Original article

Assessment of safe delivery service utilization among women of childbearing age in north Gondar Zone, north west Ethiopia

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Abstract

Background: Though women comprise a large proportion of a given society, still many of them in developing countries are at a greater disadvantage in terms of high maternal morbidity and mortality. A large number of women are dying due to factors related to pregnancy and childbirth in these countries.

Objective: This study assessed safe delivery services utilization and associated factors among mothers who gave birth during five years preceding a survey conducted in North Gondar Administrative Zone, Amhara Regional State.

Method: A community-based cross-sectional comparative survey was conducted in November and December 2002. A total of 1,242 women who had at least one live birth in the five years preceding the survey were selected randomly.

Results: The study revealed that a total of 13.5% of mothers gave birth to their last babies in health facilities. Only about 25 of the rural women gave birth in the health institutions. Untrained traditional birth attendants and relatives attended 76.4% of the deliveries. The reported reasons were: absence of health problems, short duration of labor, preferring the attention of relatives and trust in traditional birth attendants.

Educational status of the mothers, place of residence, access to radio, monthly income, prenatal care, history of intra-partum complications and other selected obstetric behaviors of the respondents showed statistically significant association with the utilization of safe delivery services ($p<0.05$, for each factor).

Conclusion: In general, this study revealed that the proportion of births delivered in health facilities is low in the area. Demographic and socio-cultural factors were found to be barriers to the utilization of safe delivery services. Enhancing the establishment of more emergency obstetric care centers within reasonable access, providing Information, Education and Communication (IEC) on maternity services utilization and harmful traditional practices and improving the status of women in the community are recommended. [*Ethiop.J.Health Dev.* 2004;18(3):145-152]

Introduction

Everyday, at least 1,600 women die worldwide from the complications of pregnancy and childbirth, 90% of which occurring in Asia and sub-Saharan Africa. Maternal mortality rate was shown to have the largest discrepancy between developed and developing countries, among others (1, 2, 3). A lifetime risk of maternal death in developing countries is forty times higher than that of the developed world (1, 2). Bleeding, obstructed labor, hypertensive disorder, unsafe abortion and infection contribute for up to 80% of maternal deaths with resultant increased fetal loss, perinatal mortality and poor survival of small children (4, 5).

As many as 30 million women (more than one quarter) now living in the developing world suffer from short or long term illnesses related to pregnancy and childbirth. Long-term complications of pregnancy and childbirth include uterine prolapse and vesico-vaginal and/or recto-vaginal fistulae. Furthermore, obstructed labor can also result in infections, including sepsis, pelvic inflammatory disease (PID), which damage the reproductive system, leading to infertility and a range of gynecological disorders (1, 2, 4).

The International Safe Motherhood Initiative made maternal mortality an international priority by way of access to basic maternity care during pregnancy and delivery to all women (6, 7). However, discrepancies continue to exist in access to maternal health care between the more developed and the developing world, the richer and poor, urban and rural, and the educated and uneducated societies (4, 5).

In Ethiopia, of maternal and infant mortality and morbidity levels are among the highest in the world (8). The maternal mortality ratio in the year 2000 was 871 per 100,000 live births and the infant mortality rate was 97 per 1000 live births (9). One explanation for the poor health outcomes among women is non-availability and non-use of modern health services by a sizable proportion of women in Ethiopia. Previous studies have clearly demonstrated that the utilization of existing maternal health services is very low in the country (8, 9). Only a quarter of Ethiopian women received antenatal care (ANC) and less than 10 percent of mothers received professionally assisted delivery (11). Several studies confirmed that use of skilled birth attendants at every delivery is the best process indicator that correlates with maternal mortality and poor delivery outcome (12).

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Despite the fact that maternal health care utilization is essential for further improvement of maternal and child health, little is known about the current magnitude of use and factors influencing the use of these services in Ethiopia. This paper, therefore, aims to assess the practice of safe delivery service utilization and attempts to explore factors that are assumed to be barriers to the maternity care utilization among urban and rural women in North-Gondar Zone, Amhara Regional State, Ethiopia.

