Knowledge and Use of Essential Obstetric Care Services in a Rural NGO Working Area: A Baseline Report

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Executive Summary

Globally, an estimated 585,000 women die each year due to pregnancy and delivery-related complications, 99% of them die in developing countries. In Bangladesh, the current maternal mortality ratio is 4.3 per 1,000 live-births. Hemorrhage, unsafe abortion, eclampsia, puerperal sepsis, and prolonged labour are the major causes of maternal deaths. In the context of maternal morbidity, the situation is even more alarming.

The Health and Population Sector Programme (HPSP) of the Ministry of Health and Family Welfare (MOHFW) aims to improve the quality of life by reducing fertility and improving family health through delivery of Essential Service Package (ESP). The Operations Research Project (ORP) of ICDDR,B, one of the partners of National Integrated Population and Health Program (NIPHP), is responsible for designing and testing a sustainable service-delivery system for partners through conducting operations research. As part of NIPHP, the ORP is mandated in designing and testing the intervention, 'Modified strategy for ensuring referral and linkage for EOC' in the GoB field sites; the ORP is also mandated to test the intervention at the Rural Service Delivery Partners' (RSDP) sites. The RSDP selected the Bangladesh Association for Maternal and Neonatal Health (BAMANEH), a rural service-delivery non-government organization (NGO), to test the intervention.

A cross-sectional survey was conducted in the working area of BAMANEH at Chandina upazila as baseline, with the objectives to (i) ascertain the knowledge of women and their husbands on obstetric complications and facilities for management of such complications, (ii) assess the knowledge of women on the necessity of antenatal care, TT vaccination, and postnatal care, (iii) assess the coverage of antenatal, postnatal, and delivery care, and (iv) examine the healthcare-seeking behaviour (types of care providers) of women regarding reported complications of pregnancy and childbirth.

A total of 895 women with a history of pregnancy outcome during last one year preceding the date of interview and their husbands were interviewed. Two separate sets of a structured questionnaire having both closed and open-ended questions were used. The interviews were conducted during August-October 1999, by the female interviewers for women and the male interviewers for husbands.

The findings of the RSDP baseline survey showed that 76% of both women and their husbands were knowledgeable about prolonged labour as a complication of childbirth. Two-fifths of the women and 30% of the husbands knew about malpresentation. Knowledge of severe bleeding during the postpartum period was higher among the husbands than their wives. However, knowledge of life-threatening complications, such as bleeding during pregnancy and/or delivery, premature rupture of membrane, convulsion, retained placenta, and postpartum infection, was poor among both women and their husbands. The majority of women and their husbands were aware of the GoB facilities where essential obstetric care (EOC) services are available for the management of obstetric complications, while only 5-10% of the women and their husbands knew about the BAMANEH clinic. A little more than a quarter (28%) of users were also aware of the availability of trained traditional birth attendants (TBAs) nearby. Only 14% of the women and 28% of the husbands reported depot-holders (DHs) as a source of information about TTBAs. Only 19% of the women reported receiving information about taking assistance from TTBAs during delivery.

With regard to antenatal care, 58% of the women reported receiving such care from the trained providers, such as paramedics, nurses, MBBS doctors, and/or visited institutional facilities. Of the women who received antenatal care, 27% received three or

more visits. However, antenatal care contacts from the depot-holders and community mobilizers (CMs) were minimal. Women's knowledge of having TT vaccine during pregnancy was found universal, and two-thirds of them knew that TT vaccine protects both mother and baby from tetanus. The findings showed that 11% of the deliveries were attended by the TTBAs, and only 3% either by the paramedics or nurses, and /or medical doctors. Comparatively more women than their husbands were undecided about the place for delivery and birth attendant for conducting delivery for their last pregnancy. The coverage of postnatal care was also limited.

Thirty-five percent of the women reported experiencing their recent pregnancy and/or childbirth-related complications. A small percentage of the women with obstetric complications sought care from the trained providers and/or visited the health facilities. The majority of the women consulted the village practitioners for the management of their obstetric complications. More than a quarter of the women did not seek care for pregnancy (27%) and/or delivery-related complications (26%), and only 12% did so for postnatal complications. Husbands were the decisions-makers for seeking care for the management of pregnancy (65%), delivery (51%), and postnatal (69%) complications. Thus, involvement of a male, husband in particular in reducing delays in decision-making for the use of EOC services, is important in increasing the use of institutional facilities and trained providers for EOC services.

