

CHAPTER 3

FERTILITY

The fertility measures presented in this chapter are based on the reported reproductive histories of women age 15-49 who were interviewed in the ZDHS. Each woman was asked the number of sons and daughters living with her, the number living elsewhere, and the number who had died. She was then asked for a history of all her live-born children, including the month and year each was born, the name, the sex, and if dead, the age at death and if alive, the current age and whether he/she was living with the respondent. Based on this information, measures of completed fertility (number of children ever born) and current fertility (age-specific and total fertility rates) are examined. These measures are also analysed in connection with various background characteristics.

3.1 Fertility Levels and Trends

Age-specific fertility rates for the three-year period preceding the survey are shown in Table 3.1, along with data from the 1980 census for comparison. It appears that fertility has declined in Zambia over the past decade (see Figure 3.1); data from the 1990 census should shed more light on trends in fertility. The sum of the age-specific fertility rates (known as the total fertility rate) is a useful means of summarising the level of fertility. It can be interpreted as the number of children a woman would have by the end of her childbearing years if she were to pass through those years bearing children at the currently observed rates. If fertility were to remain constant at the levels measured in the ZDHS, a Zambian woman would bear 6.5 children in her lifetime. This is lower than the rate of 7.2 estimated from the 1980 census data, implying a decline of about 10 percent over the past decade.

Age-specific fertility rates from the ZDHS are shown in Table 3.2 by urban-rural residence and by province.¹ Data for some provinces have been combined to increase sample sizes to acceptable levels; however, despite this precaution, readers are urged to view the data with caution as sampling errors are probably still large.

Table 3.1 Age-specific fertility rates over time

Age-specific fertility rates as reported and adjusted in the 1980 census and as reported in the 1992 ZDHS

Age group	1980 census		ZDHS
	As reported	Adjusted	As reported
15-19	61	153	156
20-24	239	318	294
25-29	253	323	271
30-34	223	289	242
35-39	181	225	194
40-44	108	115	105
45-49	70	17	31
TFR 15-49	5.7	7.2	6.5

Note: The ZDHS rates refer to the three-year period preceding the survey.

Source: Central Statistical Office, 1985b.

¹ Numerators of the age-specific fertility rates in Table 3.2 are calculated by summing the number of live births that occurred in the period 1-36 months preceding the survey (determined by the date of interview and date of birth of the child), and classifying them by the age (in five-year groups) of the mother at the time of birth (determined by the mother's date of birth). The denominators of the rates are the number of woman-years lived in each of the specified five-year age groups during the 1-36 months preceding the survey.

