Assessing the unmet need for modern contraceptives among reproductive-aged women in rural Nepal

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Abstract

Purpose – The purpose of this research was to determine the extent of the unmet need for modern contraceptives (MC) and its associated factors.

Design/methodology/approach – This community-based cross-sectional survey was conducted via interview among 306 women. Percentages, means, standard deviations, Chi-square tests and multiple logistic regression were completed for data analysis.

Findings – In total, 46.7% of respondents had total unmet need (24.8% spacing and 21.9% limiting). Multiple logistic regression for spacing showed the number of living children (AOR = 40.893, 95% CI = 6.930–241.292), no previous experience of MC (AOR = 30.149, 95% CI = 11.572–78.548) and level of knowledge (AOR = 5.587, 95% CI = 1.366–22.851). With regard to limiting pregnancies, respondent's age (AOR = 12.470, 95% CI = 1.264–86.734), number of living children (AOR = 21.257, 95% CI = 4.825–93.639) and no previous experience of MC (AOR = 120.542, 95% CI = 31.044–486.062) were recorded. Findings revealed that no previous experience of MC (AOR = 714.511, 95% CI = 160.646–3177.955) was a significant predictor of total unmet need.

Originality/value – Experience and knowledge of MC play a vital role in the unmet need of MC use. A comprehensive education program to promote decision-making on MC choice and integrated family planning services at local communities by capacity building of service providers should be scaled up.

Keywords Modern contraceptives, Rural communities, Unmet need, Family planning, Nepal

Paper type Research paper

Introduction

According to the World Health Organization (WHO), the unmet need for modern contraceptives (MC) is defined as "women who are fecund and sexually active but are not using any method of contraception, and report not wanting any more children or wanting to delay the next child" [1]. It focuses on the need for spacing (wanting to delay) and limiting (wanting to stop childbearing) and as such, focusing on modern contraceptive use can prevent pregnancy-related health risks in both women and newborns in various aspects. For example, it helps to curb infant and maternal mortality rates [2, 3], prevents transmission of HIV/AIDS and other sexually transmitted diseases [4], empowers women and enhances their knowledge [5], reduces adolescent pregnancies and abortion, helps couples determine the number and spacing of their children [6], promotes the elimination of poverty and ultimately slows the population growth [4].

Worldwide, more than one in ten women want to stop or delay childbearing but are not using any method of contraception to prevent pregnancy [6]. Therefore, the total unmet need for family planning (FP) worldwide was 12% in 2018. More developed regions have a 10% unmet need for FP, whereas less developed regions have 12%, and least developed regions have 21% unmet need for FP [7]. FP allows a couple to decide on the desired number of children by spacing and limiting their births using MC methods.

The contraceptive prevalence rate (CPR) determines the use of MC. In 2018, globally, the CPR among women aged 15–49 using MC was 57%. More developed regions recorded 61% CPR, whereas less developed regions had 57%, and least developed regions had 36% CPR [7]. An increase in CPR directly impacts the total fertility rate (TFR). According to the United Nations Population Fund (UNFPA), the TFR for the world population in 2018 was 2.5. However, the TFR was 1.7 per woman from more developed regions and 4 per woman in the least developed regions [7]. The target of the Sustainable Development Goal (SDG) is to limit the world population to 8 billion and the total fertility rate to two children per woman by 2030 [8]. Therefore, the TFR is a sensitive indicator of population growth, and FP would significantly help to maintain the target goal of SDG.

In Nepal, even though the TFR was 2.3 per woman in 2017, the TFR in urban areas was 2.0, whereas the TFR in the rural areas was 2.9 per woman [3]. There is a considerable variation in the TFR between urban and rural areas, so it is important to find the gap. The CPR in Nepal is 54% with the CPR in urban areas being 55%, whereas the CPR in rural areas is 49%. The modern CPR is 44% with 24% of unmet need indicating that the CPR has stagnated in the last few years. To maintain the current TFR, prompt action on increasing CPR to reduce the unmet need for MC is necessary [3]. The Government of Nepal is committed to increasing funding for FP programs by at least 7% annually and has requested external development partners to raise additional resources to implement the Costed Implementation Plan on FP (2015–2020) within the Nepal Health Sector Program III [9]. However, the efforts are not enough to decrease the unmet need for MC.

