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Maternal health services utilization among rural Tamang women: A cross sectional study in Nuwakot district of Nepal

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Abstract: *Background:* Maternal mortality is still a major health issue in Nepal. It is higher among disadvantaged and illiterate women living in rural areas. The major reasons for deaths are low and inequitable utilization of maternal health services. The study aims to assess the utilization of the maternal health services among mothers having under five years children of Tamang community. *Methods:* A cross-sectional study design was used for the study. A total sample of 139 mothers having under five-year children from Tamang community were selected purposively. Participant mothers were interviewed using semi-structured questionnaires. The study was approved from Nepal Health Research Council and written consent was also taken from the participants prior to data collection. Data was coded, entered in Epidata 3.1v, then transferred to SPSS v20 software and analyzed. *Results:* The average age of the mothers was 27 years and nearly half of the mothers were illiterate. Among 92.8% of the mothers who had come for Antenatal Care (ANC) checkup, only 57.4% had completed four ANC checkups. Similarly, more than two third (70.5%) of mothers had delivered their child at health institution. On the other hand, only 51.8% of mothers had visited for PNC checkup where only 47.2% of them had 3 PNC checkups. *Conclusion:* The study revealed that though mothers had visited for ANC and PNC checkups, complete visits were found to be very low. It is recommended to aware the mothers and health care providers on maternal health services and its utilization.

Keywords: Maternal Health Services, Utilization, ANC, PNC, Institutional Delivery.

Introduction

Maternal health is the health of women during pregnancy, childbirth, and the postpartum period [1]. Around 99% maternal death has occurred in most of the developing countries where more than half of these deaths occur mostly in fragile and humanitarian settings in sub-Saharan Africa and almost one third occur in South Asia.

The maternal mortality ratio (MMR) in developing countries was 239 per 100000 live births versus12 per 100000 live births in developed countries in 2015. In high-income countries, virtually all women have at least four antenatal care visits, are attended by a skilled health worker during child birth and receive postpartum care. Whereas, only 40% of all pregnant women in low-income countries had recommended antenatal care visits [2].

Improvements in maternal health services have been key in reducing the country's MMR. The National Safe Motherhood Program has made significant progress in safe motherhood and neonatal health in Nepal. Similarly, maternity incentive scheme has also encouraged women to use health facilities for maternity care with improved access [3-4]. Even though various efforts were made to achieve the MDGs 4 and 5 by the end of 2015, still reduction of maternal mortality and morbidity has become challenges to developing countries [5-6].

Most of the maternal deaths were occurred in rural areas, poorer communities and among adolescent pregnant girls [7]. They were dying because of complications during pregnancy or child birth and many more encounter serious problems [2]. The major factors for the death

of women were far distance to the health facility, socio-cultural beliefs, economic condition and inappropriate health services [8]. Likewise, hemorrhage, infection, unsafe abortion, high blood pressure, and obstructed labor are considered to be the direct causes of the maternal mortality and morbidity [2]. In support to the WHO considerations, a study conducted in Ethiopia revealed the similar main causes and change in the proportion of maternal deaths yearly [9].

Nepal is promoting safe motherhood with provision of maternity incentives schemes to skilled delivery care in a health facility, increasing access, awareness and improving ANC and PNC services [4]. ANC and PNC services improve the maternal and neonatal health with providing health information and services as well as health services at first week after delivery [10]. In Ethiopia, PNC was very low to new born in compare to ANC services [11] and many women (83%) preferred deliveries at home with normal labor pain [12]. A study conducted in Nepal showed only 27 %of women had utilized the all the services i.e. 4 or more ANC visit, delivered last birth at health facilities and postnatal checkup [13] but high in Belbari VDC [5].

Women with higher level of autonomy had utilized all four ANC services[14].Likewise, mothers from central hill and terai were more likely to have received postnatal care after delivery than in other regions[15]. A study by Kumar et al. [16] revealed that 43% of women did not know about ANC and 39% did not get services during pregnancy. In Dhanusa district of Nepal, 28.1% of women did not find the health worker during the time of ANC visit whereas, 36.2% of respondents did not feel comfortable in receiving ANC care during visit [17]. Likewise, in another study in Nepal, 44.9% of the deliveries had assisted by non-technical professionals [18].

Appropriate maternal health care significantly affects the outcome of pregnancy. Many complications occur due to delay in seeking care by pregnant mothers. It is necessary to utilize the available health care for reducing mortality and morbidity. A large majority of women, particularly the poor and the marginalized, do not have easy access to maternal health services. It is not only the concern of health sectors but the overall development sectors. Nepal has still high maternal mortality ratio (MMR) compared to the developed countries due to the lack of education, socio-economic and cultural barriers, paternalism, no any rights for the decision-making and autonomy on maternal health services. Earthquake that occurred in 2015 has destroyed about 50% of health facilities in Nuwakot district. The study was conducted to assess the availability and utilization of maternal health services among mothers having under five-year children of Tamang community at ward number one of Shivapuri Rural Municipality (Previously Talakhu VDC) of Nuwakot District in post-earthquake situation.

