Use of a Sub-district Hospital for Management of Obstetric Complications in Rural Bangladesh

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Abstract

In Bangladesh, the maternal mortality ratio is about 4.5 per 1000 live-births, which is one of the highest in the world. Pregnancy and childbirth-related complications are among the leading causes of mortality in women of reproductive age. This study was undertaken to assess the care-seeking behaviour of pregnant women with complications, and to examine the characteristics of women who seek care at the sub-district hospital, aiming at designing effective programmes for improving the quality of maternal health services in rural Bangladesh.

During October 1994-August 1995, information was obtained from 145 patients who came with obstetric complications to a sub-district hospital (Thana Health Complex (THC)) in rural Bangladesh. A structured questionnaire was used for collecting relevant data from the women in their homes. Information on the diagnosis made and the types of services provided at the THC was taken from the women and from the hospital register. Another 275 women, who had complications during pregnancy and childbirth but did not visit the hospital, served as the comparison group.

The results of the study showed that only 2.9 percent of the total number of pregnant women in the area used the hospital facility. More than four-fifths of the 145 patients who came to the sub-district hospital were admitted, while about one-fifth had to be referred to a higher-level facility due to lack of services, such as blood transfusion, caesarian section, or any other surgical manipulation. Forty-one percent of the women who came to the hospital were from the higher socioeconomic group, and almost three quarters had received some education. In the comparison group, 22 percent were from high-socioeconomic status, and 55 percent had no schooling. Thirty-eight percent of the women, who had complications but did not go to the hospital, did not know about it or about the services provided there. Over two-thirds of the patients who came to the hospital had received some antenatal care. About three-fifths (59%) came from a distance of more than seven kilometers. The decision to go to a hospital was made mostly by the husbands or the healthcare providers. Over four-fifths consulted one to three persons before coming to the hospital, and almost all had been examined internally. The comparison group in the community also sought help from several providers for their complications.

The findings of this study suggest that there is a need for awareness-raising efforts in the community regarding the danger signs of pregnancy and childbirth. Also, healthcare providers need to be trained and made aware of the complications, so that they can identify the complicated cases and make timely referral of women to the appropriate facilities.

Introduction

Complications relating to pregnancy and childbirth are among the leading causes of mortality in women of reproductive age in many parts of the developing world. Globally, it has been estimated that about half a million women die each year of pregnancy-related causes, and 99 percent of them die in developing countries [1]. About half of these deaths occur in South Asia [2].

Maternal mortality includes all deaths that occur among pregnant and postpartum women, except for deaths from "accidental or incidental causes" [3]. The tragedy of maternal mortality is a glaring manifestation of gender discrimination in health-related issues, and of the great disparity between developed and developing countries. In 1988, it ranged from 7 per 1000 live-births in the least-developed countries to 0.26 per 1000 live-births in the developed countries [1].

In Bangladesh, about 28,000 maternal deaths occur each year [4]. The current maternal mortality ratio in Bangladesh is estimated to be 4.5 per 1000 live-births, which is still very high even by the standards of other developing countries [5]. This persistently high maternal mortality ratio illustrates the risk that Bangladeshi women face during their reproductive life span [6]. In addition to the high risk of death associated with pregnancy and childbirth, women in Bangladesh are placed at an even greater risk because of the relatively high-fertility norm. Each time a woman becomes pregnant, she runs the risk of death. Maternal death is an important public health problem not only because of the large number of women die, but also because a traumatic effect of such an event on the child, the family, and the community as a whole.

It has also been estimated that for every maternal mortality there are at least 16.5 morbidities [7]. Some of the major ones include malnutrition and anaemia, infections, vescico-vaginal fistulae, utero-vaginal prolapse, diabetes, hepatitis, and morbidity resulting from operative deliveries and traditional practices [8]. Recent estimate suggests that the number of morbidities for each maternal mortality is much higher than 16.5, and may be as high as 100 morbidities for every pregnancy-related death [9].

Haemorrhage, eclampsia, obstructed labour, puerperal sepsis, and complications of abortion are the five major causes of maternal mortality in Bangladesh [8,10,11]. Each year, complications of unsafe abortion account for at least one in seven maternal deaths worldwide. All of these deaths mostly occur in developing countries and are preventable [12]. The total number of lifetime pregnancies, the interval between births, and sociocultural and economic circumstances in which women live--all affect maternal mortality and morbidity.

Although antenatal care is an acknowledged requirement for the reduction of maternal mortality [13], most women in Bangladesh do not perceive its necessity. About three-quarters of the women who gave birth in the 5 years preceding the Bangladesh Health and Demographic Survey, 1996-1997 did not receive any antenatal care [5]. For those who did, the median number of visits was 1.7, and it was mostly for tetanus toxoid (TT) immunization. Only 6 percent had four or more antenatal visits. Thus, except for TT immunization, other aspects of antenatal services are not virtually availed of. Again, only a negligible percentage of women use the Family Welfare Centre (FWC) or Satellite Clinic (SC) for antenatal care [14]. Access, availability, cost, choice and proximity of provider are the important determining factors in using the facilities, as is the issue of women's mobility. In many cases, the reasons for not using institutional facilities for delivery are fear, ignorance, or past negative experience [15].

