Demography India
Vol. 22, No. 1(1993),pp. **31-51**

Tauseef Ahmed

Unmet Need for Contraception in Pakistan: Pattern and Determinants

THE unabated growth of population in Pakistan points towards the absence of any significance fertility regulation. The Pakistan planning programme was launched as a developmental effort in mid 1960s. The persistence of low contraceptive use or the dependence of women on natural ways to regulate fertility raises a question whether Pakistani women are at all concerned with the number they would like to reproduce or to give more space between their births? Results from several demographic surveys in Pakistan show fiiat women do want to have certain number of children and il is only towards higher birth order that spacing is considered seriously (Ahmed 1989). On an average, a Pakistani woman gives birth to six children and, majority of them are born during her early years of marriage. However, not all births to a woman have been shown to be desired. Shah and Palmore (1979) found Pakistani women reproduces at least 2.6 births in excess to their desired number of children.

Government has been focussing all its efforts to control population growth by reducing fertility rate and enhancing contraceptive use. During Seventh Five Year Plan though the eligible women were planned to be reached, a very small segment of women were actually provided with services. Though the contraceptive use by ever-married women has been reported to be about eleven percent, women expressing desire to avoid pregnancy were much higher (Population Welfare Division 1986). This indicate existence of a latent demand for contraception that woman in Pakistan is not exhibiting openly. This silence may be attributed to socio-cultural norms that inhibit their overt demand for contraception. Alternatively, the non-use of contraception in Pakistan could very well be a service delivery issue, where women may not be even aware of any such services. In the absence of any significant demographic changes in factors affecting fertility (i.e. age at marriage, education, labour force participation), it is quite necessary to identify and motivate all such women who do not desire any additional children and yet not practicing any family planning method. Such a group is identified as having 'unmet need' for contraception. Study of such group would help the planners to develop and implement a programme targeted to the fertility needs of these women. Earlier estimates of unmet need for contraception for currently married women in Pakistan ranged from 11 to 44.8 percent (Shah and Ahmed 1982).

•The author is Senior Fellow at National Institute of Population Studies, Islamabad. The analysis was conducted at the East West Population Institute, Honolulu. The author would like to express deep appreciation and thanks to Dr. James Palmore Jr., Dr. Fred Arnold and Dr. Nasra Shah for their invaluable comments to improve this paper.

The focus of this paper is to update and reestimate the unmet need for contraception more objectively. The next section elaborates the scheme of measurement of unmet need for contraception. This analysis also includes a multivariate analysis of the unmet need to see the factors that affect it.

Measurement of Unmet Need

This analysis utilizes Westoff (1989) scheme of identifying unmnet need for contraception. There are four criteria used to identify women as belonging to a group having an unmet need for contraception:

(a) currently married women, who are
(b) exposed to the risk of pregnancy, and
(c) want to stop childbearing or postpone their next birth, and
(d) are not using any contraceptive method.

Each of these criteria is measured in an objective manner to arrive at a better measure of the concept. The prime focus of the scheme is to identify fecund women by their current exposure to the risk of pregnancy.

V^omen may be either currently pregnant, amenorrheic, infecund or fecund. A major criticism of previous unmet need measures elaborated by Westoff and Pebley (1981), was the manner in which women were classified as amenorrheic or infecund. They had defined amenorrheic as subfecund women who are currently not exposed to the risk of pregnancy. This was operationalized to focus on women breast-feeding for upto one year. There is ample evidence from developing countries that intensive breast-feeding positively effects the duration between births through lengthening of postpartum amenorrhea (Habicht *et al.* 1985; Smith 1983; Baer and Winikoff 1981). However, declining breastfeeding especially by urban and educated women, early infant food supplementation, and at times less consistent results regarding the magnitude of the contraceptive effect of breastfeeding (Van Ginneken 1978) make the use of breastfeeding an inefficient indicator of amenorrhea. Furthermore, recall and misreporting associated with breastfeeding weakens its validity as a measure for amenorrhea. Breastfeeding was, therefore, not included by Westoff (1989) in his new scheme, rather information on most recent menses was used to establish exposure to the risk of pregnancy.

Moreover, earlier measures to exposure to risk of pregnancy employed a subjective criterion of fecundity—self perception of the ability to bear more children. Under the new conceptualization infecund women are defined as those who had a non-protected open birth interval of at least five years duration. Therefore, infecund women would include only those who had been married for five years or more and have not been pregnant during the period.

The new approach also includes currently pregnant and amenorrheic women since these women may potentially be joining the market for contraception shortly. Not all currently pregnant or amenorrheic women wanted to get pregnant at the time they actually did. Such

women, whose current or last pregnancy was mistimed or unintended, would fall in the unmet need group. The scope of unmet need for contraception is therefore extended over most recent birth or pregnancy. Women categorized as having an unmet need may have been in this status over previous births because of the absence of needed measures of fertility control from the risks of pregnancy. In other words, many women would not be in the unmet need group if they had access to and utilized a protective method in the last closed birth interval. If the last pregnancy is mistimed, it may not be of much significance in this modification of the unmet need measurement, especially when women do not have much control over their fertility. Women reporting their last pregnancy to be intended did not fall within the unmet need classification.

From women classified as fecund, their attitude towards future births was sought. Fertility intentions have been found to be prominent factor affecting the demand for children (Hermalin *et al.* 1979). It is, therefore, important to observe if women desire to space or limit their next birth. Women desiring to have their next birth soon were excluded from the unmet need classification while those desiring to delay were included because they would require protection from the risk of pregnancy.

The final criterion was regarding contraceptive use by these women. Women protecting themselves against the risk of pregnancy by using any efficient method did not fall into the unmet need group. Non-users thus become the main focus to identify various classifications of the unmet need for contraception. The unmet need for contraceptive protection includes women who are not currently protecting and (a) who are pregnant or amenorrheic and whose last pregnancy was mistimed or unwanted; or (b) fecund women who do not want more children or who want an additional birth after a year. The concept of unmet need and its measurement have been successfully tested by Westoff (1988) in five Latin American countries where the unmet need ranged between 15-30 percent.

