

Research Article

Assessing Knowledge and Attitude towards Family Planning Among Postnatal Mothers at Community Level in Nuapada District, Odisha

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ABSTRACT

Background: Menstrual health is a critical component of adolescent health and well-being. Limited knowledge, misconceptions, and sociocultural restrictions may negatively influence adolescents' understanding and management of menstruation. Adolescent-centred health education may help address these gaps and strengthen menstrual health literacy.

Methods: A quantitative pre-experimental, one-group pre-test-post-test design was conducted among 30 adolescents selected through purposive sampling from selected residential colleges in Chhattisgarh. Menstrual hygiene knowledge was assessed using a self-structured questionnaire. Participants received a structured adolescent-centred menstrual health education intervention, followed by a post-test assessment. Data were analysed using descriptive statistics and a paired *t*-test.

Results: Before the intervention, 18 participants (60.0%) had inadequate knowledge and 12 (40.0%) had average knowledge, with none demonstrating adequate knowledge. Following the intervention, 23 participants (76.7%) achieved an adequate level of knowledge and 7 (23.3%) had average knowledge; none remained in the inadequate category. The reported paired *t*-value was 5.83, which exceeded the critical value of 2.045 at the 5% level of significance, demonstrating a statistically significant improvement in menstrual hygiene knowledge following the intervention.

Conclusion: The adolescent-centred menstrual health education intervention demonstrated a significant improvement in menstrual hygiene knowledge among adolescents. Incorporating structured, adolescent-responsive menstrual health education into residential college and adolescent health programmes may help address knowledge gaps and promote informed menstrual health and hygiene practices.

Keywords: Adolescent Health, Menstrual Health, Menstrual Hygiene, Health Education, Knowledge, Educational Intervention, Residential Colleges, Chhattisgarh.

INTRODUCTION

Family planning enables women and couples to determine the number and spacing of their children and remains closely linked with maternal, newborn and family well-being. Contemporary family-planning programs increasingly emphasize informed choice, quality of care, rights-based counseling and healthy timing and spacing rather than a narrow population-control approach. For postpartum women, these principles are

especially important because contraceptive needs may emerge before fertility is fully recognized or before routine menstruation resumes.

The postpartum period is also a practical service-delivery window. Women are already in contact with maternity and community health services, and counseling can be integrated with breastfeeding support, maternal recovery, newborn care and follow-up visits. The World Health Organization

recommends comprehensive contraceptive information and services as part of postnatal care and emphasizes informed choice, privacy and confidentiality.

Evidence from India illustrates considerable variation in contraceptive knowledge and acceptance across populations. A 2025 Indian study among primiparous postnatal women reported high overall knowledge and a predominantly positive attitude, while also identifying demographic differences in knowledge. Pal et al. found that although most immediate postpartum participants reported knowledge of contraceptive methods, previous uptake was substantially lower; tailored counseling was followed by high acceptance of postpartum family-planning methods. These findings suggest that knowledge, attitude, counseling and actual contraceptive behavior should not be assumed to be interchangeable constructs.

In community settings, contextual factors such as age, occupation, locality, family structure, language, social norms and access to reliable information may shape reproductive-health knowledge. The present study was therefore undertaken among postnatal mothers at community level in Nuapada District, Odisha, to quantify knowledge and attitude and to identify demographic groups in which differences may warrant targeted counseling. The study was conceptually informed by the Health Belief Model, particularly the roles of individual perceptions, modifying factors and cues to action in shaping health-related decisions. The findings are intended to provide a practical baseline for nursing and community-health interventions rather than to establish causal relationships.

Objectives

- To assess the level of knowledge regarding family planning among postnatal mothers.
- To assess the level of attitude regarding family planning among postnatal mothers.
- To determine the association between knowledge regarding family planning and selected demographic variables.
- To determine the association between attitude regarding family planning and selected demographic variables.

METHODOLOGY

Study Design and Setting

A descriptive cross-sectional research design was adopted to assess the knowledge and attitude regarding family planning among postnatal mothers. The study was conducted

at the community level in Nuapada District, Odisha. The study population comprised postnatal mothers residing in the selected community and meeting the predefined eligibility criteria.