Figure 3.1
Age-Specific Fertility Rates
Zambia, 1980 and 1992

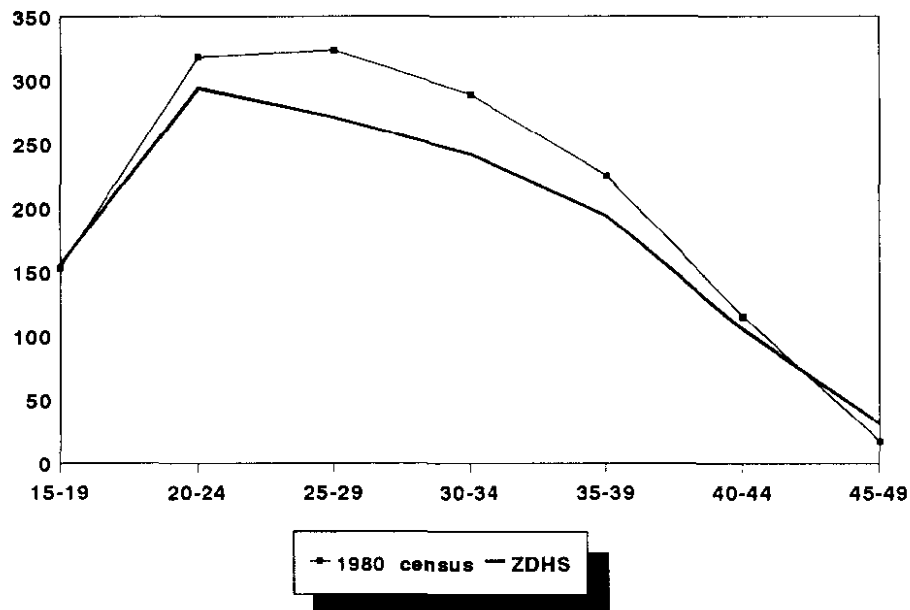


Table 3.2 Current fertility

Age-specific and cumulative fertility rates and crude birth rates for the three years preceding the survey, by urban-rural residence and province, Zambia 1992

Age group	Province								
	Residence		Copper-belt	Eastern, Central	Lusaka	Luapula, Northern	Southern	North-Western, Western	Total
	Urban	Rural							
15-19	133	184	130	204	134	159	168	158	156
20-24	263	328	291	289	263	363	284	268	294
25-29	265	276	274	268	268	274	284	245	271
30-34	222	264	234	269	168	282	296	223	242
35-39	171	221	168	208	170	243	(213)	188	194
40-44	78	121	(104)	94	(76)	126	(120)	(112)	105
45-49	28	32	(43)	(29)	*	(33)	*	(10)	31
TFR 15-49	5.8	7.1	6.2	6.8	5.5	7.4	7.1	6.0	6.5
TFR 15-44	5.7	7.0	6.0	6.7	5.4	7.2	6.8	6.0	6.3
GFR	199	238	208	232	191	241	230	207	218
CBR	44	46	44	46	43	50	46	43	45

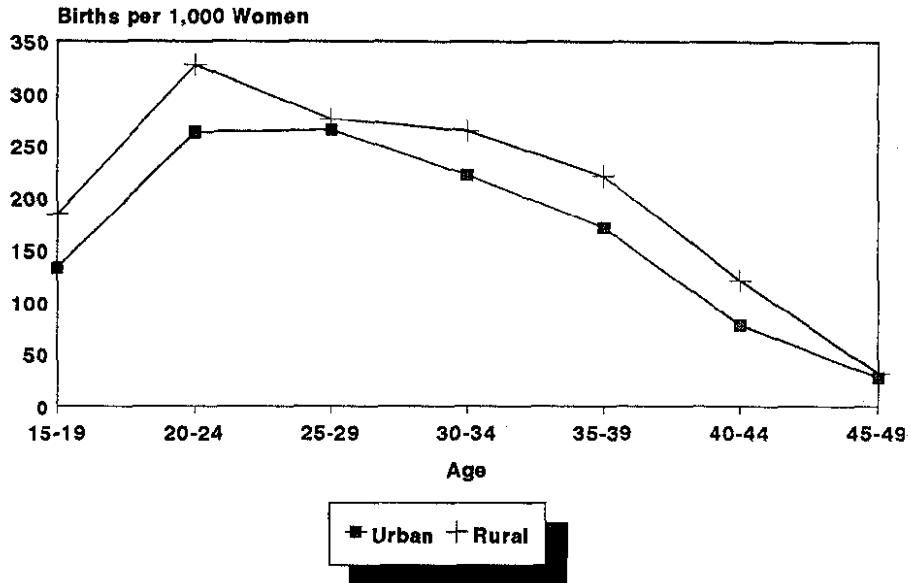
TFR: Total fertility rate expressed per woman

