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Original article

Prevalence and determinants of unmet family planning needs among rural women in Gandaki Province, Nepal

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Abstract

Background: The unmet need for family planning remains a significant barrier to achieving reproductive health equity globally, including in Nepal. This study aimed to assess the prevalence and determinants of unmet need for family planning among rural women in Nepal.

Methods: A community-based cross-sectional study was conducted in 2023 among married women of reproductive age in a rural municipality of Gandaki Province, Nepal. A total of 310 participants were recruited through consecutive sampling. Data were collected via face-to-face interviews using a structured questionnaire from March 24 to April 8. Multivariate logistic regression analysis ($p < 0.05$) was performed to identify factors associated with unmet need. Data analysis was conducted using SPSS version 26.

Results: The mean age of respondents was 28.5 ± 5.8 years (range: 17–45), with a mean age at marriage of 21.1 ± 3.3 years (range: 14–34). Over 80% of participants demonstrated good knowledge of family planning, with health workers serving as the primary source of information (74.8%). The overall prevalence of unmet need for family planning was 18.1%, predominantly for spacing (16.5%) rather than limiting (1.6%). Adolescents aged 15–19 years exhibited a markedly higher unmet need (50%). Significant determinants of unmet need included ethnicity, education level, husband's occupation, and number of living children.

Conclusion: Although the prevalence of unmet need in this rural area is lower than the national average, substantial disparities exist, particularly among adolescents. Targeted, youth-friendly interventions are essential to address these gaps. Sustained efforts to enhance access to family planning services across Nepal are critical to achieving national reproductive health goals.

Keywords: Family planning, Nepal, Reproductive health, Rural women, Unmet need

Introduction

Family planning, facilitated by modern contraceptives, provides crucial health benefits by enabling women to regulate their fertility for child spacing or limiting childbearing (1). The concept of unmet need for family planning is a critical indicator for assessing progress towards universal access to reproductive health. It reflects the gap between a woman's desire to control childbearing and her actual use of contraception, representing the percentage of women who wish to delay or avoid pregnancy but are not using any family planning methods (2).

Despite anticipated reductions in some regions, the global prevalence of unmet need for family planning is projected to remain above 10% by 2030, disproportionately affecting developing countries (3). Over 200 million women in these regions lack access to adequate family planning services, contributing to a worldwide total of approximately 214 million women facing this challenge (4).

Unmet need is instrumental in shaping family planning policies, programs, and advocacy efforts worldwide (5). In Nepal, Demographic and Health Surveys reveal that while 78% of currently married women express a demand for family planning, a significant proportion (21%) face unmet need. Specifically, 13% desire to limit childbearing and 7% wish to space births but lack access to suitable methods (6). Although there has been some progress compared to the 2016 survey, which reported a 24% unmet need (16% limiting and 8% spacing), the remaining unmet need continues to be a significant public health concern (6).

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The consequences of unmet need for family planning are far-reaching, including high fertility rates, unintended pregnancies, and unsafe abortions. Each year, approximately 80 million unintended pregnancies occur globally, leading to adverse outcomes for mothers, children, and society. Furthermore, an estimated 18 million unsafe abortions take place annually in low- and middle-income countries (4). These statistics underscore the public health importance of expanding access to modern contraceptives (1).

Multiple factors contribute to the high unmet need for family planning in developing countries, including limited access to services, fear of side effects, cultural barriers, and lower socioeconomic status. Unmet need is especially prevalent among younger, rural women with less education and fewer children (7).

Although leading health organizations recognize the issue of inequity in unmet need for family planning and are implementing various measures to address it, high levels of unmet need persist, including in Nepal (8). Therefore, this study aims to identify the prevalence and determinants of unmet need for family planning among rural women in Nepal.

Materials & Methods

This community-based cross-sectional study was conducted in Siranchowk Rural Municipality, a rural area in Gandaki Province, Nepal. The target population comprised all married women of reproductive age (15–49 years) who were permanent residents of the municipality.

Ethical approval for this observational study was granted by the Institutional Review Committee (IRC) of Yeti Health Science Academy, Maharajgunj, Kathmandu, Nepal (ref. No. 2079/080-193) on March 21, 2023. All participants were fully informed of the purpose and procedures of the study, and informed consent was obtained prior to their participation. For respondents under 18 years of age, parental consent was obtained in addition to the participants' own assent. This study adhered to the ethical guidelines of the Declaration of Helsinki. Throughout the study, we ensured that the rights and privacy of participants were respected and protected.

