

CHAPTER 4

FERTILITY AND FERTILITY PREFERENCES

A major objective of NFHS-2 is to provide detailed information on fertility levels, differentials, and trends. This chapter presents a description of current and past fertility, cumulative fertility and family size, birth intervals, age at first cohabitation with husband, age at first and last birth, age at menopause, and durations of postpartum amenorrhoea, abstinence, and insusceptibility to pregnancy. Also discussed are fertility preferences, ideal and actual number of children, preference for sons or daughters, planning status of pregnancies, and wanted and actual total fertility rates.

Most of the fertility measures presented in this chapter are based on the complete birth histories collected from ever-married women age 15–49 years. Several measures and procedures were used to obtain complete and accurate reporting of births, deaths, and the timing of these events. First, women were asked a series of questions aimed at recording all the live births that had occurred in their lifetime. Second, for each live birth, the survey collected information on the age, sex, and survival status of the child. For dead children, age at death was recorded. Interviewers were given extensive training in probing techniques designed to help respondents report this information accurately. For example, interviewers were instructed to check any documents (such as horoscopes, school certificates, or vaccination cards) that might provide additional information on dates of birth and to probe for the reason for any birth interval of four or more years in order to prevent omission of births, especially of children who died soon after birth. Stillbirths, miscarriages, and induced abortions that occurred between live births were also recorded.

Despite these measures to improve data quality, NFHS-2 is subject to the same types of errors that are inherent in all retrospective sample surveys—namely, the omission of some births (especially births of children who died at a very young age) and the difficulty of determining the date of birth of each child accurately. These problems can bias estimates of fertility levels and trends.

4.1 Age at First Cohabitation

The number of children that a woman will have in her lifetime is strongly influenced by the age at which she marries. Formal marriage is not always immediately followed by cohabitation. A marriage may not be consummated immediately if it occurs at a very young age. In such instances, there is a difference between age at marriage and age at consummation of marriage. Age at consummation of marriage is, of course, what is relevant for fertility. NFHS-2 measured age at first cohabitation as a proxy for age at consummation of marriage. The practice of marriage at very young ages is not as widely prevalent in Tamil Nadu as in some other states. In Table 4.1, the median age at first cohabitation for a group of women is defined as the age by which half of the entire group began to cohabit, rather than the age by which half of all ever-cohabiting women in the group began to cohabit.

Table 4.1 shows that, in Tamil Nadu, the median age at first cohabitation with the husband is 19.1 years for women age 20–49, which is almost two years higher than the median

Table 4.1 Age at first cohabitation with husband							
Median age at first cohabitation with husband among women age 20–49 years by current age and selected background characteristics, Tamil Nadu, 1999							
Background characteristic	Current age						
	20–24	25–29	30–34	35–39	40–49	20–49	25–49
Residence							
Urban	NC	20.8	20.2	19.7	18.6	NC	19.8
Rural	19.7	18.9	18.1	18.3	17.7	18.6	18.3
Chennai	NC	20.5	19.5	18.6	18.8	19.8	19.4
Education							
Illiterate	18.4	18.0	17.5	17.7	17.2	17.7	17.5
Literate, < middle school complete	19.9	19.6	19.0	18.9	18.7	19.2	19.0
Middle school complete	NC	20.2	20.1	19.5	18.7	19.8	19.6
High school complete and above	NC	23.3	22.4	21.0	22.2	NC	22.4
Religion							
Hindu	NC	19.4	18.8	18.7	17.9	18.9	18.6
Muslim	19.8	19.2	19.2	(18.4)	17.5	18.8	18.6
Christian	NC	22.6	(20.4)	(21.0)	20.8	NC	21.3
Caste/tribe							
Scheduled caste	19.5	18.6	17.6	17.7	17.1	18.2	17.7
Scheduled tribe	*	*	*	*	*	(17.8)	*
Other backward class	NC	19.8	19.4	19.0	18.2	19.3	19.0
Other	NC	(24.3)	(23.2)	(21.6)	(22.8)	NC	22.8
Standard of living index							
Low	19.0	18.3	17.9	18.0	17.4	18.2	17.9
Medium	NC	19.8	19.4	18.5	18.0	19.2	18.9
High	NC	21.9	20.3	20.4	19.9	NC	20.6
Total	NC	19.6	18.9	18.7	18.0	19.1	18.8
Note: Total includes women belonging to other religions and women with missing information on religion, caste/tribe, and the standard of living index, who are not shown separately.							
NC: Not calculated because less than 50 percent of the women have started living with their husband by age 20							
() Based on 25–49 unweighted cases							
*Median not shown; based on fewer than 25 unweighted cases							

age at first cohabitation for India as a whole. The median age at first cohabitation increases steadily from 18.0 for women age 40–49 to 19.6 for women age 25–29, suggesting a modest increase in the median age at first cohabitation over a period of approximately 18 years.

For women age 25–49, the median age at first cohabitation is one and a half years higher for women in urban areas than in rural areas. The median age at first cohabitation has risen faster in urban areas than in rural areas, so the urban-rural gap has been widening over time. The median age at first cohabitation rises sharply with women’s level of education, from 17.5 among illiterate women to 22.4 among those with at least a high school education. The median age at first cohabitation is higher for Christian women (21.3 years) than for Muslims or Hindus (18.6 years each). The median age at first cohabitation is lower for women from scheduled castes (17.7 years) than for women who belong to other backward classes (19.0 years) or other castes (22.8 years). The median age at first cohabitation is about three years higher for women living in households with a high standard of living than for women living in households with a low standard of living.

4.2 Current Fertility Levels

NFHS-2 provides estimates of age-specific fertility rates (ASFR), total fertility rates (TFR), and crude birth rates (CBR) for the three-year period preceding the survey, which, in Tamil Nadu corresponds roughly to the period 1996–98. This three-year period was chosen as a compromise between the need to obtain recent information (suggesting the use of a short period close to the survey date) and the need to reduce sampling variation and minimize problems related to displacement of births from recent years to earlier years (suggesting the use of a longer period). The ASFR for any specific age group is calculated by dividing the number of births to women in the age group during the period 1–36 months preceding the survey by the number of woman-years lived by women in the age group during the same three-year time period. The TFR is a summary measure, based on the ASFRs, that gives the number of children a woman would bear during her reproductive years if she were to experience the ASFRs prevailing at the time of the survey. Mathematically, the TFR is calculated as five times the sum of all the ASFRs for the five-year age groups. The CBR is defined as the annual number of births per 1,000 population.

Based on estimates for the three-year period before NFHS-2, the CBR for Tamil Nadu is estimated at 21.4 live births per 1,000 population, and the TFR is estimated at 2.2 births per woman, as shown in Table 4.2. The TFR estimate of 2.2 births is close to replacement level fertility and much lower than the all India TFR of 2.85 births.

Table 4.2 shows that NFHS-2 fertility estimates do not vary much between urban and rural areas. The CBR is nearly the same in urban and rural areas, while the urban TFR (2.1) is just barely lower than the rural TFR (2.2). As shown in Figure 4.1, ASFRs are somewhat lower in urban areas than in rural areas for the younger age groups 15–19 and 20–24, whereas rural ASFRs are slightly lower than urban ASFRs for the age groups 25–29 and above. Fertility at age 15–19 accounts for 19 percent of total fertility, indicating that there is a substantial amount of early childbearing. More than two-thirds of total fertility is concentrated in the prime childbearing ages of 20–29. For the state as a whole, fertility at ages 30 and older accounts for only 10 percent of total fertility. In Tamil Nadu, childbearing starts at relatively young ages and is nearly concluded by age 30.

Based on estimates for the three-year periods preceding NFHS-1 and NFHS-2, the CBR fell from 23.5 to 21.4 between the two surveys, a decline of 9 percent in approximately seven years. Over the same period, the TFR fell from 2.5 to 2.2, a decline of 12 percent. Table 4.2 and Figure 4.2 show that fertility fell for all age groups.

NFHS-2 fertility estimates can be compared with estimates from the Sample Registration System (SRS), which is maintained by the Office of the Registrar General, India. Since the NFHS-2 rates refer to 1996–98, it is appropriate to compare them with the SRS estimates for 1997, which are also shown in Table 4.2. The NFHS-2 estimate of the CBR, at 21.4, is higher than the SRS estimate of 19.0. The NFHS-2 estimate of the TFR (2.2) is 0.2 children higher than the SRS estimate of 2.0. The differences between the NFHS-2 and SRS estimates are small and occur mainly in the youngest age group.

Table 4.2 Current fertility

Age-specific and total fertility rates and crude birth rates from NFHS-1, NFHS-2, and the SRS by residence, Tamil Nadu

Age	NFHS-1 (1989-91)	NFHS-2 (1996-98)		SRS (1997)			
	Total	Urban	Rural	Total	Urban	Rural	Total
15-19	0.087	0.071	0.090	0.083	0.022	0.035	0.031
20-24	0.203	0.172	0.199	0.189	0.161	0.189	0.179
25-29	0.132	0.122	0.120	0.121	0.113	0.131	0.124
30-34	0.051	0.042	0.026	0.032	0.046	0.044	0.045
35-39	0.019	0.011	0.009	0.010	0.012	0.011	0.011
40-44	0.004	0.004	0.002	0.003	0.003	0.003	0.003
45-49	0.000	0.000	0.000	0.000	0.000	0.001	0.001
TFR 15-44	2.48	2.11	2.23	2.19	1.79	2.07	1.97
TFR 15-49	2.48	2.11	2.23	2.19	1.79	2.07	1.97
CBR	23.5	21.3	21.5	21.4	18.3	19.3	19.0

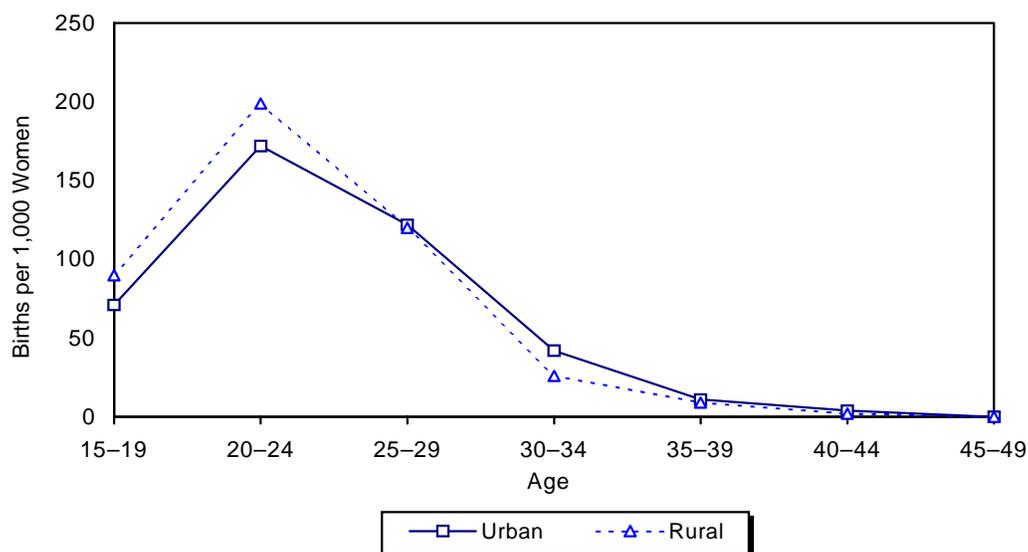
Note: Rates from NFHS-1 and NFHS-2 are for the period 1-36 months preceding the survey. Rates for the age group 45-49 might be slightly biased due to truncation. Rates from the SRS are for one calendar year. Age-specific and total fertility rates are expressed per woman.