Methods

A community-based cross-sectional comparative survey was carried out in November and December 2002 to assess the utilization of safe delivery services among womens of childbearing age in North Gondar Zone, Amhara Regional State. North Gondar Administrative Zone is located 745 kms northwest of Addis Ababa. Administratively, the Zone is structured into 16 woredas. The total population is estimated to be 2, 688, 684 with about 1:1 male to female ratio. Most people (90%) are economically dependent on subsistent farming. About 70% of urban and 8% of rural people are literate (13). Concerning, the health infrastructure, there were 35 health posts, 75 health stations, 14 health centers and 2 hospitals in the Zone.

A multi-stage sampling technique was utilized to select the study population. All the fifteen rural woredas found in the Zone were included in the study to represent the rural population. For logistical and cost reasons, two woredas, namely: Alefa and Dabat were randomly selected by a lottery method. Using simple random sampling, nine peasant associations (five from Dabat and four from Alefa) were selected. The allocated sample size for rural stratum was obtained using probability proportional to the size of households found in each peasant association. The Capital Town, Gondar, was purposefully included in the sampling frame to represent the urban communities. A total of six kebeles (two kebeles from each selected woreda and two kebeles from Gondar Town) were selected by random sampling method. The allocated sample size for urban stratum was obtained using probability proportional to the size (PPS) of the selected kebeles.

The sample size was calculated based on the following assumptions: alpha ($\alpha = 0.050$ for the risk of rejecting the null hypothesis that is true and beta ($\beta = 0.2$) for the risk of failing to reject the null hypothesis that is false. The proportion of 8 % for urban and 2 % for rural was taken after the result of a pilot study conducted in Gondar College of Medical Sciences referral hospital. Considering a design effect of 2 for the multi-stage sampling technique, and a non-response rate of 10 % the total calculated sample size was 1248 women. The allocation of households by place of residence showed that 832 (66.9%) were from rural while 416 (33.1%) were from urban areas. However, the true proportion for rural to urban population is 7.8:1. Therefore, in the present study the urban population is oversampled. In order to make the result of this survey representative sample weighting was employed on the original data during data analysis. Women, who gave birth at least once in five years preceding the survey irrespective of place and outcome of delivery and who are permanent residents of the study areas, were included in the study.

A pre-tested standard questionnaire was employed to obtain information, on socio-demographic, obstetric, delivery, health service and personality factors. Fifteen 12th grade complete females who are fluent in the local language collected the data. Four professional nurses (two females and two males) with similar work experience were assigned to supervise the data collection process. A three day training complemented by practical exercises was given to data collectors and supervisors.

Ethical clearance was obtained from the Medical Faculty of Addis Ababa University. Permission to carryout the study was obtained from the Amhara Regional Health Bureau and North Gondar Zone Health Department. Each respondent gave informed verbal consent after being told the purpose and procedures of the study. All responses were kept confidential and anonymous.

Data were entered, cleaned and analyzed using EPI-INFO version 6.02 statistical package. Statistical tests such as Chi-square tests, odds ratio with 95% confidence interval were employed as appropriate. Binary logistic regression analysis was performed using SPPS 10 statistical software to control for potential confounding factors. Safe delivery service utilization was defined as deliveries that took place in health facilities.

Results

Demographic Profile

A total of 6240 households were visited in six urban and nine rural kebeles found in three selected woredas to get 1242 women that delivered within five years before the survey. The overall response rate was 1242 (99.5%). Most (52.5%) of the respondents were in the age group 20-29 years with mean age of 28.1 ± 6.1. The majority (83.1%) of the study subjects were housewives. About 64% of the urban respondents and only 14% of their rural counter- parts had attended formal education (Table 1).

Obstetric and delivery characteristics of the respondents

The majority (78.2%) were pregnant before the age of twenty years. Age at first pregnancy was significantly associated with place of residence ($t = -6.87$, $P<0.000$). The mean parity of the respondents was 2.9±2.1 and 4 ±2.2 for urban and rural women, respectively. Out of the total respondents 24% of urban and 43.6% of rural mothers had five or more children. The number of grand multipara was 3.8 times higher among rural than urban respondents.

