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Original Article

Factors Affecting the Utilization of Postnatal Care Services in Eastern Nepal

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Abstract

Background

The importance of providing care to mothers after childbirth is critical for lowering maternal illness and death rates. This research aimed to analyze the factors influencing the use of postnatal services among mothers with having at least one living child three years preceding the survey in the Sunsari district of Eastern Nepal.

Materials and Methods

A cross-sectional study was conducted within a community setting, involving 401 ever-married women of reproductive age group. The studyperformed bivariate and multivariate logistic regression analyses to identify factors associated with the utilization of postnatal care services.

Results

Among 401 women studied, 52% had Postnatal Care (PNC) visits. Among those who utilized PNC services, the majority (96%) had partial utilization, while only 4.3% had complete PNC.

PNC visits are more frequent among the wealthy, migrants, and upper castes, as well as those exposed to media, aware of health services, and perceiving higher service quality and awareness at health facilities.

Conclusion

Both the coverage and complete utilization of PNC attendance were low. Increasing focus on mothers from poorer households, pockets of the native population, individuals needing behavioural modification, and those with poor awareness about available services may enhance the overall usage of complete PNC.

Keywords: *Cross sectional, Maternal health, Nepal, Postnatal care*

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Introduction

Globally, maternal health is a critical aspect of healthcare [1]. The postnatal period, up to six weeks after childbirth, is vital for both mothers and newborns, requiring adequate healthcare support. However, many mothers and babies do not receive the necessary care during this period [2, 3]. In Nepal, only 57% of mothers received postnatal care (PNC) within two days [4]. The situation is worse in the Sunsari district, where the PNC utilization rate is just 11.7%, compared to the national average of 40.7% [5].

Utilization of maternal health services is complex and influenced by various factors [6, 7]. The low utilization of maternal health services in Sunsari can be attributed to a variety of factors, including cultural norms, geographical challenges, and the perceived importance of postnatal care. Despite the availability of information on the overall use of PNC in Nepal [8-10], there is a notable lack of detailed data on the specific factors influencing PNC utilization in the eastern region of the country. Understanding these factors is crucial for designing targeted interventions to improve maternal and newborn health outcomes in this underserved area. Therefore, this study aims to bridge the knowledge gap by exploring the underlying reasons for the PNC services among Buddhist women in Sunsari.

The primary objective of this study is to assess the extent of PNC utilization in the Sunsari district and identify the factors associated with its usage. The research seeks to uncover the barriers and facilitators influencing buddhist mothers' decisions to seek postnatal care.

Material and Methods

The study was primarily based on primary sources of information and was cross-sectional. Moreover, the study utilized descriptive and analytical research designs. Additionally, secondary reviews from various sources (books, published and unpublished reports, studies, and journals) were conducted to gather relevant information regarding poverty measurement, construction of poverty indices, and other factors associated with delivery care utilization among ever-married women.

Quantitative data were employed for analytical purposes. The survey data were of a quantitative nature and fell under the categories of nominal or ordinal types. Both primary and secondary data sources were utilized. Primary data were collected from selected Primary Sampling Units (PSUs), while secondary sources such as books, journals, articles, government publications, and other published and unpublished sources were consulted.

Data collection involved the creation of a questionnaire. Structured questions were developed and field-tested to ensure the validity of data related to the frequency of maternal health service utilization.Structured questionnaires were employed for collecting household and individual-level information. Face-to-face interviews were conducted among married women. The questionnaire's content and design were formulated based on the Ministry of Health and Population's (MoHP) regular monitoring and supervision system. Demographic Health questionnaires were used to collect information on household and individual background characteristics, knowledge and attitudes towards delivery care, perceived severity, perceived barriers, and care-seeking behavior. The questionnaire was initially developed in English and then translated into Nepali. Pretesting was conducted on about 10% of the sample size from a different VDC within the same district, resulting in modifications to the questionnaire.

The Sunsari district in the Koshi province was selected as the study area, with Buddhist women serving as the sampling unit.Ethical approval was obtained from the ethical review board of the Nepal Health Research Council. Informed consent was obtained from eligible participants before implementing the survey questionnaire.The inclusion criteria for this study focused on married Buddhist women residing in the Sunsari district, Koshi province, who had given birth within the last six weeks and wereof reproductive age. In addition, participantshould be present, provide informed consent and be able to communicate during the survey. Exclusion criteria included women living outside the Sunsari district, those who did not identify as Buddhist, and women who had not given birth within the last six weeks and out of reproductive age range. Additionally, women who did not provide informed consent, had severe medical conditions preventing participation, or were unable to communicate were excluded from the study.