In a non-contracepting society, the individual woman's need to limit reproduction increases with age and parity level, while birth-spacing needs generally occur early in her reproductive career. Women who have achieved their desired family size have a need for curtailing additional births. Such women are usually older. Biological subfecundity and, at later ages infecundity, reduce and eliminate their risk of pregnancy. Accordingly, we should expect a nonlinear association of unmet need and age of woman.

Increasing contraceptive demand is concomitant with increasing literacy, especially female literacy, increasing social mobility, and increasing labour force participation. Greater female participation in family decision making provides opportunities to women to reconsider their fertility desires, and makes women conscious of regulating their fertility. In this regard, urbanization tends to be a process that not only places pressure on both husband and wife to be earners but also provides easier access to contraceptive. Emergence of unmet need can be seen from two aspects: (a) the absence of explicit demand for contraception from within a family; and (b) a lack of availability of appropriate services to those who need them. In conservative societies where social sanctions are associated with open discussion of matters related to sex and contraceptive use, women with demand for contraception might

refrain from expressing it. Programme should reach such needy by evolving ways of regular supply of services.

Early marriage, low educational achievement, negligible female labour force participation, and strong patriarchal norms of obedience and lineage restrain women to a few socially-permitted roles. On the other hand, there are other social norms that permit a mother to protect herself from getting pregnant again. The departure of the mother-to-be for her parental house and her restricted movement out-of-home for 40 days after delivery restrains the couple from reinitiating cohabitation and sexual contact. Furthermore, extensive breastfeeding carried out by about 90 percent of all new mothers is recognized to provide some degree of natural protection from pregnancy.

Though a large number of currently married women are familiar with at least one method of contraception, their knowledge about methods may be imperfect. Since acutal use is socially disapproved, the chances of underreporting the use of a modern method are high. Furthermore, we may also expect low intensity and efficiency in contraceptive use by women who fear being sanctioned by their husbands or mothers-in-law. The focal point of change in contraceptive use remains urban areas, where both services and knowledge regarding methods was recorded to be much higher than in rural areas in a two survey comparative analysis by Shah (1979).

^ Women whose pregnancies are unwanted try a range of methods for getting rid of fetuses. Induced abortions, though illegal and restricted to only those women whose life is threatened, are conducted in private clinics. Awan (1982) .estimated the abortion ratio for 1973 in the city of Lahore to be 71/1000 live births, the majority of which were performed by unqualified medical practitioners. Women who because of various reasons such as religious belief etc. do not abort their unwanted pregnancy, subsequently may not like to mention them as unwanted birth. Under such norms, we should expect a low percent of women reporting unwanted or mistimed pregnancy.

Intentions to have a next birth sooner or later may depend upon age, experience of infant/child mortality, and number of living children. Parents would like to replace a lost child at an early date, while a young mother conscious of spacing births would want to delay her next child. A woman burdened by repetitive births might seek ways to restrict the frequency of intercourse, seek advice from traditional birth attendants to avoid the risk of pregnancy, and wish to delay or stop the next birth.

Source of Data

Data taken from the Pakistan Contraceptive Prevalence Survey 1984-85 (PCPS) was used for this analysis. The survey included a two-stage, stratified probability sample in both urban and rural areas. A total of 7,405 currently married women aged 15-49 were interviewed. The data was collected by well-trained female interviewers selected from various regions. The questionnaire was prepared in major regional and national languages and was tested for its consistency before administration.

The PCPS was based on a relatively simple questionnaire but also included items on fertility intentions and timing, whether the last birth was desired or not, and timing of the most recent menses etc. These variables made it possible to measure various dimensions of the unmet need for contraception.

The analysis is conducted at two levels: national and provincial. This was felt necessary as women in provinces at various levels of socio-economic development are expected to behave differently to show their dimensions of unmet need.

Illustration of the Model for Pakistan

Despite high fertility rates, 49 percent (Pakistan Fertility Survey 1975) and 43 percent (Pakistan Contraceptive Prevalence Survey 1985) of Pakistani women say they do not desire to have another birth. This desire grows stronger with age and the number of living children (Population Planning Council of Pakistan 1976; Population Welfare Division 1986). Furthermore, there are women who would want to delay birth of their additional children. It is this intention to delay that was added in the PCPS 1984-85 data. About 32 percent of all women who wanted more children desired to delay their next birth by at least two years (Population Welfare Division 1986).

About 92 percent of the women interviewed in the PCPS were not currently using any contraceptive method. Among them 37 percent were currently pregnant or amenorrheic. These women were further classified to examine their current status of exposure to the risk of pregnancy. Women, not currently pregnant but who reported their last menses to be more than a month prior to the survey were categorized as being amenorrheic. Currently non-user women were asked: Do you want to have children in the future (in additon to the one you are expecting)? Women desiring more were further asked about the timing of the intended pregnancy. Women not desiring more births, were enquired about the desire of their last birth.

The PCPS did not specifically ask about the desired timing of the last birth. Women who were currently pregnant or amenorrheic were asked whether they desired to have additional children before the birth of their last child or their current pregnancy. About 12 percent of all women reported they did not want more children at that time, implying that there may have been a considerable need for some contraceptive protection in the past. Women who reported having no desire for more children before the birth of the last child or current pregnancy were further classified having last birth as: (a) 'mistimed' if they had a higher ideal family size than their number of living children, or (b) 'unwanted' if they had more living children than their ideal family size. We observe in Table 1 that a very small percent of women (2.4 and 3.5) fell in these categories. Both these type of women were classified as having an unmet need for contraception. The PCPS asked currently pregnant or amenorrheic women desiring more children about the timing of their next birth. About 11 percent of all women desired their next child after one year relative to 13.4 percent desiring it within a year. Women intending to delay their next birth were expected to need contraceptive protection to achieve their goals in the near future. Such women were also classified as having unmet need for contraception.