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

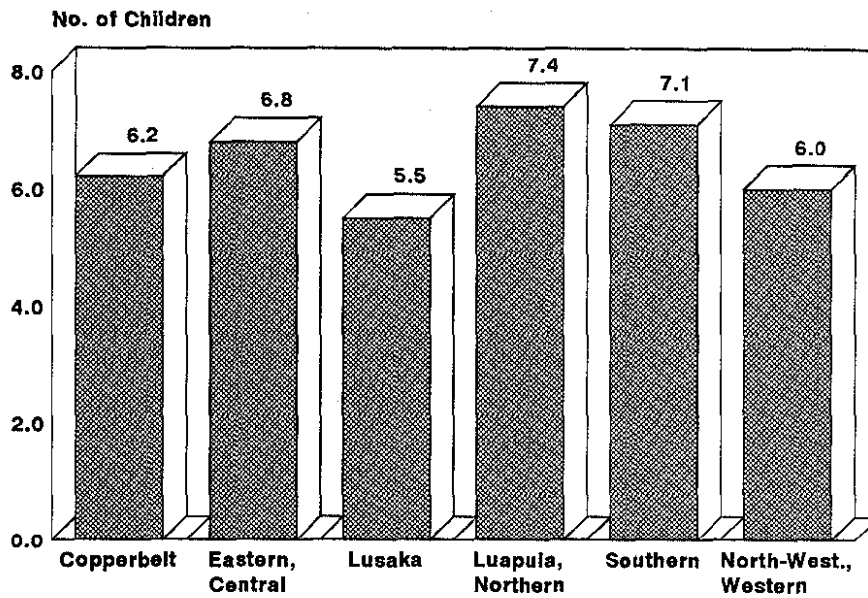
Note: Rates are for the period 1-36 months preceding the survey. Rates for age group 45-49 may be slightly biased due to truncation. Rates shown in parentheses are based on 125-249 woman-years of exposure; an asterisk means the rate was based on fewer than 125 woman-years of exposure and has been suppressed. Some provinces have been grouped together to increase sample sizes.

Figure 3.2
Age-Specific Fertility Rates
By Residence



ZDHS 1992

Figure 3.3
Total Fertility Rates by Province



ZDHS 1992

The data show that rural fertility rates are higher than urban rates; a rural woman can expect to have 7.1 children on average, compared to 5.8 for an urban woman. Rural fertility also peaks at an earlier age than urban fertility (see Figure 3.2).

There is considerable variation in fertility levels by province. Fertility is lowest in Lusaka Province with a total fertility rate of 5.5 children born per woman, followed by North-Western and Western Provinces, with a combined total fertility rate of 6.0 children per woman. Fertility is highest in Luapula and Northern Provinces, with a combined total fertility rate of 7.4. Thus, women in the latter two provinces give birth to an average of two more children than women in Lusaka Province by the time they finish childbearing (see Figure 3.3).

Fertility also varies considerably by education level of women (see Table 3.3). Women with no education can expect to give birth to 7.1 children on average, compared to 4.9 for women with secondary or higher education.

In addition to comparing the ZDHS data with previous data such as the 1980 census, another way of examining trends in fertility over time is to compare the total fertility rates for the three years preceding the survey with the average number of children ever born to women at the end of their childbearing period, age 40-49. The former is a measure of current fertility, while the latter is a measure of past or completed fertility. The data in Table 3.3 imply that there has been a decline of about one child over the past 10-20 years in Zambia.

Further evidence of a fertility decline appears in Table 3.4, which shows age-specific fertility rates for five-year periods prior to the survey, using data from respondents' birth histories. Figures in brackets represent partial fertility rates due to truncation; women 50 years of age and older were not included in the survey and the further back into time rates are calculated, the more severe is the truncation. For example, rates cannot be calculated for women age 45-49 for the period 5-9 years before the survey, because those women would have been age 50-54 at the time of the survey and were not interviewed. It should also be noted that misreporting of the date of birth of children can result in the appearance of false trends in fertility. The data, however, show a steady decline in fertility rates at all ages for almost all periods, but this will have to be confirmed by analysis of other sources of fertility information.