Based on previous findings, factors related to unmet need for MC use comprised of a fear of the side effects [10–12], inaccessibility to FP services [11, 13], objection from husband [14, 15], objection from family members [12, 16], son preference [17], lack of information about appropriate methods and informed choices [12, 15], lack of counseling from health workers [18], limited choice of methods [11, 19], inconvenient to use, lack of time, breastfeeding (postpartum amenorrhea) [20], infrequent sex [10], limited access to contraception [11, 21], low-income group [10, 13] and religious or cultural opposition [11, 16].

Rolpa is a remote district in the hilly region of state number 5 of Nepal. Thawang is one of the rural municipalities of Rolpa. The CPR of Rolpa was 38.53% in 2015, 37.37% in 2016 and 38.93% in 2017, which should be increasing but has stalled [22]. This indicates that the unmet need for MC is still higher than in other areas.

Although the resource allocation is equitable, trained human resources are scarce, there is a pattern of poor FP service utilization and problems in the utilization of the allocated budget resulting in the poor achievement of CPR in this area [3]. Many previous studies related to FP have already been completed in Nepal, but there are only a few that are concerned with the unmet need for MC among married reproductive-aged women in rural areas. This study aimed to find out the magnitude and associated factors of unmet need for MC among married reproductive-aged women in a rural area of Rolpa based on the PRECEDE-PROCEED framework in phase III to identify the antecedent and reinforce factors that should be in place to initiate and sustain the process of behavioral changes that will affect health outcomes [23]. Phase III of this model focused on several factors including predisposing, reinforcing and enabling factors that affected MC use to reduce the unmet need in fertility control. The predisposing factors included son preference, knowledge of MC, attitudes toward MC, previous experience of MC use and women's autonomy regarding fertility control. Enabling factors included respondent's geographical accessibility, respondent's affordability, respondent's acceptability of MC services, availability of MC services and accommodation of MC services. Reinforcing factors included social support and mass media. This study would provide baseline information for policymakers to effectively manage and plan on expanding FP programs in Nepal to serve the unmet need among reproductive-aged women going forward.

Methods

Study design

A cross-sectional survey was utilized. Data were collected from married reproductive-aged women between 18 and 49 years living in Thawang, a rural Municipality of Rolpa, Nepal, between October 15 and November 20, 2019.

Sample size and sampling technique

Calculation of sample size was based on Cochran [24] using the proportion of unmet need, which was 28%, based on the district health report of Rolpa 2016/17 [22] with Z = standard normal deviation, which corresponded to a 95% confidence level = 1.96 and d = degree of accuracy required = 0.05. The calculated sample size was 278 respondents. With 10% added, the total sample size was 306. A final total of 337 samples were collected in case of incomplete data from the required quota.

This study was conducted in the Thawang municipality of the Rolpa district, Nepal. Thawang is one of the most remote areas of Nepal and was purposively selected as the study site. A two-stage sampling technique was used to select the samples. Firstly, the Thawang rural municipality includes five wards with 2,577 total married women of reproductive age (MWRA). A total of three wards were selected out of the five wards by simple random sampling methods. The total number of MWRA in each selected ward was as follows: 462 in ward 1, 626 in ward 3 and 456 in ward 5 respectively. Secondly, the minimum number of samples from each ward were selected based on proportional size to random sampling. Total samples to be drawn from each ward were as follows: ward 1 = 92, ward 3 = 124 and ward 5 = 90. In total, 10% was added to the minimum sample size required to ensure sufficient information from missing data (Figure 1).

A simple random sampling technique was used to select respondents from the study sites who met the inclusion criteria.
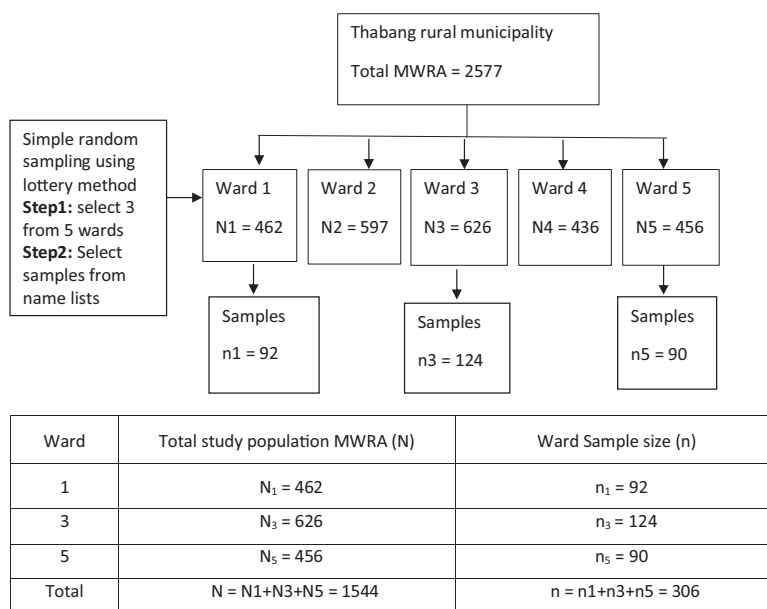
Inclusion and exclusion criteria
The inclusion criteria included married reproductive-aged women between 18 and 49 years who had been staying with their husbands for at least three months, were willing to participate, were pregnant or had no child or had at least one child aged ≥6 months.

