International Journal of Medical and Pharmaceutical Research

Online ISSN-2958-3683 | Print ISSN-2958-3675
Frequency: Bi-Monthly
Available online on: https://ijmpr.in/

Original Article

CONTRACEPTIVE UTILIZATION AND UNMET NEED FOR FAMILY PLANNING AMONG WOMEN ATTENDING A TERTIARY CARE HOSPITAL IN RAJASTHAN: A HOSPITAL-BASED CROSS-SECTIONAL STUDY

Dr Mahendra Singh Rathore[1], Dr. Bhuvanesh Champawat[2], Dr Pratap Bhan Kaushik[3], Dr Jatin Prajapati[4]

[1] Assistant Professor, Department of Community Medicine, RNT Medical College, Udaipur, Rajasthan, India.
[2] Senior Demonstrator, Department of Physiology, RNT Medical College, Udaipur, Rajasthan, India.
[3] Assistant Professor, Department of Community Medicine, Dr D.Y. Patil Medical College, Hospital & Research Centre, Pune, Maharashtra, India. (ORCID: https://orcid.org/0009-0009-6273-9242)
[4] Senior Resident, Department of Community Medicine, World College of Medical Sciences and Research, Jhajjar, Haryana, India. (ORCID: https://orcid.org/0009-0004-7298-4499)

OPEN ACCESS

Corresponding Author:

Dr Mahendra Singh Rathore

Assistant Professor, Department of Community Medicine, RNT Medical College, Udaipur, Rajasthan, India.

Received: 09-05-2026
Accepted: 14-06-2026
Available online: 28-06-2026

ABSTRACT

Background: Family planning is a key component of reproductive healthcare that contributes to improved maternal and child health by preventing unintended pregnancies and optimizing birth spacing. Despite significant progress in family planning services in India, unmet need for contraception remains an important public health concern, particularly among women with limited access to reproductive health services.

Objectives: To assess contraceptive utilization, estimate the prevalence of unmet need for family planning, and identify factors associated with unmet need among women attending a tertiary care hospital in Rajasthan.

Methods: A hospital-based cross-sectional observational study was conducted among 440 women of reproductive age (15–49 years) attending the outpatient Department of Obstetrics and Gynaecology of a tertiary care teaching hospital in Rajasthan between July 2025 and December 2025. Participants were selected using systematic random sampling. Data were collected using a pretested, interviewer-administered structured questionnaire covering sociodemographic characteristics, reproductive history, contraceptive practices, and family planning needs. Data were analyzed using IBM SPSS Statistics version 26.0. Descriptive statistics were used to summarize the data. Associations between categorical variables were assessed using the Chi-square test or Fisher's exact test, and multivariable logistic regression analysis was performed to identify independent predictors of unmet need. A p-value of <0.05 was considered statistically significant.

Results: Among the 440 participants, 288 (65.5%) were current users of contraception, whereas 152 (34.5%) were non-users. Female sterilization was the most commonly used contraceptive method, followed by male condoms and oral contraceptive pills. The overall prevalence of unmet need for family planning was 16.8%, with unmet need for spacing exceeding unmet need for limiting births. Fear of side effects, husband or family opposition, and inadequate knowledge were the most frequently reported reasons for non-use of contraception. Multivariable logistic regression identified lower educational status, absence of family planning counselling, lack of husband's support, and rural residence as significant independent predictors of unmet need for family planning.

Conclusion: Although contraceptive utilization among women attending the tertiary care hospital was encouraging, a substantial unmet need for family planning persists. Strengthening family planning counselling, improving awareness regarding modern reversible contraceptive methods, promoting male partner involvement, and addressing barriers among rural and less educated women may help reduce unmet need and improve reproductive health outcomes.