TABLE 1: PERCENTAGE OF CURRENTLY MARRIED WOMEN BY THEIR CURRENT CONTRACEPTION USE STATUS, FECUNDITY STATUS, PREGNANCY STATUS, INTENTION OF CURRENT OR PREVIOUS LAST PREGNANCY, AND FERTILITY INTENTIONS; AND PERCENTAGE WITH AN UNMET NEED FOR CONTRACEPTION BY TYPE OF NEED (PAKISTAN AND PROVINCE)

Provinces	*Pakistan*	*Punjab*	*Sind*	*NWFP*	*Baluchislan*
Practising Contraception	8.4	8.3	8.8	9.2	5.8
Not Using Contraception	91.6	91.7	91.2	90.8	94.2
Pregnant or Amenorrheic					
Wanted No More Births					
Last Birth/Cur. Preg Desired	6.5	6.8	5.1	9.4	2.2
Last Birth/Cur. Preg Mistimed*	3.5	1.8	8.4	2.8	3.2
Last Birth/Cur. Preg not less Desircd+	2.4	3.6	1.5	0.7	1.3
Wanted More Births					
Next Birth Desired Soon	13.4	14.5	11.6	11.5	15.5
Next Birth Desired Later*	10.8	8.2	15.2	16.3	4.4
Not Pregant and Not Amenorrheic					
Infecund	4.4	3.7	5.7	5.9	1.5
Wanted No More Births+	18.6	21.3	17.9	13.0	17.6
Wanted Next Birth Later*	15.8	12.5	13.1	18.1	36.3
Wanted Next Birth Soon	16.1	19.4	12.7	13.0	12.1
Total Unmet Need for Conctraception	51.2	47.4	56.1	50.9	62.8
for spacing *	30.2	22.5	36.7	37.2	43.9
for limiting*	21.0	24.9	19.4	13.7	18.9
Number of Case	7405	3769	1563	1396	677

Note. + Stands for birth limiting need. * Stands for birth spacing need.

Women who were not pregnant or amenorrheic, were classified into four types using physiological characteristics: (a) had menses within the last month, or (b) never got pregnant and had their menses more than a month back, or (c) had their menses within the last month and their open birth interval was more than five years, or (d) had their last menses more than a month back and their open interval was greater than five years. Women falling in the first three categories were classified as fecund, encompassing 50.5 percent of all women, while a very small proportion of women were classified as infecund (only 4.4 percent). These infecund women were not classified as having unmet need. These figures would be higher if we had information on menopausal cases.

Fecund respondents were asked about their fertility intentions and the timing of the next birth, if they desired another child. Almost 32 percent of these women reported their desire for another child. Among these, women who wanted it after one year were classified as 'wanting births later', while the rest were pooled as 'wanting soon.' Non-contracepting fecund women who did not want another child (18.6 percent) or those desiring a child late (16.1 percent) were classified as having an unmet need for contraception (Figure 1).

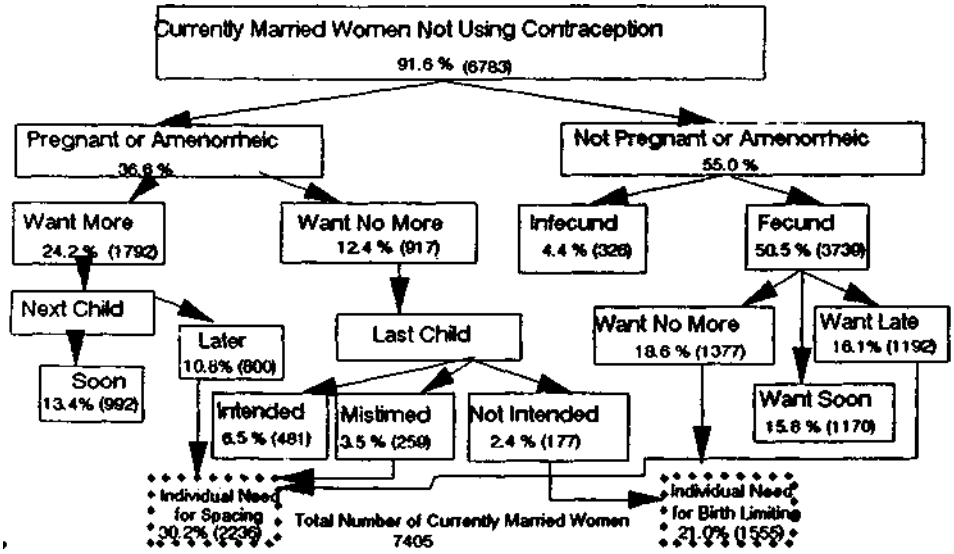

Fig. 1. Components of Individually Perceived Unmet Need for Contraception.

Results

Summing the appropriate cells of women classified as experiencing unwanted pregnancies and those desiring to delay, 51.2 percent of all currently married women had an unmet need for contraception (see Table 1). More of these women (30 percent) have desired to have space between births than to limit these (21 percent). There are two major findings to be noted here: first, the level of unmet need (51.2 percent) is high relative to the earlier estimates for Pakistan (Shah and Ahmed 1982); and second, the unmet need for spacing births has emerged strongly, indicating that women in Pakistan are conscious about their need to delay their next pregnancy. This finding is consistent with the results found for a sample of women from Lahore city where women used contraception primarily to lengthen their birth intervals (Ahmed 1989). This aspect of birth spacing needs to be seriously considered by planners in reformulating their approach to supplying services. Absence of adequate services to such birth spacers would lead to a higher rate of unwanted pregnancies and consequently fertility rate. Therefore, programme needs to be developed in accordance with the needs of people and should encompass a strategy that provides women with easy access to contraceptive methods without any feeling of embarrassment to such women.

Results for individual provinces reveal that unmet need varies by the development stage of each province. Baluchistan, which is the least developed and urbanized province, shows the highest level of unmet need (62.8 percent). Unmet need for contraception is lowest in Punjab (47.4 percent), where almost equal level of need for birth spacing and birth limiting has been estimated. Except for Punjab, women in other provinces depicted birth spacing need over birth-limiting need.

Differentials in Unmet Need for Contraception

Among all women classified as having unmet need, about 59 percent were estimated to have a felt birth spacing need. In the two least developed provinces, NWFP amd Baluchistan, the felt need for birth spacing is around 70 percent (Table 2; see also Figure 2). The task for programme managers may be quite difficult in these two provinces, where women are rarely seen outside the home and tribal systems often restrain their social interaction with female strangers. To reach these isolated women, traditional birth attendants could be used not only to provide antenatal and postnatal care but to promote family planning also. Differentials are also examined for the following: place of residence, number of living children, prior expeience of child loss, education and age of women.

