

# GEOGRAPHY OF UNMET NEED FOR FAMILY PLANNING AND FACTORS OF NON-USE OF CONTRACEPTION IN NEPAL

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## INTRODUCTION

Unmet need normally refers to the proportion of currently married fecund women who either want no more children or want to postpone their childbearing for specific period of time but are not practising contraception. The discrepancy between such reproductive preferences and actual practice of birth control i.e., the KAP-gap (or unmet need) is usually high in countries that are passing through demographic transition. Unmet need for family planning, in other words, refers to the additional contraceptive use that would be required to remove the KAP-gap. An absence of KAP-gap means all women are practising contraception in accordance with their reproductive preferences for spacing and limiting (Bongaarts; 1991).

In Nepal, after four decades of organized efforts by the government and non-government agencies, the practice of family planning services has been minimal. The contraceptive prevalence rate is still less than 25 percent (1991) and only a small number of births have been averted due to family planning program (Thapa; 1989). In the 1990s, approximately 28 Percent of currently married fecund women who want no more children or postpone their childbearing, are not using any methods of birth control. Although this apparent gap is the primary rationale for foreign aid and investment in family planning program in Nepal, our understanding of the levels of unmet need and its correlates is extremely poor.

The main purpose of this paper is to investigate the current level and geographic variation in unmet need for family planning in Nepal. Owing to the country's vast physiographic diversity, the level of unmet need is expected to differ significantly by regions such as ecological, developmental and rural-urban residence. It is argued that intra-regional variations in demand as well as in unmet need for family planning are greater than inter-regional variations. Geographic, socio-demographic and program variables play an important role in determining the use [or non-use] of contraception. This paper uses multivariate logistic regression to determine the relative risk of contraceptive use by geographic and other variables.

## CONCEPTS AND APPROACHES

The total unmet need is the sum of both "unmet need for spacing" and "unmet need for limiting." Spacing refers to those currently married women of reproductive age who are fecund, do not want any additional children for at least two years and who are not using any method of contraception. Likewise, limiting includes those women who have reached their desired family size, do not want any more children, want to avoid pregnancy and who are not using any method of family planning. The estimation of unmet need includes all currently married women of



reproductive age with their articulated reproductive intentions irrespective of real or perceived objections from their husbands about their intentions.

Literature suggests various approaches to unmet need estimation. Over time, with the availability of more detailed data, several refinements have been made on the earlier approaches. Bongaarts (1991) has summarized some of the approaches. These include: conventional approach, instantaneous KAP-gap, total unmet need and alternative approach.

*Conventional approach* to unmet need is based on two basic information namely the current practice of contraception and the desire for more children. Thus, conventional KAP-gap or unmet need is the percentage of currently married women of reproductive age who want no more children and are not using any method of contraception.

The *instantaneous KAP-gap* is an improvement over conventional approach and includes information about spacing preferences and the risk factor such as pregnancy, infecundity and breast-feeding status. The instantaneous KAP-gap can be defined as the percentage of currently married women of reproductive age who at the time of survey (i) are exposed to the risk of being pregnant, (ii) want no more children or postpone pregnancy, and (iii) are not using contraception. Some calculations of instantaneous KAP-gap also exclude those women who are not sexually active in the month prior to the survey and those who are unsure about their want to stop childbearing (see Westoff: 1988a).

Bongaarts(1991) pointed out that since women continuously move in and out of their exposed status, the following unwanted and mistimed pregnancies cannot be eliminated by the provision of contraception to a small number of women who at one point in time belong to the instantaneous KAP-gap. Women exposed to the risk of conception and sexually active are at a very high risk of conceiving. A large increase in contraception is a must to eliminate the unwanted and mistimed pregnancies than suggested by the instantaneous unmet need. Thus, the approach should be to estimate "total" unmet need. The total unmet need refers to the increase in contraceptive use that would have reduced fertility to intended levels. Some unintentionally pregnant and amenorrhic women at one point in time would have been current users if their demand at the time of conception had been met. With this assumption, Westoff (1988b), in the estimates of *total unmet need*, included women who were currently pregnant or amenorrhic if their pregnancies were unwanted or mistimed.

The alternative approach to unmet need takes into account of the shortcoming of three approaches mentioned above i.e., conventional, instantaneous KAP-gap and total unmet need approach (Westoff's method). This approach includes the adjustment factor and corrects for: (i) the reduction in the need for limiting resulting from satisfying the demand for spacing and (ii) the overestimation of need for spacing.

The adjustment is based on the fact that satisfying demands for spacing will reduce some proportion of demand for limiting. Thus, Bongaarts (1991) proposed an

alternative approach for a maximum and a minimum estimate of the total unmet need.

A maximum estimate is calculated through:

$$U_{max} = L + S - A$$

where

L = unmet need for limiting based on Westoff's method

S = unmet need for spacing based on Westoff's method

A = adjustment factor equal to the reduction in the need for limiting resulting from satisfying spacing demands.

The assumption in calculating the adjustment factor (A) is that fulfilling the unmet need for spacing reduces the unmet need for limiting by an equivalent amount among women who will have a need for limiting. Therefore, the size of (A) is assumed equal to the proportion of married women who are complete reproducers with an unmet need for spacing at the time of survey. The adjustment factor can be calculated by:

$$A = S/M (M - P)$$

Where:

M = Proportion of all currently married women who have not yet reached their desired family size (the proportion who are spacers)

P = proportion of currently married women aged 40-44 who have not yet reached their desired family size

A and S as mentioned above.

If this equation is substituted to the first formula, a *maximum estimate* of unmet need equals:

$$U_{max} = L + SP/M$$

Where L, S, P and M as defined above.

