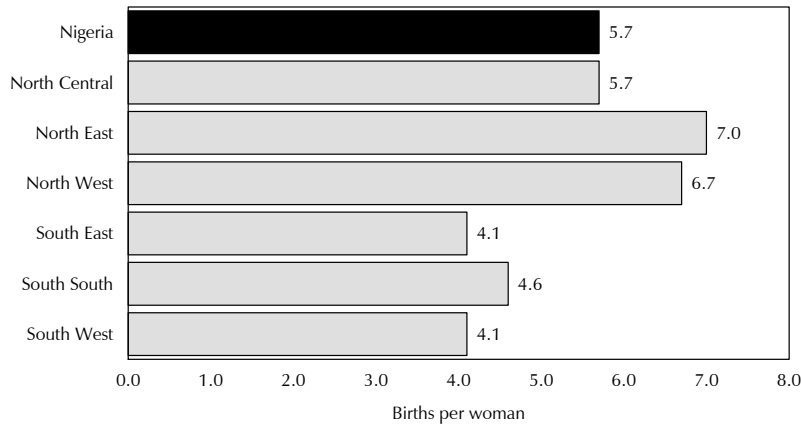
Background characteristic	Total fertility rate <sup>1</sup>	Percentage currently pregnant <sup>1</sup>	Mean number of children ever born to women age 40-49
<b>Residence</b>			
Urban	4.9	9.4	6.2
Rural	6.1	12.4	7.1
<b>Region</b>			
North Central	5.7	9.4	7.4
North East	7.0	14.2	7.4
North West	6.7	16.2	6.7
South East	4.1	6.8	6.6
South South	4.6	9.0	6.9
South West	4.1	6.0	5.5
<b>Education</b>			
No education	6.7	14.8	7.1
Primary	6.3	11.0	7.1
Secondary	4.7	8.1	5.5
Higher	2.8	6.2	4.3
<b>Wealth quintile</b>			
Lowest	6.5	12.8	7.2
Second	6.3	13.8	7.2
Middle	5.7	13.2	6.7
Fourth	5.9	10.2	7.0
Highest	4.2	7.8	5.5
Total	5.7	11.4	6.8

<sup>1</sup> Rate for women age 15-49 years

Fertility is also strongly correlated with education and wealth quintile. The higher a woman's educational attainment and the more economically advantaged her household, the lower her fertility. There is a monotonic decline in fertility with educational attainment. Eleven percent of the women interviewed reported that they were pregnant at the time of the interview. Variations in this proportion follow the same general patterns as the TFRs.

Table 4.2 also shows the mean number of live births for women age 40-49. This figure is an indicator of completed fertility or cumulative fertility of women approaching the end of their childbearing years. A comparison of the TFR (5.7) and cumulative fertility (6.8) gives an indication of fertility over time. The data indicate fertility decline among women in all groups, with the exception of women in the North West region.

**Figure 4.2 Total Fertility Rates by Region**



NDHS 2003

### 4.3 FERTILITY TRENDS

One method of understanding fertility trends is to examine the ASFRs over time. Because women age 50 and older were not interviewed in the survey, the rates are successively truncated as the number of years before the survey increases. The ASFR data shown in Table 4.3 indicate that over the last 20 years there has been a steady decline in fertility among women of all ages in Nigeria. As has been alluded to previously, the declining fertility observed here can be interpreted in light of rising age at marriage and increasing contraceptive use.