Home-delivery is almost universal in rural Bangladesh. Almost 60 percent of these deliveries are assisted by traditional birth attendants (TBAs) without any midwifery training, and 26 percent by relatives. The deliveries take place in very unsafe and unhygienic conditions. Eight percent of the deliveries are, however, attended by medically trained personnel [5]. Although the government has provided training for the TBAs, it has been observed that their services are not properly used [16]. Also, a wide gap still exists between the contents of the TBA training and the actual practices of the TBAs even after they have received training [17,18]. Despite the preventive approaches taken so far (e.g. identification and referral of high-risk pregnancies, provision of antenatal and postnatal care, and extensive TBA training for providing clean delivery services), the maternal mortality in Bangladesh is still high.

Significant reduction of maternal mortality requires accessible medical facilities. It has been observed that identification of high-risk pregnancy during the antenatal period alone cannot reduce maternal mortality, since every woman is at risk for developing complications during pregnancy and childbirth [4]. Approximately, 15-20 percent of women who become pregnant develop serious complications that are hard to predict or prevent. Thus, two important lessons were learned from experience and research: (a) all pregnant women are at risk of serious obstetric complications; and (b) maternal mortality cannot be substantially reduced, unless women have access to emergency obstetric care [4].

The maternal and child health (MCH) programme in Bangladesh has historically lacked a comprehensive approach [19]. Until the late fifties, MCH services included only obstetric care provided by urban-based hospitals and clinics. In the sixties, rural Mother and Child Welfare Centres (MCWCs) were established. In the mid-seventies, this responsibility was handed over to the Directorate of Family Planning (DFP). The thrust of the fourth five-year plan (1995-2000) of the Government of Bangladesh (GoB) was to further decentralize the services. The programme elements that were proposed to be carried out during the 1995-2000 period for reduction of maternal mortality in Bangladesh [4] are shown in Table 1.

Table 1. Programme elements for reducing maternal mortality during 1995-2000

Programme level	Programme activity
District	Comprehensive Emergency Obstetric Care (EOC) - All basic EOC functions - Caesarean sections - Blood transfusion
Thana	Basic EOC - Oxytocics (injection) - Antibiotics (injection) - Anticonvulsants (injection) - Manual removal of placenta - Assisted vaginal delivery Refer and arrange transport Vacuum aspiration
Union	Obstetric first-aid - Ergometrine (injection) - Antibiotics (injection) - Anticonvulsants (injection) Refer and arrange transport Vacuum aspiration
Community	Community education - Recognition of complications - When to seek medical care - Where to go for medical care Community mobilization - Arrange transport and finances - Arrange for blood donors

However, despite the existence of a reasonably good infrastructure for MCH services, their use, specially at the sub-district (thana) and community level, is poor. A recently-conducted study reports that only 39 percent of the district hospitals function as comprehensive EOC facilities, 56 percent of the Thana Health Complexes (THCs) render basic EOC services, while none of the 50 sample FWCs in the study provided first-aid EOC [20]. With the existing facilities, the availability of EOC services and the proportion of institutional delivery are far below the recommended "minimum acceptable level" of 15-20 percent of the total number of births which are expected to be complicated and need medical assistance [4]. A functional linkage between the grass-roots workers, such as the Family Welfare Assistants (FWAs), the Family Welfare Visitors (FWVs), and the TBAs, is almost absent.

Objective

The present study was undertaken to assess the healthcare-seeking behaviour of pregnant women with complications, with the aim of designing effective programmes for improving maternal health services in rural Bangladesh.

Specific aims

(a) To assess the comparative care-seeking behaviour of pregnant women with complications before coming to the sub-district hospital (THC), and of those women who had complications but did not come;

(b) To examine the characteristics of pregnant women who sought care at the THC, and the factors influencing this; and

(c) To assess the pattern of obstetric cases and the types of services provided at a sub-district hospital.

Methodology

Study design

This descriptive study was conducted in two steps. At first, the emergency and indoor maternity unit registers of the THC were reviewed. Obstetric patients with complications, such as incomplete abortion, bleeding, prolonged or obstructed labour, etc., admitted to the THC or referred to a higher centre, were identified and interviewed at their homes. Then, a comparable group of women from the community, who had complications but did not go to the THC for management, were also interviewed.

Data source

The data for this study were collected from three different sources: (a) THC registers from October 1994 to August 1995 to determine the patterns of obstetric cases admitted to and referred from there; (b) patients who came to the THC with obstetric complications during October 1994-August 1995; and (c) women in the community who had complications during pregnancy and childbirth during the same period but did not go to the THC. Relevant data from both the groups of women were collected through home-based interviews using a structured questionnaire. The diagnosis made and treatment given at the THC were as well recorded from the registers.

Study site

The study was conducted in Mirsarai thana (sub-district), a low-performing area in terms of health and family planning indicators in Chittagong district, which is located in the south-eastern part of Bangladesh. Mirsarai is one of the field sites of the Operations Research Project (ORP) of the ICDDR,B: Centre for Health and Population Research. It is a large thana, comprising 16 unions, having a total area of 483 sq. km. and a population of over 3,45,853 [21]. According to the crude birth rate of about 30 per 1,000 population, the number of annual expected births in the area is about 10,376. More than three-quarters of the population in the area are Muslims, and the rest are either Hindus, Buddhists, or Christians. People rely primarily on farming and business for their livelihood. The literacy rates at 45 percent for males and 29 percent for females are higher than the national average [21].

