Original Article

Maternal Health Care Services Utilization in Tea Gardens of Darjeeling, India

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ABSTRACT

Background: Since independence, the Government of India has made great efforts to curb maternal mortality and morbidity by introducing various women-oriented developmental programs. Despite this, India is still struggling with a high maternal mortality and morbidity, which is compounded by low utilization of maternal health care services. **Aim:** The study is aimed to find out the status of maternal health care services utilization and associated factors among recently delivered women in a block of Darjeeling district of West Bengal **Subjects and Methods:** A cross-sectional study was carried out among 953 recently delivered women residing in tea gardens of Darjeeling district of West Bengal. Utilization of maternal health care services including antenatal care during pregnancy, provision of safe delivery and postnatal care after delivery was assessed among them. The data were analyzed using SPSS version 16 (IL, Chicago, USA). Logistic regression analysis was done. *P* values less than 0.05 were considered as significant. **Results:** The utilization of full antenatal care was 48.6% (463/953), institutional delivery 73.5% (700/953) and adequate postnatal visit was 72.6% (692/953) among the study population. The important factors associated with low utilization of services were belonging to Islam, Scheduled tribe, lower socio-economic status, and lower literacy level of both the husband and wife. The major barrier towards utilization of these services was ignorance followed by distance to the health care center. **Conclusion:** The present study revealed low utilization of pregnancy-related health care utilization among the study population; especially in case of antenatal care. The study can provide new insight for policy makers to devote resources for achieving the best possible quality of maternal and child health services.

KEY WORDS: Antenatal care, institutional delivery, maternal health care utilization, postnatal care

INTRODUCTION

Giving birth to a baby is one of the most memorable events in a woman's life. However, pregnancy and childbirth also conceal implicit threats to women's health. According to the World Health Organization, every minute, at least one woman dies from complications due to preventable causes related to pregnancy and childbirth – that means 529 000 women a year. In addition, for every woman dying in childbirth, around 20 more suffer injury, infection or disease – approximately 10 million women each year.[1]

India accounts for approximately one-quarter of all pregnancy and delivery-related maternal deaths worldwide, and has the highest burden of maternal mortality for any single country.[2]

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The International Conference on Population and Development at Cairo in 1994 changed the world's approach to improving maternal health.[3] The focus on maternal mortality was further increased when reduction in maternal mortality was included as one of the eight goals for development in the Millennium Declaration (Millennium Development Goal 5 or MDG 5)[4], the target for which is to reduce the maternal mortality ratio (MMR) by three quarters from 1990 to 2015.[5]

Preventable maternal mortality is a proxy indicator to a failure to give effect to the right to the highest attainable standard of health. Evidence from both developed and developing countries has consistently documented an association between maternal mortality and underutilization of modern pregnancy-related health care services (antenatal care during pregnancy, provision of safe delivery and postnatal care after delivery) by a sizable proportion of women, which

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can largely prevent them from dying of pregnancy-related causes.[6-10]

The utilization of maternal care services, however, varies between countries with a great underutilization among pregnant women in low-income countries in Africa and Asia, which may be due to many factors such as age, education, medical insurance, clinical risk factors and supply of health care (e.g., clinic availability, distance to facility).[11]

Despite being one of the first countries of the world to launch maternal health programs and one of the signatories of ICPD conference, India is still struggling with a high maternal mortality and morbidity compounded by low utilization of services. Presumably, there are socio-economic and demographic factors, which may play a role in the utilization of maternal health care services. According to a national survey, only 18.8% of pregnant women in India had full antenatal care, which includes at least three visits for antenatal check-up, one tetanus toxoid (TT) injection received and 100 iron and folic acid (IFA) tablets or adequate amount of syrup consumed. Less than half of the respondents had an institutional delivery (47%) and postnatal checkup within two weeks of delivery (49.7%). The figures were even lower in tribal areas reflecting non-acceptance or poor utilization/underutilization of maternal health care services in these areas.[12]

Therefore, a better understanding of the factors affecting the utilization of pregnancy-related health care is required, so that the programmatic interventions can be concentrated to increase the acceptance/utilization rates. Therefore, the present study was carried out to assess the utilization of maternal care services in a tribal area of Darjeeling district.

