

Factors Associated with the use of Institutional Delivery Services by Mothers in a Community of Gorkha, Nepal

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ABSTRACT

Institutional delivery is a delivery that takes place at any medical facility staffed by skilled delivery assistance. A descriptive cross-sectional study design was adopted to find out the factors associated with institutional delivery service utilization among mothers. The study was done in wards 6 and 11 of Gorkha Municipality in Gorkha district. The sample size was 80. The data were analysed using SPSS 16. The majority of the respondents, i.e., 97.5%, were literate, and 60% of the respondents were homemakers. 38.5% of the respondent's husband was involved in foreign employment. Obstetric factors for institutional delivery depict nearly three-fourths of the total respondents, i.e., 72.5% of mothers marry at the age of 15-20 years; nearly half, i.e., 48.8% of mothers deliver babies at the age of 21-25; and the majority of the respondents, i.e., 97.5%, visited for an ANC checkup more than four times. Only 18.8% had complications during pregnancy. The majority of the respondents, i.e., 97.5%, thought health institutions were the best place for delivery, of which 60.3% chose health institutions for quality services. The majority of the respondents, 93.8%, delivered babies at health institutions. Enabling factors for institutional delivery depict nearly two-thirds of the respondents, i.e., 62.5%, making their own decisions. The majority of the respondents, i.e., 85.7%, received delivery services by a nurse; nearly half of the respondents, i.e., 47.5%, travelled 30-60 minutes. More than half of the respondents (55.0%) went to health institutions by vehicle. Similarly, 57.1% of the respondents received health care within 15 minutes. The present study concluded that, in spite of the higher proportion of institutional delivery, no significant association was found among the selected socio-demographic variables, i.e., educational status, spouse educational status, ethnicity, religion level, and monthly income.

Key words: Delivery, Factors, Institution, Service

1. Introduction

Institutional delivery service utilization is one of the most important factors in reducing maternal death, and the proportion of women who delivered with the assistance of a skilled birth attendant is one of the indicators in every country's health plans. Maternal death is highest among countries with less skilled professionals, such as a trained midwife, nurse, doctor, or other trained health professionals (Tiruye *et al.* 2018). It has been noted that over half a million maternal deaths occur every year, 99% in developing countries (86% in sub-Saharan Africa and Asia), and for each of these deaths, an estimated further 30 women will become disabled, injured, or ill owing to pregnancy. Complications of pregnancy and childbirth are taking away the lives of an estimated 303,000 women annually worldwide (Teklehaymanot *et al.* 2016). Although institutional delivery service utilization ensures safe birth and is a key to reducing maternal mortality, interventions in the community and/or institutions were unsatisfactory in reducing maternal mortality. Institutional delivery service utilization is affected by the interaction of personal, socio-cultural, behavioral, and institutional factors (Wako & Kassa 2017).

In Nepal, a high proportion of maternal deaths is most likely due to the fact that over 63% of births take place at home. Evidence suggests that appropriate delivery care and skilled attendance at birth ensure safe delivery and help identify the onset of complications in time. In-depth understanding of the factors associated with the utilization of institutional delivery services is of paramount importance to unleashing the barriers to promoting the utilization of institutional delivery (Thapa *et al.* 2019). Globally, there were an estimated 289,000 maternal deaths in 2013, yielding a maternal mortality rate (MMR) of 210 maternal deaths per 100,000 live births. Developing countries account for 99% (286,000) of the global maternal deaths; Sub-Saharan Africa accounts for 50% of all maternal deaths worldwide; and South Asia accounts for 35%, which is in extreme contrast with the high-income countries. Despite the commitment of the international community to reduce MM, the magnitude of the problem remains immense. Thus, the goal of MDG 5, i.e., reducing the MM by three quarters by the year 2015, has barely been achieved. Haemorrhage and hypertensive disorders are the leading causes of maternal mortality in developing countries (Amentie *et al.* 2017). An international conference on population and development aims to

have at least 90% of deliveries attended by skilled health care providers by 2015 as a strategy for reducing maternal mortality. However, in developed countries, 94% of births are attended by health care personnel. Whereas in developing countries like Nepal, only 59% of deliveries are attended by institutions (NDHS 2017). The maternal mortality rate in Nepal was found to be 258 per 100,000 live births (2017). Maternal mortality due to unsafe abortion, prolonged labour, eclampsia, and other reasons has been a major problem across the globe, especially in developing countries. Most of the deliveries occur outside of health care facilities and are assisted by nonprofessionals (NDHS 2017).

