CHAPTER 7

PROXIMATE DETERMINANTS OF FERTILITY

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Analyses of reproductive behaviour cannot omit the important role of factors related to exposure to the risk of pregnancy. The traditional social structure of Pakistan largely supports a natural fertility regime in which the majority of women do not use any means of fertility regulation. Especially in such populations, other proximate determinants of fertility are more crucial in influencing fertility levels. An inquiry into these determinants and their patterns is important in examining the course of sociodemographic change. Previous studies of the proximate determinants of fertility in Pakistan have pointed toward age at marriage and duration of breastfeeding as extremely important variables in this particular cultural context (Karim 1990, Khan 1991, Sathar 1984). Of equal significance are postpartum amenorrhoea and sexual abstinence which lead to insusceptibility to the risk of pregnancy. These factors are also closely associated with fertility patterns, especially in the early months after a birth. This chapter examines patterns and trends in all of the intermediate variables for which data were collected in the PDHS, to highlight their effect on fertility levels in Pakistan.

7.1 Marriage Patterns and Trends

All ever-married women interviewed in the PDHS were asked to give their age at the time they started cohabiting with their husbands. Probing was used to differentiate the *nikah* (the marriage contract ceremony) from the actual *rukhsati* (the departure for the husband's household, i.e., consummation of the marriage). It is not until cohabitation begins that women are considered to be exposed to the risk of pregnancy. The length of time women are exposed directly affects overall fertility; for example, a later age at marriage for females would result in a shorter period of exposure to childbearing (provided other factors are equal). Thus, any change in marriage patterns that results in later age at marriage for women can play an important role in reducing fertility, particularly in a country like Pakistan, which has a low level of contraceptive prevalence.

In the PDHS, only 25 percent of women age 15-19 and 60 percent of women age 20-24 had ever been married (see Table 7.1). Once marriages were entered into, however, they tended to remain quite stable. Less than one percent of women were divorced or separated at the time of the survey and less than two percent were widowed. The fact that marriage is a social obligation and nearly universal in Pakistan is supported by the finding that 98 percent of women age 35-49 had married.

A comparison of the proportion of women who had never been married derived from the PDHS and the 1979-80 PLM indicates that substantial changes in marriage patterns took place between the two surveys. Although the proportion of women never married rose for every age group, the changes are particularly striking at ages 20-29, which has traditionally been the peak childbearing period for women in Pakistan.

Changes in marriage patterns over time are also evident from an examination of changes in the singulate mean age at marriage (SMAM). The singulate mean age at marriage computed from various sources for males and females is presented in Table 7.2. The SMAM for females has risen by five years during the last three decades (from 16.7 years in 1961 to 21.7 years in 1990-91). The SMAM for males rose by three years over the same period.

Table 7.1 Current marital status

Percent distribution of women by current marital status, according to age, 1990-91 PDHS and 1979-80 PLM

	1990-91 PDHS							1979-80 PLM
Age	Never married	Married	Divorced	Widowed	Separated	Total	Number	Percent never married
15-19	75.1	24.3	--	0.3	0.2	100.0	1720	72
20-24	39.4	59.6	0.6	0.1	0.7	100.0	1747	23
25-29	14.4	83.2	0.2	1.0	1.3	100.0	1745	6
30-34	4.3	92.4	0.5	1.5	1.2	100.0	1241	3
35-39	2.4	92.7	0.5	4.0	0.4	100.0	1005	2
40-44	2.4	92.8	0.1	4.2	0.5	100.0	865	1
45-49	2.1	90.8	0.2	6.5	0.5	100.0	630	1
Total	26.2	71.1	0.2	1.8	0.7	100.0	8953	32

-- Less than 0.05 percent
Source: Sathar, Ali and Zahid (1984)

Table 7.2 Mean age at marriage

Singulate mean age at marriage for selected sources 1951-1991, Pakistan

Source	Male	Female	Difference
1951 Census	22.3	16.9	5.4
1961 Census	23.3	16.7	6.6
1972 Census	25.7	19.7	6.0
1981 Census	25.1	20.2	4.9
1976 PGS	25.2	20.0	5.2
1988 PDS	24.9	20.6	4.3
1990-91 PDHS	26.5	21.7	4.8

Table 7.3 shows the distribution of ever-married women by the proportion married by particular ages. Early marriage (before age 15) has never been prevalent, but it occurs even less frequently among the youngest age groups. The proportion married by age 18 or age 20 has also declined sharply when comparing women age 30-34 to those age 20-24. The median age at marriage for each of the five-year age groups from age 25-49 indicates very little variation for different cohorts. This apparent lack of change is partly due to the fact that the median cannot be calculated for women under age 25 since the majority have not yet been married. The median age at marriage, however, will necessarily be higher than 20 years for women who are currently in the 20-24 age group.