Sample Size and Sampling Technique

A total of 98 postnatal mothers participated in the study. Participants were selected using a convenience sampling technique. The sample included mothers who were available during the period of data collection and fulfilled the specified eligibility criteria.

Inclusion and Exclusion Criteria

Postnatal mothers were eligible to participate if they had one or more children, were willing to participate in the study, and were able to understand English or Odia. Mothers meeting the specified medical or obstetric exclusion criteria of the study were excluded to maintain the defined study population.

Data Collection Instruments

Data were collected using a structured, investigator-administered tool comprising three sections:

Section A: Socio-demographic characteristics: This section collected information regarding age, duration of marriage, educational status, occupational status, family monthly income, religion, type of family, locality, known language, and number of children.

Section B: Knowledge questionnaire: Knowledge regarding family planning was assessed using a 15-item semi-structured questionnaire covering relevant aspects of family planning and contraceptive methods. The obtained knowledge scores were categorized into inadequate, moderate, and adequate levels according to the predefined scoring criteria of the study protocol.

Section C: Attitude scale: Attitude toward family planning was assessed using 15 statements rated on a five-point Likert scale ranging from strongly agree to strongly disagree. The total attitude score was subsequently classified into unfavourable, moderately favourable, and favourable categories according to the predetermined scoring criteria.

Validity and Reliability

Content validity of the data collection instruments was established through expert review. The semi-structured knowledge questionnaire and five-point Likert attitude scale were reviewed by experts in Obstetrics and Gynecology, including medical and nursing experts. The instruments were revised and

finalized after incorporating the experts' suggestions and recommendations.

The reliability of the study instrument was assessed using Cronbach's alpha, and the instrument was reported to demonstrate satisfactory internal consistency and was considered reliable for use in the main study.

Pilot Study

A pilot study was conducted among 10 postnatal mothers in order to assess the feasibility, clarity and practicality of the data collection procedure and instruments. The pilot exercise helped assess the suitability of the study process before commencement of the main data collection.

Ethical Considerations

Prior to data collection, the necessary administrative and ethical permissions were obtained from the concerned authorities. Participants were informed about the purpose and nature of the study, and their voluntary informed consent was obtained before participation. Confidentiality and privacy of the participants were maintained throughout the study. Participants were informed that they could decline participation or withdraw from the study without any adverse consequences.

Data Collection Procedure

After obtaining the required permissions and informed consent, eligible postnatal mothers were approached at the selected community setting. The purpose and procedure of the study were explained to each participant. The investigator collected the required demographic information and administered the knowledge questionnaire and attitude scale.

Adequate privacy was maintained during data collection, and completed responses were checked for completeness before analysis.

Statistical Analysis

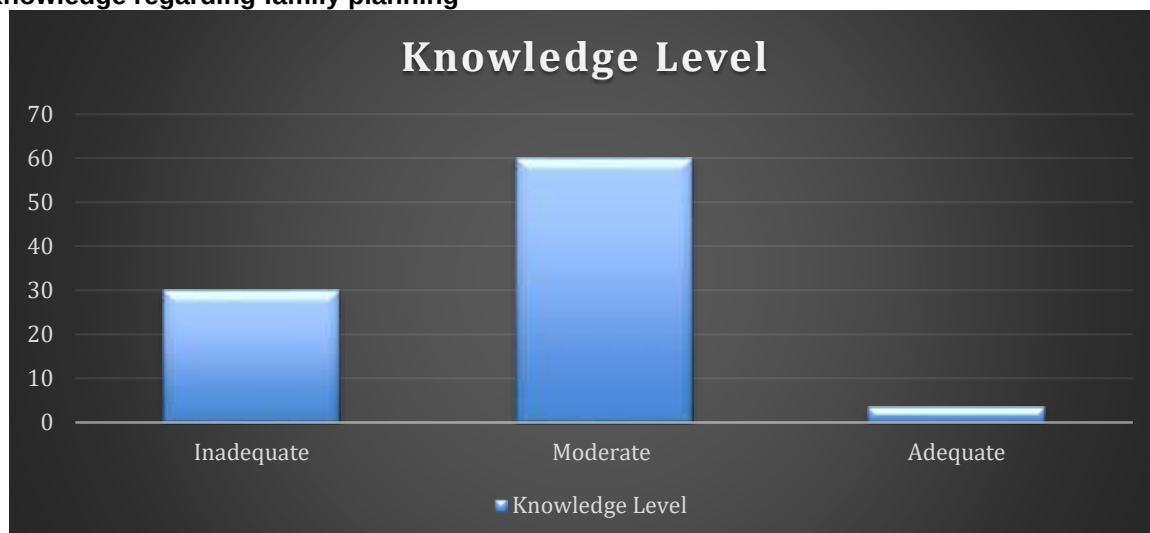
The collected data were systematically **coded, tabulated, and analyzed using descriptive and inferential statistical methods**. Frequencies and percentages were calculated to describe the socio-demographic characteristics of the participants and to present the distribution of knowledge and attitude levels. The **Pearson's chi-square (χ^2) test** was employed to determine the association between the categorized levels of knowledge and attitude regarding family planning and selected socio-demographic variables. Statistical significance was assessed at a **5% level of significance ($\alpha = 0.05$)**.