Table 3.3 Fertility by background characteristics

Total fertility rate for the three years preceding the survey and mean number of children ever born to women age 40-49, by selected background characteristics, Zambia 1992

Background characteristic	Total fertility rate ¹	Mean number of children ever born to women age 40-49
Residence		
Urban	5.8	7.4
Rural	7.1	7.9
Province		
Copperbelt	6.2	7.9
Eastern, Central	6.8	7.8
Lusaka	5.5	7.1
Luapula, Northern	7.4	8.1
Southern	7.1	8.0
North-Western, Western	6.0	7.0
Education		
No education	7.1	7.8
Primary	6.8	7.8
Secondary+	4.9	6.7
Total	6.5	7.7

¹Women age 15-49 years

Table 3.4 Age-specific fertility rates

Age-specific fertility rates for five-year periods preceding the survey, by mother's age, Zambia 1992

Mother's age	Number of years preceding the survey			
	0-4	5-9	10-14	15-19
15-19	152	173	200	243
20-24	281	295	328	364
25-29	266	309	304	352
30-34	238	281	280	[331]
35-39	189	239	[246]	-
40-44	109	[156]	-	-
45-49	[32]	-	-	-

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

Table 3.5 presents fertility rates for ever-married women by duration since first marriage for five-year periods preceding the survey. It is analogous to Table 3.4, but is confined to ever-married women and replaces age with duration since first marriage. The data confirm that the decline in fertility is apparent for all marriage durations.

3.2 Children Ever Born

The distribution of women by number of children ever born is presented in Table 3.6 for all women and for currently married women. The table also shows the mean number of children ever born (CEB) to women in each five-year age group. On average, women have given birth to three children by their late twenties, six children by their late thirties, and eight children by the end of their childbearing years. The distribution of women by number of births indicates that over one-quarter of teens (age 15-19) have already borne a child, and over one-third of women age 45-49 have borne ten or more children.

Table 3.5 Fertility by marital duration

Fertility rates for ever-married women by duration since first marriage in years, for five-year periods preceding the survey, Zambia 1992

Marriage duration at birth	Number of years preceding the survey			
	0-4	5-9	10-14	15-19
0-4	341	348	367	398
5-9	296	321	324	382
10-14	256	298	316	355
15-19	223	279	266	[300]
20-24	169	216	[211]	-
25-29	76	[155]	-	-

Note: Fertility rates are per 1,000 women. Estimates enclosed in brackets are truncated.

Table 3.6 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 ever born and living, according to five-year age groups, Zambia 1992

Age group	Number of children ever born (CEB)											Total	Number of women	Mean no. of CEB	Mean no. of living children
	0	1	2	3	4	5	6	7	8	9	10+				
ALL WOMEN															
Age															
15-19	72.8	22.5	4.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	1984	0.3	0.3
20-24	20.4	29.6	28.7	15.3	5.0	0.8	0.1	0.0	0.0	0.0	0.0	100.0	1441	1.6	1.3
25-29	8.2	11.3	16.3	23.6	19.9	12.7	5.2	2.4	0.3	0.1	0.0	100.0	1179	3.1	2.6
30-34	3.9	4.4	7.8	11.6	15.5	17.7	15.3	12.8	7.9	2.5	0.5	100.0	915	4.8	4.0
35-39	2.0	2.7	3.8	5.4	8.4	11.9	14.7	14.9	16.3	9.7	10.1	100.0	656	6.4	5.4
40-44	1.4	1.9	3.9	3.3	6.8	9.8	7.8	12.0	13.3	13.9	25.9	100.0	505	7.4	6.0
45-49	1.4	2.5	2.7	2.8	3.6	5.3	7.5	11.2	12.1	14.9	35.9	100.0	380	8.1	6.4
Total	26.9	15.4	11.5	9.6	7.8	6.7	5.2	4.9	4.2	3.0	4.8	100.0	7060	3.1	2.6
CURRENTLY MARRIED WOMEN															
Age															
15-19	36.1	48.8	13.3	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	526	0.8	0.7
20-24	10.7	28.1	33.7	19.4	6.8	1.0	0.2	0.0	0.0	0.0	0.0	100.0	989	1.9	1.5
25-29	5.1	8.2	15.4	25.1	21.8	15.1	6.3	2.6	0.3	0.1	0.0	100.0	943	3.4	2.8
30-34	2.0	3.4	7.6	9.9	14.1	18.8	16.8	14.2	9.4	3.0	0.7	100.0	755	5.1	4.3
35-39	1.2	1.8	2.5	5.0	7.0	11.2	15.3	15.3	17.6	11.3	12.0	100.0	537	6.7	5.7
40-44	0.9	1.8	3.8	2.0	5.6	9.1	6.9	12.3	13.0	15.5	29.4	100.0	412	7.7	6.3
45-49	1.3	1.7	1.9	2.1	3.7	4.7	6.6	11.7	12.1	14.3	39.9	100.0	295	8.4	6.7
Total	8.4	14.8	14.4	12.4	10.1	9.1	7.1	6.7	5.8	4.3	6.9	100.0	4457	4.2	3.5

