

Contributing Factors on Utilization of Postnatal Care Services among the Mothers of a Rural Municipality

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ABSTRACT

Introduction

The postnatal period is a period of adjustment for both the mother and her new family member. This is a critical stage because a large proportion of maternal and neonatal deaths occur during the postnatal period. This study aimed to identify the factors that influence mothers' use of postnatal care services.

Methods

Descriptive cross-sectional study was conducted among 163 mothers with children aged eight days to less than one year. The data was collected through face-to-face interviews using a semi-structured interview schedule using a non-probability purposive sampling technique. SPSS version 20 was used to analyze the data, which was then described using descriptive and inferential statistics.

Results

Only 10.4% had received full postnatal care services within seven days following last childbirth. There was a significant association with respondents' education level (p-value = 0.03), history of abortion (p-value = 0.005), importance of PNC at the ANC checkup (p-value = 0.001), place of delivery (p-value = 0.004), duration of hospital stay (p-value <0.001), and health complications during recent childbirth (p value= <0.001). In binary logistic regression analysis, it showed that respondents' education more than secondary 4.6 times than up to secondary and duration of hospital stay more than 24 hours 85.5 times more than less than 24 hours were more likely to fully utilize the postnatal care services.

Conclusion

Despite the accessibility and availability of postnatal care services, the level of utilization is low. Respondents fully utilize the first postnatal service but do not use the full package as recommended by protocol.

Keywords

Postnatal care, postnatal period, postnatal service use

INTRODUCTION

Postnatal care is the care given to the mother and her newborn baby for the first 42 days after the placenta is removed.¹ The World Health Organization recommends a postnatal visit within the first 24 hours of delivery and at least three additional PNC visits on day 3 (48-72 hours) between 7-14 days and 6 weeks after birth.^{2,3}

Sustainable development goals aimed at lowering the global maternal mortality ratio to less than 70 per 100,000 live births.⁴ To achieve this ambitious target, Nepal needs to reduce the MMR by at least 7.5% annually.⁵ The primary strategy for the lowering of MMR and neonatal mortality is proper postnatal care.⁶ The prevalence of utilization of PNC is only 34%.^{7,8} Mothers with awareness of the need for PNC checkups used PNC 3.4 times more than others.⁹

A majority of Nepalese women did not have postnatal check-ups.¹⁰ Factors associated with the non-use of maternal PNC services included education level, distanced health care facilities, low family income.¹¹

The use of PNC is essential for the early detection of postpartum health problems and potential complications. Therefore, this study aimed to find out the contributing factors to the utilization of postnatal care services among mothers. The findings of this study might be helpful to the hospital authorities or related authorities to formulate awareness-raising on PNC. Furthermore, it will benefit as a baseline study for future research on PNC.

METHODS

The study was conducted at Geruwa Rural Municipality, wards no. 5 and 6 were selected purposively. Non-probability purposive sampling technique was used. Data collection was initiated after getting ethical clearance from Institutional Review Committee. Written Informed consent was taken. Confidentiality and privacy were maintained. The prevalence of postnatal care service utilization was assumed to be 16%.¹² Sample size calculated by Cochran.¹³

From these wards, the required numbers of mothers having their youngest child aged between 8 days to less than 12 months and willing to participate in the study were selected. Data was collected using a semi-structured interview schedule in the Nepali language via face to face interview method. The collected data was classified, coded, edited and entered in Statistical Package for Social Sciences (SPSS) version 20. The data was analyzed by using a descriptive statistical method, such as frequency, percentage, mean, median, interquartile range and standard deviation.

Inferential statistical methods, such as the Chi-

square test and Fisher's exact test were applied to find out the association. Binary logistic regression analysis was performed to identify the contributing factors to the utilization of PNC services. Statistical significance was considered at a 95% confidence level.

RESULTS

This study showed that the mean age of the respondent was 23.13 ± 4.03 years and one-fourth of them belong to age 20 and below. The majority (61.3%) of the respondents got pregnant for the first time at the age of 20 years and below whereas 65.6% had only one child. Almost all (90.8%) respondents had more than four ANC checkups.

