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Factors influencing the use of contraception in an urban slum in Karachi, Pakistan

Rennie M. D'Souza

Abstract

Family planning is a health and an economic priority for Pakistan. Contraceptive prevalence rate among 502 couples in a predominantly catholic urban slum was 31 percent. Working women, education and having more than two sons increased contraceptive use. In addition, the number of daughters was the most significant factor influencing contraception. There did not seem to be any religious objections to the use of contraception, which helped introduce family planning in this community.

Key words: Contraceptive use; Determinants; Religion; Girls; Education; Husband; Pakistan

Address for correspondence: Dr Rennie M. D'Souza, Fellow,
National Center for Epidemiology and Population Health, Australian National University
Canberra ACT 0200, Australia
Tel No. 61-2-6125-5622 / Fax No 61-2-6125-0740 / Email: rennie.dsouza@anu.edu.au

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Introduction

A national growth rate of 3.1 percent and an urban growth rate of 4.8 percent (PDHS, 1991) reflect the need for family planning as both a health and an economic priority for Pakistan. The population has tripled in less than four decades and was 124.8 million in 1993 (UNICEF, 1994) and 140.47 million in 2000 (Economic Survey, 2001).

There have been several studies of family planning conducted in Pakistan to determine contraceptive prevalence (PCPS, 1984-85, PDHS, 1991, PCPS, 1994-95) but there have been no studies designed to ascertain the prevalence and determinants of contraceptive use that involved both husbands and wives as respondents. It is generally assumed that husbands are the main decision-makers for using contraception.

This study was carried out in one urban squatter settlement, Essa Nagri, where the Community Health Sciences Department of the Aga Khan University had a community-based primary health care program (Bryant *et al.,* 1993). As this was a Christian community it was felt necessary to undertake a standard knowledge, attitude and practice (KAP) survey before launching an active family planning program, in order to determine factors, such as religion, that might influence the acceptability and use of family planning. We believed that the practice of contraception might be low because half of the population was Roman Catholic.

Methodology

A cross-sectional study was conducted from February to June 1989 in Essa Nagri, which was one of more than 500 slums in Karachi. Essa Nagri had a population of approximately ten thousand almost all of who were Christians, approximately half of those being Roman Catholic. Muslims made up a very small proportion of the population. The major paid employment of both men and women was working as cleaners in the Karachi Metropolitan Corporation, which was responsible for sanitation in the city.

In a baseline survey carried out in 1986, this community had an infant mortality rate of 144, total fertility rate of 6.3, a natural increase of 3 percent per annum, and a contraceptive use rate of 11 percent among married women (Husein *et al.,* 1993). The family planning services available to this community were provided through a non-governmental family planning clinic.

Sample size calculations were done in Epi Info (Dean *et al.,* 1994) based on a 11 percent contraceptive prevalence in a population of 1500 households with women of childbearing age (15-49 years). With an alpha level of five percent and a minimum acceptable error of three percent, the estimated sample size was 327. As it was expected that at least 20-25% of the women would be pregnant, the sample size was increased to 500 to compensate for the number that we would have to exclude from the analysis. Systematic random sampling was undertaken with every third household being selected. Five hundred and two couples were interviewed with a structured questionnaire conducted by the principal investigator and male physicians who were members of the Primary Health Care team delivering services in this community. Spouses were interviewed separately and simultaneously to avoid partners' influencing each other's responses. In keeping with cultural values, males were questioned by male physician and females by female physician. No more than five couples refused to participate in the survey.

The analysis was done on the whole sample and then again excluding the pregnant women. Current use of contraception was defined as using any type of contraceptive method at the time of the interview.

Associations between determinants of contraceptive use were assessed by a chi-square test and a p value of 0.05 was chosen as the level of statistical significance. Multivariate logistic stepwise regression analysis was undertaken to determine the factors that predict the use of contraception and 0.05 was chosen as the level of significance for a variable to be kept in the model.

Results

Knowledge and practice of contraception

Table 1 shows the knowledge and use of different methods of contraception reported by husbands and wives. All of the women and 95.9 percent of the men had knowledge of at least one method of contraception. Knowledge of effective methods was quite high. The least known safe method was male sterilization among both men and women. Overall, the least known method was the rhythm method as only 13 percent of men and women knew about this method.

