

Utilization of Maternal Health Services in Slum Area of Butwal Sub-Metropolitan City

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ARTICLE INFO

Article History

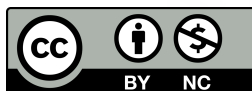
Submitted: 28 August, 2021

Accepted: 15 October, 2021

Published: 8 February, 2022

Source of support: None
Conflict of Interest: None

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ABSTRACT

Background: High maternal morbidity and mortality has been a major public health problem in Nepal which may be due to the low utilization of maternal health services in Nepal. Utilization of maternal services is found very low in slum areas as compared to upscale areas. This study aims to find out the prevalence of utilization of maternal health services and its associated factors in slum areas of Butwal sub-Metropolitan city.

Methods: A community based cross sectional study was conducted among 202 women who had given birth to baby within 1 year. Semi-structured questionnaire and face to face interview was done to collect the data. Descriptive as well as inferential statistics were used to analyze the data.

Results: The results showed that about 81.18% women had taken complete ANC and 34.65% had taken complete PNC services as per protocol of WHO. Multivariate logistic regression showed that respondent education, monthly income, nearest to health care facilities, knowledge level, and women's autonomy was found to be associated significantly with complete utilization of ANC services. Similarly, Respondent occupation and nearest to health care facilities were found to be associated significantly with complete utilization of PNC.

Conclusion: Though ANC utilization was found to be satisfactory but PNC utilization was found very low so more focused should be given to increase the utilization of PNC services in slum area.

Keywords: Antenatal care service; Postnatal care; Utilization.

BACKGROUND

Millions of women in developing countries experience life threatening and other serious health problems related to pregnancy or childbirth.¹ Almost 99% of maternal deaths occur in developing countries.² Half of all maternal deaths occur in sub-Saharan Africa and another major portion in southern Asia.³ One of the public health challenges in developing countries such as Nepal is, therefore, to identify vulnerable groups like mothers and pregnant women and to provide them with needed preventive and curative health services. The initiative to reduce maternal mortality and promote safe motherhood practices started internationally in the

mid 1980's. Despite having one of the highest Maternal Mortality Ratio (MMR) in the world, national initiatives in Nepal started only after the International Conference on Population and Development (ICPD).⁴ At present, Sustainable Development Goals (SDGs) includes the target of reducing global maternal mortality to less than 70 deaths per 100,000 live-births by 2030, with no individual country exceeding an MMR of 140 maternal deaths per 100 000 live-births.⁵

Globally, efforts to reduce deaths among women from complications related to pregnancy and childbirths

have been less successful than other areas of human development with the result that having a child remains among the most serious health risks for women.⁶ Utilization of health services is affected by a multitude of factors including not only availability, distance, cost and quality of services, but also by socioeconomic factors and personal health beliefs. Cultural barriers and traditions as well as poverty and lack of information prevent women from accessing maternal and newborn health services. Evidence from different studies shows that poor physical access to health facilities due to geographical accessibility, limited health infrastructure, political instability, lack of resources, women's low status in the society, poor communication system in rural Nepal and shortage of trained health professional are important barriers to health service utilization.⁷

Studies demonstrate the high levels of maternal mortality and morbidity in developing countries and research identifying causes of maternal deaths have repeatedly emphasized the need for antenatal care, availability of trained personnel to attend women during delivery and post natal care after delivery.⁸ Thus, risk of maternal mortality and morbidity can be reduced through regular and proper ANC check-up, delivery under safe and hygienic conditions. However, the low utilization of maternal health services may have contributed to a high maternal mortality and morbidity in Nepal.⁹

Different factors contributing to underutilization of maternal health services can be geographical and urban/rural disparities of health status, socio-demographic as well as economic factors.¹⁰ Maternal and child morbidity & mortality can be reduced highly by proper utilization of maternal child services. Moreover, the adequate maternal health service utilization is further low in slum area compared to other settings. As shown in a study done in slum area of Pokhara Sub Metropolitan city, only 26.5 percent had completed four or more ANC visits as per protocol which is very low in comparison to the ANC coverage as per protocol.¹¹

METHODS

This was a community based cross sectional study conducted in slum area of Butwal Sub-Metropolitan city of Nepal. Reproductive aged women who gave birth to baby within 1 year were our target population. A total of 202 samples were taken in this study. The total sample of 202 was obtained at 5% level of significance, prevalence was 59% of utilization of complete ANC report of NDHS 2016, keeping allowable error 7% and adding 7% non response rate. Out of 19 wards in Butwal, ward no. 1, 2, 3, 4,5,6,7,11,12,13, 14 and 17 consists of slum area.