From the above statement, the trend of institution delivery seems to be increasing, so the aim is to generate the best evidence on the determinants of institutional delivery service utilization and to find out the associated factors related to institutional delivery in the Gorkha community. Likewise, such a study has not been conducted in this community, so I chose this topic as my research topic.

2. Research Methodology

Study Design: Descriptive cross-sectional study design.

Study Area and Study Population: The study was conducted in Gorkha Municipality, wards 6 and 11, of Gorkha district, which is situated in the western part of Nepal.

Sampling Technique: Non-probability, Purposive Sampling Technique

Sampling Unit: The sampling unit was the mother having a baby less than 5 years of age.

Sample Size: 80

Method for Data Collection: Face-to-face interview method was used as a method of data collection for this study design.

Tools for Data Collection: A semi-structured tool was used for data collection for the study.

Ethical Consideration

Ethical clearance was taken from IRB of Yeti Health Science Academy, Maharajgunj, Kathmandu.

Verbal and written consent was obtained from the respondents before data collection. Confidentiality and anonymity were maintained throughout the study.

The purpose and methods were clearly informed. The obtained information was used only for the necessary study purpose.

3. Results

Table 1 depicts that 8.8% of pregnant mothers were of teen age. Near to half percentage of respondent i.e. 43.8% of the respondents were between the ages of 26-30 years. Majority of the respondents i.e. 97.5% were literate, and only 2.5% of respondents were illiterate. Among literate respondents, (n=78), 41.02% were of primary level whereas least of respondents 6.42% were of university level. Similarly, spouse educational status wise, majority of the respondents 96.25% were literate and only 3.75% were illiterate. Among literate respondents (n=77) about one third of the respondents i.e. 33.7% were of lower secondary level, and 5.19% were of university level. Occupation wise, 60% of the respondents were homemaker and least of the respondent only 1.3% were labor.

Table1: Socio demographic information of respondents (n=80)

Variables	Frequency(Percentages)
Age group	
15-20	7(8.8%)
21-25	22(27.5%)
26-30	35(43.8%)
31-35	16(19.9%)
Ethnicity	
Janajati	35(43.75%)
Brahmin/ Chhetri	24(30%)
Dalit	17(21.25%)
Muslim	4(5.00%)
Religion	
Hindu	69(86.25%)
Christian	5(6.25%)
Muslim	4(5%)
Buddhist	2(2.5%)
Educational Status	
Literate	78(97.5%)
Illiterate	2(2.5%)
Women Education (n=78)	
Lower Secondary	32(41.02%)

Secondary	30(38.46%)
Higher Secondary	11(14.10%)
University	5(6.41%)
Spouse Educational Status	
Literate	77(96.25%)
Illiterate	3(3.75%)
Spouse Education (n=77)	
Lower Secondary	26(33.7%)
Secondary	25(32.46%)
Higher Secondary	22(28.57%)
University	4(5.19%)
Women Occupation	
Homemaker	48(60%)
Sales/Service	15(18.75%)
Agriculture	13(16.25%)
Technical/Professional	3(3.75%)
Labor	1(1.25%)
Spouse Occupation	
Abroad	28(35%)
Sales/Service	22(27.5%)
Technical/Professional	14(17.5%)
Agriculture	9(11.3%)
Labor	7(8.75%)

Table 2 depicts obstetric factors for institutional delivery. Among the total respondents nearly three fourth i.e. 72.5% of mother marriage at the age of 15-20 years, whereas least of the respondents 3.8% marriage at the age of 26-30. Nearly half i.e. 48.8% of mother deliver baby at the age of 21-25, whereas least of the respondents 10.0% delivered at the age of 26-30. Similarly, 45.0% of the respondents had 1-2 numbers of children, whereas only 2.5% had 4 numbers of children. Majority of the respondents i.e. 97.5% visited for ANC checkup for more than 4 times, whereas least of the respondents 2.5% not visited for ANC checkup.