Exclusion criteria included infertile or sterilized or early menopausal women, divorced or widowed reproductive-aged women, women who were severely ill or with chronic conditions, women who had an infertile husband and those who did not complete the questionnaire.

Data collection
A face-to-face interview questionnaire was constructed based on the demographic health survey (DHS) and literature reviews [25]. The interviews were conducted by the researchers and two trained research assistants each lasting 20–30 min between October 15 and November 20, 2019. The questionnaire consisted of five parts. Part 1 covered 11 items on sociodemographic factors comprising details of the respondent and her husband's age, respondent and her husband's education, respondent and her husband's occupation, family type, number of living children, family income, the sufficiency of family income and son preferences. Part 2 consisted of predisposing factors and comprised of ten statements regarding knowledge of MC with true or false answers, where the scores of true = 1 whereas false or not sure = 0. There were ten statements on attitude toward MC of which five were positive and five were negative. For attitude, items 22, 23, 26, 29 and 31 were positive while the rest were negative statements. Likert's scale [26] was followed in which the scoring system was: agree = 3, uncertain = 2 and disagree = 1 for positive statements and the reverse scores for negative statements. There was one item on previous experience of MC use and four positive statements regarding women's autonomy on fertility control. The women's autonomy scales were agree = 3, uncertain = 2 and disagree = 1. Part 3 evaluated enabling factors consisting of a total of 20 positive statements for five components on accessibility constructed based on Penchansky and Thomas's concept [27] divided into four statements

per each for accessibility, affordability, acceptability, availability and accommodation. The accessibility scales were agree = 3, uncertain = 2 and disagree = 1. Part 4 consisted of reinforcing factors comprised of eight positive statements regarding social support constructs based on the social support theory of House JS [28]. The social support scales were agree = 3, uncertain = 2 and disagree = 1. There was one item on mass media.

Content validity of the questionnaire was determined by three public health experts. The questionnaire was pretested for reliability among 30 respondents from Dang District. The KR-20 was used for the knowledge component, and Cronbach's alpha coefficient was used to determine reliability tests for attitude, woman's autonomy, accessibility and social support. The KR-20 was 0.788 for knowledge of MC. Cronbach's alpha coefficient was 0.838 for attitude toward MC, 0.744 for woman's autonomy on fertility control, 0.870 for accessibility and 0.855 for social support, respectively.

Using the Bloom BS classification [29], total scores of predisposing factors in terms of knowledge, enabling factors in terms of five components of accessibility (5A) and reinforcing factors in terms of social support were classified into three groups: poor or low level (<60% of total score), fair or moderate (60–79% of total score) and good or high (≥80% of total score). For the knowledge of MC, the total score was classified as poor (<6), fair (6–7) and good (≥8). For all five components of accessibility (5A), the total score was classified as poor (≤35), fair (36–47) and good (≥48). For each component of accessibility, the total score was classified as poor (<7), fair (7–9) and good (≥10). For social support, the total score was classified as low (≤14), moderate (15–19) and high (≥20). Attitude and woman's autonomy were classified into two groups: ≥mean and <mean. The total score was classified as a positive attitude (≥24) and a negative attitude (<24). For woman's autonomy, the total score was classified as no autonomy (<10) and autonomy (≥10).

Data analysis
Frequencies, percentages, means and standard deviations were used for descriptive statistics. A Chi-square test was used for the bivariate analysis of factors related to unmet need for MC. Predictive factors for unmet needs were determined using forward multiple logistic regression analysis. Statistical significance was set at $p < 0.05$.