SUBJECTS AND METHODS

A community-based cross-sectional study was done in tea gardens of Siliguri subdivision of Darjeeling district from April 2012 to December 2012. Siliguri lies strategically in the foothills of the Himalayas with lush green tea garden estates inhabited by predominantly tribal population. It is bordered by three international boundaries, viz., Bangladesh in the south-east, Nepal in the west and Bhutan in the north-east. Apart from the private health care facilities, the public health care infrastructure of the area includes sub-health centers at the village level and tertiary care hospitals at the highest level. In addition, the tea gardens have their exclusive health facilities with nurses at the helm, which provide essential health and obstetric care to the residents. However, these clinics are not fully equipped and delivery services are not available round the clock for which the residents have to go to the nearest secondary or tertiary level hospitals.

All the women of these tea gardens, who had delivered in last one year and who resided in the study area for more than one year served as the sampling frame for the study. Sample size was calculated using EPI-Info version 7.09 with the assumption that women who delivered a live child 12 months prior to the study were considered as a single study subject. Based on the prevalence of full ANC utilization from a previous study conducted in the region,[13] it was assumed that the proportion of women who use full range of ANC is 55.4%. Assuming 97% confidence level, 5% absolute precision, design effect 2 and 10% non-response rate, the yielded sample size was 1019 using Epi Info version 7. It was rounded off to 1020 for an equal sub-sample of 34 from each of 30 clusters (villages). In the first stage, 30 clusters were selected from a list of villages using the probability proportional to size method. In each cluster, with a random start from the center, consecutive households were visited to select 34 willing women who had delivered in last 12 months. All eligible women in the last household in each cluster were included in the study. Full cooperation from the study population was ensured after explaining the purpose of the study in detail and they were also assured that full confidentiality would be maintained within the limits of medical ethics.

The data was collected from the study population by using a validated, predesigned, pretested, semi-structured proforma, which was administered by the investigators during a face-to-face interview. By initial translation, back-translation, and re-translation, the questionnaire was customized for the study. Pre-testing of the questionnaire was carried out on a convenience sample of 30 postnatal women attending the Gynaecology and Obstetrics OPD of North Bengal Medical College. The clarity and relevance of items were assessed and certain modifications were made on the basis of the findings of the pre-test. The questionnaire consisted of three parts including socio-demographic and obstetric profile of the respondent, utilization of maternal health care services and barriers to utilization of services.

Utilization of services was focused on three aspects of maternal health care:

- Full antenatal care utilization: If the pregnant women had fulfilled the following criteria:
  - Received at least one Tetanus Toxoid (TT) injection
  - Consumption of minimum 100 iron folic acid (IFA) tablets/equivalent amount of syrup
  - Minimum three antenatal care (ANC) visits
- Skilled attendance at birth: If the women had delivered in a hospital or health care institution
- Adequate postnatal care utilization: If the woman had received any postnatal visits by a health care professional within 48 hours of delivery.

Information thus obtained was then cross-checked with the available records to minimize the recall bias. The data were analyzed using SPSS version 16 (IL, Chicago, USA).

Binary logistic regression analysis was used for statistical analysis. In this analysis, adequate antenatal care utilization, skilled attendance at birth and postnatal care utilization were used as the dependent variables, which were made dichotomous in nature, where full antenatal care = 1 and not full antenatal care = 0; delivery at health care institution = 1 and home delivery = 0; and having postnatal visits within 48 hours = 1 and not having postnatal visits within 48 hours = 0. The predictor variables used for the analysis include: Age, religion, caste, women's education, husband's education, per capita monthly income, and birth order. Multicollinearity problem among the independent variables was identified by the Variance Inflation Factor (VIF) test.

