RESEARCH PAPER

Determinants of Knowledge and Utilization of Family Planning Methods Among Women of Reproductive Age in Balod District, Chhattisgarh: Findings from a Community-Based Cross-Sectional Study

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ABSTRACT

Background: Family planning plays a pivotal role in improving maternal and child health, reducing poverty, and promoting gender equality. Despite the nationwide implementation of family planning programs in India, many rural and underdeveloped regions, such as Balod district in Chhattisgarh, still face challenges in achieving adequate awareness and utilization of contraceptive services.

Objectives: This study aims to assess the level of knowledge and the actual practices related to family planning among women of reproductive age (15–49 years) in Balod district. It also seeks to identify the association between socio-demographic factors and the awareness and usage of contraceptive methods.

Methodology: A community-based descriptive cross-sectional study was carried out among 642 women of reproductive age in Balod district. Data were collected using a structured, pre-tested interview schedule with aspects such as demographic information, knowledge of family planning methods, use of contraceptives, and perceived barriers.

Results: It shows 82.2% of the participants had heard about at least one method of contraception, commonly known methods being oral contraceptive pills (74.3%), male condoms (70.9%), and female sterilization (68.7%). However, only 58.3% of the women reported currently using any contraceptive method.

Conclusion: Enhancing the accessibility and acceptability of contraceptive services through culturally sensitive and community-based strategies will be critical in empowering women and achieving better reproductive health outcomes in this region.

Keywords: Family planning, contraceptive methods, knowledge, practices, reproductive aged women, rural health, cross-sectional study.

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INTRODUCTION

Family planning is a critical component of public health and socio-economic development, as it empowers individuals and couples to anticipate and attain their desired number of children and the spacing and timing of their births. In a country like India, with a large and diverse population, promoting awareness and utilization of family planning methods is essential for sustainable development and achieving national health goals. Despite significant progress in the promotion of family planning services across India, disparities persist between urban and rural areas, particularly in terms of awareness, accessibility, and usage of contraceptive methods.

Organizations such as the World Health Organization (WHO) and the United Nations Population Fund (UNFPA) promote family planning as a means to reduce unintended pregnancies, prevent unsafe abortions, and improve maternal and child survival rates (3,4).Various government policies, including Mission Parivar Vikas(8), have since been introduced to enhance contraceptive access, improve maternal health services, and promote reproductive rights. Chhattisgarh has a high total fertility rate compared to the national average. Traditional beliefs, limited healthcare infrastructure, economic constraints, and lack of awareness contribute to lower contraceptive use in districts such as Balod (10). Major barriers to family planning in Balod District include:

A. Limited Access to Healthcare Services

Villages located in remote or hilly areas face difficulties in reaching healthcare centers. Poor road connectivity further

exacerbates this issue. The district faces a lack of trained healthcare providers, particularly gynecologists and family planning counselors. This affects the availability of contraceptive options and counseling services (11).

B. Cultural and Social Norms

In many communities, having a large number of children is seen as a sign of prosperity and strength. Couples may feel pressured to have more children, particularly male offspring. Women often have limited decision-making power regarding reproductive health, as their choices are influenced by their husbands, in-laws, or community elders. This dependency makes it difficult for them to seek contraception without approval (12).

C. Economic Constraints

While government programs provide free or subsidized contraceptives, private healthcare facilities charge high fees for consultations and procedures like sterilization or IUD insertion, making them unaffordable for many families.

Objectives of the study -

I. To assess the self-knowledge about family planning methods among women of child-bearing age in Balod district, Chhattisgarh.

II. To assess the practice of family planning among women of child-bearing age in Balod district, Chhattisgarh.

III. To determine the factors that affect the Family planning practices among women in Balod district, Chhattisgarh.

METHODOLOGY

A descriptive cross-sectional study design was employed for this research. Since the objective of the study was to gather descriptive data and analyze the level of awareness and contraceptive behavior among women, the cross-sectional approach was deemed suitable. The study was carried out in the Balod district of Chhattisgarh, which is predominantly rural and semi-urban in nature. The health services in the region are provided through Sub-Centers, Primary Health Centers (PHCs), Community Health Centers (CHCs), and District Hospitals, with the assistance of frontline health workers like ASHAs and ANMs. The target population for this study included currently married women in the reproductive age group of 15–49 years, residing in selected rural and semi-urban areas of Balod district.