Ethical considerations
The study was approved by the Committee on Human Rights Related to Human Experimentation, Faculty of Public Health, Mahidol University (MUPH 2019-030). Permission to conduct the study in Nepal was obtained from the National Health Research Council, Kathmandu, Nepal (NHRC) (Ref. no 3039).

Results
Sociodemographic factors
A total of 306 respondents were included in the study. Respondent's ages ranged from 18 to 49 years with an average age of 26 years and a standard deviation of 5.97. The majority of respondents were in the age group of 21–34 years (70.6%). The husband's age ranged from 18 to 62 years with an average age of 28 years and a standard deviation of 6.45. The majority of husbands were in the below 35-year age group (84.6%). Regarding respondent's education, nearly half of the respondents had completed primary level (48%). Regarding the husband's education, more than half had completed primary level (51.4%). Concerning the respondent's occupation, more than two-thirds of the respondents (70.6%) were housewives. Nearly one-third (28.8%) of husbands were unemployed. Lower than half (42.2%) lived in a nuclear family. Nearly half of the respondents had no children or at least one child (45.7%) while some (19.6%) had ≥3 children. The monthly family income of the respondents ranged from 1,000 to 80,000 Nepalese rupees with a median of 5,000 Nepalese rupees (Q_1, Q_3 = 2,000, 12,000).

The respondents with a monthly family income <10,000 rupees were nearly two-thirds (67.6%) followed by (15.7%) > 20,000 that came to 15.7%. (Table 1)

Predisposing factors
The majority of the respondents were not biased regarding son preference (71.9%). In total, 43.1% of the respondents had no previous experience of MC use. Also, it was found that 40.2% of the respondents had good levels of knowledge, and the least (23.9%) respondents had poor levels of knowledge of MC. Altogether 47.7% had negative attitudes while 52.3% had positive attitudes toward MC. Woman's autonomy regarding fertility control consisted of four items with scores ranging from 4 to 12, scores of more than the mean were categorized as women with high levels and less than mean as women with low levels of autonomy. Slightly more than half of the respondents (50.3%) had low autonomy regarding fertility control, Table 1.

Enabling factors
Nearly half of the respondents (44.1%) had good access to MC services while the majority of respondents responded with good affordability of MC services (89.5%). In total, 81.7% reported good acceptability. One-third of the respondents answered fair (33.7%) availability of MC services while 72.2% had good accommodation. Around two-thirds of the respondents had a good level of access (73.5%) to MC services, Table 1.

Reinforcing factors
A few (9.80%) respondents had low social support while half (50%) had high social support. In the context of mass media, nearly half (46.08%) did not have access to any information via mass media, Table 1.

Unmet need domain
The prevalence of total unmet need for MC was 46.7%. In total, 24.8% wanted to have spacing between pregnancies and 21.9% wanted to limit their pregnancies but were not using any MC, Table 1.

Factors associated with spacing
Among sociodemographic factors, the respondent's age, husband's age, husband's occupation, family type and the number of living children were significantly associated with spacing ($p < 0.05$). Among predisposing factors, son preference, previous experience of MC use and knowledge of MC were significantly associated with spacing ($p < 0.05$). Among enabling factors, the availability of MC services was significantly associated with spacing ($p < 0.05$). Among reinforcing factors, social support was significantly associated with spacing ($p < 0.05$), Table 2.

Factors associated with limiting
Among sociodemographic factors, respondent's age, husband's age, respondent's education, husband's education, family type and the number of living children were significantly associated limiting factors ($p < 0.05$). Among predisposing factors, previous experience of MC use was significantly associated with limiting pregnancies ($p < 0.05$). Among enabling factors, respondent's affordability of MC services was significantly associated with limiting ($p < 0.05$). Among reinforcing factors, social support was associated with limiting ($p < 0.05$), Table 2.