Although the proportion reporting use of contraceptive methods varied between husband and wife, the rank order remained generally the same: condom, followed by tubal litigation, abstinence, withdrawal and injection. Pills and Intra-uterine contraceptive devices (IUCDs) were not used very commonly (Table 1). The use of condoms was under-reported by wives but the wives reported the combination methods in which the condom was used with other methods like withdrawal, douche, and abstinence much more. The efficient methods used were 24.1 percent and 20.5% as reported by the husband and wife respectively.

Thirty-one percent of men and women reported current use of contraception. When couples in which the wife was pregnant were excluded, current use was 42.8 percent reported by the wife. The ever use of contraception as reported by the wife was 45 per cent and 41 percent by the husband which was only a little higher than current use. In 19.7 percent (N=99) of couples contraception was by both husband and wife; 22.9 percent (N=115) of couples had discrepant responses. Decision to use contraception was reported as a joint decision between husband and wife by 81 percent of the husbands and 86.5 percent of the wives (data not shown).

Table 1: Knowledge and use of contraception in men and women in Essa Nagri

Methods	Knowledge		Practice	
	Women N= 502	Men N= 502	Women N= 155	Men N= 158
Efficient				
Tubal ligation	97.8	95.2	27.7	24.0
Condom	83.6	94.4	29.0	43.6
Injection	80.2	75.1	4.5	3.1
IUCD	77.4	50.8	1.2	1.9
Pill	76.7	79.9	1.9	-
Vaginal methods (cervical cap, diaphragm)	56.5	14.5	-	-
Male sterilization	30.7	32.5	-	-
Inefficient methods				
Abstinence	100.0	76.1	10.3	11.3
Withdrawal	56.5	65.0	7.5	5.0
Douche	53.9	37.5	2.0	1.3
Rhythm	13.2	12.6	1.0	3.7
Other	1.2	0.1	-	-
Combination of methods	-	-	13.4	6.1
Any method	100.0	95.	31.0	31.0
(excluding pregnant women)	-	-	42.8	-
Ever use	-	-	44.6	41.2

Reasons for using

The major reason why the wives thought they needed to use contraception was because they had completed their family in 53.4 percent of the cases followed by the need to space children, 36.6 percent (Table 2). The major reason why the husbands felt they needed to use contraception was to space children, 39.2 percent, followed by 20.2 percent for economic reasons, completed their family in 17.8 percent of the cases and 12.3 percent felt that they had too many children.

Reasons for not using

The main reasons for non-use of contraception among the wives were as follows - 31.6 percent said their children were spaced naturally; 28.5 percent had no specific reason; 14 percent had no children; 9.3 percent had not completed their family (Table 2). The main reasons stated by the husbands was the same but the proportions were different. Only 4.8 percent of women and 3.5 percent of men felt it was against their religion.

Table 2: Reasons for use and non-use of contraception

	Men N= 155	**Women N=158**
Reasons for use		
Completed family	53.4	17.8
Space children	36.6	39.2
Economic reasons	5.7	20.2
Too many children	1.8	12.3
Own health's sake	2.5	7.9
Children's health should be better	2.5	
Reasons for non-use	**N= 347**	**N=344**
Children spaced on their own	31.6	11.1
No specific reason	28.5	49.0
No children	14.0	13.8
Haven't completely family	9.3	14.2
Husband won't allow	6.3	-
Against religion	4.8	3.5
God's wish	4.0	2.4
Side effects	1.1	2.0
Don't know any method	-	2.0
Still thinking	0.4	2.0

Factors influencing use of contraception

Table 3 represents the currently married non-pregnant women. The results based on the whole sample or excluding the pregnant women were the same. Age of the wife had a positive effect on the use of contraception, which was statistically significant at 0.05 level (Table 3). The majority of men and women in the sample were illiterate: 76.5 percent (N=296) of women and 54 percent (N=209) of men. The proportion of users was higher among the educated groups ($P<0.05$) (Table 3).

There were 25% (N=100) women who worked outside the house who were mostly employed as household help and cleaners, while a very small number were professional women who worked as nurses and teachers (Table 3). The use of contraception was significantly higher among women who were working ($p<0.001$) but the occupation of the husbands did not significantly influence the practice of

contraception (data not shown). Men in this community were mainly employed as cleaners (51.7 percent) and other skilled workers (44.1 percent); and only 4.2 percent were in professional jobs.

