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Original Article

Prevalence and determinants of unmet need for family planning in a district of eastern region of Nepal

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Abstract
Objectives: The unmet need for family planning is defined as the discrepancy between individual's contraceptive behaviors and their stated fertility preferences – The extent of which is very high in developing countries like Nepal. This study explores the unmet need and its determinants.
Methods: Among the teaching district of B.P. Koirala institute of Health Sciences, in the Eastern Region of Nepal, a district was selected randomly to conduct a cross-sectional study. A total of 1079 women were selected using systematic random sampling. We compared different demographic variables and sex-ration to unmet need by using means, percentage and applied chi-squared test where applicable.
Result: The extent of unmet need is 25 percent with 9.5 percent for spacing and 15.5 percent for limiting. The mean age at marriage is 16(±3.2) years. A strong association of gender preferences towards male child and unmet need exist, which is highly significant.
Conclusion: Unmet need is high despite extensive family planning program in Nepal. Mean age at marriage below legal age, low female education and gender discrimination are the factors responsible for unmet need.

The population of Nepal was 11.6 millions in 1971, which had doubled in 30 years, and the population was 23.2 million according to 2001 census. The population growth rate increased from 2.1 in 1971 to 2.3 in 2001. The fertility in Nepal has declined steadily from 5.1 births per women in 1984-1986 to 4.1 births per women in 1998-2000. Family Planning services in Nepal were started in 1959 by Family Planning Association of Nepal (FPAN) to provide the services[1]. Even after long run in the milestones of family planning, the prevalence of unmet need is still high. The first series of surveys to shed light on the extent of unmet need for family planning in developing countries were knowledge, attitude and practice surveys, which were first fielded in 1960s. These were followed by the World Fertility Surveys (WFS), Demographic Health Surveys (DHS), Contraceptive Prevalence Surveys (CPS) and more recently the Reproductive Health Surveys (WRS)[2].

The unmet need for family planning is defined as the discrepancy between individual's contraceptive behaviors and their stated fertility preferences. The concept of unmet need refers to a gap between someone's stated fertility preferences and contraceptive use at a given point. The population reports of 1992 estimated that 102 million married women of reproductive age in developing countries had unmet need for family planning[3]. In 2000, a new estimate calculated that 105 million married women and 8 million unmarried women in developing countries had unmet need. While the percentage of women with unmet need fell in many countries in the 1990s, the absolute number of women of reproductive age increased. Thus the number of women with unmet need changed little. In the developing world as a whole, excluding China, about 20 percent of married women of reproductive age group (MWRA) have unmet need[4].

As per the Demographic and Health survey of Nepal 2001, the total demand for family planning is 67.1 per cent of the MWRA of which 39.35 is met. That leaves 27.85 per cent of need not yet met (11.4 percent for spacing and 16.4 percent for limiting). Therefore out of 67.1 percent of the MWRA requiring family planning services, the demand has been satisfied for 58.6 percent of this couples.[5]

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It is necessary to study the magnitude and factors contributing towards unmet need in different region of Nepal due to cultural and geographical heterogeneity. Thus, the present study was planned to explore the factors related to unmet need for family planning in Eastern Region of Nepal.

Nepal's Context

In rural Nepal, contraceptive use is considered to be risky behavior. Reproduction is a critical concern for rural Nepalese women and their families, and any change in a couple's reproductive capacity constitutes risk. Moreover, fertility decisions including those concerning the use of contraceptives occur within the context of competing motivations, real-life contingencies, and economic considerations. For example, because children are desired as a means to secure the future social and economic welfare of households, couples balance their future needs against their present economic hardships. Because decisions regarding the birth of children affect other extended family members, couples sometimes must choose between satisfying their own desires and those of powerful kin[6].