Variables	Number	Percentage
Sociodemographic factors		
Respondent's age (years)		
≤20	51	16.7
21–34	216	70.6
≥35	39	12.7
(Mean ± SD = 26.38 ± 5.97), Min = 18, Max = 44		
Husband's age (years)		
≤34	259	84.6
≥35	47	15.4
(Mean ± SD = 28.11 ± 6.45), Min = 18, Max = 62		
Respondent's education		
Illiterate	60	19.6
Primary	147	48.0
Secondary and above	99	32.4
Husband's education		
Primary	157	51.4
Secondary	92	30.0
High school and above	57	18.6
Respondent's occupation		
Housewife	216	70.6
Working	90	29.4
Husband's occupation		
Unemployed	88	28.8
Agriculture	36	11.8
Labor	102	33.3
Private, small business, government	80	26.1
Family type		
Nuclear	129	42.2
Extended	177	57.8
Number of living children		
0–1	140	45.8
2	106	34.6
≥3	60	19.6
Median = 2 (Q1, Q3 = 1,2)		
Family income (Nepalese rupees)		
<10,000	207	67.6
10,000–19,999	51	16.7
≥20,000	48	15.7
Median = 5,000 (Q1,Q3 = 2000,12000)		
Predisposing factors		
Son preference		
No	220	71.9
Yes	86	28.1
Previous experience of MC use		
No	132	43.1
Yes	174	56.9
Level of knowledge of MC		
Poor (0–5)	73	23.9
Fair (6–7)	110	35.9
Good (8–10)	123	40.2
(Mean ± SD = 6.83 ± 2.32), Min = 0, Max = 10		

Table 1.
Descriptive
distribution of
respondents (*n* = 306)

Variables	Number	Percentage
Level of attitude toward MC		
Negative (<mean)	146	47.7
Positive (≥mean)	160	52.3
Mean ± SD = 23.59 ± 2.27, Min = 18, Max = 30		
Level of woman's autonomy on fertility control		
Low autonomy (<mean)	154	50.3
High autonomy (≥mean)	152	49.7
Mean ± SD = 9.29 ± 2.42, Min = 4, Max = 12		
Enabling factors		
Level of respondent's geographical accessibility to MC services		
Poor (4–6 score) /fair (7–9 score)	171	55.9
Good(10–12 score)	135	44.1
Mean ± SD = 8.66 ± 3.10, Min = 4, Max = 12		
Level of respondent's affordability of MC services		
Poor(4–6 score) /fair (7–9 score)	32	10.5
Good (10–12 score)	274	89.5
Mean ± SD = 10.80 ± 1.22, Min = 7, Max = 12		
Level of respondent's acceptability of MC services		
Poor (4–6 score) / fair (7–9 score)	56	18.3
Good (10–12 score)	250	81.7
Mean ± SD = 10.98 ± 1.47, Min = 6, Max = 12		
Level of availability of MC services		
Poor (4–6 score) / fair (7–9 score)	103	33.7
Good (10–12 score)	203	66.3
Mean ± SD = 10.15 ± 1.93, Min = 4, Max = 12		
Level of accommodation of MC services		
Poor (4–6 score) /fair (7–9 score)	85	27.8
Good (10–12 score)	221	72.2
Mean ± SD = 10.49 ± 2.04, Min = 4, Max = 12		
Level of accessibility		
Poor (20–36 score) / fair (37–47 score)	81	26.4
Good (48–60 score)	225	73.6
Mean ± SD = 51.09 ± 6.5, Min = 30, Max = 60		
Reinforcing factors		
Level of social support		
Low (≤14 score)	30	9.8
Moderate (15–19 score)	123	40.2
High (≥20 score)	153	50.0
Mean ± SD = 18.98 ± 3.47, Min = 8, Max = 24		
Mass media		
Information about MC when needed		
No	141	46.1
Yes	165	53.9
Spacing		
No spacing	230	75.2
Need spacing	76	24.8
Limiting		
No limiting	239	78.1
Need limiting	67	21.9
Total unmet need		
Met need	163	53.3
Unmet need	143	46.7

Note(s): Remarks: MC, modern contraceptives

Table 1.

Variables		p-value (95% CI)	
	Spacing	Limiting	Total unmet need
Sociodemographic factors			
Respondent's age	<0.001*	<0.001*	0.278
Husband's age	0.005*	<0.001*	0.518
Respondent's education	0.277	<0.001*	0.108
Husband's education	0.176	0.013*	<0.001*
Respondent's occupation	0.772	0.174	0.134
Husband's occupation	0.021*	0.875	0.043*
Family type	0.007*	0.030*	0.596
Number of living children	<0.001*	<0.001*	0.358
Family income	0.465	0.618	0.936
Predisposing factors			
Son preference	0.014*	0.505	0.115
Previous experience of MC use	<0.001*	<0.001*	<0.001*
Knowledge of MC	0.003*	0.065	<0.001*
Attitude toward MC	0.074	0.401	0.025*
Women's autonomy on fertility control	0.643	0.082	0.066
Enabling factors			
Respondent's geographical accessibility to MC services	0.500	0.902	0.630
Respondent's affordability of MC services	0.682	0.002*	0.024*
Respondent's acceptability of MC services	0.756	0.328	0.588
Availability of MC services	0.004*	0.193	<0.001*
Accommodation of MC services	0.393	0.904	0.402
Total accessibility	0.572	0.050	0.034*
Reinforcing factors			
Social support	0.014*	0.014*	<0.001*
Mass media	0.429	0.386	0.160