The sampling frame was established using a comprehensive list of married couples obtained from the Municipal Office. From a total of 421 registered couples, 310 eligible women were identified and included as the final sample size for the study. Eligibility was determined based on specific inclusion and exclusion criteria. Women were excluded if they were unavailable during the data collection period, declined to participate, were currently breastfeeding, or if their husbands had been absent for more than one year. Additionally, women reporting infertility, those who had not conceived in the past four years despite multiple attempts, and individuals with medical conditions potentially affecting study outcomes were excluded. A consecutive sampling technique was employed, selecting eligible respondents in the order they were identified. This approach was chosen due to the relative homogeneity of the population and ease of participant accessibility.

Data collection was conducted through face-to-face interviews from March 24 to April 8, 2023, using a structured questionnaire that had been pre-tested for validity and reliability. The questionnaire was developed based on relevant literature (9-11) and adapted to the local context. It consisted of four sections:

- Sociodemographic characteristics: Basic participant information such as age, education, and occupation.
- Reproductive characteristics: Data on age at marriage, duration of marriage, number of living children, sex of the youngest child, and experience of side effects from family planning methods.
- Family planning knowledge assessment: Evaluation of participants' understanding of family planning concepts.
- Contraception unmet need assessment: Measurement of unmet need for contraception among participants.

The questionnaire, originally developed in English, was translated into Nepali to ensure better comprehension. Content validity was confirmed by subject matter experts, and a pre-test was conducted on a sample of 31 individuals to assess clarity and reliability.

Unmet need for contraception was assessed among eligible women (non-pregnant, reproductive-aged) by inquiring about current contraceptive use. Women not using any method were further questioned about their pregnancy intentions: those not wanting any more children were classified as having an unmet need for limiting, while those wishing to postpone childbirth for at least two years or uncertain about future childbearing were classified as having an unmet need for spacing. The overall unmet need was calculated as the percentage of fertile, sexually active women aged 15–49 who were not using contraception for either spacing or limiting purposes (3, 12).

Participants' knowledge of family planning was measured using a set of nine questions covering a broad range of relevant topics. Scores were computed, and respondents scoring at or above the mean were categorized as having 'Good Knowledge' (13), reflecting a sound understanding of family planning concepts.

Data were reviewed daily for completeness and consistency. After coding, data entry and analysis were performed using SPSS version 26. Descriptive statistics summarized categorical variables. To identify factors associated with unmet need for family planning, multivariate logistic regression analysis was conducted. Statistical significance was set at $p < 0.05$.

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Results

The study respondents were predominantly young adults, with the largest age group being 25–29 years (33.9%), and a mean age of 28.5 ± 5.8 years. Nearly half of the participants (49.4%) belonged to the Brahmin/Chettri ethnic group, reflecting the regional demographic distribution. Most respondents (60%) had attained secondary education, and over half (52.9%) were homemakers living in joint families (67.4%). The majority of their husbands (59.7%) also had secondary education, with business owners or self-employed being the most common occupation (43.5%) (Table 1).

Table 1. Socio-demographic characteristics of respondents (n = 310)

Variables	Number (%)
Age, mean (range)	28.5 ± 5.8 (17–45)
15–19	10 (3.2)
20–24	75 (24.2)
25–29	105 (33.9)
30–34	65 (21.0)
35–39	41 (13.2)
≥40	14 (4.5)
Ethnicity	
Brahmin/Chettri	153 (49.4)
Jana Jati	75 (24.2)
Newar	48 (15.5)
Dalit	34 (11.0)
Religion	
Hinduism	241 (77.7)
Buddhism	39 (12.6)
Christian	30 (9.7)
Participant's education	
Informal education	16 (5.2)
Basic (1–8 grades)	56 (18.1)
Secondary (9–12 grades)	186 (60.0)
University education	52 (16.8)
Husband's education	
Informal education	9 (2.9)
Basic (1–8 grades)	52 (16.8)
Secondary (9–12 grades)	185 (59.7)
University education	64 (20.6)
Participant's occupation	
Homemaker	164 (52.9)
Business/Self-employed	65 (21.0)
Service worker	51 (16.5)
Student	30 (9.7)
Husband's occupation	
Business owner/Self-employed	135 (43.5)
Service worker	73 (23.5)
Labor	57 (18.4)
Farmer	36 (11.6)
Others*	9 (2.9)
Types of family	
Nuclear	84 (27.1)
Joint	209 (67.4)
Extended	17 (5.5)

*Others include professionals and students

Regarding reproductive characteristics, 68.4% (n=212) of respondents were married at age 20 or older, with a mean age at marriage of 21.1 ± 3.3 years (range: 14–34). More than half (51.6%, n=160) had been married for six years or longer. Forty percent (40.3%, n=125) had one living child, and among those with children, 61.3% had a male youngest child. Nearly all (97.7%) reported experiencing side effects from family planning methods, which may influence contraceptive use decisions (Table 2).