It may be concluded that enhancement of the knowledge of women and their husband on symptoms of obstetric complications which require care from the medically-trained providers is essential. Although the majority of the women were knowledgeable about the facilities for the management of such complications, very few used them. Therefore, behaviour change activities need to be strengthened, focusing younger women and husbands. Use of a pictorial card depicting the pictures of pregnancy and childbirth-related complications and involvement of formal and informal group leaders need to be instituted for raising community awareness regarding obstetric complications. Village practitioners who are consulted first for the management of obstetric complications need to be oriented in referring clients with complications to the appropriate facility.

Introduction

Globally, an estimated 585,000 women die each year due to pregnancy and delivery-related complications. In developing countries, 1 in 48 women dies of pregnancy and childbirth-related complications compared to 1 in 1,800 in developed countries (1). Although most pregnancies of healthy mothers end with the birth of a live baby, in many occasions, childbirth is a time of pain, fear, suffering, and even death. In Bangladesh, the current maternal mortality ratio is 4.3 per 1,000 live-births (2). Hemorrhage, unsafe abortion, eclampsia, puerperal sepsis, and prolonged labour are the major causes of direct obstetric deaths. Majority of these deaths could be avoided if women could have access to and use of emergency obstetric care (EOC) services.

Despite the existence of health service facilities, the use rate of services, particularly obstetric care services, is still very low in Bangladesh. Most mothers do not receive any antenatal care (ANC), and home delivery is almost universal. Ideally, all pregnant women should have regular antenatal checkups either by a paramedic or by a doctor. The 1996-1997 Bangladesh Demographic and Health Survey (BDHS) shows that only 29% of the pregnant women who gave birth during the five years prior to the survey received ANC, and only 19% had two or more ANC checkups (3). Only 16% of the

deliveries were conducted by trained providers, such as doctors, nurses, paramedics, and trained traditional birth attendants. A review of service use for delivery at 25 Upazila Health Complexes (UHCs) showed that deliveries at the UHCs ranged from 0.7 to 4.2% of the total estimated deliveries (4). A study conducted in two rural field sites of the Operations Research Project (ORP) of ICDDR,B showed that only 16% of the women with obstetric complications were treated by medically-qualified practitioners, such as doctors, paramedics (FWVs), and Medical Assistants (MAs). The rest of the women consulted either a village practitioner or a homeopath or did not consult anyone; these care givers are not qualified to provide obstetric services (5). Results of a qualitative study conducted in one upazila in Bangladesh showed that the majority of women, who had complications, consulted untrained providers for the treatment of their obstetric complications before coming to the UHC (6). It has been observed that identification of high-risk pregnancies during the antenatal period alone cannot reduce maternal morbidity or mortality, since every pregnant woman is at risk. It is estimated that about 15-20% of all the pregnant women may develop serious complications which are difficult to predict or prevent and need immediate hospital care (7). Thus, for the management of obstetric complications, availability and use of EOC services is essential for preventing maternal deaths and disability.

The former MCH-FP Extension Project (Rural) of ICDDR,B tested an intervention on the Family Welfare Assistant's (FWA) new role in providing ANC advice to pregnant women for an early recognition of obstetric complications and timely referral for EOC services. This was done by introducing a pictorial card given to pregnant women in Abhoynagar upazila. The evaluation of this intervention showed that ANC increased by 35 percentage points and postnatal care by 8 percentage points. The use of UHC services for obstetric complications also increased (8). Considering the situation of maternal health in Bangladesh, the intervention, "Strengthening maternal and neonatal health: improving linkages at all levels" was undertaken in June 1996. This intervention focused on improving maternal health by strengthening referral and linkages between service-delivery tiers and raising community awareness about the complications of pregnancy and childbirth. As part of this intervention, the UHC maternity units were rehabilitated and upgraded for providing basic EOC services at Abhoynagar and for comprehensive EOC services at Mirsarai. A modified pictorial card was introduced as a tool for raising community awareness about the symptoms of complications of pregnancy and childbirth and for encouraging women to use health facilities in emergencies. A Pregnant Woman Register was also introduced for both FWAs and Family Welfare Visitors (FWVs) to record pregnancy and delivery care-related information as well as ensuring appropriate referrals.