TFR: Total fertility rate

CBR: Crude birth rate, expressed per 1,000 population

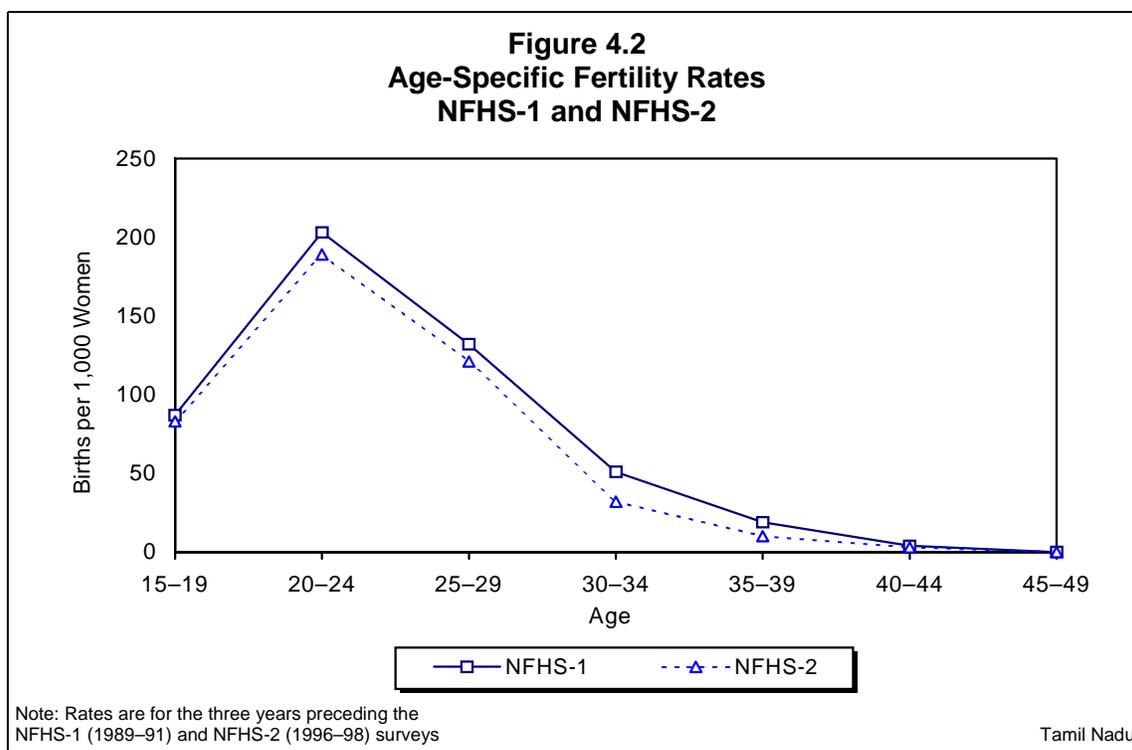
Source for SRS: Office of the Registrar General, 1999a

**Figure 4.1
Age-Specific Fertility Rates
by Residence**



Note: Rates are for the three years preceding the survey (1996-98)

NFHS-2, Tamil Nadu, 1999



4.3 Fertility Differentials and Trends

Table 4.3 and Figure 4.3 show how the TFR, the percentage currently pregnant, and the mean number of children ever born to women age 40–49 vary by selected background characteristics. As mentioned above, the TFR is slightly lower in urban areas than in rural areas. In Chennai, the TFR is 1.9 children per woman, well below “replacement level”. The TFR is higher by 0.6 children among illiterate women than among women who have completed at least a high school education, 0.4 children higher among Muslims than among Hindus and Christians, and 0.5 children higher among women in households with a low standard of living than among women in households with a high standard of living. The TFR is 2.3 among women from scheduled castes, 2.2 among women from other backward classes, and 1.7 among women who do not belong to a scheduled caste, scheduled tribe, or other backward class.

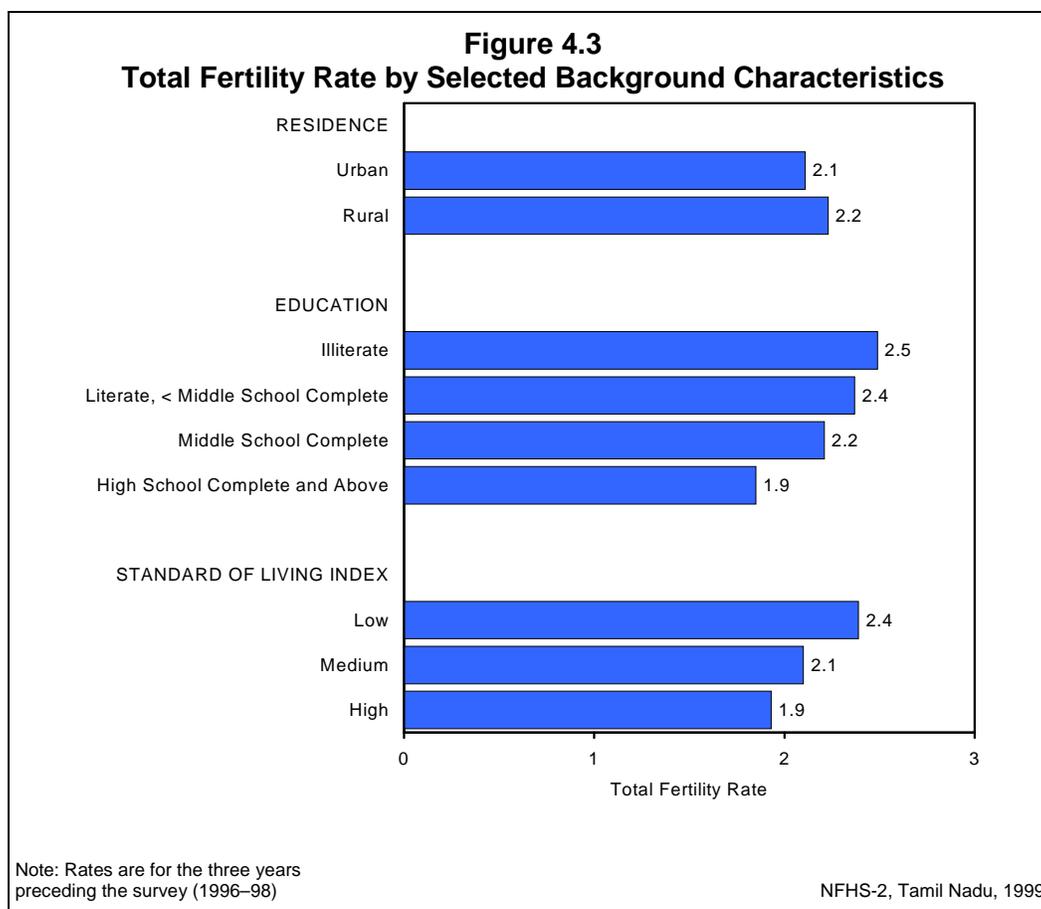
Fertility transitions in other countries have shown that fertility differentials typically diverge early in the transition and reconverge (though rarely completely) towards the end of the transition as fertility approaches the replacement level. Table 4.3 and Figure 4.3 indicate that in Tamil Nadu—now close to the end of the fertility transition—fertility differentials have reconverged, with the TFR and other fertility indicators showing small differences by background characteristics. However, differentials are slightly more pronounced for the mean number of children ever born to ever-married women age 40–49 than for the other two current fertility indicators in Table 4.3, because women in their forties had many of their births at an earlier stage of the fertility transition when fertility differentials were somewhat larger.

Overall, 5 percent of women in Tamil Nadu report that they are currently pregnant (slightly lower than the national average of 6 percent). Differentials in the percentage currently pregnant follow a somewhat different pattern than differentials in the TFR due partly to the fact

Table 4.3 Fertility by background characteristics			
Total fertility rate for the three years preceding the survey, percentage of all women age 15–49 currently pregnant, and mean number of children ever born to all women age 40–49 by selected background characteristics, Tamil Nadu, 1999			
Background characteristic	Total fertility rate ¹	Percentage currently pregnant ²	Mean number of children ever born to all women age 40–49 years
Residence			
Urban	2.11	4.9	3.18
Rural	2.23	5.4	3.72
Chennai	1.86	5.1	2.99
Education			
Illiterate	2.49	4.4	3.77
Literate, < middle school complete	2.37	5.8	3.60
Middle school complete	2.21	5.6	3.24
High school complete and above	1.85	5.9	2.27
Religion			
Hindu	2.16	5.4	3.51
Muslim	2.57	4.7	4.20
Christian	2.14	3.9	3.30
Caste/tribe			
Scheduled caste	2.25	5.2	4.00
Scheduled tribe	(2.39)	(8.6)	*
Other backward class	2.18	5.2	3.41
Other	1.69	7.1	(2.21)
Standard of living index			
Low	2.39	4.9	3.56
Medium	2.10	5.6	3.76
High	1.93	5.0	2.80
Total	2.19	5.2	3.53
<p>Note: Total includes women belonging to other religions and women with missing information on religion, caste/tribe, and the standard of living index, who are not shown separately. () Based on 125–249 woman-years of exposure for the total fertility rate and 25–49 unweighted cases for percentage currently pregnant and the mean number of children ever born *Mean not shown; based on fewer than 25 unweighted cases ¹Rate for women age 15–49 years ²For this calculation, it is assumed that women who are never married, widowed, divorced, separated, or deserted are not currently pregnant.</p>			

that the TFR is not affected by the age structure, whereas the percentage currently pregnant is affected by the age structure.