Samples were selected by using cluster random sampling. All wards consists of slum area was considered as cluster then by using lottery method ward no.11 and 17 were selected. Equal sample 101 was taken from both wards by using snow ball sampling technique. Data were collected from June 2019 to September 2019. Written informed consent was taken from each respondent and interviewed was done separately for their confidentiality. Semi-structured questionnaires and face-face interview was used as tools and techniques to collect the data. Descriptive as well as inferential statistics were used to analyze the data. In descriptive statistics, frequency, percentage, mean and standard deviation were used to analyze the data. In inferential Statistics, Chi-square test was used to find the association between utilization of maternal health services with different factors. Multivariate logistic regression was used to find the net effect of different factors in utilization of maternal health services. P value less than 0.05 is considered as statistically significant.

RESULTS

The mean age of the respondents was 26.60±5.54 years. About 77% of the respondents had married before 20 years. Majority of the respondents (64.9%) were disadvantages group. Most of the respondents were Hindus. About 91% of the respondents were literate. Similarly, about 95% of the respondent's husbands were literate. About 85% respondents were employed and their main occupation was service. The main occupation of the respondent's husband was service. The average monthly income of family was Rs. 23425 ±2456. Nearly, 71% respondents lived in nuclear family. The average family size was 4.70 ± 1.60 and average number of children was 1.89 ± 0.86. (Table 1). Table 2 describes the Frequency distribution of ANC and PNC visits of the participants.

Similarly, literate women were found 1.77 times more likely to visit complete ANC as compared to illiterate women (AOR:1.77(0.16-4.56)). Respondents whose family income was Rs.21000 and above were found 8.40 times more likely to visit complete ANC (AOR:8.40(1.14-62.01)). Similarly, Respondents whose nearest health care facility government hospital were found 96% less likely to visit complete ANC and respondents whose nearest health care facility were 17% less likely to visit complete ANC as compared to health post and PHC. Likewise, Respondents whose knowledge level was good regarding ANC were about 41 times more likely to visit complete ANC (AOR:41.06(6.03-279.73)). Respondents who had more autonomy in decision making were about 6 times more likely to visit complete ANC (AOR:6.28(0.82-48.52))(Table 3).

Table 1: Socio-demographic and Descriptive Information of Participants

Variables		Frequency	Percentage
Age	<20	19	9.41
	20-34	160	79.21
	>=35	23	11.39
Mean± SD =26.60 ± 5.54 years			
Age at Marriage	<20	155	76.7
	>=20	47	23.3
Mean± SD =19.35 ± 3.46 years			
Ethnic Group	Disadvantaged	131	64.9
	Advantaged	71	35.1
	Dalit	63	31.2
	Disadvantaged janajatis	34	16.8
	Disadvantaged non-dalitterai caste groups	20	9.9
	Religious minorities	14	6.9
	Relatively advantaged janajatis	12	5.9
	Upper caste group	59	29.2
Religion	Hindu	180	89.1
	Muslim	22	10.9
Respondent Education	Illiterate	18	8.9
	Literate	184	91.1
Husband Education	Illiterate	10	4.95
	Literate	192	95.05
Respondent Occupation	Unemployed	173	85.6
	Employed	29	14.4
Husband Occupation	Labour	37	18.3
	Service	55	27.2
	Foreign Job	55	27.2
	Business	55	27.2
Monthly Income	1,000-15,000	32	15.8
	16,000-20,000	48	23.8
	21,000 & Above	122	60.4
Mean± SD =Rs.(23425±2456)			
Family type	Nuclear	143	70.8
	Joint	59	29.2
Family size	<5	138	68.32
	>=5	64	31.68
Mean± SD =4.70 ±1.60			
No of children	1	71	35.15
	>=2	131	64.85
Mean± SD =1.89 ±0.86			

Nearest Health care facility	Health post/PHC	73	36.1
	Government Hospital	112	55.4
	Private Hospital	17	8.4
Distance to the facility	15 minutes	67	33.2
	>15 minutes	135	66.8
Mean± SD =18±4.5 minutes			
Knowledge Level	Poor	45	22.3
	Good	157	77.7
Women's Autonomy	Less Autonomy	145	71.8
	More Autonomy	57	28.2