Table 1 **Selected Socio-demographic characteristics of the respondents in North Gondar Zonal Administration Nov – Dec. 2002**

Variables	Urban (n=411) N (%)	Rural (n=831) N (%)	Total (n=1242) N (%)
Age at interview			
15-19	42 (10.2)	63 (7.6)	105 (8.5)
20-24	105 (25.5)	178 (11.4)	283 (22.8)
25-29	116 (28.2)	217 (26.1)	369 (29.7)
30-34	160 (38.9)	175 (21.1)	335 (26.9)
35+	83 (20.2)	198 (23.8)	281 (22.6)
Respondents' education			
Illiterate	127 (30.9)	710 (85.4)	837 (67.0)
Read & Write	23 (5.6)	5 (0.6)	28 (2.3)
Elementary	76 (18.5)	24 (2.9)	100 (8.1)
Secondary	161 (39.2)	79 (9.5)	240 (19.3)
12+	24 (5.8)	13 (1.6)	37 (2.9)
Respondents' occupation			
House wife	262 (63.7)	770 (92.7)	1032 (83.1)
Other	149 (36.3)	61 (7.3)	210 (16.9)
Income/month			
<100 Birr	49 (11.9)	167 (20.1)	216 (17.4)
100-499 Birr	217 (52.8)	648 (78.0)	865 (69.6)
>=500 Birr	145 (35.3)	16 (1.9)	161 (12.9)
Radio			
Yes	248 (60.3)	70 (8.4)	318 (25.6)
No	163 (39.7)	761(91.6)	924 (74.4)

Regarding prenatal service utilization, 568 (45.7%) women had attended prenatal care at least once during the last pregnancy. The percentage of mothers living in urban areas and receiving adequate ANC was about three times greater than mothers living in rural areas. Of the total 168 (13.5%) gave birth at health institutions. Out of these, only 14 (1.7%) of the rural respondents gave birth to their last babies at health facilities. About three-quarter (76.4%) of the home deliveries were attended by untrained traditional birth attendants (TBAs), relatives and by the mothers themselves. About 7% of women who attempted to give birth at home encountered prolonged labor. Of the total number of women, only 19 (1.5%) of them delivered by cesarean section (Table2).

Regarding reasons for preferring home delivery, 44.7% of the respondents reported that labor was short and smooth. The rest 55.3% of the mothers reported preference to give birth the in presence of relatives, trust in TBAs, cultural reason and lack of money as reasons for non-use of health facilities. Intra and postpartum obstetric complications were reported by 67 (16.3%) of urban and 169 (20.3%) of the rural women. The reported symptoms were excessive vaginal bleeding in 41.1%, prolonged labor in 24.2 % and retained placenta in 18.6% of the cases. Only about a third (31.8%) of those who developed the complications sought modern health care (Table 3).

Traditional harmful practices related to labor and childbirth

Out of the 257 urban women who gave birth at home, the majority (73.2%) tied the cord with un-boiled thread and 12.1% left the cord untied. Out of 817 home deliveries 433 (53.1%) reported to have tied the cord themselves and 219 (26.8%) left the cord untied. About 66.2% of rural and 45.3% of urban respondents applied butter on the umbilical stump. Only 50 (12.2%) urban women and 324 (39%) rural women practiced abdominal massage during labor. Significant association was observed between urban and rural residence for each of the variables (P<0.001) (Table 2).

Determinants of safe delivery service utilization

Maternal education was a strong predictor of preference to place of delivery. Mothers whose educational status was secondary high school and above were about 11 times more likely to give birth at health institutions than women with other levels of education (OR= 10.6, 95% CI: 6.7, 16.7). Women without access to radio were less likely to deliver at a health institution than women with access to radio (OR = 0.41, 95% CI: 0.22, 0.75).

There was a statistically significant association between place of residence and use of safe delivery services. Women who resided in rural areas were more likely to use the services than their urban counterparts (OR=0.03, 95%CI: 0.02, 0.05). The present study revealed that

Table 2: **Obstetric, delivery characteristics and traditional harmful practices of the respondents in North Gondar, Nov. - Dec. 2002**