This study shows that all respondents had delivered at health facilities and utilized PNC services at least once within 24 hours following childbirth. Status of the utilization of PNC services, 89.6%, and partial (1 to 2 times) PNC service utilization while only 10.4% of the respondents had fully utilized PNC services within 7 days following recent childbirth.

In this study shows that there was statistically significant association between utilization of postnatal care services with respondents' education level (p value = 0.032).

In this study shows that there was a statistically significant association between the level of utilization of PNC services with abortion (p -value = 0.005), the importance of postnatal visit (p -value = 0.001), place of delivery (p -value = 0.004), duration of hospital stay after childbirth (p value = <0.001), health complications arise during last childbirth (p value = <0.001) and prolonged labor during delivery time (p value = <0.001) were statistically significant association with postnatal care service utilization.

This study reveals that there was no significant association between level of utilization of PNC services and nearest health facility, mode of transport, walking distance on foot, experience a problem while going to a health facility, financial problems transportation problems at 95% Confidence Level (p -value = > 0.05).

The contributing factors were measured using binary Logistic regression. Model Fitness was done using Hosmer and Lemeshow (HLT) test. This shows $\chi^2 = 0.488$, p value = 0.975 meaning the model is fit at 95% Confidence Level. Nagelkerke

Table 1. Status of utilization of postnatal care services

Utilization status	Number (%)
Full utilization	17 (10.4%)
Partial utilization	146 (89.6%)
Total	163 (100.0%)

Table 2. Association between status of utilization of PNC services and socio-demographic variables of the respondents

Variables		Status of Utilization n (%)		Chi-square	p-value
		Full	Partial		
Age	Up to 25	11 (8.4)	120 (91.6)	2.951	0.08
	26 and above	6 (18.7)	26 (81.3)		
Ethnicity	Bramhin/Chhetri	8 (16.3)	41 (83.7)	2.608	0.10
	Others	9 (7.9)	105 (92.1)		
Education Level	Up to secondary	13 (8.7)	137 (91.3)		0.03#*
	More than secondary	4 (30.8)	9 (69.2)		
Husbands education Level	Up to secondary	10 (8.8)	104 (91.2)	1.115	0.29
	More than secondary	7 (14.3)	42 (85.5)		
Occupation	Homemakers	8 (8.8)	83 (91.2)	0.592	0.44
	Others	9 (12.5)	63 (87.5)		
Occupation of husbands	Agriculture	8 (12.0)	59 (88.0)	0.278	0.59
	Others	9 (9.4)	87 (90.6)		
Type of Family	Nuclear	6 (15.0)	34 (85.0)	1.185	0.27
	Joint/Extended	11 (9.0)	112 (91.0)		
Monthly income of Family	Below 25 thousand	10 (10.5)	86 (89.5)	0.000	0.99
	25 thousand and above	7 (10.4)	60 (89.6)		

p-value * significant at <0.05 #Fisher's exact test

Table 3. Association between status of utilization of PNC services and obstetrical variables