The results for younger women who are currently married differ from those for the sample as a whole because of the large number of unmarried women with minimal fertility. Differences at older ages, though minimal, generally reflect the impact of marital dissolution (either divorce or widowhood). The parity distribution for older, currently married women provides a measure of *primary infertility*—the proportion of women who are unable to have children at all. Voluntary childlessness is rare in Zambia, and married women with no live births are most likely unable to bear children. The ZDHS results suggest that primary infertility is low, with only about one percent of Zambian women unable to bear 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*).

Table 3.7 Birth intervals

Percent distribution of births in the five years preceding the survey by number of months since previous birth, according to demographic and socioeconomic characteristics, Zambia 1992

Characteristic	Number of months since previous birth					Total	Median number of months since previous birth	Number of births
	7-17	18-23	24-35	36-47	48+			
Age of mother								
15-19	17.8	22.5	50.2	5.7	3.8	100.0	26.3	103
20-29	7.7	14.5	51.0	14.0	12.8	100.0	29.9	2465
30-39	5.1	9.4	47.5	18.3	19.7	100.0	33.2	1818
40 +	3.3	9.7	41.0	20.5	25.6	100.0	36.2	482
Birth order								
2-3	7.5	14.5	47.6	13.2	17.2	100.0	30.2	1937
4-6	5.8	10.5	50.0	17.7	16.0	100.0	32.0	1721
7 +	6.0	11.2	48.5	18.4	15.9	100.0	32.6	1212
Sex of prior birth								
Male	6.7	11.8	49.3	15.1	17.1	100.0	31.5	2409
Female	6.3	12.8	48.1	17.1	15.8	100.0	31.4	2460
Survival of prior birth								
Living	3.4	11.0	51.9	17.0	16.8	100.0	32.0	3983
Dead	20.7	18.1	34.4	12.0	14.9	100.0	27.3	887
Residence								
Urban	6.3	12.1	47.2	16.4	18.1	100.0	31.4	2230
Rural	6.7	12.4	49.9	15.8	15.1	100.0	31.5	2640
Province								
Central	5.9	11.6	52.4	16.7	13.4	100.0	30.9	467
Copperbelt	6.6	10.6	51.8	14.6	16.4	100.0	31.0	1129
Eastern	10.1	11.2	47.2	16.1	15.4	100.0	31.8	504
Luapula	8.3	14.8	52.7	12.1	12.2	100.0	29.2	332
Lusaka	5.2	13.3	43.4	16.1	22.0	100.0	32.0	707
Northern	7.5	14.9	48.1	17.7	11.9	100.0	30.8	520
North-Western	7.2	11.2	46.7	19.4	15.5	100.0	32.4	143
Southern	4.7	13.1	49.9	16.5	15.8	100.0	31.5	802
Western	4.7	9.9	39.3	20.1	25.9	100.0	35.9	264
Education								
No education	6.1	12.8	46.0	15.5	19.5	100.0	32.9	893
Primary	6.9	11.8	50.7	15.7	14.9	100.0	31.1	3093
Secondary	5.3	13.5	44.9	18.2	18.2	100.0	31.3	805
Higher	8.5	15.6	34.9	15.6	25.5	100.0	31.6	77
Total	6.5	12.3	48.7	16.1	16.5	100.0	31.4	4869

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.