Likewise, A *Minimum estimate* is derived from:

$$U_{min} = L + S' P/M$$

Where:

L, P, and M as defined above and S' stands for unmet need for spacing based on Westoff's method excluding pregnant and amenorrheic women.  $U_{max}$  and  $U_{min}$  differ because in the latter category S, is substituted for S.

Despite these refinements in methods of estimating unmet need, estimation of adjustment factors in both these equations are difficult to calculate. Likewise, further complication arises because there are always some women who fail to reach their desired family size. As a result, many surveys fail to capture precise information on these aspects and surveys in Nepal are no exceptions. Because your



knowledge about unmet need is very limited and since the purpose of this paper is to highlight the geography of unmet need and its correlates rather than getting into methodological complexity, it chooses Westoff's method for analyzing the status of unmet need in Nepal.

#### DATA AND METHODS

Nepal Fertility, Family Planning and Health Status Survey, 1991 (hereafter referred as NFFHS '91) is the main source of data for this study. This survey covered 24,745 households and interviewed 25,384 ever-married women of 15-49 years from 75 districts. The survey was conducted into two phases. In the first phase 26 districts mainly from the Mountains were surveyed between Aug. 11-Oct. 15, 1991. The second phase was conducted between Nov. 27, 1991- Feb. 28, 1992 and covered the remaining 49 districts (for detailed methodology see, MOH/FPMCH, 1993). NFFHS '91 administered two types of questionnaire: the household and the individual questionnaire. The main purpose of household questionnaire was the identification of eligible women and their associated household characteristics whereas the details of women's characteristics, reproductive history, knowledge and practice of family planning, family size, health status and husband's background were obtained from individual questionnaire. The eligible women for administering individual questionnaire were ever-married women aged 15-49 years, who lived together with their husbands and who slept in the sample household the night before the interviewer's visit.

For the analysis of unmet need a distinction is made between "limiters" and "spacers" and estimation of demand and unmet need for both "spacing" and "limiting" has been done. Each level of estimates has been disaggregated by various geographic regions and for selected socio-demographic characteristics. For factors of non-use of contraception the probability of using contraception has been calculated by multivariate logistic regression.

As indicated earlier, the estimation of unmet need in this paper is based on the framework developed by Westoff and Ochoa (1993). As much as the data available from NFFHS '91 allows, the framework has been strictly followed. The adjustment factor has not been calculated. The unmet need for *spacing* is defined as the proportion of currently married fecund (Fecundity is measured by the evidence of menopause. Infecund women are those who reported themselves to be menopausal and had not experienced menstruation for the last six months at the time of survey. This is among currently married women of reproductive age who are neither pregnant or postpartum amenorrhoeic.) women of reproductive ages who are:

- neither pregnant nor amenorrhoeic, not using any method of family planning and want to wait 2 or more years for their next child.
- currently pregnant and whose pregnancy was mistimed
- amenorrhoeic (amenorrhoeic women are those who have not experienced the resumption of menstruation after last birth at the time of survey) whose last birth has mistimed.

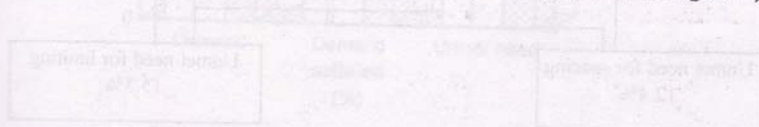
The unmet need for *limiting* is defined as the proportion of currently married fecund women of reproductive age who are:

- neither pregnant nor amenorrhic, not using any methods of family planning and want no more children.
- currently pregnant and whose pregnancy was unwanted
- amenorrhic and whose last-birth was unwanted.

Figure 1 shows the details of the components of unmet need with corresponding percentages currently married women of reproductive ages (15-49 years) based on NFFHS '91. Initially, a distinction is made between contraceptives i.e., those who are using contraception and non-contraceptives. This follows further classifications among non-contraceptives leading into pregnant or amenorrhic and not pregnant or non-amenorrhic. Among expecting women pregnancy is separated into intended, mistimed and unwanted and the intended pregnancies are excluded from calculation. Likewise, among not pregnant women a distinction is made between infecund and fecund and those considered infecund are excluded from calculation. Even among fecund women if they fall under "want children soon" they are excluded. Of the remaining, women with unmet need for spacing and limiting are identified and finally total unmet need is calculated. The figure shows a total unmet need at 27.7 percent with 12.4 percent for spacing and 15.3 percent for limiting.

#### UNMET NEED FOR FAMILY PLANNING

NFFHS '91 showed that among total currently married women of reproductive age 50.5% had a demand for family planning (Table 1, Figure 1).