Table 2: Frequency Distribution of ANC and PNC Visits

No of ANC visits	Frequency	Percentage
0	38	18.82
1	0	0
2	0	0
3	0	0
>=4	164	81.18
Incomplete ANC	38	18.82
Complete PNC	164	81.18
No of PNC visits		
0	0	0
1	202	100
2	82	40.6
3	70	34.65
Incomplete PNC	136	65.35
Complete PNC	70	34.65

Similarly, Table 4 showed women of age group 20-34 years were 97% less likely to visit PNC (AOR:0.03(0.003-0.370)) and women of age group were 95% less likely to visit PNC (AOR:0.053(0.003-0.81)) as compared to women of age group <20 years. Likewise, women who had married at >=20 years were 2.53 times more likely to visit PNC (AOR: 2.53(0.83-7.75)). Similarly, Muslim women were 76% less likely to visit PNC (AOR: 0.24(0.04-1.24)) as compared to Hindu women.

Employed women were about 19 times more likely to visit PNC as compared to unemployed women (AOR: 18.97(1.88-191.37)). Similarly, women who had >=2 children were about 1.03 times more likely to visit PNC as compared to women having single children (AOR: 1.03(0.42-2.58)). Similarly, women whose husband occupation was service were 3.76 times more likely to

Table 3: Association between ANC with different variables

Variables	ANC Visit		Crude OR (95% CI)	Adjusted OR (95% CI)	P value
	Complete, n(%)	Incomplete, n(%)			
Age	<20	17(89.4)	2(10.6)	1	
	20-34	127(79.3)	33(20.6)	0.45(0.10-2.06)	
	>=35	20(87.0)	3(13.0)	0.78(0.12-5.26)	
Age at marriage	<20	125(80.6)	30(19.3)	1	
	>=20	39(82.9)	8(17.1)	1.17(0.50-2.76)	
Ethnic Group	Disadvantaged	115(87.7)	16(12.3)	1	0.456
	Advantaged	49(69.1)	22(30.9)	1.31(0.15-3.26)	1.77(0.16-4.56)
Religion	Hindu	152(84.4)	28(15.6)	1	
	Muslim	12(54.5)	10(45.5)	0.22(0.09-0.56)	
Respondent Education	Illiterate	4(30.8)	9(69.2)	1	0.035
	Literate	160(84.7)	29(15.3)	12.41(3.58-43.02)	1.38(0.02-7.50)
Husband Education	Illiterate	9(90)	1(10)	1	
	Literate	155(80.7)	37(19.3)	0.46(0.06-3.79)	
Respondent Occupation	Unemployed	137(79.2)	36(20.8)	1	0.754
	Employed	27(93.1)	2(6.9)	3.55(0.81-15.62)	18.97(1.88-191.37)
Husband Occupation	Labour	35(63.6)	20(36.3)	1	0.298
	Service	33(89.2)	4(10.8)	1.01(0.26-3.86)	0.17(0.02-1.52)
	Foreign Job	47(85.5)	8(14.5)	0.72(0.23-2.23)	0.09(0.009-0.8)
	Business	49(89.1)	6(10.9)	0.21(0.08-0.59)	0.01(0.001-0.12)
Monthly Income	1,000-15,000	25(78.1)	7(21.9)	1	0.042
	16,000-20,000	27(56.2)	21(43.8)	0.36(0.13-0.99)	0.06(0.008-0.48)
	21,000 & Above	112(91.8)	10(8.2)	3.14(1.08-9.04)	8.40(1.14-62.01)
Family type	Nuclear	119(83.2)	24(16.8)	1	
	Joint	45(76.3)	14(23.7)	0.65(0.31-1.36)	
Family size	<5	114(82.6)	24(17.4)	1	
	>=5	50(78.1)	14(21.9)	0.75(0.36-1.57)	
No of children	1	66(93)	5(7)	1	0.654
	>=2	98(74.8)	33(25.2)	0.22(0.08-0.610)	0.55(0.12-2.46)
Nearest Health care facility	Health post/ PHC	66(90.4)	7(9.6)	1	0.002
	Government Hospital	84(75)	28(25)	0.32(0.13-0.77)	0.04(0.007-31)
	Private Hospital	14(82.4)	3(17.6)	0.49(0.11-2.15)	0.83(0.06-11.64)
Distance to the facility	15 minutes	59(88.1)	8(11.9)	1	
	>15 minutes	105(77.8)	30(22.2)	0.47(0.20-1.10)	
Knowledge Level	Poor	30(66.7)	15(33.3)	1	0.027
	Good	134(85.4)	23(14.6)	2.91(1.36-6.24)	41.06(6.03-279.73)
Women's Autonomy	Less Autonomy	109(75.1)	36(24.8)	1	0.015
	More Autonomy	55(96.4)	2(3.6)	9.08(2.11-39.12)	6.28(0.82-48.52)

