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#### Correspondence

Sushmita Sharma  
Bir Hospital Nursing Campus,  
Kathmandu, Nepal  
Email:  
sushmitasharma2046@gmail.  
com

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## Utilization of maternal health care services in a rural community of Nepal

Sushmita Sharma  

Lecturer, Bir Hospital Nursing Campus, Kathmandu, Nepal

*\*During study period, the author was Master in Nursing student at Lalitpur Nursing Campus, School of Nursing and Midwifery, Patan Academy of Health Sciences, Lalitpur, Nepal*

### Abstract

**Introduction:** Nepal has made progress in declining maternal mortality; but not up to the target. One of the important aspects in this regard is to know about the base line maternal health care utilization among women and to develop intervention accordingly. This study aims to identify the utilization of maternal health care services among women of rural municipality of Nepal.

**Method:** A cross sectional analytical study with purposive sampling among 323 married women having at least one child less than five years old was conducted in Bagnaskali rural municipality of Palpa district using face to face interview technique with self-developed structured interview schedule. Descriptive statistics frequency, percentage, mean and standard deviations were used and association between descriptive variables and utilization was done using Chi square and Fisher Exact test as applicable using Statistical Package for Social Sciences (SPSS) version 16.

**Result:** The study showed 21.05% of respondents had completely utilized maternal health care services (four Antenatal Care (ANC) checkups, institutional delivery and three Postnatal Care (PNC) checkups), 78.94% of the respondents had partially utilized services. There was no significant difference in health care utilization between maternal age, education of both mothers and husbands, occupation, types of families and distance to nearest health facility as seen by Chi Square and Fisher Exact Test.

**Conclusion:** Almost all the respondents had ANC checkup and institutional delivery. More than half of the respondents had PNC checkup and the demographic variables had no association with utilization of maternal health care services.

**Keywords:** maternal health service, Nepal, rural community

## Introduction

Maternal health refers to the state of complete physical, mental, and social well-being of women during pregnancy, childbirth and the postpartum period. Maternal health care services are antenatal care (ANC), intranatal and postnatal care (PNC) services. Maternal health has become a global concern because the lives of millions of women of reproductive age can be saved through good maternal health care services.<sup>1,2</sup> In Low and Middle Income Countries (LMICs) about half of the women are deprived of ANC services and more than half of all births take place outside institutional settings.<sup>3</sup>

A study conducted in Tanahun district among 540 women showed that 93.20% went for ANC visit, 27.50% had institutional delivery whereas only 21.74% had PNC visit during their last pregnancy.<sup>4</sup> Another study from Dharan among 285 mothers showed that 78.9% had completed four or more antenatal visits, 28.1% had home delivery while 28.8% had visited the health care facility for post-natal care.<sup>5</sup> As per Annual Health Report, 2075/2076, the maternal mortality ratio of Nepal is 186 per 100,000 live births. The services provided by the government of Nepal under safe motherhood programme are: transport incentive for institutional delivery, incentive for four ANC visits, free institutional delivery services, *Aama Surakshya* and the new born Program, *Nyano Jhola* Programme.<sup>6</sup> Irrespective of the different programs under maternal health like safe motherhood, the maternal mortality rate is still not up to the target set by these programs. Hence the present study aims to assess the maternal health care utilization among married women of a rural municipality of Nepal.

## Method

This was a community based cross-sectional study conducted at Bagnaskali rural Municipality Palpa district of Lumbini province, Nepal over a period of one year from April 2020 to May 2021. Non probability purposive sampling technique was used to select the required sample for the study.

Respondents were married women who had at least one child who was less than five years. The sample size was determined using the formula of Cochran. There are three parameters of maternal health care utilization which includes antenatal, intranatal and postnatal care. For the maximum number of sample size, the prevalence of intranatal is taken i.e., 70.9% in Dharan. The estimate of the sample in this study is done at confidence level of 95%, margin of error of 5% and z-value 1.96.<sup>5</sup> The estimated sample size was 323. *Aama Surakshya* programme under the Government of Nepal maternal health care utilization includes four ANC visits, institutional delivery and three PNC visits.<sup>7</sup> The study was done in the line of same program. Utilization of maternal health care services was divided in two components as complete and partial. Complete utilization of maternal health care service includes four antenatal visits, institutional delivery and three postnatal visits whereas partial utilization includes any of the three services not utilized completely.

Data collection was done after obtaining approval from the Research Committee of School of Nursing and Midwifery, Lalitpur Nursing Campus and Institutional Review Committee of Patan Academy of Health Sciences (Ref: PNC2008251426). Approval from the ward office of Bagnaskali rural Municipality of Palpa District was obtained for the study. As per the ward office total number of households was 1102. Households of mother of under children below five years of age were purposively selected with the help of Female Community Health Volunteers (FCHVs) of the same ward. Then data were collected with the respondent using face to face interview technique by using semi structured interview schedule in Nepali version. Respondents could withdraw from the study at any time without giving any reason during the study period. Considering the COVID-19 pandemic the data were collected by wearing mask, using sanitizer and maintaining social distance with respondents. The confidentiality of the respondents was maintained by using code number and not

revealing their individual identity in research findings. The respondents' privacy was maintained by interviewing separately in their home. Data was analyzed using Statistical Package of Social Sciences (SPSS) version 16.

