

Original Research Article

Factors affecting utilization and satisfaction of maternal health care services among mothers of neonates in Paropakar maternity and women's hospital

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ABSTRACT

Background: Knowledge and use of maternal health service is an effectual way to reduce the risk of maternal morbidity and mortality which can be influenced by multiple factors. Maternal service utilization thus plays an important role during pregnancy, childbirth, and the postpartum period. The aim of the study was to analyse antenatal services as proxy indicator for study purpose.

Methods: A descriptive cross-sectional study was conducted in post-natal ward of Paropakar maternity and women's hospital after ethical approval from the Ethical Review Board of the Nepal Health Research Council and Institutional Review Committee of Paropakar maternity and women's hospital and 210 samples were collected by a simple random sampling method. Statistical analysis was done using SPSS 16.0.

Results: Out of 210 participants, only 100 (47.6%) had antenatal care as per protocol. The median age of the women delivering in hospital was 25 years. Women having household income more than 10,000 (OR=2.125, 95% CI=1.065-4.241, $p=0.032$), impact of mass media for utilization of antenatal care service (OR=14.261, 95% CI=4.881-41.670, p value<0.001), and women's taking an hour or less to reach health facility (OR=2.763, 95% CI=1.293-5.903, p value=0.009) were found to be statistically significant.

Conclusions: Majority of women in the study didn't utilized full antenatal care service as per protocol. There is a need for different community based maternal and child health programs targeting the reproductive aged women and adolescent groups.

Keywords: Antenatal care, Maternal health, Paropakar maternity and women's hospital, Protocol

INTRODUCTION

Maternal health is the health of women during pregnancy, childbirth, and the postpartum period so maternal service utilization is crucial on determining women overall health status. Antenatal care and skilled health attendance at delivery are essential for eliminating every preventable maternal death. The WHO recommends that pregnant women should have four antenatal visits. First at fourth, sixth, eighth and ninth months respectively.^{1,2}

According to the fact sheet published by WHO, globally 2.6 million children died in the first month of life.³ In Nepal, the Maternal mortality ratio (MMR) is 239 maternal deaths per 1,00,000 live births. Although different indicators of maternal health in Nepal had shown few improvements, but a lot of challenges on maternal health still remains.^{4,5}

The objective of this study was to describe the factors associated with utilization and satisfaction of maternal

health care services among mothers having neonates in Paropakar maternity and women's hospital.

METHODS

A hospital based quantitative cross-sectional study was conducted from September 2018 to April 2019 among 210 recently delivered mothers (15-49 years) who had normal delivery in Thapathali maternity and women's hospital of Kathmandu district. The sample size (N) was calculated using the formula-

$$N = \frac{Z^2(1 - P)}{d^2}$$

Where, N= sample size; Z= 1.96 for CI of 95%; P= prevalence of antenatal care during all specified months in Central Development Region (51%).⁴

$$q = 1 - P$$

e= margin of error= 7%.

The calculated sample size was 196. By adding non-response rate of 7%, the final sample size for the study was 210. Recently delivered woman having normal delivery in Thapathali maternity hospital were included in the study. Women having cesarean delivery, severely ill and mentally depressed women were excluded.

A set of structured questions and Interviews was done and simple random sampling was used as sampling technique. The names of the respondents were collected from the register book of the ward. Confidentiality was maintained throughout the study.

The quantitative data were presented on descriptive statistics using percentage and table by using statistical data analysis techniques (SPSS 16.0). The relation between dependent and independent variables were shown by using chi-square test. P value less than 0.05 was considered as statistically significant throughout the analysis in this study.

RESULTS

Socio-demographic characteristics of respondents

Table 1 shows socio-demographic characteristics of respondents where, majority (82.9%) of the women having normal delivery in hospital were above 20 years of age where 56.7% were married before or at the age of 20 years and two-third of the women (66.2%) age at pregnancy was after 20 years. Ninety-five (45.2%) of the respondents taken under study were Janajati. Almost two-third (62.4%) were from joint family where the majority (86.7%) had two or less than two children. Nearly, three-fourth (72.4%) of the respondents were housewives, and more than three-fourth (78.6%) household income was less than NRs. 10,000.

Utilization of antenatal care service

Table 1 shows, utilization of antenatal care service, where of total respondents, time taken to reach the hospital for 81.4% was one hour or less. Similarly, two-third (66.7%) had completed 4 or more ANC visits and 47.6% completed it as per protocol. Nearly three-fourth of the respondents visited public health facility (74.8%) for ANC service and almost nine in ten were assisted by trained health professionals. Majority (91.9%) of the respondents were suggested by their husband/family members to have ANC checkup and more than three quarters of 78.6% were influenced by mass media for utilization of ANC and institutional delivery service. Almost two-third (63.3%) knew about maternal health services.

