Original Article

Adherence to Complete Postnatal Care Visits among Mothers in Gandaki Province, Nepal

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Abstract

Background

Maternal and infant mortality remains a major global health challenge, and adherence to postnatal care (PNC) is vital for reducing morbidity and mortality. This study aimed to assess adherence to complete postnatal care visits among mothers of children under two years in Nepal.

Methods

A cross-sectional quantitative study of 303 mothers from five local wards of Phalewas Municipality was conducted in 2023. The total enumeration included all eligible mothers listed on the health posts. Data were collected through face-to-face interviews, using a structured questionnaire. Multivariate logistic regression analysis identified the factors associated with complete PNC adherence ($p<0.05$).

Results

Only 40.3% of participants completed all PNC visits per protocol. Factors associated with increased odds of complete PNC adherence included husband's employment in the service sector (AOR 3.2, 95% CI 1.53-6.80), cesarean section deliveries (AOR 2.9, 95% CI 1.62-5.19), and satisfaction with healthcare services (AOR 2.2, 95% CI 1.07-4.43). Conversely, mothers from the Janajati ethnic group had lower odds of complete PNC adherence (AOR 0.4, 95% CI 0.16-0.87).

Conclusion

Low PNC adherence in the study area highlights challenges in achieving the national targets. Efforts should focus on improving community awareness, healthcare service quality, and targeted support for marginalized groups.

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Keywords: adherence, antenatal care, cesarean section, infant mortality, postnatal care

Introduction

Despite concerted efforts, maternal and infant mortality remain a significant global challenge.[1] The postnatal period is a critical time for maternal and child health, yet it is also a period of heightened risk, with most maternal deaths being preventable.[2] Postnatal care (PNC) is essential for addressing this crisis as it prevents the majority of maternal and child morbidity and mortality.[3] The World Health Organization (WHO) has identified postnatal care as crucial for reducing childhood mortality and improving maternal health, aligning with the UN Sustainable Development Goal 3 (SDG 3), and recommends four PNC visits for all mothers: within 24 hours of birth, on day 3, between days 7 and 14, and at 6 weeks.[4, 5] Although access to antenatal care (ANC) has improved, PNC uptake remains significantly lower in low- and middle-income countries (LMICs).[5] This disparity is particularly pronounced in South Asia and sub-Saharan Africa, with approximately 529,000 women dying annually due to pregnancy-related complications.[3]

Nepal is a case in point, with 19% of women still giving birth at home, and early discharge from healthcare facilities hindering access to essential PNC services.[2, 6] In 2021, the maternal mortality ratio (MMR) was 151 per 100,000 live births (LB) in Nepal, with the goal of reducing it to 99 per 100,000 LB by 2025 and 70 per 100,000 LB by 2030.[7] This rate is lower than the global estimate of 197 maternal deaths per 100,000 live births in 2023, according to the WHO. However, when compared to the South Asia region, which achieved an MMR of around 117 per 100,000 live births in 2023, Nepal's MMR in 2021 was higher.[8]

The high maternal death rate in developing nations is primarily due to inadequate access to skilled postnatal care.[9] Although the WHO recommends four PNC visits, Nepal's current postnatal care (PNC) protocol mandates three check-ups: within 24 hours, on day 3, and on the 7th day.[10] However, there is a significant gap in home-based follow-up for both home and hospital delivery. Mothers who are discharged early (after 24 hours) after a normal hospital delivery often lack proper follow-up mechanisms to ensure that they complete the recommended PNC schedule. This challenge is even more pronounced in-home deliveries, in which tracing mothers for postnatal care is particularly difficult. Therefore, early discharge from healthcare facilities means that many mothers miss out on essential postnatal care.[2]

Despite national efforts to increase postnatal care coverage, a significant gap persists between the uptake of four antenatal care visits (93.5%) and the recommended three postnatal care visits as per the protocol (44.2%) in Fiscal Year (FY) 2079/80 (July 16, 2022, to July 15, 2023). This disparity has remained consistent over the past three fiscal years.[11]

