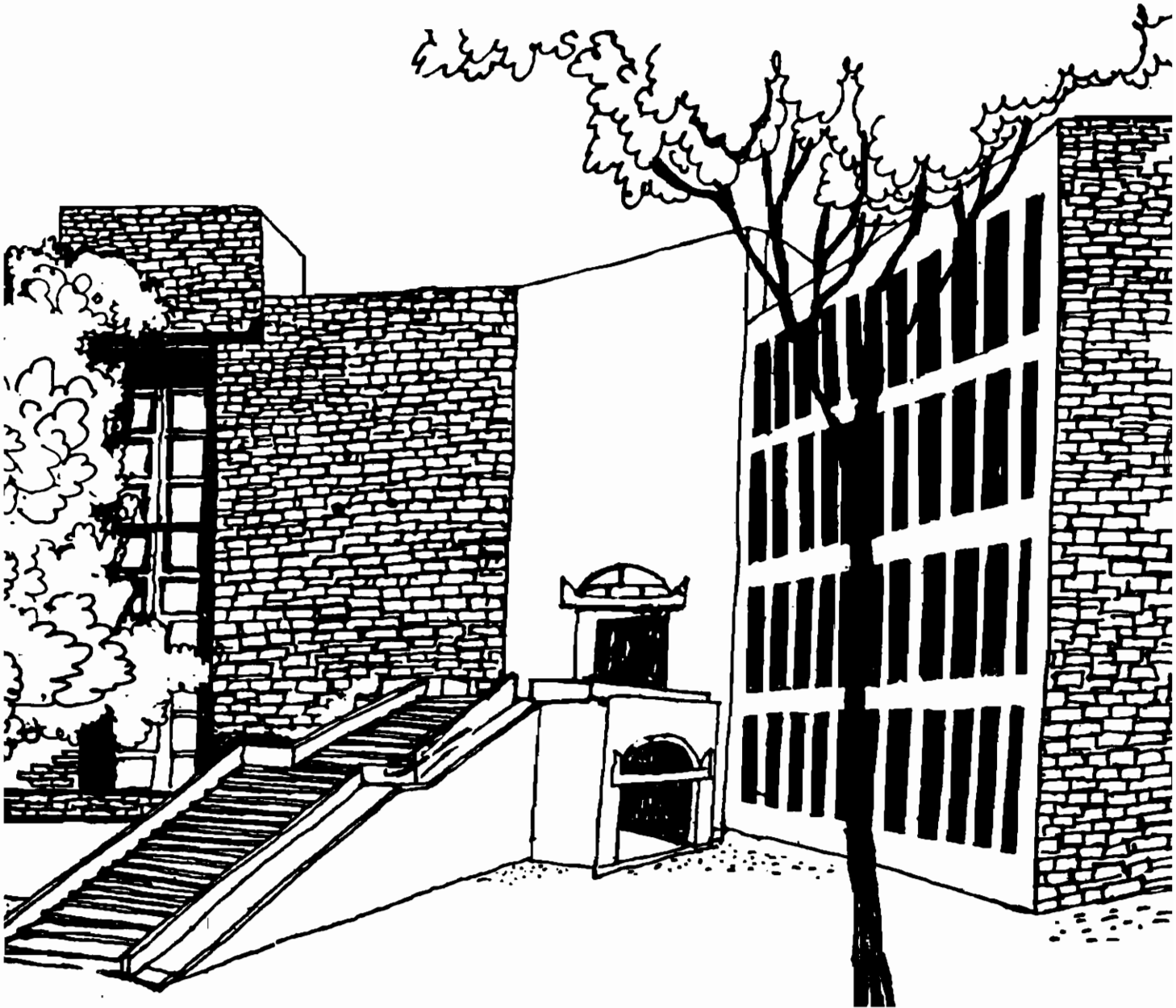




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I I I M I  
AHMEDABAD

# Working Paper



**Use of Family Planning During the First Year Postpartum  
in Ahmedabad, India**

By  
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**Abstract:**

India's urban population taken together would rank as fifth largest country in the world. Dynamics of contraceptive use in this group during postpartum period is not well researched. This paper reports results of a sample survey of 1,100 women within one year of last delivery which was carried out in Ahmedabad, India during 1988. Use of contraception was low (19.5%) in this population, so was the desire for future use. Tubectomy and IUDs were the two most commonly used methods. Sterilization rates were high only among women with at least two sons and at least one daughter indicating substantial son preference. One third of the women did not want more children of which 60% were unprotected, while 43% were not sure of their reproductive goals of which 90% were unprotected. Among women at risk of conception 77% were not using any method of contraception. There are substantial socioeconomic differences between sterilised, users of spacing methods and non-users suggesting that access to contraception varies by class. The results indicate that substantial efforts will be required during antenatal and postpartum period to increase the contraceptive prevalence in this recently delivered group of mothers in urban India. A new strategy will have to be evolved to meet the need of contraception in this large group.