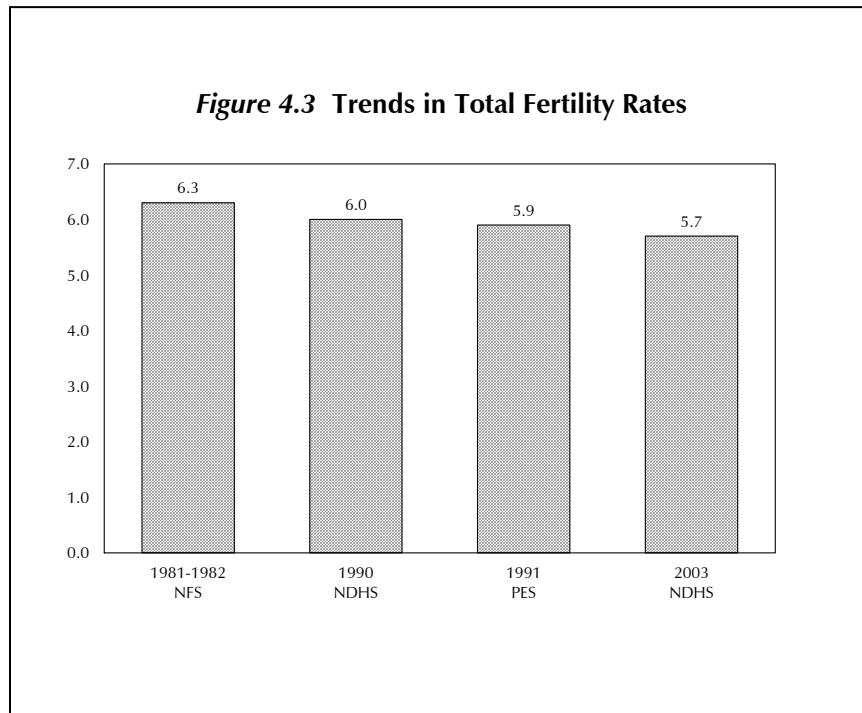
Table 4.3 Trends in age-specific fertility rates

Age-specific fertility rates for five-year periods preceding the survey, by mother's age at the time of the birth, Nigeria 2003

Mother's age at birth	Number of years preceding the survey			
	0-4	5-9	10-14	15-19
15-19	126	147	167	197
20-24	246	265	285	307
25-29	272	315	305	312
30-34	237	254	270	[282]
35-39	171	173	[200]	-
40-44	69	[89]	-	-
45-49	[25]	-	-	-

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

Figure 4.3 presents the trend in the TFR over the years from different Nigerian data sets. Overall, these data indicate a modest decline in fertility at the national level over the years, from a TFR of 6.3 in the 1981-82 National Fertility Survey (NFS) to 5.7 in the 2003 NDHS.



#### 4.4 CHILDREN EVER BORN AND LIVING

Table 4.4 shows all women and currently married women by number of children ever born. Data on the number of children ever born reflect the accumulation of births over the past 30 years and therefore have limited relevance to current fertility levels, particularly when the country has experienced a decline in fertility.

Approximately seven in ten women reported having given birth. As expected, currently married women have had more births than all women in all age groups; 90 percent of married women report that they have given birth. The reason is undoubtedly that currently married women are more consistently exposed to the risk of pregnancy.

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 Nigeria, it is likely that married women with no births are unable to bear children. The 2003 NDHS results suggest that primary infertility is low: less than 3 percent of married women age 45-49 report that they have had no children. It should be noted that this estimate of primary infertility does not include women who may have had one or more births but who are unable to have more (secondary infertility).

The mean number of children ever born (CEB) for all women is 3.1 and for currently married women is 4.1. As expected the mean CEB increases with age. Comparing the CEB column with that of the mean number of living children reveals substantial experience of child loss among Nigerian women.

Table 4.4 Children ever born and living

Percent distribution of all women and currently married women by number of children ever born, and mean number of children ever born and mean number of living children, according to age group, Nigeria 2003

