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Understanding Contraceptive Awareness and Adoption in the Postpartum Period: A Knowledge, Attitude, and Practice Study at a Tertiary Care Hospital in South India

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ABSTRACT
Background: *Postpartum contraception remains an underutilized strategy for preventing unintended pregnancies and improving maternal and child health outcomes, particularly in developing countries such as India. Despite the availability of multiple contraceptive options, significant gaps persist in knowledge, attitudes, and practices among postpartum women attending tertiary care hospitals. This study aimed to evaluate the knowledge, attitude, and practice regarding contraception among postpartum women at a tertiary care hospital in South India.*
Methods: *A descriptive cross-sectional observational study was conducted among 100 postpartum women aged 18–45 years attending the Department of Obstetrics and Gynaecology at R L Jalappa Hospital and Research Centre, Kolar, Karnataka, over a period of six months. Data were collected using a predesigned, pretested structured questionnaire assessing sociodemographic characteristics and knowledge, attitude, and practice regarding contraception. Data were analyzed using SPSS version 22. Categorical data were analyzed using the chi-square test, and continuous data were analyzed using the independent t-test. A p-value of less than 0.05 was considered statistically significant.*
Results: *The mean age of participants was 25.4 ± 3.8 years. Overall, 78.0% of women had adequate knowledge of at least one contraceptive method, and 72.0% exhibited a positive attitude toward postpartum contraception. However, only 54.0% were currently practicing any form of contraception. Condoms (38.0%) and oral contraceptive pills (24.0%) were the most commonly known methods. Education level ($p = 0.001$), parity ($p = 0.012$), and prior contraceptive counseling ($p < 0.001$) were significantly associated with better knowledge and practice of contraception.*
Conclusion: *Although awareness of contraceptive methods was reasonably high among postpartum women, a considerable gap existed between knowledge and actual practice. Targeted postpartum counseling, especially during antenatal visits and before hospital discharge, could significantly enhance contraceptive adoption and reduce unmet need for family planning.*
Keywords: *Contraception; Knowledge, Attitude, Practice; Postpartum; Family Planning; Tertiary Care Hospital*

I. INTRODUCTION

Family planning and contraception constitute fundamental pillars of reproductive healthcare and are recognized globally as essential strategies for improving maternal and child health outcomes. The World Health Organization has emphasized that effective contraceptive use can prevent approximately 30% of maternal deaths and 10% of childhood mortality by enabling women to space pregnancies adequately and avoid unintended conceptions [1]. In the context of developing nations, where maternal mortality ratios remain disproportionately high, promoting contraceptive awareness and utilization during the postpartum period assumes particular significance.

India, currently the most populous nation in the world, faces a persistent challenge in controlling its population growth rate despite decades of organized family planning efforts [2]. The National Family Health Survey (NFHS-5) conducted during 2019–2021 reported that while awareness of modern contraceptive methods was nearly universal among married women, actual utilization remained substantially lower, with only 56.5% of currently married women using any method of contraception [3]. This disparity between awareness and practice underscores the existence of deep-rooted barriers related to socio-cultural norms, educational attainment, accessibility of services, and quality of counseling provided within the healthcare system.

The postpartum period represents a critical yet frequently missed opportunity for initiating contraception. Research evidence suggests that a significant proportion of women resume sexual activity within the first few months following delivery, often before the return of menstruation, which places them at substantial risk for closely spaced or unintended pregnancies [4]. Cleland et al. have demonstrated that pregnancies occurring within 24 months of a previous delivery are associated with significantly higher risks of adverse outcomes including preterm birth, low birth weight, and neonatal mortality [5]. Consequently, the integration of postpartum family planning (PPFP) counseling into routine obstetric care has been advocated as a high-impact intervention by numerous international health agencies.

Despite the recognized importance of postpartum contraception, studies from India have consistently revealed a considerable unmet need for family planning among postpartum women. Pasha et al. reported that nearly 65% of women in the first year postpartum in low- and middle-income countries had an unmet need for contraception [6]. Similarly, Indian studies have documented that knowledge and practice gaps regarding contraception persist among women in both urban and rural settings, influenced by factors such as education, parity, socioeconomic status, and the quality of counseling received during antenatal and postnatal care [7]. These gaps are particularly pronounced in semi-urban and rural populations where access to qualified healthcare providers and comprehensive family planning services may be limited.