Criticality of rapid growth of population in India is well recognized (Conley 1992). India was the first country to start a government supported family planning program which was started as early as 1952 (Banerji, 1989), but only modest success has been achieved in terms of increasing contraceptive prevalence, and reducing the birth rate (Chaudhary, 1989; Bhatia, 1989). India's urban population taken together (approximately 217 million) would rank as the fifth largest country in the world. Even though overall fertility is lower in urban areas as compared to rural areas, Mukerji (1989) has shown that, contrary to expectation, fertility among young Indian women in urban areas has increased between 1972-84. Most data on contraceptive prevalence in India come from service statistics, the accuracy of which has been often questioned because of the target oriented nature of the program (Bhatia, 1989, Visaria 1992). Periodic National Sample Surveys have provided useful information on fertility and contraception (ORG 1990). Unfortunately analysis of National and Sub-national Sample Survey data has been limited. Hence contraceptive dynamics is not well understood in India.

Of late there has been some debate on contraception during postpartum period Winikoff and Mensch (1991) have challenged the behavioural and biological assumptions on which Post Partum Family Planning services are based. Recently Thapa et al (1992) have shown substantial unmet need for contraception among postpartum women during 2 years following delivery in 25 countries where Demographic and Health Surveys (DHS) have been done. The All India Hospital postpartum programme promotes use of contraception after institutional birth in urban areas. But dynamics of contraceptive use following birth is not well explored in Indian settings.

Here we present analysis of data on contraceptive use among women who have had a birth in the previous year, in Ahmedabad city. This group is of special interest because they have had a recent birth and hence would be most in need of contraceptive services to adequately space subsequent pregnancies, or end child bearing.

#### **Materials and Methods:**

The data were collected during 1988 by a sample survey of women who had delivered in the previous year in the city of Ahmedabad which has a population of 2.5 million - seventh largest urban area in India. A two stage cluster sampling design was used based on the sampling frame developed by National Sample Survey Organization which conducts annual socioeconomic sample surveys in India. In the first stage 71 blocks were randomly selected from about 4,000 blocks of the city. The second stage sampling consisted of identifying and interviewing all women living in the selected blocks who had delivered within the previous 12 months by going door to door. The interviews were conducted using a structured questionnaire by selected general medical practitioners of respective areas of the city. Information was collected on sociodemographics, past reproductive history, current and past use of contraception, antenatal care, child health, additional number of children desired and future family planning intentions. Interviewers contacted 7,792 household, and identified 1,189 (15.3%) women who had delivered within the past 12 months. Among these women, 1,100 (91.8%) were successfully interviewed, of the remaining mothers, 87 (7.3%) refused or could not be contacted after at least two repeat efforts and 2 women had died who were excluded from analysis. Mothers of infants who had died were also included in the sample and were interviewed to get relevant information.

The data were analyzed using Statistical Analysis System (SAS) and EpiInfo software packages. Contraceptive use was studied in reference to method of choice, number and sex of living children, desire for additional children, menstrual status and breast feeding status. Contraceptors and non-users were compared on various socioeconomic and other factors to understand how they differed.

## Results:

Over all 19.5% of mothers were using any form of contraception when interviewed during the year following a birth, whereas only 10.4% had used any method before their last pregnancy. Table 1 presents the distribution of contraceptive methods among current users. Tubectomy (7.6%) and IUD (6.1%) were the two most common methods used, and very few women reported using pills (1.2%), condoms (3.5%), or had vasectomized husbands (1.1%).

Figure 1 shows contraceptive spacing methods use (IUD, condoms, pills) and sterilization by the number of living children. There was a steady increase in use of sterilization with increasing number of children, but at the same time there was a decline in use of temporary methods leading to only a moderate decline in the proportion of non-users from 86.6% to 64.6% with increasing number of children from one to more than four. The average number of children among sterilized couples was much higher (3.99) than among users of temporary methods (1.84) and non-users (2.22). It is worth noting that only 10% of mothers had 4 children and 7% had 5 or more children.

Figure 2 presents use of sterilization by number of sons and daughters. It is clear that mothers with more than one son are much more likely to use sterilization than mothers with the same number of daughters. Thirty-six percent of mothers with five or more living sons used sterilization as compared to only seventeen percent of mothers with five or more daughters. Extending this analysis further we plotted a three dimensional bar chart of sterilization rates by number of living sons and daughters (see Figure 3). Only a small proportion (<6%) of women who had less than two sons and had less than three daughters adopt sterilization, whereas higher rates of sterilization ( $\geq 25\%$ ) were observed among women who had at least 2 sons and at least one daughter. Sterilization rates were moderate ( $>15\%$ ) among women having at least three sons and no daughters, and among women having one son and three or more daughters. Table 2 shows percent of couples using spacing methods by number of living sons and daughters. Spacing method use is very less or not at all after one son and more than one daughter or with more than three daughters. These categories of clients exclusively rely on sterilization for their contraceptive needs.