Table 7.3 Age at first marriage

Percentage of women ever-married by exact age 15, 18, 20, 22, and 25, and median age at first marriage, according to current age, Pakistan 1990-91

Current age	Percentage ever-married by exact age: 15	18	20	22	25	Percent never married	Number	Median age
15-19	7.3	NA	NA	NA	NA	75.1	1720	a
20-24	11.4	31.6	48.9	NA	NA	39.4	1747	a
25-29	16.5	42.3	58.4	70.1	82.1	14.4	1745	18.9
30-34	17.0	47.8	63.1	74.3	87.7	4.3	1241	18.2
35-39	16.3	43.4	60.5	75.0	88.3	2.4	1005	18.6
40-44	18.0	44.8	60.9	75.9	87.7	2.4	865	18.5
45-49	16.3	40.7	57.4	68.9	81.9	2.1	630	18.8
20-49	15.5	41.0	57.4	NA	NA	14.5	7233	18.9

NA = Not applicable
[a]Less than 50 percent of women in the age group were married by the beginning of the age group.

Differentials in Age at Marriage

Table 7.4 presents differentials in the median age at marriage for various groups of women. Overall, for women age 25-49, the median age at marriage is 18.6 years. This figure is slightly higher in urban areas (19.1 years) than in rural areas (18.4 years). Among Pakistan's four provinces, the median age is highest in NWFP and Punjab and substantially lower in Balochistan and Sindh. Finally, there is a positive association between the median age at marriage for women and their educational attainment: women with no education marry four years earlier, on average, than women with secondary or higher education.

Table 7.4 Median age at first marriage

Median age at first marriage among women age 25-49 years, by current age and background characteristics, Pakistan 1990-91

Background characteristic	Current age					Women
	25-29	30-34	35-39	40-44	45-49	25-49
Residence						
Total urban	19.9	19.1	18.7	19.2	18.3	19.1
Major city	20.1	19.4	18.5	18.8	18.5	19.2
Other urban	19.5	18.4	18.9	20.1	17.8	19.0
Rural	18.4	18.0	18.6	18.3	19.0	18.4
Province						
Punjab	19.4	18.5	19.0	18.9	19.0	19.0
Sindh	17.5	17.2	17.6	16.5	16.0	17.1
NWFP	19.5	18.6	19.0	18.9	20.8	19.3
Balochistan	16.8	17.7	18.3	18.2	21.9	17.7
Education level attended						
No education	18.2	17.8	18.4	18.4	18.8	18.3
Primary	19.1	19.1	18.6	17.7	(16.9)	18.7
Middle	20.6	18.4	(17.9)	a	(19.6)	18.9
Secondary +	22.9	23.3	21.5	21.6	(20.0)	22.5
Total	18.9	18.2	18.6	18.5	18.8	18.6

Note: Figures in parentheses are based on 25 to 49 unweighted cases.
[a]Based on fewer than 25 unweighted cases, median not shown

Ideal Age at Marriage

The PDHS included questions asking ever-married women about what they considered to be the ideal age at marriage for women. The median ideal age at marriage was 18.4 years (see Table 7.5). Although ages 20-21 were considered ideal by the largest percentage of women (23 percent), more than one-quarter said it is ideal for a woman to get married at age 15 or earlier. There is a strong positive association between the stated ideal age at marriage and the actual age at which women got married. Nevertheless, most women who got married at a relatively young age (under 18) report an ideal age at marriage that is greater than their own age at marriage. Overall, the wide range of responses suggests that there is no consensus about what the *ideal* age at marriage is for women in Pakistan, despite a trend toward increasing age at marriage for females over the last three decades.

