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Original Research Article

Utilization of postnatal care services and its associated factors among women in a tertiary health care center in central India – a cross sectional study

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ABSTRACT

Background: The postnatal period, lasting six weeks after childbirth, is a crucial time for mothers and newborns, requiring proper care for recovery and well-being. The World Health Organization (WHO) recommends postnatal care within 24 hours of delivery, with three follow-up visits, but uptake remains low in South East Asia, especially India. India accounts for 20% of global maternal deaths, with many preventable through better healthcare access. This study aims to assess postnatal care utilization and related factors in a tertiary healthcare center in central India.
Methods: A cross-sectional study was conducted from January 1st to February 28th, 2025, among 260 postnatal women. Data was collected through face-to-face interviews using a semi-structured questionnaire. Univariate and bivariate analysis method was adopted in this study. A p value of less than 0.05 was considered statistically significant.
Results: The study included 260 postnatal women, with the majority (41.16%) aged 26-30 years. Adequate postnatal care (PNC) was received by 28.4%, including breastfeeding counselling (74.23%) and newborn care advice (65.76%). Bi-variate analysis revealed significant associations between PNC utilization and some of the factors like, residence, socioeconomic status, parity, place and mode of delivery, obstetric history, and complications.
Conclusions: The study found that only 28.4% of women received adequate postnatal care, with notable gaps in maternal recovery support, postnatal exercises, and family planning counselling. Enhancing awareness, increasing accessibility, and implementing focused public health interventions are crucial to improve postnatal care coverage and outcomes for mothers and newborns.

Keywords: Postnatal care, Maternal mortality, Neonatal morbidity, Healthcare access, Public health intervention, Utilization

INTRODUCTION

Postnatal period, which starts immediately after childbirth and continues for six weeks (42 days).[1] It is an essential phase for mothers, newborns, partners, parents, caregivers, and families. This period involves significant physical and emotional adjustments, requiring proper care and support from family and health care providers. However, maternal and neonatal mortality and morbidity rates remain disturbingly high during this time.

Additionally, many opportunities to enhance maternal well-being, encourage recovery, and promote nurturing and responsive newborn care are often overlooked, leaving families without the critical support they need during this transformative stage.[1]

The World Health Organization (WHO) recommends that women giving birth in a health facility receive postnatal care (PNC) for at least 24 hours after delivery. For home births, the first PNC visit should occur within 24 hours. Additionally, three more PNC visits are advised: on day 3, between days 7–14, and at 6 weeks after birth to ensure the well-being of both mother and newborn.[2] PNC uptake has been generally low across South East Asia, with India experiencing particularly limited access and utilization.[3] The 2019-2021 National Family Health Survey (NFHS-5) reports that only 78% of mothers in India received postnatal care within two days of delivery.[4]

The Government of India has launched several programs aimed at improving the well-being of women in the reproductive age group. However, significant reductions in maternal mortality and morbidity remain unachieved. India continues to record some of the highest maternal mortality ratios, accounting for around 20% of all maternal deaths worldwide.[5] Nearly 40% of women face complications after childbirth, with around 15% developing potentially life-threatening conditions. Many of these maternal health issues and deaths could be prevented if women had adequate access to maternal healthcare services during pregnancy, childbirth, and the postnatal period.[6] However, women's ability to seek healthcare is often restricted by household dynamics, where decisions about their mobility and healthcare expenses are typically controlled by men or older women. This limits their ability to pursue timely and essential medical care, increasing the risk of complications.[7]

Studies have shown that the utilization of PNC services is influenced by various factors, including maternal age, women's education level, occupational status of both women and their husbands, place and mode of delivery, number of pregnancies, and awareness of obstetric danger signs and PNC services. However, these factors differ across regions due to cultural and socioeconomic variations. Therefore, understanding the specific factors affecting PNC service utilization within the study area is essential for designing effective public health interventions aimed at improving PNC uptake and maternal well-being.[8] PNC is one of the most essential maternal health services for ensuring the survival of mothers and newborns, yet it remains widely overlooked.[9] With this background, the present study was conducted with the following objectives to estimate the proportion of mothers utilizing adequate PNC services and to determine the factors associated with utilization of PNC services among women in a tertiary health care center in central India.