The findings of a mid-term evaluation of the intervention indicated that women's knowledge on the common complications of pregnancy and childbirth had increased. An increased number of pregnant women had established contact with the FWVs for ANC. Among pregnant women, the ANC visits to the qualified personnel increased from 25% to 39% in Mirsarai and from 75% to 79% in Abhoynagar intervention areas. The pictorial card had made an important impact in this regard. It was observed during the mid-term evaluation of the previous intervention, that despite the programme effort the use of EOC services was poor, and the referral for EOC was virtually non-functional. Although the use of obstetric care services had increased, but the majority of the people still first use the services of untrained providers who do not have any professional training in handling obstetric emergencies (9). The study also showed that, in Abhoynagar, 97% of the pregnant women, who had a pictorial card, visited a qualified health provider, while only

74% who did not receive the card, visited a qualified provider for ANC. More women who had a pictorial card used the institutional facilities for management of obstetric complications compared to those who did not have the card. However, this is still below the expected level of 15% of all pregnant women (10).

Based on the lessons learnt from the previous intervention, the ORP modified the EOC intervention strategy to ensure referral and linkages between different service-delivery tiers and the community for improving maternal health. To raise community awareness about the danger signs of complications and the consequences of delay in seeking care from appropriate facilities for the management of complications, pictorial cards and posters have been introduced. In addition, formal and informal community group leaders, have also been included in the programme of community awareness raising activities about obstetric complications and timely referral of complicated cases to appropriate facilities.

The Health and Population Sector Programme (HPSP) 1998-2002 of the Ministry of Health and Family Welfare (MOHFW) aims to improve the quality of life by reducing fertility and by improving family health through providing services under the essential services package (ESP) focusing on the clients' needs. The ESP has been designed to address the health needs of families comprehensively and to be available at one single service-delivery site (11). The National Integrated Population and Health Programme (NIPHP), a bilateral programme between the USAID and MOHFW, has directly supported the national programme of providing essential health services through non-government organization (NGO) clinics. The previous system of service-delivery from door to door was changed to static and satellite clinics emphasizing the delivery of a wide-range of reproductive and child health services.

The ORP, one of the partners of NIPHP, is responsible for designing and testing sustainable service-delivery system for partners through conducting operations research with the partners, particularly with the Urban Family Health Partnership (UFHP) and Rural Service Delivery Partnership (RSDP) and also for facilitating scaling-up of successful intervention in other areas. Besides testing the EOC intervention at the GoB field sites, the ORP is also mandated to test the modified strategy for ensuring referral and linkage for EOC in the RSDP sites. The BAMANEH, a rural service delivery NGO, was selected by the RSDP for testing the intervention.

The BAMANEH has been providing a community-based maternal, child and family health services, imparting training to TBAs, and conducting research on health and family planning issues since 1979. The BAMANEH aims to reduce maternal and neonatal mortality in its areas of operation. Currently, the activities of BAMANEH are implemented in nine upazilas of four districts supported by the RSDP. It offers ESP services to the community through static clinics and a number of satellite clinics in each of their working areas. Limited services are provided through the depot-holders (DHs) and community mobilizers (CMs). Of the nine working areas of BAMANEH, Chandina of Comilla district, was selected for testing the modified intervention on EOC. It is necessary to mention that in Chandina, BAMANEH is the only NGO working in that area.

Chandina had an estimated population of 315,000 in 1997. The literacy rate in Chandina was 36.7% (12). Of them, only 65,960 population have been served by BAMANEH in Chandina upazila where ESP services are being offered. At the community level, the BAMANEH have depot-holders (DHs), who are mainly females, sell family-planning commodities (pill and condom) and ORS, and refer women for clinical contraceptives and pregnant women for antenatal care. They also attend the satellite

clinics in their area. The CMs supervise the activities of the DHs and assist the paramedics at the SCs for providing the ESP services to the community. They also attend group meetings organized by the DHs in the community and discuss the issues relating to the ESP services.Three paramedics, assisted by three clinic aids, each conduct SCs in different areas of Chandina and attend static clinic by rotation. The static clinic is open six days a week. Prices are charged for services and commodities. The clinic Manager is responsible for the overall management and supervision of activities undertaken by both the static clinic and mobile clinic designated for the BAMANEH in Chandina upazila.