Women's Situation in Nepal

The population of Nepal is increasing at an alarming rate. Nepal is one of only two countries where the life expectancy of women is lower than that of men. This clearly indicates the low status of women. The low status accorded to women, low percentage of delivery at a hospital site and unwanted pregnancies are some of the causes for high Maternal Mortality Rate and Infant Mortality Rate. About 90 percent of the economically active female population in Nepal is engaged in agriculture and related activities, while less than one percent of them work as professionals and technicians. Women's participation in upper level decision making positions to influence national policies and programme is negligible. Those employed in non-agriculture sectors are generally in lower level and low paid jobs. The tiring household chores including taking care of children are generally thought to be the concerns of women only and unproductive in terms of money and are usually taken for granted. The division of labor for men and women decided traditionally has increased extra burdens for the working women, who have a dual responsibility to perform at home and at the work place. Men's attitude towards women's health generally is found to be very indifferent. Although, literacy rates of female show an increasing tendency, participation of girls in education is much lower than that of boy. Female literacy rate (30%) is almost half that of men (66%) and the proportion of female with higher education are minimal, particularly in rural area. The 1996 Family Health survey showed that 25 percent of married women in the age group 15-19 were either mothers or pregnant with their first child. In 40 percent of all marriage in Nepal, the age of girls was under 14, whereas in 7 percent it was below 10 years. Although fertility rate is high (4.6), the total wanted fertility is only 2.9, which clearly shows that large proportions of pregnancies are unwanted. Women with unwanted pregnancy are more likely to seek abortion and are in more risk. In Nepal most of the abortion is done in unsafe, unhygienic condition by untrained personnel and is one of the important causes of maternal mortality & morbidity.

Objectives

The main objective of this study was to assess the extent of unmet need for family planning among married women of reproductive age group in a district of Eastern Nepal and to study the factors related to it.

Materials and methods

Geographic distribution: Out of five development regions, Eastern Development Region consists of 16 district and each districts are subdivided into village District Committee (VDC) and Municipality. VDCs are further divided in nine wards and wards in areas. The study design was cross-sectional with sample size of 1079. A pre-tested semi-structured questionnaire was used to collect the data. The married women age 15-44 were interviewed using the questionnaire. Married women, who were divorced, separated or not living with husband was excluded for the study. The outcome was measured in terms of means and percentage and test of significance was applied where applicable. A multiple logistic regression analysis was done keeping the unmet need as dependent variable and age as covariates to see the effects of different socio-economic factors on unmet need.

This study was designed to cover the Eastern Development Region of Nepal, focusing mainly on a teaching district of an only medical university, i.e. B. P. Koirala Institute of Health Sciences (BPKIHS), of Nepal. Out of 16, three are teaching districts of BPKIHS, Dhankuta, Sunsari and Morang Districts in Eastern Region. The centers of the teaching districts (district hospitals) are mainly focusing its activities in the rural area of the respective districts, i.e. Dhankuta, Ineruwa and Rangeli respectively. Simple random sampling was used to select Morang District. The detail of Morang District is mentioned below. The Rangeli VDC was purposively selected to conduct the study, as the district teaching hospital is located and running all its activities providing health

care services to the villages in and around Rangeli Village.

On the basis of 2001 census, we took the list of all the households from nine wards of the village, enumerate the sample size (1079), and calculated the sample size for each ward by using probability proportion to sample size. We use systematic Random sampling to select the households.

Setting

The population of Morang District is 9, 14,483 (Census 2001) with a total of 68 health institutions. There are 65 VDCs and one Municipality in the District. The total population of Rangeli VDC is 22000 with sex ratio of 109 males for 100 females. The total number of household is 2764. It is situated in southeast of Biratnagar, an industrial city and can be accessed by local bus in one hour. Rangeli VDC has border to southern part of India. Although there are graveled roads in all parts of the village, there are no such transportation facilities within the village. There are few small Industries in Rangeli VDC, apart from the agriculture and livestock as a source of income.

Regarding the education facilities, there is one government high school and two primary schools and private primary level schools are few in numbers. Safe piped water supply and electricity are yet to reach the periphery of the VDC.

The government district hospital is situated in the center of the VDC and is recognized as the Teaching District Hospital of B. P. Koirala Institute of Health Sciences (BPKIHS), Dharan for the training of medical Interns and Post- Graduates. BPKIHS provides specialized services in all major medical disciplines such as Medicine, Surgery, Pediatrics Obstetrics & Gynecology and Dentistry through visiting faculty and Residents. Two private clinics run by graduate doctors and others by health auxiliaries are also available in the center of the VDC.