Moreover, the latest estimates of the maternal mortality ratio (MMR) lag behind the SDG 3 target of 116 per 100,000 LB by 2022. Achieving SDG targets of reducing MMR to 99 per 100,000 LB by 2025 and 70 per 100,000 LB by 2030 is a formidable challenge.[12] This is due to the significantly higher required annual decline of 8.7% (compared to the 5.0% annual decline achieved in the preceding period), the limited remaining timeframe until 2030, significant geographical and healthcare access heterogeneity, and considerable variation in MMR estimates.[13] Similarly, attaining the SDG goal of 90% coverage for three postnatal care visits as per protocol by 2030 appears challenging based on the current PNC coverage.[14] The gap between antenatal and postnatal care services could contribute to these national challenges. Therefore, this study aimed to identify adherence to complete postnatal care visits and its associated factors among mothers of children under two years in Nepal.

Methods

Study design

This study employed a community-based, cross-sectional quantitative design. Data were collected between April 4 and 24, 2023.

Study setting

The study was conducted in the Phalewas Municipality, Gandaki Province, Nepal. The municipality was established on March 10, 2017, through the merger of several former Village Development Committees. It is administratively divided into 11 wards, with its headquarters located in Phalebas Khanigaun. Covering an area of 85.70 square kilometres (33.09 square miles), the municipality has a total population of 24,688.[15] Phalewas Municipality was selected as the study setting due to its rural demographics and limited access to healthcare services. Although other similar areas exist in the province, Phalewas was chosen for its specific relevance to the study's objectives.

Study population and eligibility criteria

The study population included mothers residing permanently (living in the area continuously for at least six months) in the selected wards (local administrative unit) of the Phalewas Municipality who had at least one child under two years of age during the data collection period. A list of eligible mothers was obtained from the health post records of the selected wards, and assistance was sought from the Female Community Health Volunteers (FCHVs) to ensure completeness and accuracy.

Sample size and sampling procedures

To enhance representativeness, five of the 11 wards of Phalewas Municipality were randomly selected using a lottery method. The study was conducted exclusively within the selected wards. A total enumeration approach was adopted, whereby all eligible mothers identified through health post records with support from the FCHVs were included in the study. All identified mothers participated, resulting in a final sample size of 303 and response rate of 100%.

Data collection instruments, procedures, and quality control

The questionnaire for this study was developed based on variables and items used in previous studies conducted in Nepal and consisted of sections on socio-demographic information, reproductive health, healthcare access, and adherence to complete postnatal care, including awareness of postnatal care and sources of information. [10,16] The questionnaire was subjected to content validity assessment by three public health experts with previous experience publishing on similar topics or familiar with similar issues. To assess the clarity, understandability, and consistency of the questionnaire, a pilot test was conducted with 30 mothers with similar characteristics in a nearby municipality. Feedback from the pilot test indicated that the questionnaire was clear and understandable. Minor adjustments were made to the wording of a few questions to enhance the clarity. Overall, the pilot test suggests that the questionnaire was suitable for the main study. The questionnaire was administered in Nepali (local language). Data were collected through face-to-face interviews, during which the researchers read questions to the participants and recorded their responses. Researchers were directly involved in the data collection process and were trained in interview techniques (including neutral and non-judgmental questioning and rapport building) and ethical practices to maintain data quality. The FCHVs assisted in identifying and reaching the houses of these mothers. The completed questionnaires were checked immediately after the interviews for completeness and inconsistency.

Study variables

The study variables were categorized into dependent and independent variables. Independent variables included sociodemographic factors (age, ethnicity, religion, type of family, education, and occupation of respondents), reproductive health, and access to healthcare. Sociodemographic variables were measured based on self-reports.