The assessment of knowledge, attitude, and practice (KAP) provides a structured framework for evaluating the current state of contraceptive awareness and utilization within a given population. KAP studies serve as valuable tools for identifying specific deficiencies in understanding, attitudinal barriers, and gaps between intention and actual behavior regarding family planning [8]. Such evidence is indispensable for designing targeted educational interventions and improving the delivery of contraceptive services at the community and institutional levels.

R L Jalappa Hospital and Research Centre, attached to Sri Devaraj Urs Medical College in Kolar, Karnataka, serves as a tertiary care referral center catering to a diverse population comprising both urban and rural communities. The socio-cultural milieu of this region, characterized by varying levels of educational attainment, deeply entrenched traditional beliefs, and variable access to healthcare services, presents unique challenges to contraceptive adoption among postpartum women [9]. However, limited data exist regarding the specific knowledge, attitudes, and practices related to contraception among postpartum women attending this institution.

Therefore, the present study was conducted to assess the knowledge, attitude, and practice regarding contraception among postpartum women at this tertiary care hospital. The findings of this study were intended to identify existing gaps in contraceptive awareness and utilization, thereby providing evidence-based recommendations for strengthening postpartum family planning counseling and service delivery at the institutional level [10].

II. AIMS AND OBJECTIVES

The present study was conducted with the primary aim of assessing the knowledge, attitude, and practice regarding contraception among postpartum women attending a tertiary care hospital in South India. The study sought to evaluate the level of awareness about various contraceptive methods available, determine the prevailing attitudes toward the use of postpartum contraception and family planning, and identify the current contraceptive practices among the study population.

Additionally, the study aimed to identify the sociodemographic factors that influenced contraceptive knowledge and utilization among postpartum women. It was also intended to assess the barriers to contraceptive adoption in the postpartum period and to provide evidence-based recommendations for strengthening family planning counseling and service delivery at the institutional level. The study further sought to determine the association between prior contraceptive counseling received during antenatal and postnatal periods and the actual contraceptive practices of postpartum women.

III. MATERIALS AND METHODS

Study Design and Setting

A descriptive cross-sectional observational study was conducted in the Department of Obstetrics and Gynaecology at R L Jalappa Hospital and Research Centre, Sri Devaraj Urs Medical College, Tamaka, Kolar, Karnataka, India. The study was carried out over a period of six months after obtaining approval from the Institutional Ethics Committee of Sri Devaraj Urs Academy of Higher Education and Research.

Study Population and Sampling

The study population comprised postpartum women within 12 months after delivery who attended the postnatal ward, postnatal outpatient department, or immunization clinics of the study hospital during the study period. A total of 100 postpartum women who fulfilled the eligibility criteria were enrolled in the study using a consecutive sampling technique.

The sample size was calculated using the formula for estimating a single proportion in a cross-sectional study: $n = Z^2 \times P \times Q / d^2$, where Z was the standard normal variate at 95% confidence interval (1.96), P was the expected proportion of knowledge of contraception among postpartum women taken as 70% (0.70) based on previous literature, Q was $1 - P$ (0.30), and d was the allowable error of 10% (0.10). The minimum required sample size was calculated to be 81. Accounting for a 20% non-response rate, the final sample size was rounded to 100 postpartum women.

Inclusion Criteria

Postpartum women within 12 months after delivery, aged 18 to 45 years, and attending the postnatal wards, postnatal outpatient department, or immunization clinics of the study hospital during the study period were included. Only those women who provided written informed consent were enrolled in the study.

Exclusion Criteria

Women who experienced stillbirth or neonatal death in the index pregnancy were excluded, as such events could significantly influence contraceptive attitudes and introduce bias. Women who had undergone permanent sterilization (bilateral tubal ligation) prior to the index delivery were also excluded, since their awareness and practice patterns were expected to differ from women who remained eligible for reversible postpartum contraception.