The National Programs are implemented through District Hospital. Family Planning programmes are run by different NGOs (Plan International). The Rangeli District Hospital provides all family planning methods except for tubal ligation or vasectomy, for which they are referred to Koshi Zonal Hospital, Biratnagar (25 km from this area). Female Community Health Volunteer (FCHV) also dispense contraceptive supplies (condoms, pills) to women in their homes during their home visits or as per requirement

Most of the people are dependent on agriculture. Majorities are agricultural laborers with few cultivating in their own land. The main crops are Rice, Millet, Sugarcane, Jute etc. The major caste is mandal. Most of the people residing the Rangeli VDC are Hindu by religion minority are Muslims.

Result

Table 1 shows percentage distributions of married women on each of the characteristics, and the distributions adds to 100 percent. The Age distribution of married women of reproductive age shows that about 47 percent of the married women are concentrated in the prime reproductive ages 20-29. About 11 percent of the women fall in 15-19 age group, whereas 13-15 percent of the women is in above 30 years age group.. The mean age of the women is 28.15 (±7.82). The mean number of children is 2.29. Women with one or two children have nearly similar distribution pattern (16.2 & 19.6 percent respectively) with a peak at three and four children, 27.9 & 22.6 percent respectively. About 14 percent of the married women are without any children. Approximately 80 percent of the women already get married before they reach 18 years of age, which is legal age at marriage in Nepal. Only 19 percent of the women start married life after 18 years. The mean age at marriage is 16 (±3.2) years. More than half of the families is living in nuclear families (55 percent) where as 45 percent is in Non-Nuclear type (other than nuclear type).

Regarding women's education 43 percent are literate, with a share of only 13 percent in secondary education, whereas two third of the husband are literate, with approximately half in the secondary education. Majority of the study population are Hindu by religion (97.3 percent), and almost all the rest are Muslim. Table 2 subdivides need for Family Planning methods into four components. Only 10 percent of the women have unmet need for spacing. However, there is considerable unmet need for limiting (15.5 percent). The total unmet need for family planning comes out to 25 percent. The contraceptive prevalence rate is 49 percent. To measure the strength of association of some selected background variables on the likelihood of unmet need, a multiple logistic regression was performed for the entire sample. As shown in table 3, the results for unmet need indicated that age, religion, age at marriage and total number of children were the most significant predictors of unmet need. As compared with Hindu women, Muslim had higher odds (OR=2.7; 95% CI 1.15-6.66) of having unmet need, which was statistically significant. Table shows that unmet need rises with the women's level of

education, which indicates that unmet need rises when women become more aware and literate. However, the association was not statistically significant. The odds for unmet need was slightly higher in nuclear family (OR=1.024; 95% CI 0.737-1.423) than non-nuclear family. The association between unmet need and age at marriage were highly significant. Women with age at marriage of 17-18 years were 2.3 times more likely and women with age at marriage of more than 18 years are 2.2 times more likely to have unmet need. This is because, at high age at marriage, the women become mature and want to postpone their childbirth.

Table 1: Background characteristics of the study population (*n*=1079)

Background characteristic	**Percent**
Age Distribution	
15-19	10.8
20-24	24.4
25-29	22.6
30-34	13.6
35-39	15.2
40-44	13.3
Mean Age of the women	28.15(±7.82)
Total number of Children	
0	13.7
1	16.2
2	19.6
3	27.9
4+	22.6
Age at Marriage	
<15	28.4
15-16	29.2
17-18	23.3
>18	19.2
Mean age at Marriage (years)	16(±3.2)
Family Type	
Nuclear	54.6
Non-Nuclear	45.4
Women's Education	
Illiterate	57.1
Literate	42.9
Primary	29.9
Secondary	13.0
Husband's Education	
Illiterate	33.6
Literate	66.4
Primary	33.7
Secondary	32.6
Religion	
Hindu	97.3
Muslim	2.7
Total	**100**

Table 2: Extent of Met and Unmet Need (*n*=1079)

Need for Family Planning Methods	**Percent**
Unmet Need for Spacing	9.5
Unmet Need for Limiting	15.5
No Demand	25.9
Users	49.1
Total	**100**

Table 3: Multiple logistic regression coefficients for the relationship between Unmet Need and different factors among married women of reproductive age group.