METHODS

Study setting and study population

A hospital based cross-sectional study was conducted from 01 January 2025 to 28 February 2025, among postnatal women attending the immunization clinic at a tertiary healthcare center in Central India.

Inclusion criteria

Postnatal women attending immunization clinic for 6th, 10th and 14th week vaccination of their babies and who have given consent were included in the study.

Exclusion criteria

Those who did not give consent were excluded from the study and failure to furnished necessary information pertinent to study protocol requirement and mother with busy schedule were also excluded.

Sample size estimation and sampling method

The sample size was determined using a 58.33% prevalence of postnatal care utilization, as reported by Pandey et al in their study on postnatal care services in Jabalpur district.[10] With an absolute precision of 6%, the final sample included 260 participants. The sampling was done using the universal sampling method.

Data collection methods and tools

The present study was carried out at the immunization clinic of a tertiary care center in central India, with approval from the Institutional Ethical Committee. Informed consent was obtained from participants after explaining the purpose of the study, nature, and objectives in their local language, ensuring confidentiality and time required to complete the task. The criteria for adequate postnatal service utilization was set by doing minimum 4 PNC visits. Data collection involved face-to-face interviews using a predesigned, semi-structured and pre-tested questionnaire. The questionnaire covered key areas such as sociodemographic details, antenatal history, and postnatal history, ensuring a comprehensive understanding of the participants backgrounds and maternal health experiences and study variables pertaining to study objectives.

Statistical analyses

The collected data was entered into Microsoft excel and analyzed using STATA 14 software. Descriptive statistics were presented as frequencies and percentages. Bivariate analysis was performed to assess the influence of various factors on postnatal care utilization. A p value of less than 0.05 was considered statistically significant.

RESULTS

The study included 260 postnatal women. The majority (41.16%) were aged between 26-30 years, followed by 28.07% in the 20-25 years' group, and 30.77% aged above 30 years. Majority (57.69%) resided in urban areas, and the predominant religion among participants was Hinduism (80%). In terms of family structure, 51.15% belonged to nuclear families, while 40.39% were from joint families. Educationally, 44.61% of the women had completed

graduation or post-graduation. Most mothers (83.08%) were unemployed. Among husbands, 36.16% had higher education qualifications, and 26.16% worked as semi-skilled laborers. According to the modified B. G. Prasad classification, 33.85% of families fell into class II (Table 1).

Table 1: Socio demographic characteristics of postnatal women.

Sociodemographic factors	Number of postnatal women (n=260)	Percentage (%)
Age of mother (in years)		
20-25	73	28.07
26-30	107	41.16
>30	80	30.77
Place of residence		
Urban	150	57.69
Rural	110	42.31
Religion		
Hindu	208	80
Buddhist	39	15
Christian	2	0.77
Muslim	11	4.23
Type of family		
Nuclear	133	51.15
Joint	105	40.39
Three generation	22	8.46
Education of mother		
Primary school	4	1.54
Middle school	21	8.07
High school	75	28.85
Intermediate or post high school diploma	44	16.93
Graduate or post graduate	116	44.61
Occupation of mother		
Unemployed	216	83.08
Unskilled worker	3	1.16
Semi-skilled worker	9	3.46
Skilled worker	3	1.16
Clerical, shop owner, farmer	1	0.38
Semi-professional	22	8.46
Professional	6	2.30
Education of husband		
Illiterate	5	1.92
Primary school	3	1.15
Middle school	26	10
High school	80	30.77
Intermediate or post high school diploma	52	20
Graduate or post graduate	94	36.16
Occupation of husband		
Unemployed	1	0.38
Unskilled worker	35	13.47
Semi-skilled worker	68	26.16
Skilled worker	67	25.77
Clerical, shop owner, farmer	26	10
Semi-professional	46	17.69
Professional	17	6.53
Socioeconomic status (modified B. G. Prasad classification)		
Class I	62	23.85
Class II	88	33.85
Class III	58	22.30

Continued.