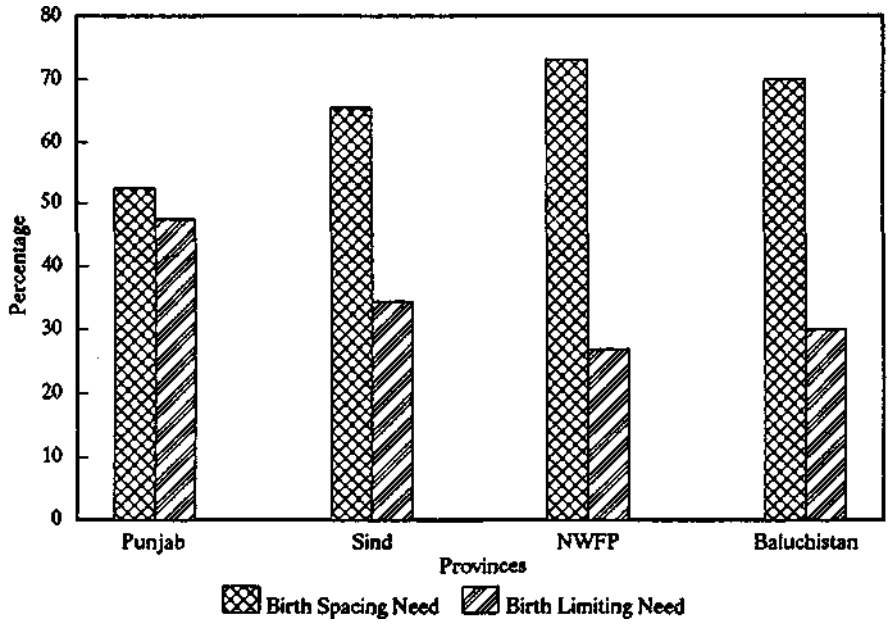

Fig. 2. Percentage of Currently Married Women with Unmet Need for Contraception for Spacing and Limiting Births by Space

TABLE 2: PERCENTAGE DISTRIBUTION OF VARIOUS CHARACTERISTICS FOR CURRENTLY MARRIED WOMEN WITH UNMET NEED FOR CONTRACEPTION IN PAKISTAN AND PROVINCES

Provinces					
Characteristics	*Pakistan*	*Punjab*	*Sind*	*NWFP*	*Baluchistan*
Percent with Unmet Need	51.2	47.4	56.1	50.9	43.9
	100.0	100.0	100.0	100.0	100.0
		Of Those With	Unmet	Need, Percentage	
Unmet Need by Type Spacing Limiting	59.0 41.0	52.5 47.5	65.5 34.5	73.1 26.9	70.1 30.0
Place of Residence					
Urban	37.3	35.1	45.0	34.6	35.2
Ruran	62.7	64.9	55.0	65.4	64.8
Loss of Infant/Child					
No	59.4	56.0	62.3	68.3	52.8
Yes	40.6	44.0	37.7	31.7	47.2
Number of Living Children					
0	9.0	7.6	8.3	12.4	10.8
1-3	39.3	38.7	38.8	43.4	35.7
4+	51.7	53.7	52.9	44.2	53.5
Either Spouses Approve Use of Contraceptive					
No	74.4	68.7	77.4	80.6	81.5
Yes	25.6	31.3	22.6	19.4	18.5
Contraception Use Slatusl Never Used Never Will	72.6	65.8	77.0	79.3	80.3
Never Used But Will	21.4	26.2	19.3	16.4	14.6
Used Before	6.0	8.0	3.7	4.4	5.1
Education	85.1	82.3	85.4	87.3	92.5
Grade 1-5	7.8	9.6	7.0	6.6	3.8
Grades 6-10	7.1	8.1	7.6	6.1	3.8
Grades 11 +					
Age Groups 15-19	7.1	5.6	8.2	11.1	4.2
20-24	18.1	17.7	17.4	19.0	19.7
25-29	22.3	21.0	22.6	25.5	22.1
30-34	16.4	16.2	15.1	17.2	18.3
35-39	16.9	18.0	16.9	13.9	17.4
40-44	12.5	14.4	12.3	8.9	11.5
45-49	6.7	7.1	7.5	4.4	6.8

Theoretically, we know that women at various stages of reproductive career differ in their desire to limit or space births. (It would, therefore, be appropriate to examine women in various groups by their contraceptive use and their desire status to space or limit births.) As expected, we see in Table 2 that unmet need for contraception for birth spacers has negative relationship with age. Younger women are more likely to want to space births while older cohorts desire to limit births (Figure 3). The unmet need for spacing here is an indicator of younger cohort of women who adhere to traditional high ideals about family size but want their children to be spaced. In other words, assuming a similar age composition in all provinces, the fact that relatively more women fall in the birth limiting category in Punjab may imply a hidden fertility transition waiting to be uncovered and accessed through program outreach services.

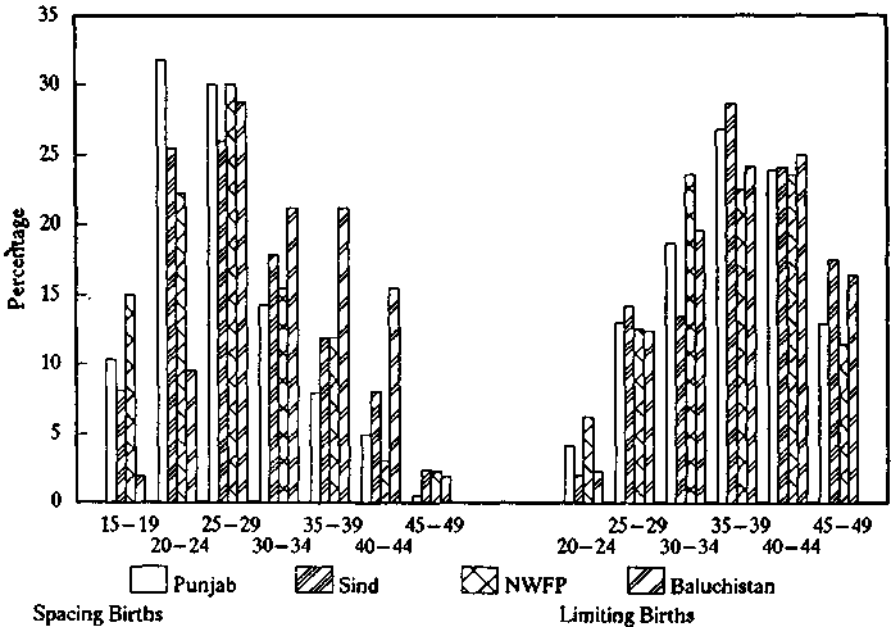

Fig. 3. Percentage of Currently Married Women with Unmet Need for Contraception for Spacing and Limiting Births by Age and Province

A fairly large proportion of younger women desire to have their next birth within a year, but in no age group does a majority of women want another birth soon. Contraceptive use rises with age reaching a peak of 21 percent in the ages 30-39. Contraception needs of those below age 30 require an entirely different approach than the women above age 30, because of the underlying differential in the purpose of using it.