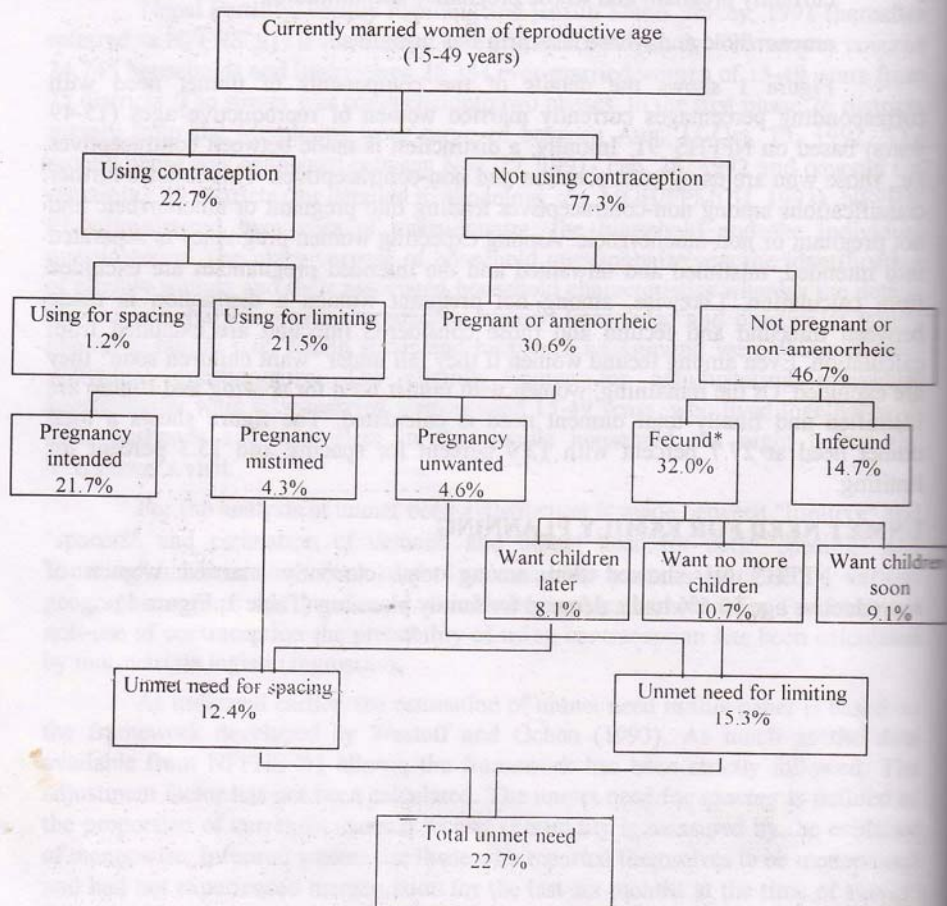


According to NFFHS '91, the unmet need for family planning (UNFP) was 27.7 percent. This was the highest among women of reproductive age (15-49 years) in Nepal. The UNFP was 12.4 percent for spacing and 15.3 percent for limiting. The UNFP was 12.4 percent for spacing and 15.3 percent for limiting. This is indicative of a high level of unmet need for family planning.

The unmet need for family planning differed by sex group. The unmet need was highest among women of reproductive age (15-49 years) in Nepal. The UNFP was 12.4 percent for spacing and 15.3 percent for limiting. This is indicative of a high level of unmet need for family planning.



**Figure-1: Components of Unmet Need with Corresponding Percentages of Currently Married Women of Reproductive Age (Based on NFFHS 1991)**



\* Sub-categories do not add-up 32% due to 4.1% missing.

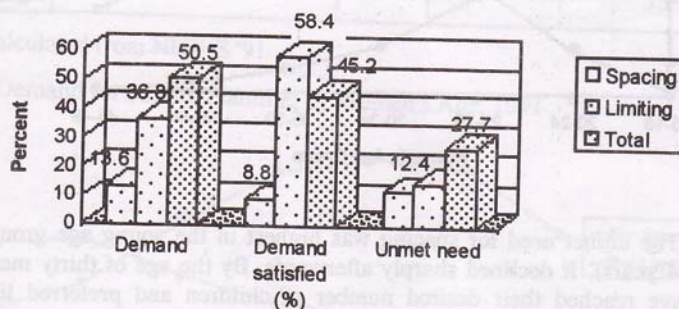
Demand for limiting was nearly 3 times higher than the demand for spacing (i.e., 36.8% as opposed to 13.6%). Only 45.0% of the total demand was satisfied. Of the demand for limiting 58.4% was satisfied whereas only 8.8 percent of the demand for spacing was satisfied. Altogether, this resulted into an unmet need of 27.7 percent. The unmet need for spacing was 12.4 percent whereas for limiting 15.3 percent. Compared with the wide gap in percentage of demand satisfied between limiting and spacing, the difference in the level of unmet need was narrow. The actual difference between unmet need for spacing and limiting was less than 3 points (Table 1).

Table-1: Demand and Unmet Need for Family Planning in Nepal, 1991

S.No.	Description	Spacing	Limiting	Total
1.	Demand	13.6	36.8	50.5
2.	Demand satisfied (%)	8.8	58.4	45.2
3.	Unmet need	12.4	15.3	27.7

Source: Calculated from NFFHS '91.

Figure-1.1: Demand, Demand Satisfied and Unmet Need for Family Planning, 1991



According to NFFHS '91 the contraceptive prevalence rate (CPR) was 22.8 percent. This was an increment by 72.0% over Nepal fertility and family Planning Survey, 1986 which showed the CPR of 13.2% only. The percentage of demand satisfied also increased from 27.4 to 45.0 percent between 1986 and 1991. During the same period, both demand and unmet need for spacing increased significantly (see, IDEA, 1996). This is indicative of advent of temporary method users over the years.

#### UNMET NEED BY WOMEN'S AGE

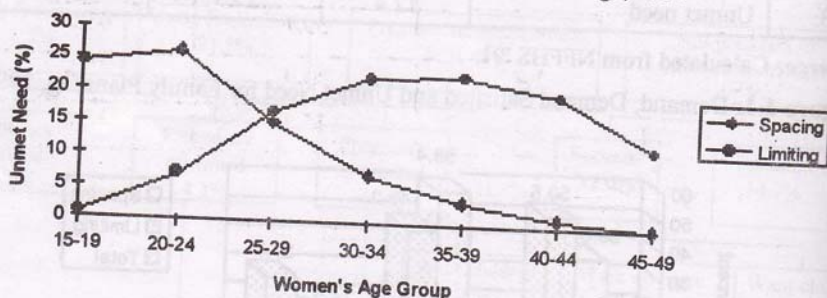
The unmet need for family planning differed by age group of women. The total unmet need was highest among women of 20-24 years of age (Table 2). It gradually declined with an increase in the age group until 40-44 years. The unmet need was very low among women aged 45-49 years. This is understandable because biologically, most women would have very little or no risk of conception by that age.