Reproductive health factors included age at marriage, age at first pregnancy, sex of the youngest child, mode of delivery, place of delivery, complications during pregnancy, history of ANC visits, and time to reach the nearest health facility. Healthcare access variables included the behavior of health service providers and respondents' satisfaction with health services at health institutions. For measuring satisfaction with healthcare services, respondents were asked a single-item question, with answers categorized as "yes" or "no." Similarly, the behavior of health service providers was self-rated by the respondents' using categories of "very good," "good," or "satisfactory."

The dependent variables included complete adherence to PNC visits and non-adherence (zero, one, or two visits). Complete adherence to PNC visits was defined as attending all three mandated visits (24 hours, three days, and seven days post-birth) according to Nepal's national guidelines.[2,11] PNC visit details were self-reported by the respondents and, where available, verified using the mothers' ANC cards provided by health institutions.

Data processing and analysis

All collected data were entered into the Statistical Package for the Social Sciences (SPSS) version 26 for analysis. Data were cleaned to ensure accuracy and consistency. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were calculated to summarize the data. Bivariate analysis, using chi-square tests, was initially performed to assess associations between potential independent variables and the dependent variable (adherence to complete PNC visits). Only variables showing a significant association ($p < 0.05$) in this bivariate analysis were included in the subsequent multivariable model. Multivariable logistic regression analysis was then employed to identify factors independently associated with adherence to the three PNC visits. Model fit was assessed using the Hosmer-Lemeshow test ($p = 0.849$), indicating acceptable fit, and Nagelkerke's R^2 ($R^2 = 0.30$). Multicollinearity among the independent variables included in the final model was assessed using Variance Inflation Factors (VIF); all VIF values were below 5, indicating no significant multicollinearity concerns. [17] Variables with a p-value less than 0.05 in the final multivariate model were considered statistically significant. Results from the multivariable logistic regression are presented as adjusted odds ratios (AOR), while results from the bivariate analysis are presented as crude odds ratios (COR), all with corresponding 95% confidence intervals (CI).

Ethical considerations

Ethical approval was obtained from the Institutional Review Committee of Yeti Health Science Academy (Ref. No. 079-74). Participants were clearly informed that their participation was voluntary, and they had the right to withdraw from the study at any time without any consequences. Written informed consent was obtained from all participants after explaining the study objectives, procedures, potential risks and benefits. Confidentiality and anonymity of all data was maintained throughout the study.

Results

Socio-demographic characteristics of participants

Most participants (n=125, 41.3%) were aged 23-27 years, with a mean age of 25.31 ± 4.21 years. Most respondents (n=130, 42.9%) belonged to the Brahmin/Chhetri ethnic group, Hindus (n=295, 97.4%), lived in joint families (n=216, 71.3%), had secondary-level education (n=225, 74.3%), and were homemakers (n=174, 57.4%). Similarly, the majority of the respondents' husbands had a secondary-level education (n=253, 83.5%) and were employed abroad (n=127, 41.9%) (Table 1).

Table 1. Socio-demographic characteristics

Variables	Frequency	Percentage (%)
Age group		
Mean, SD	25.31 ± 4.21 (range: 18-38)	
18-22	86	28.4
23-27	125	41.3
28-32	72	23.8
≥33	20	6.6
Ethnicity		
Brahmin/ Chhetri	130	42.9
Dalit	117	38.6
Janajati	56	18.5
Religion		
Hindu	295	97.4
Buddhism	8	2.6
Type of family		
Nuclear	81	26.7
Joint	216	71.3
Extended	6	2.0
Respondents' education		
No formal education	18	5.9
Basic level (1-8 grades)	60	19.8
Secondary level (9-12 grades)	225	74.3
Husband's Education		
No formal education	13	4.3
Basic level (1-8 grades)	37	12.2
Secondary level (9-12 grades)	253	83.5
Respondents' occupation		
Homemaker	174	57.4
Farmer	95	31.4
Business	17	5.6
Service*	14	4.6
Labor	3	1.0
Husband's occupation		
Foreign Employment	127	41.9
Service*	64	21.1
Agriculture	45	14.9
Labor	36	11.9
Business	31	10.2

*Individuals employed in formal salaried jobs, such as office-based government or private sector employment.