The Mirsarai THC has a two-storied building with in-patient and out-patient units. In addition to the out-patient rooms and patient wards consisting of 31 beds, the THC has a delivery room, an operation theatre, a small laboratory, an immunization room, an MCH room, and an X-ray room. At the time of the study, in absence of any separate maternity ward or room, obstetric patients stayed in the general female ward, a corner of which housed the delivery room which was dirty and poorly equipped. Instruments that were available were good only for normal delivery. Electricity failure was a constant feature. There was neither a generator in the hospital nor a clinical waste disposal facility. No separate room was provided for eclampsia patients, and the facility was grossly inadequate to provide quality obstetric services [22].

Study population

In total, 3,129 patients were admitted to the THC during October 1994-August 1995. Of them, 221 were admitted for maternity care; of them, only 145 women were available for interview. The patients who were not available for interview either came from neighbouring thanas having admitted to the THC because they had come to their fathers' homes in Mirsarai to deliver, some had migrated elsewhere, or they had given incomplete addresses at the time of admission to the THC.

The comparison group consisted of 275 women in the community who had complications during pregnancy and childbirth, but did not go to the THC for services. They were identified from the Sample Registration System (SRS) of the Project. The SRS is a longitudinal data collection system of the ORP, which conducts a longitudinal surveillance of demographic, health, and family planning behaviour of the population in a given area of the Project [23]. The women of the comparison group women were also interviewed at their homes.

Data collection

Indepth interviews of both THC users and non-users were conducted using a structured questionnaire. The questionnaire was pre-tested in the field, and necessary adjustments were made before it was implemented. The female Field Research Officers of the Project conducted the interviews of the THC users, while the female SRS interviewers conducted the interviews of the THC non-users. Although all the interviewers are experienced in conducting interviews, they were given additional training for conducting the interviews and were supervised by a Medical Officer. Univariate and multivariate analyses were done to assess the relationships between different variables.

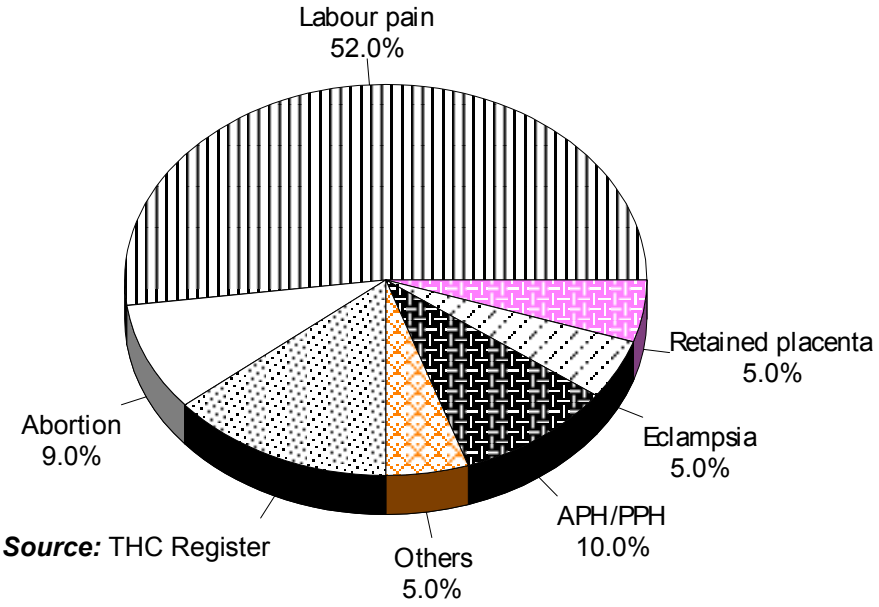
Results

Patterns of obstetric patients and admissions

A review of two THC registers (emergency and maternity registers) showed that, during October 1994-August 1995, 221 obstetric cases were admitted which is only 7 percent of the total admissions at the THC. This number represents again only 2.3 percent of the total pregnancies expected in the Mirsarai thana. This was calculated considering the crude birth rate to be 30 live-births per 1,000 population [24]. Eighty-six percent of the obstetric cases were admitted to the hospital, while 14 percent were referred to the district hospital. On an average, only 20 obstetric cases were admitted at the THC every month.

The majority (52%) of the women came with labour pain. These were actually cases of prolonged labour as revealed from subsequent discussions with the doctors and the patients. In this study, labour was considered to be prolonged when it lasted for more than 12 hours. Obstructed labour constituted the second largest group, followed by incomplete abortion and bleeding. Some severe cases of eclampsia, bleeding (antepartum haemorrhage, postpartum haemorrhage) and obstructed labour were referred to higher facilities (Table 2). The patterns of obstetric cases, including those referred to, are shown in the Figure 1.