## Result

Out of 323 respondents, majority of the respondents belonged to 20-30 y age groups 276(85.44%) with the mean age  $25.47 \pm 3.30$  y. Majority 302(93.49%) were home maker, Table 1. The respondents' mean age of marriage was  $24.48 \pm 2.10$  y. The minimum age at marriage was 15 y and maximum was 29 y. Majority of the participants 219(67.81%) were married at the age of  $\geq 20$  y whereas 104(32.19%) were married at the age of  $\leq 19$  y. Similarly, the mean age of the participants at the first child birth was  $21.75 \pm 2.28$  y, Table 1. The minimum age for first child birth was 16 y and maximum was 31 y and none of the respondents had still birth at Gestational Age (GA) $>22$  w.

The entire respondents visited health facility for ANC during pregnancy, majority 318(98.46%) visited four times or more whereas, 5(1.54%) visited 2-3 times. The maximum respondents 320(99.07%) went to hospital for their delivery. Nearly one third of respondents 114(35.29%) received incentives for hospital delivery. The majority of

respondents 252(78.01%) had PNC. Only 68(21.05%) respondents had completely utilized maternal health care services i.e., four ANC checkups, institutional delivery and three PNC checkups, however, majority 318(98.45%) had complete utilization of ANC services, Table 2.

Among the respondents, half 174(53.86%) went to outreach clinic as it was easily accessible whereas 136(42.10%) went to Health Post, 11(3.40%) went to Government Hospital and only 2(0.64%) went to Private Hospital for ANC checkup.

The association of different variables of the study was seen by Chi Square whereas Fisher Exact Test was applied for respondent's occupation and utilization of maternal health care services. There was no significant difference in health care utilization among the mothers whose age was up to 25 y and above 25 y ( $p=1.673$ ). Also, there was no significant difference in utilization of maternal health services between the education groups of both mothers and husbands (below School Leaving Certificate (SLC) and above SLC), between professional groups (home maker and other profession), between types of families (Nuclear and Joint) and between distance to nearest health facility (less than or 30 min and more than 30 min), Table 3.

**Table 1. Sociodemographic and obstetrics characteristics of the respondents (N=323)**

Characteristics	N(%)	Characteristics	N(%)
Age (in years)		Type of Family	
<20	26(8.04%)	Nuclear	171(52.94%)
20-30	276(85.44%)	Joint	126(39.01%)
>30	21(6.52%)	Extended	26(8.05%)
Mean Age $\pm$ SD $25.47 \pm 3.30$ years		Family Income per month	
Education		10,000-20,000	226(69.96%)
Primary	37(11.45%)	21,000-30,000	84(26.02%)
Some Secondary	167(51.70%)	31,000-40,000	13(4.02%)
SLC and above	119(36.85%)	Age at Marriage (years)	
Education status of Husband		$\leq 19$	104(32.19%)
Primary	20(6.20%)	$\geq 20$	219(67.81%)
Some Secondary	144(44.58%)	Mean Age $\pm$ SD $24.48 \pm 2.1$	
SLC and above	159(49.22%)	Age at first child birth (years)	
Occupation of women		$\leq 19$	43(13.31%)
Unskilled manual	1(0.33%)	$\geq 20$	280(86.69%)
Home maker	302(93.49%)	Mean Age $21.75 \pm 2.28$	
Professional	13(4.02%)		
Business	7(2.16%)		

**Table 2. Maternal health care utilization of the respondents (N=323)**

Characteristics	N(%)	Characteristics	N(%)
Antenatal care		Utilization of maternal health care services	
Number of visits		Complete	68(21.05%)
2-3 times	5(1.54%)	Partial	255(78.94%)
4 times or more	318(98.46%)	Complete ANC	
Place of delivery		Yes	318(98.45%)
Hospital	320(99.07%)	No	5(1.55%)
Home	3(0.93%)	Hospital delivery	
Incentive received for hospital delivery		Yes	320(99.07%)
Yes	114(35.29%)	No	3(0.93%)
No	209(64.71%)	PNC visit	
Postnatal visit		3 visits (Complete)	99(30.66%)
Yes	252(78.01%)	2 Visits (Partial)	153(47.36%)
No	71(21.98%)	No Visit (After Discharge)	71(21.98%)
Number of visits (n=252)			
Two times	153(60.72%)		
Three times	99(39.28%)		