RESULTS

The study included 98 postnatal mothers. The majority were aged 20–25 years (36.73%), followed by those aged 25–30 years (31.63%). Regarding duration of marriage, 42.85% had been married for 1–4 years. High-school education was the most common educational level (39.79%). Most participants belonged to joint families (71.42%) and resided in rural areas (66.30%). Hindi was the predominant language reported by the participants (77.55%). In terms of number of children, 43.87% each had one child and two children. Overall, the participant characteristics were consistent with the distributions presented in the detailed study tables.

Characteristic	Category	n (%)
Age	18–≤20 years	11 (11.22%)
	20–≤25 years	36 (36.73%)
	25–≤30 years	31 (31.63%)
	More than 30 years	20 (20.40%)
Duration of marriage	≤1 year	12 (12.24%)
	1–≤4 years	42 (42.85%)
	4–≤7 years	18 (18.36%)
	>7 years	26 (26.53%)
Education	High school	39 (39.79%)
Religion	Hindu	64 (65.30%)
Type of family	Joint family	70 (71.42%)
Locality	Rural	65 (66.30%)
Known language	Hindi	76 (77.55%)
Number of children	One	43 (43.87%)
	Two	43 (43.87%)

Knowledge regarding family planning

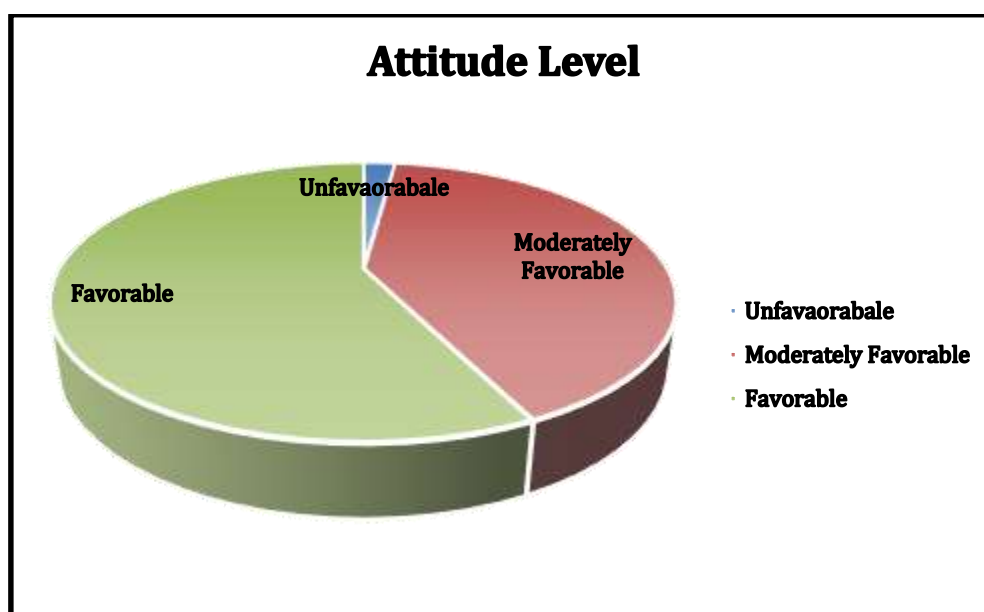


Moderate knowledge was the predominant category, observed among 60 participants (61.22%), followed by inadequate knowledge among 30 participants (30.61%). Only 8

participants (8.16%) demonstrated adequate knowledge. After rounding, these proportions correspond to 61%, 31%, and 8%, respectively.