Keywords*: Contraceptive utilization; Family planning; Unmet need; Reproductive health; Rajasthan; Cross-sectional study.*

INTRODUCTION

Family planning is a fundamental component of reproductive health and an essential public health intervention that contributes to improved maternal and child health outcomes, gender equality, and socioeconomic development. Access to safe, effective, and affordable contraceptive methods enables individuals and couples to determine the number and spacing of their children, thereby reducing unintended pregnancies, unsafe abortions, and pregnancy-related morbidity and mortality. Despite substantial global progress in expanding family planning services, millions of women of reproductive age continue to experience barriers to accessing modern contraceptive methods, resulting in a persistent unmet need for family planning. Addressing this unmet need remains a key priority under the Sustainable Development Goals (SDGs), particularly SDG 3, which aims to ensure universal access to sexual and reproductive healthcare services.[1,2]

Globally, modern contraceptive use has increased steadily over the past decades; however, considerable disparities persist between and within countries due to differences in socioeconomic status, educational attainment, cultural norms, healthcare accessibility, and policy implementation. According to recent global estimates, approximately two-thirds of women of reproductive age who wish to avoid pregnancy use a modern contraceptive method, while a substantial proportion still have an unmet need for family planning. Women with unmet need are at increased risk of unintended pregnancies, adverse maternal outcomes, and poor neonatal health, highlighting the importance of strengthening family planning programs and ensuring equitable access to contraceptive services.[2,3]

India has made significant progress in family planning through the National Family Welfare Programme and successive reproductive and child health initiatives. The introduction of a basket of contraceptive choices, improved service delivery, and community-based interventions has contributed to increasing contraceptive prevalence over time. Findings from the National Family Health Survey (NFHS-5) indicate that the prevalence of modern contraceptive use among currently married women has improved compared with previous survey rounds, while unmet need for family planning has declined nationally. Nevertheless, notable interstate and intrastate variations continue to exist, influenced by differences in literacy, women's autonomy, access to healthcare facilities, socioeconomic conditions, and sociocultural beliefs.[4,5]

Rajasthan, one of India's geographically large states, presents unique demographic and public health challenges. Although improvements have been observed in reproductive health indicators over recent years, contraceptive utilization remains heterogeneous across districts and population groups. Factors such as early marriage, lower female educational attainment, rural residence, gender norms, misconceptions regarding contraceptive methods, fear of adverse effects, and limited involvement of male partners continue to affect family planning practices. Additionally, disparities in healthcare access and quality of counseling may further contribute to variations in contraceptive uptake and persistence.[5,6]

Understanding the determinants of contraceptive utilization requires consideration of multiple interacting factors, including maternal age, parity, educational level, occupation, socioeconomic status, religion, family structure, previous obstetric history, knowledge regarding contraceptive methods, exposure to health education, partner support, and accessibility of family planning services. Evidence suggests that women who receive comprehensive counseling and possess adequate knowledge regarding contraceptive options are more likely to adopt modern contraceptive methods. Conversely, inadequate awareness, concerns regarding side effects, misconceptions, social stigma, and opposition from family members remain important contributors to unmet need for family planning.[3,7,8]

Hospital-based assessments provide valuable opportunities to evaluate contraceptive practices among women utilizing healthcare services and to identify modifiable barriers that may not be adequately captured through population-based surveys. Women attending tertiary care hospitals represent diverse socioeconomic and geographic backgrounds and frequently interact with healthcare providers, making these settings suitable for assessing contraceptive utilization and unmet need while identifying opportunities for improving counseling and service delivery. However, published hospital-based evidence from Rajasthan examining both contraceptive utilization and determinants of unmet need remains relatively limited, particularly using contemporary data collected after implementation of recent national family planning initiatives.[5,9]

Generating institution-based evidence is important for guiding targeted interventions, strengthening counseling services, improving method choice, and informing local reproductive health policies. Identification of factors associated with unmet need can assist healthcare providers and program managers in designing context-specific strategies to improve contraceptive acceptance and continuity of use among women of reproductive age.

Therefore, the present study aims to assess the pattern of contraceptive utilization and estimate the prevalence of unmet need for family planning among women attending a tertiary care hospital in Rajasthan. The specific objectives are to determine the utilization of various contraceptive methods, estimate the proportion of women with unmet need for family planning, and identify sociodemographic and reproductive factors associated with contraceptive utilization and unmet need.

METHODOLOGY

Study Design: A hospital-based cross-sectional observational study was conducted to assess contraceptive utilization and unmet need for family planning among women attending a tertiary care hospital in Rajasthan. The study was designed and reported in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines.