Mother's age was categorized into <20, 20-24 years, 25-29 years and ≥30 years of age. The educational level of the women and their husbands was defined using years of schooling and they were grouped into illiterate, non-formally literate and primary school and above. The religion of the mother was grouped as Hindu, Muslim and Christian. Identification of the social group was based on the women's self-reporting as General caste, Scheduled Castes (SCs) and Scheduled Tribes (STs). The groups were based on the Central Government of India classification of certain castes/tribes based on their historical disadvantage in social and economic positions.[14]

A relative indicator of household wealth was calculated from the per capita monthly income of the family and categorized as per recommendations of Tendulkar Committee's recommendation[15] into two classes (<Rs. 673 and ≥Rs. 673). According to the Commission's report, the poverty line in India is set at Rs. 673 (Rupees six hundred and seventy three). The Government of India mandates that all Below Poverty Line pregnant women who are 19 years or above in age are eligible for a conditional cash incentive scheme known as Janani Suraksha Yojana.[16] The birth order of children of the women was grouped as one, two and ≥3.

The women who had answered in the negative for utilization of maternal health services were asked for their perspectives on barriers to utilization using open-ended questions. The responses to these questions were grouped into discrete categories that did not overlap. The participants were told that they could mention more than one factor if they thought so.

Ethical considerations

Approval was obtained from the Institutional Ethics Committee of North Bengal Medical College, Darjeeling, West Bengal prior to the study. Verbal informed consent was taken from the respondent before the interview during household survey after ensuring anonymity and confidentiality.

RESULTS

Of 1020 women contacted for the study, only 953 (93.4%) finally participated in the study. The mean age of the participating women was 26.14 (4.9) years. More than four-fifths of the women were Hindu 797/953 (83.6%) and had their monthly per capita family income less than Rs. 673 826/953 (86.7%). Majority of the women and their husbands were illiterate [Table 1].

Utilization of health care

Less than half of the study population 463/953 (48.6%) had availed antenatal care whereas almost three-fourths had skilled attendance at birth 700/953 (73.5%) and adequate postnatal care utilization 692/953 (72.6%) [Table 2].

Table 1: Socio-demographic characteristics of the study population

	N	%
Age Group (in years)		
<20	76	8.0
20-24	318	33.4
25-29	353	37.0
≥30	206	21.6
Religion		
Hindu	797	83.6
Muslim	82	8.6
Christian	74	7.8
Caste		
General	301	31.6
SC	380	39.9
ST	272	28.5
Poverty index (per capita family income in rupees)		
≥673	127	13.3
<673	826	86.7
Literacy status		
Illiterate	465	48.8
Non-formal literate	274	28.8
Primary and above	214	22.5
Literacy status of husband		
Illiterate	391	41.1
Non-formal literate	370	38.8
Primary and above	192	20.1
Birth order		
1	414	43.4
2	437	45.9
≥3	102	10.7
Total	953	100

N=953

Table 2: Utilization of maternal health care utilization services by the study population

Maternal health care service	Utilization rate	
	N	%
Full antenatal care utilization	463	48.6
Received at least one tetanus toxoid injection	843	88.5
Consumption of minimum 100 iron folic acid tablets/ equivalent amount of syrup	463	48.6
Minimum three antenatal care visits	863	90.6
Skilled attendance at birth	700	73.5
Adequate postnatal care utilization	692	72.6

N=953

Association between socio-demographic characteristics and utilization of health services

The relationship between independent variables, namely socio-demographic characteristics of women, and use of maternal health care services is shown in the Table 2. No significant association was found between full antenatal care utilization and the mothers' age, religion and caste. However, women belonging to Christianity, general caste, lower birth order and per capita income ≥Rs. 673 had better odds of utilizing antenatal care services compared to their counterparts. Literacy of the women (OR 2.21) and her husband (OR 1.52) had a positive relation with antenatal care utilization [Table 3].