The last column of Table 4.3 shows the mean number of children ever born to ever-married women age 40–49 at the time of the survey. The average number of children ever born for these women, who are at the end of their childbearing years, is 3.5. There has been substantial decline in fertility in Tamil Nadu over time which is evident from the difference of 1.3 children between the average number of children for women who are currently in their forties and the number of children women would have in their lifetime if they were subject to the current age-specific fertility rates (the last column and first column of Table 4.3). In most cases, the pattern of differentials in the mean number of children ever born is similar to the pattern of differentials in the TFR. The differentials by standard of living are a partial exception. Exceptions can occur because the mean number of children ever born at age 40–49 reflects



fertility in the past, whereas the TFR reflects fertility only in the three years preceding the survey.

The preceding section already discussed fertility trends based on estimates from NFHS-1 and NFHS-2 for the three-year period preceding each survey. Table 4.4 shows fertility trends for five-year time periods preceding NFHS-2, estimated solely from NFHS-2 birth histories. It is not possible to show TFRs in this table because of progressively greater age truncation as one goes back in time. For example, for the period 5–9 years preceding the survey, it is not possible to compute an ASFR for age 45–49 because the women in question would be 50–54 at the time of the survey, whereas NFHS-2 only collected birth histories for women up to age 49. Similarly, for the period 10–14 years preceding the survey, it is not possible to compute ASFRs for women age 40–49, and for the period 15–19 years preceding the survey, it is not possible to compute ASFRs for women age 35–49. Thus Table 4.4 shows only the truncated trends in ASFRs. Results are shown separately for urban and rural areas as well as for the entire state. These results show substantial fertility declines in all age groups.

For the periods 0–4 years and 5–9 years before the survey, it is possible to calculate truncated TFRs (more appropriately called cumulative fertility rates, or CFRs) for the age range 15–39, based on the ASFRs shown in Table 4.4. This is done by summing ASFRs for the age groups 15–19 through 35–39 and multiplying the sum by five. For the state as a whole, CFR(15–39) declined from 2.4 to 2.2 between these two five-year periods, a decline of 0.2 children. The

Table 4.4 Fertility trends				
Age-specific fertility rates for five-year periods preceding the survey by residence, Tamil Nadu, 1999				
Age	Years preceding survey			
	0–4	5–9	10–14	15–19
URBAN				
15–19	0.068	0.068	0.078	0.090
20–24	0.174	0.169	0.204	0.224
25–29	0.123	0.136	0.149	0.166
30–34	0.042	0.051	0.067	[0.093]
35–39	0.013	0.019	[0.032]	U
40–44	0.002	[0.000]	U	U
45–49	[0.000]	U	U	U
RURAL				
15–19	0.091	0.106	0.135	0.140
20–24	0.203	0.203	0.222	0.280
25–29	0.118	0.134	0.149	0.181
30–34	0.037	0.051	0.074	[0.118]
35–39	0.010	0.019	[0.026]	U
40–44	0.003	[0.003]	U	U
45–49	[0.000]	U	U	U
TOTAL				
15–19	0.082	0.092	0.114	0.121
20–24	0.192	0.190	0.215	0.260
25–29	0.120	0.135	0.149	0.176
30–34	0.039	0.051	0.072	[0.110]
35–39	0.011	0.019	[0.028]	U
40–44	0.002	[0.002]	U	U
45–49	[0.000]	U	U	U
Note: Age-specific fertility rates are expressed per woman.				
U: Not available				
[] Truncated, censored				

decline was 0.1 children for urban areas and 0.3 children for rural areas, indicating that the absolute level of fertility fell somewhat more rapidly in rural areas than in urban areas.

Another way of looking at fertility is to calculate fertility rates by the number of years since first cohabitation with the husband. These rates are measures of marital fertility, i.e., fertility within marriage. Table 4.5 shows fertility rates by duration since first cohabitation for ever-married women over the entire 20-year period preceding the survey.¹ Fertility has declined at all durations, but more at durations longer than five years since first cohabitation. It is also evident from Table 4.5 that marital fertility is lower in urban areas than in rural areas for most durations and time periods.

¹Since NFHS-2 collected information only on a woman's age at the time of first cohabitation and not on the year and month when she first began cohabiting with her husband, the exact number of months since first cohabitation cannot be calculated. For this reason, the first year since cohabitation contains only six months, on average, and the first five years since cohabitation contain only 4.5 years, on average.

Table 4.5 Fertility by marital duration				
Fertility rates for ever-married women by duration since first cohabitation with husband (in years) and residence for five-year periods preceding the survey, Tamil Nadu, 1999				
Duration since first cohabitation (in years)	Years preceding survey			
	0–4	5–9	10–14	15–19
URBAN				
< 5	0.305	0.309	0.322	0.326
5–9	0.131	0.140	0.185	0.201
10–14	0.027	0.053	0.068	0.132
15–19	0.008	0.019	0.042	(0.072)
20–24	0.007	0.009	(0.020)	*
25–29	0.000	(0.000)	*	U
RURAL				
< 5	0.320	0.324	0.340	0.334
5–9	0.149	0.168	0.180	0.244
10–14	0.048	0.070	0.094	0.152
15–19	0.020	0.030	0.054	0.099
20–24	0.006	0.012	0.025	*
25–29	0.000	0.006	*	U
TOTAL				
< 5	0.314	0.318	0.333	0.332
5–9	0.142	0.158	0.182	0.231
10–14	0.040	0.065	0.086	0.145
15–19	0.016	0.027	0.050	0.092
20–24	0.007	0.011	0.024	*
25–29	0.000	0.004	*	U
Note: Duration-specific fertility rates expressed are per woman. The duration since first cohabitation with husband is defined as the difference between the woman's age at the specific time period and her age when she began living with her husband. U: Not available () Based on 125–249 woman-years of exposure *Rate not shown; based on fewer than 125 woman-years of exposure				

4.4 Children Ever Born and Living

The number of children a woman has ever borne is a cohort measure of fertility. Because it reflects fertility in the past, it provides a somewhat different picture of fertility levels, trends, and differentials than do period measures of fertility such as the CBR and the TFR. Table 4.6 shows the percent distribution of all women and currently married women by the number of children ever born (CEB). The table shows these distributions by the age of the woman at the time of the survey and also shows the mean number of children ever born and living children.

Among women age 15–49, the mean number of children ever born is 1.9 for all women and 2.4 for currently married women. The mean number of children ever born increases steadily with women's age, reaching a high of 3.7 children among all women age 45–49 and 3.8 among currently married women in this age group. The table also shows that early childbearing is fairly common in Tamil Nadu. Twelve percent of all women age 15–19 and 50 percent of currently married women age 15–19 have already had a child.

For women age 45–49, the number of children ever born is of particular interest because these women have virtually completed their childbearing. For all women in this age group, irrespective of marital status, the modal number of children ever born is three. Twenty percent of all women age 45–49 and 22 percent of currently married women in this age group have given

Table 4.6 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 children ever born and living, according to age, Tamil Nadu, 1999

Age	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	88.2	9.3	2.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	100.0	1,038	0.15	0.14
20-24	45.6	26.7	21.2	5.5	0.6	0.3	0.0	0.0	0.0	0.0	0.0	100.0	1,146	0.90	0.84
25-29	16.9	21.1	34.7	18.1	7.6	1.3	0.3	0.0	0.0	0.0	0.0	100.0	1,051	1.84	1.69
30-34	7.0	14.1	34.8	27.8	10.9	4.2	0.9	0.3	0.0	0.0	0.0	100.0	849	2.39	2.19
35-39	6.6	10.2	27.2	28.5	15.7	6.7	3.6	1.3	0.2	0.2	0.0	100.0	745	2.79	2.50
40-44	5.7	6.9	20.3	21.5	21.7	12.4	7.1	2.5	1.3	0.4	0.2	100.0	629	3.38	2.83
45-49	6.6	7.2	16.4	19.9	17.1	14.1	7.9	6.0	2.5	0.7	1.8	100.0	535	3.72	3.03
Total	30.0	15.1	22.4	15.8	8.7	4.3	2.1	1.0	0.4	0.1	0.2	100.0	5,992	1.89	1.67
CURRENTLY MARRIED WOMEN															
15-19	50.5	38.8	9.2	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	100.0	242	0.62	0.60
20-24	19.2	40.0	31.1	8.3	0.9	0.5	0.0	0.0	0.0	0.0	0.0	100.0	759	1.33	1.25
25-29	8.5	22.3	38.8	20.1	8.6	1.3	0.4	0.0	0.0	0.0	0.0	100.0	910	2.04	1.88
30-34	3.9	13.0	36.4	29.6	11.6	4.5	0.8	0.2	0.0	0.0	0.0	100.0	764	2.50	2.30
35-39	2.5	8.6	29.5	30.2	16.6	6.9	4.0	1.3	0.2	0.2	0.0	100.0	637	2.96	2.64
40-44	2.4	6.5	19.5	22.8	22.6	13.5	8.5	2.3	1.2	0.5	0.2	100.0	516	3.55	2.99
45-49	4.2	5.5	15.8	22.0	19.0	15.5	7.7	5.9	2.6	0.0	1.7	100.0	417	3.83	3.14
Total	9.9	19.1	29.3	20.7	11.2	5.4	2.6	1.1	0.4	0.1	0.2	100.0	4,245	2.41	2.14

birth to three children. Just over half of currently married women in this age group (52 percent) have had four or more live births. Between 2.4 percent and 4.2 percent of currently married women age 35–39 to 45–49 have never given birth, indicating that primary infertility (which is the proportion of couples who are unable to have any children) is slightly higher in Tamil Nadu than for all India (2.1–2.3 percent).