Material and Methods

A population based cross-sectional study design was used to assess availability and utilization of maternal health services. The study was conducted at Talakhu, ward number one of Shivapuri Rural Municipality (previous village development committee). Primary data was collected from the mothers having under 5 children of Tamang community (15-49 years) using face to face interview techniques. Pre-tested semi-structured questionnaires were used for data collection with 139 mothers. All the Tamang women of age 15-49 years were interviewed through house to house survey.

Ethical approvals were taken from research committee of Asian College for Advance Studies and Ethical Review Board of Nepal Health Research Council. Similarly, permission was received from the ward office and consent was obtained from the participant mothers prior data collection. The collected data were checked for errors and edited daily for the validation, and entered into Epi data. Then, the data was transferred to SPSS version 20.0 for data analysis. Descriptive analysis and cross tabulations were done for assessing availability and utilization of maternal health services.

Results

Socio-demographic characteristics: Among 139 participants, participants, nearly half of the mothers (48.2%) of age group 27 to 32 years and least were from 39 to 44 years

(5.8%) of age. The mean age of mothers was 27.5 years with the standard deviation of 4.7. Similarly, about half of the mothers (48.9%) were illiterate and very few (1.4%) had completed the bachelor's level of education. Likewise, major occupation of the mothers was agriculture (61.9%) followed by services (28.8%), business (7.9%) and labour (1.4%).

Table-1: Socio-demographic characteristics (n=139)

Age of participants	**Frequency**	**Percent**
15-20	11	7.9
21-26	34	24.5
27-32	67	48.2
33-38	19	13.7
39-44	8	5.8
Mean and SD 27.52 years and 4.703		
Education status		
Illiterate	68	48.9
Primary Level	30	21.6
Secondary Level	30	21.6
Higher Secondary Level	9	6.5
Bachelors level	2	1.4
Occupation Status		
Agriculture	86	61.9
Service	40	28.8
Business	11	7.9
Labour	2	1.4
Total	**139**	**100.0**

Maternal Health: Half of the mothers' age at marriage (50.4%) was seen highest in age group below 20. However, the mean age at marriage was 21 years. About 10% of the mothers gave birth to their last child at the age of 15 to 20 years. Among the mothers who had heard about pregnancy check up 42% had heard through female community health volunteers (FCHV).

Similarly, only 7.2% had not gone for the ANC checkup and among those who visited for ANC checkup, 57.4% had gone for four and more visits despite FCHV referred to all. The reason behind not visited for ANC checkup were did not feel necessary (40%), far distance to the health facility from home (30%) and inadequate knowledge about the benefits of the ANC. Moreover, most of the mothers (94.2%) had vaccinated TT during pregnancy while those who had not vaccinated with the reasons of unknown about TT vaccine (37.5%), health facility staffs not available on time, far distance to health facility and did not feel necessary.

More than four fifth (87.1%) of the mothers did not feel any complication during pregnancy whereas12.9% had complication as headache and swollen limbs during pregnancy. Still 29.5% mothers had delivered their child at home without skill birth attendants. In one third (33.7%) of the institutional deliveries, husband and FCHVs were the decision makers respectively. Among those who went for institutional delivery, only 28.7% did not received the incentives. Similarly, less than half (47.2%) of the mothers had completed three PNC checkup and only 50% is taking folic acid and iron tablets. The reasons for not visiting health facilities for PNC checkup were far distance to health facilities and felt not necessary.

Utilization and availability of maternal health services: Majority of the participants (69.8%) had travelled more than an hour to utilize the maternal health services from the nearest health institution. Near half of the participants (41%) had no any clue regarding the availability of health workers at local health institution. Similarly, those who had visited the health facility, 82% were satisfied with the behavior of health workers and received services immediately after reaching the health institution respectively. Likewise, 61.9% participants were comfortable while receiving maternal health services. Most of the female were not comfortable while receiving maternal health services, as the health post was not established before and had to travel Kathmandu for the maternal health services. Most of the participants (81.4%) had visited Kathmandu to receive maternal health services because of lack of birthing center and unavailability of female health workers at local health institution.

There is a significant association between the educational status, occupation with ANC and PNC checkup visits having P-value <0.05.