Note(s): Remarks: MC, modern contraceptives
*Significant at $p < 0.05$

Table 2.
Factors related to unmet need for MC by Chi-square test ($N = 306$)

Factors associated with total unmet need
Among sociodemographic factors, the husband's education and husband's occupation were significantly associated with the total unmet need for MC ($p < 0.05$). Among predisposing factors, previous experience of MC use, knowledge of MC and attitudes toward MC were significantly associated with total unmet need for MC ($p < 0.05$). Among enabling factors, the respondent's ability to afford MC, availability of MC services and total 5A were significantly associated with the total unmet need for MC ($p < 0.05$). Among reinforcing factors, social support was associated with the total unmet need for MC ($p < 0.05$), Table 2.

Factors influencing spacing by multiple logistic regression analysis
Factors significantly associated with spacing using forward multiple logistic regression analysis were: sociodemographic factors, mainly the number of living children; predisposing factors, specifically any previous experience of MC and knowledge of MC. Respondents with children 0–1 had 41 times higher need for spacing compared with respondents with children ≥3 (adjusted OR = 40.893; 95% CI = 6.930–241.292). Respondents who didn't have previous experience of MC had a 30 times higher unmet need for spacing compared to respondents who had previous experience of MC (adjusted OR = 30.149; 95% CI = 11.572–78.548). Respondents with low levels of knowledge had a six times higher need for spacing when

compared with respondents who had high levels of knowledge of MC (adjusted OR = 5.587; 95% CI = 1.366–22.851), Table 3.

Factors influencing pregnancy limiting by multiple logistic regression analysis
Factors significantly associated with limiting pregnancy using forward multiple logistic regression analysis were: sociodemographic factors including respondent's age and the number of living children; predisposing factors included previous experience of MC. Respondents aged ≥35 years had 12 times higher unmet need for limiting pregnancy compared to respondents aged ≤20 years (adjusted OR = 12.470; 95% CI = 1.264–86.734). Respondents who had a number of living children ≥3 had a 21-times increase in unmet need for limiting compared to respondents who had 0–1 children (adjusted OR = 21.257; 95% CI = 4.825–93.639). Respondents who didn't have previous experience of MC had a 120 times higher unmet need for limiting compared to respondents who had previous experience of MC (adjusted OR = 120.542; 95% CI = 31.044–486.062), Table 3.

Factors influencing total unmet need by multiple logistic regression analysis
Factors significantly associated with total unmet need using forward multiple logistic regression analysis were predisposing factors such as previous experience of MC use. Respondents without any previous experience of MC use had 714 times increase in unmet need compared to respondents who had an experience of MC use (adjusted OR = 714.511; 95% CI = 160.646–3177.955), Table 3.

Factors	B	SE (B)	Exp (B)	95 % CI	p-value
Spacing					
Number of living children					
0–1	3.711	0.906	40.893	6.930–241.292	<0.001*
2	1.644	0.882	5.174	0.918–29.149	0.062
≥3			1		
Previous experience					
No	3.406	0.489	30.149	11.572–78.548	<0.001*
Yes			1		
Knowledge of MC					
Low	1.721	0.719	5.587	1.366–22.851	0.017*
Moderate	−0.640	0.492	0.527	0.201–1.383	0.193
High			1		
Limiting					
Respondent's age (years)					
≥35	2.348	1.079	12.470	1.264–86.734	0.029*
21–34	0.702	0.670	2.017	0.441–9.946	0.295
≤20			1		
Number of living children					
≥3	3.057	0.757	21.257	4.825–93.639	<0.001*
2	1.692	0.505	5.454	2.027–14.673	0.001*
0–1			1		
Previous experience					
No	4.792	0.692	120.542	31.044–486.062	<0.001*
Yes			1		
Total unmet need					
Previous experience					
No	6.572	0.761	714.511	160.646–3177.955	<0.001*
Yes			1		
Note(s): *Significant at p < 0.05, 95% CI = 95% Confident Interval					