Fig. 1. Profile of obstetric cases (n=221) at the THC, Mirsarai, October 1994-August 1995



Source: THC Register

Table 2. Distribution of obstetric cases (n=221) admitted to and referred from the THC during October 1994-August 1995

Type	Total (n=221)	Ecla-mpsia (n=12)	APH/ PPH* (n=21)	Retained placenta (n=11)	Obstructed labour (n=31)	FTP/ LP** (n=114)	Abortion (n=20)	Others (n=12)
Admission	190	10	15	10	17	107	20	10
Referral	31	2	6	1	14	7	0	2

* APH/PPH Antepartum haemorrhage/postpartum haemorrhage
**FTP/LP Full-term pregnancy with labour pain

Characteristics of women

Age

The mean age of the THC users was 24.9 years (range: 16-45), while that of the non-users was 27.4 years (range: 17-45). The age distribution of the women, both in study and comparison groups, is given in Table 3. As shown, 20-24 year old patients represented the largest proportion (40.7%) among the THC users compared to only 26.9 percent in the comparison group. Younger women were more likely to attend hospitals ($p<0.01$).

Education

Thirty percent of the THC users had 1-5 years of schooling, and 40 percent had received schooling of over six years. In the comparison group, only 25 percent had received one to five years of schooling, and 20 percent had schooling over six years. Another 30 percent of the THC users did not receive any schooling, while the corresponding figure in the comparison group was 55 percent. This difference was significant ($p<0.001$).

Husbands' education

A majority (54%) of the husbands of the women who utilized the THC services had received 6 or more years of schooling. Thirty-five percent had one to five years of schooling, and only 11 percent received no formal education. In the non-users group, 49 percent had no schooling, 24 percent had primary education, and only 27.5 percent had received 6 or more years of schooling (Table 3). More women whose husbands had education used the THC services ($p<0.001$).

Women's occupation

The occupations of the women in the study and comparison groups were similar. Ninety-three percent of the women in both the groups were housewives, while 7 percent were working either as handicraft makers, teachers, or students. Thus, it is clear that very few women in the study were working outside their homes.

Husbands' occupation

Forty-four percent of the husbands of the THC users were either service holders (employed in mills or factories, teacher or working in offices) or doing small business, whereas 42 percent of the non-users were farmers. Of the non-users, only 17.6 percent were service holders.

Table 3. Percentage distribution of THC users and non-users by socio-demographic characteristics

Characteristics	THC users (n=145)	Non-users (n=275)
Age (in years)*		
<20	11.0	10.6
20-24	40.7	26.9
25-29	24.8	25.1
30 and above	23.5	37.4
Women's education**		
No schooling	30.0	55.0
1-5 years	30.0	25.0
6 and above	40.0	20.0
Husbands' education**		
No schooling	11.0	48.5
1-5 years	35.2	24.0
6 and above	53.8	27.5
Husbands' occupation**		
Service	44.1	17.6
Business	29.0	22.3
Farmer	17.2	42.1
Others	9.7	18.0
Number of pregnancies		
1	45.5	30.7
2-3	31.1	33.0
4-5	11.0	21.1
6 and above	12.4	15.2
Religion*		
Muslim	72.7	81.0
Non-Muslim	27.3	19.0
Socioeconomic status**		
High	41.0	22.0
Middle	53.0	77.0
Low	6.0	1.0

*p<0.01; **p<0.001

Number of pregnancies

About 45 percent of the THC users coming with complications were primi para. The mean number of pregnancies among them was 2.6 (range: 1-13). Among the non-users, the mean number of pregnancies was 3, and only 31 percent were primi cases.

Religion

About 73 percent of the THC users were Muslims, whereas 27 percent were non-Muslims. In the comparison group, the corresponding figures were 81 percent and 19 percent respectively. While comparing the proportion of Muslims and non-Muslims in the study population and in the comparison group with that of the total population of Mirsarai, it appeared that about 27 percent of the THC users were non-Muslims ($p<0.01$).

Socioeconomic status

The socioeconomic status of the respondents was assessed in terms of the estimated amount earned by a family. The SRS interviewers were trained to convert all earnings, even those in kind, into cash income. The respondents whose monthly family income was Tk. 4,000 or more were placed in the high-economic status group, those with an income between Tk. 1,000 and Tk. 4,000 in the middle economic status, and those whose income was less than Tk.1,000 in the low-economic status group. Forty-one percent of the users belonged to the high-socioeconomic status, 53 percent to the middle income group, and only 6 percent to the low-income group. In the comparison group, 77 percent were from the middle income group.

Antenatal care/advice

About 50 percent of the THC users in this study received some kind of antenatal care or advice, such as nutrition during pregnancy, clean and hygienic delivery, breastfeeding, immunization, etc., from the THC (Table 4). In the comparison group, only 17.4 percent received such care. Also 86 percent of them received some ANC advice from the FWAs or TBAs at home. Thirty-one percent of the women in the study group received no ANC, and this was a little more than a quarter in the comparison group.