The UHC in Chandina is being linked with the BAMANEH for the management of referral cases since the RSDP does not have any facilities for managing obstetric complications. The UHC is equipped for providing basic EOC services and refers clients to district hospital if cases can not be managed at this level. The Thana Functional Improvement Pilot Project (TFIPP) had intervention at Chandina and strengthened the UHC facilities to provide comprehensive EOC services. But due to lack of trained providers (Anesthesiologist and Gynaecologist), this UHC provides basic EOC services only.

This study was carried out to collect baseline information on community awareness of obstetric complications and on the use of essential obstetric care services in the BAMANEH working area before implementing the intervention activities.

Objectives

The objectives of this study were:

- To ascertain the knowledge of women and their husbands on obstetric complications and facilities for management of such complications
- To assess the knowledge of women and their husbands on the necessity of antenatal care, TT vaccine, and postnatal care
- To assess the coverage of antenatal, postnatal, and delivery care
- To examine healthcare-seeking behaviour (types of care providers) of women regarding the reported complications of pregnancy and childbirth.

Methodology

A cross-sectional survey was conducted in the BAMANEH working areas of Chandina upazila under Comilla district, the RSDP field site. Women, having a history of pregnancy outcome during the last one year preceding the date of interviews, and their husbands were selected for interview. To estimate the required sample size, a 5% difference in the prevalence of UHC use between baseline and evaluation was used.

The following formula was used to determine sample size:

$$n' = \frac{\left(c_{\alpha_2}\sqrt{2\overline{P}\overline{Q}} - c_{1-\beta}\sqrt{P_1Q_1 + P_2Q_2}\right)^2}{\left(P_2 - P_1\right)^2}$$

$$n = \frac{n'}{4}\left[1 + \sqrt{1 + \frac{4}{n'\left|P_2 - P_1\right|}}\right]^2$$

Where,

$n' = \text{Sample size in each group without continuity correction}$

$n = \text{Sample size in each group after continuity correction}$

$P_1 = \text{Prevalence during baseline } (0.02)$

$P_2 = \text{Prevalence during evaluation } (0.07)$

$Q_1 = 1 - P_1$

$Q_2 = 1 - P_2$

$\overline{P} = \frac{\left|P_1 - P_2\right|}{2}$

$\overline{Q} = 1 - \overline{P}$

$\alpha = \text{Alfa error} = 5\%, 1 - \beta = \text{Power} = 80\%, \text{c} = \text{z value}$

Source: Flesis. " Statistical methods for Rates and Proportions", 2nd Ed., Wiley, 1981.

In this way, a sample of 381 women was estimated to be sufficient to detect a 5% difference in hospital delivery between the two periods. Considering the proportion of complicated cases managed by the trained providers (considering prevalence of complications to be 50%), the sample size was estimated to be 800 women.

The sample women were selected to have a proportional representation of women of all ages (15-49 years) in the population and 48 locations of 11 unions of the BAMANEH working areas in Chandina. First, a sampling frame of women having pregnancy outcome within the last one year was prepared. Then a systematic design was used for drawing the required number of target women from the frame. Ultimately, a total of 895 women were interviewed, and husbands of each of these women were also attempted for interview; 791 of them were interviewed. The interviews were conducted during August-October, 1999. The Field Research Officer of the survey and surveillance team of ORP in Mirsarai field office supervised data collection and edited the questionnaire.

A structured questionnaire with both close and open ended questions was reviewed and finalized jointly by the RSDP and the ORP. After pre-testing the questionnaire, necessary modifications were made before data collection. The questionnaire was also shared with concerned officials of BAMANEH before conducting the interviews. Separate sets of the questionnaire were used for women and their husbands. A 2-member team, consisting of one female and one male interviewers, conducted the interviews. A female interviewer interviewed the female respondents, and the male interviewers interviewed the husbands simultaneously, but in a separate place. A maximum of three attempts were made to interview the absentees. The interviewers were experienced in conducting interviews and were oriented with the necessary instructions for asking specific questions on EOC. Information sheets, such as list of DHs, CMs, and trained TBAs, were supplied to the interviewers for their use.

The respondents were only probed for answer for assessing their knowledge on obstetric complications. The women and their husbands' knowledge on the availability of heath facility for the provision of EOC services was examined. The respondents were allowed for multiple responses for selected variables. The women were also asked whether they had experienced any obstetric complications and the types of providers consulted or health facilities visited for the management of obstetric complications.