Religion, whether they were Catholics, Protestants, or Muslims did not significantly affect the practice of family planning in Essa Nagri and the use rate was in the range of 40 to 46 percent. Regardless of whether contraception was considered wrong or not, the proportion of users did not differ significantly between the groups. Family income was only of borderline significance.

The mean duration of marriage was 10.2 $\pm$ 8.2 years and the mean number of children alive was 3.4 $\pm$ 2.3. A trend was seen towards the increased use of contraception as the duration of marriage and the number of live children increased ($p<0.001$) (Table 3).

The mean number of male children alive was 1.6 $\pm$ 1.4, and female children were 1.8 $\pm$ 1.2. A linear positive relationship between contraceptive use was the number of sons and daughters but was more striking for daughters ($p<0.001$) (Table 3)

In the logistic regression models for the current use of contraception (excluding pregnant women) (Table 4), the odds of using contraception increased significantly after two girls OR=6.70 (95% C.I. 2.92 – 15.39). Among the socio-demographic variables education and occupation of the wife also influenced the use of contraception and the use rate was twice that of women who were uneducated or were housewives OR = 2.55 (95% CI1.83 – 5.48).

In the logistic regression model (Table 4) when the entire sample was used (Model 2), the number of boys also becomes significant in addition to variables in Model 1 but the odds of using contraception were not as high as the number of girls. When the husband's response was used in Model 3, the number of boys and girls along with the education of the husband were statistically significant in the model. The determinants of ever use of contraception shown in model 4 were the same as current use except for the occupation of the wife was not significant any more. In all the models, the number of girls was the most consistent and strongest correlate of contraceptive use.

Discussion

Although Essa Nagri is a Christian community, it is influenced by the larger prevailing conservative Muslim society. Even though it is a poor community, the knowledge of at least one effective contraceptive method among men and women of this community was very high when compared with that in the country as a whole in 1984-85, when it was 61.5 percent (PCPS, 1984-85) and in 1990-91 when it was 80 percent (PDHS 1991). The knowledge of male sterilization was low among both men and women, which can be explained in part by the fact that family planning programs focus more on women.

The current use rate of contraception in Essa Nagri was much higher than the 9.1 percent, 11.9 percent and 17.8 percent in the 1984-85 Pakistan Contraceptive Prevalence Survey (PCPS, 1984-85), 1990-91 Pakistan Demographic Health Survey (PDHS 1991) and in the 1994-95 Contraceptive Prevalence Survey (PCPS, 1994-95) respectively. A reason for the higher use rate in Essa Nagri may be better communication between husband and wife, which is reflected in the fact that to use contraception was a joint decision between the husband and wife as reported by a large majority of couples.

Another reason for the greater use of contraception is that there is a higher proportion of working women in this population than is the case nationally; 25 percent in Essa Nagri but only 19.8 percent overall in Pakistan and 7.9 percent in urban areas[1]. Working women having a higher rate of contraceptive use was also demonstrated in the 1984-85 PCPS (PCPS, 1984-85), where the user rate among working women was 24.6 percent, which was almost twice the rate for women working at home, and four times the rate of those self-employed in the household. On the other hand, the husband's occupation in this study did not show a significant effect on the use of contraception, possibly because there were very few in the professional category. In the PCPS 1984-85, which focused on interviews with women, there were differences in contraceptive use according to the husband's economic activity. Women whose husbands worked in agriculture had the lowest ever use-rate, the wives of salaried employees had the highest rate, followed by the wives of the self-employed and unemployed.