Table 7.5 Ideal age at marriage for women

Percent distribution of ever-married women by ideal age at marriage for women and median ideal age at marriage, according to actual age at first marriage, Pakistan 1990-91

Ideal age at first marriage for women	Actual age at first marriage							Total
	< 15	15	16-17	18-19	20-21	22-23	24+	
< 15	21.8	11.0	8.6	6.9	6.6	7.3	7.7	10.6
15	21.1	22.8	16.4	15.3	11.2	14.2	10.3	16.4
16-17	13.8	15.4	18.0	13.5	15.5	13.7	9.5	14.6
18-19	14.1	18.5	18.6	25.0	19.3	18.8	19.9	19.2
20-21	17.1	18.8	24.5	26.2	28.0	22.9	27.2	23.3
22-23	2.2	3.7	5.0	5.0	7.2	8.5	5.6	4.9
24 +	5.0	6.2	5.6	5.1	8.2	8.0	15.0	6.9
Non-numeric response	5.0	3.5	3.2	3.0	3.9	6.7	4.9	4.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	1245	782	1302	1252	852	558	620	6611
Median age	16.4	17.1	18.3	18.6	18.8	18.7	20.0	18.4

Marriage Between Relatives

One of the most salient aspects of marriage patterns in Pakistan is the frequency of marriage between blood relatives (i.e., consanguineous marriages). There is some evidence that cousin marriage may affect both fertility and the health of children. For example, Bittles et al. (1992) found that unions between close biological relatives in Pakistan were characterised by higher fertility as well as higher mortality among the offspring of such marriages. Shami and Zahida (1982) found significantly higher pregnancy wastage and longer first birth intervals in consanguineous marriages.

Data on marriage between relatives are shown in Table 7.6 and Figure 7.1. It should be noted that such data have not previously been available for Pakistan at the national level. The PDHS presents documented evidence of the widespread prevalence of cousin marriage in Pakistan. Sixty-one percent of all marriages are consanguineous unions between first or second cousins; this is one of the highest rates reported anywhere in the world (Bittles 1990; Bittles et al. 1991). First cousin marriages occur more frequently on the father's side (30 percent), but are also common on the mother's side (21 percent).

There is a negative association between current age and marriage between relatives. The incidence of consanguineous marriage is higher among younger couples than older ones. More specifically, women age 35 and above are more likely to have married nonrelatives than women under age 35. It appears, therefore, that the traditional pattern of cousin marriage continues to be adhered to on a wide scale.[1] The continued popularity of cousin marriage may be related to the increasing size of dowries. Some parents may not be able to afford a large dowry, but if a daughter marries her cousin, the size of the dowry may be smaller and the dowry can be kept within the family. Further investigation of this phenomenon is needed.

[1] It should be noted, however, that the greater proportion of consanguineous marriages among younger women may partially reflect the fact that such marriages are more common for women who marry at younger ages. The percentage of consanguineous marriages for the younger age cohorts may decline over time as more women in those cohorts get married.

Table 7.6 Marriage between relatives

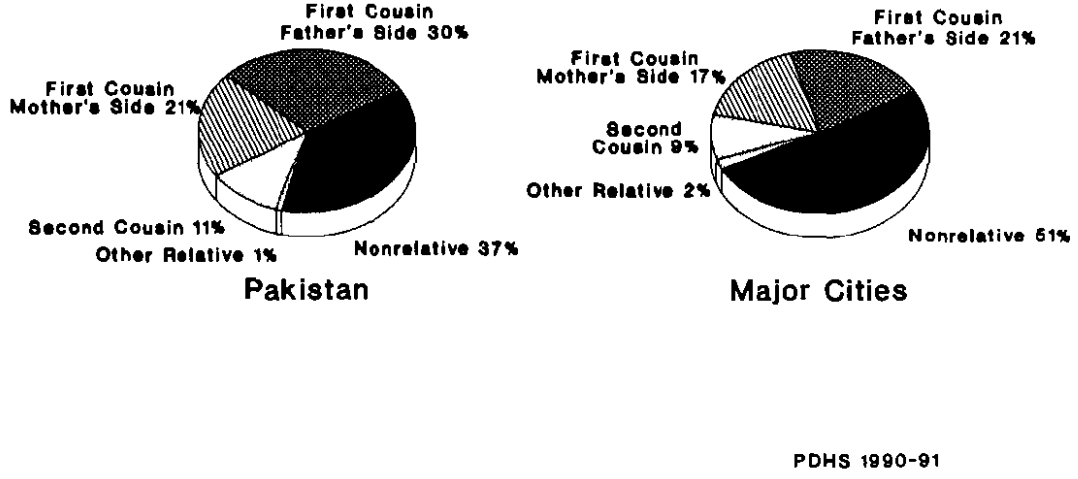
Percent distribution of ever-married women by relationship to their husbands, according to background characteristics, Pakistan 1990-91