A total of 401 women of reproductive age were included in the study, and the sample size was determined using the Stat calculator of Epi Info 7. The study employed a multistage sampling technique. In the initial stage, one district was randomly chosen from the Koshi province. Subsequently, 3 Rural Municipalitiesand 3 Urban Municipalities were randomly selected from the Sunsari district. At the third stage, one ward (primary sampling unit) was randomly chosen from each rural municipality and municipality. In the fourth sampling stage, lists of households were obtained through network sampling and ward profiles of the respective municipalities (rural and urban). The selection of ever-married women with at least one child at the time of the survey was done conveniently, with only one woman selected per household for the interview.
Data were entered into EpiData version 3.1 and imported into the Statistical Package for the Social Sciences (SPSS) for analysis. Quantitative data were analyzed using various techniques, including univariate analysis (percentages, frequency distribution), bivariate analysis (Chi-Square test).The Chi-square test was used for bivariate analysis to examine the association between variables under study and health care utilization, considering both independent and dependent variables as categorical.To ensure reliability and validity, a standard process (modified Lawshe content validity ratio) was adopted. Standard tools from WHO were used for validity, with modifications made to the questionnaire. Great attention was given to maintaining internal and external validity.

Results

Table 1 shows the socio-demographic and behaviour-related characteristics of 401 respondents. More than half (50% or greater) of the participants were between 20 and 29 years old, and the majority of the participants had either no education or were just literate/primary-educated (56.4%). An overwhelming majority were housewives, and the majority represented indigenous, lower, or other castes (81.0%). Nearly 25% of women were from a poor economic status, with the majority coming from nuclear families (88.3%). Approximately 69% were from rural areas. Almost 31% of women had consumed alcohol at some point in their lifetime.

Table 1: Socio-demographic and behaviour-related characteristics of study participants

Age of the participant	Frequency	Percentage
17-19	20	5.0
20-24	140	34.9
25-29	134	33.4
30-34	56	14.0
35 and above	51	12.7
Educational Status		
No education	36	
Literate/primary	121	30.2
Lower secondary	105	26.2
SLC & above	139	34.7
Occupation		
Housewife	328	81.8
Agriculture	19	4.7
Small business	18	4.5
Wage labor	23	5.7
Others	13	3.2
Caste		
Upper Caste	72	18.0
Indigenous	166	41.4
Lower caste	59	14.7
Other castes	100	24.9
Economic status		
Poor	92	22.9
Middle	250	62.3
Rich	59	14.7
Marital Status		
Never Married	4	1.0
Married	394	98.3
Widowed	2	0.5
Divorced/Separated	1	0.2
Type of family		
Nuclear	354	88.3
Extended/joint	47	11.7
Sex of Household Head		
Male	26	6.5
Female	375	93.5
Place of residence		
Rural	275	68.6
Urban	126	31.4
Ever drunk alcohol		
No	277	69.1
Yes	124	30.9

Table 2 presents the sources of information and characteristics related to health service access of the respondents. Just over 80% of the mothers do not read newspapers, 31% do not listen to the radio, and 19% do not watch TV. An overwhelming majority of the women responded that pregnant women should go for medical check-ups (93.3%), and 97.3% said that immunization is a must for children. Nearly 50% of the women are not satisfied with the services of public health institutions, and almost 80% said that the services of public health institutions are sufficient, with the majority of them responding that the quality of service of private health institutions is better.

Table 2: Health service access related characteristics

Variables	Frequency	Percentage
Should a pregnant woman go for a medical check-up		
No	27	6.7
Yes	374	93.3
Is immunization a must for children		
No	11	2.7
Yes	390	97.3
Satisfied with service of the public health institution		
Not satisfied	187	46.6
Satisfied	214	53.4
Service of public health institution is sufficient		
Disagree	83	20.7
Agree	318	79.3
Existing service of public health institution is sufficient		
Insufficient/meaningless	286	71.3
Sufficient	115	28.7
Quality of service of private health institution is better		
Disagree	75	18.7
Agree	326	81.3
Perceived awareness of PNC service availability		
Poor	112	27.9
Moderate	254	63.3
High	35	8.7
Place of residence		
Rural	275	68.6
Urban	126	31.4
Hospital/PHC/HP in the ward		
No	325	81.0
Yes	76	19.0
Time to reach the nearest health facility		
Less than an hour	372	92.8
More than an hour	29	7.2

Table 3 presents the sources of information related to health services. Just over 80% of the mothers do not read newspapers, 31% do not listen to the radio, and 19% do not watch TV.