Variables		Status of Utilization n (%)		Chi-square	p-value
		Full	Partial		
Age at first pregnancy	Up to 20	10 (10.0)	90 (90.0)	0.051	0.82
	21 and above	7 (11.1)	56 (88.9)		
Number of children	Up to 1	8 (7.5)	99 (92.9)	2.907	0.08
	2 and more	9 (16.1)	47 (83.9)		
History of abortion	No	11 (7.8)	130 (92.2)	7.724	0.005*
	Yes	6 (27.3)	16 (72.7)		
Last pregnancy planned	No	6 (15.0)	34 (85.0)	1.185	0.27
	Yes	11 (9.0)	112 (91.0)		
Using a skill birth attendant during delivery	No	5 (6.8)	68 (93.2)	1.814	0.17
	Yes	12 (13.3)	78 (86.7)		
Counseling on institutional delivery	No	3 (9.1)	30 (90.9)	0.079	0.77
	Yes	14 (89.2)	116 (89.2)		
Importance of getting a postnatal visit	No	11 (7.6)	134 (92.4)	11.363	0.001*
	Yes	6 (33.3)	12 (66.7)		
Place of delivery	Government	13 (8.3)	142 (91.7)		0.004#*
	Private	4 (50.0)	4 (50.0)		
Duration of hospital stay after childbirth	Up to 24 hr.	5 (3.4)	142 (96.6)	79.183	<0.001*
	More than 24 hrs.	12 (75.0)	4 (25.0)		
Health complications during last childbirth	No	5 (4.1)	117 (95.9)	17.544	<0.001*
	Yes	12 (26.7)	33 (73.3)		
Prolonged labor	No	10 (7.1)	131 (92.1)	12.455	<0.001*
	Yes	7 (31.8)	15 (68.2)		

p-value * significant at <0.05 #Fisher's exact test

Table 4. Association between status of utilization of PNC services and health care service related variables

Variables	Status of Utilization n (%)		Chi-square	p-value
	Full	Partial		
Nearest health facility from the residence				
Government	17 (11.3)	134 (88.7)	1.508	0.21
Private		12 (100.0)		
Mode of transport				
Walking	10 (14.9)	57 (85.1)	2.462	0.11
Using vehicle	7 (7.3)	89 (92.7)		
Walking time(On foot)				
Less than 30	4 (5.8)	65 (94.2)	2.748	0.09
30 min and more	13 (13.8)	81 (86.2)		
Experience a problem while going health facility				
No	6 (9.2)	59 (90.8)	0.166	0.68
Yes	11 (11.2)	87 (88.8)		
Financial problem				
No	11(9.7)	102 (90.3)	0.190	0.06
Yes	6 (12.0)	44 (88.0)		
Transportation problem				
No	9 (8.8)	93 (91.2)	0.752	0.38
Yes	8 (13.1)	53 (86.9)		

p-value * significant at <0.05

Table 5. Different contributing factors on utilization of postnatal care services

Variables	Status of Utilization n (%)		COR 95%CI	AOR (95%CI)	p-value
	Full	Partial			
Respondents education level					
Up to secondary	13 (8.7)	137 (91.3)	4.684 (1.266,17.32)	9.645 (1.055,88.145)	0.04*
More than secondary	4 (30.8)	9 (69.2)			
History an abortion					
No	11 (7.8)	130 (92.2)	4.425 (1.443,13.699)	5.822 (0.898,38.461)	0.06
Yes	6 (27.3)	16 (72.7)			
Importance of getting postnatal visit					
No	11 (7.6)	134(92.4)	6.091 (1.915,19.368)	2.020, (0.066,62.5)	0.68
Yes	6 (33.3)	12 (66.7)			
Place of Delivery					
Government	13 (8.4)	142 (91.6)	10.192 (2.443,48.844)	3.472 (0.073,166.667)	0.52
Private	4 (50.0)	4 (50.0)			
Duration of hospital Stay					
Up to 24 hr.	5 (3.4)	142 (96.6)	85.2 (20.171,359.882)	215.804 (15.733,2960.192)	<0.001*
More than 24 hrs.	12 (75.0)	4 (25.0)			
Health complication during recent child birth					
No	5 (4.2)	113 (95.8)	8.196 (2.703,25)	4.739 (0.677,33.333)	0.11
Yes	12 (26.7)	33 (73.3)			
Prolonged labor					
No	10 (7.1)	131 (92.9)	6.113 (2.027,18.435)	1.006 (0.089,11.419)	0.99
Yes	7 (31.8)	15 (88,2)			

p-value * significant at <0.05

$r^2 = 0.632$ (that is predictive variable explain 63.2% about outcome variable i.e Utilization).