Operational Definition

Women and their husbands were asked about common complications of pregnancy and childbirth for which a woman needs to visit a hospital for care. Based on the recommendations made by the Safe Motherhood Initiative as life-threatening complications, a list of medically-recognized obstetric complications was prepared before the interviews were conducted (13). For this study, Paramedics, nurses and MBBS doctors were considered trained providers for the management of obstetric complications. Any other types of providers, such as village practitioners, homeopaths, and herbalists were considered untrained providers. A woman who was advised to visit and/or consult any health facility and/or advised to call any trained provider in case of obstetric complications at any time during pregnancy, delivery, and/or after delivery was considered a referral-related information for this study.

Sociodemographic Characteristics of Respondents

Table 1 indicates selected sociodemographic profiles of the women and their husbands. More than half of the women were aged 20-29 years and their mean age was 27.4 years. The mean age of the husbands was 35.2 years. One quarter of the respondents had schooling of 1-5 year(s) and nearly one-fifth of women attended secondary or above level of schooling. More than half of the husbands had some level of schooling. The mean year of schooling was 3.4 years for husbands, and it was 2.4 years for their wives. Two-thirds of the husbands were engaged in agriculture and/or daily labourer, and the rest were involved either in small business or in any employment. Only 9% of the women were involved in any occupation for which they earned money or got remuneration of any kind. Nearly two-thirds had three or more pregnancies, and only 37% had 1-2 pregnancy(ies). Most of them used tubewell water for drinking, and nearly one -third did not have any fixed sanitation facility. Over half of the respondents reported having monthly family expenditure of Tk. 2000-4000.

Table 1. Sociodemographic characteristics of respondents

Characteristic	Percentage of women (n=895)
Women's age (in years)	
15-19	10.4
20-24	26.4
25-29	27.3
30-34	17.8
35+	18.1
Mean	27.4
Women's education	
No schooling	56.7
Primary	25.3
Secondary and above	18.0
Mean	2.4
Husband's age (in year)	
≤24	5.5
25-29	20.4
30-34	22.0
35-39	20.9
40+	31.1
Mean	35.2
Husbands education	(n=791)
No schooling	45.6
Primary	29.5
Secondary and above	25.0
Mean	3.4

contd..

Table 1 (*contd.)*

Characteristic	Percentage of women
Husband's occupation	(n=791)
Agriculture	30.2
Non-agriculture day labour	36.3
Small business	18.4
Service	14.0
Others	2.0
Respondents involved in employment (earns money)	(n=895)
Yes	8.9
No	91.1
Total no. of pregnancies	
1-2	37.2
3-5	40.2
5+	22.6
Source of drinking water	
Tubewell water	99.7
Pond and others	0.3
Sanitation facility	
Sanitary	38.4
Pit	28.1
No latrine/bush/field	33.4
Monthly expenditure (in Taka)	
<2000	9.7
2000- 4000	53.0
4001 and above	37.1

Results

The results obtained from the interviews of 895 women and 791 husbands are highlighted below.

Women and Husbands' Knowledge on Obstetric Complications

Women and their husbands' knowledge of complications relating to pregnancy, delivery, and after-delivery was assessed and presented in Fig. 1.