Analysis of menstrual status shows that 54.1% of women were amenorrhoeic at time of interview, of whom 11.9% were using contraception - mostly sterilization (8.4%). Among the menstruating women 28.9% were using one of the methods. In this group use of temporary methods was higher (19.8%) while use of sterilization was similar (9.1%) to amenorrhoeic mothers. (see Table 3). However, women who have resumed menses are at high risk of pregnancy, but 71% of them were not using any contraception. Analysis of use of contraception by duration in months since birth of the last child shows an increasing trend for temporary methods use during first half of the year followed by plateauing during the latter half, and fluctuating use of sterilization over time (see Figure 4). Hence the overall contraceptive use also increased during the first seven months after birth while it stabilizes during the eighth to twelfth months postpartum.

Table 4 presents use of contraception by desire for additional children. Slightly less than one third of the women did not want any more children. However, one quarter of the mothers could not decide or did not know how many more children they wanted, and 16.6% reported that it would depend on their husband's wish. Use of contraceptives in last two groups was negligible. Of those who reported that they did not want any more children only 26.9% of the mothers used sterilization and 13% used temporary methods, leaving 60% unprotected. Out of those who did not want additional children and who had started to menstruate, 52% were using some contraception leaving 48% unprotected. The unmet need in this group has almost same as overall national statistics of unmet need (ORG 1990).

Table 5 shows use of contraception by menstrual status, breast feeding status and months since last birth. As shown in the table these three variables divided in to two categories each (before resumption of menses, after resumption of menses; less than six months after last birth, more than six months; exclusive breast feeding, supplementary feeding with or without breast feeding) creates eight combinations of these categories. They are labelled as group (a) to (h) in the Table 5. Sterilization use remains similar in all the eight groups except some variation in groups (d) and (h) (more than 6 months after delivery and after resumption of menses). On the other hand spacing method use varies substantially between all the eight groups. Pair wise comparisons between the eight groups gives idea as to which variable independently affects the spacing method use the most. The most important variable seems to be menstrual status. Among the four pairs of groups (a and b, c and d, e and f, g and h) with same combinations of breast feeding status and months since last birth, change from before starting of menses to after starting of menses is associated with substantial (more than three times) increase in spacing method use in each pair. The next important factor seems to be breast feeding as in three out of the four pairs of groups (b and f, c and g, d and h) introduction of supplemental feeding is associated with substantial increase of use of spacing methods even when the other two variables remain the same. This suggests that except for women who have delivered in last six months and are amenorrhoeic, women who exclusively breast fed seem to use spacing methods substantially less than those who have started top feeding indicating that women do rely on contraceptive effect of breast feeding. However, this table also shows that in each of the eight groups there are at least two-thirds of the couples who are unprotected.

Mothers who have delivered within last six months and who are amenorrhoeic and who are exclusively breast feeding are considered not at the risk of conception (WHO, 1992). In this study 26.6% of the mothers were in this group while the rest 73.4% were not meeting at least one of these criteria and hence could be classified as being at risk of conception. Among these at risk mothers 14% were using a spacing method, which was much higher than 2.7% spacing method use among women not at risk of conception using the above definition. But overall 77.2% of those at risk were not using any method. (see Table 6.)

Table 7 depicts differences in various socioeconomic and demographic characteristics of the non-users, sterilized couples and users of spacing methods. Overall, it is seen from the table that those who use spacing methods belong to the higher socioeconomic class as compared to the other two groups; while those sterilized have the lowest socioeconomic status and the non-users are in between the two groups. Those using sterilization are on an average four years older and have more children than the other two groups. The sex ratio (M:F) for children of those protected by sterilization was 34% higher than one, while for the other two groups it was lower than one. Sterilized couples had on an average 2.2 sons as compared to 0.88 for the spacers. Both these suggest that sons preference does play a role in choosing sterilization. Among the sterilized group almost half had delivered in the government hospitals as compared to only a quarter of the other two groups. Among those who expressed clear desire for number of children they wanted the mean total number of children desired (living + additional desired) by those sterilized was 3.9; those using spacing methods desired 2.2 children and those not using any method desired 2.8 children.

Table 8 shows the use of contraception by length of previous birth interval. It is clear that those who had experienced short birth intervals of less than 18 months previously were more than twice as likely to use spacing methods as those who had experienced birth intervals of 18 months or more. This suggests that women make contraceptive choices based on their past fertility experiences.

Table 9 presents data on future desire for contraception among current non-users. Forty-nine percent of these women do not plan to use any method in future, and a substantial proportion of women did not know whether they would use contraception (17.5%) or depended on their husbands

to decide (13.6%) whether they should use contraception in future. Among those who planned to use contraception (20.2%), almost half (9.6%) would choose tubectomy and a quarter would choose IUD. Pills and vasectomy were uncommon future choices.

### **Discussion:**

The Indian government has given top priority to providing family planning services through primary health care system. The All India Hospital Postpartum Program of the government is designed to motivate postpartum women in urban areas to accept family planning and provide necessary services. Recently there has been debate on strategy to serve contraceptive needs during postpartum period (Winikoff & Mensch, 1991). They have argued that immediate post partum contraception is not a optimal strategy in low fecundity countries where breast feeding is prolonged. They suggest that family planning programs should actively incorporate breast feeding and contraceptive counselling, and after protection from breast feeding declines promote use of spacing methods. Unfortunately data on dynamics of use of contraception in postpartum period is limited. This study looks at contraceptive use during one year following birth in Ahmedabad city of India to assess its level and some of its determinants.