Data Collection

Data were collected using a predesigned, pretested structured questionnaire that was developed based on a comprehensive review of existing literature. The questionnaire comprised sections on sociodemographic characteristics (age, education, occupation, parity, mode of delivery, and residence) and knowledge, attitude, and practice regarding contraception. The knowledge section included questions on awareness of various contraceptive methods, sources of information, and understanding of the benefits of birth spacing. The attitude section assessed willingness to use contraception, perceived barriers, and support from spouse and family. The practice section evaluated current and prior use of contraceptive methods.

The questionnaire was administered through face-to-face interviews conducted by the principal investigator in a private and comfortable setting to ensure confidentiality. Participants were provided adequate time to respond to the questions, and clarifications were offered when required. Additional relevant clinical information was obtained from hospital records where necessary.

Scoring and Classification

Knowledge was assessed using a scoring system wherein each correct response was awarded one point. The total knowledge score was categorized as adequate (≥50% of the maximum score) or inadequate (<50%). Attitude was assessed using a five-point Likert scale and categorized as positive (≥60% of the maximum attitude score) or negative (<60%). Practice was categorized as current user, past user, or never user of any contraceptive method.

Statistical Analysis

Data were entered into a Microsoft Excel spreadsheet and subsequently analyzed using the Statistical Package for Social Sciences (SPSS) version 22.0 software. Categorical data were expressed as frequencies and percentages, and the chi-square test was employed as the test of significance for associations between categorical variables. Continuous data were expressed as mean ± standard deviation, and the independent samples t-test was used to compare means between groups. A p-value of less than 0.05 was considered statistically significant.

Ethical Considerations

The study protocol was approved by the Institutional Ethics Committee of Sri Devaraj Urs Academy of Higher Education and Research before commencement of the study. Written informed consent was obtained from all participants after explaining the purpose, procedures, and voluntary nature of participation. Confidentiality of participant data was maintained throughout the study.

IV. RESULTS

Table 1: Sociodemographic Characteristics of the Study Population (N = 100)

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	18–23	28	28.0
	24–29	46	46.0
	30–35	19	19.0
	>35	7	7.0
Education	Illiterate	8	8.0
	Primary	18	18.0
	Secondary	32	32.0
	Higher Secondary	24	24.0
	Graduate and above	18	18.0
Occupation	Homemaker	68	68.0
	Employed	32	32.0
Residence	Urban	42	42.0
	Rural	58	58.0
Parity	Primipara	44	44.0
	Multipara	56	56.0
Mode of Delivery	Vaginal	62	62.0
	Caesarean Section	38	38.0
Religion	Hindu	72	72.0
	Muslim	18	18.0
	Christian	10	10.0

A total of 100 postpartum women participated in the study. The mean age of the study participants was 25.4 ± 3.8 years, with the majority (46.0%) in the 24–29 years age group (Table 1). With regard to educational status, 32.0% had completed secondary education, followed by 24.0% with higher secondary education and 18.0% who were graduates or above. The majority of participants were homemakers (68.0%) and residents of rural areas (58.0%). Among the study participants, 56.0% were multiparous and 62.0% had undergone vaginal delivery.

Table 2: Knowledge of Contraceptive Methods Among Postpartum Women (N = 100)

Contraceptive Method	Aware n (%)	Not Aware n (%)
Condoms	82 (82.0)	18 (18.0)
Oral Contraceptive Pills	74 (74.0)	26 (26.0)
Intrauterine Contraceptive Device (IUCD)	58 (58.0)	42 (42.0)
Injectable Contraceptives	36 (36.0)	64 (64.0)
Female Sterilization	88 (88.0)	12 (12.0)
Male Sterilization	42 (42.0)	58 (58.0)
Emergency Contraception	28 (28.0)	72 (72.0)
Natural Methods (rhythm, LAM)	34 (34.0)	66 (66.0)
Overall Adequate Knowledge (≥50%)	78 (78.0)	22 (22.0)

Regarding knowledge of contraceptive methods (Table 2), the most commonly known method was female sterilization (88.0%), followed by condoms (82.0%) and oral contraceptive pills (74.0%). Knowledge of intrauterine contraceptive devices was reported by 58.0% of participants, while awareness of injectable contraceptives (36.0%), natural methods (34.0%), and emergency contraception (28.0%) was considerably lower. Overall, 78.0% of participants were classified as having adequate knowledge (≥50% of the maximum knowledge score).