Background characteristic	First cousin		Second cousin	Other relation	Not related	Missing	Total	Number
	Father's side	Mother's side						
Age								
15-19	31.4	24.6	11.8	1.9	30.2	0.1	100.0	428
20-24	34.9	21.2	8.4	1.0	34.6	--	100.0	1059
25-29	30.6	20.2	10.5	0.9	37.6	0.1	100.0	1494
30-34	27.8	21.1	13.7	1.1	35.8	0.6	100.0	1187
35-39	26.5	20.6	10.2	1.7	40.9	0.1	100.0	981
40-44	29.2	18.9	11.2	2.6	38.1	--	100.0	844
45-49	27.2	19.2	10.9	1.7	41.0	--	100.0	617
Age at marriage								
< 15	33.8	22.2	8.7	1.1	33.9	0.4	100.0	1245
15	36.1	21.2	13.2	1.8	27.5	0.2	100.0	782
16-17	30.2	23.1	10.3	0.9	35.3	0.1	100.0	1302
18-19	28.2	17.3	11.7	1.0	41.8	--	100.0	1252
20-21	28.7	19.7	9.1	2.4	39.8	0.2	100.0	852
22-23	26.1	19.1	9.8	1.8	43.1	--	100.0	558
24 +	20.3	20.7	15.6	1.7	41.8	--	100.0	620
Residence								
Total urban	22.8	18.2	10.3	1.8	46.7	0.3	100.0	2019
Major city	21.0	16.6	9.2	2.0	50.8	0.5	100.0	1151
Other urban	25.2	20.3	11.8	1.5	41.2	--	100.0	868
Rural	32.8	21.6	11.2	1.3	33.0	0.1	100.0	4592
Province								
Punjab	29.8	23.2	10.9	1.4	34.6	0.2	100.0	3948
Sindh	33.3	16.4	9.9	1.4	38.8	0.2	100.0	1529
NWFP	22.1	16.2	12.7	1.2	47.8	--	100.0	878
Balochistan	33.9	20.5	10.8	2.7	31.6	0.4	100.0	255
Education level attended								
No education	31.2	21.3	10.6	1.4	35.4	0.1	100.0	5237
Primary	29.7	19.2	14.4	1.8	34.7	0.3	100.0	601
Middle	23.1	20.0	10.0	1.5	45.3	--	100.0	288
Secondary +	18.0	14.5	10.8	1.3	55.1	0.3	100.0	485
Total	29.7	20.6	10.9	1.4	37.2	0.2	100.0	6611

-- Less than 0.05 percent

Women who marry at an early age are more likely to marry cousins. For example, cousin marriages were contracted by 67 percent of women who got married before age 16 compared to 57 percent of women who got married at age 18 or above. There is also a clear relationship between residence and consanguinity. Women residing in major urban areas are least likely to have married a cousin, and those living in rural Pakistan are most likely to have done so. The difference is more pronounced for marriage with a cousin from the father's side, indicating stronger adherence to the traditional marriage pattern in rural areas. Rural residents may also have a greater desire to keep the dowry on the father's side of the family. Consanguineous marriages are relatively less popular in NWFP, although even in that province a majority of women marry a close relative.

Figure 7.1
Marriage Between Relatives and Between Nonrelatives among Ever-Married Women 15-49, Pakistan and Major Cities



PDHS 1990-91

As expected, more educated women tend to marry nonrelatives more often than women with no education. In fact, women with a secondary or higher education and those living in major cities are more likely to marry a nonrelative than a relative. These results are supported by the findings of a survey in Karachi which found that women who were educated or employed were less likely to have married relatives (Sathar and Kazi 1988). With the exception of the pattern across age groups, which reflects a trend toward more consanguineous unions over time, all other factors indicate that more modern women are less likely to enter consanguineous unions. Women who marry later, those who are exposed to urban influences and those who are more educated are less likely to marry relatives.