Unmet need for contraception does not differ much by place of residence. Urban women reported a greater use of contraception but more specifically for birth limiting purposes. Such a higher use rate by urban women may be attributed to their higher education and easier access to modern contraceptives. Even though educated women are more likely to adopt family planning than less educated women, still almost half of all highly educated women fall into the unmet need group.

Loss of a child presents a unique picture. In our sample, 38 percent of all women reported experiencing a loss of a child over their childbearing period. Relatively more women who experienced a loss depict their unmet need, primarily for limiting births. On the contrary, women not experiencing a loss reported their desires to space or wanted a birth soon. This underlying differential may be due to the age of the respondent as older women had greater chances of experiencing of child loss than younger ones. Furthermore, women with repeated births in early years of marriage would prefer to space their future births.

The number of living children exhibited a relationship similar to that of age. Unmet need rises with number of living children, more so for spacing if she had fewer than four children and for limiting births if the parity size was equal to or above four. Women who have four or more living children are much more serious to consider limiting future births. This finding carries substantial weight and should be incorporated by programme planners in their strategy to rapidly reach women with more than three living children.

One area that has not received adequate attention is the attitudes of women towards contraception. Such attitudes relative to behaviour can be classified in terms of intentions to use, as follows: (a) current users; (b) hard core non-users who never did and do not intend to use; (c) potential users, who never did use but approve contraceptive use; and (d) drop-outs. The last two groups may be persuaded to adopt contraception through education.

Observing women with an unmet need for birth limiting with respect to their prospective contraceptive use status, a substantial percent of them reported their intentions to use contraception, especially in urban areas of Sind and Baluchistan (see Figure 4). The hard core non-users are more prominent in rural areas of all provinces. This presentation highlights the gravity of situation, especially when these women desire to limit their reproduction and avoid excess fertility. This group needs special attention of extension and outreach services to educate and encourage them to use contraception. Programme managers in Pakistan need to learn from the experiences of other countries like Indonesia and Bangladesh so as to increase local programmes of population education. These hard core non-users need to be the focus for further research to see how they intend to achieve their desired goal of limiting births.

Multivariate Analysis

None of the analysis estimating the unmet need for contraception controlled for more than one independent covariate. Two variables are added to this analysis. The first variable is the gender composition of living children, included to see if women exhibit any differential on unmet need with respect to the sex of their children. The differential was examined for three categories of gender composition: more boys, more girls, and the same number of boys and girls. Women with different number of boys and girls had very similar levels of unmet

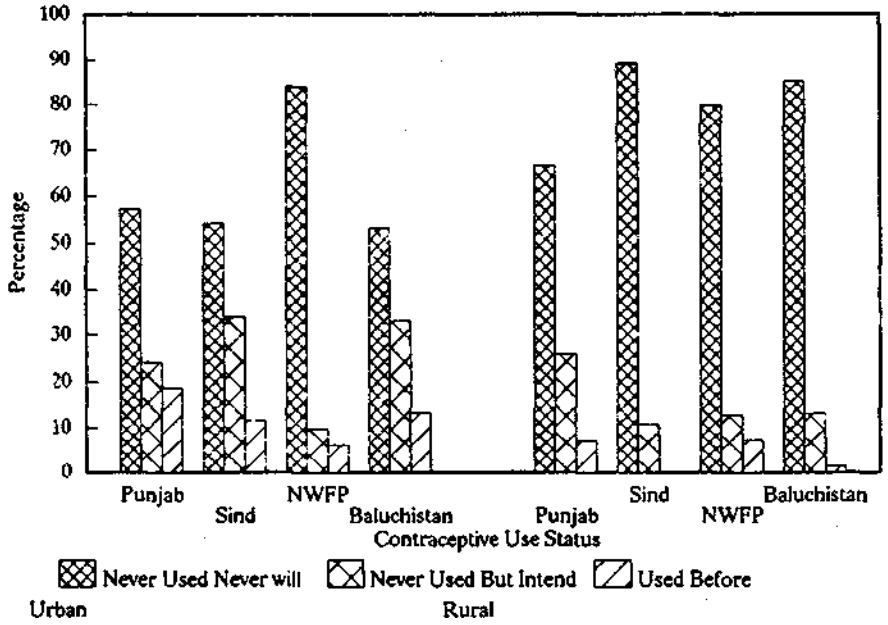

Fig. 4. Percentage of Currently Married Women with Unmet Need for Contraception for Limiting Births by Contraceptive Use Status

need. These categories were, therefore, lumped together. Second, husband's education was added to see if it made any difference when the respondent's education is also considered. These variables are considered to be the main ones explaining the differentials in unmet need. Variables regarding ever use and attitudes towards contraception were not added to avoid any problem of the reverse effect between the two variables. The percentage distribultion of the covariates in the analysis does not exhibit many major differences across provinces (Table 3). Women from NWFP and Baluchistan have lower education than their counterparts from Punjab and Sind. The lowest level of infant /child loss was reported by women from NWFP and highest by women from Baluchistan indicating some probable reporting error in NWFP.

Logistic regression was chosen for the analysis with the dependent variable categorized T if the respondent depicted unmet need for contraception, and 'zero' otherwise. The analysis was conducted in three stages : (a) univariate logistic regression for all variables, (b) full regression models for Pakistan and all provinces, and (c) regression with selected unmet need groups to see how women differed in their classification of having birth limiting or birth spacing needs.