3.3 Birth Intervals

Research has shown that children born too close to a previous birth are at increased risk of dying. The risk is particularly high when the interval between births is less than 24 months. Table 3.7 shows the percent distribution of births in the five years preceding the survey by the number of months since the previous birth. Almost one in five births occurs after an interval of less than 24 months. Half the births take place 24-35 months (two years) after the previous birth and one-third have a previous birth interval of three years or more. The median birth interval length (31 months) is only six months longer than the minimum considered safe.

The median birth interval is relatively short for younger women and for women living in Luapula Province. As expected, children whose preceding sibling died before the survey had the shortest previous birth interval; almost 40 percent of these children were born less than 24 months after the birth of the preceding child. Birth intervals in Western Province are notably longer than in other provinces (36 months).

3.4 Age at First Birth

The age at which childbearing begins has important demographic consequences for society as well as health consequences for the mother and child. On the demographic side, early initiation into childbearing is generally a major determinant of large family size and rapid population growth, particularly in countries where family planning is not widely used. On the health side, bearing children at a young age involves substantial risks to the health of both the mother and child. Early childbearing also tends to restrict educational and economic opportunities for women.

Table 3.8 presents the distribution of Zambian women by age at first birth, according to their current age. Childbearing begins early in Zambia, with the majority of women becoming mothers before they reach the age of 20. Childbearing before age 15 was not uncommon among older women; however, it has become less common over time. More than 40 percent of women age 25-49 had their first birth before age 18 and about 70 percent had their first birth by age 20. It seems that younger cohorts are tending to delay somewhat their first births. The median age at first birth is slightly higher among women age 20-24 than among women in their late 20s or 30s. Also, the proportion of women who begin childbearing in their teenage years shows a decline, from 76 percent of women age 35-39 to 61 percent of women age 20-24.

Table 3.8 Age at first birth

Percent distribution of women 15-49 by age at first birth, according to current age, Zambia 1992

Current age	Women with no births	Age at first birth						Total	Number of women	Median age at first birth
		<15	15-17	18-19	20-21	22-24	25+			
15-19	72.8	1.8	17.4	8.0	NA	NA	NA	100.0	1984	a
20-24	20.4	3.7	30.5	27.1	14.5	3.7	NA	100.0	1441	19.1
25-29	8.2	5.7	33.3	25.5	14.9	9.4	3.0	100.0	1179	18.8
30-34	4.0	8.2	38.4	25.2	13.7	7.2	3.4	100.0	915	18.2
35-39	2.0	9.0	37.9	28.9	11.6	7.3	3.4	100.0	656	18.2
40-44	1.4	9.7	32.9	25.2	15.6	9.1	6.2	100.0	505	18.6
45-49	1.4	14.0	31.7	24.0	12.5	9.6	6.8	100.0	380	18.3

NA = Not applicable

^aLess than 50 percent of the women in the age group x to $x+4$ have had a birth by age x

Differentials in the age at first birth are shown in Table 3.9. The median age at first birth for all women age 20-49 is 18.6. Overall, there is little variation in the median age at first birth by background characteristics of women, except that women with secondary education or higher tend to delay their first birth later than those with less education. Women in Lusaka, Eastern and Northern Provinces have the highest median age at first birth, while women in North-Western Province have the lowest.