Table 3: Attitude Toward Postpartum Contraception (N = 100)

Attitude Statement	Agree n (%)	Neutral n (%)	Disagree n (%)
Contraception is necessary after delivery	76 (76.0)	14 (14.0)	10 (10.0)
Willing to use contraception postpartum	72 (72.0)	16 (16.0)	12 (12.0)
Spouse supports contraceptive use	64 (64.0)	20 (20.0)	16 (16.0)
Contraception has harmful side effects	38 (38.0)	24 (24.0)	38 (38.0)
Family planning is woman's responsibility	46 (46.0)	18 (18.0)	36 (36.0)
Would recommend contraception to others	70 (70.0)	18 (18.0)	12 (12.0)
Overall Positive Attitude (≥60%)	72 (72.0)	–	28 (28.0)

The assessment of attitudes toward postpartum contraception revealed that 76.0% of participants agreed that contraception was necessary after delivery, and 72.0% expressed willingness to use contraception in the postpartum period (Table 3). Spousal support for contraceptive use was reported by 64.0% of women. Notably, 38.0% of participants believed that contraceptive methods had harmful side effects. Nearly half of the respondents (46.0%) held the view that family planning was primarily the woman's responsibility. Overall, 72.0% of the study participants demonstrated a positive attitude toward postpartum contraception.

Table 4: Contraceptive Practice Among Postpartum Women (N = 100)

Variable	Category	Frequency (n)	Percentage (%)
Current Contraceptive Use	Yes	54	54.0
	No	46	46.0
Method Currently Used (n=54)	Condoms	22	40.7
	Oral Contraceptive Pills	14	25.9
	IUCD	10	18.5
	Injectable Contraceptives	4	7.4
	Natural Methods	4	7.4
Prior Contraceptive Use	Yes	38	38.0
	No	62	62.0
Source of Information	Healthcare Provider	52	52.0
	Family/Friends	24	24.0
	Mass Media	16	16.0
	Internet	8	8.0

Received Counseling (ANC/PNC)	Yes	58	58.0
	No	42	42.0

Regarding contraceptive practices (Table 4), only 54.0% of the study participants were currently using any form of contraception. Among current users (n = 54), condoms were the most frequently used method (40.7%), followed by oral contraceptive pills (25.9%) and intrauterine contraceptive devices (18.5%). Injectable contraceptives and natural methods were each used by 7.4% of participants. Prior contraceptive use before the index pregnancy was reported by 38.0% of women. Healthcare providers were the primary source of information about contraception for 52.0% of participants, followed by family and friends (24.0%). Of particular significance, only 58.0% of participants reported having received contraceptive counseling during antenatal or postnatal care.

Table 5: Association of Contraceptive Knowledge with Sociodemographic Factors (N = 100)

Variable	Adequate Knowledge n (%)	Inadequate Knowledge n (%)	p-value
Age ≤25 years (n=48)	34 (70.8)	14 (29.2)	0.108
Age >25 years (n=52)	44 (84.6)	8 (15.4)	
Illiterate/Primary (n=26)	14 (53.8)	12 (46.2)	0.001*
Secondary and above (n=74)	64 (86.5)	10 (13.5)	
Urban (n=42)	36 (85.7)	6 (14.3)	0.114
Rural (n=58)	42 (72.4)	16 (27.6)	
Primipara (n=44)	30 (68.2)	14 (31.8)	0.032*
Multipara (n=56)	48 (85.7)	8 (14.3)	
Counseling received (n=58)	52 (89.7)	6 (10.3)	<0.001*
No counseling (n=42)	26 (61.9)	16 (38.1)	

**Statistically significant (p < 0.05); Chi-square test*

The association between sociodemographic factors and contraceptive knowledge is presented in Table 5. Education level was significantly associated with adequate knowledge, with 86.5% of women who had completed secondary education or above demonstrating adequate knowledge compared to only 53.8% among those with primary education or less (p = 0.001). Multiparity was significantly associated with better knowledge, with 85.7% of multiparous women having adequate knowledge compared to 68.2% of primiparous women (p = 0.032). The strongest association was observed with prior contraceptive counseling; 89.7% of women who had received counseling during antenatal or postnatal care had adequate knowledge compared to 61.9% among those who did not receive counseling (p < 0.001). Although women in the older age group and urban residents demonstrated higher knowledge levels, these differences did not reach statistical significance (p = 0.108 and p = 0.114, respectively).