The prevalence of contraceptives use (19.5%) was relatively low among women who had delivered in the previous year in Ahmedabad, and much lower than the overall contraceptive prevalence rates reported nationally (37.5%), or in the state of Gujarat (51%) for the year 1987 (Department of Family Welfare 1988). This suggests the possibility that the high level of contraceptive coverage reported in general population may be predominantly among older couples who have completed child bearing and may not be at a high risk of pregnancy. Use of contraception in this actively reproducing group has significant demographic importance and hence should receive higher programmatic priority. Unfortunately the current monitoring system of Indian Family Planning Programme does not differentiate between use by young, low parity women and older high parity women. Hence health workers may be giving more attention to the latter group as they are easier to motivate.

The method mix observed in this sample reflects a heavy emphasis on terminal methods, especially female sterilization, with almost forty per cent of the protection coming from this method. Male sterilization still remains unpopular. The low level of pill use among these women may be due to lack of availability of progesterone only pills which can be used safely during lactation, but it also suggests that pills are still not well accepted even by urban Indian women. These findings contrast with substantial use of oral contraceptives in Bangladesh (Kabir 1990, Lason & Mitra 1992) suggesting that low use of pill in India is perhaps more because of program design rather than socioeconomic status of women. Religious and cultural factors may partly explain the differences. It is noteworthy that interval contraceptive use was somewhat higher among women who had resumed menstruation (Table 2). However, the overall low level of contraceptive use among postpartum women, particularly after resumption of menses suggests that the family planning program has not successfully reached this group even in urban areas, perhaps because of the overemphasis on terminal methods at the expense of spacing methods, and weak extension efforts during the antenatal and postpartum period. It seems that the Family Planning Programme situation has not changed much over the last several years (Soni 1983).

Analysis of contraceptive use by number of living children demonstrates that sterilization acceptance starts rising only after two or more living sons. However, the declining use of temporary methods with larger numbers of children suggests that higher parity women who do not accept sterilization remain unprotected (Figure 1 & Table 2). Hence the program has to focus attention on



such women, and if they are not willing to accept sterilization then motivate them for spacing methods especially IUD.

Substantially higher sterilization rates among women with more than one son as compared with those with more than one daughter suggests that there is considerable son preference (Figure 2). This is confirmed by the sterilization rates cross classified by number of sons and number of daughters (Figure 3). The pattern of sterilization rates suggests that couples want at least two sons and at least one daughter before accepting sterilization. In follow-up studies in Maharashtra State of India, Vlassoff (1990) and Jejeebhoy (1989), observed that attaining two sons and around one daughter appeared to be the critical determinant of sterilization use. Our findings from an urban area agree with these earlier observations from rural area of a neighbouring state suggesting that son preference is equally strong in urban areas. Even though couples desire 2 male and 1 female children but in practice sterilization acceptors in our study had 2.2 male children and 1.7 female children giving a sex ratios of 1.34 (see Table 7). This suggests that on an average people go beyond this ideal family size before getting sterilized.

About one quarter of women could not give an estimate of the number of additional children desired, and a substantial proportion of women (16.6%) said that their decision would depend on their husband's wish (Table 3). Contraceptive use among undecided women in our study was less than 10%, which implies that motivational efforts should be directed towards husbands and other important family members besides women themselves. It also suggests that these women have not been adequately counselled about family planning during the antenatal and postnatal period. Frequent contact with such women may help increase use of contraceptives as shown in Bangladesh (Mehrat Ali Khan, 1989). The fact that almost half of the women who accepted sterilization had delivered in government hospitals suggests that more efforts have been made in such facilities for promotion of sterilization as compared to private facilities. Systematic efforts to motivate private health care providers to promote family planning would be a useful strategy.

Among the women who did not want any more children, only one quarter were sterilized and sixty percent were not using any contraception, indicating a substantial unmet need for family planning even in an urban area like Ahmedabad where family planning services are physically accessible and exposure to media may be substantial. It is plausible that some women will use contraceptives as the child becomes older and they start to menstruate and hence become exposed to risk of pregnancy. Our data shows that even after starting of menses 71% were not using any method and of which 48% were not wanting another child and still were not using any method. Thus in Ahmedabad contraceptive use among postpartum women exposed to risk of pregnancy was lower than in Indonesia & Thailand (Thapa et al 1992). It would be useful for Indian family planning programme managers to learn from neighbouring Asian countries' experiences.

This data clearly shows that women who have started to menstruate or who have introduced top feeding do tend to use spacing methods more frequently than amenorrhoeic women hence this can be used as a programmatic guideline to prompt women to start using contraceptives. Unfortunately in urban areas there is no infrastructure and staff who can do home visits to postpartum women. Hence motivation of such women for contraceptive use will have to depend on mass media, private practitioners, well baby clinics and immunization programme which would be in touch with postpartum women. Unfortunately urban FP programme has not taken such integrated approach and hence there may be many missed opportunities to counsel postpartum women about contraception.