Table 3: Factors associated with contraceptive use in non-pregnant women

	Yes N=155	%	No N=207	%	Unadjusted OR (95% CI)
Age					
<25	35	32.5	73	67.6	1.0
25-34	68	43.9	87	56.1	1.63 (0.98 – 2.72)
35-49	52	52.5	47	47.5	2.31 (1.31 – 4.05)
Education					
Illiterate	109	39.6	166	60.4	1.0
1-5 years	27	55.1	22	44.9	1.52 (0.77 – 3.01)
>5 years	19	50.0	19	50.0	1.87 (1.01 – 3.45)
Occupation					
Housewife	96	37.1	163	62.9	1.0
Working women	57	57.0	43	43.0	2.25 (1.41 – 3.60)
Religion					
Catholics	70	46.1	82	53.9	1.0
Protestants	78	40.0	117	60.0	0.97 (0.34 – 2.83)
Muslim	7	46.7	8	53.3	0.76 (0.27 – 2.19)
Religious objections					
Yes	19	22.9	26	77.1	1.0
No	119	27.2	159	72.8	1.02 (0.52 – 2.03)
Don't know	17	17.1	22	82.9	1.06 (0.41 – 2.75)
Family income					
<= Rs 1500	73	38.0	119	62.0	1.0
> Rs 1500	82	48.2	88	51.8	1.52 (0.99 – 2.31)
Duration of Marriage					
0-2 years	12	31.6	26	68.4	1.0
2.1-5 years	22	33.3	44	66.7	1.08 (0.46 – 2.54)
5.1-10 years	36	40.0	54	60.0	1.44 (0.65 – 3.23)
10.1-15 years	32	44.4	40	55.6	1.73 (0.76 – 3.96)
>15 years	53	55.2	43	44.8	2.67 (1.20 – 5.95)
No. of children					
None	6	23.1	20	76.9	1.0
1-2	54	34.0	105	66.0	1.71 (0.65 – 4.52)
3-4	84	54.9	69	45.1	5.06 (1.54 – 10.67)
5-7	11	45.8	13	54.2	2.82 (0.83 – 9.51)
No. of girls					
None	11	19.6	45	80.4	1.0
1-2	73	37.8	120	62.2	2.49 (1.21 – 5.12)
3-4	59	62.8	35	37.2	6.89 (3.16 – 15.05)
5-7	12	63.2	7	36.8	7.01 (2.24 – 21.96)
No. of Boys					
None	21	26.9	57	73.1	1.0
1-2	77	45.3	93	54.7	2.25 (1.25 – 4.03)
3-4	44	48.4	47	51.6	2.54 (1.76 – 4.29)
5-7	13	56.5	10	43.5	3.53 (1.35 – 9.26)

Discrepant responses in use of contraception have been seen in studies done in developing societies and range from 15 to 20 percent. It is generally the husbands who report the use of contraception

while the wives do not (Koenig *et al.,* 1984), although in this study, there were equal proportion of discrepant responses from husbands and wives.

The contraceptive methods used in Essa Nagri seem to be in the same rank order as among the major urban contraceptive users in the PCPS (1984-85). The use of efficient methods in Essa Nagri was substantially greater than in Pakistan overall which was 7.6 percent and almost the same as in major urban areas, 20.2 percent in 1984-85 (PCPS, 1984-85).

Table 4 Logistic regression models for factors influencing the use of contraception

	Current Use of Contraception			Ever Use of contraception
	Non-pregnant N=362	**Wife** *N=502*	**Husband N=502**	**Wife N=502**
Variables	**Model 1 Odds ratio (95% CI)**	**Model 2 Odds ratio (95% CI)**	**Model 3 Odds ratio (95% CI)**	**Model 4 Odds ratio (95% CI)**
Education				
No education	1.0	1.00		1.00
> 5 years	2.38 (1.22 – 4.66)	2.23 (1.23 – 4.04)		1.72 (0.87 – 3.39)
1-5 years	2.55 (1.83 – 5.48)	3.11 (1.53 – 6.34)		2.52 (1.41 – 4.51)
Children - girls				
None	1.0	1.0	1.00	1.0
1-2	2.38 (1.12 – 5.04)	2.69 (1.32 – 5.49)	2.61 (1.38 – 4.96)	3.29 (1.84 – 5.89)
3-4	6.70 (2.92 – 15.39)	7.48 (3.42 – 16.39)	4.73 (2.32 – 9.68)	8.66 (4.37 – 17.17)
5-7	7.37 (2.24 – 24.22)	9.56 (3.01 – 30.4)	4.26 (1.42 – 12.79)	5.13 (1.77 – 14.85)
Children - boys				
None		1.0	1.0	1.0
1-2		1.9 (1.07 – 3.42)	2.41 (1.39 – 4.17)	2.08 (1.28 – 3.38)
3-4		2.5 (1.17 – 4.57)	1.67 (0.86 – 3.24)	2.40 (1.33 – 4.32)
5-7		3.6 (1.34 – 9.78)	2.13 (0.79 – 5.68)	1.44 (0.57 – 3.64)
Occupation				
Housewives	1.0	1.0		
Working	1.80 (1.07 – 3.01)	1.75 (1.08 – 2.86)		
Education of husband				
No education			1.0	
> 5 years			1.20 (0.69 – 2.09)	
1-5 years			1.84 (1.14 – 2.95)	