Table 4. Percentage distribution of THC users and non-users by place of antenatal care

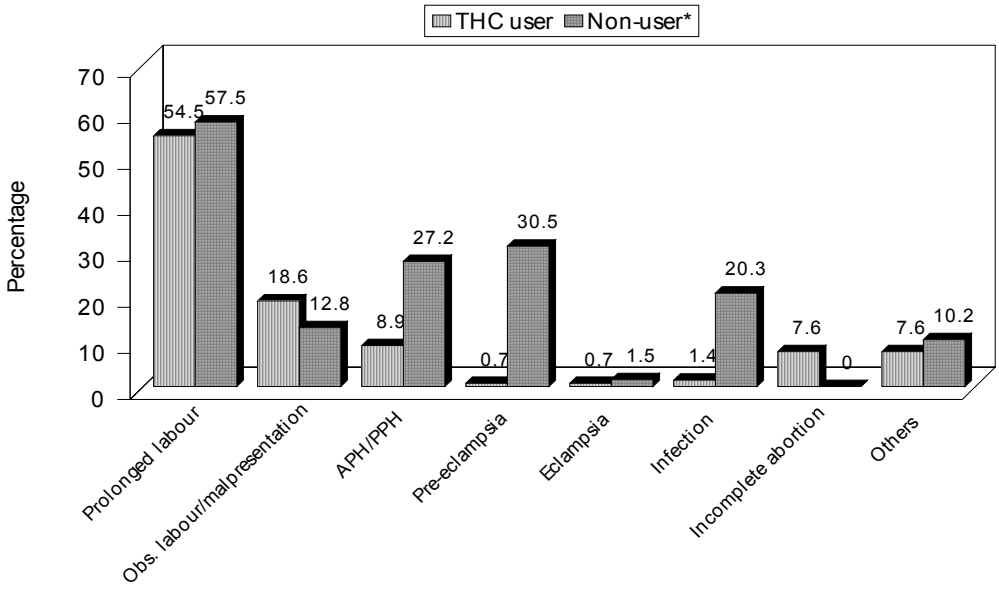
Source of ANC	THC users (n=129)	Non-users* (n=275)
THC	50.4	17.4
FWC	3.1	6.5
SC	3.1	3.5
EPI centres	1.6	29.4
Home	1.6	86.1
Others	9.3	12.5
Not received	31.0	26.9

*Some women received ANC from multiple sources

Obstetric complications

The types of complications that women experienced, both in study and comparison groups, are shown in the Figure 2. Most women had prolonged labour pain in both the groups (55% and 58% respectively). About one-fifth (18.6%) of the patients were admitted to the THC with obstructed labour or malpresentation. As can be seen from the figure, not many were admitted with pre-eclampsia or eclampsia, while about 31 percent in the comparison group had experienced these complications. It may be that these women considered swelling of the legs or headache as a part of normal pregnancy and, thus, did not seek any medical help. Other complications experienced by the respondents in both the groups include retained placenta, sepsis, abdominal pain in the early months, and false labour pain. More women with obstructed labour came to the THC, while 27.2 percent of the THC non-users had antepartum or postpartum haemorrhage (APH/PPH) but did not come for help.

Fig. 2. Obstetric complications among the THC users and non-users



* More than one complications were often cited by the non-users

Outcome of the current pregnancy

About 72 percent of the deliveries at the THC were live-births compared to 88 percent of those conducted at home ($p<0.001$) (Table 5). Although the women in the comparison group complained of having complications, a majority (71.7%) had live-births, and there were only 4 percent still-births compared to almost 12 percent still-births at the THC. Of the 145 patients who visited the THC, 29 percent were referred to a higher facility. Of those referred were patients with complications of abortion, severe abdominal pain, and obstructed labour. Of the cases that delivered at a referred hospital, 14 were live-births, 4 still-births, and 2, though born alive, died just after birth.

Table 5. Percentage distribution of THC users and non-users by pregnancy outcome

Outcome	THC users (n=145)	Non-users (n=275)
Born alive	71.7	88
Still-birth	11.7	4
Abortion/miscarriage	10.3	8
Others	6.3	0

Decision to go to the THC

Table 6 shows that the women's husbands played an important role in deciding to take them to the THC. Also, 28 percent of the cases were referred to by the service providers after having convinced the family members of the severity of the complications. However, 10 percent of the women made their own decision to go to the THC.

Table 6. Percentage distribution of THC users by decision-makers

Decision-maker	THC users (n=145)
Self	10
Husband	28
In-laws	12
Relatives	22
Providers	28

Distance from the THC

Eighty-three percent of the THC non-users and 59 percent of the THC users resided more than 7 kms away from the THC. However, the mean distance of the THC users and non-users' homes from the THC were 10.6 kms and 14 kms respectively. Only one-third of the users came from a distance of less than 6 kms (Table 7). The main mode of transport to the THC was the autorickshaw (64%), a common means at Mirsarai. Rickshaws were used by 23.4 percent of the users, while 7.5 percent came by cars or ambulances.

Table 7. Percentage distribution of the distance between the THC and the women's homes

Distance	THC user (n=145)	Non-user (n=275)
0-5 kms	31	0
6-7 kms	10	17
>7 kms	59	83

Time of arrival at the THC

Sixty-three percent of the women reached the THC within 24 hours of the onset of the complications, while 9 percent delayed more than 5 days and tried different interventions at home (Table 8).