Table 3: Source of information about the health services

Variables	Frequency	Percentage
Readership of newspaper		
Everyday	42	10.5
Once a week	37	9.2
Not at all	322	80.3
Listening of radio		
Everyday	212	52.9
Once a week	62	15.5
Not at all	127	31.7
Watching TV		
Everyday	305	76.1
Once a week	22	5.5
Not at all	74	18.5

Table 4 presents the postnatal care utilization status of the 401 study participants. Overall. 52.1% of women visited health facility for PNC check-up. Of those who visited, majority (95.7%) had partial utilization (1-2 visit), while 4.3% had complete PNC.

Table 4: Postnatal care utilization status of the study participants

Variables	Frequency	Percentage
Received PNC (n=401)		
Yes	210	52.4
No	191	47.6
Frequency of PNC (N=210)		
Once	125	59.5
Two times	76	36.2
Three times or more	9	4.3

Table 5-7 reveals the factors associated with PNC services. Based on the Chi-square test, an association between the uptake of PNC and the following factors was observed: economic status, caste/ethnicity, listening to the radio, watching TV, family migration from other places, awareness about immunization, perceived quality of services, and perceived awareness of services at health facilities.

Table 5: Associated explanatory variables with postnatal care

Background characteristics	PNC check-up No	PNC check-up Yes	N
Economic status* **			
Poor	67.9%	32.1%	90
Middle	42.8%	57.2%	250
Rich	40.0%	60.0%	61
Sex of the HH head			
Male-HH head	52.2%	47.8%	23
Female-HH head	47.7%	52.3%	378
Religion			
Hindu	48.4%	51.6%	235
Buddhist	49.0%	51.0%	122
Muslims	40.5%	59.5%	37
Others	71.4%	28.6%	7
Caste/Ethnicity**			
Upper Caste	28.8%	71.2%	66
Indigenous	50.6%	49.4%	188
Lower caste	50.0%	50.0%	54
Other caste	59.1%	40.9%	93
Type of family			
Nuclear	47.2%	52.8%	352
Extended	48.7%	51.3%	49
Place of residence			
Rural	47.0%	53.0%	279
Urban	49.6%	50.4%	122

PNC visits are higher among the wealthy compared to the poor, individuals who migrated from other places than natives, and upper castes than lower castes. Additionally, the uptake of PNC is reported to be higher among those exposed to media (TV, radio) compared to those not exposed, those with awareness about health services (including immunization), and those having an adequate perceived quality of services in health facilities and perceived awareness of services at health facilities.

Table 6: Associated explanatory variables with postnatal care- continued

Background characteristics	PNC check-up No	Yes	N
Education level			
No education	62.5%	37.5%	32
Literate/primary	46.4%	53.6%	125
Lower secondary	47.9%	52.1%	94
SLC & above	46.9%	53.1%	150
Occupation			
Housewife	48.3%	51.7%	332
Agriculture	47.4%	52.6%	19
Small business	35.3%	64.7%	17
Wage labour	57.1%	42.9%	21
Others	33.3%	66.7%	12
Readership of newspaper			
Everyday	38.2%	61.8%	34
Once a week	42.9%	57.1%	28
Not at all	49.7%	50.3%	339
Listening of radio**			
Everyday	42.6%	57.4%	197
Once a week	67.9%	32.1%	56
Not at all	47.9%	52.1%	148
Watching TV**			
Everyday	44.2%	55.8%	283
Once a week	71.4%	28.6%	21
Not at all	60.7%	39.3%	97
Migrated from other places * **			
No	57.6%	42.4%	191
Yes	38.9%	61.1%	210

Table 7: Associated explanatory variables with postnatal care- continued

Background characteristics	PNC check-up No	Yes	N
Hospital/PHC/HP in the ward			
No	45.4%	54.6%	321
Yes	58.1%	41.9%	80
Should a pregnant woman go for a medical check-up			
No	66.7%	33.3%	27
Yes	46.9%	53.1%	374
Is immunization a must for children**			
No	90.9%	9.1%	20
Yes	46.5%	53.5%	381
Satisfied with service of public health institution*			
Not satisfied	55.5%	44.5%	182
Satisfied	42.2%	57.8%	219
Service of a public health institution is sufficient***			
Disagree	67.9%	32.1%	87
Agree	42.9%	57.1%	314
Existing service of public health institution is sufficient			
Insufficient/meaningless	47.4%	52.6%	300
Sufficient	50.0%	50.0%	101
Quality of service of private health institution is better***			
Disagree	27.1%	72.9%	78
Agree	53.1%	46.9%	323
Perception about free distribution of basic medicines from HP, PHC***			
Most necessary for poor	63.0%	37.0%	263
Misused by the health professional	12.9%	87.1%	64
Not so beneficial for needy people	27.5%	72.5%	74
Total	**48.0%**	**52.0%**	**401**

Note: *** Significant at p<0.000 level; ** Significant at p<0.01 level * Significant at p<0.05 level

Discussion

The study revealed that out of 401 enrolled women; nearly 52% utilized PNC services. Among those who utilized PNC services, the majority (96%) had partial utilization, while only 4.3% completed PNC visits within seven days following delivery.