Variables	Urban (n=411) N (%)	Rural (n=831) N (%)	Total (n=1242) N (%)
Age at first pregnancy (years)			
<20	273 (66.4)	698 (83.9)	971 (78.2)
20-29	133 (32.4)	130 (15.6)	263 (21.2)
30+	5 (1.2)	3 (0.4)	8 (0.6)
Parity			
1	135 (32.8)	122 (14.7)	257 (20.7)
2-4	187 (45.5)	382 (46.0)	569 (45.8)
>=5	89 (21.7)	327 (39.3)	416 (33.5)
ANC visit			
Attending	325 (79.1)	243 (29.2)	568 (45.7)
Not attending	86 (20.9)	588 (70.8)	674 (54.3)
# TT vaccination			
1	100 (24.3)	169 (20.3)	269 (21.7)
2	165 (40.1)	278 (33.5)	443 (35.7)
3+	37 (9.1)	46 (5.5)	83 (6.7)
None	109 (26.5)	338 (40.6)	447 (35.9)
Duration of labor			
<12 hours	352 (85.6)	684 (82.3)	1036 (83.4)
12-24 hours	38 (9.2)	84 (10.1)	122 (9.8)
>24 hours	21 (5.1)	63 (7.6)	84 (6.8)
Place of delivery			
Home	257 (62.5)	817 (98.3)	1074 (86.5)
Health institution	154 (37.5)	14 (1.7)	168 (13.5)
Delivery assistance			
TBA	152 (37)	720 (86.6)	872 (70.2)
TTBA	90 (21.9)	33 (4.0)	123 (9.9)
Health Worker	157 (38.2)	13 (1.6)	170 (13.7)
Relative	9 (2.2)	60 (7.2)	69 (5.6)
Other	3 (0.7)	5 (0.6)	8 (0.6)
Reported complications labor			
Bleeding	21 (31.3)	76 (44.7)	97 (41.1)
Prolonged labor	20 (29.9)	37 (21.8)	57 (24.2)
Retained placenta	6 (9.0)	38 (22.4)	44 (18.6)
Other	20 (29.8)	18 (10.7)	38 (16.0)
Umbilical cord tied with [a](n=1074)			
Boiled thread	28 (10.9)	11 (1.3)	39 (3.6)
Unboiled thread	188 (73.2)	133 (16.3)	321 (29.9)
Self tied	-----	433 (52.9)	433 (40.3)
Not tied	31 (12.1)	219 (26.8)	250 (23.3)
Others	10 (3.9)	21 (2.6)	31 (2.9)
Materials applied to stump (n=1074)			
Nothing	107 (41.6)	260 (31.9)	367 (34.2)
Butter	116 (45.1)	540 (66.1)	656 (61.2)
GV/alcohol	30 (11.7)	----	30 (2.8)
Other	4 (1.6)	17 (2.1)	21 (1.9)
Abdominal massage			
Yes	50 (12.2)	324 (39)	374 (30.1)
No	361 (87.8)	507 (61)	868 (69.9)

a: figure indicated total number of home deliveries;

Table 3: **Association of socio-demographic factors of respondents with preference to Safe Delivery Services Utilization in North Gondar, Nov. – Dec. 2002**

Variables	Delivery in Health institution Yes	No	Crude OR (95% CI)	Adjusted OR (95% CI)
Place of residence				
Urban	154	257	1.00	1.00
Rural	14	817	**0.03(0.02, 0.05)**	0.30 (0.08, 1.04)
Age of a interview				
15-29	17	88	1.00	1.00
20-29	51	232	1 14 (0.06, 2.17)	1.25 (0.53, 2.9)
25-29	55	278	1.02 (0.55, 1.94)	0.86 (0.35, 1.8)
30-34	25	215	0.60 (0.30, 1.23)	0.91 (0.4, 2.3)
35+	18	65	1.43 (0.65, 3.19)	0.08 (0.26. 1.75)
Decision Maker				
Self	57	474	1.00	1.00
Husband	91	465	**1.63 (1.1, 2.4)**	1.2 (0.76, 1.92)
Both	15	278	0.45 (0.24, 0.83)	0.35 (0.17, 0.68)
Other	10	89	**0.93 (0.43, 1.98)**	0.40 (0.17, 0.93)
Respondents' education				
Illiterate	33	804	1.00	1.00
Read & write	4	23	4.2 (1.0, 13.9)	1 19 (0.35, 4.1)
Elementary	12	179	1.6 (0.8, 3.4)	1.6 (0.77, 3.38)
Secondary	85	196	**10.6 (6.7, 16.7)**	2.3 (1 13, 4.9)
Husbands' Occupation				
Government employee	22	551	1.00	1.00
Private employee	3	23	1.3 (0.58, 12.1)	**5.17 (1.38, 19.3)**
Self employee	12	179	0.6 (0.24, 1.19)	2.8 (0.9, 8.4)
Farming	17	118	**3.6 (1.87, 7.3)**	0.38 (0.11, 1.37)
Other	98	108	**22.7 (13.4, 39.0)**	1.43 (0.73, 2.8)
Husbands' education				
Illiterate	22	551	1.00	1.00
Read & write	4	23	4.3 (1.0, 14.3)	1.4 (.6, 3.2)
Elementary	12	179	1.9 (0.77, 3.6)	1.4 (0.6, 3.4)
Secondary	85	196	**10.8 (6.5, 18.4)**	2.1 (0.9, 4.8)
Radio				
Yes	127	191	1.00	1.00
No	41	883	**0.07 (0.05, 0.1)**	1.4 (0.6, 3.2)
Income/month				
<100 Birr	9	207	**0.04 (0.02, 0.08)**	0.84 (0.37, 1.91)
100-490 Birr	78	787	**0.09 (0.06, 0.13)**	1.19 (0.59, 2.4)
>=500 Birr	93	80	1.00	1.00
Floor made from				
Cement	44	14	1.00	1.00
Mud	124	1060	**0.04 (0.02, 0.07)**	**0.26 (0.12, 0.50)**