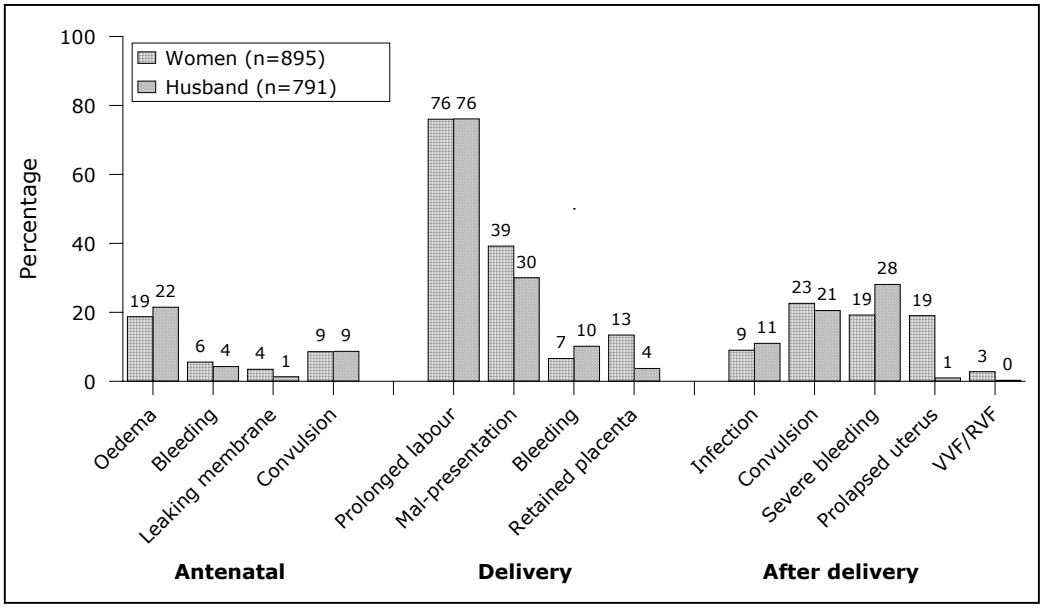

Fig. 1. Women and husbands' knowledge of complications relating to pregnancy, delivery, and after delivery

Antenatal: Less than one-fifth of the women and more than one-fifth of the husbands were aware of the signs of pre-eclamptic toxaemia as a complication relating to pregnancy. Bleeding, leaking membrane, and convulsion were each mentioned by less than 10% of both women and husbands as complications that can occur during pregnancy and that require management by trained providers. Severe vomiting was also reported by one-third of the women as another such complication.

Delivery: More than three quarters of the women and an equal proportion of their husbands (76.0%) mentioned prolonged labour; more than one-third of the women and nearly one-third of the husbands mentioned abnormal presentation of the foetus. Only 3% of the husbands and 13% of the women reported retained placenta, and a small percentage of them had knowledge about severe bleeding and perennial tear.

Postnatal: Less than one-fifth (19%) of the women were aware that severe bleeding, and prolapsed uterus are postnatal complications. Only 23% considered postnatal convulsion as a postnatal complication. More than one-fifth of the husbands mentioned convulsion as a postnatal complication. Severe bleeding and prolapsed uterus were mentioned by less than one-fifth of the husbands. A very small percentage of both women and their husbands mentioned about the signs of postnatal sepsis, such as fever for more than three days, and foul-smelling vaginal discharge as postnatal complications.

Number of Complications Known by Women and Husbands

Knowledge of the women on the number of obstetric complications was higher than that of their husbands. Eight percent of the husbands could not mention any complication relating to pregnancy and/or child births, while it was 3.4% for their wives. The majority of the women and their husbands knew 3-4 symptoms of obstetric complications, but comparatively the husbands were less knowledgeable (Fig. 2).

The mean numbers of symptoms of obstetric complications known by women and their husbands were 2.9 and 2.4, respectively.

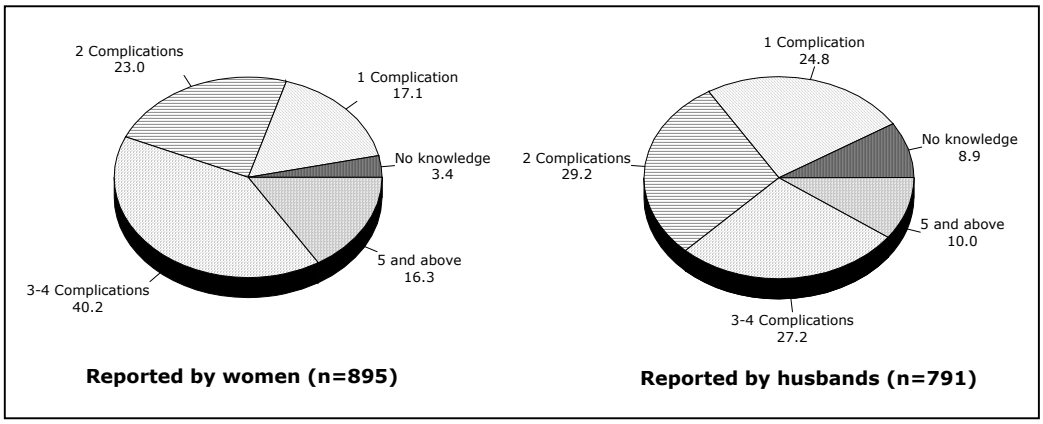

Fig. 2. Percentage of number of obstetric complications known by women and their husbands

Knowledge of Complications by Background Characteristics of Women

Table 2 indicates that the women aged less than 20 years were less knowledgeable about the symptoms of obstetric complications than the women aged 20 years and above. Education of women was an influencing factor for having more knowledge on obstetric complications. However, the differences was not significant. The average monthly expenditure did not have any linear relationship with the number of symptoms mentioned by the women.