In this study, the economic status of women has a significant association with the postnatal check-up. This is similar to the NDHS study which showed women in the highest wealth quintile are more likely to have PNC check-ups both for newborn and women themselves [11]. This may be because the women in the highest wealth quintile can overcome the financial barriers related to postnatal care.

PNC check-up is significantly associated with

caste/ ethnicity as shown in this study which is similar to the result of NDHS. Brahmin castes are more likely to have a PNC check-up. Similarly, place of birth was also found significantly associated with PNC services in Ethiopia as institutional delivery might catalyse the increase of PNC visits by women [12]. A study done in Nigeria found that individual characteristics like age, education and family size are the stronger predictors for postnatal care whereas economic status, urban residency and media saturation are the significant predictors at the household and community level [13].

Media exposure has a significant association with the utilization of PNC care services as reported in this study. The result is similar to the study done in Nigeria by Regassa, which showed an increased ratio of women utilizing PNC care services with exposure to media. Study findings indicated that women are more exposed to information on PNC care services through the media.

The utilization of PNC service in this study is less than the national standards as like in the other studies [11]. Various barriers such as social, economic, cultural and religious have been explored for the less utilization of maternal healthcare services in Nepal [14]. Furthermore, studies have explained the factors like economic status, knowledge, decision-making autonomy, the role of family members mainly mother-in-law and husbands, accessibility and availability of health institutions and service providers as the influential factors for promoting maternal health service utilization in Nepal [15,16].Noticeable similarities have been found between various lower and middle-level countries which proved the education of mothers and wealth index as a facilitation factor for maternal service utilization [17].

According to the findings of this study, economic status is positively associated with utilization of maternal health services because financial stability of women ultimately facilitates health-seeking behaviour because the burden of travel and additional costs can be controlled. The study's findings suggested a negative relationship between religion and maternal treatment consumption, similar to evidence from a Nigerian study among two different religious communities. This demonstrates that people of different cultural communities have diverse patterns of service consumption pattern among the people of different cultural communities. Nonetheless, the findings indicate that there is little support for the religious element influencing service consumption, which cannot be completely ignored because religious beliefs influence an individual's attitude and conduct, which in turn influences specific decision-making processes [1].On the contrary, some of the past studies from Nigeria, Ethiopia Nepal, Pakistan, Bangladesh and India have also revealed the association of religion with maternal health-seeking behaviour acting as a primary predictor [12, 19-21].

Overall, the study was capable of exploring the various factors that play an influential role in the utilization of postnatal services. The study identified several socio-economic factors that affected the utilization and investigated the links between these factors. The findings concluded that factors such as education, family support, individual perception and knowledge of the services, timely availability, and proper access also significantly contributed to the health-seeking behaviour of women.

This study has some limitations. There was a possibility of recall bias as the ever-married women of reproductive age group having at least one living child three years preceding the survey were enrolled for the data collection. The findings may not be generalizable in all places as the sample was restricted to selected municipalities of Sunsari district. The study has some strength as well. The study identifies the status of the utilization PNC in which very limited information is available in community-based studies in the Eastern Nepal.

In terms of policy implications, considering the low educational status, it is important for all promotional programs to focus on reaching women who would benefit from health check-ups during pregnancy and after childbirth in order to reduce disparities. Similarly, the introduction of a livelihood-focused program is necessary to improve the living standards of marginalized populations. The study revealed that women with stable economies are more capable of utilizing health services. These interventions should be designed to be inclusive and provide benefits to all social and religious groups within the communities.

Conclusion

The frequency of PNC visits exhibits notable disparities across demographic strata. Specifically, it is observed that individuals of higher socioeconomic status, including the affluent as opposed to the poor, migrants rather than natives, and members of upper castes in contrast to lower castes, tend to engage in more frequent PNC visits. Moreover, a discernible trend

emerges wherein the utilization of PNC is notably elevated among individuals with exposure to media platforms such as television and radio, when compared to their counterparts devoid of such exposure. Additionally, a positive correlation is established between PNC uptake and factors such as awareness regarding health services, encompassing immunization, as well as the perceived quality and awareness of services available at healthcare facilities.

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Conflict of interest
There is no any conflict of Interest.

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