For all women age 15–49, the average number of children who died is 0.2 per woman. For currently married women, the average number of dead children is 0.3, indicating that 11 percent of children ever born to currently married women have died. For currently married women, the proportion of children ever born who have died increases from 3 percent for women age 15–19 to 18 percent for women age 45–49.

4.5 Birth Order

The distribution of births by birth order is yet another way to view fertility. Table 4.7 shows the distribution of births during the three-year period preceding the survey by birth order for selected background characteristics. Overall, as expected, the proportion of births at each order is larger than the proportion of births at the next higher order. Forty-three percent of all births are first-order births, 34 percent are second-order births, and 14 percent are third-order births. More than three-fourths of births (77 percent) are first and second order births in Tamil Nadu, compared with 55 percent for all India. Only 9 percent of births are of order four or higher, compared with the national average of 28 percent, which also indicates that fertility is low in Tamil Nadu.

Seventy-seven percent of births to women age 15–19 are first-order births. By contrast, 52 percent of births to women age 30–39 are of order three or higher. The proportion of births that are of order three or higher is relatively large for births to rural women, illiterate women, Muslim women, scheduled-caste women, working women, and women in households with a low standard of living. The range is particularly wide for education groups: 36 percent of births to illiterate women are of order three or higher, compared with 6 percent of births to women who have at least completed high school. The range is also wide according to the household standard of living: 31 percent of births to women in households with a low standard of living are of order three or higher, compared with 8 percent of births to women in households with a high standard of living. Only 20 percent of births to women who did not work during the 12 months preceding the survey are of order three or higher. This finding can be partly explained by the fact that nonworking women come disproportionately from urban areas, where fertility is relatively low.

4.6 Birth Intervals

A birth interval, defined as the length of time between two successive live births, indicates the pace of childbearing. Short birth intervals may adversely affect a mother's health and her children's chances of survival. Past research has shown that children born too close to a previous birth are at increased risk of dying, especially if the interval between the births is less than 24 months (Pandey et al., 1998; Govindasamy et al., 1993; Hobcraft, 1994).

Table 4.8 shows the percent distribution of births during the five years preceding the survey by birth interval according to selected demographic and socioeconomic background characteristics. In Tamil Nadu, 13 percent of births occur within 18 months of a previous birth and 30 percent occur within 24 months. Thirty-seven percent of births occur after an interval of three years or more.

Table 4.7 Birth order

Percent distribution of births during the three years preceding the survey by birth order, according to selected background characteristics, Tamil Nadu, 1999

Background characteristic	Birth order				Total percent	Number of births
	1	2	3	4+		
Mother's current age						
15–19	77.4	18.9	2.7	0.9	100.0	131
20–29	43.5	36.1	14.0	6.3	100.0	1,051
30–39	15.0	32.8	22.1	30.2	100.0	176
Residence						
Urban	43.6	40.7	11.0	4.8	100.0	470
Rural	42.6	30.4	15.6	11.4	100.0	893
Chennai	45.3	41.0	11.0	2.7	100.0	80
Mother's education						
Illiterate	30.9	33.0	20.3	15.8	100.0	520
Literate, < middle school complete	41.7	32.4	17.2	8.7	100.0	329
Middle school complete	50.3	39.0	6.9	3.8	100.0	248
High school complete and above	61.0	33.2	4.5	1.3	100.0	266
Religion						
Hindu	43.4	33.8	13.8	9.0	100.0	1,182
Muslim	31.1	42.2	13.8	13.0	100.0	99
Christian	52.0	27.8	16.8	3.5	100.0	77
Caste/tribe						
Scheduled caste	39.1	31.4	15.6	13.9	100.0	339
Other backward class	44.4	34.7	13.8	7.2	100.0	996
Other ¹	(46.9)	(34.0)	(6.3)	(12.8)	100.0	19
Mother's work status						
Working in family farm/business	37.1	43.0	8.7	11.2	100.0	96
Employed by someone else	36.4	31.4	16.6	15.6	100.0	360
Self-employed	(39.7)	(34.2)	(14.2)	(11.9)	100.0	30
Not worked in past 12 months	46.3	34.0	13.5	6.1	100.0	878
Standard of living index						
Low	38.2	30.9	17.6	13.3	100.0	529
Medium	43.3	36.0	13.3	7.4	100.0	633
High	55.8	36.5	5.6	2.1	100.0	183
Total	42.9	34.0	14.0	9.1	100.0	1,363
Note: Total includes 6 births to women currently age 40–49, 3 births to mothers belonging to other religions, 9 births to scheduled-tribe mothers, and 2 and 18 births with missing information on religion and the standard of living index, respectively, which are not shown separately. () Based on 25–49 unweighted cases ¹ Not belonging to a scheduled caste, a scheduled tribe, or an other backward class						

The median birth interval in Tamil Nadu is 31 months. The median birth interval ranges from 20 months for women age 15–19 to 39 months for women age 30–39. The relatively short birth interval for women age 15–19 may result partly from a selection effect: only women who have had two or more births are included in the table, and women age 15–19 with more than one birth are likely to have shorter birth intervals due to high fecundity. Given the finding that the median birth interval increases with mother's age, it is surprising that it does not also increase substantially with the order of the previous birth. Perhaps this is due to the absence of the selection effect just noted. There may also be another type of selection effect operating: mothers of higher-order births may be more fecund, on average, than mothers of lower-order births.

Table 4.8 Birth interval

Percent distribution of births during the five years preceding the survey by interval since previous birth and median number of months since previous birth, according to selected background characteristics, Tamil Nadu, 1999

Background characteristic	Months since previous birth						Total percent	Median months since previous birth	Number of births
	< 12	12–17	18–23	24–35	36–47	48+			
Mother's current age									
15–19	(0.0)	(27.3)	(38.5)	(34.2)	(0.0)	(0.0)	100.0	(20.4)	31
20–29	2.0	13.5	19.0	35.6	15.6	14.4	100.0	28.3	943
30–39	0.5	4.1	11.4	27.1	21.4	35.6	100.0	39.4	332
Residence									
Urban	0.9	11.5	18.0	30.3	13.3	25.9	100.0	30.6	432
Rural	2.0	11.1	17.0	34.3	18.1	17.5	100.0	30.4	891
Chennai	0.9	12.9	20.7	34.9	9.4	21.1	100.0	28.3	72
Mother's education									
Illiterate	1.9	9.3	14.5	33.4	18.8	22.1	100.0	32.6	627
Literate, < middle school complete	1.1	13.9	19.4	34.5	15.4	15.7	100.0	28.2	336
Middle school complete	2.5	12.2	22.8	32.9	13.6	16.0	100.0	27.7	191
High school complete and above	0.9	12.3	17.6	28.2	13.3	27.7	100.0	32.5	168
Religion									
Hindu	1.5	11.1	17.0	33.2	17.2	20.0	100.0	30.8	1,148
Muslim	2.4	14.1	17.3	30.9	11.1	24.1	100.0	28.9	110
Christian	3.8	8.4	21.8	32.4	14.5	19.1	100.0	29.7	59
Caste/tribe									
Scheduled caste	1.7	12.2	14.0	31.7	19.1	21.2	100.0	31.9	343
Other backward class	1.6	10.9	18.4	33.4	15.6	20.2	100.0	30.0	955
Standard of living index									
Low	1.9	11.5	17.5	33.0	16.7	19.4	100.0	29.5	566
Medium	1.6	10.9	17.9	34.3	16.3	19.1	100.0	30.2	611
High	0.2	13.3	12.0	25.7	17.1	31.7	100.0	35.6	129
Order of previous birth									
1	1.8	11.6	18.9	32.5	14.4	20.9	100.0	29.9	768
2	1.1	11.6	17.9	31.7	18.4	19.3	100.0	30.6	335
3	0.9	10.1	13.8	36.3	25.9	12.9	100.0	30.8	127
4+	3.9	8.5	7.7	36.6	14.2	29.1	100.0	32.6	92
Sex of previous birth									
Male	1.8	12.0	18.2	32.2	15.6	20.1	100.0	29.6	643
Female	1.5	10.5	16.5	33.7	17.3	20.5	100.0	31.2	680
Survival of previous birth									
Living	1.4	10.2	17.1	33.2	17.0	21.1	100.0	31.2	1,215
Dead	4.5	22.7	20.4	29.9	11.1	11.5	100.0	24.7	108
Total	1.7	11.3	17.3	33.0	16.5	20.3	100.0	30.5	1,323

Note: Table includes only second- and higher-order births. The interval for multiple births is the number of months since the preceding pregnancy that ended in a live birth. Total includes 17 births to women currently age 40–49, 3 births to mothers belonging to other religions, 10 and 15 births belonging to scheduled tribes and 'other' caste/tribes, respectively, and 2 and 17 births with missing information on religion and the standard of living index, respectively, which are not shown separately.
() Based on 25–49 unweighted cases

The median birth interval is nearly the same in urban and rural areas. Birth intervals vary irregularly by mother's education, with higher medians for illiterate women and for women with high school and above education (33 months) than for women who have completed less than middle school and those who have completed middle school (28 months). The median birth

interval is two months longer for births to Hindu women than for births to Muslim women and one month longer than for births to Christian women. It is also two months longer for births to women from scheduled castes than for births to women from other backward classes. The median birth interval, however, varies positively with household standard of living; it is six months longer for births to women in households with a high standard of living than for women in households with a low standard of living.

The median birth interval is about one and a half months longer if the previous birth was a girl than if it was a boy. The median birth interval is almost seven months shorter if the previous child died than if it survived. In part, this reflects the shortening of postpartum amenorrhoea that occurs when the preceding child dies in infancy and breastfeeding stops prematurely. Women are also less likely to use temporary methods of contraception to postpone fertility if the previous child died and they want to replace the dead child.

4.7 Age at First and Last Birth

The ages at which women start and stop childbearing are important demographic determinants of fertility. A higher median age at first birth and a lower median age at last birth are indicators of lower fertility. Table 4.9 shows the median age at first birth for various age groups by selected background characteristics. In this table, the median age at first birth for any group of women is defined as the age by which half of all women in the group have had a first birth, rather than the age by which half of all mothers in the group have had a first birth. If the median age at first birth calculated for an age group lies above the lower limit of that age group, it is not valid because some younger women in the age group who have not yet had a first birth will not have reached the median age by the time of the survey. In such cases, the estimate of the median is not shown.