Unmet Need	**B**	**Std. Error**	**df**	**Sig.**	**Odds Ratio (OR)**	**Confidence interval of OR**	
						Lower bound	**Upper bound**
Intercept	-2.264	1.057	1	.032			
Age	-9.23E-02	.015	1	.000	.912	.885	.940
Religion							
1. Muslim	1.020	.447	1	.023	2.773	1.155	6.661
2. Hindu (RC)							
Socio-eco Status							
1. High	.342	.969	1	.724	1.408	.211	9.403
2. Medium	.245	.947	1	.796	1.278	.200	8.177
3. Low (RC)							
Women's Education							
1. Illiterate	1.95E-02	.313	1	.950	.981	.531	1.810
2. Primary	-.135	.308	1	.662	.874	.478	1.598
3. Secondary(RC)							
Husband's Education							
1. Illiterate	2.448E-02	.232	1	.916	1.025	.650	1.615
2. Primary	-2.82E-02	.218	1	.897	.972	.634	1.490
3. Secondary(RC)							
Type of Family							
1. Nuclear	2.405E-02	.168	1	.886	1.024	.737	1.423
2. Non-nuclear(RC)							
Age at Marriage							
1. >18 yr.	.825	.244	1	.001	2.283	1.415	3.682
2. 17-18 yr.	.871	.225	1	.000	2.390	1.537	3.716
3. 15-16 yr.	.379	.216	1	.079	1.461	.997	2.231
4. <15 yr. (RC)							
Total Children							
1. 4+	.808	.287	1	.005	2.244	1.280	3.936
2. 3	.800	.241	1	.003	2.232	1.365	3.643
3. 2	.797	.215	1	.000	2.218	1.455	3.382
4. 1 (RC)							

RC = Reference Category

Table 4: Relation of Sex ratio to Unmet Need in the study population (n=270)

Sex Ratio	**Percent**	***p* value**
Son Two Daughter Zero	21.9	
Son Three Daughter Zero	17.5	
Son Four plus Daughter Zero	0.00	
Son Zero Daughter Two	47.2	***p*<0.001**
Son Zero Daughter Three	40.0	
Son Zero Daughter Four plus	33.3	
Total	**100**	

The odds of unmet need were 2.24 times higher in women with four or more children and 2.21 times higher in women with 2 children. The association was highly significant. It shows increase in the unmet need with increase in the number of children. Table 4 shows a direct relationship of gender preferences towards male child. The percent of unmet need for family planning is high (47, 40 and 33 percent) in those who have two, three and four plus daughters but no sons respectively. The study population with two, three and four plus sons but no daughters has less unmet need, i.e., 22, 18 and zero percent respectively. The differences are statistically significant. (p<0.001, χ^2=49.35, df=13, 95% CI).

Discussion

Present study revealed that 25 percent of married women have unmet need for family planning services, 9 percent for spacing and 16 percent for limiting. 49 percent were using contraception and 26 percent of married women had no demand. The Demographic and Health Survey 2001 showed that 28 percent of currently married women in Nepal have an unmet need for family planning services, 11 percent for spacing and 16 percent for limiting births. At the same time, 39 percent of currently married women are using a contraceptive method[7].

From study of unmet need, conducted in Department of Community Medicine, Calcutta National Medical College, India revealed that 23.1 percent of women had unmet need[8]. A study on hospital setting may show less prevalence than a study on community. The reason may be that women coming to the hospitals are more educated, aware regarding health seeking behavior. According to the National Health Survey-2, about 16 percent of currently married women in India have an unmet need for family planning. The unmet need for spacing births is same as the unmet need for limiting births (8.3 and 7.5 percent respectively) [9].

A study on unmet need for family planning in Nepal by S.Thapa showed that the unmet need in Nepal was 27.7 percent in 1991, and 31.4 percent in 1996. Unmet need during 1991 – 96 increased by 0.74 percent[10]. The reason may be that knowledge and awareness regarding family planning has increased during the mid – 90s, thus increased in the demand for contraceptive methods. As we know the unmet need rises as more women want to control their fertility and it falls with more use of contraception.

Westoff and Bankole estimated the level of unmet need in "Explanation of Unmet Need for Contraception in chitwan, Nepal". From their study approximately 30 percent of married women found to have unmet need for family planning. Approximately 17 percent of these women wished to limit childbirth and approximately 13 percent wished to space their children[11]. Chitwan is one of the trade centers and people there are more educated and aware regarding contraceptives. So more the people educated, more they want to regulate the fertility and more they have unmet need.