**Table-2: Unmet Need for Family Planning by Women's Age Group, 1991**

Age Group	Spacing	Unmet Need for	
		Limiting	Total
15-19 years	24.3	1.0	25.3
20-24 years	26.3	7.2	33.5
25-29 years	15.4	16.9	32.3
30-34 years	7.6	22.6	30.2
35-39 years	3.7	23.0	26.7
40-44 years	1.4	20.5	21.9
45-49 years	0.3	12.4	12.7
Total	12.4	15.3	27.7

Source: Calculated from NFFHS '91.

**Figure- 2: Unmet Need for Family Planning by Women's Age, 1991**

The unmet need for spacing was highest in the young age groups (15-19 and 20-24 years). It declined sharply afterwards. By the age of thirty most women would have reached their desired number of children and preferred limiting to spacing (i.e. permanent methods). The unmet need for limiting was very low where the need for spacing was high, roughly equalled at the age group 25-29 years, and reached its maximum at 35-39 years (Fig. 2). Afterwards, it declined successively.

The level of unmet need is related to demand for family planning and the percentage of demand satisfied. More than one group of women as well as two or more areas may posit same level of unmet need but their level of demand and contraceptive prevalence rate may be vastly different. Mere estimate of unmet need is misleading unless this is analysed in the context of total demand and percentage of demand satisfied.

As much the unmet need varied according to age group, the demand also varied and showed a curvilinear trend. The total demand increased from a minimum of 27.5 percent among young women, gradually increased to reach maximum at 35-39 years age group and declined thereafter. The demand for limiting closely followed the trend of total demand (Table 3). In fact, the trend of total demand



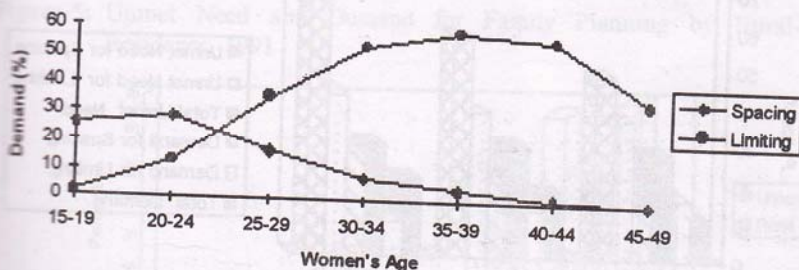
among women of various age groups appeared to be highly dominated by demand for limiting. On the contrary, with an exception of 20-24 years, demand for spacing progressively declined with an increase in the age group of women (Fig. 3). The demand for spacing was negligible among women aged forty and above.

Table-3: Demand for Family Planning by Women's Age Group, 1991

Age Group	Spacing	Unmet Need for	
		Limiting	Total
15-19 years	26.0	1.5	27.5
20-24 years	29.0	13.1	42.1
25-29 years	17.2	36.0	53.2
30-34 years	8.0	54.3	62.3
35-39 years	4.1	59.1	63.2
40-44 years	1.4	56.4	57.8
45-49 years	0.3	35.2	35.5

Source: Calculated from NFFHS '91.

Figure-3: Demand for Family Planning by Women's Age, 1991



UNMET NEED BY WOMEN'S EDUCATIONAL ATTAINMENT

Of the total respondents, only 13.4% had ever attended school. Among them 6.3% had attended primary level and 7.1% had attended secondary level and above. Despite small number of women who even attended school, the role of education was evident in both the total demand and level of unmet need. The total demand increased with an increase in the level of educational attainment. Accordingly, demand was highest among those with secondary and plus education, while it was lowest among women with no education (Table 4). The percentage of total demand satisfied also followed the same trend. The percentage of total demand satisfied was highest among women with secondary and plus education and lowest among women categorized as "no education."

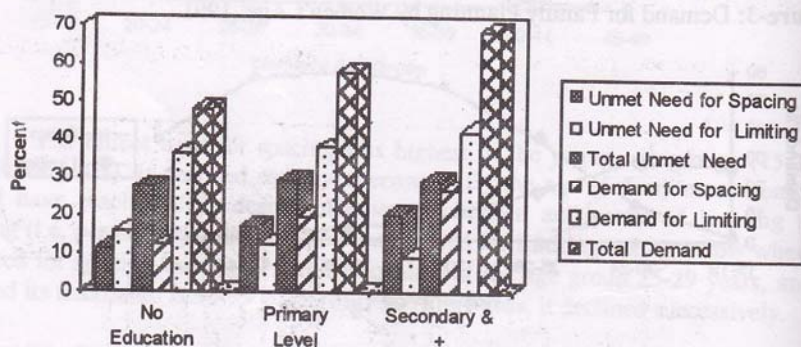
**Table-4: Unmet Need for Family Planning by Educational Attainment, 1991**

S. N.	Educational Attainment	Unmet Need for			Demand for			Demand	
		Spacing	Limiting	Total	Spacing	Limiting	Total	Satisfied	N
1.	No Education	11.4	16.0	27.4	12.2	36.3	48.4	43.3	21070
2.	Primary Level	17.2	12.3	29.5	19.4	38.1	57.6	48.6	1543
3.	Secondary & +	20.4	9.2	29.6	26.6	42.6	69.2	57.3	1720

**Source:** Calculated from NFFHS '91

The total unmet need was lowest among with no education compared with women with some education. This low level of unmet need among "no education" and high among those with both the primary and secondary plus education is because of the high level of demand among educated ones. Although the percentage of demand satisfied was high among educated women, the demand among them was so high that the difference between demand and contraceptive prevalence remain high compared with women with "no education" (Fig. 4).