Table-2: Utilization of maternal health services						
Variables*	**ANC checkup**		**Place of delivery**		**PNC checkup**	
Age of the mothers	**Yes n (%)**	**No n (%)**	**Home n (%)**	**HI n (%)**	**Yes n (%)**	**No n (%)**
15-20	11 (100)	0	1 (9.1)	10 (90.9)	8 (72.7)	3 (27.3)
21-26	34 (100)	0	8 (23.5)	26 (76.5)	21 (61.8)	13 (38.2)
27-32	61 (91.0)	6 (9.0)	22 (32.8)	45 (67.2)	34 (50.7)	33 (49.3)
33-38	17 (89.5)	2 (10.5)	6 (31.6)	13 (68.4)	8 (42.1)	11 (57.9)
39-44	6 (75.0)	2 (25.0)	4 (50)	4 (50)	1 (12.5)	7 (87.5)
Educational Status						
Illiterate	58 (85.3)	10 (14.7)	31 (45.6)	37 (54.4)	23 (33.8)	45 (66.2)
Primary level	30 (100.0)	0	7 (23.3)	23 (76.7)	15 (50)	15 (50)
Secondary level	30 (100.0)	0	3 (10.0)	27 (90.0)	23 (76.7)	7 (23.3)
Higher secondary level	9 (100.0)	0	0	9 (100)	0	9 (100)
Bachelor level	2 (100)	0	0	2 (100)	0	2 (100)
Occupation						
Agriculture	78 (90.7)	8 (9.3)	31 (36.0)	55 (64.0)	35 (40.7)	51 (59.3)
Service	40 (100)	0	6 (15.0)	34 (85.0)	30 (75)	10 (25)
Business	10 (90.9)	1 (9.1)	3 (27.3)	8 (72.7)	6 (54.5)	5 (45.5)
Labor	1 (50)	1 (50)	1 (50)	1 (50)	1 (50)	1 (50)
*Chi-square and Fisher's exact test P<0.05						

Discussion

In the present study, the highest age group of the participants was 27 to 32 years of age i.e. 48.2% which is similar to a study conducted in Ethiopia [11] where the age of the participants was 25-34 years of age i.e. 44.7%. Similarly, the age of total participants of Tamang community who had given birth to their last child was between 21 and 26 years i.e. 47.5% whereas, according to [3] mothers' age group at child birth was below 20 (63.5%). Among the participants who had visited ANC in this study, only 57.4% of them had more than four times ANC checkup. Those who visited for the ANC checkup, the main services provided to them were folic acid distribution (100%) and TT vaccination (99.2%) respectively. In contrast with this study findings, 62.1% participants had ≥4 times ANC checkup and 90.7% of them had received TT vaccine and folic acid in a study conducted in mid-western development region of Nepal [18].

In this study, 70.5% of participants had delivered their baby at health institution and 29.5% of them had preferred at home. It is contradictory to the research conducted in eastern Nepal[14]where about 73% of participants had delivered their baby at home and remaining 26.8% went to hospital for the delivery of baby. Similarly, more than 13.5% of participants had delivered their baby at health institution than a national survey [4]. From the findings, 36.6% of participants were assisted by FCHVs and 34.1% were assisted by family member for the home delivery. It is slightly high in similar study where 44.9% home deliveries were assisted by relatives/women/husband [18]. Only 51.8% had PNC checkup and remaining 48.2% did not feel necessary to visit for PNC checkup which was less in a study conducted by Gyawali et al. [18] where 32% of participants had PNC checkup and 67.9% did not go for PNC checkup respectively.

In this study, more than half of the participants (58.3%) gave positive response regarding the availability of health workers while remaining 41% of them had no any clue about it. Similarly, 61.9% were not comfortable while receiving maternal health services. Whereas, 28.10% revealed unavailability of health worker during the time of ANC visit at health facility and 36.19% of participants felt uncomfortable in receiving ANC in the study conducted at Dhanusa District of Nepal [17].

Conclusion

Most of participants were found to be illiterate, aged between 27 and 32 years having mean age of 28 years and marry below the age of 20. Almost 92.8% of mothers had

went for ANC checkup and among them 57.4% had visited four or more than four times. Most of mothers had received TT vaccine and folic acid tablets during ANC checkup. Likewise, significant percentage of the participants had delivered their baby at Health institution. Most of the participants did not feel necessary to complete 3 PNC checkup visits as health institution was far away from residential areas. Similarly, few of them were not satisfied with the behavior of health workers and services respectively. As birthing center was not built at the study site, maximum participants felt uncomfortable while receiving maternal health services. The mothers from the Tamang community should make aware about the importance of four ANC visits, institutional delivery and PNC visits. It is also recommended that health facilities should be friendly and comfortable for the services seekers.

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