The median age at first birth for Tamil Nadu is 20.6 years for women age 25–49, higher than the all-India average of 19.4 years. As shown in the last row of the table, the median age at first birth has increased regularly over time. The median of 19.8 years for women age 45–49 has increased to 21.5 years for women age 25–29, an increase of almost 2 years in approximately 20 years.

The median age at first birth is particularly low among women who live in rural areas, women who are illiterate, women from scheduled castes, and women who live in households with a low standard of living. The median age at first birth is nearly two years lower in rural areas (20.0) than in urban areas (21.7), and nearly five years lower for illiterate women (19.4) than for women who have completed at least high school (24.3). The median is nearly three years lower for women in households with a low standard of living (19.7) than for women in households with a high standard of living (22.5). The median is three years higher for Christian women than for Hindu and Muslim women, and 4–5 years higher for women belonging to ‘other’ groups than for women belonging to scheduled castes and other backward classes.

For older women, the age at last childbirth is an indicator of cessation of childbearing. Table 4.10 presents the distribution of ever-married women age 40–49 by age at last birth, as well as the median age at last birth. Although a few of these women may have another birth later on, the very low fertility rates for women in this age group suggest that childbearing is virtually complete by these ages. In Tamil Nadu, nearly two-thirds of women (65 percent) in this age group had their last birth by age 30, compared with 54 percent for India as a whole. The median age at last birth is lower by about one and a half years for women age 40–44 than for women age

Table 4.9 Median age at first birth

Median age at first birth among women age 25–49 years by current age and selected background characteristics, Tamil Nadu, 1999

Background characteristic	Current age					
	25–29	30–34	35–39	40–44	45–49	25–49
Residence						
Urban	22.8	22.1	21.9	20.7	20.3	21.7
Rural	20.9	19.8	20.0	19.5	19.5	20.0
Chennai	22.3	21.0	21.0	21.1	20.8	21.4
Education						
Illiterate	19.8	19.4	19.6	19.0	19.1	19.4
Literate, < middle school complete	21.1	20.4	21.0	20.5	20.0	20.7
Middle school complete	21.9	22.1	22.1	20.3	(20.1)	21.6
High school complete and above	24.9	24.2	23.0	24.4	24.2	24.3
Religion						
Hindu	21.3	20.5	20.4	19.8	19.6	20.4
Muslim	20.9	20.8	(20.8)	(18.8)	(19.9)	20.5
Christian	23.8	(22.2)	(22.9)	(24.7)	(21.2)	23.4
Caste/tribe						
Scheduled caste	20.3	19.5	19.6	19.3	18.8	19.5
Other backward class	21.6	21.0	20.8	20.1	20.0	20.8
Other ¹	NC	(25.2)	(23.7)	*	*	24.8
Standard of living index						
Low	20.1	19.5	19.9	19.4	19.2	19.7
Medium	21.6	21.0	20.3	19.7	19.6	20.6
High	23.6	21.9	22.0	22.2	21.3	22.5
Total	21.5	20.6	20.5	19.9	19.8	20.6

Note: Total includes women belonging to other religions and scheduled-tribe women and women with missing information on religion, caste/tribe, and the standard of living index, who are not shown separately.

NC: Not calculated because less than 50 percent of women had their first birth by age 25

() Based on 25–49 unweighted cases

*Median not shown; based on fewer than 25 unweighted cases

¹Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

Table 4.10 Age at last birth

Percent distribution of ever-married women age 40–49 years by age at last birth and median age at last birth, according to current age, Tamil Nadu, 1999

Current age	No birth	Age at last birth							Total percent	Median age at last birth	Number of women
		< 20	20–24	25–29	30–34	35–39	40–44	45–49			
40–44	3.6	5.8	25.5	38.5	19.5	6.3	0.8	NA	100.0	27.2	616
45–49	4.8	3.8	21.1	33.9	27.4	8.5	0.7	0.0	100.0	28.6	525
40–49	4.2	4.9	23.4	36.4	23.1	7.3	0.7	0.0	100.0	27.9	1,140

NA: Not applicable

45–49, indicating a decline over time in the median age at last birth. The typical reproductive age span (which is the difference between the median age at last birth and the median age of first birth for women who have ever had a birth) is shorter in Tamil Nadu (8.1 years) than in India as a whole (9.9 years), which is consistent with the lower level of fertility in Tamil Nadu (see International Institute for Population Sciences and ORC Macro, 2000: Table 4.15).

4.8 Postpartum Amenorrhoea, Abstinence, Insusceptibility, and Menopause

Among the factors that influence the risk of pregnancy following a birth are breastfeeding and sexual abstinence. Breastfeeding prolongs postpartum protection from conception through its effect on the period of amenorrhoea (the period prior to the return of menses) following a birth. Delaying the resumption of sexual relations following a birth also prolongs the period of postpartum protection. Women are defined as insusceptible to pregnancy following a birth if they are not at risk of conception because they are amenorrhoeic, abstaining from sexual relations, or both.

Table 4.11 shows the percentage of births occurring during the three years preceding the survey whose mothers are postpartum amenorrhoeic, abstaining, or insusceptible, by the number of months since the birth. These distributions are based on current status information, that is, on the proportions of births occurring within the 36 months before the survey whose mothers were amenorrhoeic, abstaining, or insusceptible. In other words, the table is based on cross-sectional data and does not represent the experience of a real cohort of births over time. The data are grouped in two-month intervals to minimize fluctuations in the distributions. The table also shows median and mean durations of amenorrhoea, abstinence, and insusceptibility. The prevalence/incidence mean is obtained by dividing the number of mothers who are amenorrhoeic, abstaining, or insusceptible by the average number of births per month over the 36-month period.

Ninety-eight percent of women who had a birth less than two months before the survey and 70 percent of women who had a birth 2–3 months before the survey are still amenorrhoeic. The proportion amenorrhoeic decreases rapidly as the number of months since the birth increases. Just over half of all women who had a birth 4–5 months before the survey are still amenorrhoeic, and the proportion amenorrhoeic declines to only one-quarter of women who had a birth 8–9 months before the survey. The proportion of women abstaining from sexual intercourse within two months after a birth is the same as that of the proportion amenorrhoeic, but a higher proportion (61 percent) of women are still abstaining 4–5 months after a birth than are amenorrhoeic, and this percentage declines rapidly thereafter. Overall, when amenorrhoea and abstinence are considered together, about half of women are susceptible to pregnancy 6–7 months after giving birth, and 70 percent are susceptible 12–13 months after giving birth.

The median and mean durations of insusceptibility are 7 and 10 months, respectively. Because the mean is affected by extreme values and the median is not, and because the distribution is skewed towards the higher durations, the mean is somewhat higher than the median. The median durations of amenorrhoea and abstinence are nearly identical (5 months). These results indicate that women in Tamil Nadu remain insusceptible to pregnancy for about 9 months after a birth, due to the effects of both postpartum amenorrhoea and abstinence.

Menopause is a primary limiting factor of fertility. It is the culmination of a gradual decline in fecundity with increasing age. After age 30, the risk of pregnancy declines with age as

Table 4.11 Postpartum amenorrhoea, abstinence, and insusceptibility				
Percentage of births during the three years preceding the survey whose mothers are postpartum amenorrhoeic, abstaining, or insusceptible by number of months since birth, and median and mean durations, Tamil Nadu, 1999				
Months since birth	Percentage of births whose mothers are:			Number of births
	Amenorrhoeic	Abstaining	Insusceptible	
< 2	98.0	98.0	100.0	61
2-3	70.0	84.8	85.3	60
4-5	52.4	61.0	73.0	81
6-7	42.8	22.8	53.3	70
8-9	23.0	12.8	31.9	69
10-11	24.0	14.4	33.4	103
12-13	20.8	14.5	29.7	85
14-15	13.4	5.3	15.2	67
16-17	1.4	2.7	4.1	86
18-19	1.6	7.7	9.3	76
20-21	3.2	3.2	6.4	75
22-23	0.0	1.6	1.6	73
24-25	0.0	4.5	4.5	79
26-27	0.0	5.4	5.4	72
28-29	1.4	0.0	1.4	78
30-31	0.0	1.7	1.7	71
32-33	1.7	7.0	7.0	67
34-35	1.4	1.3	2.6	87
Median ¹	5.1	5.0	7.0	NA
Mean	7.4	7.2	9.6	NA
Prevalence/incidence mean	6.5	6.3	8.7	NA

Note: Median and mean durations are based on current status. Insusceptible is defined as amenorrhoeic, abstaining, or both.
NA: Not applicable
¹Based on a three-period moving average of percentages

Table 4.12 Menopause						
Percentage of currently married women age 30-49 years who are in menopause by age and residence, Tamil Nadu, 1999						
Age	Urban		Rural		Total	
	Percentage	Number	Percentage	Number	Percentage	Number
30-34	1.1	291	2.5	473	2.0	764
35-39	2.5	245	5.8	392	4.5	637
40-41	5.7	80	16.3	154	12.6	234
42-43	21.3	69	28.8	124	26.1	193
44-45	22.5	62	34.6	120	30.5	183
46-47	39.4	54	55.5	99	49.8	153
48-49	62.9	55	72.9	114	69.7	169
30-49	11.5	857	18.6	1,477	16.0	2,334

Note: Percentage menopausal is defined as the percentage of currently married women who are not pregnant and not postpartum amenorrhoeic and who reported that their last menstrual period occurred six or more months preceding the survey or that they are menopausal or have had a hysterectomy.

an increasing proportion of women become infecund. In NFHS-2, menopause is defined as the absence of menstruation for six or more months preceding the survey among currently married women. Women who report that they are menopausal or that they have had a hysterectomy are

also included in this category. Women who are pregnant or postpartum amenorrhoeic are assumed not to be menopausal. Table 4.12 presents data on menopause among women age 30–49 years. In Tamil Nadu, menopause is not common among women in their thirties, but its incidence increases rapidly after age 40. By age 42–43, 26 percent of women are menopausal. The proportion menopausal rises to 50 percent by age 46–47 and to 70 percent by age 48–49. Rural women reach menopause earlier than urban women; the proportion of women menopausal is higher at all ages for women in rural areas than in urban areas.