Table 2. Reproductive characteristics of respondents (n = 310)

Variables	Number (%)
Age at marriage	
Mean (range)	21.1 ± 3.3 (14–34)
20 years and above	212 (68.4)
Below 20 years	98 (31.6)
Duration of married life	
≥6 years	160 (51.6)
<6 years	150 (48.4)
Number of living children	
0	93 (30.0)
1	125 (40.3)
2	87 (28.1)
3	5 (1.6)
Sex of youngest child	
Male	133 (61.3)
Female	84 (38.7)
Experience of side effects	
Yes	303 (97.7)
No	7 (2.3)

The overall unmet need for family planning was 18.1%, predominantly for spacing (16.5%) compared to limiting births (1.6%). Notably, unmet need was highest among adolescents aged 15–19 years, reaching 50%. Despite this, most participants (81.9%) demonstrated good knowledge of family planning methods, while 18.1% had poor knowledge. Health workers were the primary source of family planning information for 74.8% of respondents, followed by family members, husbands, or neighbors (51.9%), and social media (44.5%). Only 30% cited health institutions as a direct source of information.

Logistic regression analysis examined associations between sociodemographic factors and unmet need for family planning. Variables significant in bivariate analysis were included in a multivariate logistic regression model, which showed good fit (Omnibus Tests of Model Coefficients, $p < 0.001$; Hosmer-Lemeshow Test, $p = 0.883$; Nagelkerke $R^2 = 0.326$) (Table 3).

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In the adjusted model, compared to Brahmin/Chettri women, those from the Dalit ethnic group had significantly higher odds of unmet need (AOR = 6.66; 95% CI: 1.98–22.40). Women with education at the basic level or below (AOR = 0.14; 95% CI: 0.03–0.71) and secondary education (AOR = 0.20; 95% CI: 0.06–0.64) had significantly lower odds of unmet need compared to those with university education. Husbands engaged in business had wives with lower odds of unmet need (AOR = 0.32; 95% CI: 0.12–0.83) compared to those in service occupations. Women with no children were more likely to have unmet need (AOR = 2.78; 95% CI: 1.09–7.13).

Table 3. Multivariate logistic regression analysis of factors associated with unmet need for family planning (n = 310)

Variables	AOR (95% CI)	p-value
Age (ref: ≥35)		
15–24	1.84 (0.37–9.18)	0.456
25–34	1.84 (0.47–7.23)	0.383
Ethnicity (ref: Brahmin/ Chhetri)		
Dalit	6.66 (1.98–22.40)	0.002
Newar	4.17 (1.25–13.87)	0.020
Jana Jati	4.86 (1.63–14.55)	0.005
Participant's education (ref: University)		
Basic level or below	0.14 (0.03–0.71)	0.018
Secondary	0.20 (0.06–0.64)	0.007
Husband's occupation (ref: Service worker)		
Business owner/Self-employed	0.32 (0.12–0.83)	0.020
Number of living children (ref: 1–3)		
0	2.78 (1.09–7.13)	0.033

Note: Only statistically significant variables shown. Full model details available in Table 3

Discussion

The prevalence of unmet need for family planning in our study area was found to be 18.1%, aligning closely with findings from Karnataka, India (10), Pakistan (14), Gambia (15), and Myanmar (16). This figure is marginally lower than the national average reported for 2022 (21%). Nepal has seen a fluctuating trend in unmet need, decreasing from 32% in 1996 to 25% in 2006, then rising to 28% in 2011, reflecting challenges in sustaining progress (17). The national targets aim to reduce unmet need to 18.3% by 2022, 15.2% by 2025, and 10% by 2030 (18). This positive trend highlights the effectiveness of ongoing efforts to improve access to family planning services in Nepal. Encouragingly, the study area appears to be on track to meet the 2025 target of a 15.2% unmet need.

However, significant disparities exist across Nepal. While our study area shows progress, other regions face greater challenges. For instance, sub-Saharan Africa reports a higher unmet need (23.7%) (5) and Eastern Ethiopia's unmet need stands at 26% (11). A stark contrast is observed in Kailali District, Nepal, where the unmet need among postpartum mothers is as high as 50% (Joshi et al., 2020). Conversely, India has demonstrated a significant reduction in unmet needs, from 20.6% in 1993 to 9.4% in 2021 (19), which are lower than our current findings. These disparities highlight the importance of addressing regional variations in Nepal. Factors such as access to services, cultural beliefs, and demographics may influence unmet needs in different regions. Reaching national targets and ensuring equitable access to family planning services across Nepal requires sustained and targeted efforts.