Table 6: Association of Contraceptive Practice with Selected Factors (N = 100)

Variable	Currently Using n (%)	Not Using n (%)	p-value
Adequate Knowledge (n=78)	48 (61.5)	30 (38.5)	0.012*
Inadequate Knowledge (n=22)	6 (27.3)	16 (72.7)	
Positive Attitude (n=72)	46 (63.9)	26 (36.1)	0.001*
Negative Attitude (n=28)	8 (28.6)	20 (71.4)	
Counseling received (n=58)	40 (69.0)	18 (31.0)	<0.001*
No counseling (n=42)	14 (33.3)	28 (66.7)	

Education ≥Secondary (n=74)	46 (62.2)	28 (37.8)	0.005*
Education <Secondary (n=26)	8 (30.8)	18 (69.2)	
Multipara (n=56)	36 (64.3)	20 (35.7)	0.012*
Primipara (n=44)	18 (40.9)	26 (59.1)	

**Statistically significant ($p < 0.05$); Chi-square test*

Table 6 presents the association between contraceptive practice and selected factors. Current contraceptive use was significantly higher among women with adequate knowledge (61.5%) compared to those with inadequate knowledge (27.3%, $p = 0.012$). Similarly, women with a positive attitude toward contraception had significantly higher rates of current use (63.9%) compared to those with negative attitudes (28.6%, $p = 0.001$). The receipt of contraceptive counseling during antenatal or postnatal care was the strongest predictor of current contraceptive use, with 69.0% of counseled women currently using contraception compared to only 33.3% among those who did not receive counseling ($p < 0.001$). Higher education (≥secondary level; $p = 0.005$) and multiparity ($p = 0.012$) were also significantly associated with current contraceptive practice.

Among the 46 women who were not currently using any contraceptive method, the most commonly cited reasons were fear of side effects (34.8%), lack of adequate information (26.1%), opposition from the husband or family members (19.6%), desire for another child soon (10.9%), and religious or cultural beliefs (8.7%). The mean knowledge score among current users was 7.8 ± 1.6 compared to 5.2 ± 2.1 among non-users, and this difference was statistically significant ($t = 6.84$, $p < 0.001$). Similarly, the mean attitude score was significantly higher among current users (22.4 ± 3.2) compared to non-users (16.8 ± 4.1; $t = 7.62$, $p < 0.001$).

V. DISCUSSION

The present study assessed the knowledge, attitude, and practice regarding contraception among 100 postpartum women attending a tertiary care hospital in South India. The findings revealed that while a majority of participants had adequate knowledge and positive attitudes toward contraception, a substantial gap existed between awareness and actual practice, which is consistent with findings from several studies conducted across India and other developing countries.

In this study, 78.0% of postpartum women demonstrated adequate knowledge of contraceptive methods. This finding is comparable to the results reported by Takkar et al. [11], who observed that 80.2% of postpartum women in a North Indian hospital had awareness of at least one contraceptive method. Similarly, Sharma et al. [12] reported an awareness rate of 82.0% among postpartum women in Rajasthan. However, the knowledge level observed in the present study was higher than that reported by Gaikwad et al. [13], who found that only 62.5% of postpartum women in a rural Maharashtra hospital had adequate knowledge. This difference may be attributed to the tertiary care setting of the present study, where greater exposure to healthcare services and counseling likely contributed to higher awareness levels.