Reproductive health and healthcare access among respondents

Table 2. Reproductive health and healthcare access among respondents

Variables	Frequency	Percentage (%)
Age at marriage		
Median, IQR, Range	19.0 (18.0–21.0, range: 15–29)	
<20	152	50.2
≥ 20	151	49.8
Age at first pregnancy	21.0 (19.0–23.0, range: 15–32)	
<20	84	27.7
≥ 20	219	72.3
Sex of a young child		
Male	167	55.1
Female	136	44.9
Mode of delivery		
Normal (Vaginal delivery)	216	71.3
Cesarean section delivery	87	28.7
Place of delivery		
Government Health Institution	237	78.2
Private Health Institution	62	20.5
Home	4	1.3
Complications during recent pregnancy		
Yes	68	22.4
No	235	77.6
History of ANC visit		
Yes	292	96.4
No	11	3.6
Time to reach the nearest health facility		
<30 minutes	262	86.5
≥30 minutes	41	13.5
Behavior of a health service provider		
Very good	70	23.1
Good	172	56.8
Satisfactory	61	20.1
Satisfied with the health service in the health institution		
Yes	243	80.2
No	60	19.8
If no, why? (n=60) *		
Unavailability or insufficient supply of medicines	50	83.3
Behavioral issues of the service provider	11	18.3
Negligence to the client	6	10.0
No trust in privacy	4	6.7

*Multiple responses

About half of the respondents (50.2%) were married before the age of 20, while 49.8% were married at 20 or older. The median age at marriage was 19.0 years (IQR: 18.0–21.0, range: 15–29 years). Notably, although half of the women married early, most (72.3%, n = 219) became pregnant after the age of 20 years, with a median age at first pregnancy of 21.0 years (IQR: 19.0–23.0, range: 15–32 years). Most of the last deliveries (71.3%, n=216) were normal (vaginal). The vast majority (98.7%) were delivered at the primary delivery site in health institutions with governmental health facilities (78.2%, n=237). Despite high antenatal care (ANC) coverage (96.4%), complications occurred in 22.4% of the pregnancies. Access to healthcare was generally good, with most respondents (86.5%, n=262) reaching facilities within 30 min. Satisfaction with services was high (80.2%, n=243); however, unavailability or insufficient supply of essential medicines (83.3%) was a primary concern among the dissatisfied (Table 2).

Adherence to complete postnatal care

Data analysis revealed significant gaps in postnatal care (PNC) service utilization. More than half of the respondents had heard of postnatal care (PNC), with health workers and FCHVs emerging as primary sources of PNC information, emphasizing their crucial role in promoting PNC services. Regarding adherence to the recommended PNC visits, the findings indicated that a considerable number of mothers did not complete the three required visits (Table 3).

Table 3. Adherence to complete postnatal care visits among mothers

Variables	Frequency	Percentage (%)
Heard of PNC		
Yes	177	58.4
No	126	41.6
Source of information		
FCHV	90	50.8
Health Worker	121	68.4
Family members	21	11.9
Media	21	11.9
Others*	18	10.2
Adherence to Postnatal Care Visits		
Yes	122	40.3
No	181	59.7
Frequency of visits		
0	4	1.3
1	61	20.1
2	116	38.3
3	122	40.3
Reason for nil visit (n=4)		
Lack information	4	100

* "Others" refers to information received from friends, neighbors, and other non-professional sources

Bivariate and multivariable logistic regression analysis of factors influencing adherence to complete postnatal care visits

Results of multivariable logistic regression showed that the odds of adherence to the complete three PNC visits were higher among respondents whose husband's occupation was in service [Adjusted Odds Ratio (AOR)=3.2, 95% Confidence Interval (CI): 1.53- 6.80; p = 0.002], among those who had cesarean delivery [AOR=2.9, 95% CI: 1.62- 5.19; p <0.001], and those who were satisfied with services provided by health institutions [AOR=2.2, 95% CI: 1.07- 4.43; p =0.032]. Conversely, lower odds of adherence were observed among women of the Janajati ethnic group [AOR=0.4, 95% CI: 0.16- 0.87; p =0.022] (Table 4).