Polygyny

Another factor which has thus far been undocumented is the extent of polygynous marriages in Pakistan. Polygyny is legal in Pakistan, although according to the Muslim Family Laws Ordinance promulgated in 1961, the husband needs to obtain written permission from his first wife to marry a second wife. Even though polygyny is legal, less than five percent of currently married women reported that their husbands had more than one wife (Table 7.7). Only 0.2 percent of women reported that their husbands had more than two wives (data not shown). The prevalence of polygynous marriages is low in all groups, with the highest proportion found in the 45-49 age group, especially in rural areas. Among the provinces, polygynous unions are most common in Balochistan (12 percent) and least common in Punjab (3 percent). Not surprisingly, female education shows a negative association with polygyny, but an erratic pattern is evident in some age groups due to the small number of cases.

Table 7.7 Polygyny

Percentage of currently married women in a polygynous union, by age and selected background characteristics, Pakistan 1990-91

Background characteristic	Age							Total
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
Residence								
Total urban	2.1	2.5	3.2	2.3	3.3	4.1	2.3	2.9
Major city	2.1	2.7	2.9	1.9	3.1	4.0	0.7	2.6
Other urban	2.1	2.1	3.7	2.8	3.6	4.1	3.9	3.2
Rural	3.7	4.1	5.0	4.8	5.2	3.9	11.4	5.2
Province								
Punjab	1.6	2.4	1.1	2.6	3.4	1.7	7.7	2.6
Sindh	8.6	6.0	7.5	7.6	5.0	7.3	6.2	6.8
NWFP	2.5	3.8	9.0	3.5	7.4	8.0	11.8	6.6
Balochistan	7.3	7.1	17.6	5.6	7.6	10.3	27.2	12.1
Education level attended								
No education	3.5	4.3	5.3	4.5	4.5	3.8	9.2	4.9
Primary	0.8	2.0	2.5	2.1	10.2	4.7	6.3	3.7
Middle	--	2.7	1.1	1.1	--	3.9	6.5	1.7
Secondary +	10.5	--	1.7	3.2	0.7	5.6	--	2.3
Total	3.4	3.6	4.5	4.0	4.5	3.9	8.7	4.5
Number	418	1041	1452	1147	932	803	572	6364

-- Less than 0.05 percent

7.2 Breastfeeding and Postpartum Infecundibility

Breastfeeding has a negative effect on fertility through the mechanism of lactational infecundibility. Since the majority of women in Pakistan have traditionally breastfed their children for fairly long periods of time, lactational infecundibility has helped to keep fertility in check. Declines in the period of lactation in Pakistan would lead to shorter birth intervals and to an increase in fertility unless other factors compensate for its effects.

Breastfeeding

The PDHS provides an opportunity to assess whether the prevalence and length of breastfeeding are declining in Pakistan. More than half (57 percent) of children under three years of age were being breastfed at the time of the survey (see Table 7.8). More than 80 percent of children were being breastfed during the first year of their lives. In the second year of life, breastfeeding declines rapidly, but 42 percent of children were still being breastfed in the last two months of their second year of life. On average, Pakistani mothers breastfeed their children for 20 months, which is slightly less than the mean duration of 22 months estimated in the 1975 PFS for surviving children (Shah 1984). Breastfeeding is usually supplemented at an early age

Table 7.8 Breastfeeding, postpartum amenorrhoea, abstinence and insusceptibility

Percentage of births for which the mothers are breastfeeding, postpartum amenorrhoeic, abstaining, and insusceptible, by number of months since birth, and median and mean durations thereof, Pakistan 1990-91

Months since birth	Breast-feeding	Amenor-rhoeic	Abstain-ing	Insus-ceptible	Number of births
< 2	92.4	88.7	89.0	98.3	241
2-3	88.9	66.0	31.2	71.7	293
4-5	89.0	54.5	19.7	59.7	265
6-7	87.0	46.9	13.2	50.2	238
8-9	88.3	46.8	8.5	48.9	214
10-11	76.5	38.4	10.3	42.4	173
12-13	80.6	21.3	7.3	26.6	296
14-15	64.9	14.5	8.8	19.3	286
16-17	54.3	15.3	8.3	23.3	205
18-19	54.9	9.9	3.5	13.1	213
20-21	50.9	5.2	2.9	8.0	157
22-23	42.4	8.6	1.6	9.3	164
24-25	28.3	3.2	1.4	4.6	210
26-27	18.6	3.3	2.5	5.8	222
28-29	18.0	2.6	5.0	7.6	212
30-31	16.5	3.4	1.0	4.5	231
32-33	20.5	1.3	4.3	5.6	214
34-35	15.4	0.1	3.8	3.9	194
Total	57.1	25.8	13.4	30.0	4026
Median	20.2	6.3	2.4	7.5	NA
Mean	20.0	8.9	4.7	10.3	NA
Prev/Incidence Mean	20.3	9.2	4.8	10.6	NA

Note: Multiple births are counted as only one birth. Medians are based on the current status proportions at each two-month duration since birth (smoothed).
NA = Not applicable

by the provision of other liquids or food (see Chapter 11); however, at least some breastfeeding generally takes place well into the second year of life. Overall, the PDHS results are consistent with the findings from the National Nutrition Survey (National Institute of Health 1988).