Satisfaction on maternal health service of hospital

Table 3 shows satisfaction on maternal health service of hospital, which was self-administered questionnaires having 5 category approaches to scaling responses of satisfaction and is based on Likert scale. Majority of neutral responses were observed for satisfaction on staff behavior (36.7%), counseling service (41%), staffs and patients communication (45.7%), and consultation time (41.9%). Most of the respondents were satisfied with doctors' availability (41.9%), staff availability (44.3%), and privacy maintenance (47.1%). Similarly, dissatisfaction was observed for cleanliness 99 (47.1%), availability of medicine and other medical products 96 (45.7%) and status of infrastructure 110 (52.4%).

Factors affecting utilization of antenatal care service

Respondents' age at marriage and age at 1st pregnancy was not statistically significant. Educational status of a women was not statistically significantly however, literate women were 2.327 times more likely to visit ANC as per protocol than illiterate women (OR=2.327, 95% CI=0.789-6.856, p=0.126). Respondents whose ethnicity was Dalit were significantly associated with ANC as per protocol (OR=0.294, 95% CI=0.126-0.685, p=0.005).

Hindu and Buddhist respondents were 4.197 and 3.325 times respectively more likely to visit ANC as per protocol than Christian respondents. Similarly, income of respondents more than or equals to NRs 10,000 were 2.125 times more likely to be visit ANC as per protocol (OR=2.125, 95% CI=1.065-4.241, p=0.032) than income less than NRs 10,000 which was found to be statistically significant. Education level and family type of the respondents were not statistically significant with ANC visits.

Incentives given for ANC visit was not statistically significant with ANC visit as per protocol. Similarly, family members/husband suggestion for utilization of ANC (OR=4.715, 95% CI=1.313-16.933, p value=0.017), ANC assisted by Trained health professionals (OR=23.360, 95% CI=3.079-177.225, p value=0.002),

impact of mass media on the utilization of ANC (OR=14.261, 95% CI=4.881-41.670, p value<0.001) and time taken to reach health facility within or less than 1 hour

(OR=2.763, 95% CI=1.293-5.903, p value<0.009) were significantly associated with ANC as per protocol.

Table 1: Socio-demographic characteristics of respondents.

Characteristics	Frequency (N=210)	Percentage (%)
Age in years (median=25 years, SD=4.604 years)		
≤20	36	17.1
>20	174	82.9
Age at marriage (median=20 years, SD=3.219 years)		
≤20	119	56.7
>20	91	43.3
Age at first pregnancy (median=22 years, SD=3.487 years)		
≤20	71	33.8
>20	139	66.2
Ethnicity		
Brahmin/Chettri	76	36.2
Dalit	39	18.6
Janajati	95	45.2
Religion		
Hindu	141	67.1
Buddhist	45	21.4
Christian	24	11.4
Type of family		
Nuclear	79	37.6
Joint	131	62.4
Main occupation		
Housewife	152	72.4
Job holder	37	17.6
Labor	21	10.0
Educational status		
Illiterate	17	8.1
Literate	193	91.9
Primary education	35	16.7
Lower econdary	19	9.0
Secondary	67	31.9
Higher secondary and above	72	34.3
Monthly income of a family		
<10,000	45	21.4
≥10,000	165	78.6

Table 2: Utilization of antenatal care service.

Characteristics	Frequency (N=210)	Percentage (%)
Distance to health facility in minutes		
≤1 hour	171	81.4
>1 hour	39	18.6
Frequency of ANC visits		
<4 times	61	29.0
≥4 times	140	66.7
ANC visits as per protocol		
Yes	100	47.6
No	110	52.4
Place where women received ANC*		
Public health facility	157	74.8
Private health facility	53	25.2

Continued.

Characteristics	Frequency (N=210)	Percentage (%)
Suggestion to deliver in health facility and through-assistance of SBA during ANC visits		
Yes	159	75.7
No	51	24.3
ANC assisted by trained health professionals		
Yes	188	89.5
No	22	10.5
Suggestion for delivering in health facility*		
Self-knowledge	133	63.3
Husband/family members	193	91.9
Health professionals	164	78.1
Others (friends and neighbour)	12	5.7
Impact of mass media on utilization of ANC and institutional delivery		
No	45	21.4
Yes*	165	78.6
Television	138	65.7
Newspaper	63	30.0
Radio	81	38.6
Internet	82	39.0
Heard about maternal health services		
Yes	133	63.3
No	77	36.7

Note: *-Multiple responses.

Table 3: Satisfaction on maternal health service of hospital.