Age	Number of children ever born											Total	Number of women	Mean number of children ever born	Mean number of living children
	0	1	2	3	4	5	6	7	8	9	10+				
ALL WOMEN															
15-19	79.0	16.7	3.2	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	1,716	0.26	0.22
20-24	41.6	24.0	17.6	10.6	4.9	1.1	0.2	0.0	0.0	0.0	0.0	100.0	1,494	1.18	0.97
25-29	16.8	13.5	16.0	17.6	17.0	10.7	5.2	2.1	0.5	0.2	0.2	100.0	1,382	2.74	2.23
30-34	8.0	6.6	9.8	11.5	14.9	15.7	12.8	11.2	5.8	2.4	1.2	100.0	941	4.35	3.41
35-39	2.5	4.1	5.6	8.8	12.2	10.2	12.4	12.4	12.2	9.8	9.8	100.0	816	5.93	4.54
40-44	5.5	3.3	3.7	4.2	6.7	10.9	11.8	12.0	11.1	11.9	18.9	100.0	688	6.62	4.91
45-49	3.3	3.4	4.3	2.6	8.8	9.9	10.4	9.2	11.1	10.9	26.1	100.0	583	7.03	5.05
Total	31.0	12.7	9.6	8.4	8.5	6.9	5.8	4.9	4.0	3.3	4.9	100.0	7,620	3.09	2.38
CURRENTLY MARRIED WOMEN															
15-19	44.8	41.9	10.0	3.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	100.0	545	0.72	0.61
20-24	13.5	32.3	27.4	16.6	8.0	1.8	0.4	0.0	0.0	0.0	0.0	100.0	911	1.80	1.48
25-29	7.1	12.9	17.8	20.2	19.4	12.8	6.1	2.6	0.6	0.2	0.3	100.0	1,146	3.15	2.56
30-34	3.9	6.3	9.2	11.9	15.5	16.8	13.8	12.2	6.4	2.7	1.4	100.0	848	4.63	3.63
35-39	1.5	3.3	5.7	8.6	12.7	10.5	12.1	12.2	12.6	10.4	10.3	100.0	763	6.07	4.63
40-44	5.1	2.8	3.5	3.7	6.9	11.1	12.0	11.3	10.8	12.6	20.2	100.0	619	6.76	5.00
45-49	2.5	2.7	4.2	2.6	8.6	10.3	9.9	9.2	11.4	11.3	27.1	100.0	504	7.17	5.13
Total	10.1	14.6	12.6	11.3	11.4	9.5	7.6	6.4	5.3	4.5	6.7	100.0	5,336	4.12	3.17

## 4.5 BIRTH INTERVALS

A birth interval is defined as the length of time between two successive live births. Information on birth intervals provides insight into birth spacing patterns, which affect fertility as well as infant and childhood mortality. Research has shown that children born too soon after the previous birth are at increased risk of dying at an early age.

Table 4.5 presents the percent distribution of non-first births in the five years preceding the survey, by number of months since preceding birth. The median birth interval in Nigeria is 31 months. The median number of months since preceding birth increases significantly with age, from a low of 26 among mothers age 15-19 to a high of 39 among mothers age 40-49.

Studies have shown that the death of a preceding birth should lead to a shorter birth interval compared with when a child survives. Indeed, the table indicates that the death of a preceding birth shortens the birth interval by about six months.

According to the 2003 NDHS data, living in a rural or an urban area does not make any difference in birth intervals in Nigeria. There is a ten-month difference between women in the South West, who have the longest birth interval, and those in the South East, who have the shortest birth interval (37 months and 27 months, respectively).

Table 4.5 Birth intervals

Percent distribution of non-first births in the five years preceding the survey by number of months since preceding birth, according to background characteristics, Nigeria 2003

Background characteristic	Number of months since preceding birth					Total	Number of non-first births	Median number of months since preceding birth
	7-17	18-23	24-35	36-47	48+			
<b>Age</b>								
15-19	21.1	22.8	44.1	9.5	2.6	100.0	91	26.1
20-29	10.4	17.8	43.9	18.1	9.8	100.0	2,302	29.1
30-39	7.9	12.7	37.2	20.8	21.4	100.0	1,979	33.3
40-49	8.0	9.0	28.8	19.1	35.0	100.0	564	38.7
<b>Birth order</b>								
2-3	9.5	15.6	42.0	18.0	14.9	100.0	1,904	30.5
4-6	8.4	14.7	40.5	19.4	17.0	100.0	1,837	31.3
7+	10.6	13.8	34.0	20.6	21.0	100.0	1,195	32.4
<b>Sex of preceding birth</b>								
Male	10.1	15.5	39.7	18.5	16.2	100.0	2,468	30.7
Female	8.6	14.2	39.2	19.8	18.2	100.0	2,468	31.9
<b>Survival of preceding birth</b>								
Living	5.8	13.9	41.5	20.0	18.8	100.0	3,900	32.3
Dead	22.7	18.5	31.7	16.0	11.1	100.0	1,036	26.4
<b>Residence</b>								
Urban	7.8	14.9	38.1	19.4	19.8	100.0	1,383	31.7
Rural	10.0	14.8	40.0	19.0	16.2	100.0	3,554	31.1
<b>Region</b>								
North Central	7.4	12.9	37.9	20.4	21.4	100.0	704	33.2
North East	11.0	17.1	42.2	19.1	10.6	100.0	1,220	29.4
North West	9.3	15.2	39.7	20.1	15.7	100.0	1,757	31.3
South East	11.5	23.2	35.5	14.5	15.2	100.0	282	27.2
South South	10.2	10.5	40.9	15.5	23.0	100.0	591	30.9
South West	5.2	9.8	33.8	21.4	29.9	100.0	383	36.5
<b>Education</b>								
No education	10.2	15.3	38.9	19.5	16.0	100.0	2,678	31.1
Primary	8.5	13.3	38.9	19.5	19.9	100.0	1,212	32.0
Secondary	8.8	14.7	42.6	18.0	15.9	100.0	888	30.6
Higher	5.9	19.4	36.0	15.8	22.9	100.0	158	32.2
<b>Wealth quintile</b>								
Lowest	9.8	16.2	38.9	19.4	15.7	100.0	1,163	30.8
Second	11.2	14.0	39.1	19.5	16.3	100.0	1,131	31.1
Middle	10.2	14.3	38.3	21.2	15.9	100.0	991	31.6
Fourth	6.8	13.8	42.7	18.3	18.4	100.0	902	31.2
Highest	7.9	15.8	38.7	16.6	21.0	100.0	749	31.4
Total	9.4	14.8	39.5	19.1	17.2	100.0	4,936	31.2