**Figure-4: Unmet Need and Demand for Family Planning By education of women, 1991**



The role of education in the level of unmet need is nowhere much pronounced than the need for spacing. With an increase in the level of education, the unmet need for spacing increased progressively. On the contrary, with an increase in education the unmet need for limiting decreased. The level of demand for spacing was relatively lower than the level of demand for limiting. Since the percentage of demand satisfied was much higher for limiting, the level of unmet need for spacing remained at a high level. Therefore, the reason for high level of unmet need for spacing compared with limiting has much to do with the differential level of demand satisfied for spacing and limiting. This is indicative of the weakness of family planning program where the emphasis appeared to be more on limiting (permanent method) and less on spacing i.e., temporary methods.



UNMET NEED BY RURAL/URBAN RESIDENCE

Both the total unmet need and demand for family planning differed according to rural-urban residence of women. In urban areas almost every two out of three currently married women of reproductive age had demand for family planning whereas the corresponding figure for rural areas was only two out of four. Rural-urban areas differed significantly in percent of demand satisfied as well (Table 5).

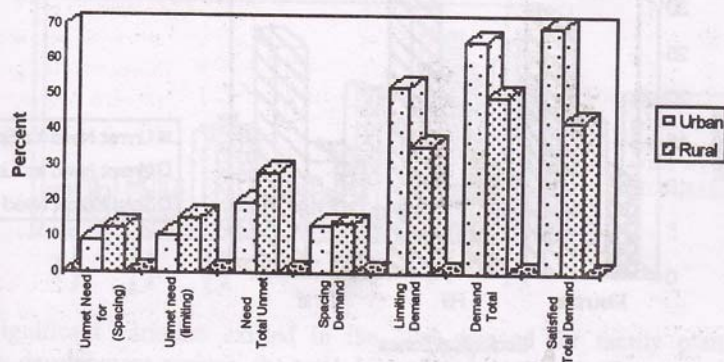
Table-5: Unmet Need and Demand for Family Planning by Rural/Urban Residence, 1991

S. N.	Place of Residence	Unmet Need for			Demand for			Demand	
		Spacing	Limiting	Total	Spacing	Limiting	Total	Satisfied	N
1.	Urban	9.0	10.7	19.7	13.1	52.0	65.1	69.8	1,664
2.	Rural	12.7	15.6	28.3	13.7	35.7	49.4	42.6	22,669

Source: Calculated from NFFHS '91

The level of unmet need was higher in rural areas than in urban areas. While it was as high as 28.3 percent among rural women, it was only 19.7 percent among urban women. Despite high demand for family planning in urban areas, the level of unmet need was low there. Since a large proportion of demand was satisfied in urban areas (e.g., 69.8 percent in contrast to 42.6 percent only in rural areas), the level of unmet need remained at low level there.

Figure-5: Unmet Need and Demand for Family Planning by Rural-Urban Residence, 1991



A large gap existed in unmet need for limiting than for spacing. For limiting demand was high, percentage of demand satisfied was high but still the level of unmet need was also high. Compared with rural areas the level of demand for limiting in urban areas was large by 16.5 percentage points but on the contrary the level of unmet need was lower by almost 5 percentage point. This suggested that to a large extent family planning program has been more effective in urban area than in rural area.

## UNMET NEED BY ECOLOGICAL ZONES

Unlike wider rural-urban differences, the level of unmet need did not vary much by ecological zones. Table 6 reports the estimates of unmet need and demand for family planning by ecological zones of residence.

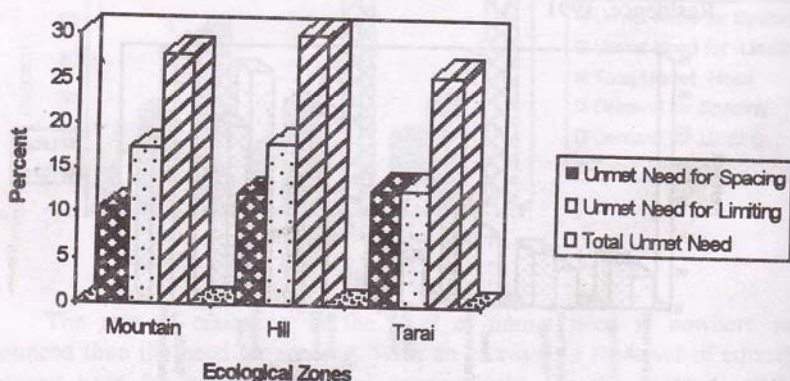
**Table-6: Unmet Need for Family Planning by Ecological Zones, 1991**

S. N.	Ecological Zones	Unmet Need for			Demand for			Demand	
		Spacing	Limiting	Total	Spacing	Limiting	Total	Satisfied	N
1.	Mountain	10.5	17.3	27.8	11.5	31.4	43.0	35.4	1,646
2.	Hill	12.2	17.8	30.0	13.6	38.1	51.8	42.1	10,636
3.	Tarai	12.9	12.9	25.8	13.9	36.4	50.4	48.8	12,051

*Source:* Calculated from NFFHS '91

Of the three ecological zones namely, the Mountains, the Hills and the Tarai, the total unmet need was highest in the Hills i.e., 30.0 percent (Fig. 6). The Mountains ranked second with 27.8 percent. The level of unmet need was least in the Tarai. Disaggregation by spacing and limiting suggested that the Tarai ranked highest for spacing. The level of unmet need was highest among the women of Tarai followed by the Hills and the Mountain, respectively. However, among limiters unmet need was highest in the Hills and declined gradually in the Mountains and the sharply in Tarai. It was unclear whether it was a coincidence or real that the level of unmet need for spacing and limiting in the Tarai was 12.9 percent for both.