Adjusted for obstetric factors (age at first pregnancy, parity, birth order, use of ANC, Obstetric complications)

women with lower incomes (<100 Birr) were less likely to deliver at health facilities than women having incomes of 500 Birr and above (OR=0.04, 95%CI: 0.08, 0.02) (Table 3).

Past Obstetric experiences

Birth order of five or more and being grand multipara found to be strong obstetric predictors of preference to have been place of delivery. As birth order increases utilization of safe delivery services decreases (x^2= 43.7, P=0.000).

Obviously, prenatal visit was found to be strong predictor of safe delivery services utilization. Women who did not have any registered antenatal visit were less likely to give birth at health facilities (OR=0.09, 95% CI: 0.06, 0.15). Moreover, mothers who have had past history of intra-partum complication were more likely to seek safe delivery care than those with no such history (OR=1.63, 95% CI: 1.1, 2.24) (Table 4).

Table 4: **Association of obstetric factors of respondents with preference to safe delivery services utilization in North Gondar Nov. – Dec. 2002, (n=1242)**

Variables	Delivery in Health institution		Crude	Adjusted
	Yes	No	OR (95% CI)	OR (95% CI)
Place of residence				
Urban	154	257	1.00+	1.00
Rural	14	817	**0.03(0.02, 0.05)**	**0.05 (0.016, 0.15)**
Age at 1st pregnancy				
<20 yrs	96	875	0.18 (0.14, 1.20)	0.88 (0.10, 7.7)
20-29 yrs	69	194	0.59 (0.11, 3.93)	1 41 (0.16, 12.5)
30+	3	5	1.00	1.00
Birth order				
1	81	177	1.00	1.00
2-4	73	476	**0.34 (0.23, 0.49)**	0.49 (0.13, 1.8)
5+	15	421	**0.24 (0.13, 0.44)**	**0.11 (0.02, 0.64)**
Parity				
1	79	178	1.00	1.00
2-4	74	495	**0.34 (0.23 0.49)**	1.57 (0.39, 6.29)
>=5	15	401	**0.08 (0.14, 0.46)**	0.94 (0.14, 6.12)
Use of ANC				
Yes	147	421	1.00	1.00
No	21	653	**0.09 (0.06, 0.15)**	**0.51 (0.26, 0.99)**
Obstetric Complications				
Yes	44	192	**1.63 (1.1, 2.4)**	**4.7 (2.41, 9.12)**
No	124	882	1.00	1.00

Adjusted for socio-demographic factors (age, education, husband's occupation, husband's occupation, income)

Discussion

This community-based study has attempted to identify the practice of safe delivery services and factors associated with the practices in North Gondar Zone, Amhara Regional State.

The results of the present study revealed that the use of skilled birth attendants is significantly influenced by level of education. Women with higher level of education (secondary and above) were 10.6 times more likely to use safe delivery services than those with lower education levels. This finding is in line with most maternal and child health studies conducted in developing countries (14, 15, 16, 17). This may be because education is likely to enhance the status of women and enable them to develop greater confidence and capacity to make decisions about their own health. Consistent with most sub-Saharan Africa studies (9, 16, 17, 18), rural women were found to be less likely to give birth at health facilities than their urban counterparts. The reason may be that urban women tend to have better access to health facilities and other promotional activities that are usually urban based. Inline with this, access to mass media (radio) was also shown to an have an effect on the preference of institutional delivery.