**Table 3. Association between Selected Demographic Variables and Maternal Health Care Utilization N=323**

Characteristics	Categories	Utilization of maternal health care services		X <sup>2</sup>	P value
		Partial N(%)	Complete N(%)		
Age	Up to 25 years	135 (81.81%)	30(18.19%)	0.196	1.673
	More than 25 years	120(75.95%)	38(24.0%)		
Education status of women	Below SLC	164(80.39%)	40 (19.61%)	0.404	0.695
	SLC and above	91(76.47%)	28(23.53%)		
Education status of husband	Below SLC	132(80.48%)	32(19.525)	0.490	0.476
	SLC and above	123(77.35%)	36(22.65%)		
Occupation	Home maker	238(78.8%)	64(21.2%)		1.00*
	Other profession	17(81.0%)	4(19.0%)		
Type of Family	Nuclear	132(77.64%)	38(22.36%)	0.546	0.365
	Joint	123(80.40%)	30(19.60%)		
Distance to nearest health facility	<30 minutes	116(82.26%)	25(17.74%)	1.662	0.197
	>30minutes	139(76.37%)	43(23.63%)		

\*Fisher exact test

## Discussion

In this study the number of four antenatal visits was completed by majority 318(98.46%) similar to the study conducted in 2019 among 285 women in Dharan which showed 95.1% had antenatal visit.<sup>5</sup> Also another study conducted in 2017 among 797 women in Bungmati showed that 90.9% had Antenatal visit during pregnancy.<sup>8</sup> However, another study conducted in Dhanusha district in 2019 among 426 women showed contradictory result with 60.9% Antenatal visits.<sup>9</sup> Another mixed method conducted in 2020 among 202 women in Sindhupalchowk district showed

56.9% had Antenatal visits.<sup>10</sup> The difference in the result may be due to the distance to reach health facility, different geographical area and level of awareness and time period of study.

In this study majority (99.1%) had hospital delivery. Similar to our study, a study conducted in Baglung municipality in 2020 among 318 respondents showed that 98.7% had their delivery at health facility.<sup>11</sup> Another study done in Sunsari district among 368 women showed that 55.1% had intuitional delivery which was different than the results from our study.<sup>12</sup> A study conducted from Nepal Demography and Health Survey (NDHS)

in 2016 among 4148 women also showed contradictory result that only 40% had utilized intra natal care service i.e., hospital delivery.<sup>13</sup> And similar study conducted in Tanahun district among 540 showed that only 27.50% had hospital delivery.<sup>4</sup> The difference in result may be due to the distance of health facility from the residence of the respondents, availability of birthing centers etc.

In this study 252(78%) respondents had postnatal checkup similar to a study conducted in 2015 in eastern Nepal among 224 women where 75% had postnatal checkups after delivery. And another cross-sectional study conducted in 2017 in Lalitpur district among 130 women showed that 67.7% had postnatal checkups.<sup>14</sup> A study done among 126 women in Bharatpur Sub Metropolitan city in 2019 showed that only 17.5% had Postnatal checkups.<sup>15</sup> Similarly, cross sectional study conducted among 380 mothers in 2017 in Ramechhap district showed that 28.4% had their PNC checkups.<sup>16</sup> The difference in the result may be due to not having any problems during postnatal periods in our study sample and once the mother and baby were healthy they may not consider completing PNC visits.

In this study results showed that there was no association between selected demographic variables (age, education status of women, husband's education, occupation of mothers, type of family, distance of nearest health facility) and maternal health care utilization. A similar study of explorative descriptive design was conducted in 2016 among 196 women of Uttarakhand which showed that there was no association between distance and utilization of maternal health care services ( $p=0.06$ ).<sup>17</sup> And another study conducted in 2019 among 447 women of Nawalparasi district showed that there was no association between occupation of women and utilization of maternal health care services ANC visit ( $p=0.219$ ), place of delivery ( $p=0.83$ ) and PNC visit ( $p=0.096$ ).<sup>18</sup>

In contrast to the present study, the study conducted in Nuwakot district in 2019 showed

that there is a significant association between the educational status, occupation with ANC and PNC checkup visits having  $p<0.05$ .<sup>19</sup> Also another study conducted in India in 2020 among 1,90,898 women showed that household economic status is likely to be the most powerful factor of maternal health care utilization.<sup>20</sup> The difference in the result of the above studies as compared to present study may be due to low education level of women, occupation of women and economic status or family income in those areas.

The findings of the study would provide the baseline data about the utilization of maternal health care services in rural municipality where the study was conducted. Also, this municipality can be taken as an example for maternal care utilization during health teaching. However, there are some limitations to the study. The study was conducted in only one rural municipality of Palpa district and non-probability sampling technique was used, therefore, the findings cannot be generalized. Questionnaire was self-developed by the researcher and pretesting was not done for reliability of the tool due to COVID-19 pandemic. There may be recall bias among the respondents as the retrospective information was sought.

Further similar studies can be conducted at different setting such as urban area or other provinces. Similar study can be done using probability sampling technique to generalize the findings. Awareness to mother regarding PNC examination to prevent any further complication and reduce the maternal mortality and morbidity can be emphasized.

## Conclusion

Based on the findings of the study, majority of the respondents had ANC checkup; almost the entire respondents had institutional delivery. More than half of the respondents had PNC checkups. There was no association between selected demographic variables (age, education status of women, education status of husband, type of family and distance from the health facilities) and maternal health care

utilization. So, the study highlights that this rural municipality had good maternal care utilization and this could be provided as an example to other areas in Nepal.

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### Conflict of Interest

None

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