Table 3.9 Median age at first birth

Median age at first birth among women age 20-49 years, by current age and selected background characteristics, Zambia 1992

Background characteristic	Current age						Ages 20-49	Ages 25-49
	20-24	25-29	30-34	35-39	40-44	45-49		
Residence								
Urban	19.5	19.0	18.2	18.1	18.6	18.3	18.8	18.5
Rural	18.8	18.6	18.3	18.3	18.7	18.3	18.6	18.4
Province								
Central	18.7	18.8	18.1	(18.2)	(18.2)	(17.7)	18.5	18.4
Copperbelt	19.5	19.1	18.3	17.9	18.0	18.1	18.7	18.4
Eastern	18.7	18.9	18.8	19.2	18.4	(18.3)	18.8	18.8
Luapula	18.8	18.7	18.4	18.6	18.0	(17.5)	18.5	18.4
Lusaka	19.7	19.0	18.2	18.1	19.2	(19.2)	18.9	18.6
Northern	19.1	18.8	17.9	(18.4)	(19.9)	(18.9)	18.8	18.6
North-Western	18.0	18.5	18.1	(17.2)	(17.4)	*	18.1	18.1
Southern	19.1	18.5	17.6	18.0	18.5	(18.7)	18.4	18.2
Western	19.1	18.4	19.0	18.2	(18.9)	17.7	18.7	18.5
Education								
No education	19.0	18.8	18.1	18.3	18.3	18.5	18.5	18.4
Primary	18.5	18.2	17.8	17.8	18.3	18.2	18.2	18.0
Secondary+	a	20.5	20.0	19.2	20.4	*	a	20.0
Total	19.1	18.8	18.2	18.2	18.6	18.3	18.6	18.5

Note: Rates shown in parentheses are based on 25-49 women, while an asterisk means the rate is based on fewer than 25 women and has been suppressed. The medians for cohort 15-19 could not be determined because half the women have not yet had a birth.

^aMedians were not calculated for these cohorts because less than 50 percent of women in the age group x to $x+4$ have had a birth by age x .

3.5 Teenage Fertility

Fertility among teenagers (those under age 20) is receiving increasing attention from policymakers. Table 3.10 shows the percentage of women age 15-19 who are mothers or pregnant with their first child. The sum of these two percentages represents the proportion of young women who have begun childbearing.

More than one-quarter of teenage women have already had a child and another 7 percent were pregnant with their first child at the time of the survey. As stated before, childbearing begins early in Zambia,

Background characteristic	Percentage who are:		Percentage who have begun child-bearing	Number of teenagers
	Mothers	Pregnant with first child		
Age				
15	1.9	3.4	5.3	384
16	8.7	6.1	14.7	427
17	22.1	7.8	29.9	392
18	44.2	10.2	54.3	380
19	59.9	5.7	65.6	401
Residence				
Urban	22.6	5.8	28.5	1076
Rural	32.5	7.5	40.0	907
Province				
Central	31.9	7.8	39.8	155
Copperbelt	23.8	4.3	28.0	535
Eastern	35.7	8.1	43.7	193
Luapula	29.5	6.6	36.1	127
Lusaka	22.0	8.5	30.5	320
Northern	26.8	9.8	36.7	202
North-Western	28.7	3.2	31.9	50
Southern	29.5	5.0	34.4	311
Western	27.6	8.7	36.4	91
Education				
No education	37.3	8.2	45.4	211
Primary	29.0	7.6	36.5	1293
Secondary	17.9	3.3	21.2	479
Total	27.2	6.6	33.8	1984

with the proportion of women having begun childbearing increasing rapidly in the late teen years. By age 17, one-third of women have begun childbearing; by age 18, one-half of women and by age 19, two-thirds have (see Figure 3.4). Early childbearing is particularly characteristic of rural women, those in Eastern Province, and those who have not attended school.

Whereas most teenage women who have begun childbearing have given birth only once, a small proportion have had two births. Table 3.11 shows the distribution of women age 15-19 by number of children ever born. Overall, five percent of women age 15-19 have delivered more than one child. Fifteen percent of women age 19 have had two or more births.