Attitude regarding family planning

Attitude level	n	%
Unfavorable	2	2.04%
Moderately favorable	40	40.82%
Favorable	56	57.14%
Total	98	100.00%



A favorable attitude was observed in 56 participants (57.14%), followed by a moderately favorable attitude in 40 participants (40.82%). Only 2 participants

(2.04%) demonstrated an unfavorable attitude. After rounding, the corresponding proportions were 57%, 41%, and 2%, respectively.

Association between knowledge and demographic variables

Variable	χ^2	df	Exact p*	Decision ($\alpha=0.05$)
Age	13.13	6	0.041	Significant
Duration of marriage	4.69	6	0.584	Not significant
Education status	13.51	12	0.333	Not significant
Occupational status	26.68	12	0.009	Significant
Family monthly income	4.04	12	0.983	Not significant
Religion	6.36	6	0.384	Not significant
Type of family	4.61	6	0.595	Not significant
Locality	10.00	4	0.040	Significant
Known language	4.89	6	0.558	Not significant
Number of children	3.62	6	0.728	Not significant

The association between participants' knowledge level and selected demographic variables was assessed using the chi-square (χ^2) test at a significance level of 0.05. Knowledge level showed statistically significant associations with age ($\chi^2 = 13.13$, df = 6, p = 0.041), occupational status ($\chi^2 = 26.68$, df =

12, p = 0.009), and locality ($\chi^2 = 10.00$, df = 4, p = 0.040). In contrast, no statistically significant associations were observed with duration of marriage, educational status, family monthly income, religion, type of family, known language, or number of children (p > 0.05).

Association between attitude and demographic variables

Variable	χ^2	df	Exact p*	Decision ($\alpha=0.05$)
Age	5.59	6	0.471	Not significant
Duration of marriage	15.53	6	0.017	Significant
Education status	11.46	12	0.490	Not significant
Occupational status	10.27	12	0.592	Not significant
Family monthly income	0.34	12	1.000	Not significant
Religion	5.41	6	0.492	Not significant
Type of family	6.39	6	0.381	Not significant
Locality	3.31	4	0.507	Not significant
Known language	5.30	6	0.506	Not significant
Number of children	3.15	6	0.790	Not significant

Attitude level was significantly associated with duration of marriage ($\chi^2 = 15.53$, df = 6, p = 0.017). However, no statistically significant associations were observed between attitude level and age, educational status, occupational status, family monthly income, religion, type of family, locality, known language, or number of children (p > 0.05).

Data-Analysis Quality Check

The reported χ^2 statistics, degrees of freedom, and p-values were internally consistent with the stated significance decisions. Significant associations were observed for knowledge with age ($\chi^2 = 13.13$, df = 6, p = 0.041), occupational status ($\chi^2 = 26.68$, df = 12, p =

0.009), and locality ($\chi^2 = 10.00$, df = 4, p = 0.040), and for attitude with duration of marriage ($\chi^2 = 15.53$, df = 6, p = 0.017).

DISCUSSION

The key finding of this study was a clear gap between attitude and knowledge regarding family planning. Although 57.14% of mothers had a favorable attitude, only 8.16% demonstrated adequate knowledge, while most (61.22%) had moderate knowledge. This suggests that willingness to consider family planning may be present even when mothers lack sufficient information for informed method selection and use.

The predominance of moderate knowledge highlights an opportunity for strengthening postnatal counselling. Previous Indian studies have similarly reported that awareness does not always translate into contraceptive use, while structured postpartum counselling can improve acceptance of family-planning methods. These findings emphasize the importance of moving beyond general awareness toward clear, individualized and practical counseling.