When institutional delivery was concerned, it was observed that women in the age group of 25-29 years [OR 1.30 (0.67-2.53)], belonging to Hinduism, general caste, and illiterate, with per capita family income equal to or above Rs. 673 had better odds of delivering at health institutions more than their counterparts. It was also found that women with higher parity and husbands who were educated up to primary level or above had significantly higher odds of delivering at health institutions with the odds ratios being 6.62 (2.95-14.8) and 10.16 (3.03-15.9), respectively [Table 3].

Postnatal care within 48 hours was significantly associated with religion and caste of the respondent. Postnatal care was more prevalent in the women belonging to age group 25-29 years, Hindu religion and general caste and in illiterate women. Similarly, having had more pregnancies [OR 7.71 (3.45-17.26)] and belonging to a family with higher per capita income [OR 0.27 (0.12-0.60)] was associated with a significant higher likelihood of postnatal care utilization. It was also observed that as education of women's husband increased so did the likelihood of having postnatal health care with the OR of 9.08 (3.79-12.13) in husbands education up to primary level or above [Table 3].

Barriers to utilization of services

When the study participants who had not availed the health care services were asked to give their reasons for poor utilization of health services during pregnancy and childbirth, the major reason cited by them was ignorance. Of the 490 women who did not seek proper antenatal care during their last pregnancy, majority 398/490 (81.2%) of them said that they were not aware of getting health checkups done pre- or post-delivery and therefore, did not feel the necessity to go to a health care provider. The other barriers in the order of their frequency were distance of the health centre too far, financial constraints, family traditions and previous bad experiences [Table 4].

Of the 253 women who had opted home delivery, 321/253 (91.3%) opined that the delivery hub was too far from their residence. The other reasons cited were that there was no time to go, no one to accompany them to

Table 3: Association between maternal care utilization and socio-demographic characteristics of the study population