Religion did not significantly affect the practice of family planning in Essa Nagri. This is also reflected in the reasons stated for not using contraception, as only a very small proportion (less than 5%) of men and women felt it was against their religion. A change in attitudes towards religion and contraceptive use was observed in Lahore, where a 1963 survey (Yusuf, 1985) had shown religion (which was Islam in this community) as the main reason among virtually all respondents for not using

contraception. However, the strength of religious opposition, and more likely its perception by respondents is the 1980 survey, seems to have declined substantially.

Female education has been associated with greater knowledge and use of contraceptive methods (Shah, 1979; PCPS, 1984-85; Yusuf, 1985; PDHS, 1991). There is also a strong linkage between lower fertility and post-primary education and formal sector employment (Sathar, 1990). In the Essa Nagri study education of the wife was a significant factor influencing the use of contraception (Table 4). Education operates through a number of ways like delayed age at marriage, reduction in desired family size, being gainfully employed, having a higher socio-economic status and a favorable attitude towards family limitation (Sathar, 1984; Mahmood, 1985). Contraceptive behavior is likely to be influenced by socio-economic status as seen in a study in Hyderabad, India (Reddy, 1984) but in the Essa Nagri study, family income was of borderline significance. This could be due to their not being a great variation in income.

In Essa Nagri, the prevalence of contraception increased as the number of children increased. Similar findings were also observed in the PCPS: high-parity women have more knowledge, more favorable attitudes towards family planning and a higher prevalence of contraception (PCPS, 1984-85; Yusuf 1989). There is little indication that contraception is employed to delay the birth of the first child, but there is a substantial rise in use before the second birth, followed by a more gradual rise up to four children, and then an unexplained decline after five children (Westoff, 1978).

Son preference is observed in most traditional societies and some modern societies since male children represent economic, social, cultural and psychological values. Thus the use of contraception is likely to be influenced heavily by the number of living sons in the family. This is similar to a finding by Ali (1989) where the majority of contraceptive users do have two living sons and the number of living sons was positively associated with the desire not to have any more children. In Hyderabad, current practice was the lowest among those having no living sons, and increased with the number of living sons (Reddy, 1984). Contrary to this in Essa Nagri, it was the number of living daughters that influenced the use of contraception. The main reason could be the cost of dowry associated with the marriage of each daughter. There was quite a striking increase in the use of contraception when the couple had more than two living daughters. It is likely that a family, with more than two daughters would also have boys in the family that would influence the use of contraception. The number of boys only affected the current and ever use of contraception in the multivariate model that used the full sample in the wife or husband model.

In Essa Nagri, it was generally the older women who were accepting contraception, which is consistent with other studies (Westoff, 1978; PCPS, 1984-85; Yusuf, 1985; Yusuf, 1989; PDHS, 1991). Also, older women prefer permanent methods of contraception as they have completed their families. The greater adoption of contraception by those in their late reproductive ages may be largely due to their actual family size being equal to or greater than their desired family size.

Conclusion

The findings of this study suggest that being a working woman, education of the wife and having more than two daughters and two sons increased the practice of family planning. It appears that there is knowledge of family planning in the community and that religious affiliations did not affect the use of contraception. There is currently a large unmet need for contraception, which is around 38% in the 1996-7 Pakistan Fertility and Family Planning survey (Hakim *et al.,* 1996-97). Birth spacing would improve child health in this community as more than one child under five years of age was identified as a risk factor for childhood morbidity and mortality (D'Souza, 1997; D'Souza, 1999). Therefore there is a need for a concerted program to provide safe methods to younger and low parity women in order to promote smaller family size and birth spacing. Both husbands and wives should be approached, as the decision to use contraception should be a joint one. In addition, couples should be provided with the necessary education to increase the acceptance of contraception. Cultural and religious beliefs should be kept in mind in trying

to introduce family planning to a particular community. The findings from this study had important policy implications for the PHC program in Essa Nagri and other urban squatter settlements in Karachi, and Pakistan more generally.

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