Our study revealed that the majority of unmet need was concentrated among adolescents aged 15–19, corroborating national data (6). This demographic trend underscores the critical need for targeted family planning interventions for adolescents and young adults. Interestingly, the majority of participants in our study exhibited good understanding of family planning methods, consistent with previous research (13). However, despite this, unmet needs remain concentrated among adolescents. This finding suggests a gap between knowledge and access to family planning services in this age group. A study from Ethiopia (20) further highlights this issue, indicating that less than half of the participants had adequate knowledge. This discrepancy between our findings and those of the Ethiopian study could be attributed to variations in sample size, assessment tools, and potentially cultural factors influencing knowledge dissemination.

Ethnicity emerged as a significant factor associated with unmet need for family planning, echoing findings from other studies (21). This suggests that cultural- and community-specific strategies may be necessary to address the unique barriers faced by different ethnic groups. Education level also showed a significant association with unmet need; individuals with basic or secondary education had lower odds of unmet need, in line with prior research (1, 9). This highlights the role of education in empowering individuals to make informed family planning decisions.

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Interestingly, our study found that mothers with no children had higher odds of unmet need, which contrasts with a study from Congo (22) reporting that the odds of unmet need increased with the number of living children. Such divergent findings may stem from differences in sample size, methodology, study area, and demographic characteristics of the respondents. This points to the complex interplay of sociodemographic factors in family planning needs and warrants further investigation to understand these dynamics.

The study's cross-sectional design limits the ability to establish causal relationships between sociodemographic factors and unmet need, as it captures data at a single point in time. Reliance on self-reported data introduces potential social desirability bias, which may affect the accuracy of reported knowledge and contraceptive use. The focus on a single rural municipality in Gandaki Province restricts the generalizability of findings to other regions of Nepal, given regional variations in cultural, economic, and healthcare access factors. The use of consecutive sampling may introduce selection bias, as it may not fully represent the diversity of the population. Additionally, the sample size may lack sufficient power to detect all significant associations, particularly for subgroups with smaller representation, such as adolescents. The high reported rate of side effects (97.7%) may also reflect recall bias or varying perceptions of side effects, potentially skewing the results. Finally, the study did not explore qualitative factors, such as cultural beliefs or partner dynamics, which could provide deeper insight into barriers to contraceptive use.

Conclusion

This study provides a comprehensive analysis of the unmet need for family planning in a specific region of Nepal, focusing on the sociodemographic and reproductive characteristics of the participants. The prevalence of unmet needs was found to be slightly lower than the national average reported in 2022, suggesting that the study area is on track to meet the national target of reducing unmet needs by 2025. However, a significant disparity exists, with a staggering unmet need among adolescents (15–19 years old). This underscores the critical necessity of targeted family planning interventions for adolescents and young adults.

Despite good knowledge levels overall, a gap between knowledge and access/application was evident among adolescents. Sociodemographic factors such as ethnicity, education level, husband's occupation, and number of living children were significantly associated with unmet needs. Targeted interventions are crucial for addressing the high unmet needs of adolescents. These interventions should bridge the knowledge-application gap and ensure access to youth-friendly services. Culturally sensitive strategies are required to address the specific barriers faced by different ethnic groups. Continued efforts are required to improve access to family planning services across all regions of Nepal, particularly for those with lower educational levels and whose husbands are not in business occupations.

Further exploration is needed to understand the reasons for the higher unmet needs among mothers with no children. Investigating the influence of social norms and cultural beliefs on family planning decisions across different ethnicities is valuable. Future research incorporating longitudinal designs, larger and more diverse samples from across Nepal, and exploration of the specific challenges faced by different sociodemographic groups can provide an even more comprehensive understanding of the unmet need for family planning.

This study contributes to ongoing efforts to improve access to family planning in Nepal. By addressing identified disparities and implementing targeted interventions, Nepal can move closer to achieving its national family planning goals.

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Conflicts of Interest

There are no conflicts of interest.