Table 4. Bivariate and multivariable logistic regression analysis of factors influencing adherence to complete three postnatal care visits

Variables			Adherence to 3-PNC visits			Adherence to 3-PNC visits		
	B	SE	COR	CI	P value	AOR	CI	P value
Age								
18-22 (Ref.)	-	-	1.00	-		1.00	-	-
23-27	0.60	0.34	2.17	1.20- 3.90	0.010*	1.83	0.94- 3.56	0.075
28-32	0.45	0.41	2.31	1.19- 4.47	0.013*	1.56	0.70- 3.51	0.278
≥33	-0.08	0.60	1.39	0.50- 3.91	0.531	0.92	0.29- 2.99	0.894
Ethnicity								
Dalit (Ref.)	-	-	1.00	-	-	1.00	-	-
Brahmin/Chhetri	-0.27	0.38	2.04	1.22 – 3.42	0.006*	0.76	0.36- 1.61	0.475
Janajati	-1.00	0.438	0.70	0.35 – 1.42	0.329	0.37	0.16 – 0.87	0.022*
Occupation of mothers								
Others# (Ref.)	-	-	1.00	-	-	1.00	-	-
Homemaker	-0.28	0.45	0.46	0.22- 0.97	0.042*	0.76	0.31- 1.84	0.535
Farmer	-0.43	0.48	0.37	0.17- 0.83	0.016*	0.65	0.25- 1.67	0.373
Husband occupation								
Foreign Employment (Ref.)	-	-	1.00	-	-	1.00	-	-
Agriculture	0.19	0.40	1.05	0.51- 2.16	0.897	1.21	0.56- 2.63	0.629
Business	0.14	0.47	1.15	0.51- 2.63	0.734	1.16	0.46- 2.90	0.759
Service	1.17	0.38	4.30	2.26- 8.15	<0.001*	3.22	1.53- 6.80	0.002*
Labor	0.21	0.46	1.05	0.48- 2.30	0.906	1.23	0.50- 3.03	0.651
Age at marriage								
<20 (Ref.)	-	-	1.00	-	-	1.00	-	-
≥ 20	0.66	0.35	2.62	1.63- 4.21	<0.001*	1.93	0.97- 3.86	.061
Age at first pregnancy								
<20 (Ref.)	-	-	1.00	-	-	1.00	-	-
≥ 20	-0.07	0.39	2.37	1.36-4.12	0.002*	0.94	0.44- 2.0	0.865
Types of delivery								
Normal Delivery (Ref.)	-	-	1.00	-	-	1.00	-	-
Cesarean Section	1.07	0.30	2.36	1.42-3.92	0.001*	2.90	1.62- 5.19	<0.001*
Heard about PNC								
No (Ref.)	-	-	1.00	-	-	1.00	-	-
Yes	0.51	0.31	2.51	1.54- 4.10	<0.001*	1.66	0.91- 3.05	0.101
Satisfied with Heath service in health institution								
No (Ref.)	-	-	1.00	-	-	1.00	-	-
Yes	0.78	0.36	2.36	1.25- 4.46	0.008*	2.18	1.07- 4.43	0.032*

* Factors with a p-value < 0.05 were considered statistically significant. Abbreviations: COR, Crude odds ratio; AOR, adjusted odds ratio; Coeff: Coefficient; SE: Standard error. # Business, service

Discussion

The primary aim of this study was to assess adherence to complete postnatal care (PNC) visits among mothers with children under the age of two in Nepal. To the best of our knowledge, this is the first study conducted in Phalewas Municipality on this topic. Only 40.3% of participants completed the recommended three visits, which is lower than the provincial (42%) and national (44.2%) averages, and far below the national target of 90% by 2030. Our findings revealed several factors influencing adherence, which are explored below. These results highlight the need for targeted strategies to increase PNC utilization among this population.