4.9 Desire for More Children

In order to obtain information on fertility preferences, NFHS-2 asked nonsterilized, currently married, nonpregnant women: ‘Would you like to have (a/another) child or would you prefer not to have any (more) children?’ Pregnant women were asked, ‘After the child you are expecting, would you like to have another child or would you prefer not to have any more children?’ Women who expressed a desire for additional children were asked how long they would like to wait before the birth of their next child. The survey also collected information on the preferred sex of the next child and the ideal number of children by sex.

Table 4.13 and Figure 4.4 show future fertility preferences of currently married women. Twenty-three percent of currently married women say that they do not want any more children, an additional 46 percent cannot have another child because either the wife or the husband has been sterilized, and 5 percent of women say that they cannot get pregnant (that is, they are ‘declared infecund’). More than a quarter of women (26 percent) say that they would like to have another child (14 percent within two years, 12 percent after waiting at least two years, and less than 1 percent are undecided when they want the next child). Overall, 81 percent of women either want to space their next birth or do not want any more children, including women who are sterilized or whose husbands are sterilized. This proportion is 83 percent in urban areas and 80 percent in rural areas. Very few women (less than 1 percent) say that the decision about having children is up to God.

The desire to have a child within two years drops rapidly with the number of living children, from 81 percent of women with no living children to 1 percent or less for women with three or more living children. For women with one living child, 43 percent (40 percent in urban areas and 44 percent in rural areas) want to wait at least two years before having the next child. And yet, as will be seen in Chapter 5, very few women use any temporary method of contraception. These findings suggest that encouraging the use of temporary methods would lower overall fertility and population growth, as well as provide health benefits to mothers and their children through increased birth spacing.

Forty-six percent of women who want another child say that the sex of the child does not matter, whereas 30 percent say that they want the next child to be a boy, 18 percent say that they want a girl, and the rest say that the sex of the child is ‘up to God’ (6 percent). Overall, preference for sons is relatively low in Tamil Nadu. Both the proportion of women expressing a desire for a child of a particular sex and the proportion expressing a desire for a son increase with the number of living children. Among women with no living children, only 15 percent (compared with 35 percent for India as a whole) want their first child to be a son, 3 percent want a daughter, and 82 percent say that the sex of the child does not matter or is up to God. However,

Table 4.13 Fertility preferences

Percent distribution of currently married women by desire for children and preferred sex of additional child, according to number of living children and residence, Tamil Nadu, 1999

Desire for children	Number of living children ¹					Total
	0	1	2	3	4+	
URBAN						
Desire for additional child						
Wants another soon ²	83.9	22.4	2.3	0.9	0.0	12.6
Wants another later ³	6.1	40.3	4.1	0.1	0.0	10.7
Wants another, undecided when	0.9	1.1	0.1	0.0	0.0	0.3
Undecided	0.0	1.6	0.2	0.1	0.0	0.4
Up to God	0.0	0.8	0.1	0.4	0.0	0.3
Wants no more	1.2	21.5	30.9	27.0	26.0	25.2
Sterilized	2.1	8.9	60.3	68.3	63.4	46.6
Declared infecund	4.9	3.2	2.0	3.2	10.5	3.7
Missing	0.9	0.1	0.0	0.0	0.0	0.1
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	121	317	602	288	169	1,497
Preferred sex of additional child⁴						
Boy	16.0	23.1	(53.0)	*	NA	24.4
Girl	4.6	31.7	(15.4)	*	NA	20.2
Doesn't matter	74.5	41.2	(27.6)	*	NA	51.2
Up to God	5.0	3.9	(4.1)	*	NA	4.3
Total percent	100.0	100.0	100.0	100.0	0.0	100.0
Number of women wanting more ⁴	110	160	35	3	0	308
RURAL						
Desire for additional child						
Wants another soon ²	79.8	28.2	5.6	1.1	0.8	14.0
Wants another later ³	3.0	44.3	8.2	0.4	0.3	12.4
Wants another, undecided when	0.6	0.2	0.0	0.0	0.0	0.1
Undecided	0.0	0.2	0.7	0.0	0.0	0.3
Up to God	0.6	0.8	0.1	0.6	0.3	0.4
Wants no more	1.8	13.0	28.1	24.7	25.5	21.7
Sterilized	3.6	9.1	54.0	68.5	63.0	45.6
Declared infecund	10.7	3.7	3.1	4.6	10.2	5.3
Missing	0.0	0.4	0.1	0.2	0.0	0.2
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	200	587	873	644	444	2,748
Preferred sex of additional child⁴						
Boy	14.3	34.6	51.7	*	*	33.0
Girl	2.2	21.7	22.5	*	*	16.8
Doesn't matter	69.3	40.0	23.6	*	*	44.0
Up to God	14.3	3.7	2.3	*	*	6.2
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women wanting more ⁴	167	352	106	9	5	639

among women with two living children, 52 percent want their next child to be a son, 21 percent want a daughter, and 27 percent say that the sex of the child does not matter or is up to God.

Table 4.13 Fertility preferences (contd.)

Percent distribution of currently married women by desire for children and preferred sex of additional child, according to number of living children and residence, Tamil Nadu, 1999

Desire for children	Number of living children ¹					Total
	0	1	2	3	4+	
TOTAL						
Desire for additional child						
Wants another soon ²	81.3	26.2	4.3	1.0	0.6	13.5
Wants another later ³	4.1	42.9	6.5	0.3	0.2	11.8
Wants another, undecided when	0.7	0.5	0.0	0.0	0.0	0.2
Undecided	0.0	0.7	0.5	0.0	0.0	0.3
Up to God	0.4	0.8	0.1	0.5	0.2	0.4
Wants no more	1.6	16.0	29.3	25.4	25.6	23.0
Sterilized	3.0	9.1	56.6	68.4	63.1	45.9
Declared infecund	8.5	3.5	2.7	4.2	10.3	4.7
Missing	0.3	0.3	0.1	0.1	0.0	0.1
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	321	904	1,475	932	613	4,245
Preferred sex of additional child⁴						
Boy	15.0	31.0	52.0	*	*	30.2
Girl	3.1	24.8	20.7	*	*	17.9
Doesn't matter	71.3	40.4	24.6	*	*	46.3
Up to God	10.6	3.8	2.7	*	*	5.5
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women wanting more ⁴	277	511	141	12	5	947

NA: Not applicable

() Based on 25-49 unweighted cases

*Percentage not shown; based on fewer than 25 unweighted cases

¹Includes current pregnancy, if any

²Wants next birth within 2 years

³Wants to delay next birth for 2 or more years

⁴Excludes currently pregnant women

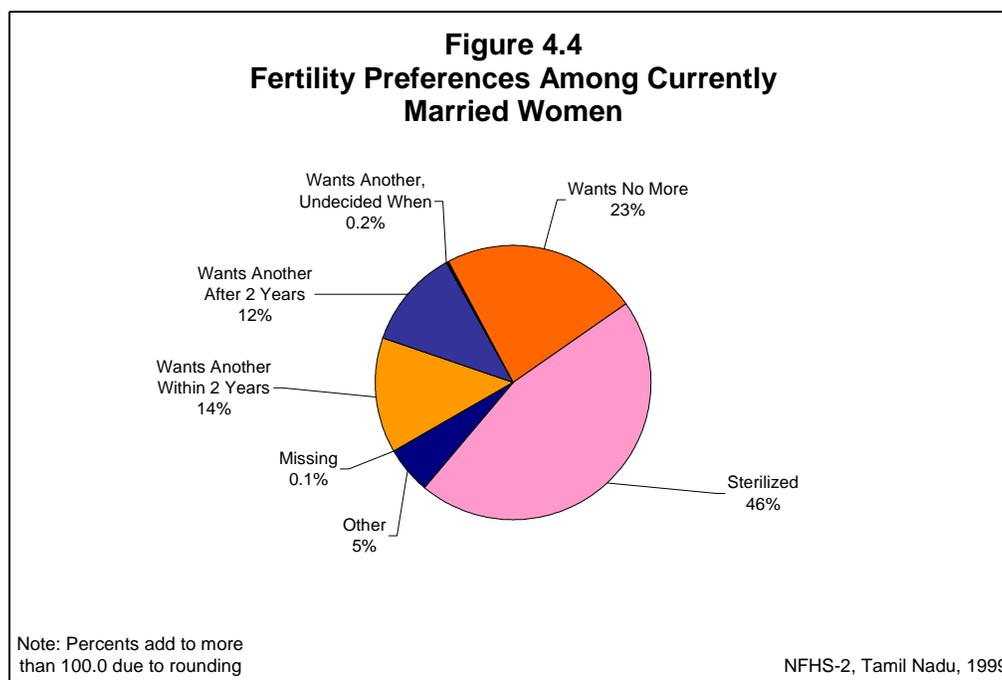


Table 4.14 Desire to have no more children by background characteristics

Percentage of currently married women who want no more children by number of living children and selected background characteristics, Tamil Nadu, 1999

Background characteristic	Number of living children ¹					Total
	0	1	2	3	4+	
Age						
15–24	0.7	8.5	71.1	95.8	*	33.2
25–34	5.5	30.3	88.6	97.0	94.2	75.4
35–49	15.6	63.5	91.8	90.6	86.9	84.8
Residence						
Urban	3.3	30.5	91.2	95.3	89.5	71.8
Rural	5.4	22.1	82.1	93.2	88.5	67.3
Chennai	2.6	33.2	92.5	97.9	95.8	72.9
Education						
Illiterate	7.4	30.1	81.3	93.4	87.1	71.7
Literate, < middle school complete	5.0	25.2	85.3	93.1	89.1	71.8
Middle school complete	0.0	17.2	88.0	94.2	95.8	63.5
High school complete and above	1.7	23.5	93.9	97.3	*	61.8
Religion						
Hindu	4.7	26.5	86.5	94.1	89.6	69.6
Muslim	*	15.6	72.7	95.5	77.1	62.4
Christian	*	11.8	88.2	(85.3)	(92.8)	65.4
Caste/tribe						
Scheduled caste	0.4	27.2	75.9	92.8	90.3	67.6
Scheduled tribe	*	*	*	*	*	(56.2)
Other backward class	6.1	23.7	88.1	94.2	88.4	69.4
Other	*	(48.4)	100.0	*	*	73.4
Standard of living index						
Low	8.8	27.1	82.0	94.7	91.4	69.1
Medium	2.5	21.5	85.3	93.3	86.5	68.1
High	0.0	29.5	93.0	93.6	89.5	70.0
Number of living sons²						
0	4.6	24.3	73.6	83.7	(83.6)	37.0
1	NA	31.6	89.4	94.5	89.3	75.8
2	NA	NA	87.9	96.3	91.4	91.8
3+	NA	NA	NA	89.8	85.8	87.1
Number of living daughters²						
0	4.6	31.6	87.9	89.8	(83.0)	47.8
1	NA	24.3	89.4	96.3	93.9	75.7
2	NA	NA	73.6	94.5	93.2	87.6
3+	NA	NA	NA	83.7	83.8	83.8
Total	4.6	25.1	85.8	93.8	88.7	68.9

