Original Article

DOI: https://doi.org/10.62143/6y1krc50

Factors Influencing the Utilization of Postnatal Care Services in the First Seven Days of Childbirth in Lalitpur District, Nepal

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ABSTRACT

Introduction: *The utilization of postnatal care (PNC) is very important for improving the well-being of both the mother and the newborn, treating postnatal complications, and providing important care information. The purpose of this study is to identify factors affecting the utilization of PNC among postnatal mothers within the first seven days of childbirth.*

Methods: *A cross-sectional study was conducted among 479 mothers of infants from urban and rural municipalities. Data were analyzed using SPSS version 20. Binary logistic regression was used to analyze the association between independent variables and PNC service utilization.*

Results: *Only 25.1% were visited three times for PNC services by health workers within seven days of birth and about 12% never visited health institutions for PNC services. Results indicate that mothers who gave birth with the assistance of a physician (AOR = 6.687, 95% CI = 3.699, 12.087), who received information from healthcare workers (AOR = 2.297, 95% CI = 1.325, 3.985), who knew about postpartum complications (AOR = 2.216, 95% CI = 1.342, 3.659), and who had a business or service occupation (AOR = 1.803, 95% CI = 1.024, 3.175) were more likely to utilize three PNC visits within the first week after childbirth.*

Conclusion: *Findings indicate low utilization of three PNC services within seven days of childbirth among postnatal mothers. Community-based education on the importance of three PNC services and postnatal complications during prenatal visits may enhance the utilization of PNC services among postnatal mothers in Nepal.*

Keywords: *Barriers, Childbirth, Postnatal Care, Utilization*

INTRODUCTION

The maternal mortality ratio accounts for approximately 99% of global maternal deaths, with South Asia alone accounting for about 22% of global maternal deaths.[1] Fifty percent of maternal deaths and 40% of all neonatal deaths occur within 24 hours of childbirth, and the majority of maternal and neonatal deaths can be prevented if all mothers have access to quality postnatal care (PNC) services during the first few weeks of childbirth.[2] The major reason for direct maternal deaths in South Asia is postpartum hemorrhage (PPH).[3] In Nepal, approximately 28% of maternal deaths occurred during the immediate postpartum period due to eclampsia, puerperal sepsis, and PPH.[4] The postnatal period is a critical period for the provision of quality care in which most maternal deaths occur during this time due to infection and/or PPH.[5] Based on the current WHO recommendations, all postnatal mothers and newborn should receive their first PNC services in the health facility within 24 hours after childbirth and three additional PNCs

on day 3 (48–72 hours), between days 7–14, and six weeks after childbirth.[6] The Government of Nepal (GON) also emphasized the need for three PNC visits within the first week of childbirth, including within 24 hours, on the third day, and on the seventh day of childbirth.[7] The Nepal Demographic and Health Survey (NDHS) 2016 report, however, indicates a lack of PNC services in a large proportion of postnatal mothers (42%), and newborn babies (43%) within 2 days of delivery and only 18% of postnatal mothers completed three PNC visits within seven days of childbirth.[8] The reasons for decreased PNC services utilization among postnatal mothers and newborns in Nepal could be related to multiple factors, including cultural norms, geographical factors, transportation, and the perceived importance of PNC.[9] Most of the studies to date have used secondary data to examine these outcomes and or focused only on the utilization of a single PNC visit within six weeks of childbirth. Limited studies to date have examined the factors affecting the utilization of three PNC services within the first weeks of childbirth according to GON/WHO recommendations. In addition, limited studies have explored the potential reasons or barriers for non-adherence to the utilization of recommended PNC services among postnatal mothers in Nepal. Thus, the purpose of this study is to identify unique factors influencing the utilization of three PNC services within seven days of childbirth in Nepal. Additionally, this study identifies mothers' responses regarding the barriers for non-adherence to the utilization of recommended PNC services.

METHODS

A facility-based cross-sectional study was conducted in Lalitpur district of Nepal among 479 mothers of an infant less than one-year-old from July to August 2018. Lalitpur district was purposefully selected since it captures diverse geography, including urban and rural, areas. It represents most of the remote and rural districts of Nepal along with the presence of diverse ethnic groups and prevalent disparities in health service utilization. The sample size was determined using the single population proportion formula[10] in which the estimated total sample size was 481. The final sample included for analysis and interpretation of findings was 479, since 2 mothers refused to participate in the study. Multistage random sampling technique was utilized to select the health facilities from urban and rural areas. Eligible mothers from all the immunization clinics of sampled eight health facilities were invited to participate in the study. The inclusion criteria of participants include: (a) all postnatal mothers' who attended immunization clinics during the survey period and (b) who had infants under one year of age. Postnatal mothers who were mentally ill and not capable of being interviewed or providing informed consent were excluded from the study.