**Figure-6: Unmet Need for Family Planning by Ecological Zones, 1991**



The total demand was highest in the Hills and lowest in the Mountains. In all three ecological zones the demand for limiting was far higher than for spacing. Mountains had the least demand for both limiting and spacing. Demand for spacing was highest in the Tarai while for limiting the Hills was ahead of others. The level of demand satisfied increased sharply from the Mountains through the Hills to the Tarai. The same is true if limiting is taken into consideration. However, among spacers, the level of demand satisfied is slightly higher among women of the Hills.



UNMET NEED BY DEVELOPMENT REGIONS

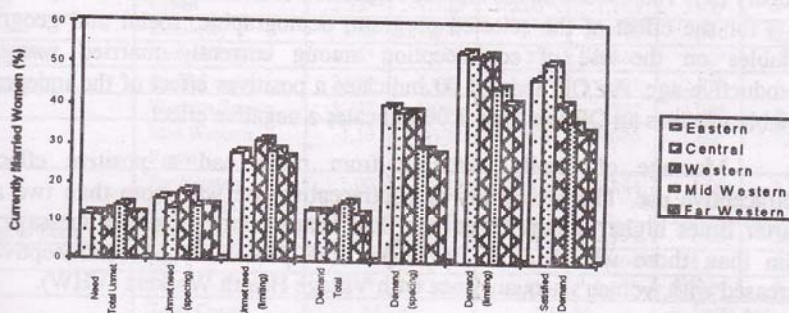
The difference in the level of unmet need among development regions was modest. It ranged from a maximum of 31 percent for Western region to a minimum of 25 percent for Central region. The Mid-western and Eastern regions had almost the same level of unmet need. Unmet need for spacing was highest in the Mid-western region followed by Western, Far-western, and Eastern regions respectively. Central region had the lowest level of unmet need for both spacing and limiting. The unmet need for limiting was highest in the Western region and was followed by Eastern region. Normally, regions with higher literacy, better health facilities and higher level of urbanization had lower proportion of unmet need. However, the level of unmet need must be interpreted with respect to the total demand and percentage of demand satisfied in each development regions.

Table-7: Unmet Need for Family Planning by Development Regions, 1991

S. N.	Development Regions	Unmet Need for			Demand for			Demand	
		Spacing	Limiting	Total	Spacing	Limiting	Total	Satisfied	N
1.	Eastern	12.1	16.1	28.2	13.4	40.1	53.5	47.3	5,973
2.	Central	11.9	13.5	25.4	13.3	38.6	51.8	51.1	7,914
3.	Western	12.7	18.2	30.9	13.9	38.7	52.6	41.2	4,995
4.	Mid Western	14.4	14.2	28.6	15.5	29.5	45.0	36.4	3,167
5.	Far Western	12.2	14.6	26.8	12.6	28.3	40.9	34.4	2,286

Source: Calculated from NFFHS '91.

Figure-7: Unmet Need and Demand for Family Planning by Development Regions, 1991



Significant variation existed in the total demand for family planning services by development regions. the total demand was highest in Eastern region. Most of the demand was for limiting rather than for spacing. For example, of the total currently married women of reproductive age who had demand for family planning three out of every four had demand for limiting there. Western region ranked second in the total demand for family planning but it ranked highest in the total unmet need. Like Eastern region, large portion of the demand was for limiting.

Central Development Region was comparable to Western region in the level of total demand. The difference was in the percentage of demand satisfied



which in turn resulted into difference in the level of total unmet need. The region with least demand was Far-western region. This was also the region with lowest level of demand satisfied and second highest in the level of unmet need.

#### **FACTORS OF NON-USE OF CONTRACEPTION: A MULTIVARIATE ANALYSIS**

Multivariate logistic regression was used to investigate the factors related to the probability of using contraception among currently married women of reproductive age. Three separate models were used. The dichotomous dependent variable used for all three models was the use of contraception. The first model (model I) included use of all methods of family planning as dependent variable whereas the second model (model II) looked to the use of sterilization i.e., permanent method. Likewise model III included the use of only temporary methods. In all models Three sets of explanatory variables were used in the models. These included: program variables, demographic variables, and social and geographic variables. Message of family planning from radio and acquaintance with the Village Health Workers (VHW) were taken as proxy for program variables. Women's age and number of living sons were taken as proxy for demographic variables. Women's education, residence by rural-urban, ecological zones and development regions were included as proxy for social and geographic variables.

Interpretation of multivariate logistic regression model is based on Odd Ratio (OR) which is a measure of association approximating how much more likely (or unlikely) it is for the outcome (in this case, the use of contraception) to be present in each of the categories of the variable in question compared to reference category (R). Table 8 shows the logistic regression estimates of odd ratio (OR = exp. (B) ) for the effect of the selected program, demographic, social and geographic variables on the use of contraception among currently married women of reproductive age. An OR above 1.00 indicates a positives effect of the independent variable whereas an OR less than 1.00 indicates a negative effect.

Message of family planning from radio had a positive effect on contraceptive use. The probability of contraceptive use was more than two and a quarter times higher among those who had heard family planning message from radio than those who had not. Likewise, the probability of contraceptive use increased with women's acquaintance with Village Health Workers (VHW).