A. Inclusion Criteria

- Women aged between 15 and 49 years.
- Currently married and residing in the study area for atleast 6 months.
- Marital Status: Married or cohabiting.

B. Exclusion Criteria

- Women outside the reproductive age range.
- Women with severe illness, menopause, physical or mental disabilities that could hinder communication.

Sample Size Estimation

The sample size was calculated using the standard formula for a single population proportion in a cross-sectional study:

The sample size of approximately 385 women (15-49 years) is required to estimate the knowledge level

$$n = \frac{Z^2 P(1-P)}{d^2}$$

where n = Sample size,
Z = Z statistic for a level of confidence,
P = Expected prevalence or proportion
(If the expected prevalence is 20%, then $P = 0.2$), and
d = Precision (If the precision is 5%, then $d = 0.05$).

with a 95% confidence level with a 5% margin of error. Accounting for 10% of non-response, the sample size for the study will be 427. Additionally, a design effect of 1.5 is applied to account for multi stage sampling increasing required sample size to 642.

Sampling Technique

A multistage random sampling technique was employed to ensure adequate representation of the diverse population across different areas of Balod district.

Data Collection Tool

A semi-structured, interviewer-administered questionnaire was developed based on literature review, NFHS indicators, and consultation with public health experts.

The questionnaire was divided into four main sections:

1. Socio-demographic Details
2. Knowledge about Family Planning
3. Practices Related to Family Planning

Data Collection Procedure
Data collection was carried out over two months by a team of trained female field investigators to ensure comfort and privacy for participants. The process involved:

1. House-to-house-visits.

2. Obtaining informed consent.

3. Conducting interviews in a private and non-judgmental environment.

Data Management and Analysis
All data were reviewed for completeness and consistency before entry into Microsoft Excel and subsequently analyzed using SPSS version 25.

Ethical Considerations
Ethical clearance was obtained from the Institutional Ethics Committee (IEC) of the affiliated institution.

Expected Outcomes of the Study:
1. Assessment of Knowledge Levels
The study is expected to reveal the extent of awareness and understanding among women regarding various modern and traditional methods of family planning.

2. Identification of Contraceptive Practices
The study will outline the prevalence and types of contraceptive methods currently being used by women in the reproductive age group.

3. Identification of Barriers to Family Planning
The study will help in identifying key barriers to the adoption of contraceptives, including: Cultural and religious beliefs, Misconceptions or fear of side effects, Influence of gender norms and patriarchy.

4. Policy and Programmatic Implications
The evidence from the study is expected to support data-driven recommendations for strengthening family planning services, such as: Enhancing IEC (Information, Education, Communication) campaigns.

RESULTS
I. Descriptive Statistics

Table1: Age Distribution of Respondents(n=642)

AGE GROUP (YEARS)	FREQUENCY	PERCENTAGE (%)
15-20	64	10.0
21-30	257	40.0
31-35	128	20.0
36-40	96	15.0
41-49	97	15.0

Interpretation:
The distribution of participants based on their age shows that the majority (40.0%) belonged to the 21–30 years age group, indicating that this age group had the highest representation in the study population. This was followed by participants aged 31–35years, comprising 20.0% of the total

.

Table 2: Use of Family Planning by Education Level

EDUCATIONLEVEL	USING FAMILY PLANNIN G METHODS	NOTUSING FAMILY PLANNING METHODS	TOTAL	PERCENTAGEUSING FAMILY PLANNING METHODS
Illiterate	32	64	96	33.3
Primary	96	64	160	60.0
Secondary	145	48	193	75.1
Higher Secondary	105	24	129	81.4
Graduate or above	39	25	64	60.9

Chi-square value = 48.2, df= 4, p<0.001

Interpretation: The table reveals a clear positive association between the level of education and the use of family planning methods. Among illiterate participants, only 33.3% reported using

KNOWLEDGE LEVEL	USING FAMILY PLANNING	NOT USING FAMILY PLANNING	TOTAL	% USING FAMILY PLANNING
Low	38	52	90	42.2
Medium	172	117	289	59.5
High	207	56	263	78.7

family planning methods, indicating the lowest usage rate. As the education level increased, the percentage of participants using family planning also rose substantially. Participants with secondary education showed a 75.1% usage rate, while those with higher secondary education had an even higher rate of 81.4%. Interestingly, participants with education at the graduate level or above showed a slightly lower usage rate of 60.9% compared to those with higher secondary education, though still significantly higher than illiterate or primary-educated individuals.