From DHS 2001 it is revealed that about 30 percent of married women aged between 15-30 express unmet need[12].

Similar pattern was found in our study too, where most of the women having unmet need were in the same age group. Similarly, a study on unmet need

from Uttar Pradesh, India found that 35-50 percent of married women who had unmet need were in age group 15-30 [13].

Similarly, a study in Calcutta National Medical College by Ram R et al revealed 20-30 percent of women lie in the same age group as in other studies[14]. Tuladhar J.M. et al in their study of unmet need in Nepal also found 57.6 percent of women with unmet need were between 15-30 years age[15]. This shows that unmet need is high in more fertile age group. So the family planning program should address women with unmet need focusing this age group so as to increase the contraceptive prevalence rate and decrease the unmet need.

Our study revealed that unmet need increases with the increase in the number of children. The reason may be that the women, in our context, do not end up childbearing below 2-3 children, but they starts thinking of spacing or limiting after fourth or more children. And unmet need rises, as more women want to control fertility. Westoff revealed in their study that once women had their first child, unmet need for spacing decreases with each additional child, whereas the unmet need for limiting births increases with each additional child that a woman has. Overall the trend for limiting and the trend for spacing cancel each other out. As a result, there is no apparent relationship between number of children and the overall level of unmet need[16].

D Radha Devi et al. in their study explained that unmet need ranges irregularly and showed no particular pattern by number of living children[17]. This study revealed the prevalence of unmet need is more in nuclear families. In Nuclear families, couples live alone or with their unmarried children, and tend to have more children because that will not increase the total number of members in the family as in the joint family. And in Non-Nuclear families, other family members may be the prime regarding the decision making of use and non-use of contraceptives.

A study from Uttar Pradesh by D Radha Devi et al. in National Family Health Survey subject Reports, showed that 63 percent of women with unmet need were living in joint family[18].

In Kenya, Mothers-in-law prevent some women from using contraption because they think that it would weaken the control of the husband's family or that their daughters-in-law should not accept anything different from their own experience[19]. NDHS 2001 – unmet need for family planning is negatively associated with women's level of education ranging from a high of 28 percent among women with no education to a low of 21 percent among women with at least high school[20]. Sharon Stash on "Explanation of unmet need for contraception in Chitwan, Nepal." Mentioned that 77 percent women without schooling had unmet need, whereas schooling at least up to some grades decreases the percentage of unmet need[21]. Tuladhar J.M. et al. in a study of unmet need in Nepal showed that about 43 percent of women with no schooling had unmet need, whereas only 11 percent with higher education had unmet need[22].

According to the NFHS-2 (1998-99), India, the percentage of unmet need falls with education from 16 percent among illiterate women to 15 percent among women with at least high school education[23]. But this study showed no significant relation of education to unmet need. All women want to have more children, regardless of whether the first child is son or a daughter. The scenario is different for women with two children. Unmet need declines from 47.2 percent for women with no sons to 21.9 percent for women with 2 sons, as women become socially and culturally secure. Similarly, for women with 3 and 4 children, the unmet need declines from 40 and 33 percent for women with no sons to 18 and zero percent for women with 3 and 4 children respectively.

Similar pattern follows in another study by D Radha Devi that unmet need decline from 36 percent for women with no sons to 19 percent with two sons. Sons are considered important for family labor, supporting parents in their old age, continuing the family line, and in the case of Hindus, performing certain religious rites upon the death of the parents[24]. In some countries with strong sex preferences, couples stop having children only when they are satisfied with the sex composition of their family[25] - typically after the birth of a son, thus increase unmet need.

Conclusion

Despite the extensive family planning program in Nepal, with socially marketed and widely campaigned permanent and temporary methods of contraception, and a very well infrastructure of health care delivery system from regional to village level, the unmet need for family planning in Nepal is 25 percent among married women of reproductive age group. If the women with unmet need were to use family planning methods, the CPR will increased from 49 percent to 74 percent that will bring NRR to one and the population stationary.

The Demographic characteristic determining magnitude of unmet need are, (i) low age at marriage, which make the women culturally and socially secured and lengthen the reproductive span, so legal age at marriage should be seriously implemented; (ii) Program should focus on female education; (iii) Concept of son preferences – if we can decrease the gender discrimination preferring the male child, the CPR will increase instantly.

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