Knowledge was significantly associated with age, occupational status, and locality, indicating that access to information and social or contextual factors may contribute to differences in reproductive-health knowledge. The association with locality is particularly relevant to community nursing, where differences in access to health services and counseling may influence information exposure. However, these associations should not be interpreted as causal because of the cross-sectional design.

Attitude was significantly associated with duration of marriage, which may reflect differences in reproductive experience, previous exposure to family-planning services, or changing fertility intentions. Further studies are required to clarify these relationships.

Overall, the findings highlight an important service-delivery message: a favourable attitude should be supported by adequate knowledge. Strengthening repeated, respectful and individualized family-planning counselling during antenatal, postpartum, discharge, and follow-up contacts may help mothers make informed contraceptive choices. Future studies with larger, multicentre samples and assessment of actual contraceptive practices would provide stronger evidence on whether improved knowledge translates into sustained family-planning use.

Clinical and Public-Health Implications

The findings support strengthening the quality of postnatal family-planning counselling. Counselling should prioritize informed choice, healthy birth spacing, and individualized clarification of contraceptive options and misconceptions. Nurses and community health workers can use brief knowledge assessments to identify information gaps and tailor communication to women's language, literacy, and social context. Partner or family involvement may be considered when preferred by the woman, while preserving autonomy, privacy, and confidentiality. Reinforcement of counseling across postnatal

contacts may be particularly valuable as reproductive intentions can change during the postpartum period.

Strengths

The study examines knowledge and attitude during a clinically important window for family-planning decision-making and considers multiple socio-demographic factors. The combined use of descriptive and inferential analyses provides a structured assessment of the study outcomes and their associations. Statistical reporting was also standardized by clearly distinguishing χ^2 statistics, degrees of freedom, and p-values.

Limitations

The convenience-based sample of 98 postnatal mothers limits the generalizability of the findings. The cross-sectional design prevents causal inference, and self-reported knowledge and attitude may be influenced by recall and social-desirability bias. Because participant-level data were unavailable for independent re-analysis, expected-frequency assumptions could not be verified for every contingency table; sparse cells therefore warrant caution in interpreting Pearson's χ^2 results. In addition, the study assessed knowledge and attitude rather than actual contraceptive initiation, continuation, method choice, or adherence. Future studies using larger, probability-based or multicentre samples and longitudinal assessment of contraceptive practices are warranted.

CONCLUSION

This study identified a knowledge-attitude gap in family planning among postnatal mothers in the selected community setting of Nuapada District, Odisha. Although a favorable attitude was common, adequate knowledge was limited, indicating an important opportunity to strengthen postnatal reproductive-health education. Differences in knowledge by age, occupation, and locality, and in attitude by duration of marriage, further suggest that counseling should be responsive to women's individual and contextual needs. Integrating brief, individualized, and repeated family-planning counseling into routine postnatal care, complemented by community-based follow-up, may help support informed contraceptive decision-making. Further multicentre and longitudinal research is needed to determine whether improved knowledge translates into sustained contraceptive uptake and continuation.

Recommendations

Implement standardized, nurse-led postpartum family-planning counseling using clear and locally understandable educational materials.

Emphasize method-specific knowledge, including timing, effectiveness, common concerns, eligibility and follow-up, rather than awareness alone.

Use community outreach to reach mothers who may have fewer opportunities to access reliable reproductive-health information.

Where appropriate and with the woman's consent, involve partners in counseling to address communication and support barriers.

Conduct future studies with probability sampling, larger samples and measurement of actual contraceptive uptake and continuation.

Reanalyze the present association tables from the original participant-level dataset and use exact or Monte Carlo methods for sparse contingency tables where Pearson chi-square assumptions are not met.

Ethical Considerations

The source study reports ethical/administrative permission, informed consent and confidentiality procedures. Participant autonomy and privacy should be maintained in any subsequent use or publication of the dataset.

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Conflict of Interest

The author declares no conflict of interest.

Author Contribution

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Writing – Review & Editing: Priyabrata Joshi, Premalata Parida

Supervision: Sharmistaranee Malik

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