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.

## 4.6 AGE AT FIRST BIRTH

The age at which childbearing begins influences the number of children a woman bears throughout her reproductive period in the absence of any active control. Table 4.6 shows the percent distribution of women by age at first birth, according to age at the time of the survey. For women age 25 and older, the median age at first birth is presented in the last column of the table.

The data indicate that the age at first birth in Nigeria is increasing. For example, the median age at first birth is 20.3 years for women age 25-29, whereas it is less than 19 years among women 35 years and older. Also the percentage of women who gave birth before age 15 and 18 generally shows some postponement of first births by younger cohorts of mothers. For example, only 3 percent of women 15-19 had given birth by age 15 compared with at least 15 percent of those age 30 or older.

Table 4.6 Age at first birth

Percentage of women who gave birth by specific exact ages, and median age at first birth, by current age, Nigeria 2003

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	3.4	na	na	na	na	79.0	1,716	a
20-24	6.6	28.0	45.7	na	na	41.6	1,494	a
25-29	8.3	31.5	47.4	61.9	77.0	16.8	1,382	20.3
30-34	15.1	39.2	57.5	70.9	82.2	8.0	941	19.2
35-39	15.6	46.6	61.6	74.3	86.3	2.5	816	18.4
40-44	16.2	43.1	59.1	71.2	82.1	5.5	688	18.8
45-49	15.0	46.7	62.0	73.6	83.7	3.3	583	18.5

na = Not applicable

<sup>a</sup> Omitted because less than 50 percent of women had a birth before reaching the beginning of the age group

Table 4.7 shows the median age at first birth among women age 25-49 by background characteristics. Women in urban areas initiate childbearing almost 2 years later than their counterparts in rural areas. Among the six geopolitical regions, childbearing is started several years later in South East and South West than in the North East and North West. Median age at first birth increases steadily with educational attainment from 18 among women with no education to 25 among women with higher education—a five-year difference. There is also a positive correlation by wealth quintile.



**Table 4.7 Median age at first birth by background characteristics**

Median age at first birth among women age 20-49, by current age and background characteristics, Nigeria 2003