Sociodemographic factors	Number of postnatal women (n=260)	Percentage (%)
Class IV	44	16.93
Class V	8	3.07

Of the total participants, 51.92% were primi, and 81.92% delivered in government hospitals. Early antenatal care (ANC) registration, within the first 12 weeks, was reported by 90% of women, and 99.62% completed a minimum of four ANC visits. Most women (84.23%) delivered at full term, and normal vaginal delivery was the predominant mode of birth (83.46%). Furthermore, 87.31% of women reported no previous obstetric complications, while 17.31% had comorbidities. Only 26.15% were enrolled in government maternity welfare schemes (Table 2).

Table 2: Antenatal components of the postnatal women.

Antenatal factors	Number of postnatal women (n=260)	Percentage (%)
Parity		
Primi	135	51.92
Multi	125	48.08
Place of delivery		
Government hospital	213	81.92
Private hospital	47	18.08
Time of registration of ANC		
Early (within 12 weeks)	234	90
Late (after 12 weeks)	26	10
Total number of ANC visits		
<4	1	0.38
≥4	259	99.62
Gestational age at the time of delivery		
Term	219	84.23
Preterm	41	15.77
Mode of delivery		
Normal vaginal delivery	217	83.46
LSCS	43	16.54
Bad obstetric history		
Yes	33	12.69
No	227	87.31
History of any comorbidities		
Yes	45	17.31
No	215	82.69
History of any complications		
Yes	22	8.46
No	238	91.54
Registered in any government schemes		
Yes	68	26.15
No	192	73.85

As illustrated in Figure 1, 28.4% of mothers received adequate PNC services. Among those, 38.46% reported experiencing maternal health issues, and 52.3% received dietary guidance. Breastfeeding counselling was provided to 74.23% of women, and newborn care advice was offered to 65.76%. Immunization services had the highest uptake, with 82.3% of mothers ensuring their infants were vaccinated. However, only 25.38% received advice on postnatal exercises, and 30% were counselled on family planning. These figures suggest a strong focus on newborn care and immunization, while postpartum recovery and family planning counselling were less frequently covered (Figure 2).

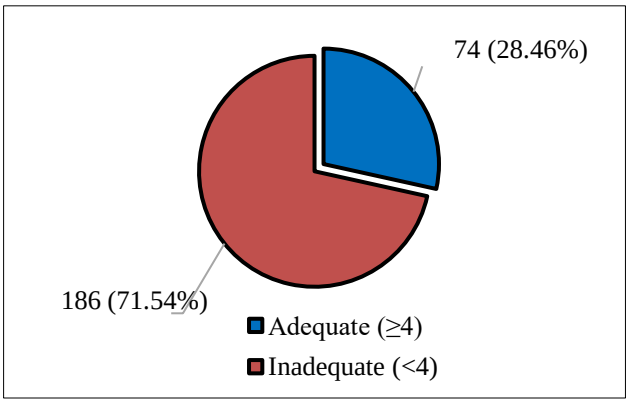

Figure 1: Distribution of study subjects according to number of post-natal check-ups (N=260).

Factors which were significantly associated with PNC services utilization were place of residence, socioeconomic status, parity, place of delivery, mode of delivery, bad obstetric history and history of complications (Tables 3 and 4).

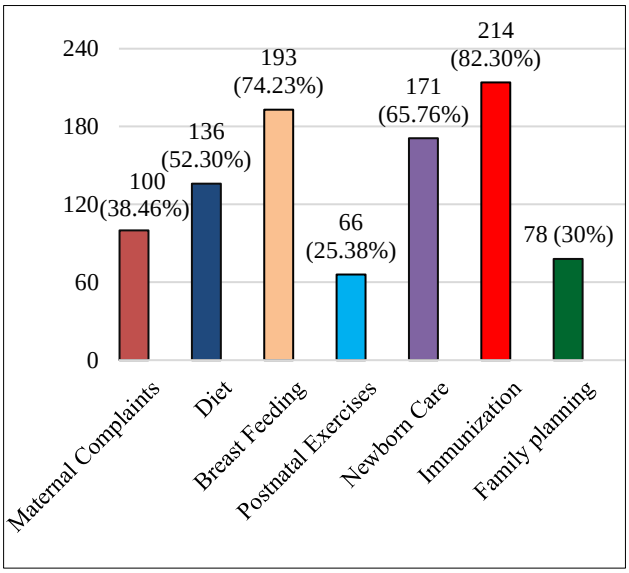

Figure 2: Services received during postnatal care visit.