	Full antenatal care utilization		Skilled attendance at birth		Adequate postnatal care utilization		Total *N* (%)
	N (%)	OR (95% CI)	*N* (%)	OR (95% CI)	*N* (%)	OR (95% CI)	
Age group (in years)							
<20	34 (44.7)	1 (Referent)	56 (73.7)	1 (Referent)	56 (73.7)	1 (Referent)	76 (8.0)
20-24	174 (54.7)	1.56 (0.91-2.66)	209 (65.7)	0.73 (0.39-1.39)	205 (64.5)	0.68 (0.36-1.30)	318 (33.4)
25-29	164 (46.5)	0.90 (0.52-1.54)	279 (79.0)	1.30 (0.67-2.53)	275 (77.9)	1.18 (0.61-2.29)	353 (37.0)
≥30	91 (44.2)	0.85 (0.48-1.51)	156 (75.7)	0.99 (0.49-1.99)	156 (75.7)	0.99 (0.49-2.00)	206 (21.6)
Religion							
Hindu	378 (47.4)	1 (Referent)	618 (77.5)	1 (Referent)	610 (76.5)	1 (Referent)	797 (83.6)
Muslim	42 (51.2)	0.92 (0.54-1.57)	51 (62.2)	0.08 (0.04-0.18)	51 (62.2)	0.08 (0.04-0.18)	82 (8.6)
Christian	43 (58.1)	1.08 (0.64-1.83)	31 (41.9)	0.14 (0.07-0.27)	31 (41.9)	0.14 (0.07-0.27)	74 (7.8)
Caste							
General	161 (53.5)	1 (Referent)	277 (92.0)	1 (Referent)	277 (92)	1 (Referent)	301 (31.6)
SC	168 (44.2)	0.69 (0.48-1.00)	298 (78.4)	0.11 (0.06-0.22)	294 (77.4)	0.10 (0.05-0.20)	380 (39.9)
ST	134 (49.3)	0.66 (0.45-0.98)	125 (46.0)	0.03 (0.02-0.06)	121 (44.5)	0.03 (0.01-0.05)	272 (28.5)
Poverty index (per capita family income in rupees)							
≥673	77 (60.6)	1 (Referent)	111 (87.4)	1 (Referent)	111 (87.4)	1 (Referent)	127 (13.3)
<673	386 (46.7)	0.52 (0.32-0.83)	589 (71.3)	0.31 (0.14-0.69)	581 (70.3)	0.27 (0.12-0.60)	826 (86.7)
Literacy status							
Illiterate	196 (42.1)	1 (Referent)	366 (78.7)	1 (Referent)	358 (77.0)	1 (Referent)	465 (48.8)
Non-formal literate	131 (47.8)	1.70 (0.97-2.99)	183 (66.8)	0.54 (0.39-0.76)	183 (66.8)	0.60 (0.43-0.84)	274 (28.8)
Primary and above	136 (63.6)	2.21 (0.82-5.98)	151 (70.6)	0.65 (0.45-0.94)	151 (70.6)	0.72 (0.50- 1.03)	214 (22.5)
Literacy status of husband							
Illiterate	172 (43.9)	1 (Referent)	296 (75.7)	1 (Referent)	288 (73.7)	1 (Referent)	391 (41.1)
Non-formal literate	167 (45.1)	0.74 (0.42-1.31)	266 (71.9)	5.23 (3.42-10.63)	266 (71.9)	4.39 (1.13-7.19)	370 (38.8)
Primary and above	124 (64.6)	1.52 (0.52-4.43)	138 (71.9)	10.16 (3.03-15.9)	138 (71.9)	9.08 (3.79-12.13)	192 (20.1)
Birth order							
1	226 (54.6)	1 (Referent)	297 (71.7)	1 (Referent)	292 (70.5)	1 (Referent)	414 (43.4)
2	217 (49.7)	0.78 (0.59-1.03)	311 (71.2)	1.24 (0.86-1.79)	308 (70.5)	1.30 (0.91-1.87)	437 (45.9)
≥3	20 (19.6)	0.20 (0.12-0.36)	92 (90.2)	6.62 (2.95-14.8)	92 (90.2)	7.71 (3.45- 17.26)	102 (10.7)
Total	463 (48.6)		700 (73.5)		692 (72.6)		953 (100)

CI – Confidence interval; SC – Scheduled caste; ST – Scheduled tribe; OR – Odds ratio; *N*=953

Table 4: Barriers to utilization of services*

Antenatal care utilization (*n*=490)		
Ignorance/Felt not necessary	398	81.2%
Health center too far/no transport	213	43.5%
Financial reasons	157	32.0%
Family practices and traditional norms	59	12.0%
Past experiences with health care provider	31	6.3%
Skilled attendance at birth (*n*=253)		
Delivery hub too far/no transport	231	91.3%
No time to go	162	64.0%
No one to accompany	43	17.0%
Fear of surgery/Better care at home	79	31.2%
Hospitals too expensive	143	56.5%
Postnatal care utilization (*n*=261)		
Ignorance/Felt not necessary	247	94.6%
Health worker did not visit	167	64.0%
No money to go to hospital	104	39.8%

*Multiple responses

the hospital and fear of surgery. More than half said that hospitals were too expensive.

Two hundred and sixty one women had not received postnatal checkups within 48 hours of delivery. The major reasons cited were lack of awareness 247/261 (94.6%), no postnatal visits by health worker and financial constraints.

DISCUSSION

Utilization of maternal health care services can have significant consequences for both the safe transition of mother through pregnancy and child birth, and the survival and health of the child during the early years of life.[17] In the present study, maternal health care utilization has been analyzed under three categories namely the use of antenatal care, institutional delivery care and the postnatal care. The predictive factors studied were age of the women, education of the women and her husband, economic status and birth order.