Study Setting: The study was conducted in the Department of Obstetrics and Gynaecology and associated outpatient clinics of a tertiary care teaching hospital in Rajasthan, India. The hospital caters to a large urban and rural population and serves as a referral center for surrounding districts, providing comprehensive reproductive and family planning services.

Study Duration: The study was conducted over a period of 6 months, from July 2025 to December 2025.
Study Population: The study population comprised women of reproductive age (15–49 years) attending the outpatient Department of Obstetrics and Gynaecology during the study period. Eligible participants were interviewed regarding their contraceptive practices, reproductive history, and family planning needs using a pretested structured questionnaire.

Inclusion Criteria

- Women aged 15–49 years.
- Married women or women currently in union attending the outpatient department.
- Women willing to participate and provide written informed consent.
- Women who were medically stable and able to respond to the interview.

Exclusion Criteria

- Pregnant women attending solely for antenatal care.
- Women who had undergone hysterectomy.
- Women with severe illness or cognitive impairment preventing interview.
- Women who declined to participate or withdrew consent at any stage of the study.

Sample Size: The sample size was calculated using the single population proportion formula:
$n = Z^2P(1 - P)/d^2$
Where:
Z = 1.96 (95% confidence level)
P = 0.50 (assumed prevalence of contraceptive utilization in the absence of a precise local estimate to obtain the maximum sample size)
d = 0.05 (absolute precision)
Accordingly,
$n = (1.96)^2 \times 0.50 \times 0.50 / (0.05)^2$
n = 384
After adding approximately 15% to compensate for possible non-response and incomplete questionnaires, the required sample size was 442. During the study period, 440 eligible women completed the interview with complete information and were included in the final analysis.

Sampling Technique: A systematic random sampling technique was employed. Based on the average outpatient attendance during the study period, the sampling interval was calculated. The first eligible participant was selected randomly, and thereafter every 5th eligible woman fulfilling the inclusion criteria was recruited until the desired sample size of 440 participants was achieved.

Data Collection Tools and Procedure: Data were collected using a pretested, interviewer-administered structured questionnaire prepared after reviewing relevant literature, National Family Health Survey (NFFS-5) indicators, and standard family planning assessment tools. The questionnaire was initially developed in English, translated into Hindi, and back-translated to ensure linguistic consistency. A pilot study was conducted among approximately 5% of the estimated sample at a comparable healthcare facility; these participants were excluded from the final analysis. Necessary modifications were incorporated before commencement of the study.

The questionnaire included information on socio-demographic characteristics, educational status, occupation, socioeconomic status, residence, parity, reproductive history, knowledge regarding family planning methods, current and previous contraceptive use, source of information, accessibility of family planning services, partner involvement, reasons for non-use or discontinuation of contraception, and unmet need for spacing or limiting births. Interviews were conducted in a private setting by trained investigators to ensure confidentiality and minimize information bias.

Study Variables: The dependent variables were current contraceptive utilization (yes/no, type of contraceptive method) and unmet need for family planning (present/absent), classified according to standard demographic and family planning definitions. The independent variables included age, place of residence, educational status of woman and husband, occupation, socioeconomic status, religion, family type, age at marriage, duration of marriage, parity, number of living

children, previous obstetric history, exposure to family planning counseling, knowledge regarding contraceptive methods, accessibility of family planning services, husband's support for contraception, and previous contraceptive experience.

Statistical Analysis: Data were entered into Microsoft Excel after checking for completeness and consistency and subsequently analyzed using IBM SPSS Statistics version 26.0 (IBM Corp., Armonk, NY, USA). Categorical variables were summarized as frequencies and percentages, whereas continuous variables were expressed as mean ±standard deviation or median with interquartile range, depending on data distribution. Associations between categorical variables were assessed using the Chi-square test or Fisher's exact test, wherever appropriate. Variables demonstrating significant association in bivariate analysis were considered for multivariable logistic regression to identify independent predictors of unmet need for family planning. Results were expressed as adjusted odds ratios (AORs) with 95% confidence intervals (95% CI). A p-value <0.05 was considered statistically significant.

Ethical Considerations: Written informed consent was obtained from each participant prior to enrolment. Participation was entirely voluntary, and participants were informed about the purpose of the study, confidentiality of collected information, and their right to refuse participation or withdraw at any stage without affecting their medical care. Personal identifiers were removed during data analysis to maintain anonymity. The study was conducted in accordance with the ethical principles of the Declaration of Helsinki (2013 revision) and the applicable national ethical guidelines for biomedical and health research involving human participants.