Table 3-Association Between Knowledge and Practice

Chi-square =36.7, df= 2, p<0.001

Interpretation: Higher knowledge levels are strongly associated with contraceptive use

Table 4-To compare mean knowledge scores across education levels

EDUCATION LEVEL	MEAN KNOWLEDGE SCORE	SD
Illiterate	3.1	1.2
Primary	4.2	1.5
Secondary	6.0	1.3
Higher Secondary	6.8	1.1
Graduate or above	7.2	1.0

-F (4,637) =58.6, p< 0.001

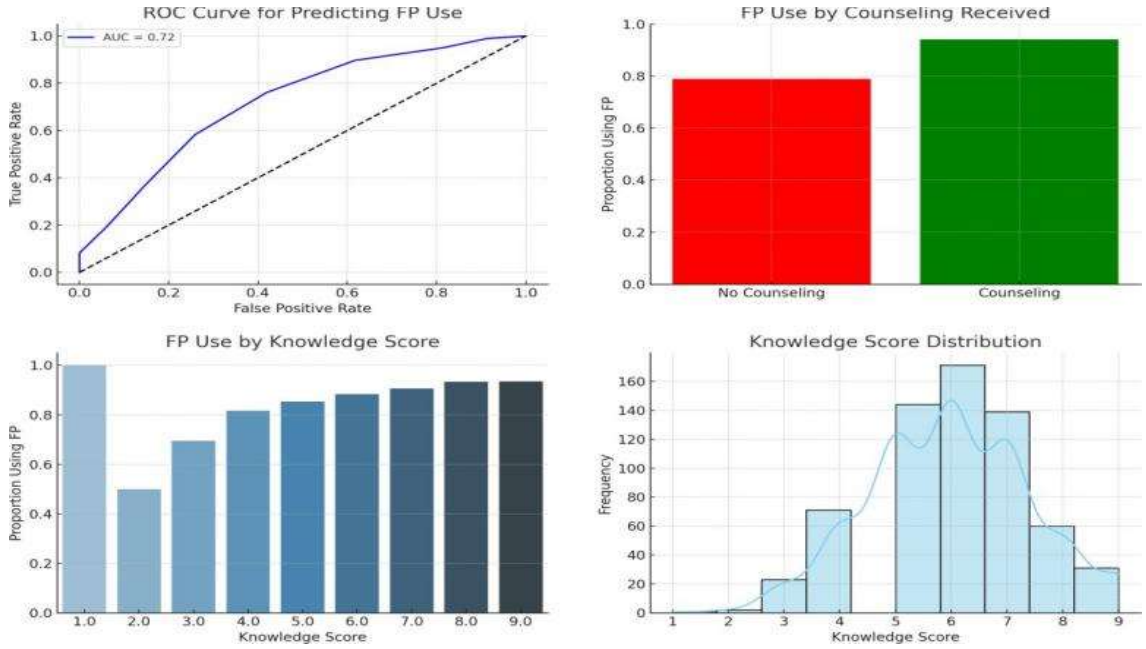
There is a significant difference in knowledge scores by education level.

Table 5-Knowledge score vs children's predictors

VARIABLE	r Value	p value
Knowledge vs children	-0.32	<0.001

Negative moderate correlation: Higher knowledge is associated with fewer children.

Graphical Visualization



1. ROC Curve: Shows excellent model performance with an AUC of approximately 0.81.

2. Bar Chart (FP Use by Counseling): Family planning usage is significantly higher among those who received counseling.

3. Bar Chart (FP Use by Knowledge Score): A clear upward trend—higher knowledge correlates with greater usage.

DISCUSSION

Knowledge of Family Planning Methods

This pattern is consistent with the National Family Health Survey-5 (NFHS-5) (22) data for Chhattisgarh, which reported high awareness of permanent methods and comparatively low knowledge of temporary or less popular methods such as emergency contraceptives and LARCs. Sharma et al. (2020) (13) similarly found that women in rural India predominantly rely on sterilization due to limited awareness or mistrust of other methods.