Amenorrhoea, Abstinence and Insusceptibility

Although it has been suggested that Pakistani women probably have an extended period of amenorrhoea largely due to a long duration of lactation, the median duration of amenorrhoea in the PDHS (based on children born in the last three years) is 6.3 months and the mean is 8.9 months (see Table 7.8). Thus, the median duration of postpartum amenorrhoea is only one-third the median length of breastfeeding. The proportion of women who are amenorrhoeic decreases rapidly in the first few months after a birth, from 89 percent of mothers with children under 2 months of age, to 47 percent at 6 to 7 months, to 21 percent at

age 12 to 13 months. Less than 10 percent of mothers with children born more than 17 months preceding the survey are still amenorrhoeic. The decline in the proportion of women who are amenorrhoeic is much faster than the decline in the proportion of women who are currently breastfeeding their last child, indicating that the extent of postpartum protection due to breastfeeding is quite limited. The short duration of amenorrhoea may be due to the shift from full to partial breastfeeding and to the early supplementation of breast milk with mushy and solid foods.

Although a 40-day period of postpartum abstinence from sexual activities is prescribed in Islam, the median period of abstinence is 2.4 months and the mean is 4.7 months. Abstinence decreases rapidly after a birth and only 20 percent of women are still abstaining 4 to 5 months after a birth. Since there is an overlap between the period of abstinence and the period of amenorrhoea, the insusceptible period is shown separately in Table 7.8. A woman is considered to be insusceptible to the risk of pregnancy if she is either amenorrhoeic or abstaining or both. Altogether, the median insusceptible period is 7.5 months and the mean is 10.3 months. In summary, the PDHS results show that a Pakistani woman, on average, is insusceptible to pregnancy for ten months after giving birth. This is largely due to intensive breastfeeding for the first few months of a child's life.

Table 7.9 presents differentials in the median duration of postpartum amenorrhoea, postpartum abstinence, and postpartum insusceptibility. For amenorrhoea, there are several marked differentials. Women

Table 7.9 Median duration of postpartum insusceptibility

Median number of months of postpartum amenorrhoea, postpartum abstinence, and postpartum insusceptibility, by selected background characteristics, Pakistan 1990-91

Background characteristic	Amenor-rhoeic	Abstain-ing	Insus-ceptible	Number of births
Age				
15-29	4.9	2.2	5.9	2403
30-49	9.1	2.6	10.1	1622
Residence				
Total urban	4.1	2.5	5.0	1217
Major city	3.9	2.5	4.7	704
Other urban	4.4	2.5	5.4	513
Rural	8.6	2.3	9.4	2808
Province				
Punjab	6.4	2.5	7.7	2469
Sindh	4.9	2.3	6.0	865
NWFP	8.9	2.1	9.1	556
Balochistan	(4.9)	(2.0)	(6.7)	136
Education level attended				
No education	7.9	2.3	9.0	3129
Primary/Middle	(4.5)	(2.6)	(5.4)	580
Secondary +	(3.1)	(2.4)	(3.5)	317
Total	6.3	2.4	7.5	4026

Note: Multiple births are counted as only one birth. Medians are based on the current status proportions at each two-month duration since birth (smoothed). Figures in parentheses are based on 25 to 49 unweighted cases in the relevant duration cell.

less than 30 years of age have a median duration of amenorrhoea that is four months shorter than older women. Rural women have a median duration that is twice as long as urban women. Education is negatively associated with the duration of amenorrhoea: women with at least some secondary education have a median duration of amenorrhoea of 3.1 months compared to 7.9 months for women with no education. Table 7.9 also shows wide differentials for provinces. Women in Sindh and Balochistan experience only five months of amenorrhoea, while the median is six months in Punjab and nine months in NWFP. For postpartum abstinence, there are only small differences in the median values, and the differentials in insusceptibility follow closely the pattern of differentials in amenorrhoea.