RESULTS

A total of 440 women of reproductive age were included in the analysis. The mean age of the participants was 29.8 ±5.6 years. Most participants belonged to the 25–34 years age group, were from rural areas, and had attained at least secondary-level education. Approximately two-thirds of the women reported current use of at least one contraceptive method, while the remaining women were either non-users or had an unmet need for family planning.

Among the 440 participants, the majority were aged 25–34 years, resided in rural areas, and belonged to the middle socioeconomic class (Table 1).

Table 1. Sociodemographic characteristics of study participants (N = 440)

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	15–24	92	20.9
	25–34	228	51.8
	35–49	120	27.3
Residence	Rural	264	60.0
	Urban	176	40.0
Educational status	No formal education	54	12.3
	Primary	82	18.6
	Secondary	188	42.7
	Graduate & above	116	26.4
Occupation	Homemaker	318	72.3
	Employed	122	27.7
Socioeconomic status*	Lower	110	25.0
	Middle	248	56.4
	Upper	82	18.6

*Classified according to the Modified BG Prasad Socioeconomic Scale (updated for the study period).

Nearly two-thirds of the women were current users of contraception, with female sterilization being the most commonly adopted method, followed by male condoms and oral contraceptive pills (Table 2).

Table 2. Pattern of contraceptive utilization among study participants (N = 440)

Variable	Category	Frequency (n)	Percentage (%)
Current contraceptive use	Yes	288	65.5
	No	152	34.5
Type of contraceptive method (n = 288)	Female sterilization	104	36.1
	Male condom	72	25.0
	Oral contraceptive pills	46	16.0
	IUCD	40	13.9

	Injectable contraceptive	14	4.9
	Other methods	12	4.1

The overall unmet need for family planning was 16.8%, with unmet need for spacing exceeding unmet need for limiting births. Fear of side effects, opposition from husbands or family members, and inadequate knowledge were the most frequently reported barriers to contraceptive use (Table 3).

Table 3. Unmet need for family planning and reasons for non-use of contraception (N = 440)

Variable	Category	Frequency (n)	Percentage (%)
Unmet need	Present	74	16.8
	Absent	366	83.2
Type of unmet need (n = 74)	Spacing	46	62.2
	Limiting	28	37.8
Major reasons for non-use*	Fear of side effects	42	56.8
	Husband/family opposition	28	37.8
	Lack of adequate knowledge	24	32.4
	Desire for more children	20	27.0
	Poor access/availability	10	13.5

*Multiple responses were permitted.

Bivariate analysis demonstrated significant associations between contraceptive utilization and women's educational status, place of residence, receipt of family planning counselling, and husband's support (Table 4).

Table 4. Association between selected factors and current contraceptive utilization (N = 440)

Variable	Category	Contraceptive users n (%)	Non-users n (%)	p-value
Educational status	Up to primary (n=136)	72 (52.9)	64 (47.1)	<0.001
	Secondary & above (n=304)	216 (71.1)	88 (28.9)	
Residence	Rural (n=264)	160 (60.6)	104 (39.4)	0.02
	Urban (n=176)	128 (72.7)	48 (27.3)	
Family planning counselling	Received (n=286)	212 (74.1)	74 (25.9)	<0.001
	Not received (n=154)	76 (49.4)	78 (50.6)	
Husband's support	Present (n=302)	224 (74.2)	78 (25.8)	<0.001
	Absent (n=138)	64 (46.4)	74 (53.6)	

On multivariable logistic regression analysis, lower educational status, absence of family planning counselling, lack of husband's support, and rural residence remained independent predictors of unmet need for family planning (Table 5).