Reproductive health and healthcare access

The findings indicate that 50.2% of respondents were married before the age of 20, consistent with previous research indicating a high prevalence of early marriages in Nepal.[18,19] Notably, despite the commonality of early marriage, the majority of women in our study (72.3%) initiated childbearing after the age of 20 years, with a median age at first pregnancy of 21.0 years. This aligns with findings from a study in the Bagnaskali rural municipality of Palpa district, Nepal, where most women gave birth at 20 years or older.[20] However, this contrasts with other studies that reported significantly higher rates of early childbearing in different regions of Nepal.[21,22] Early marriage, irrespective of childbearing commences, carries significant risks, including increased health vulnerability, limited educational attainment, and reduced economic prospects. Addressing these fundamental issues requires a multifaceted approach encompassing awareness campaigns, rigorous enforcement of marriage age laws, and improved access to comprehensive reproductive health services.

The majority of deliveries (71.3%) were vaginal, consistent with previous studies.[23,24] However, 28.7% of deliveries were cesarean sections (C-sections), which is higher than the national average of 18% in 2022 [6] and lower than the 33.6% reported in a previous study conducted in Morang District, Nepal.[24] National survey data show a steady increase in C-sections, from 1% in 1996 to 18% in 2022, suggesting improved access to this procedure in Nepal. Although C-sections can reduce maternal and neonatal mortality, unnecessary C-sections pose significant short- and long-term health risks for women, including infections, hemorrhage, longer recovery times, future pregnancy complications, and higher healthcare costs.[6] These findings underscore the urgent need to monitor rising C-section rates in study area and ensure strict adherence to evidence-based clinical guidelines to prevent overuse of the procedure, particularly in cases lacking medical necessity. Given the potential risks associated with unnecessary surgical interventions, local healthcare providers and policymakers should prioritize strategies to promote appropriate utilization of C-sections, ensuring the best possible outcomes for mothers and newborns in the region. Further research focusing on the study area is needed to identify the contributing factors to the observed C-section rate and understand the reasons behind the potential difference from the national average.

An overwhelming majority (98.7%) of respondents preferred institutional deliveries, significantly surpassing the national figure of 79% reported by the Nepal Demographic and Health Survey (NDHS) 2022.[6] This finding is consistent with previous studies in Nepal[16] and aligns with the country's progress towards the national target (SGD) of 90% by 2030.[14] Government institutions were the primary choice for delivery, as in other studies.[16, 23] Most respondents expressed satisfaction with healthcare provider behavior, corroborating the findings of previous research.[25] Government incentives for institutional delivery and comprehensive awareness campaigns likely contribute to these positive outcomes.

Additionally, respondents' satisfaction with provider behavior and available services may have influenced their preference for institutional deliveries. However, in the present study, neither the place of delivery nor satisfaction with provider behavior showed a statistically significant association with complete adherence to postnatal care visits.

Awareness and adherence to complete postnatal care visits

The majority of respondents (58.4%) had heard of PNC services, with health workers being the primary source of information, consistent with a previous study.[25] However, only 40.3% adhered to the recommended three PNC visits, which is lower than the provisional figure of 42% for Gandaki, the national figure of 44.2% for Fiscal Year 2079/80,[11] and significantly below the national target of 90% by 2030.[14] These findings are consistent with other studies in Nepal reporting similar low adherence rates in Chitwan,[23,26] Butwal,[19] Lalitpur,[27] Nawalparasi,[28] and Morang,[29] as well as a study conducted in Southern Ethiopia,[1] indicating a substantial gap in PNC service utilization nationwide. This suggests that simply being aware of PNC is not sufficient to ensure complete PNC utilization. Targeted interventions are needed to bridge this gap, focusing on factors beyond awareness that may prevent mothers from completing the full course of postnatal care.