Table 8. Percentage distribution of the time gap between onset of complications and arrival at the THC

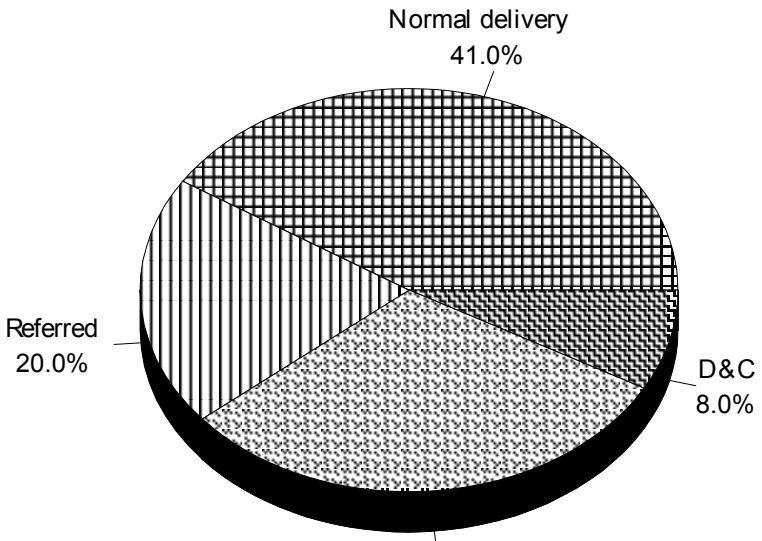
Duration	Percentage of women (n=145)
<24 hours	63
1-2 days	14
3-5 days	14
>5 days	9

Obstetric services provided at the THC

Of the 145 patients interviewed, 41 percent had normal delivery, while 26 women needed episiotomy. About eight percent needed dilatation and curettage (D&C) for incomplete abortion. Twenty percent had to be referred to the district hospital for better management (Fig. 3) as the THC was not equipped to do forceps delivery, caesarean section or blood transfusion, etc.

Of the remaining patients, two were treated for retained placenta, and the rest were given oral medication, injections, or intravenous fluids. Of those who attended the THC for the treatment of complications, 29 percent had some complaints, such as fever, burning micturition, episiotomy stitch infections, etc., after returning home from the THC.

Fig. 3 . Measures taken for obstetric patients (n=145) at the THC



Source : THC Register

Advice given on discharge

As shown in Table 9, 72 percent of the respondents received advice for follow-up visit. Also, nearly a quarter of the THC users mentioned that they were given advice on breastfeeding prior to discharge. Only 4 percent of the women were informed about child immunization and contraceptives.

Table 9. Percentage distribution of the THC users according to the advice given on discharge from the THC

Type of advice	THC users* (n=145)
Breastfeeding	22
Immunization	4
Weaning food	8
Contraception	8
Return visit	72
No advice	17
Others	20

*Multiple responses were accepted

Care-seeking behaviour of both THC users and non-users

Almost 87 percent of the THC users had sought help from different service providers before they went to the THC (Table 10). Most of them had gone to two or three providers. They also preferred to consult untrained providers.

Table 10. Percentage distribution of the THC users (n=145) according to their care-seeking patterns before going to the THC

Provider	1st visit	2nd visit	3rd visit
UTBA*	42.8	1.4	-
TTBA**	24.1	1.4	2.0
Village doctor	11.0	13.1	12.4
Homeopath	2.0	27.6	4.1
Relatives	-	1.4	4.1
MBBS doctor	1.4	2.0	2.0
Nurse	2.0	1.4	3.4
FWV	2.0	4.8	3.4
Religious healer	1.4	9.0	2.8
None	13.1	-	-

*UTBA Untrained traditional birth attendant
**TBA Trained traditional birth attendant

The THC non-users also sought the services of two or three providers (Table 11). About 20 percent of the respondents consulted the UTBA, while another 11 percent consulted relatives. About 18 percent of the women consulted no one, and delivered on their own. A small percentage used the services of trained personnel, such as FWV and qualified medical doctors. About 36 percent took the help of village quacks, while the homeopath and religious healers were consulted by more than one quarter of the women.

Table 11. Percentage distribution of the THC non-users according to their service-seeking behaviour

Type of person consulted	Percentage of women* (n=275)
UTBA (at client's home)	20.4
TTBA (at client's home)	10.2
Consulted relatives	10.9
FWV at client's home/FWC/SC	5.9
Quack/village doctor	35.6
Homeopath	16.4
Kabiraj/religious healer	10.2
MBBS doctor	6.5
Others	4.0
None	17.5

*Multiple responses were accepted

Measures taken by the persons consulted

Ninety percent of all the women were examined internally, and 70 percent of these examinations were done by the TBAs. Thirty-one percent of the women stated that the village doctors gave them injections only, and most of them did not know what the injection was for. More than 33 percent of the THC non-users got homeopathic medicine, and another 13 percent received "sacred water" from local religious healers. The findings show that rural women are quite dependent on homeopathic treatment, although qualified allopathic practitioners are available in the community.

Knowledge about the THC

Thirty-eight percent of the 275 women, who had experienced complications during childbirth but did not go to the THC, did not know about its existence or the services provided there. Of those who knew, less than one-fifth had been informed about it by the government field workers (FWA) or paramedics (FWV) (Table 12). More than 80 percent heard about the THC from their family members.