Table 5. Multivariable logistic regression showing factors independently associated with unmet need for family planning (N = 440)

Variable	Adjusted Odds Ratio (AOR)	95% Confidence Interval	p-value
Education up to primary	2.1	1.2–3.6	0.01
No family planning counselling	2.8	1.6–4.9	<0.001
Lack of husband's support	2.4	1.3–4.3	0.004
Rural residence	1.7	1.0–2.9	0.04

DISCUSSION

The present hospital-based cross-sectional study assessed contraceptive utilization and unmet need for family planning among 440 women of reproductive age attending a tertiary care hospital in Rajasthan. Approximately two-thirds of the participants were current users of contraception, while the prevalence of unmet need for family planning was 16.8%. Female sterilization remained the most commonly utilized contraceptive method, followed by male condoms and oral contraceptive pills. Lower educational status, rural residence, lack of family planning counselling, and inadequate husband support were independently associated with unmet need for family planning.

The contraceptive prevalence observed in the present study is comparable to findings reported in the National Family Health Survey (NFHS-5), which documented an improvement in modern contraceptive use among currently married women in India compared with previous survey rounds.[4] Similar trends have been reported by the World Health Organization and the United Nations, reflecting gradual expansion of access to family planning services in many low- and

middle-income countries.[1,2] The observed utilization rate also falls within the range reported by hospital- and community-based studies conducted across different regions of India, although variations are expected because of differences in study populations, healthcare access, and regional sociocultural characteristics.[5]

Female sterilization was the predominant contraceptive method in this study, consistent with the long-standing pattern observed in India, where permanent methods continue to contribute substantially to the contraceptive method mix.[4,5] Although the availability of reversible contraceptive options has expanded under the National Family Planning Programme, their utilization remains comparatively lower. This pattern may reflect completed family size, provider preference, greater familiarity with permanent methods, and continued reliance on female-centered contraceptive choices. The relatively lower uptake of spacing methods underscores the need to strengthen counselling regarding reversible contraceptive options, particularly among younger couples.[6]

The prevalence of unmet need for family planning in the present study was similar to estimates reported by NFHS-5 for India and Rajasthan, indicating that despite improvements in contraceptive coverage, a considerable proportion of women continue to experience barriers to accessing or using appropriate family planning methods.[4,5] The predominance of unmet need for spacing over limiting observed in this study is also consistent with previous Indian studies, particularly among younger women who desire future pregnancies but wish to delay childbirth. This finding emphasizes the importance of expanding access to reversible contraceptive methods and ensuring timely counselling during the postpartum and post-abortion periods.[7,8]

Fear of side effects emerged as the most frequently reported reason for non-use of contraception, followed by opposition from husbands or family members and inadequate knowledge regarding available methods. Similar barriers have been consistently documented in studies from India and other low- and middle-income countries.[3,7,10] Misconceptions regarding infertility, menstrual disturbances, weight gain, and long-term health consequences continue to influence contraceptive decision-making. These concerns may be further amplified by inadequate counselling, limited follow-up, and the circulation of inaccurate information within communities. Addressing these misconceptions through evidence-based counselling and community awareness initiatives could substantially improve contraceptive acceptance and continuation.

Educational attainment demonstrated a significant association with contraceptive utilization, with women having secondary education or higher being more likely to use contraception. This finding corroborates previous evidence indicating that education improves reproductive health awareness, autonomy in healthcare decision-making, and the ability to access health information.[4,8] Similarly, women residing in rural areas exhibited a higher likelihood of unmet need compared with their urban counterparts. Geographic disparities in healthcare accessibility, transportation, availability of trained providers, and differences in health literacy may partly explain this observation.

Receipt of family planning counselling was strongly associated with increased contraceptive utilization and lower unmet need. Women who received counselling during healthcare visits were more likely to adopt contraception, highlighting the importance of integrating comprehensive family planning counselling into routine reproductive and maternal healthcare services. Previous studies have similarly demonstrated that counselling by trained healthcare providers improves informed method choice, continuation rates, and overall client satisfaction.[1,6]

Husband support also emerged as an independent predictor of contraceptive utilization. In many Indian households, reproductive decisions are influenced jointly by couples or extended family members, making male involvement an essential component of successful family planning programmes. Previous research has shown that spousal communication and shared decision-making significantly improve contraceptive acceptance and continuation.[3,10] Strengthening male participation through targeted educational interventions and couple-based counselling may therefore reduce unmet need and promote informed reproductive choices.