Background characteristic	Current age						Women age 20-49	Women age 25-49
	20-24	25-29	30-34	35-39	40-44	45-49		
<b>Residence</b>								
Urban	a	22.1	20.2	18.9	20.0	18.8	a	20.4
Rural	19.6	19.3	18.8	18.3	18.4	18.1	19.0	18.7
<b>Region</b>								
North Central	a	20.4	19.8	18.9	18.9	18.9	20.0	19.7
North East	18.3	18.1	17.3	18.0	17.2	18.2	18.0	17.8
North West	18.0	18.3	17.5	16.9	18.1	17.8	17.9	17.8
South East	a	a	22.5	22.0	20.8	19.5	a	22.7
South South	a	22.2	20.2	17.9	18.4	17.2	a	19.8
South West	a	23.7	22.4	21.4	21.0	20.5	a	22.1
<b>Education</b>								
No education	17.7	18.0	17.4	17.4	17.7	18.3	17.7	17.8
Primary	19.2	19.5	19.0	18.6	19.1	17.6	19.0	18.9
Secondary	a	22.9	21.7	21.2	21.3	23.4	a	22.3
Higher	a	a	26.1	22.7	23.3	20.4	a	24.9
<b>Wealth quintile</b>								
Lowest	18.4	17.7	18.5	17.6	17.1	18.8	18.0	17.9
Second	19.0	18.5	17.5	18.0	18.5	17.9	18.4	18.2
Middle	19.4	18.8	18.4	18.1	19.0	17.8	18.7	18.5
Fourth	a	21.2	19.7	17.3	19.2	18.6	19.9	19.5
Highest	a	24.4	22.1	21.9	20.5	19.6	a	22.5
Total	a	20.3	19.2	18.4	18.8	18.5	19.6	19.3

<sup>a</sup> Omitted because less than 50 percent of the women had a birth before the beginning of the age group

## 4.7 TEENAGE PREGNANCY AND MOTHERHOOD

Early childbearing, particularly among teenagers (those under 20 years of age) has negative demographic, socioeconomic, and sociocultural consequences. Teenage mothers are more likely to suffer from severe complications during delivery, which result in higher morbidity and mortality for both themselves and their children. In addition, the socioeconomic advancement of teenage mothers in the areas of educational attainment and accessibility to job opportunities may be curtailed.

Table 4.8 shows the percentage of women age 15-19 who are mothers or pregnant with their first child by background characteristics. One in five teenage women in Nigeria is a mother and another 4 percent are pregnant with their first child. Thus, 25 percent of teenage women have begun childbearing. As expected, the percentage who have begun childbearing increases with age from 8 percent of women age 15 to 40 percent of women age 19.

Clearly, early childbearing is more of a rural phenomenon, with 30 percent of rural women age 15-19 having begun childbearing compared with 17 percent of urban women. Adolescent fertility is lowest in the South West and South East, high in the South South and North Central, and highest in the North East and North West. This pattern follows the educational attainment gradient among the regions, with regions having the lowest levels of schooling among adolescents also having the highest levels of childbearing among them.

Table 4.8 shows that whereas more than half of women age 15-19 who have no formal education have begun childbearing (54 percent), 9 percent of those with secondary education have done so. Thus, initiation of childbearing is delayed among those who stay in school.

The wealth index shows that as the socioeconomic status of households increases, the likelihood of teenage childbearing decreases. That is, women living in less advantaged households are more likely to initiate childbearing before age 20 than those living in relatively more advantaged households.

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, Nigeria 2003				
Background characteristic	Percentage who are:		Percentage who have begun child-bearing	Number of women
	Mothers	Pregnant with first child		
<b>Age</b>				
15	3.8	3.7	7.5	391
16	9.4	4.6	13.9	273
17	26.9	4.2	31.1	324
18	29.2	5.0	34.2	429
19	35.8	3.7	39.5	299
<b>Residence</b>				
Urban	13.6	3.1	16.7	580
Rural	24.8	4.8	29.6	1,136
<b>Region</b>				
North Central	13.8	2.6	16.4	242
North East	38.1	6.3	44.4	294
North West	36.9	8.3	45.2	420
South East	5.3	0.8	6.2	180
South South	11.3	3.0	14.3	362
South West	4.1	0.6	4.7	218
<b>Education</b>				
No education	44.5	9.5	53.9	501
Primary	20.5	3.0	23.5	360
Secondary	7.6	1.8	9.4	831
Higher	*	*	*	23
<b>Wealth quintile</b>				
Lowest	27.4	4.8	32.2	270
Second	30.2	5.4	35.6	299
Middle	22.8	5.6	28.4	375
Fourth	18.0	4.7	22.8	404
Highest	10.1	1.0	11.2	367
Total	21.0	4.3	25.2	1,716

Note: An asterisk indicates that a figure is based on fewer than 25 un-weighted cases and has been suppressed.