Satisfaction on hospital	Fully dissatisfied		Dissatisfied		Neutral		Satisfied		Fully satisfied	
	N	%	N	%	N	%	N	%	N	%
Doctor availability	11	5.2	25	11.9	65	31	88	41.9	21	10
Staff behavior	12	5.7	35	16.7	77	36.7	68	32.4	18	8.6
Counseling service	9	4.3	25	11.9	86	41	78	37.1	12	5.7
Staff and patients communication	6	2.9	19	9	96	45.7	81	38.6	8	3.8
Staff availability in maternity ward	7	3.3	44	21	51	24.3	93	44.3	15	7.1
Cleanliness	52	24.8	99	47.1	42	20	16	7.6	1	0.5
Privacy maintenance	7	3.3	10	4.8	82	39	99	47.1	12	5.7
Medicine and other medical products availability	10	4.8	96	45.7	44	21	56	26.7	4	1.9
Consultation time	11	5.2	77	36.7	88	41.9	33	15.7	1	0.5
Status of infrastructure	21	10	110	52.4	57	27.1	18	8.6	4	1.9

Table 4: Factors affecting utilization of antenatal care service.

Characteristics	Frequency (N=210)	ANC as per protocol (%)		OR (95% CI)	P value
		Yes (47.6)	No (532.4)		
Age of the respondents (years)					
≤20	36	15 (41.7)	21 (58.3)	Ref	0.433
>20	174	85 (48.9)	89 (51.1)	1.337 (0.647-2.764)	
Age at marriage (years)					
≤20	119	53 (44.5)	66 (55.5)	Ref	0.307
>20	91	47 (51.6)	44 (48.4)	1.330 (0.769-2.300)	
Age at 1st pregnancy (years)					
≤20	71	30 (42.3)	41 (57.7)	Ref	0.267
>20	139	70 (50.4)	69 (49.6)	1.386 (0.779-2.468)	
Ethnicity					
Brahmin/Chettri	76	43 (56.6)	33 (43.4)	1.276 (0.696-2.339)	0.431

Continued.

Characteristics	Frequency (N=210)	ANC as per protocol (%)		OR (95% CI)	P value
		Yes (47.6)	No (53.4)		
Dalit	39	9 (23.1)	30 (76.9)	0.294 (0.126-0.685)	0.005*
Janajati	95	48 (50.5)	47 (49.5)	Ref	
Religion					
Hindu	141	74 (52.5)	67 (47.5)	4.197 (1.485-11.864)	0.007*
Buddhist	45	21 (46.7)	24 (53.3)	3.325 (1.057-10.460)	0.040*
Christian	24	5 (20.8)	19 (79.2)	Ref	
Main occupation					
Housewife	152	69 (45.4)	83 (54.6)	Ref	
Job holder	37	19 (51.4)	18 (48.6)	1.270 (0.618-2.607)	0.515
Labor	21	12 (57.1)	9 (42.9)	1.604 (0.638-4.030)	0.315
Monthly income of a family					
<10,000	45	15 (33.3)	30 (66.7)	Ref	0.032*
≥10,000	165	85 (51.5)	80 (48.5)	2.125 (1.065-4.241)	
Educational status					
Illiterate	17	5 (29.4)	12 (70.6)	Ref	0.126
Literate	193	95 (49.2)	98 (50.8)	2.327 (0.789-6.856)	
Type of family					
Nuclear	79	39 (49.4)	40 (50.6)	1.119 (0.640-1.957)	0.694
Joint	131	61 (46.6)	70 (53.4)	Ref	
Incentive for ANC visit					
Yes	163	80 (49.1)	83 (50.9)	1.301 (0.676-2.504)	0.431
No	47	20 (42.6)	27 (57.4)	Ref	
Family members/husband suggestion for ANC check-up					
Yes	193	97 (50.3)	96 (49.7)	4.715 (1.313-16.933)	0.017*
No	17	3 (17.6)	14 (52.4)	Ref	
ANC assisted by trained health professionals					
Yes	188	99 (52.7)	89 (47.3)	23.360 (3.079-177.225)	0.002*
No	22	1 (4.5)	21 (95.5)	Ref	
Impact of mass media on utilization of ANC check-up					
Yes	165	96 (58.2)	69 (41.8)	14.261 (4.881-41.670)	<0.001*
No	45	4 (8.9)	41 (91.1)	Ref	
Time taken to reach health facility					
≤1 hour	171	89 (52.0)	82 (48.0)	2.763 (1.293-5.903)	0.009*
>1 hour	39	11 (28.2)	28 (71.8)	Ref	

Note: *Significant at <0.05.