Table 2: Factors associated with Institutional Delivery (n=80)

Variables	Frequency(Percentage)
Age at marriage	
15-20	58(72.50%)
21-25	19(23.80%)
26-30	3(3.75%)
Age at first delivery	
15-20	33(41.25%)
21-25	39(48.75%)
26-30	8(10%)
No. of Children	
1	36(45%)
2	36(45%)
3	6(7.5%)
4	2(2.5%)
ANC Visit, n=78	
More than 4	78(100%)
Complication during Pregnancy	
Yes	15(81.3%)
Complication type (n=15)	
Post date	5(33.3%)
GHTN	5(33.3%)
Breech Presentation	2(13.3%)
Allergy	1(6.7%)
Oligohydraminous	1(6.7%)
Rh incompatibility	1(6.7%)

Table 3 depicts obstetric factors for institutional delivery. Majority of the respondents i.e. 97.5% thought health institution the best place for delivery, whereas least of the respondents only 2.5% thought home is the best place for delivery, in which 60.3% choose health institution for quality services. Majority of the respondents, 93.8% delivered baby at health institution

institution. More than half of the respondents 55.0% went to health institution by vehicles whereas, 45% went by foot. And, none of the respondents prefer institution for incentive facilities. Similarly, 57.1% of the respondents received health care within 15 minutes, whereas least of the respondent i.e. only 1.3% received care after more than 1 hour. Similarly, all of the respondents prefer health institution as they were satisfied towards available

whereas only 3.8% delivered baby at home. Likewise, 62.3% of the family member suggest for institutional delivery whereas, 2% were suggested by others.

Table 3: Obstetric Factors for Institutional delivery (n=80)

Variables	Frequency (Percentage)
Best place for Delivery	
Institution	78(97.5%)
Home	2(2.5%)
Reason for Home Delivery (n=2)	
No response	2(100%)
Reason for Institution Delivery (n=78)	
To get quality services	47(60.30%)
Complications can be prevented easily	15(19.20%)
For safe Delivery	13(16.70%)
Accessible and Available services	3(3.80%)
Place of Delivery	
Health Institution	75(93.75%)
Home	3(3.75%)
On the way to hospital	2(2.50%)
Suggesting person for institutional delivery (n=77)	
Family	48(62.30%)
Self	24(31.20%)
Husband	3(3.90%)
Others	2(2.60%)

Among the total respondents, nearly two third i.e. 62.5% of the respondents make their decision by own, whereas 17.5% of respondents husbands used to make decision related to place of delivery. Similarly, majority of the respondent i.e. 85.7% received delivery services by nurse, whereas only 1.3% of respondent received delivery service by ANM. Likewise, in distance between home and institution nearly half i.e. 47.5% of the respondents have 30-60 minutes, whereas, only 1.3% have 1 hours distance between home and health

health care facilities and towards the service provider's behavior.

Table 4: Enabling Factors for Institutional Delivery (n=80)

Variables	Frequency (Percentage)
Decision making person	
Self	50(62.50%)
Mother in Law/Father in Law	16(20%)
Husband	14(17.50%)
Service provider at health Institution (n=77)	
Nurse	66(85.70%)
Doctor	10(13%)
ANM	1(1.30%)
Distance between Home and Institution	
Less than 30 minute	37(46.25%)
30-60 minutes	38(47.50%)
1-2 hours	1(1.30%)
More than 2 hours	4(4%)
ways to go health Institution	
By Vehicles	44(55%)
By foot	36(45%)
Prefer Institution for incentive facility (n=77)	
No	77(96.25%)
Service provided within after reaching Institution (n=77)	
within 15 minutes	44(57.14%)
15-30 minutes	29(37.66%)
1 hours	3(3.89%)
more than 1 hours	1(1.29%)
Satisfied towards service (n=77)	77(100%)
Satisfaction toward service providers behavior (n=77)	77(100%)

There was no significant association between delivery place and selected socio-demographic variables.

Table 5: Association between Delivery place and Socio-demographic variables (n= 80)

Variables		Delivery Place		P value
		Home	Institution	
Educational status	Literate	2	76	0.074
	Illiterate	1	1	
Spouse Educational Status	Literate	2	75	0.110
	Illiterate	1	2	
Ethnicity Level	Ungrouped caste	1	44	0.578
	Janajati	2	33	
Religion Level	Hindu	2	67	0.362
	Others	1	10	
Monthly income	1000-50000	2	69	0.304
	51000-100000	1	8	

Fisher's exact test

4. Discussion

In this study, the majority of the respondents (97.5%) were literate. Occupation-wise, 60% of the respondents were homemakers, and spouse-occupation-wise, all were employed, and 47.5% of the family had 21000–40000 income.

The finding is consistent with the similar study conducted in Kavre district; the data revealed that the majority (85.9%) were literate, whereas, spouse-wise, the majority (95.9%) were literate. The finding is not consistent among spouse occupations, as only more than half (55.3%) of respondents husbands were employed; the rest are unemployed (Shrestha & Shrestha 2017).