Table 12. Percentage distribution of the THC non-users according to their source of information about the THC

Source of information	Percentage of women* (n=170)
FWA	15.7
TTBA	3.9
UTBA	3.9
FWV	2.0
Husband	9.8
Relatives	70.6
Quack	5.6
Others	3.9

*Multiple responses were accepted

The women who knew about the THC but did not go there mentioned several reasons for not having visited the facility. These included apprehension about hospitals, distance to the THC, the expense involved, and prohibition by members of the family. Some women did not think that their complications were serious enough to go to a hospital, as they thought it was usual to have these problems.

Delivery attendants of THC non-users

Sixty-nine percent of the women who did not go to the THC delivered at home with the help of the UTBA or relatives, while 22 percent used the trained TBA (Table 13). The FWVs and the MBBS doctors attended only five percent of the deliveries altogether. Most deliveries (96%) took place at home. The remaining women had complications related to abortion, such as lower abdominal pain, and bleeding.

Table 13. Types of providers who attended the deliveries of the THC non-users

Type of provider	Percentage of deliveries (n=275)
UTBA	42.2
TTBA	22.2
Relatives	20.7
FWV	4.0
Quack	0.4
MBBS doctor	1.1
Other	9.5

Factors associated with THC use

A logistic regression analysis was carried out to identify the socio-demographic variables that influenced women to go to the THC for maternity services. The results, by and large, confirmed the findings of the bivariate analyses as shown in Table 14. Women aged 25 years or less were more likely to go the THC for maternity services compared to those aged over 30 years ($p<0.01$). Also, husband's education had a significant effect on the wife's THC use. Women, whose husbands had completed primary school education**,** were more likely to use the THC than those whose husbands had received no education ($p<0.001$). Women of higher socioeconomic status were more likely to utilize health services ($p<0.001$). Husband's occupation was positively and significantly related with the wife's use of the THC services. Wives of the service holders were more likely to use the THC services than the wives of the farmers ($p<0.001$). The analysis also showed that the distance from the patient's residence to the THC significantly affected the THC use. Patients who resided seven kms or less away from the THC were more likely to go to the THC for maternity services than those who lived more than seven kms away from the THC **(**$p<0.001$).

Table 14. Association between THC use and socio-demographic factors

Factors	Odds ratios	Factors	Odds ratios
Age (in years)		**Socioeconomic status**	
≤25	2.58**	Low	1.18
26-30	1.33	Medium (RC)	1.00
>30 (RC)†	1.00	High	1.69***
Woman's education		**Mobility**	
No education (RC)	1.00	Yes	2.05
Primary	1.50	No (RC)	1.00
Above primary	1.62	**Husband's occupation**	
Husband's education		Service	4.14***
No education (RC)	1.00	Business	2.32
Primary	6.99***	Farmer and others (RC)	1.00
Above primary	4.99***	**Distance from THC**	
		≤7 kms	2.84***
		>7 kms (RC)	1.00

†RC Reference category
* p<0.05; **p<0.01; ***p<0.001

Discussion and Conclusion

This study compared the care-seeking behaviour of two groups of rural Bangladeshi women. One group of women had obstetric complications and went to a rural hospital (THC) for services, and the other group had obstetric complications but did not use the services of the THC. The findings of this study show that the proportion of deliveries at hospitals in rural Bangladesh is extremely low and is in accordance with the national study [5]. Women do not generally go to a hospital unless they have serious obstetric complications; they occasionally do so only after consulting several other service providers in the community. They do it because they and their relatives do not recognize complications which need an urgent medical attention. Thus, most come late to the health facilities leading to the grave situation of maternal health in Bangladesh.

The total number of obstetric patients admitted to the THC represents only 2.9 percent of the total pregnancies expected in the area during the study period. On an average, only 20 obstetric patients were admitted to the THC every month. However, in consistence with the demographic profile of Mirsarai, if 15-20 percent of all pregnancies in a year are expected to have complications [5], this number should be more than 1,500 in the area and the corresponding monthly figure should be 130.

An analysis of the findings of the study indicate that rural mothers still depend on untrained female personnel for their deliveries, and home delivery is almost universal. The community depended on the services of untrained TBAs, village practitioners, homeopathic practitioners and religious healers rather than qualified medical practitioners. A large number of the mothers in the study consulted one to three persons, mostly untrained, for their obstetric complications, even if they went to the THC at the last moment. Unnecessary and dangerous internal examinations and other manipulations were performed by these unqualified persons. Internal examination can often be harmful especially in case of placenta praevia [25]. However, this study showed that women in the community preferred to depend on these people whom they consider close to them, irrespective of their qualification. This study also showed that only a small percentage of women in the community was informed about the THC by the service providers. Since the traditional practitioners provide 70-80 percent of healthcare to rural dwellers [26], it may be important to orient them on when to "let go" and refer their patients for appropriate medical help. Also, the fact that the TBA training has not done much to improve the practices of the TBAs suggests that too much may be expected from the TBA training, and its effect on maternal health requires further research [18].

Women aged 20-24 years represented the largest proportion (41%) among the THC users compared to only 27 percent in the comparison group. This points out that younger women are more likely to visit hospitals. This finding is comparable with the findings of Bhatia,1991 [27]. Another interesting finding of the study is that the non-Muslims utilized the services of the THC more than the Muslims ($p<0.01$). This again points out that even with the threat of serious health consequences, "purdah" or seclusion practised by Muslim women may pose a barrier to seeking services available at the rural hospitals.