Antenatal care provides an entry point for women to the health care system and presents an opportunity to evaluate the mother's overall condition, diagnose and treat infections, screen for anemia and HIV/AIDS and to provide a broad range of health promotion and disease preventive services.[18]

Skilled attendance at delivery is an important indicator in monitoring progress towards Millennium Development Goal 5[5] and, has consistently been found to be associated to reduce maternal morbidity and mortality.[19] Postnatal care is essential for identifying and attending to the post partum complications.

In the present study, the rates of utilization of adequate antenatal care, skilled attendance at birth and adequate postnatal care were 48.6%, 73.5% and 72.6%, respectively, which were quite higher than the national figures but at par with the district level data.[12] This may be attributed to the fact that Darjeeling district always puts up a better show than the rest of the country in respect of several health care utilization parameters. This may also be due to the introduction of Janani Suraksha Yojana, which provides financial assistance to the backward classes on availing maternal health care services. The current figures however are quite low when compared to the national goals set by the National Population Policy.[20]

Factors associated with utilization of maternal care service

There are several factors influencing maternal health care utilization within the dimensions of skilled maternal care definition. These factors operate their impact at various levels. Beeckman *et al*. found that women who were better educated, had higher incomes, or were primiparous had more antenatal care visits than women who were less educated, had lower incomes, or were multiparous.[21] To identify the various factors associated with the utilization of maternal healthcare services, namely, full antenatal care, safe delivery and postnatal care, the multivariate differential of the selected socioeconomic and demographic characteristics were studied.

Maternal age

Because of different experience and influence, maternal age may play an important role in maternal health care utilization, though the direction of the effect is often contradictory.[22,23] Following bivariate analysis, some studies show a lack of association between maternal age and health service utilization[24,25] or higher utilization for younger women than older ones.[26] In the present study, there was no specific relationship between age and antenatal care utilization, institutional delivery and postnatal care.

On the other hand, the age group of 25-29 years had the highest proportion of institutional delivery and postnatal care. The possible explanation for this may be the fact that women in this age group are generally more experienced and knowledgeable about healthcare services and their use due to earlier child birth, which may improve utilization.

Religion and caste

Religion has always been an integral part of India's foundation of culture and has an enormous effect on Indian society and behavioral patterns. One interesting finding of the present study is that religion has emerged as an important predictor of maternal care utilization. Hindu women had the highest proportion of utilizing institutional delivery and postnatal care compared to the others. Hazarika suggested the possibility of the 'purdah' system prevalent among the Muslims, which is a physical segregation of the sexes, and the requirement for women to cover their bodies and conceal their form, which may contribute to the low

utilization of safe delivery care among them.[27] The findings in the present study were in consonance with the national survey done in India and other studies.[12,28]

Caste can have an important effect on antenatal care utilization. People who belong to a lower class tend to be marginalized and discriminated, affecting prospects of social status and opportunities. Earlier studies have highlighted that the proportion of 'lower castes' women receiving maternal healthcare services such as antenatal care[29,30] and having a trained attendant present at birth,[31,32] is far low compared to women belonging to 'upper castes'. In the present study, however, antenatal care utilization was much higher in women belonging to Scheduled Caste and tribes than in women of general castes whereas the opposite picture was revealed for institutional delivery and postnatal care. This can be explained by the fact that since 2005, the Government of India has started a conditional cash transfer scheme wherein women belonging to lower castes get a lump sum amount of money on receiving four antenatal checkups.[16] This scheme may have lured lower castes women to avail antenatal checkups.

Education

Education, is an important independent predictor positively associated with maternal health care utilization as highlighted in many studies in the developing countries.[33-37] Educated mothers are considered to have a greater awareness of the existence of maternal healthcare services and benefited in using such services.