The odds for contraceptive use were lower among young women i.e. below 25 years whereas odds were higher among mature women aged 30 - 44 years in general. However, when only temporary methods were taken into consideration, the likelihood of contraceptive was lower among young women and women aged 40 and above. Living son had positive effect on the probability of contraceptive use. The odds to contraceptive use were high among women who had one or more living sons. The probability to contraceptive use was very high among currently married women who had two living sons.

Education had positive effect on contraceptive use and the probability to contraceptives increased with education. Women with secondary plus education



were likely to use family planning methods by more than 2 and one half times than those who had no education.

**Table-8:** Logistic Regression Estimate of the Odd Ratios of Program, Demographic and Social and Geographic Variables on Current Use of Contraception in Nepal, 1991

Variables	Categories	Model I		Model II		Model III	
		OR	N	OR	N	OR	N
<b>Program Variables</b>							
Message of FP	Yes	2.27*	7,898	2.24*	7,232	2.37*	6,114
From Radio	No (R)	1.00	16,394	1.00	15,919	1.00	14,327
Know VHW	Yes	1.39*	878	1.29*	8,225	1.74*	7,132
	No (R)	1.00	15,544	1.00	14,926	1.00	13,309
<b>Demographic Variables</b>							
Women's Age	15-19	0.26*	2,214	0.01*	2,167	0.5	2,213
	20-24	0.46*	4,916	0.25*	4,666	0.84	4,784
	25-29 (R)	1.00	4,641	1.00	4,355	1.00	4,058
	30.-34	1.54*	3,975	1.79*	3,744	1.00	3,041
	35-39	1.77*	3,537	2.11*	3,337	1.02	2,558
	40-44	1.64*	2,759	2.08*	2,668	0.61*	1,982
	45-49	0.91	2,250	1.23*	2,224	0.16*	1,805
Living Sons	No Son (R)	1.00	6,568	1.00	6,422	1.00	6,511
	One Son	4.40*	7,029	8.06*	6,629	2.97*	6,333
	Two Sons	12.38*	6,077	6.85*	5,740	4.78*	4,242
	Three and Above	10.94*	4,618	21.38*	4,360	6.26*	3,355
<b>Social and Geographic Variables</b>							
Women's Education	No Education(R)	1.00	21,380	1.00	20,574	1.00	18,105
	Some Primary	1.96*	1,468	1.92*	1,347	2.05*	1,207
	Some Secondary	2.84*	1,444	2.43*	1,230	3.07*	1,129
Place of Residence	Urban	2.52*	1,301	2.07*	1,105	3.92*	916
	Rural (R)	1.00	22,991	1.00	22,046	1.00	19,525
Development Region	Eastern Region	1.55*	5,179	1.27*	4,860	2.92*	4,334
	Central region	2.07*	6,626	1.87*	6,221	2.93*	5,289
	Western Region	1.49*	5,006	1.39*	4,791	1.78*	4,150
	Mid-Western Region	1.10	4,172	0.99	4,035	1.60*	3,708
	Far-Western Region (R)	1.00	3,309	1.00	3,244	1.00	2,960
Ecological Zone	Mountain (R)	1.00	2,991	1.00	2,870	1.00	2,687
	Hill	1.35*	12,067	1.41*	11,406	1.18	10,334
	Tarai	1.68*	9,234	2.13*	8,875	0.76**	7,420
	Total Cases	24,292		23,151		20,441	
-2 log likelihood		19375.3*		15568.7*		7402.7*	
Other coefficient of the model intercept		-4.7*		-5.7*		-5.4*	

**Note:-** Model I = All Methods; Model II = Sterilization (Limiters); and Model III = Temporary Methods (Spacers). OR = Odds Ratio; \* < 0.01 and \*\* p < 0.05

**Source:** Computed from NFFHS '91

The odds for contraceptive use was more than two times higher among women living in urban areas than in rural areas. For temporary methods the odds



were likely to use family planning methods by more than 2 and one half times than those who had no education.

**Table-8:** Logistic Regression Estimate of the Odd Ratios of Program, Demographic and Social and Geographic Variables on Current Use of Contraception in Nepal, 1991

Variables	Categories	Model I		Model II		Model III	
		OR	N	OR	N	OR	N
<b>Program Variables</b>							
Message of FP	Yes	2.27*	7,898	2.24*	7,232	2.37*	6,114
From Radio	No (R)	1.00	16,394	1.00	15,919	1.00	14,327
Know VHW	Yes	1.39*	878	1.29*	8,225	1.74*	7,132
	No (R)	1.00	15,544	1.00	14,926	1.00	13,309
<b>Demographic Variables</b>							
Women's Age	15-19	0.26*	2,214	0.01*	2,167	0.5	2,213
	20-24	0.46*	4,916	0.25*	4,666	0.84	4,784
	25-29 (R)	1.00	4,641	1.00	4,355	1.00	4,058
	30.-34	1.54*	3,975	1.79*	3,744	1.00	3,041
	35-39	1.77*	3,537	2.11*	3,337	1.02	2,558
	40-44	1.64*	2,759	2.08*	2,668	0.61*	1,982
Living Sons	45-49	0.91	2,250	1.23*	2,224	0.16*	1,805
	No Son (R)	1.00	6,568	1.00	6,422	1.00	6,511
	One Son	4.40*	7,029	8.06*	6,629	2.97*	6,333
	Two Sons	12.38*	6,077	6.85*	5,740	4.78*	4,242
	Three and Above	10.94*	4,618	21.38*	4,360	6.26*	3,355
<b>Social and Geographic Variables</b>							
Women's Education	No Education (R)	1.00	21,380	1.00	20,574	1.00	18,105
Education	Some Primary	1.96*	1,468	1.92*	1,347	2.05*	1,207
	Some Secondary	2.84*	1,444	2.43*	1,230	3.07*	1,129
Place of Residence	Urban	2.52*	1,301	2.07*	1,105	3.92*	916
Development Region	Rural (R)	1.00	22,991	1.00	22,046	1.00	19,525
	Eastern Region	1.55*	5,179	1.27*	4,860	2.92*	4,334
Region	Central region	2.07*	6,626	1.87*	6,221	2.93*	5,289
	Western Region	1.49*	5,006	1.39*	4,791	1.78*	4,150
	Mid-Western Region	1.10	4,172	0.99	4,035	1.60*	3,708
	Far-Western Region (R)	1.00	3,309	1.00	3,244	1.00	2,960
Ecological Zone	Mountain (R)	1.00	2,991	1.00	2,870	1.00	2,687
	Hill	1.35*	12,067	1.41*	11,406	1.18	10,334
	Tarai	1.68*	9,234	2.13*	8,875	0.76**	7,420
	Total Cases	24,292		23,151		20,441	
-2 log likelihood		19375.3*		15568.7*		7402.7*	
Other coefficient of the model intercept		-4.7*		-5.7*		-5.4*	