The finding is consistent with the similar study conducted in Palungtar, Gorkha district, as 80.5% of the mothers have attended secondary and above grades, while 85.6% of mothers reported that their husbands have attended secondary and above grades. The majority (57.2%) of the mothers were engaged in agriculture. Nearly half (49.4%) of the mothers reported that their husbands were working abroad. 40.6% of the mothers reported their monthly family income above Rs. 30,000 (Yadav & Jena 2020).

This finding is consistent with a similar study conducted in Ethiopia, where mothers who attended primary school and were above the primary educational level were almost five times more likely to give birth at a health institution than those who were uneducated. The chance of delivering in health facilities among those women whose husbands attended primary and above primary educational levels was 4.4-fold higher than that of those women whose husbands did not attend any educational level (Teklehaymanot *et al.* 2016).

Obstetric factors: In this study, about three-fourths of 72.5% of respondents had marriage at the age of 15-20 years, and 48.8% of mothers delivered babies at the age of 21–25. Likewise, the majority of the respondents, i.e., 97.5%, visited for ANC checkups more than four times, whereas the least number of respondents (2.5% not visit for ANC checkups. Likewise, 62.3% of the family members suggested institutional delivery, whereas 2% were suggested by others. The data revealed that the majority, 93.8%, had utilised health facilities for delivery, while only 3.8% had delivered at home and the rest, 2.5%, delivered on the way to the hospital. Likewise, 81.3% did not have any

complications, whereas only 18.8% had complications during pregnancy. The finding is consistent with a similar study done in the Chitwan district of Nepal. The mean age at first pregnancy of respondents was 21–26 years. But the finding is not consistent among ANC visits. 74.4% of the respondents had visited the ANC clinic four or more times. 78.3% of the respondents had delivered their last child in a health care facility, while 21.7% had home delivery (Thapa *et al.* 2019).

This finding is consistent with the similar study conducted in Palungtar, Gorkha district; the study revealed that 68.3% of respondents got married at the age of ≤ 19 years. In total, 39.4% of the mothers had their first pregnancy at an early age (≤ 19 years). All the mothers reported having an antenatal care (ANC) visit during pregnancy. The prevalence of institutional and home delivery was 93.3% and 6.7%, respectively. However, the finding contradicts the results reported by the Nepal Demography and Health Survey (NDHS), which depict that only 59% of births took place in health facilities (Yadav *et al.* 2016). The finding is consistent with the study done in Kavre district, among the total participants. Almost 96.5% of them had visited for an ANC checkup. The majority (90%) of them had institutional delivery (Shrestha & Shrestha 2017).

Enabling factors: In this study, more than half (62.5%) of the respondents make their own decisions related to the place of delivery. Similarly, the majority of the respondents (85.7% received delivery services from nurses. Likewise, in terms of distance between home and institution, 47.5% of the respondents have 30–60 minutes, whereas 1.3% have 1 hour, and more than half of the respondents, 55.0%, went to health institutions by vehicle, whereas 45% went by foot. Likewise, more than half (57.1%) of the respondents received health care within 15 minutes, whereas the least (1.3%) received care after more than 1 hour. Similarly, all of the respondents preferred health institutions, as they were satisfied with the available health care facilities and the service provider's behavior.

Association of place of delivery with selected socio-demographic variables: In the current study, any of these variables—educational status of respondents, spouse's educational status, ethnicity, religion, and monthly income—are not significantly associated with the place of delivery.

The Chi-square test was done to find an association between the variables in Palungtar, Gorkha. It showed

that ethnicity, educational level of the respondent, respondents' husband's education, and monthly income were not significantly associated, whereas age at marriage, age at first pregnancy, knowledge of delivery incentives and maternal health before the recent delivery, time to receive health services at a health institution, and mothers knowledge of the differences between home and institutional delivery were statistically significant with the utilization of institutional delivery services (Yadav & Jena 2020).

5. Conclusion

The present study concluded that, in spite of the higher proportion of institutional delivery, no significant association was found among the selected socio-demographic variables, i.e., educational status, spouse educational status, ethnicity, religion level, and monthly income. But the study indicates that respondents having higher education, spouse's educational status, monthly income, age at marriage, ANC visit, associated complications, self-autonomy, availability and accessibility, and satisfaction with the services and the service provider's behaviours seem to be associated with the place of delivery.

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