Table 3.
Factors influencing the unmet need for MC on multiple logistic regression analysis

Discussion
A total of 46.7% reproductive-aged women in a rural area of Rolpa reported an unmet need for MC. The proportion of unmet need for spacing was 24.8% and limiting 21.9%, which is similar to a study conducted in the Dang district of Nepal where the total unmet need was 49% and where the unmet need for limiting and spacing was 27 and 22%, respectively [17]. A study conducted in Ghana showed more than one-third (35.2%) had an unmet need (20.2% spacing, 15% limiting) [30]. Also, a study conducted in Mexico showed that the unmet need for contraception was 11.5% among women in a marriage union (6.4% limiting; 5.1% spacing) and 28.9% for women who had never been in a marriage union (8% limiting; 20.9% spacing) [13]. According to a recent demographic survey, the overall unmet need of MC use in Nepal was 24% (8% spacing and 16% limiting), which was lower than that in our study [3]. The variation may be due to difficulty in the accessibility of MC services in a remote area such as Rolpa.

Factors predicting the unmet need for MC
Sociodemographic factors such as the number of living children, predisposing factors such as previous experience of MC use and knowledge of MC use were the predictors of unmet need for spacing. A lower number of living children was found to be the strongest influencing factor to indicate the unmet need for spacing. This finding was similar to previous studies [18, 21, 30]. It can be inferred that respondents with lower numbers of children are younger and they need to have a gap in birth between their children due to financial constraints and time devoted to child-rearing. The second influencing factor was the previous experience with MC use. Those who had no previous experience tended to have a more unmet need for spacing when compared with the experienced group, which can be supported by a study of Solomon et al. [18]. This finding suggests that the need for new couples is varied according to their background information regarding MC use. The last predictor was knowledge of MC use, the lower the level of knowledge, the higher the need for spacing when compared with respondents who had a high level of knowledge of MC, which is quite similar to the previous studies [11, 17, 20]. This can be explained that respondents with a high level of knowledge of MC use would recognize the benefits and effects of MC on birth spacing. Knowledge strengthens their cognitive abilities to choose suitable methods of MC use.

Sociodemographic factors such as respondents' age and number of living children, predisposing factor including previous experience of MC use were three predictors of unmet need for limiting. Previous experience of MC use was the strongest influencing factor to indicate that those respondents without previous experience of MC use had a higher unmet need for limiting when compared to the experienced group, which is supported by a study of Solomon et al. [18]. The second influencing factor was the number of living children, which indicates that the more children in the family, the higher was the unmet need for limiting. The finding was similar to previous studies [18, 21, 30]. The last predictor was the respondent's age. The respondents whose age was equal to or more than 35 years had a higher unmet need for limiting compared to respondents with an age equal to or less than 20 years as the respondents more than 35 years would have already achieved the desired number of children and would want to stop childbearing entirely. Similarly, the respondents aged less than 20 years would think of planning the desired number of children in the future. This result was similar to reports from other studies [10, 11, 14].

The significant predictor that influenced the total unmet need for MC was the predisposing factor of previous experience of MC use. Previous experience of MC was found to be the strongest influencing factor, which indicates that those who had no previous experience tended to have a greater total unmet need for MC when compared with the experienced group, which can be supported by a previous study [18].

Strength and limitation
This study provides a better understanding of the current status of women in rural Nepal and their unmet need for contraceptive use. It will be helpful for policymakers to establish an effective plan to enhance FP programs in rural areas by identifying key points of unmet need.

This study had some limitations including the data collection period as some of the sampled respondents were able to stay in the community while those who were engaged in seasonal migration work in other communities could not be included. This study was carried out in one rural area of Nepal, which might lead to the limitation of generalization to other settings. Our study could not give the whole picture of FP as respondents using permanent birth control methods were not included.

Conclusion
From our findings, a comprehensive education program should be introduced to focus on strengthening and informing MC choice and use. Capacity building of service providers should be promoted to enhance integrated family planning services in local communities. Further study is suggested to conduct action research or a quasi-experimental study to enhance knowledge and raise awareness of MC use as well as to empower couples on MC use. In addition, it would be beneficial to conduct a large-scale cross-sectional study by including other variables such as cost-effectiveness, social mobilization and alliance strategy related to the unmet need for MC.

Conflict of Interest: None

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