From a public health perspective, the findings of the present study highlight the continuing need to strengthen family planning services beyond merely ensuring contraceptive availability. Improving the quality of counselling, expanding awareness regarding spacing methods, addressing misconceptions, and promoting male involvement are likely to enhance contraceptive utilization and reduce unmet need. Special attention should be directed toward women with lower educational attainment and those residing in rural communities, who remain disproportionately affected by barriers to family planning services.

The strengths of this study include an adequate sample size, standardized data collection using a pretested questionnaire, and assessment of both contraceptive utilization and determinants of unmet need within a tertiary care setting that caters to women from diverse geographic and socioeconomic backgrounds. The use of multivariable regression analysis enabled identification of independent predictors after adjustment for potential confounding variables.

CONCLUSION

The present study demonstrated that approximately two-thirds of women attending the tertiary care hospital were current users of contraceptive methods, while a considerable proportion continued to have an unmet need for family planning, predominantly for spacing births. Female sterilization remained the most commonly utilized contraceptive method, indicating continued reliance on permanent methods despite the availability of a wider range of reversible contraceptive options. Lower educational status, rural residence, lack of family planning counselling, and inadequate husband support were identified as important factors associated with unmet need for family planning.These findings highlight the need to strengthen comprehensive family planning services through improved counselling, promotion of informed contraceptive choice, and increased awareness regarding modern spacing methods. Greater involvement of male partners and targeted interventions for women from rural and socioeconomically disadvantaged backgrounds may further enhance contraceptive uptake and reduce unmet need. Integrating high-quality family planning counselling into routine reproductive healthcare services and ensuring equitable access to a broad contraceptive method mix can contribute to improved reproductive health outcomes and support national family planning goals.

DECLARATIONS

Funding: The study received no external funding.

Conflict of Interest: The authors declare no conflict of interest.

Informed Consent: Written informed consent was obtained from all participants prior to enrolment. Confidentiality and anonymity of participant information were maintained throughout the study.

Acknowledgement: The authors sincerely acknowledge the support of the Institutional Ethics Committee, the Department of Obstetrics and Gynaecology, the hospital administration, and all study participants for their valuable cooperation during the conduct of the study.

REFERENCES

1. Habib N, Ali M. Contraceptive equity: insights from the progress in 48 FP2030 countries. The Lancet Global Health. 2025 Jan 1;13(1):e2-3.
2. Bongaarts J. United Nations Department of Economic and Social Affairs, Population Division World Family Planning 2020: Highlights, United Nations Publications, 2020. 46 p. Popul Dev Rev. 2020 Dec 30;46(4):857-8.
3. United Nations Population Fund (UNFPA). State of World Population 2025: The Real Fertility Crisis-The Pursuit of Reproductive Agency in a Changing World. Stylus Publishing, LLC; 2025 Jun 10.
4. Iips IC. National family health survey (NFHS-5): 2019-21 India. Mumbai: International Institute for Population Sciences (IIPS). 2021.
5. Rajan SI, James KS. Second national family health survey: Emerging issues. Economic and Political Weekly. 2004 Feb 14:647-51.
6. Pharmacopoeia of India. Ministry of health and family welfare. Government of India. 1996;2(1996):350.
7. Cleland J, Conde-Agudelo A, Peterson H, Ross J, Tsui A. Contraception and health. The Lancet. 2012 Jul 14;380(9837):149-56.
8. Sully EA, Biddlecom A, Darroch JE, Riley T, Ashford LS, Lince-Deroche N, Firestein L, Murro R. Adding it up: investing in sexual and reproductive health 2019.
9. Bradley SE, Croft TN, Fishel JD, Westoff CF. Revising unmet need for family planning.
10. Sood S, Riley AH. Health communication fundamentals: Planning, implementation, and evaluation in public health. Springer Publishing Company; 2023 Oct 10.
11. Rajan SI, James KS. Third national family health survey in India: Issues, problems and prospects. Economic and Political Weekly. 2008 Nov 29:33-8.
12. Citaristi I. United Nations Population Fund—UNFPA. InThe Europa Directory of International Organizations 2022 2022 Jul 28 (pp. 293-296). Routledge.
13. Cleland J, Bernstein S, Ezeh A, Faundes A, Glasier A, Innis J. Family planning: the unfinished agenda. The lancet. 2006 Nov 18;368(9549):1810-27.