The structured questionnaire was used to conduct face to face interview with mothers, which consisted of four sections. The first section includes socio-demographic information with eight items such as place of residence, religion, age, ethnicity, education, occupation adapted from the 2016 NDHS.[8] The second section includes the mother's knowledge-related information includes knowledge on PNC visits, heard PNC information from different sources, knowledge on postnatal complications adapted from current literature.[11] The third section includes antenatal care (ANC) visit, place of delivery, types of delivery assistance adapted from the current literature.[11,12] The fourth section includes barriers/reasons of non-adherence to PNC service utilization including decision making for seeking care, financial decision maker, means of transportation, and perception towards PNC services adapted from current literature.[12] Pre-testing was completed with 10% of participants in another health care center outside of the study sites. Cronbach α and test re-test reliability was analyzed for reliability. Item-level content validity index ranges from 0.8 to 1.

Ethical approval for this study was obtained from the Human Research Ethics Committee of Central South University, China and Nepal Health Research Council. Informed written consent was obtained from each participant prior to conducting an interview. SPSS version 20 was

used to analyze the data. Descriptive statistics were calculated to explain the characteristics of the participants. Binary logistic regression using forward likelihood ratio was performed to assess the association between utilization care with the significant variables identified in Pearson chi-square at p-value <0.05.

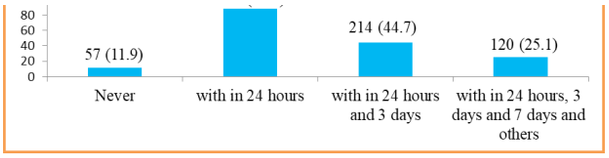
RESULTS

About two-thirds (64.3%) of the sample were from urban areas. Approximately two-thirds (65.3%) of mothers were between the ages of 21 and 30 years, with a mean age of 24.74 years (± 4.88) at childbirth. Almost two thirds (63.9%) of mothers completed their secondary or higher education (see Table 1). The results also indicate that only one-fourth (25.1%) of mothers received three PNC services within the first seven days of their childbirth. (Figure 1). Preliminary analysis using chi-square tests indicate that educational level, occupation, ethnicity, heard information about PNC Services, knowledge about postnatal complications, and delivery assistance, decision maker of PNC services, and mothers' perception towards PNC were statistically significant at p <005.

Table 1: Socio-demographic Characteristics of Respondents

Socio-demographic Characteristics	Number	Percentage
Place of residence		
Rural	171	35.7
Urban	308	64.3
Age in Years		
≤20 Years	105	21.9
21-30 Years	313	65.3
> 30 years	61	12.7
24.74±4.88		
Educational status		
Below secondary	173	36.1
Secondary/higher education	306	63.9
Religion		
Hindu	342	71.4
Buddhists	92	19.2
Other religions (Kirat/ Christian)	45	9.4
Ethnicity		
Brahamin/ Chhetri	250	52.2
Dalit	31	6.5
Disadvantaged Janajati	198	41.3
Occupation		
Business or services	79	16.5
Agriculture or household work	400	83.5
Number of Children		
One child	244	50.9
Two children	164	34.2
≥ Three children	71	14.8

Figure 1: Utilization of PNC Services within the First Seven Days of Childbirth



Predictors of PNC Services Utilization during the First Seven Days of Childbirth

Binary logistic regression was used to identify factors that influence the utilization of PNC services. The mother's occupation heard information from a health worker about PNC services, knowledge about postnatal complications, delivery conducted by doctor were significant predictors of utilization of three PNC services in the first seven days of childbirth (See Table 2). Specifically, mothers who delivered an infant with the doctor's assistance were six times more likely to utilize three PNC services (adjusted odds ratio (AOR) 6.687; 95% CI = 3.699, 12.087) compared to mothers whose deliveries were assisted by nurses and/or other health workers. The mothers who heard about PNC services from health workers were two times more likely to utilize three PNC services within the first week of childbirth (AOR: 2.297; 95% CI = 1.325, 3.985) compared to mothers who did not hear about PNC services. Similarly, postnatal mothers who had knowledge about postnatal complications were two times more likely to utilize three PNC services within the first week of childbirth (AOR: 2.216; 95% CI = 1.342, 3.659)

compared to mothers with no knowledge of complications. Additionally, mother's occupation also predicted higher utilization of PNC services (AOR = 1.803; 95% CI = 1.024, 3.175) in which mothers who were engage in business and in services were 1.8 times more likely to utilize three PNC services than the mothers who work in agriculture or serve as housewives.