Note: Women who have been sterilized or whose husbands have been sterilized are considered to want no more children. Total includes women belonging to other religions and women with missing information on religion, caste/tribe, and the standard of living index, who are not shown separately.
NA: Not applicable
() Based on 25–49 unweighted cases
*Percentage not shown; based on fewer than 25 unweighted cases
¹Includes current pregnancy, if any
²Excludes pregnant women

Table 4.14 provides information about differentials in the desire to limit family size by selected background characteristics. In this table, women who are sterilized (or whose husbands are sterilized) are included among those who say that they want no more children. It is striking

that 86 percent of women with two living children want no more children. As expected, older women are much more likely than younger women to want no more children. By age 25–34, three-quarters of women want no more children. At age 35 and above, 85 percent of women want no more children. The proportion who want no more children is higher among urban women (72 percent) than among rural women (67 percent). Overall, the proportion wanting no more children declines with education of women, from 72 percent among illiterate women to 62 percent among those who have completed at least a high school education. However, these differences by education are partly due to the fact that less educated women already have more children on average than better educated women. When the number of living children is controlled, the relationship between education and desire for no more children is either irregular or reverses; for example, among women with two living children, those who have completed high school are more likely to want no more children than illiterate women. The proportion of women who want no more children is higher for Hindus (70 percent) than for Muslims (62 percent) or Christians (65 percent). The proportion who want no more children does not vary much by caste/tribe or by household standard of living index.

The background characteristic with the strongest effect on women's desire to limit family size is the number of living sons and daughters. Thirty-seven percent of women with no living sons want no more children, compared with 87 percent of women with three or more living sons. Differences associated with the number of living daughters are almost as large as for number of living sons, indicating only a modest preference for sons. Forty-eight percent of women with no living daughters want no more children, compared with 84 percent of women with three or more living daughters. This low level of preference for sons is also shown by the fact that the proportion of women with two daughters and no sons who do not want a third child (74 percent) is almost as high as the proportion of women with two sons and no daughters (88 percent).

4.10 Ideal Number of Children

To assess women's ideal number of children, NFHS-2 asked each woman the number of children she would like to have if she could start over again. Women with no children were asked, 'If you could choose exactly the number of children to have in your whole life, how many would that be?' Women who already had children were asked, 'If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be?' Some women found it difficult to answer these hypothetical questions, and hence the question sometimes had to be repeated to ensure that the meaning was understood. Despite this, 97 percent of women in Tamil Nadu were able to give a numerical response.

Table 4.15 shows that more than three-quarters (76 percent) of ever-married women in Tamil Nadu consider two to be the ideal number of children. Only 11 percent have an ideal that is more than two. Among women who gave a numeric response, the average number of children considered ideal is 2.0, very close to the total fertility rate in Tamil Nadu (2.2). The average number of children considered ideal varies only slightly, from 1.9 for women with no living children to 2.3 for women who have four or more children.

Asking a question on ideal family size is sometimes criticized on the grounds that women tend to adjust their ideal family size upward as their number of living children increases, in a process of rationalizing previously unwanted children as wanted. It is argued that the question on

Table 4.15 Ideal and actual number of children						
Percent distribution of ever-married women by ideal number of children, and mean ideal number of children, by number of living children, Tamil Nadu, 1999						
Ideal number of children	Number of living children ¹					Total
	0	1	2	3	4+	
0	0.0	0.0	0.0	0.0	0.0	0.0
1	15.8	15.8	8.3	7.2	3.8	9.6
2	75.6	75.1	80.9	74.5	68.3	76.0
3	5.4	4.9	6.4	13.7	17.3	9.2
4	0.9	0.8	1.4	1.0	5.5	1.7
5	0.0	0.0	0.2	0.1	0.9	0.2
6+	0.0	0.0	0.0	0.2	0.1	0.1
Non-numeric response	2.4	3.4	2.8	3.4	4.1	3.2
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	393	1,005	1,575	1,007	695	4,676
Mean ideal number ²	1.9	1.9	2.0	2.1	2.3	2.0
Number of women giving numeric response	384	971	1,532	973	667	4,526

¹Includes current pregnancy, if any
²Means are calculated excluding women who gave non-numeric responses.

ideal family size prompts many women to state the actual number of children they already have as their ideal. It is evident from Table 4.15, however, that this is not so for most women in Tamil Nadu. Among women with four or more living children, for example, 89 percent state that fewer than four children would be ideal. Similarly, among women with three living children, 82 percent state that their ideal family size is smaller than three children. It is evident from these results that a substantial proportion of women already have more children than they now consider ideal. This proportion may be taken as another indicator of surplus or unwanted fertility.

Table 4.16 shows the mean ideal number of children for ever-married women by age according to selected background characteristics. The mean ideal number of children is 2.0 for all age groups of women under age 40 and increases only slightly to 2.2 for women age 45–49. The mean ideal number of children does not vary much at all by background characteristics, providing additional evidence that the two-child norm has taken widespread hold in Tamil Nadu.

4.11 Sex Preference for Children

A strong preference for sons has been found to be pervasive in Indian society, affecting both attitudes and behaviour with respect to children (Arnold et al., 1998; Arnold, 1996; Basu, 1989; Das Gupta, 1987; Kishor, 1995; Koenig and Foo, 1992; Murthi et al., 1995; Nag, 1991; Parasuraman et al., 1994). In NFHS-2, women who gave a numerical response to the question on the ideal number of children were asked how many of these children they would like to be boys, how many they would like to be girls, and for how many the sex would not matter. Table 4.17 shows women's mean ideal number of sons and daughters, the percentages who want more children of a particular sex, the percentage who want at least one son, and the percentage who want at least one daughter, according to selected background characteristics. The table shows that the preference for sons over daughters is very low. Overall, the average ideal family size consists of 0.8 sons, 0.7 daughters, and 0.6 children of either sex. Only 10 percent of women

Table 4.16 Ideal number of children by background characteristics

Mean ideal number of children reported by ever-married women, according to current age and selected background characteristics, Tamil Nadu, 1999

Background characteristic	Current age							Total
	15–19	20–24	25–29	30–34	35–39	40–44	45–49	
Residence								
Urban	2.0	1.9	2.0	1.9	2.0	2.1	2.1	2.0
Rural	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.1
Chennai	(1.9)	1.9	1.9	2.0	1.9	2.1	2.2	2.0
Education								
Illiterate	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.1
Literate, < middle school complete	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.0
Middle school complete	2.0	2.0	2.0	2.0	2.0	2.1	(2.0)	2.0
High school complete and above	(1.7)	1.9	1.8	1.8	1.9	1.9	1.9	1.9
Religion								
Hindu	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.0
Muslim	*	2.1	2.1	2.1	(2.1)	(2.2)	(2.1)	2.1
Christian	*	(2.0)	2.1	(2.0)	(2.0)	(2.0)	(2.4)	2.1
Caste/tribe								
Scheduled caste	2.1	2.0	2.1	2.1	2.1	2.2	2.3	2.1
Scheduled tribe	*	*	*	*	*	*	*	(2.2)
Other backward class	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.0
Other	*	*	(1.7)	(1.7)	(1.8)	*	*	1.8
Work status								
Working in family farm/business	*	2.1	2.0	2.0	2.1	2.1	2.3	2.1
Employed by someone else	2.1	2.0	2.0	2.0	2.0	2.1	2.3	2.1
Self-employed	*	*	(2.1)	(1.9)	(2.0)	(2.0)	(2.1)	2.0
Not worked in past 12 months	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0
Standard of living index								
Low	2.1	2.0	2.1	2.0	2.0	2.1	2.2	2.1
Medium	2.0	2.0	2.0	2.0	2.1	2.1	2.3	2.1
High	*	1.9	1.8	1.9	2.0	2.1	2.0	1.9
Husband's education								
Illiterate	(2.1)	2.1	2.0	2.1	2.1	2.1	2.3	2.1
Literate, < primary school complete	*	(2.0)	(2.1)	(2.1)	(2.1)	(2.2)	(2.1)	2.1
Primary school complete	(2.1)	2.0	2.1	2.1	2.1	2.1	2.2	2.1
Middle school complete	1.9	2.1	2.0	1.9	2.0	2.1	2.2	2.0
High school complete	(2.0)	2.0	1.9	2.0	2.0	2.0	2.0	2.0
Higher secondary complete and above	*	1.9	1.9	1.9	1.9	2.0	2.0	1.9
Total	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.0

Note: Means are calculated excluding women who gave non-numeric responses. Total includes women belonging to other religions and women with missing information on religion, caste/tribe, the standard of living index, and husband's education, who are not shown separately.

() Based on 25–49 unweighted cases

*Mean not shown; based on fewer than 25 unweighted cases

want more sons than daughters, compared with 33 percent for all India and 53 percent for Uttar Pradesh. Two percent of women want more daughters than sons.

The indicator that shows the percentage of women who want at least one son and at least one daughter exhibits the weakest son preference. In Tamil Nadu there is not much difference between the proportion of women who want at least one son (66 percent) and those who want at least one daughter (64 percent).