In the present study, educated women had better odds of full antenatal care utilization though women's education was found to have an inverse relationship with both institutional delivery and postnatal checkup. This may be due to other contributing factors such as childhood place of residence, husband's educational level, socioeconomic environment, etc.[38,39] Magadi *et al*.[24] in their study have also found that there is no relationship between education of women and service utilization by using multivariate analysis. In the current situation, however, traditional beliefs and cultural practices and the overall lower level of education among the study subjects may have contributed to the variability in the use of health services.

Husbands' education

In addition to women's education, socioeconomic status, education of husband plays a significant role in influencing women's participation in various decisions within the household. Researchers have shown that having an educated husband increases the promotion of pregnancy-related health-seeking behaviors.[40-42] Likewise, in the present study, husbands' education was found to be significantly associated with maternal health care utilization.

Birth order

Many researchers have shown a strong relationship between birth order and utilization of maternal healthcare services.[33,36,43] Due to uncertainty and the perception of risk associated with first pregnancies, women are more likely to seek medical attention for first-order births than subsequent ones. Moreover, having a larger number of children may cause resource constraint, which has been found to be negatively associated with maternal healthcare service use.[44] In the present study too, having had a previous birth decreased the likelihood of having antenatal care. However, in the present case scenario, women with higher order births were more likely to utilize the institutional delivery and postnatal checkup. The possible explanation may be that the women with first-order births are more ignorant of the natal and postnatal services provided by health institutions. On the other hand, women who have had previous pregnancies had better experiences at health institutions during their previous deliveries, which made them opt for having their present delivery at health institutions rather than at home. Mahler in his study among multiparous women suggested that the more children women have the more they pay attention to taking care of their health during pregnancy.[45]

Barriers to health care utilization

The "barriers" to health care utilization were identified to explain why the target area continues to have low maternal health care utilization. And these barriers are largely involved in causing delays in service recipients getting adequate care from appropriate facilities.[46] The major reason identified in the study was ignorance to get themselves checked before, during or post delivery; and lack of awareness, which explains why many women consider availing antenatal and postnatal care services as low priority. Studies show that lack of knowledge and awareness about health-related issues lead to low demand of health care for the poor and marginalized groups.

A handful of the women who did not seek institutional delivery care stated that they were familiar with delivering at home like other women in their families. They also said that they would have opted for institutional delivery if they experienced any complications during labor.

Another key barrier perceived by the study women was distance to the secondary or tertiary level of health care facilities which may force the women to travel long distance seeking for care. The women's good intentions to utilize pregnancy-related health care may often be impeded by their inability to cover the cost of transportation.

In a country where health services are freely available, other indirect costs like bed stay, drugs and other supplies,

transport cost, food, accommodation and communication may serve as constraints to seeking health care. Financial difficulties have been considered as an important barrier to utilization of pregnancy related health care in the study women. A study in rural Tanzania found that women cited lack of money as a reason of delaying antenatal care.[47]

Thirty one women opined that past experiences with poor-quality care by health workers prevented them from seeking antenatal checkup during their present pregnancy. Poor behaviors of health professionals, excessive waiting times and embarrassing physical examinations may lead to women's misperceptions and lack of understanding regarding healthy behaviors and potential complications.

The present study is not without any limitations, which may lead to restraints while using the data. Only socio-demographic factors of women that were suitable for the study were selected from the data and other variables like mass-media exposure, women's autonomy/ decision-making power, family structure, distance to care health facility, pregnancy intention were not included. Secondly, the use of cross-sectional design for the study has the limitation of identifying associations and not causality. Further study, therefore, is necessary to examine the relationship between not only individual characteristics of women but also household as well as community factors and utilization of maternal health care services.

CONCLUSION

The present study revealed an unexpected low utilization of maternal health care utilization among the study population; especially in case of antenatal care. It also highlights the socio-cultural barriers impeding women's utilization of maternal health services in this part of the country.

The finding scan assist health managers to identify bottlenecks in the provision of services and can provide new insight for policy makers to devote resources for achieving the best possible quality of maternal and child health services as per the felt need of community.

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