Table 2: Independent Predictors of Utilization of PNC Services

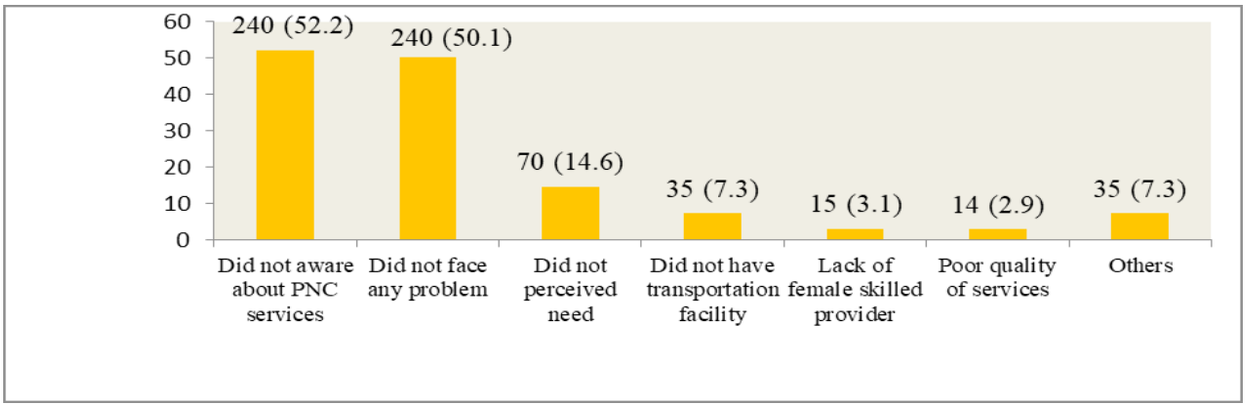
Characteristics	B	S.E.	Wald	p-value	AOR (95%)
Mother Occupation					
Housewife					1
Service/ Business	0.590	0.289	4.172	0.041*	1.803(1.024,3.175) *
			10.096	0.006	
Heard information about PNC services					
Never					1
Health worker	0.832	0.281	8.764	0.003*	2.297(1.325,3.985) *
Others (FCHV, family member and friends)	0.131	0.351	0.139	0.710	1.140(0.573,2.268)
Knowledge on PNC Complications					
No					1
Yes	0.796	0.256	9.680	0.002*	2.216(1.342,3.659) *
Delivery assisted by			43.343	.000	
Nurses and health workers					1
Friends and birth attendants	0.737	0.477	2.385	0.123	2.090(0.820,5.328)
Doctor	1.900	0.302	39.575	<0.001*	6.687(3.699,12.087) *
Constant	-3.186	0.343	86.419	.000	.041

1 indicate base category, *p value<0.05

Reasons/Barriers for Non-adherence to Three PNC Services

The results indicate that major reasons for non-adherence of three PNC visits in the first week of childbirth were lack of awareness about the PNC services (52.2%) followed by not facing any complications related problems (50.1%), lack of perceived needs (14.6%) and transportation (7.3%) (Fig 2).

Figure 2: Reasons for Non-Adherence of PNC Visits after Childbirth



DISCUSSION

This study highlighted the significance of multiple factors in the utilization of PNC services in Lalitpur, Nepal. In particular, types of delivery assistants, occupation, sources of information about PNC services, and knowledge of postnatal complications were identified as significant predictors for increased utilization of PNC services within seven days of childbirth. These findings are consistent with findings of prior studies carried out in Myanmar,[13] and Northern Shoa, Ethiopia.[14] The utilization of three PNC services is slightly higher (25.1%) in this study compared to the findings of prior studies conducted in Nepal (18.5%),[15] Tanzania (10.4%)[16] and India (14.7%).[17]

Delivery assisted by a doctor is the strongest predictor of the utilization of three PNC services in Lalitpur, Nepal. These findings are consistent with previous studies conducted in India[17] and Ethiopia,[18] Higher utilization of PNC services based on types of delivery assistants can be attributed to the fact that mothers who gave birth to their child with the assistance of doctors have a greater opportunity to receive better counseling and/or education related to PNC services and/or postnatal complications at the time of delivery.