Table 3: Association of socio-demographic factors of women with postnatal services utilization.

Sociodemographic factors	Frequency, N (%)	PNC check-ups		X^2	P value
		Adequate	Inadequate		
Age of mother (in years)					
Up to 30	180 (69.23)	53 (20.38)	127 (48.84)	44.33	0.59
>30	80 (30.77)	21 (8.07)	59 (22.69)		
Place of residence					
Urban	150 (57.69)	65 (25)	85 (32.70)	38.5124	<0.00001
Rural	110 (42.31)	9 (3.46)	101 (38.84)		
Religion					
Hindu	208 (80)	60 (23.07)	148 (56.93)	0.0756	0.78
Others	52 (20)	14 (5.38)	38 (14.62)		
Type of family					
Nuclear	133 (51.16)	36 (13.85)	97 (37.30)	0.2598	0.61
Joint and three generation family	127 (48.84)	38 (14.62)	89 (34.23)		
Education of mother					
Up to middle school	25 (9.62)	4 (1.53)	21 (8.07)	2.1096	0.14
Above middle school	235 (90.38)	70 (26.93)	165 (63.47)		
Occupation of mother					
Unemployed	216 (83.07)	65 (25)	151 (58.08)	1.66	0.19
Employed	44 (16.93)	9 (3.46)	35 (13.46)		
Education of husband					
Up to middle school	34 (13.07)	7 (2.69)	27 (10.38)	1.1909	0.275
Above middle school	226 (86.93)	67 (25.77)	159 (61.16)		
Occupation of husband					
Unemployed	1 (0.38)	1 (0.38)	0	-	-
Employed	259 (99.62)	73 (28.08)	186 (71.54)		
Socioeconomic status (modified B. G. Prasad classification)					
Class I and II	150 (57.69)	60 (23.08)	90 (34.62)	23.183	<0.00001
Class III , IV and V	110 (42.31)	14 (5.38)	96 (36.92)		

Table 4: Association of antenatal components of postnatal women with postnatal services utilization.

Antenatal factors	Frequency, N (%)	PNC check-ups		X^2	P value
		Adequate	Inadequate		
Parity					
Primi	135 (51.92)	60 (23.08)	75 (28.85)	35.2298	<0.00001
Multi	125 (48.08)	14 (5.38)	111 (42.69)		
Place of delivery					
Government hospital	213 (81.92)	44 (16.92)	169 (65)	35.2469	<0.00001
Private hospital	47 (18.08)	30 (11.54)	17 (6.54)		
Time of registration of ANC					
Early (within 12 weeks)	234 (90)	63 (24.24)	171 (65.76)	2.7201	0.0990
Late (after 12 weeks)	26 (10)	11 (4.24)	15 (5.76)		
Total number of ANC visits					
<4	1 (0.38)	1 (0.38)	0	-	-
≥4	259 (99.62)	73 (28.08)	186 (71.54)		
Gestational age at the time of delivery					
Term	219 (84.23)	63 (24.23)	156 (60)	0.0637	0.8007
Preterm	41 (15.77)	11 (4.23)	30 (11.54)		
Mode of delivery					
Normal vaginal delivery	217 (83.46)	37 (14.23)	180 (69.23)	83.9078	<0.00001
LSCS	43 (16.54)	37 (14.23)	6 (2.31)		
Bad obstetric history					
Yes	33 (12.69)	30 (11.54)	3 (1.16)	72.3926	<0.00001

Continued.