Comparison of those sterilized and those using spacing methods indicate that these two groups are fairly different on many socioeconomic and demographic characteristics. The data suggests that spacing methods are not popular in lower socioeconomic groups. The programmatic implication would

be to understand this and try to improve knowledge and use of spacing methods among the lower socioeconomic groups. A NGO in Ahmedabad has shown that concerted efforts can succeed in promoting spacing method use even among urban poor (Kak 1992).

Among the women not using contraceptives at the time of interview, 48% were not planning to use any method in the future (Table 8). Vlassoff (1990) has shown that women generally follow their stated fertility intentions in India. Hence, much more programmatic effort will be required to increase contraceptive awareness and use in this group.

### **Conclusion:**

This survey data showed that contraceptive prevalence among women who had delivered in the past one year was low, with tubectomy and IUD being the two most popular methods. Almost three fourths of these women remain unprotected even after resuming menstruation even though substantially more women were using contraceptives after being at risk of pregnancy as compared to before being at risk. There was substantial son preference and higher sterilization rates were only observed after the women have had at least two sons and one daughter. About one third of the women did not want any more children but substantial proportion were unsure of the future desire for children or depended on their husbands' wish which pointed to need for counselling during ANC and PNC periods about reproductive choices. There was substantial unmet need of contraception even among women who did not want any more children. The data also show that spacing method use has yet not reached the bottom layers of socioeconomic hierarchy hence special efforts would be required to make these methods a popular choice in these groups. Desire for future use of contraception was also low in this population which indicated need for demand generation activities.

Overall, the data indicate low to moderate acceptance of family planning among actively reproducing group in Ahmedabad. These findings could be generalized to urban India. The results suggest that the family planning program needs to target younger, recently delivered mothers and to place more emphasis on spacing methods. Family planning counselling should form part of routine antenatal and postpartum care and should also include the husband and other important family members. A new strategy has to be evolved to serve the family planning needs in urban India.

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**Table 1** Current use of family planning by methods within one year of delivery in Ahmedabad city, India 1988.  
(n = 1,100)

Method	Current use	
	Mothers	%
Not using	885	80.5
Tubectomy	84	7.6
IUD	67	6.1
Condoms	39	3.5
Pills	13	1.2
Vasectomy	12	1.1
Total using any method	215	19.5

**Table 2** Spacing method use and total contraceptive use by number of living male and female children among postpartum women in Ahmedabad city, India

(All numbers are in per cents)

		Male Children			
		0	1	2	3+
C F h e i m l a d l r e e n	0	20.0 (20.0)	12.4 (13.6)	10.3 (11.5)	12.8 (15.4)
	1	12.8 (12.8)	18.0 (19.7)	5.6 (11.2)	6.0 (22.0)
	2	15.6 (22.1)	10.3 (38.2)	4.9 (39.0)	0 (36.0)
	3+	0 (17.9)	0 (42.1)	0 (55.6)	0 (25.0)

(Total contraceptive use is shown in parenthesis.)

**Table 3** Use of family planning by menstrual status among postpartum women in Ahmedabad City, India (N=1100)

Method	Amenorrhoeic (%)		Menstruating (%)	
Condom/IUD/pill	21	(3.5)	100	(19.8)
Sterilization	50	(8.4)	46	(9.1)
Not using contraception	524	(88.1)	359	(71.1)
<b>Total</b>	<b>595</b>		<b>505</b>	
<b>%</b>	<b>(54.1)</b>		<b>(45.9)</b>	

**Table 4** Use of family planning by desire for additional children among mothers in Ahmedabad, India 1988.

Methods used	Number of additional children desired				
	0	1	2+	Husband's Wish	Don't know
Not using any method	60.1	83.5	86.2	95.1	91.4
Menstruating but not using any method	48.1	73.5	77.4	91.8	80.5
Using Condom/IUD/pills	13.0	16.1	14.0	4.4	8.7
Sterilized	26.9	0.5	1.8	0.6	0.0
Total mothers (%)	346 (31.5)	218 (19.8)	65 (5.9)	182 (16.6)	289 (26.3)



**Table 5** Use of contraception by breast feeding status, menstrual status and months since last birth

	Months Since Last Birth			
	Less than 6 months		More than 6 months	
	Before Menses	After Menses	Before Menses	After Menses
<b><u>Exclusive Breast Feeding</u></b>	(a)	(b)	(c)	(d)
Unprotected	88.7	82.0	91.7	77.5
Sterilization	8.5	8.2	8.3	5.6
Spacing Method	2.7	9.8	0.0	16.9
<b><u>Supplementary feeding +Breast Feed</u></b>	(e)	(f)	(g)	(h)
Unprotected	90.5	69.5	83.9	67.8
Sterilization	7.9	8.5	8.4	10.2
Spacing Method	1.6	22.0	7.7	22.0

**Table 6** Use of family planning methods by risk of conception among postpartum women in Ahmedabad

Method Use	Risk of Conception				
	<u>Not at Risk*</u>		<u>At Risk</u>		
	No.	%	No.	%	
Not using any method	260	(88.7)	623	(77.2)	883
Sterilization	25	( 8.5)	71	( 8.8)	96
Spacing	8	( 2.7)	113	(14.0)	121
<b>Total</b>	<b>293</b>	<b>(26.6)</b>	<b>807</b>	<b>(73.4)</b>	<b>1100</b>

Not at risk of conception means mothers who have delivered in last 6 months and are still amenorrhoeic and are exclusively breast feeding their babies, all the rest are at risk.