The most commonly known contraceptive method in the present study was female sterilization (88.0%), followed by condoms (82.0%) and oral contraceptive pills (74.0%). This pattern of awareness is consistent with observations by Pegu et al. [14], who reported that sterilization and condoms were the most recognized methods among postpartum women in Assam. The relatively low awareness of long-acting reversible contraceptive methods such as intrauterine devices (58.0%) and injectable contraceptives (36.0%) in this study highlights a significant gap in knowledge that warrants targeted educational interventions. Kumar et al. [15] similarly reported low awareness of IUCD among postpartum women in Karnataka and attributed this to insufficient counseling about the range of available methods.

Regarding attitudes, 72.0% of participants exhibited a positive attitude toward postpartum contraception, which aligns with findings by Puri et al. [16], who reported a positive attitude in 68.0% of women in an urban hospital in Chandigarh. Notably, 38.0% of women in the present study believed that contraceptive methods had harmful side effects, which represents a considerable attitudinal barrier. This finding is corroborated by Shukla et al. [17], who reported that fear of side effects was the most commonly cited deterrent to contraceptive adoption among postpartum women in Uttar Pradesh.

The current contraceptive utilization rate in the present study was 54.0%, which is comparable to the national figure of 56.5% reported in the NFHS-5 [3]. However, this rate was higher than that observed by Choudhary et al. [18], who reported a contraceptive prevalence of 42.0% among postpartum women in Bihar, a state with lower female literacy and healthcare accessibility. Conversely, Sebastian et al. [19] reported a higher utilization rate of 63.0% in Kerala, likely reflecting the advanced literacy and healthcare infrastructure in that

state. These inter-state variations underscore the significant influence of socio-cultural and health system factors on contraceptive adoption.

The present study identified several factors significantly associated with contraceptive knowledge and practice. Education level emerged as a strong predictor of both adequate knowledge ($p = 0.001$) and current contraceptive use ($p = 0.005$), which is consistent with the well-established association between female education and reproductive health behavior reported in multiple studies [11,15,20]. Multiparity was also significantly associated with both better knowledge ($p = 0.032$) and higher contraceptive use ($p = 0.012$), suggesting that prior reproductive experience facilitated greater engagement with family planning.

Perhaps the most important finding of this study was the significant association between receipt of contraceptive counseling and both adequate knowledge ($p < 0.001$) and current contraceptive practice ($p < 0.001$). Women who received counseling during antenatal or postnatal care were nearly twice as likely to be currently using contraception compared to those who did not receive counseling. This finding strongly supports the integration of structured contraceptive counseling into routine antenatal and postnatal care, as advocated by Achyut et al. [20], who demonstrated that facility-based counseling interventions significantly improved postpartum contraceptive uptake in Indian hospitals.

The gap between knowledge (78.0%) and practice (54.0%) observed in this study indicates that awareness alone is insufficient to ensure contraceptive adoption. This knowledge-practice gap has been consistently documented in the literature and reflects the complex interplay of individual, interpersonal, and systemic barriers that influence reproductive health behavior. Addressing this gap requires multi-level interventions that go beyond information provision to include motivational counseling, spousal involvement, community-level awareness campaigns, and improvements in the accessibility and quality of family planning services.

The present study had certain limitations. The cross-sectional design precluded the establishment of temporal or causal relationships between variables. The study was conducted at a single tertiary care center, which may limit the generalizability of findings to other settings. Additionally, the reliance on self-reported data may have introduced social desirability bias, particularly regarding attitudes and practices related to contraception.

VI. CONCLUSION

The present study revealed that while a substantial majority of postpartum women at a tertiary care hospital in South India possessed adequate knowledge and positive attitudes toward contraception, a significant gap existed between awareness and actual contraceptive practice. Education level, parity, and receipt of contraceptive counseling during antenatal and postnatal care emerged as the strongest predictors of both knowledge and current contraceptive use. Fear of side effects, inadequate information, and opposition from family members were the principal barriers to contraceptive adoption. These findings underscore the critical need for structured, individualized contraceptive counseling during antenatal visits and before hospital discharge, with an emphasis on addressing misconceptions, involving male partners, and promoting awareness of the full range of available methods including long-acting reversible contraceptives. Strengthening postpartum family planning services at the institutional level holds the potential to significantly reduce the unmet need for contraception and improve maternal and child health outcomes in the community served by this tertiary care center.

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