Antenatal factors	Frequency, N (%)	PNC check-ups		X^2	P value
		Adequate	Inadequate		
No	227 (87.31)	44 (16.92)	183 (70.38)		
History of any comorbidities					
Yes	45 (17.31)	16 (6.16)	29 (11.16)	1.345	0.2461
No	215 (82.69)	58 (22.30)	157 (60.38)		
History of any complications					
Yes	22 (8.46)	20 (7.69)	2 (0.77)	46.0312	<0.00001
No	238 (91.54)	54 (20.77)	184 (70.77)		
Registered in any government schemes					
Yes	68 (26.15)	24 (9.24)	44 (16.92)	2.1113	0.146
No	192 (73.85)	50 (19.23)	142 (54.61)		

DISCUSSION

The findings of this study indicate that only 28.4% of postnatal women received adequate PNC, highlighting significant gaps in maternal health services. Similar trends have been reported in other studies across India. A study conducted in urban Jabalpur found that 58.33% of mothers received three or more postnatal visits, with higher utilization among women with better education, higher socioeconomic status, and institutional deliveries.[10] In contrast, our study observed lower PNC utilization despite high institutional delivery rates, suggesting a need for improved postnatal service delivery and awareness.

In a study conducted by Jahnavi et al, 97.9% of mothers received some form of PNC, with 82.2% receiving breastfeeding advice and 67.8% receiving family planning guidance.[5] Comparatively, our study revealed lower proportions of breastfeeding counselling (74.23%) and family planning guidance (30%), emphasizing the need for stronger postnatal educational initiatives. Similarly, in a study conducted by Paudel et al highlighted that 79% of mothers utilized postnatal services, with education, income, and place of delivery being key determinants.[6] This aligns with our findings, where socioeconomic status, parity, and delivery-related factors significantly influenced PNC utilization.

Studies done by Uppadhaya et al and Sharma et al have pointed out the role of awareness and education in improving PNC uptake.[11,12] The study done by Uppadhaya et al found that only 35.86% of mothers received two or more PNC visits, citing lack of knowledge as a major barrier.[11] Similarly, study done by Sharma et al concluded that female education plays a crucial role in PNC utilization, impacting economic status, empowerment, and decision-making capacity.[12] These findings reinforce the importance of targeted educational campaigns to improve postnatal care awareness and accessibility.

Furthermore, the determinants of PNC utilization in our study align with those found in the study conducted by Singh et al, where disparities in urban and rural healthcare access led to inconsistent maternal health service utilization.[13] Addressing these disparities through improved outreach, transportation support, and community-based healthcare services could enhance PNC uptake. Besides the findings of our study, numerous other studies worldwide have identified various sociodemographic and obstetric factors associated with postnatal care service utilization. These factors have been consistently linked to PNC use across different populations.[14-20] Overall, our study highlights the urgent need for strengthened PNC services, particularly in maternal recovery, postnatal exercise guidance, and family planning counselling. Implementing structured awareness programs, expanding access to postnatal services, and integrating home-based PNC visits could significantly improve maternal and newborn health outcomes.

This study possesses several strengths. It was conducted in a tertiary healthcare center, so it included a diverse group of postnatal women from various sociodemographic backgrounds. The use of a standardized, pretested questionnaire and compliance with WHO guidelines ensured reliability and consistency in data collection. Furthermore, the study effectively identified key factors influencing postnatal care utilization, offering valuable insights for policymakers to develop targeted interventions.

However, certain limitations should be acknowledged. Since this study was conducted at a single tertiary healthcare center, the findings may not be generalizable to other settings, particularly rural areas and lower-tier healthcare facilities. The cross-sectional design limits the ability to establish causal relationships between factors influencing PNC utilization. Since data were collected through self-reported interviews, recall bias may have affected responses, particularly regarding past antenatal and postnatal visits.

CONCLUSION

The study found that only 28.4% of postnatal women received adequate care, revealing a significant shortfall in service utilization. Breastfeeding counselling and newborn care advice were commonly provided, support for maternal recovery and guidance on postnatal exercises and family planning was insufficient. Key factors influencing PNC utilization included residence, socioeconomic status, parity, place and mode of delivery, bad obstetric history,

and complications during pregnancy. Enhancing awareness, expanding accessibility, and ensuring comprehensive PNC are essential to improve coverage and outcomes for both mothers and newborns. Targeted public health interventions addressing these barriers are vital to closing the existing gaps.

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