**Table 7** Socio-economic and demographic difference between contraceptors & non-contraceptors among postpartum women in Ahmedabad

	<u>Non-users</u>	<u>Sterilized</u>	<u>Spacing Method Users</u>
N	883	96	121
Mother's mean age	24.9 (±4.2)	28.8 (±4.7)	24.9 (±3.8)
Mother's mean years of education	6.1 (±5.0)	5.0 (±4.7)	9.8 (±4.9)
Husband's mean years of education	8.4 (4.8)	7.4 (4.7)	11.2 (4.4)
Average Per capita Income (Rs/month)	207.6 (±214.6)	146.7 (±121.7)	319.9 (±243.2)
Average Rooms in the House	2.23 (1.4)	2.01 (1.2)	3.05 (1.6)
Mean Family Size	7.06 (3.09)	7.3 (2.36)	7.2 (3.22)
Mean No. of living male children	2.04	2.23	0.88
Mean No. of living female children	1.17	1.67	0.95
Mean No. of total children desired	2.8	3.9	2.2
Sex of last child			
Male %	51.5	58.3	55.4
Female %	48.5	41.7	44.6
Sex ratio of living children(M:F)	0.891	1.338	0.922
Last delivery in big (Govt) Hospital	25%	49%	22%

Note: Figures in the bracket are standard deviations.

**Table 8** Use of contraceptive methods by length of previous interbirth interval among postpartum women in Ahmedabad

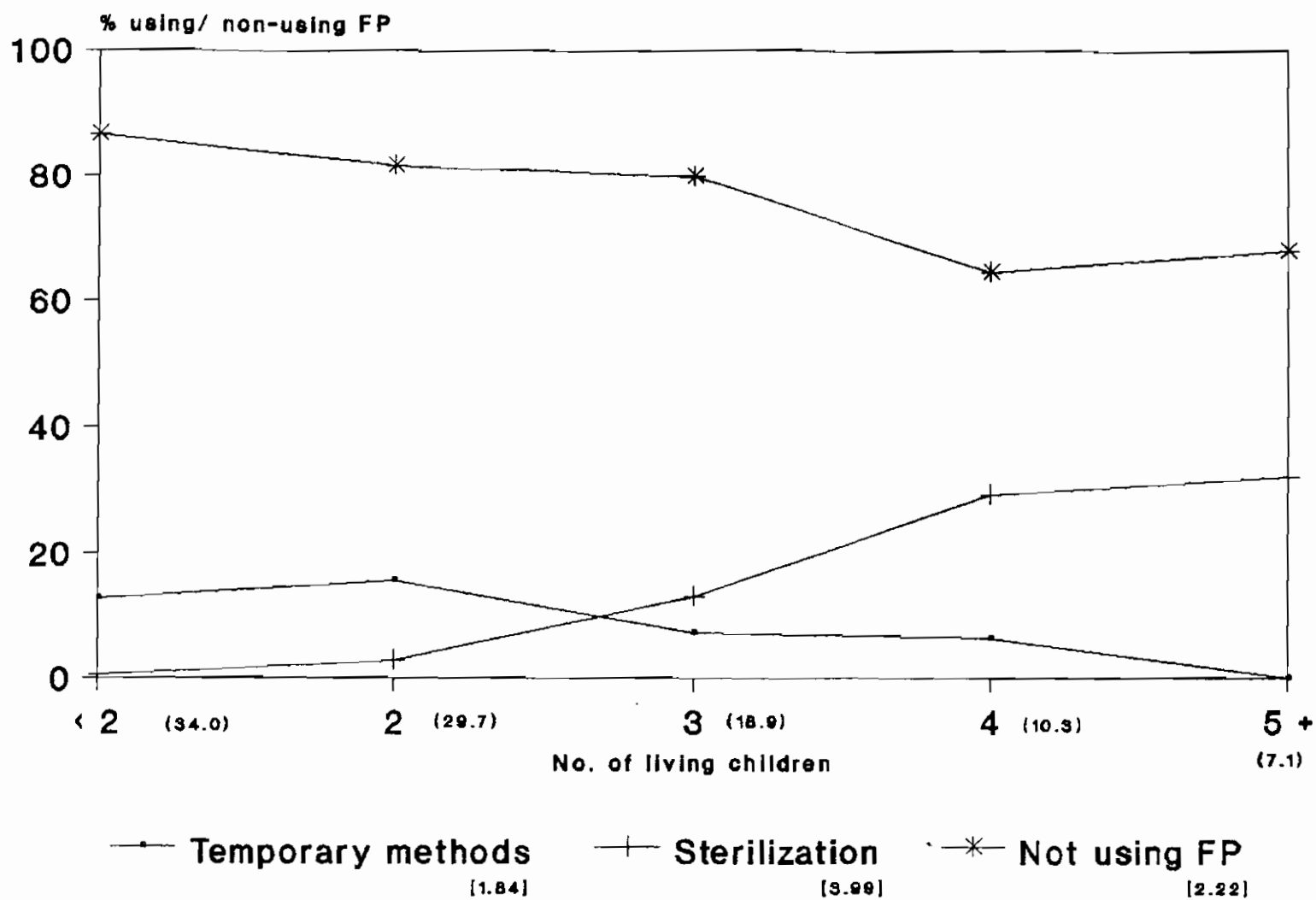
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Previous Birth Interval	Not Using Any Method	Sterilized	Using Spacing Method
Only one child	85.8	0.6	13.6
< 18 months	71.9	4.7	23.4
18 - 23 months	79.8	10.1	10.1
24 - 35 months	78.4	14.4	7.2
36 & + months	77.8	13.3	9.0
Total %	80.3	8.71	11.0