Determinants of Unmet Need for Contraception

Logistic regression results are reported as odds ratio values (Table 4) derived by taking the exponential of the coefficients of each variable. An odds ratio greater than 1.0 indicates an increased likelihood of a woman's being categorized in the unmet need group and vice versa. In this analysis, one reference category for each independent variable was specified to see its effect on unmet need relative to each category.

Univariate logistic regression was conducted to see if each variable exhibited any significant independent relationship. All variables did exhibit the expected association and direction of the coefficients. All the full models showed large-log(L) values relative to the degrees of freedom. This goodness of fit rejects the null hypothesis that the effects of all variables are zero. The full models for Pakistan and Punjab exhibit a better fit than the other full models.

TABLE 3 : PERCENTAGE DISTRIBUTION OF COVARIATES FOR CURRENTLY MARRIED WOMEN WITH UNMET NEED FOR CONTRACEPTION IN PAKISTAN AND THE PROVINCESi

Covariales	*Pakistan*	*Punjab*	*Sind*	*NWFP*	*Baluchistan*
Age					
< 25	26.3	26.7	26.2	26.7	23.0
25-34	38.8	37.5	38.1	41.0	43.1
35-44	27.4	27.4	27.9	26.8	27.5
45+	7.5	8.4	7.7	5.5	6.4
Education					
Grades < 6	82.8	80.6	81.3	87.0	89.7
Grades 6-10	8.5	10.0	8.5	6.2	4.6
Grades 11 +	8.7	9.4	9.9	6.8	5.7
Husband's Education					
None	50.4	48.4	46.7	54.9	60.7
Grades 1-5	25.7	28.8	21.1	25.6	19.2
Grades 6-10	15.4	15.2	21.2	11.7	10.0
Grades 11 +	8.5	7.6	10.9	7.8	10.0
Number of Living Children					
0	12.7	12.9	10.9	13.5	13.7
1-3	40.3	40.9	41.4	38.5	38.4
4-7	39.3	38.2	41.3	39.3	40.0
8+	7.8	8.0	6.5	8.7	7.9
Loss of Infant/Child					
No	62.0	59.8	64.9	68.5	54.1
Yes	38.0	40.2	35.1	31.5	45.9
Place of Residence					
Urban	39.3	35.3	50.2	38.0	39.1
Rural	60.7	64.7	49.8	62.0	60.9
Gender Composition of Living Children					
Diff No. of Boys & Girls	71.0	71.2	71.5	70.9	68.5
Same No. of Boys & Girls	29.0	28.8	28.5	29.1	31.5
Total Percent	100.0	100.0	100.0	100.0	100.0
Cases	7405	3769	1563	1396	*6^1*

In contrast to the results obtained from the univariate analysis, the full multivariate model for Pakistan shows a different pattern. For example, not all coefficients are significant and the direction of the effect of some variables is also different. The odds ratio values associated with age (interpreted as the chance of being classified as having an unmet need for contraception) decline gradually and are lowest for women aged 45 and higher, after controlling for number of living children and other variables.

TABLE 4 : ODDS RATIOS* FOR CURRENTLY MARRIED WOMEN WITH AN UNMET NEED FOR CONTRACEPTION IN PAKISTAN AND THE PROVINCES

Covariates	*Pakistan*		*Punjab*	*Sind*	NWFP	*Baluchistan*
	Univariate	*Mulii-variale*				
Age						
< 25						
25-34	1.085	.784*	.853	.724*	.778	.460*
35-44	1.275*	.742*	.941	.648*	.520*	.432
45+	.860	.468*	.461	.499*	.440*	.446*
Education						
Grades < 6						
Grades 6-10	.803*	"m	.936	.760	1.112	.662
Grades 11+	.643*	.793*	.786	.919	.944	.511
Husband's Education						
/None						
Grades 1-5	.864*	.955	.988	.866	1.178	.709
Grades 6-10	.995	1.014	1.011	.902	1.187	.661
Grades 11+	.668*	.851	1.083	.512*	.781	.938
Number of Living Children						
0						
1-3	1.736*	1.834*	2.116*	1.485	1.810*	1.653
4-7	2.158*	1.556*	3.207*	2.509*	1.478	3.165*
8+	2.841*	3.609*	4.510*	3.646*	2.160*	7.721*
Loss of Infant/Child						
No						
Yes	1.256*	1.124*	1.154*	1.121	1.148	1.028
Place of Residence						
Urban				...		
Rural	1.182*	1.118*	.980	1.409*	1.309	1.377
Gender Composition of Living Children						
Diff No. of Boys & Girls						
Same No. of Boys & Girls	.740*	.985	.976	.845	1.124	.911
LOG (L)	-5023.4		-2523.5	-1030.6	-945.5	-420.6
d.f.	646		530	349	305	212

*** Coefficient significant at 5 percent level.**
+ These values are derived by taking the exponential of each binary logit regression coefficient.
... Stands for the reference category of the variable.

Results for the education of women depicted a similar pattern. Comparing the odds ratios from null model with the univariate analysis, we find that parity exhibits strongei effect at higher level when other variables are also controlled.

The literature points out the problem of the lack of an intuitive interpretation associated with odds ratio. Estimation of predicted values that lie between zero and one are interpreted as the expected percentage point difference of having an unmet need for contraception, net of other variables in the whole model. Furthermore; these probabilities are non-linear in prediction, such that marginal effects decrease at the tails of the distribution of independent variables (Morgan and Teachman 1988: 933).

Using the logistic regression coefficients, probability estimates were calculated for each variable assuming mean values for all other covariates in the model. For parsimony, only those results are shown in Table 5 that exhibited statistically significant coefficients in Table 4 for Pakistan's full model.