DISCUSSION

In this study, utilization of maternal health service was measured by ANC visits as per protocol which was 49.8%. According to Nepal demographic health survey 2016, 58.8% of a women had ANC during all specified months.⁴

This study shows that women whose age at 1st pregnancy was above 20 years were 1.386 times and whose ethnicity and religion was Brahmin/Chettri and Hindu were 1.2 and 4.1 times more likely to visit ANC as per protocol, similar findings was observed in study carried out by A. Sunil shows that women whose age at first child born was above 20 were 1.5 times more likely to have at least 4 ANC visits.⁷

According to this study, literate women were 2.3 times more likely to utilize ANC service, similarly study carried out by Kidist et al in Holeta town of Central Ethiopia shows that women with some education were more than

two times more likely to attend ANC (OR=2.645, 95% CI=1.078-6.487, p=0.034) as compared with those who had no education.⁸ Respondents who had impact of mass media for utilization of ANC were 14 times more likely to visit ANC as per protocol than those who were not impacted. The findings of the study were comparable with a study conducted by Deo et al in Eastern Nepal which shows that respondents who were exposed to mass media for utilization of ANC service were 3.5 times more likely to have four or more ANC visits than the women who were not exposed to media information regarding maternal health care (OR=3.5, 95% CI=1.2-10.1).⁶

Women who were within hour distance to the health facility were 2.7 times more likely to use ANC services as per protocol which was supported by a study done in Rural Chitwan, Nepal by Shah et al which shows that, women living within one hour's distance from a birthing facility were more likely to utilize maternal health service than women living further away (OR=2.15, 95% CI=1.26-3.69,

$p=0.005$). Similarly, high percentage (72.4%) of the women in the study were housewives but women engaged in Job (service or trade) were 1.2 times and those who were labor were 1.6 times more likely to utilize ANC as per protocol. The findings of this study is similar to other studies done by Buna et al and Dhimal et al which shows most (53%) and (80.4%) of the respondents under study were housewives. Also, study conducted in Nepal by Sunil et al shows that women whose occupation is manual labor (57.7%) have utilized ANC services 4 or more times and the logistic regression analyses result shows that women who are in service or trade related occupation are 2.43 times more likely (95% CI=1.761-3.368) to use ANC services 4 or more times than those women who are not working.^{7,9-11}

According to this study, women who knew about ANC Checkup were 6.5 times more likely to visit ANC as per protocol than women who didn't knew about it and was statistically significant. A similar finding had been reported in a study done by Amentie et al in Assosa District, West Ethiopia and in Southern Ethiopia by Wakgari et al shows that women who were knowledgeable about ANC service were 1.96 and 16.35 times more likely to utilize ANC service than women who were not knowledgeable on ANC services (AOR=1.96, 95%; CI=1.04-3.68) (OR=16.35, 95% CI=6.07-44.04, p value<0.000].^{12,13}

Respondents who were suggested by family members/husband for ANC check-up were 4.7 times more likely to utilize ANC as per protocol (OR=4.715, 95% CI=1.313-16.933, p value=0.017) than those who were not and was also statistically significant.

Similarly, a study carried out by Kidist et al in Holeta town of Central Ethiopia shows that utilization of ANC was almost nine times more likely for women reported their husband's approval for ANC was found to be statistically significant. (OR=8.99, 95% CI=3.706 21.855, p value=0.000).⁸

Regarding statements related to health institutions, most (41.9%) of the respondents were satisfied with the doctor's availability in hospital. The result of study conducted in Rural Bengal by Das et al showed that more percentage of the respondents (73.94%) had a satisfactory level of satisfaction regarding the availability of doctors in that institution.¹⁴

Furthermore, the study shows that higher percentage (47.1%) of the respondents were satisfied with privacy maintained at hospital and most (41%) of the respondents were had neutral responses towards counseling service of the hospital, about 45.7% of the respondents were dissatisfied with the availability of all medicines and other medical products. Similar findings were observed in a study done by Panth et al in a government hospital of Mid-Western Nepal shows a consistent result regarding privacy maintained, counseling service and availability of all

necessary medicines and supplies where most 47.2%, 53.4% and 44.4% were satisfied with privacy maintained, counseling service and availability of all necessary medicines and supplies.¹⁵

Higher percentages (52.4%) were not satisfied with status of hospital infrastructure followed by 27.1% having neutral response. A study done by Taghavi et al in Northwest Iran shows that higher percentage of the respondents (42.4%) were satisfied with physical infrastructure of health facilities followed by 31.3% of respondents having neutral response, whereas only 3.3% of the respondents were dissatisfied with the physical infrastructure of health facilities.¹⁶

The limitation of this study was that it was only confined to mothers visiting Paropakar maternity and women's hospital, so it might not predict to mothers from different health service seeking settings.

CONCLUSION

The study reveals that out of 210 respondents, 100 (47.6%) respondents visited ANC as per protocol while, 110 (52.4%) visited ANC but not as per protocol, still every respondent had at least one ANC visit during her pregnancy, where most of them visited public health facilities. Ethnicity, religion, monthly income, support from husband/family were factors supporting to utilize the antenatal care services.

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