**Table 9** Future desire for contraception among current non-users in Ahmedabad, India 1988.

Method	Mothers	Percent
Not planning to use any method in future	432	48.8
Condoms	26	2.9
IUD	45	5.1
Pills	6	0.7
Tubectomy	85	9.6
Vasectomy	11	1.2
Other methods	5	0.6
As per husband's wish	120	13.6
Don't know	155	17.5
Total	885	100.0

**Fig: 1** Family Planning Use by number of living children

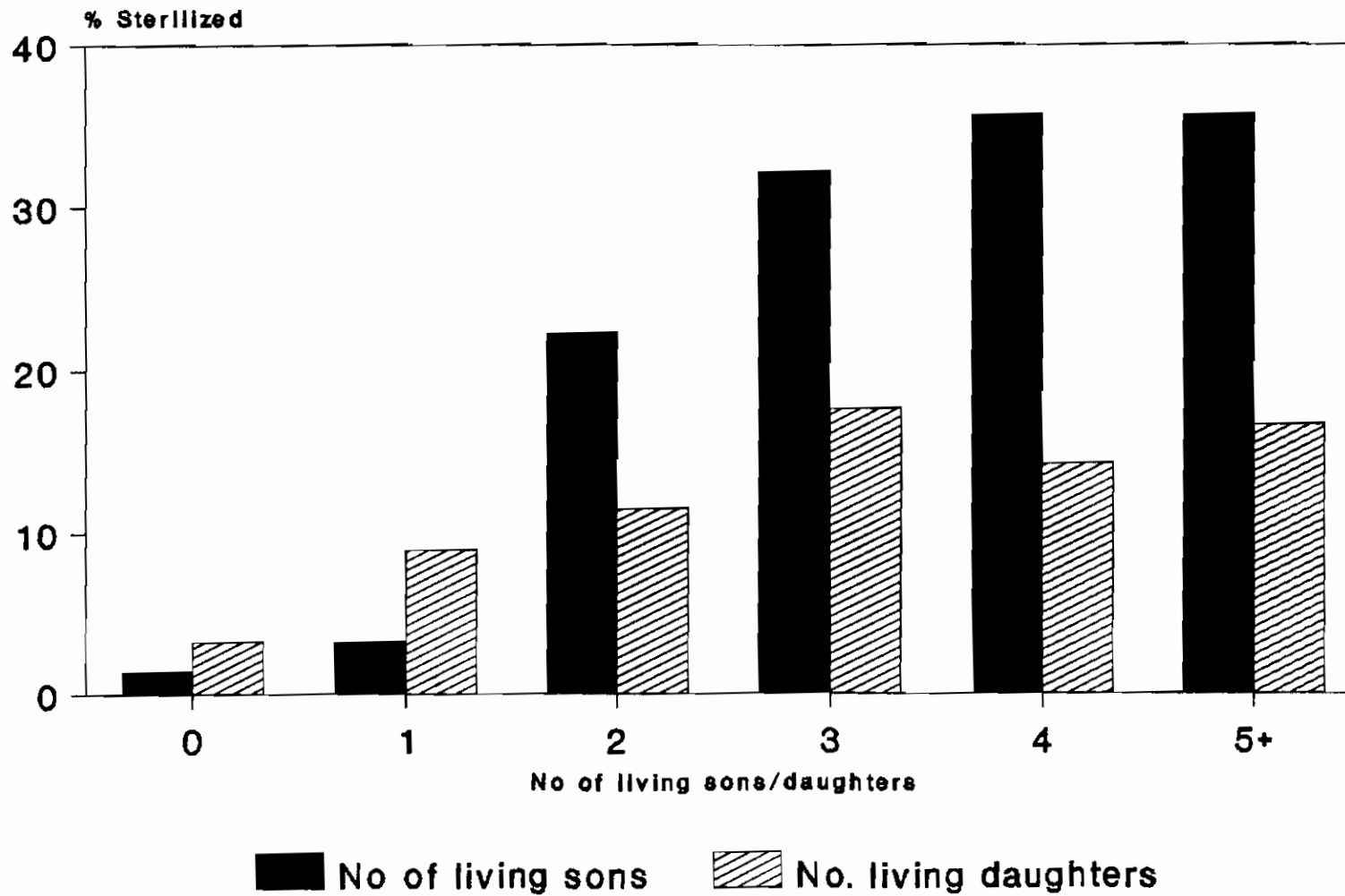