Table 20 shows respondent's education level contributes to utilization at 95% CI in which those who had more than secondary level education are 9.6 times more likely to full utilize postnatal care services. Similarly, duration of health facility stay affect the utilization up to 95% CI in which those who stay more than 24 hours are 215.80 times more likely to full utilize postnatal care services.

DISCUSSION

The findings of the study showed that all respondents had a delivery at a health facility and used PNC at least once in the last 24 hours. These findings outperform those of study in Ethiopia.¹⁴ This study contrasts with NDHS 2016 Nepal, which showed that 57% of mothers received PNC within 24 hours.^{3,15} Women who delivered in a health facility were more likely to utilize PNC in the first 48 hour¹⁶ Study report showed that 20.2% of mothers utilized postnatal care service.¹⁷

In the present study, 89.6% had partial while only 10.4% of the respondents had fully utilized PNC. A similar study in India where 9.3% of all institutional delivered women use PNC.^{13,18} The national annual health report showed that 17% of mothers received full PNC.¹² In the study, 93.5% of the respondents out of 33.1% who did not attend the second and third PNC visits reported that the most common reasons were not being aware of the need for the visit and that 87% did not feel it was necessary. Same findings were reported in different research.^{19,8} The present study reveals that respondents who had a secondary level of education were 4.684 times (AOR = 9.64595%CI 1.055,88.145) more likely to utilize the PNC than those up to a secondary level. It was similar to the study conducted in Nepal and other settings.^{20,21,22} There was no association with age, ethnicity, occupation of respondents and their husbands' education levels, and type of family was similar on study in India.⁹

The present study describes that respondents who had a history of abortion are 4.425 times (AOR = 5.208, 95% CI 0.821, 83.33) more likely to fully utilize the PNC service as compared to those who had no history of abortion. Similar findings were reported in a study conducted in Northern Ethiopia.^{26,23} Respondents who have got information on the importance of PNC visits were 6.091 times (AOR = 4.348, 95% CI: 0.036, 62.5) more likely to fully utilize the PNC services than compared the respondents who didn't get information on the importance of PNC visit A study conducted in Ethiopia revealed a significant association between a lack of knowledge about the importance of PNC and its use.^{23,24,24,25}

This study reveals that there was no statistically significant association between the ages at first pregnancy, number of children, pregnancy planned, ANC visit and type of delivery. Mothers with cesarean sections were more likely to utilize PNC services than the ones with normal delivery.^{25,26} These findings are in contrast with the present study due to the variation of time and place.

The present study reveals that there was statistically significant association between level of utilization of PNC services with importance of postnatal visits ($p=0.001$). Respondents who delivered their recent child at private health facilities were 10.9 times (AOR=3.471 95% CI: 0.073, 166.667) more likely to fully utilized PNC services as compared to those deliver in government health facilities. This finding is similar to the study conducted in Palestine.²⁵ This study showed that those respondents who had complications during child birth were 8.196 times (AOR4.739, 95%CI: 0.697, 33.333) more likely to fully utilized PNC services as compared to those who had not complications during recent child birth. The most common complications that may associate with the utilization of PNC services were prolonged labor. An almost similar study showed that mothers who had delivery problems more fully utilized PNC services than mothers with no complications during delivery (AOR=3.9 95%,CI 2.0-7.5). The present study shows that, there was no statistically significant association between the status of utilization of PNC services and the nearest health facility, mode of transport, walking distance on foot experience a problem while going to health facility, financial problems and transportation problems. On the other hand, same findings study conducted in Ethiopia and China.^{26,23}

CONCLUSION

It can be concluded that Geruwa Rural Municipality's utilization of PNC services is low. PNC utilization was influenced by the respondent's abortion history, information about the importance of PNC visits, place of delivery, complications during delivery, and prolonged labor. The respondents' education level and the length of stay at health facilities after delivery were the two most important factors influencing their use of PNC services. As well as mothers didn't use the full package of postnatal services as recommended by protocol instead of that they did only first PNC visit.

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CONFLICT OF INTEREST

The author(s) declare that they do not have any

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