visit PNC as compared to Labor (AOR: 3.76(1.21-11.75). Similarly, women whose nearest health care facility was government hospital were 2.29 times more likely to visit

PNC as compared to health post (AOR: 2.29(0.40-12.93) and were found 45% less likely to visit PNC when nearest health care facility was private hospital (AOR: 0.55(0.12-

Table 4: Association between PNC with different variables

Variables	PNC Visit		Crude OR (95% C.I)	Adjusted OR(95% C.I)	P value
	Complete,n(%)				
Age	<20	16(84.2)	3(15.8)	1	0.365
	20-34	46(28.8)	114(71.2)	0.08(0.02-0.27)	
	≥35	8(34.8)	15(65.2)	0.1(0.02-0.45)	
Age at marriage	<20	61(39.4)	94(60.6)	1	0.632
	≥20	9(19.1)	38(80.9)	0.36(0.16-0.81)	
Ethnic Group	Disadvantaged	47(35.9)	84(64.1)	1	
	Advantaged	23(32.4)	48(67.6)	0.86(0.46-1.58)	
Religion	Hindu	68(37.8)	112(62.2)	1	0.78
	Muslim	2(9.1)	20(90.9)	0.16(0.04-0.73)	
Respondent Education	Illiterate	4(22.2)	14(77.8)	1	
	Literate	66(35.9)	118(64.1)	1.83(0.49-6.88)	
Husband Education	Illiterate	6(60)	4(40)	1	
	Literate	64(33.3)	128(66.7)	0.33(0.09-1.22)	
Respondent Occupation	Unemployed	60(34.7)	113(65.3)	1	0.038
	Employed	10(34.5)	19(65.5)	0.99(0.43-2.27)	
Husband Occupation	Labour	19(34.5)	36(65.5)	1	0.65
	Service	23(62.2)	14(37.8)	3.11(1.31-7.40)	
	Foreign Job	13(23.6)	42(76.4)	0.59(0.25-1.35)	
	Business	15(27.3)	40(72.7)	0.71(0.31-1.60)	
Monthly Income	1,000-15,000	6(18.8)	26(81.2)	1	0.21
	16,000-20,000	19(39.6)	29(60.4)	2.84(0.98-8.19)	
	21,000 & Above	45(36.9)	77(63.1)	2.53(0.97-6.62)	
Family type	Nuclear	51(35.7)	92(64.3)	1	
	Joint	19(32.2)	40(67.8)	0.86(0.45-1.63)	
Family size	<5	47(34.1)	91(65.9)	1	
	≥5	23(35.9)	41(64.1)	1.09(0.58-2.02)	
No of children	1	33(46.5)	38(53.5)	1	0.289
	≥2	37(28.2)	94(71.8)	0.45(0.25-0.83)	
Nearest Health care facility	Health post/ PHC	40(54.8)	33(45.2)	1	0.012
	Government Hospital	23(20.50)	89(79.5)	0.21(0.11-0.41)	
	Private Hospital	7(41.2)	10(58.8)	0.58(0.20-1.68)	
Distance to the facility	15 minutes	37(55.2)	30(44.8)	1	0.078
	>15 minutes	33(24.4)	102(75.6)	0.26(0.14-0.49)	
Knowledge Level	Poor	12(26.7)	33(73.3)	1	0.162
	Good	58(36.9)	99(63.1)	1.61(0.77-3.36)	
Women's Autonomy	Less Autonomy	53(36.6)	92(63.4)	1	0.545
	More Autonomy	17(29.8)	40(70.2)	0.74(0.38-1.43)	

2.51). Similarly, women whose distance to the health facility was >15 minutes were 93% less likely to visit PNC as compared to distance to the health facility less or equal to 15 minutes (AOR: 0.07(0.01-0.41). Multivariate logistic regression showed that respondent occupation and distance to health care facility were significantly associated with PNC utilization.