This study revealed that the mothers with knowledge about at least one postnatal complication were more likely to utilize three PNC services as compared to mothers who did not have prior knowledge of postnatal complications. This finding is consistent with previous research conducted in Myanmar[13] and Tanzania[16], which revealed a significant difference in the utilization of PNC services among mothers with knowledge of complications during the postnatal period. This can be explained by the fact that awareness of postnatal complications is the most important factor in motivating postnatal mothers and their families to receive timely PNC services with the intention of prevention, early detection, and management of their complications.

Mothers who heard information about PNC services from health workers were two times more likely to report utilization of three PNC services in the first week of childbirth than mothers who did not have information from any sources. This result is consistent with prior findings in Ethiopia,[14] and Uganda[11] which revealed that mothers who did not have information about early PNC services were less likely to utilize PNC services than the mothers who received information from the health worker. Reasons for better utilization could be related to better explanations by health workers about the available PNC services, the benefits of having PNC services, and the possible health risks of the postnatal period.

Findings showed that mothers involved in business or engaged in service were more likely to utilize three PNC services in the first week of childbirth than those involved in household work or agriculture. The findings of this study were consistent prior study conducted in Myagdi, Nepal,[15] which suggests that women involved in paid (business or service) occupations (AOR = 1.08, 95% CI = 1.08, 3.44) were more likely to utilize PNC services than those involved in housework /agriculture field. Similarly, the results are consistent with the findings of the systematic review[19] and previous studies conducted in south west Ethiopia,[20] Southern Ethiopia[21] and Eastern Uganda[22] which revealed significant differences in the utilization of PNC services among mothers with different occupations. Thus, mothers who are involved in a paid occupation are more likely to be economically independent, and are well aware of available PNC services, and consequently have better access to PNC services resulting in better utilization of recommended PNC services.

The findings suggest major reasons for non-adherence to three PNC visits in the first week of birth were: lack of awareness on essential PNC services (52.2%) followed by mothers did not face any postnatal complications (50.1%) and did not perceive a need for all three PNC visits (14.6%). This finding is consistent with prior qualitative study conducted in Indonesia, which revealed that potential barriers of underutilization of PNC is a lack of knowledge and perceived benefits of receiving PNC services.[23]

In addition, decision makers for PNC services significantly predicted the utilization of PNC services among postnatal mothers in Nepal.

This finding is consistent with prior studies conducted in Ethiopia[24] and Nepal[25] which revealed a significant difference in the utilization of PNC services based on decision makers for visiting health facilities for PNC. Socio-economic inequality, such as access to healthcare services, education, and control of economic resources, may result in unable to make informed decisions about their healthcare services. Low decision-making capacities and education level may hinder access to PNC services. The husband was the primary decision maker of PNC services in this study, so the involvement of the husband in PNC services utilization could promote a better adherence. In addition, consistent with a prior study among postnatal mothers in Ethiopia, [24] a significant relationship was also observed between utilization of PNC services and mothers perceptions related to the quality of service provided during the antenatal check-up and delivery visit.

LIMITATIONS

Postnatal care services utilization was taken from participants' self-reports; there was no validation of obtained information on PNC service utilization with any objective sources (i.e., health facility records or PNC cards). In addition, inferences drawn from the study might be weaker than adoption of analytical study design.

CONCLUSION

The proportion of mothers who received three postnatal visits within the first seven days of childbirth was very low. Types of delivery assistants, occupation of mothers, source of heard information about PNC services, and knowledge on postnatal complications were revealed as significant predictors for the utilization of three recommended PNC services after childbirth. The top three barriers for non-adherence to three PNC visits were not being aware of the recommended PNC services, not facing any postnatal complications, and not perceiving the need for three PNC visits after childbirth.

ACKNOWLEDGEMENTS

We would like to express our sincere gratitude to the Ministry of Finance and the Economic Council of China for providing grant to conduct this study. We would also like to thank all the experts who were involved in the validation of the questionnaire and provided insightful comments.

CONFLICT OF INTEREST: NO

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