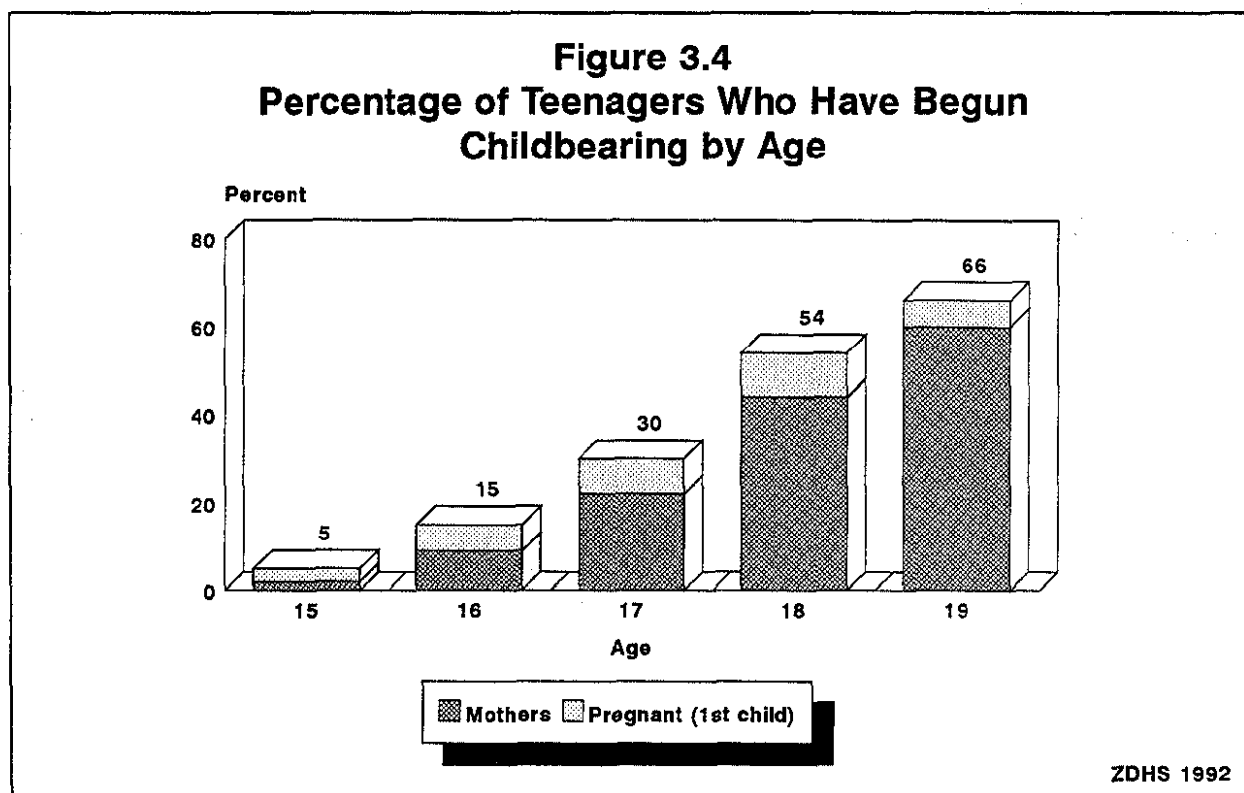


Table 3.11 Children born to teenagers

Percent distribution of teenagers 15-19 by number of children ever born (CEB), Zambia 1992

Age	Number of children ever born			Total	Mean number of CEB	Number of teenagers
	0	1	2+			
15	98.1	1.7	0.2	100.0	0.02	384
16	91.3	8.7	0.0	100.0	0.09	427
17	77.9	21.1	1.0	100.0	0.23	392
18	55.8	37.5	6.7	100.0	0.52	380
19	40.1	44.5	15.4	100.0	0.77	401
Total	72.8	22.5	4.6	100.0	0.32	1984