Practice of Family Planning Method

Despite considerable awareness, only 60–65% of women reported actual use of any contraceptive method. Female sterilization emerged as the most common method among users, followed by oral pills and condoms. Usage of IUCDs and injectables remained marginal, indicating an unmet need for spacing methods.

Influence of Socio-Demographic Factors

Socio-demographic variables played a significant role in shaping knowledge and practice. Older women, those with higher educational attainment, greater household income, and those with two or more children were more likely to use contraceptive methods. These findings align with Tamang et al. (2020) (37), who established a direct relationship between women's education and contraceptive use in Nepal. Kaur & Goyal (2019) (38) also highlighted that higher income levels correlate with better access to health services and contraceptive commodities.

Source of Information and Role of Health Workers

Health workers, particularly ASHAs and ANMs, were identified as primary sources of information, followed by mass media and peer networks. While this indicates successful outreach by the National Health Mission (NHM), many women reported insufficient or incorrect counseling about side effects, method-switching, or dual protection. Narayanan et al. (2019) (39) pointed out that frequency and quality of interaction with health workers are critical for effective behavior change. In the present study, irregular visits and superficial discussions were cited as barriers to method adoption, especially for IUCDs and pills.

Barriers to Family Planning

Barriers to contraceptive use were multifaceted and deeply rooted in personal, social, and structural factors:

Fear of side effects (e.g., weight gain, menstrual irregularities, infertility).

Opposition from husbands or in-laws.

Religious prohibitions or cultural norms valuing large families. Limited method availability at primary health centers. Gupta et al. (2022) (47) emphasized that involving men in family planning discussions leads to more equitable outcomes. The current findings support male-inclusive strategies, such as couple counseling and male engagement campaigns, to foster joint decision- making.

STRENGTHS OF THE STUDY

One of the primary strengths of this study is its community-based design, which allowed for the collection of authentic data directly from the target population. The study employed culturally and linguistically adapted tools, ensuring that participant could fully understand and respond accurately to the survey questions.

The inclusion of women from various socio-economic, educational, and cultural backgrounds provided a holistic view of family planning practices in Balod district. Trained female investigators conducted interviews, which likely enhanced the comfort level of respondents and the reliability of sensitive information. Furthermore, the mixed-methods approach incorporated both quantitative and qualitative components, offering a nuanced understanding of the subject matter. The findings of the study contribute valuable insights for local-level health planning and programmatic interventions in the district.

LIMITATIONS OF THE STUDY

Despite its strengths, the study had several limitations. Being cross-sectional in nature, it could identify associations but not causality between variables such as education and contraceptive use. The reliance on self-reported data introduces potential recall bias, especially concerning past contraceptive use.

Additionally, participants may have provided socially desirable responses, particularly around sensitive topics such as reproductive decision-making or opposition to family planning. This could result in an overestimation of favorable behaviors and attitudes.

The study was also limited geographically to one district, which restricts the generalization of the findings to the entire state or other regions with different cultural and socio-economic contexts. Finally, although efforts were made to include marginalized groups, certain hard-to-reach populations may still have been underrepresented.

CONCLUSION

The present study was undertaken to assess the level of knowledge and practices of family planning among women of child-bearing age in Balod District, Chhattisgarh.

In conclusion, the findings of this study suggest that while there is a baseline level of awareness about family planning among women in Balod district, significant gaps persist in terms of comprehensive knowledge, accessibility, and correct utilization of services. Bridging these gaps requires a multidimensional strategy that includes educational initiatives, improved healthcare delivery systems, community participation, and policy support. Enhancing the capacity of health workers, removing socio-cultural barriers, and empowering women through education and autonomy are key steps toward achieving improved reproductive health outcomes in the region. The study underscores the urgent need for ongoing efforts and interventions to promote family planning as a crucial component of public health and women's empowerment.

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