Higher socioeconomic status and education are other factors that influenced the THC use. More than two-fifths (41%) of the THC users were from the higher economic group, and more than half (53%) belonged to the middle income group. Two-fifths (40%) of the respondents had more than 6 years of education. Although bivariate analysis showed a significant difference in the use of THC services by the more educated women than those with fewer years of schooling; however, this was not significant in the logistic regression. Husband's education was significantly related to the wife being taken to the THC for services. Thus, it may be inferred that where the husband is educated, the wife is more likely to be taken to the THC for services, and the woman's education is perhaps linked to THC attendance through her husband's education. Again, it was found that more than two-fifths (44%) of the husbands of the THC users were service holders compared to less than one-fifth (18%) of those of the non-users who were in service. This suggests that occupation also plays an important role in men's attitudes toward their wives' welfare. Very few women in the study area were working outside their homes, and this had no effect on the use of services.

Husbands and in-laws in the study were found to play a vital role in the decision-making process, and the decision-making power of the women was limited. Findings of a recent study also showed that mothers-in law played a more dominant role than husbands in decision-making [20]. Since education has a link to decision-making efforts, widespread education of women is important, specially in the context of rural Bangladesh.

The present study showed that 45 percent of the THC users who received services for pregnancy-related complications came for their first delivery. This indicates that women are more concerned for their first pregnancy than the subsequent ones ($p<0.01$). This may also be related to the fact that primi parae tend to be younger and are, therefore, more susceptible to complications during pregnancy and childbirth [25].

More than half (50.4%) of the THC users had received antenatal care from the THC compared to less than one-fifth (17.4%) of the women in the comparison group. In the comparison group, more than one quarter received only tetanus toxoid as ANC. Thus, it may be inferred that women who received ANC from the THC were more informed about the maternity services provided there, and had gone back for safe delivery.

It was evident from the study that very little is told about child immunization and contraception at the time of discharge from the THC, and only one-fifth of the respondents were given advice about breastfeeding. Women coming with abortion-related complications were also not told about contraception. Complications of unsafe abortion are responsible for 25-50 percent of maternal deaths [28]. Safe contraception could probably result in a reduced number of maternal deaths [29]. A recent study has also shown that about 15 percent of women undergo repeat abortions [22]. Thus, post-abortion contraceptive counselling needs to be strengthened as has been amply emphasized at the ICPD [1].

Among the obstetric complications presented at the THC, prolonged or obstructed labour, haemorrhage, sepsis, and eclampsia were common. Most women in both the groups had prolonged labour, and about one-fifth (18.6%) were suffering from obstructed labour or malpresentation. The results of this study show that not many were admitted with pre-eclampsia or eclampsia, and only nine percent came with bleeding. This indicates that obstructed labour/malpresentation may have been recognized as serious problems, while haemorrhage and pre-eclampsia not considered so serious. However, an analysis of 20,119 hospital deliveries in Dhaka showed that the maternal mortality of 25/1,000 live-births was largely due to eclampsia [30]. A relatively high incidence of eclampsia and maternal and perinatal loss are considered to be related to lack of antenatal care and late referral to hospital [31]. That 38 percent of the THC non-users did not know about the existence or about the services provided at the THC calls for raising awareness among the community people. Information regarding the danger signs of pregnancy and childbirth given to pregnant women and their relatives can be an important step in awareness raising.

Four major steps require attention when a woman has an obstetric complication. The first step is the recognition of the life-threatening complications by the woman and her family, the TBA or other providers who cannot manage the complication. The second is the decision to seek care, typically made by family members other than the woman if she is in poor condition. Once the problem is recognized, the third step is to overcome impediments to accessing services, such as distance, lack or cost of transport, geographical or weather constraints, and the perceived poor quality or attitude of the providers. The last step is the quality of care available and provided once services are accessed [32].

Therefore, along with the awareness-raising efforts for the woman and her family, the healthcare providers in the community also need to be trained and made aware of the complications. Results of research show that community-based approaches, such as family planning, and training and use of midwives, reduce maternal mortality in areas where mortality is high. The findings of an ICDDR,B study [33] suggest that maternal survival can be improved by posting midwives at the village level, if they are given proper training, means, supervision, and back-up. However, awareness-raising efforts are needed to be supplemented by the appropriate referral and linkage system between the community and the health facilities. Several authors have recently advocated emphasis on case management for the prevention of obstetric complications [34]. This must start at the health facility, where attending nurses and midwives should be oriented toward pregnancy-related problems with appropriate supervisory support [35].

In the present study, about 20 percent of the patients were referred from the THC to a higher facility due to lack of services at the THC, such as blood transfusion and caesarean sections. Thus, health facilities at the local level also need to be equipped to handle emergency obstetric cases.

Policy Implications

Results of this study clearly show that there is a strong need for awareness-raising efforts in the community regarding the danger signs of pregnancy and childbirth. As the literacy rate in rural Bangladesh is low, pictorials can be used to raise such awareness. Healthcare providers as well need to be trained and made aware of the pregnancy and childbirth-related complications, so that they can identify the complicated cases and make timely referrals to appropriate facilities. And finally, selected rural hospitals need to be equipped to handle emergency obstetric cases, so that maternity services can be brought closer to the community.

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