A small proportion of respondents (1.3%) reported no PNC visits, primarily because of a lack of information, as reported in other studies.[21] However, other factors such as geographic accessibility, financial constraints, knowledge of PNC, access to transportation and cultural beliefs may also contribute to low PNC uptake.[10] Addressing these challenges requires a multifaceted approach, including expanding access to PNC services, increasing community awareness, and providing financial incentives.

Factors associated with adherence to complete PNC visits

Study found that the Janajati ethnic group had lower odds of complete adherence to PNC visits, contrary to previous findings in which Janajati women had higher odds of adherence.[16] This discrepancy may be attributed to geographical variations, socioeconomic changes, or differences in health service accessibility. Further research is needed to explore the factors contributing to this disparity, such as potential differences in cultural practices, access to information, and availability of healthcare services within this ethnic group.

Women whose husbands had service occupations were more likely to adhere to PNC visits, consistent with studies in Baglung Municipality, Nepal,[16] and Mangochi district, Malawi.[3] This association may be explained by the higher income, better education, and greater decision-making power within the household.

Cesarean section deliveries were associated with higher odds of PNC visit adherence, consistent with findings from Ethiopia.[30] This is likely due to longer hospital stay and increased postpartum care following cesarean deliveries.

Finally, respondents who were satisfied with the health services available in health facilities had higher odds of utilizing PNC visits, underscoring the importance of quality health services in promoting better utilization. Satisfied clients are more likely to trust healthcare providers, feel respected and heard, and perceive the services as beneficial, which encourages repeated visits and adherence to recommended care schedules. This finding is consistent with those of previous studies in Nepal.[31]

Study strengths and limitations

A key strength of this study is that it is the first to specifically examine complete postnatal care adherence in the Phalewas Municipality, providing crucial baseline data for this region.

Additionally, the high response rate enhanced the representativeness of the findings among mothers registered at health posts in the selected wards. Moreover, this study identified several significant factors associated with PNC adherence, offering valuable insights for designing targeted public health interventions.

However, this study had some limitations. It was conducted in five randomly selected wards within a single municipality, limiting its broader applicability across Nepal. Furthermore, the sample included only mothers registered at health posts, possibly excluding those who did not use these services. Recall bias related to maternal reporting of PNC visits is another potential limitation of this study. Future studies with larger sample sizes and a longitudinal design are recommended to strengthen the generalizability of the findings and to explore the causal relationships between associated factors and adherence to complete postnatal care.

Conclusion

Based on the study findings, significant disparities existed in postnatal care adherence among mothers in the Phalewas Municipality. Despite high institutional delivery rates and ANC service utilization, complete adherence to recommended PNC visits remains suboptimal. Higher PNC adherence was associated with husbands in service occupation, cesarean section deliveries, and satisfaction with health services, indicating the influence of socioeconomic status, delivery type, and quality of care. Notably, the Janajati women exhibited lower adherence.

Policymakers should prioritize employment opportunities and enhance the quality of healthcare services in institutions through adequate resources and training to improve PNC utilization. Cesarean sections were linked to higher adherence, promoting normal delivery, and ensuring that informed consent remained vital. Targeted, culturally sensitive health education and awareness campaigns, along with improved access to transportation and home-based follow-ups, are crucial for increasing PNC adherence among marginalized groups, particularly Janajati women. Community-based initiatives led by public health nurses are key to this effort. By implementing these strategies, we can improve adherence to complete postnatal care visits per protocol, ultimately contributing to achieving SDG 3 in Nepal.

Authors contribution

KR designed the study, interpreted the data, and conducted statistical analyses. RA and SVL collected the data, searched the literature, and developed the research tools. PR and KM provided oversight during data collection and reviewed the manuscript. All authors contributed to the manuscript's revision and approved the final version for publication.

Declaration of conflict of interest

The author declares no conflict of interest in this research and the authorship of this article.

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Availability of data and materials

The data associated with this study can be made available on reasonable request.

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