Antenatal care visit positively predicts use of safe delivery services and it is more effective in preventing adverse pregnancy outcome if continued throughout pregnancy (19, 20). The mean gestational age at the first antenatal care visit was 5.2±1.6 months. This indicates that women in the study area start ANC relatively late in their pregnancy. The current study has also revealed that women who have not had antenatal visit were less likely to seek institutional delivery than women who had the visit.

Birth order is another obstetric factor found to be significantly affecting the use of safe delivery services. The probability of giving birth at health facilities decreased in grand multipara (>=5 birth) mothers than births of four or less. As birth order increased the chance of giving birth at health institution decreased, implying that mothers tend to seek modern obstetric care for their first pregnancy than for the subsequent pregnancies. In contrast, many studies reported that grand multiparas and primiparas are at greatest risk of maternal mortality and morbidity as well as having poor delivery outcome (21, 22).

While home delivery is the norm in many developing countries mortality tends to be the highest where this is the case (1, 2, 4). In the present study, only 13.5% of all the mothers gave birth in health facilities; whereas, only 1.7% of the women in rural areas delivered in health facilities. This indicates that still the majority (86.5%) preferred home delivery. This finding is consistent with other studies condcted in southern Ethiopia (23, 24). Other reports from Bangladesh and Indonesia reported similar findings (25, 26). All of those studies reported that large numbers of women are delivering at home unde the care of by untrained traditional birth attendants and relatives (21, 24, 25).

Another finding in the present study is that the utilization of safe delivery services was about five times higher among those who previously had developed one of the life threatening obstetric complications (OR = 4.7, 95% CI: 2.41, 9.12). This implies that significant proportions of mothers seek help from skilled birth attendants after developing obstetric complications and when other traditional interventions fail. Studies from India and Iraq showed a lack of recognition of perceived seriousness of health problems as a significant reason for not seeking health care that accounted for half of maternal deaths (23, 25, 26).

With regard to aseptic practices during deliveries, 91.8% of the home deliveries used new blades without boiling. Similar results (93.5% and 92%) were reported from other local studies (14, 26). In a sizable proportion (23.3%) of home deliveries, the umbilical cord was not tied. The result was consistent with the finding of a study conducted in the same area in 1978 (27). It is surprising that this harmful traditional practice still continus after twenty years of health services expansion in the area. The figure is high when compared with reports of local studies elsewhere (14, 21).

The majority (61.2%) of the mothers who delivered applied raw butter on the umbilical stump of their newborns. Similarly, an earlier study in a nearby Wereda reported such practice in 83% of home deliveries (26). Thirty percent of the mothers in the present study reported the practice of abdominal massage in attempt to facilitate labor and to correct mal-positioning of the fetus. This finding is similar with those of other local studies (14, 21). Applying vigorous abdominal massage an during labor is believed to cause untimely separation of the placenta, which subsequently leads to excessive bleeding and fetal death.

Out of 236 (19.0%) women who reported complications of labor and delivery only about a third (32%) consulted health workers, while 53% went to traditional healers and 15% did nothing. Similar results were obtained from various parts of Ethiopia (8, 21). Despite the seriousness of the problems encountered, mothers either try to self-limit or resort to traditional medication for their problems. This low health seeking behavior may be due to the inaccessibility of health services or lack of awareness about perceived seriousness of complications.

Only 1.5 % of the deliveries were reported to be through cesarean section. The rate was lower in rural residents (0.9%). This finding is consistent with the reports of the Demographic and Health Survey (DHS), Ethiopia 2000 where cesarean section was reported in 5% of urban and 0.2 % of rural deliveries (9, 28). This can be explained by inaccessible emergency obstetric services and inconvenient referral systems accounted for the mothers with obstetric complications.

The present study showed poor utilization of maternity care (antenatal care and safe delivery service) in the study area. The study also confirmed strong disparity in heath services utilization between urban and rural residents. Socio-demographic, obstetric, and delivery characteristics were found to be determinants of safe delivery services utilization.

Expanding emergency obstetric care within reasonable access, providing Information, Education and Communication (IEC) on maternity service and harmful traditional practice and improving the status of women in the community are recommended.

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