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References

1. Nkoka O, Mphande WM, Ntenda PA, Milanzi EB, Kanje V, Guo SJ. Multilevel analysis of factors associated with unmet need for family planning among Malawian women. BMC public health. 2020;20:1-12.
2. Getaneh T, Negesse A, Dessie G, Desta M, Moltot T. Predictors of unmet need for family planning in Ethiopia 2019: a systematic review and meta analysis. Archives of Public Health. 2020;78:1-11.
3. Tadele A, Abebaw D, Ali R. Predictors of unmet need for family planning among all women of reproductive age in Ethiopia. Contraception and Reproductive Medicine. 2019;4:1-9.
4. Gelagay AA, Negash WD, Belachew TB, Bitew DA, Fentie EA, Worku AG, et al. Magnitude of unmet need for family planning and associated factors among women in the extended postpartum period in Dabat district, Northwest Ethiopia. evidence from Dabat demographic health surveys. BMC Public Health. 2023;23(1):1123.
5. Teshale AB. Factors associated with unmet need for family planning in sub-Saharan Africa: A multilevel multinomial logistic regression analysis. Plos one. 2022;17(2):e0263885.
6. Minstry of Health and Population [Nepal]. Nepal Demographic Health Sruvey 2016.
7. Asif MF, Pervaiz Z. Socio-demographic determinants of unmet need for family planning among married women in Pakistan. BMC public health. 2019;19:1-8.
8. Målqvist M, Hultstrand J, Larsson M, Ashish K. High levels of unmet need for family planning in Nepal. Sexual & Reproductive Healthcare. 2018;17:1-6.
9. Bhusal CK, Bhattarai S. Factors affecting unmet need of family planning among married Tharu women of Dang District, Nepal. International journal of reproductive medicine. 2018;2018.
10. Dowerah J, Murthy MN, Kulkarni P. Prevalence and pattern of contraceptive use and unmet need among women of reproductive age in urban Mysuru. Clinical Epidemiology and Global Health 2020;8(4):1221-4.
11. Girma Garo M, Garoma Abe S, Dugasa Girsha W, Daka DW. Unmet need for family planning and associated factors among currently married women of reproductive age in Bishoftu town, Eastern Ethiopia. PloS one. 2021;16(12):e0260972.
12. World Health Organization. Unmet need for family planning [Internet]. 2024. Available from: https://www.who.int/data/gho/indicator-metadata-registry/imr-details/3414.
13. Amaje E, Ayalew T. Unmet need for family planning and associated factors, among women of child-bearing age working in Hawassa industrial park, Southern Ethiopia 2021: An institution based cross-sectional study. Clinical Epidemiology and Global Health. 2022;17:101122.
14. Imran M, Yasmeen R. Unmet need for family planning in Pakistan: prevalence and factors influencing unmet need among women of reproductive age. International Journal of Women Empowerment. 2021;7.
15. Yaya S, Idriss-Wheeler D, Uthman OA, Bishwajit G. Determinants of unmet need for family planning in Gambia & Mozambique: implications for women's health. BMC women's health. 2021;21:1-8.
16. Wai MM, Bjertness E, Stigum H, Htay TT, Liabsuetrakul T, Moe Myint AN, et al. Unmet need for family planning among urban and rural married women in Yangon region, Myanmar—a cross-sectional study. International journal of environmental research and public health. 2019;16(19):3742.
17. Minstry of Health and Population. Nepal demographic and health survey 2022. Kathmandu, Nepal: 2023.
18. Prakash DP, Jhabindra PP, Kristin B. Unmet Need for Family Planning and Fertility in Nepal: Levels, Trends, and Determinants [Internet]. 2019. Available from: https://www.dhsprogram.com/pubs/pdf/FA119/FA119.pdf.
19. Devaraj K, Gausman J, Mishra R, Kumar A, Kim R, Subramanian S. Trends in prevalence of unmet need for family planning in India: patterns of change across 36 States and Union Territories, 1993–2021. Reproductive Health. 2024;21(1):48.
20. Bekele D, Surur F, Nigatu B, Teklu A, Getinet T, Kassa M, et al. Knowledge and attitude towards family planning among women of reproductive age in emerging regions of Ethiopia. Journal of Multidisciplinary Healthcare. 2020:1463-74.

[Downloaded from caspjrm.ir on 2026-11-11]

[DOI: 10.22088/caspjrm.10.2.5]

21. Barrow A, Jobe A, Okonofua F. Prevalence and determinants of unmet family planning needs among women of childbearing age in the Gambia: analysis of nationally representative data. Gates Open Research. 2021;4(124):124.
22. Mosuse MA, Gadeyne S. Prevalence and factors associated with unmet need for family planning among women of reproductive age (15–49) in the Democratic Republic of Congo: A multilevel mixed-effects analysis. Plos one. 2022;17(10): e0275869.

[Downloaded from caspjrm.ir on 2026-11-11]

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