DISCUSSION

This study assessed maternal health utilization and its associated factors among women of slum areas of Butwal Sub metropolitan who gave birth 12 month prior to study period. The result showed that among 202 respondents, 164 (81.18%) utilized complete ANC and 34.65% utilized complete PNC as per as protocol of WHO. This finding of complete utilization of ANC is higher than report of NDHS 2016;59% and studied conducted in different parts of Nepal: slum area of Pokhara sub metropolitan 27%.¹² Slum area of Dharan Sub Metropolitan 78.99%.¹³ and abroad country: Slum areas of Lucknow, India(28.4%).¹⁴ Similar the complete utilization PNC is higher than the different study done in Nepal: Baglung Municipality 32.67%.¹⁵ found almost similar in Kathmandu district 34%.¹⁶ and abroad: found higher than rural areas of Uttar Pradesh India 26%.¹⁷ This variation in utilization of complete ANC and PNC was may be due to differences in socioeconomic status, variations in geography, time between current and previous study and access to health facilities and services.

This present results showed that literate women were 1.38 times more likely to utilize complete ANC as compared to illiterate women. This results was found contrast to study done in slum areas of Dharan sub metropolitan where literate people were found less likely to utilize complete ANC(Primary: AOR=0.349(0.125-0.976) and secondary: AOR=0.588(0.223-1.550).

The study also showed that respondent's with good knowledge on maternal health are nearly forty one times more likely to receive antenatal care in reference to poor knowledge on maternal health care (AOR= 41.06(6.03-279.73)in contrast to a study where knowledge on danger signs during pregnancy, childbirth and postpartum period is not statistically significant to ANC visit(18). Similarly, the decision making power of a women was also found to be significant with ANC visit (AOR=6.28(0.82-48.52), contrast to the result of the study.¹⁹ In difference with antenatal care, knowledge level of women and their autonomy, both were not statistically significant with postnatal care which shows consistence with the findings of the studies.^{12, 18} The results showed that respondents who had taken health care facilities from nearest health care facility of government and private hospital were less likely to visit

complete ANC as compared to health post(Government hospital: AOR =0.04(0.007-31.0);private hospital: AOR=0.83(0.06-11.64). Similar results was found in study.^{9,20} Likewise the results showed that women with high family monthly income were more likely to utilize complete ANC (Income: >Rs.20000; AOR=8.40(1.14-62.01). This results is similar to study where family income greater than Rs.20000 were 2.467 times more likely to utilize complete ANC.¹²

The results showed that there was significant association between respondent occupation and complete utilization of PNC. The results showed that employed women were about 19 times more likely to utilize complete PNC as compared to unemployed women. Similar results were found in study done in Bharatpur sub-metropolitan.¹¹ This result is contrast to many other studies which showed there was insignificant association between PNC utilization and respondents occupation.¹⁸ Similarly, the results showed that respondents whose nearest health care facilities was government tertiary hospital were 2.29 times more likely to utilize PNC as compared to health post and PNC. Similar results were found in study done in report of NDHS 2001 and 2006.²¹ This result was found contrast to study done in Bharatpur which showed that respondent whose nearest health care facilities was government were 11% less likely to utilize PNC.¹¹

CONCLUSION

Utilization of ANC services was quite high in the study area. About 81.18% of the women had done complete ANC and only 34.65% had done complete PNC as per protocol of WHO. Despite high institutional delivery, PNC was very poor. The very poor status of PNC was may be due to lack of awareness on importance of postnatal care.

Ethnicity, respondent's education and occupation, husband's occupation, number of children, monthly income, nearest health care facility, knowledge of the respondent and women's autonomy were found to be significantly associated with having ANC visit.

Age of the respondent, age at marriage, respondent's and husband's education, husband's occupation, number of children and the distance to the nearest health facility were found to be significantly associated with the having PNC visit. Multivariate logistic regression showed that respondent education, monthly income, nearest to health care facilities, knowledge level, and women's autonomy was found to be associated significantly with complete utilization of ANC services. Similarly, Respondent occupation and nearest to health care facilities were found to be associated significantly with complete utilization of PNC.

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