( ) = % of women in that group.

[ ] = mean number of living children for that group

**Fig: 2**

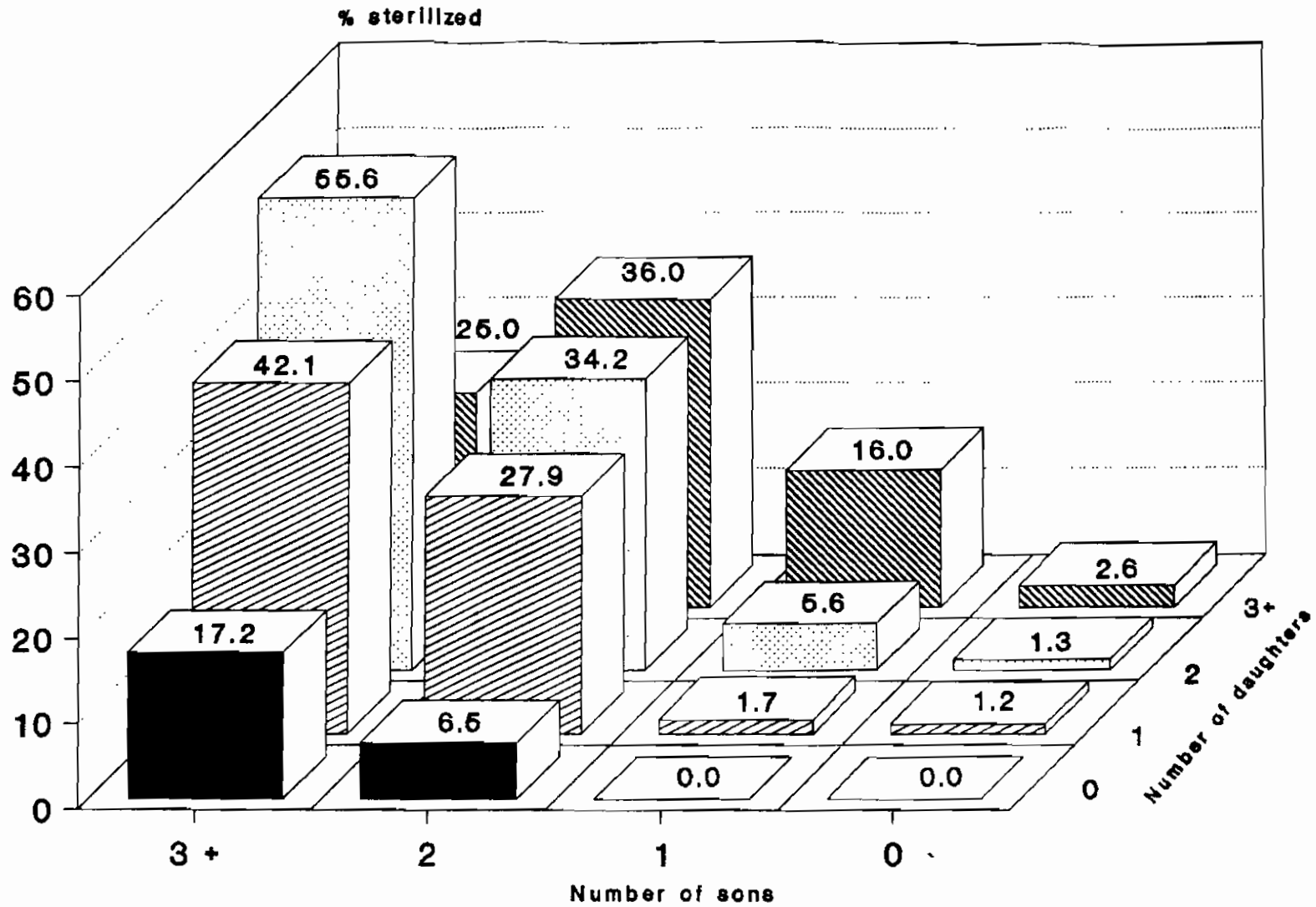
**Percent sterilized by  
number of Living sons/Daughters**



Ahmedabad, India 1988

**Fig: 3**

**Sterilization by number  
and sex of children**





**Fig: 4**      **FP use by months postpartum**  
**Ahmedabad, India 1988**