Table 4.17 Indicators of sex preference

Mean ideal number of sons, daughters, and children of either sex for ever-married women, percentage who want more sons than daughters, percentage who want more daughters than sons, percentage who want at least one son, and percentage who want at least one daughter by selected background characteristics, Tamil Nadu, 1999

Background characteristic	Mean ideal number of:			Percentage who want more sons than daughters	Percentage who want more daughters than sons	Percentage who want at least one son	Percentage who want at least one daughter	Number of women
	Sons	Daughters	Either sex					
Residence								
Urban	0.7	0.6	0.7	7.6	2.5	60.8	59.2	1,567
Rural	0.8	0.7	0.6	10.7	1.6	69.3	66.3	2,959
Chennai	0.7	0.6	0.7	6.5	3.8	58.9	58.7	283
Education								
Illiterate	0.8	0.7	0.6	12.4	1.4	71.7	68.2	2,131
Literate, < middle school complete	0.8	0.7	0.6	9.3	2.3	67.0	65.2	1,047
Middle school complete	0.7	0.7	0.6	6.0	1.7	64.7	63.4	618
High school complete and above	0.5	0.5	0.8	4.8	2.9	51.1	49.9	730
Religion								
Hindu	0.8	0.7	0.6	9.6	1.9	66.3	63.9	4,017
Muslim	0.8	0.7	0.6	9.1	2.1	67.4	65.9	261
Christian	0.8	0.7	0.7	10.6	2.3	65.6	61.4	237
Caste/tribe								
Scheduled caste	0.8	0.7	0.5	11.1	1.4	72.2	69.6	1,068
Scheduled tribe	(1.0)	(0.8)	(0.3)	(10.5)	(0.0)	(83.5)	(79.9)	34
Other backward class	0.7	0.6	0.6	9.1	2.0	64.5	62.2	3,345
Other	0.6	0.5	0.7	7.8	2.2	54.3	48.1	78
Work status								
Working in family farm/business	0.9	0.7	0.5	12.1	1.6	74.9	70.4	470
Employed by someone else	0.8	0.7	0.6	10.3	2.0	68.1	66.0	1,759
Self-employed	0.8	0.7	0.6	13.0	3.0	68.8	63.3	183
Not worked in past 12 months	0.7	0.6	0.7	8.1	1.8	62.8	60.7	2,114
Standard of living index								
Low	0.8	0.7	0.6	10.8	1.5	69.7	66.9	1,691
Medium	0.8	0.7	0.6	9.6	2.1	66.8	64.6	2,104
High	0.6	0.6	0.8	6.7	2.1	56.2	53.8	685
Husband's education								
Illiterate	0.9	0.7	0.5	13.5	1.7	72.9	68.4	1,259
Literate, < primary school complete	0.8	0.8	0.5	8.3	3.9	71.5	71.0	298
Primary school complete	0.8	0.7	0.6	10.9	1.3	68.2	65.7	1,002
Middle school complete	0.7	0.6	0.7	7.1	1.4	63.9	62.1	709
High school complete	0.7	0.7	0.6	6.3	2.6	64.5	63.7	672
Higher secondary complete and above	0.5	0.5	0.8	5.8	1.8	51.3	49.3	575
Total	0.8	0.7	0.6	9.6	1.9	66.3	63.9	4,526

Note: Table excludes women who gave non-numeric responses to the questions on ideal number of children or ideal number of sons and daughters. Total includes 5 women belonging to other religions and 6, 1, 47, and 10 women with missing information on religion, caste/tribe, the standard of living index, and husband's education, respectively, who are not shown separately.

() Based on 25–49 unweighted cases

Son preference is relatively weak among women who live in urban areas, women who have at least completed high school, women whose husbands have at least completed high school, women who do not belong to a scheduled caste, scheduled tribe, or other backward class, women who have not worked in the 12 months preceding the survey, and women living in households with a high standard of living. Son preference does not vary much by religion.

4.12 Fertility Planning

For each child born in the three years before the survey and for each current pregnancy, NFHS-2 asked women whether the pregnancy was wanted at that time (planned), wanted at a later time (mistimed), or not wanted at all. Because a woman may retrospectively describe an unplanned pregnancy as one that was wanted at that time, responses to these questions may lead to an underestimation of unplanned childbearing. Nevertheless, this information provides a potentially powerful indicator of the degree to which couples successfully control childbearing. It should be noted that the proportion of births that are unplanned is influenced not only by whether, and how effectively, couples use contraception, but also by the couple's ideal family size.

Table 4.18 shows the percent distribution of births during the three years preceding the survey and current pregnancies according to fertility planning status. One-fifth of all pregnancies that resulted in live births in the three years preceding the survey (including current pregnancies) were unplanned (that is, unwanted at the time the woman became pregnant). Fourteen percent were wanted later and 6 percent were not wanted at all. Within the unplanned category, the proportion of births that were wanted later falls and the proportion that were not wanted at all rises as mother's age increases.

The proportion of births that were unplanned varies somewhat by socioeconomic characteristics. The proportion of births that were unplanned does not vary much between rural and urban areas. However, the proportions of births that were unplanned are considerably lower for women who have at least completed high school and women living in households with a high standard of living. The proportion of births that were unplanned is considerably larger for Muslim women (34 percent) than for Hindu women (18 percent) or Christian women (17 percent). Not surprisingly, births of higher order are more likely than births of lower order to be unplanned. The proportion unplanned ranges from 10 percent for first-order births to 43 percent for births of order four or higher. The fact that 29 percent of births of order four or higher were not wanted at all indicates that the family welfare programme has failed to meet the needs of women who already have at least three children to control their fertility. However, since only 9 percent of births in Tamil Nadu are of order four or higher (Table 4.7), eliminating these unwanted births would have less effect on reducing fertility. Nevertheless, the substantial proportion of women at all parities who would have liked to have their births later suggests that attention also needs to be given to the promotion of spacing methods of contraception.

The impact of unwanted fertility can be measured by comparing the total wanted fertility rate with the total fertility rate (TFR). The total wanted fertility rate represents the level of fertility that theoretically would result if all unwanted births were prevented. A comparison of the TFR with the total wanted fertility rate indicates the potential demographic impact of the elimination of all unwanted births. The total wanted fertility rates presented in Table 4.19 are calculated in the same way as the TFR except that unwanted births are excluded from the numerator. In this case, a birth is considered unwanted if the number of living children at the time of conception was greater than or equal to the ideal number of children reported by the respondent at the time of the survey. Women who did not give a numeric response to the question on ideal number of children are assumed to have wanted all the births they had.

Overall, the total wanted fertility rate of 1.7 in Tamil Nadu is lower by 0.5 children (i.e., by 22 percent) than the total fertility rate of 2.2. This means that if unwanted births could be

Table 4.18 Fertility planning						
Percent distribution of births during the three years preceding the survey and current pregnancies by fertility planning status, according to selected background characteristics, Tamil Nadu, 1999						
Background characteristic	Planning status of pregnancy				Total percent	Number of births and current pregnancies
	Wanted then	Wanted later	Not wanted at all	Missing		
Mother's age at birth¹						
< 20	84.2	15.3	0.5	0.0	100.0	330
20–24	80.9	15.1	4.0	0.0	100.0	760
25–29	78.1	11.7	10.2	0.0	100.0	445
30–34	77.5	7.6	14.9	0.0	100.0	103
35–39	(82.9)	(7.6)	(9.4)	(0.0)	100.0	31
Residence						
Urban	82.0	13.1	4.8	0.1	100.0	571
Rural	79.6	13.9	6.5	0.0	100.0	1,102
Chennai	79.0	15.6	5.1	0.3	100.0	98
Education						
Illiterate	78.5	13.4	8.1	0.0	100.0	625
Literate, < middle school complete	80.2	12.9	6.9	0.0	100.0	409
Middle school complete	77.2	19.1	3.6	0.1	100.0	299
High school complete and above	87.1	10.1	2.8	0.0	100.0	340
Religion						
Hindu	81.6	12.8	5.6	0.0	100.0	1,460
Muslim	66.3	24.1	9.6	0.0	100.0	116
Christian	82.8	12.1	5.1	0.0	100.0	90
Caste/tribe						
Scheduled caste	76.4	14.8	8.9	0.0	100.0	409
Other backward class	81.5	13.5	5.0	0.0	100.0	1,223
Other ²	(90.2)	(9.8)	(0.0)	(0.0)	100.0	27
Standard of living index						
Low	78.2	13.9	7.9	0.0	100.0	635
Medium	79.7	15.2	5.1	0.0	100.0	787
High	90.3	7.5	2.1	0.1	100.0	230
Birth order³						
1	90.3	8.8	0.9	0.0	100.0	835
2	77.3	20.1	2.6	0.1	100.0	497
3	63.2	17.5	19.3	0.0	100.0	206
4+	57.5	13.7	28.8	0.0	100.0	134
Total	80.4	13.6	5.9	0.0	100.0	1,673
<p>Note: Table includes the two most recent births in the three years preceding the survey and current pregnancies. Total includes 5 births to women age 40–44 at the time of birth, 3 births to women belonging to other religions, 13 births to scheduled-tribe women, and 3 and 20 births with missing information on religion and the standard of living index, respectively, which are not shown separately.</p> <p>() Based on 25–49 unweighted cases</p> <p>¹For current pregnancy, estimated maternal age at birth</p> <p>²Not belonging to a scheduled caste, a scheduled tribe, or an other backward class</p> <p>³Includes current pregnancy, if any</p>						

eliminated, the TFR would be considerably below the replacement level of fertility. The absolute difference between the wanted fertility rate and the TFR is slightly higher for illiterate women, women who belong to a scheduled caste or a scheduled tribe, women living in households with a low standard of living, and Muslim women.

Table 4.19 Wanted fertility rates

Total wanted fertility rate and total fertility rate for the three years preceding the survey by selected background characteristics, Tamil Nadu, 1999

Background characteristic	Total wanted fertility rate	Total fertility rate
Residence		
Urban	1.77	2.11
Rural	1.67	2.23
Chennai	1.60	1.86
Education		
Illiterate	1.84	2.49
Literate, < middle school complete	1.82	2.37
Middle school complete	1.86	2.21
High school complete and above	1.62	1.85
Religion		
Hindu	1.69	2.16
Muslim	1.96	2.57
Christian	1.73	2.14
Caste/tribe		
Scheduled caste	1.62	2.25
Scheduled tribe	(1.40)	(2.39)
Other backward class	1.74	2.18
Other	1.45	1.69
Standard of living index		
Low	1.77	2.39
Medium	1.66	2.10
High	1.70	1.93
Total	1.71	2.19

Note: Rates are based on births in the period 1–36 months preceding the survey to women age 15–49. The total fertility rates are the same as those presented in Table 4.3. Total includes women belonging to other religions and women with missing information on religion, caste/tribe, and the standard of living index, who are not shown separately.

() Based on 125–249 woman-years of exposure