TABLE 5 : PROBABILITY ESTIMATES OF UNMET NEED FOR CONTRACEPTION BY VARIOUS CHARACTERISTICS IN PAKISTAN AND THE PROVINCES

Characteristics	*Pakistan*	*Punjab*	*Sind*	*NWEP*	*Baluchistan*
Total	*512*	*.471*	*.563*	*.505*	*.638*
Age					
< 25	.570	.506	.634	.585	.766
25-34	.510	.466	.557	.523	.601
35-44	.496	.491	.529	.423	.586
45+	.383	.321	.464	.383	.594
Education					
< 6	.520	.478	.571	.508	.652
6-10	.486	.461	.502	.481	.553
11+	.462	.418	.550	.493	.489
No. of Living Children					
0	.340	.271	.408	.395	.439
1-3	.486	.440	.505	.541	.564
4-7	.568	.544	.633	.491	.713
8+	.650	.627	.715	.585	.858
Loss of Infant/Child					
No	.501	.457	.533	.494	.636
Yes	.530	.492	.581	.529	.642
Place of Residence					
Urban	.495	.474	.520	.464	.593
Rural	.523	.469	.605	.531	.667

On average, currently married women in Pakistan have about 51 percent chances of having an unmet need for contraception. Observing the same for the provinces, we find the Baluch women having the highest probability while women from Punjab have relatively

lower chances. Both age and education of a woman depict a negative relationship, wherein an older or more educated woman has lower chances of being selected as having the 'need'. Age of woman shows a significant differential in all provinces. This may be taken as an indicator that women experiencing rapid childbearing quickly realize the need to space or limit births. Furthermore, the lack of easy access to contraceptive services may aggravate the situation.

Education does not show significant differentials in probability estimates for the provinces. In contrast, parity emerges as the most prominent and significant variable having a positive association with unmet need. This result is as expected. Underlying this variable is the pace of reproduction which points towards the fatigue associated with rapid childbearing of women that accumulates at each higher parity. Though reproduction brings prestige and honor to the family and for women, it is the rapidity of births and the associated demand for her time for child care that increases a woman's desire to space future births. One crucial stage to be noted by programme planners is the point at which a certain group's probability exceeds the overall probability. For instance, it is after the birth of the third child that the probability value lies beyond the national average of 51.2 percent. To start with, population planners in Pakistan should concentrate heavily on women with at least four children. Moreover, women experiencing a loss of a child/infant or rural residents are shown to have higher chances of having an unmet need.

We find a great deal of similarity of results for Pakistan and the provinces. This indicates that one broad national policy to enhance contraceptive out-reach for target groups based on age, parity, place of residence, and education can be functional for all provinces. More educated women are easily convinced and persuaded to use contraception, but their small numbers in a highly conservative and orthodox environment may not make a big difference in increasing the actual demand for contraception. Another crucial aspect of policy concern is the type of unmet need for contraception. This issue is discussed below.

Determinants of Type of Unmet Need

This section focuses on the categories of unmet need, whether it is for birth spacing or limiting purposes. Full models were run for Pakistan and the provinces (Table 6) comparing women desiring to limit their births (coded 1) with women desiring to space their births (coded zero). Table 6 shows the odds ratios of the desire to limit births against the desire to space births. The full model for Pakistan with high log(L) values rejects the null hypothesis, with four variables showing statistically significant coefficients. Observing the odds ratios for different variables we find these to be difficult to interpret.

Probability estimates were calculated for all variables with the results presented in Table 7. These values need to be interpreted carefully as the comparison is made between two different groups of women. A probability estimate of .289 for Pakistan indicates that among all women with an unmet need for contraception, there is about a 29 percent chance that a woman desired to limit her births. We observe that the probability of a limiting birth increases rapidly with age. In contrast, at younger ages, the probability that women would desire to delay their births is quite high.

TABLE 6 : ODDS RATIOS* FOR CURRENTLY MARRIED WOMEN WITH UNMET NEED FOR CONTRACEPTION FOR LIMITING BIRTHS VERSUS SPACING BIRTHS, PAKISTAN AND THE PROVINCES

Covariates	*Pakistan*	*Punjab*	*Sind*	*NWFP*	*Baluchistan*
Age					
< 25					
25-34	3.038*	2.735*	7.349*	1.514	3.280
35-44	10.580*	12.160*	35.120*	3.871*	8.261*
45+	30.430*	53.840*	104.9	6.498*	51.290*
Education					
Grades < 6					
Grades 6-10	1.305	1.127	1.014	1.146	2.076
Grades 11+	1.840*	2.367*	1.020	.924	3.891
Husband's Education					
None					
Grades 1-5	1.359*	1.452*	1.811*	.606	.707
Grades 6-10	1.200	1.513*	1.162	.459*	1.285
Grades 11+	1.221	.929	2.518*	1.454	.681
Number of Living Children					
0					
1-3	1865.0*	2584.0*	1533.0*	871.3*	1551.0*
4-7	7553.0*	17450.0*	2967.0*	4780.0*	6175.0*
8+	15720.0*	32490.0*	4402.0*	12040.0*	20160.0*
Loss of Infant/Child					
No					
Yes	.939	.987	.793	.750	.977
Place of Residence					
Urban					
Rural	.937	1.042	.887	.996	.349*
Gender Composition of					
Living Children					
Diff No. of Boys & Girls					
Same No. of Boys & Girls	1.151	1.218	1.481	.783	1.197
LOG (L) d.f.	-1714.9 507	-721.1 382	-391.3 251	-285.2 214	-.172.9 156

Dependent Variable Women with Birth Limiting Need = 1 Women with Birth Spacing Needs = 0 * Coefficient significant at 5 percent level.

+ These values are derived by taking the exponential of each binary logit regression coefficient. .... Stands for the reference category of the variable.

TABLE 7 : PROBABILITY ESTIMATES FOR WOMEN WITH AN UNMET NEED FOR CONTRACEPTION FOR LIMITING BIRTHS VERSUS SPACING BIRTHS BY VARIOUS CHARACTERISTICS IN PAKISTAN AND THE PROVINCES