Two indicators of the termination of exposure to the risk of childbearing are shown in Table 7.10. The first indicator concerns fecundity as measured by evidence of menopause. The lack of a menstrual period for six months among women who are neither pregnant nor postpartum amenorrhoeic is taken as evidence of menopause and therefore infecundity. Only two percent of women in their thirties have already reached menopause. By the mid-forties (age 44-45), nearly one-quarter of women are menopausal and the proportion increases rapidly in the late forties.

Table 7.10 Termination of exposure to the risk of pregnancy

Indicators of menopause and infertility among currently married women 30-49 years of age, by age, Pakistan 1990-91

Age	Menopause[1]	Infertility[2]
30-34	1.7	15.3
35-39	2.1	22.8
40-41	10.1	42.0
42-43	12.8	49.6
44-45	22.8	64.4
46-47	41.1	67.3
48-49	60.8	85.6
Women 30-49	11.8	34.8

[1]Percentage of non-pregnant, non-amenorrhoeic currently married women whose last menstrual period occurred six or more months preceding the survey or who report that they are menopausal.
[2]Percentage of currently married women in their first union of six or more years' duration, never having used contraception, who did not have a birth in the six years preceding the survey and who are not pregnant.

The second indicator is a crude measure of infertility, based on the number of women who have not had a birth in the six years preceding the survey and who were not pregnant at the time of the survey. Since the survey does not include a complete history of marriage and contraceptive use, the figures are based only on women in their first union of six or more years' duration who have never used contraception. Even in their early thirties, nearly one in every six of these women is estimated to be infertile. The infertility rate rises rapidly for women in their forties, from 42 percent of women age 40-41 to 86 percent of women age 48-49. By age 44-45, nearly two-thirds of women are estimated to be infertile.

REFERENCES

Bittles, Alan H. 1990. Consanguineous Marriage: Current Global Incidence and its Relevance to Demographic Research. Research Report No. 90-186. Population Studies Center, University of Michigan, Ann Arbor.

Bittles, Alan H., Jonathan C. Grant and Sajjad A. Shami. 1992. Consanguinity, Reproductive Health and Mortality in Pakistan. Paper presented at the annual meeting of the Population Association of America, 30 April - 2 May 1992, Denver, Colorado.

Bittles, Alan H., William M. Mason, Jennifer Greene and N. Appaji Rao. 1991. Reproductive Behavior and Health in Consanguineous Marriages. *Science* 252:789-794.

Karim, Mehtab S. 1990. Proximate Determinants of Fertility in Pakistan: Policy Recommendations. In United Nations Fund for Population Activities, *South Asia Study of Population Policy and Programmes: Pakistan*. Islamabad: UNFPA.

Khan, Zubaida. 1991. Are Breastfeeding Patterns in Pakistan Changing? *Pakistan Development Review* Vol.30, No.3.

National Institute of Health [Pakistan]. 1988. *National Nutrition Survey: 1985-87 Report*. Islamabad: Nutrition Division, Government of Pakistan.

Sathar, Zeba A. 1984. Intervening Variables. In *Fertility in Pakistan: A Review of Findings from the Pakistan Fertility Survey*, ed. Iqbal Alam and Betzy Dinesen, 113-122. Voorburg, Netherlands: International Statistical Institute.

Sathar, Zeba and S. Kazi. 1988. *Productive and Reproductive Choices of Metropolitan Women: Report of a Survey in Karachi*. Islamabad: Pakistan Institute of Development Economics.

Sathar, Zeba A., Syed Mubashir Ali and G. Mustafa Zahid. 1984. *Socio-Economic and Demographic Characteristics of the Population of Pakistan: Findings of the Population, Labour Force and Migration Survey 1979-80*. Studies in Population, Labour Force and Migration, Project Report No. 8. Islamabad: Pakistan Institute of Development Economics.

Shah, Iqbal. 1984. Socio-economic Differentials in Breastfeeding. In *Fertility in Pakistan: A Review of Findings from the Pakistan Fertility Survey*, ed. Iqbal Alam and Betzy Dinesen, 123-147. Voorburg, Netherlands: International Statistical Institute.

Shami, S.A. and Zahida. 1982. Study of Consanguineous Marriages in the Population of Lahore, Punjab, Pakistan. *Biologia* 28(1):1-15.