**Note:-** Model I = All Methods; Model II = Sterilization (Limiters); and Model III = Temporary Methods (Spacers). OR = Odds Ratio; \* < 0.01 and \*\* p < 0.05

**Source:** Computed from NFFHS '91

The odds for contraceptive use was more than two times higher among women living in urban areas than in rural areas. For temporary methods the odds



demands for spacing in time has its offsetting effect on the need for limiting resulting into decrease in the level of demand for limiting decreases. Therefore, it is in the long-term interest of countries such as Nepal to pay more attention towards fulfilling the need for spacing than the current emphasis on fulfilling the need for limiting.

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#### WORKS CITED

- Bongaarts, J., (1991), "The KAP-gap and the Unmet Need for Contraception." *Population and Development Review*. 17(2).
- Bongaarts, John and Judith Bruce (1995), "The Causes of Unmet Need for Contraception and the Social Content of Services." *Studies in Family Planning*. Vol. 26(2): 57-75.
- Castgerline, John B., Aurora E. Perez, and Ann E. Biddlecom (1996), *Factors Underlying Unmet Need for Family Planning in the Philippines*. Population Council Working Papers No. 84, New York: The Population Council.
- Dahal, S.D.R. (1989), "Demand Aspects of Fertility and Family Planning." *South Asia Study on Population Policies and Programmes in Nepal*. Kathmandu: UNFPA, pp. 73-97.
- Integrated Development Approach (IDEA) (1996), *Reasons for Low Level of Contraceptive Acceptance in Nepal*. Kathmandu: IDEA.
- MOH (1996), *Nepal Family Health Survey: Preliminary Report 1996*. Kathmandu: Family Health Division, HMG.
- , (1993), *Nepal Fertility, Family Planning and Health Status Survey 1991 Report*. Kathmandu: FP/MCH.
- , (1987), *Nepal Fertility and Family Planning Survey 1986 Report*. Kathmandu: FP/MCH.
- (1983), *Nepal Contraceptive Prevalence Survey 1981 Report*. Kathmandu: FP/MCH.
- Morgan, D.L. (1988), "Focus Groups as Quantitative Research." *Sage University Paper Series Quantitative Research Methods*. Beverly Hills: Sage, Vol. 16.
- Nag, Moni (1984), "Some Cultural Factors Affecting Costs of Fertility Regulation." *Population Bulletin*. No. 17, New York: United Nations.

Schuler, S.R. et.al. (1985), "Barriers to Effective Family Planning in Nepal." *Studies in Family Planning*. 16(5).

Shrestha, A. et.al. (1988), *Factors Related to Non-Use of Contraception Among Couples with an Unmet-need for Family Planning in Nepal*, Kathmandu: The New Era.

Sinding, Steven W., John A. Ross, and Allan G. Rosenfield (1994), "Seeking Common Ground: Unmet Need and Demographic Goals." *International Family Planning Perspectives*, 20(1): 23-27. Thapa, S.D. Chettry, and R. Aryal, 1996, "Poverty, Literacy, and Child Labour in Nepal: A District Level Analysis." *Asia Pacific Population Journal*. Vol. 11, No. 3, pp. 3-14.

Thapa, S. (1996), "Infant Mortality and its Correlates and Determinants in Nepal: A District Level Analysis." *Journal of the Nepal Medical Association (JNMA)*. Kathmandu: JNMA, Vol. 34, No. 118 & 119, pp. 94-109.

Thapa S. et.al. (1989), "A Decade of Nepal's Family Planning Program: Achievements and Prospects." *Studies in Family Planning*. 20(1): 38-52.

Thapa, S. and K.R. Pandey (1994), "Family Planning in Nepal: An Update." *Journal of the Nepal Medical Association*. Kathmandu: Nepal Medical Association, 32(11).

Westoff, F.C., (1988a), "Is the KAP-GAP Real ?" *Population and Development Review*. 14(2): 293-313.

-----, (1988b), "The Potential Demand for Family Planning: A New Measure of Unmet Need and Estimates for Five Latin American Countries." *International Family Planning Perspectives*. 14(2): 45-53.

Westoff, F. Charles and Luis H. Ochoa (1993), "Unmet Need and the Demand for Family Planning." *Contraception and Family Planning, Readings in Population Research Methodology*. Vol. VII (Chicago: Social Development Centre, UNFPA).

Westoff, F.C. and Pebley (1981), "Alternative Measures for Unmet Need for Family Planning in Developing Countries." *Family Planning Perspectives*. 7(4).