Characteristics	*Pakistan*	*Punjab*	*Sind*	*NWFP*	*Baluchistan*
Total	*289*	*.426*	*.169*	*.102*	*.117*
Age					
< 25	.095	.146	.023	.061	.033
25-34	.242	.319	.150	.089	.101
35-44	.526	.676	.457	.200	.22!
45+	.761	.902	.716	.296	.637
Education					
Grades < 6	.229	.407	.169	.103	.110
Grades 6-10	.901	.436	.171	.096	.203
Grades 11+	.354	.619	.172	.096	.324
Husband's Education					
None	.265	.387	.141	.124	.125
Grades 1-5	.329	.478	.228	.079	.092
Grades 6-10	.302	.488	.150	.061	.155
Grades 11+	.306	.370	.292	.170	.089
No. of Living Children					
0	.000	.000	.000	.000	.000
1-3	.266	.310	.203	.103	.110
4-7	.595	.752	.330	.387	.331
8+	.753	.850	.422	.613	.618
Loss of Infant/Child					
No	.294	.428	.182	.111	.119
Yes	.281	.425	.150	.086	.116
Place of Residence					
Urban	.296	.420	.179	.118	.208
Rural	.284	.430	.162	.095	.084
Composition of Living Boys and Girls					
Diff. No. of Boys and Girls	.282	.414	.156	.103	.112
Same No. of Boys and Girl	.311	.463	.214	.102	.132

All things considered, women in Punjab exhibit the highest probability of desiring to limit their future births. This is particularly true for women aged 45 and above. Women in NWFP and Baluchistan consistently show higher preferences for spacing births at all ages, indicating that the demand for large families exists at all ages. With respect to education, the need for limiting births gets large only at higher levels. Number of living children emerges as a major factor affecting the desire to limit births. This variable, too, highlights the significance of the large family norm affecting the perpetuation of fertility behaviour. The absence of loss of an infant or a child in the family as a significant variable implies that such parents still want to have more children but prefer them to be spaced. Our results point

out that the probability of women to space births is quite high in Sind, NWFP, and Baluchistan.

Finally, looking at the education of husbands, we find significant results for three provinces (see Table 7). The odds ratios and probability estimates show a nonlinear association between husband's education and woman's need to limit births. The pattern of effect is different among provinces. In other words, husbands's education shows a variant relationship at various levels in different provinces. Comparing the effects of education of wife and husband, we see education of wife to have a prominent effect on limiting births.

The complementary nature of the two groups of unmet need in this analysis shows that a fair number of women are well aware of the need for birth spacing. This is definitely a positive sign for planners to focus their attention, as an increase in birth spacing has been shown to negatively affect the number of children (Ahmed 1989).

Pakistan's family planning program has mostly focussed on limiting aspect of family size, while our analysis indicates that there is a major interest among women to space their births. A question not asked in this survey or any other survey in Pakistan relates to 'how women with an unmet need for contraception would achieve spacing between births.' Answers to such queries would highlight the real hidden demand and the grass root solution to accomplish it. Do women have adequate knowledge about contraceptives? Would they opt to use a contraceptive if access is made easy? If they do not intend to use, then what alternatives do they have to either space or limit their births?

Discussion and Conclusions

Childbearing in Pakistan is considered a religious and social imperative duty. But repeated childbearing over the first few years of marriage makes Pakistan's woman conscious of the disadvantages of rapid reproduction. Our analysis has brought out the needs of women subject to natural fertility conditions in Pakistan. Substantial percent of women express their need for both spacing and limiting births that is not being met by the use of effective contraceptive methods. Young, low parity women in particular require education about contraception that is sensitive to their needs. Women above age 30 or with four or more children should be a part of local and national campaign to limit their births. However, bringing about even a moderate change in fertility is a major challenge.

Is Pakistan's family planning program capable of accomplishing even a moderate decline in fertility? Population policy in Pakistan has always been an ambitious program, but it never achieved its major objectives. The government planned to increase the program services through increasing family welfare centers and their functions, increasing the involvement of NGO's and especially focussing on the contraception distribution scheme (Robinson 1987). Besides, demand generation through 'target group institutions' and the use of mass media was incorporated. Pakistan's program has been predominantly supply oriented and has not successfully incorporated ways to accomplish the motivational needs of the people. An inefficient administrative structure and inappropriate policy attention to the demand aspect seem to inhibit the progress. Inefficiency seems to have inhibited the supply of contraception to the needy of the programme. Furthermore, the reason of failure also lies in

its lack of commitment, urban orientation while the bulk of unmet demand exists in rural areas.

Our analysis has shown the existence of a large unmet demand for contraception. The urgent need is to maintain an efficient supply of contraceptives but concentrate on social education and persuasion of women to use contraception in accordance with their needs of spacing or limiting births. Social education needs to focus on proper orientation and information regarding various methods. In this regard Simmons (1986) emphasizes the improvement in the quality of services, reduction in contraceptive cost, strengthening of out-reach to have a stronger independent effect on a couple's decision about contraceptive use. Once unmet demand is transformed into the actual practice of contraception, the transition in fertility would set its momentum for an accelerated change over time. The strategy to reach women needs to be in accordance with local customs and the programme needs to be implemented in ways that are least embarrassing and threatening to traditions. The need is at the grassroots level, which calls for grass root work. In this regard the institution of *dai* (midwives) needs to be expanded and organized on more pragmatic basis in order to transform the unmet demand into actual demand for contraception and as a source of social education and the supply of needed services.

An important issue that has been usually ignored is the availability of contraceptive mix according to preferences and living conditions of the people. For instance, condoms are not appropriate method for a very large number of couples living with large families in one room houses. Moreover, pills are to be taken on regular basis by rural women who have too much on their minds and can easily forget and lose protection against pregnancy. This narrows down the available contraceptive methods. Women desiring to delay their next birth need more efficient methods like IUDs, or injections, while women with high parity must be persuaded to get sterilized for fuller protection. Accordingly, there is an urgent need to conduct research to see the types of methods that are suitable and are preferred by couples in various socio-economic strata, so that women be serviced according to their needs.

At a societal level, a transition in family norms from larger to smaller size would increase the unmet need for contraception unless such services are made available efficiently. A society exhibiting norms of gender bias may show higher unmet need levels. Such biases not only keep contraceptive use low but repeated reproduction may lead women to exceed their desired levels.

At the macro level, the rate of growth of the population plays a significant role too. In order for the unmet need for contraception to stay at the same level or to subside, program managers and planners should ensure that the rate of growth of accesss to contraceptive services should exceed the rate of growth of currently married women. On the whole, absolute changes in the contraceptive use level may not mean much if the increase in the female population in need of contraception is faster. The main factor that can reduce the levels of unmet demand is the enhanced programme of population education with adequate availability and use of efficient contraceptive methods for birth spacing or limiting purposes. This implies that women who show their awareness and consciousness towards planning future births be able to do so.

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