Table 2. Women's knowledge on obstetric complications by their age, education, and monthly expenditure

Characteristic	Number of symptoms known (%)	
	Less than three	Three and more
Age (in years)		
>20	51.6	48.4
≥20	42.6	57.4
Education		
No education	46.1	54.0
Primary	41.2	59.0
Secondary and above	39.0	61.3
Monthly expenditure (in Taka)		
<2000	43.7	56.3
2000-3999	44.7	55.3
4000 and above	41.7	58.3

Knowledge of Health Facilities

Women and their husbands' knowledge on existing EOC service facilities and/or trained providers for management of obstetric complications were assessed.

Women's knowledge

The majority of the women had knowledge about the government health facilities, such as the UHC, followed by the district hospital as sources of care for the management of complications relating to delivery and/or after-delivery. While the UHC, followed by H&FWC, was mentioned by the majority of the women as the facility for pregnancy-related care. NGO clinic was mentioned by only 10% of the women as a source of care for pregnancy-related complications followed by delivery (5.4%) and 4% for postnatal complications. Nearly half of the women mentioned untrained providers as a source of care for the management of complications relating to pregnancy and after-delivery (Table 3).

Table 3. Women's knowledge on the source of care for the management of obstetric complications

Facility/or provider	Source of care for obstetric complications (n=895)		
	Pregnancy (%)	Delivery (%)	After delivery (%)
H&FWC	21.2	16.4	13.1
UHC	42.8	70.7	49.1
District hospital	14.0	36.5	21.0
Private clinic	0.9	2.7	2
NGO clinic (BAMANEH)	10.0	5.4	4.0
EPI+SC	3.6	--	.5
Trained provider	20.0	14.6	20.5
Village practitioner	40.4	23.0	43.1
Homeopath	4.0	2.3	4.0
Kabiraj/moulana	4.8	2.3	5.0
Others/don't know	4.0	2.0	1.0

Multiple responses were allowed

Husbands' knowledge

Husbands' knowledge regarding the availability of trained providers and/or facilities for the management of obstetric complications was also assessed and was found to be similar to that of their wives. Nearly three-quarters of the husbands mentioned the UHC, followed by H&FWC, as the source of care for the management of complications relating to pregnancy, while the UHC followed by district hospital was mentioned for the management of delivery and postnatal complications. Less than 5% of the husbands mentioned BAMANEH clinic as a source of care for obstetric complications. More than half of the husbands mentioned village practitioners as caregivers for the management of complications relating to pregnancy and delivery (Table 4).

Table 4. Husbands' knowledge on the source of care for obstetric complications

Facility/or provider	Source of care (n=791)		
	Pregnancy (%)	Delivery (%)	After delivery (%)
H&FWC	28.2	15.7	16.3
UHC	74.0	92.2	69.3
District hospital	13.5	30.0	14.4
Private clinic/hospital	2.4	2.6	2.0
NGO clinic (BAMANEH)	4.0	4.0	3.5
EPI+SC	2.7	1.7	2.0
Trained provider	15.0	9.3	17.0
Village practitioner	52.1	34.1	58.0
Homeopath	1.6	2.0	3.3
Kabiraj/moulana	3.7	1.8	2.4
Others/don't know	3.4	3.0	4.0

Multiple responses were allowed

Women's Knowledge about Hygienic-delivery

Women's knowledge on hygienic delivery, such as cleanliness about the delivery place, washing hands with soap before attending delivery, boiling blade and thread for cutting, and tying the umbilical cord was assessed. More than half of the women were aware of washing hands with soap before attending delivery and keeping clean cloths ready for use, and 87% of the women knew about the use of boiled blade and thread for cutting and tying the umbilical cord (Table 5). Further analysis showed that one-third of the women knew three or more asceptive measures of safe delivery, 41% of all knew two of such measures, and only one measure was mentioned by a quarter of the women.

Table 5. Women's knowledge on hygienic-delivery procedures

Characteristic	Percentage (n=891)
Safe-delivery procedure	
Clean delivery place	34.6
Washing hands with soap	51.4
Boiling blade and thread	87.6
Keep clean cloths available	51.8
Others	10.0

Multiple responses were allowed

Women's Knowledge about Trained TBAs

The women were asked whether they were aware of the availability of any trained TBAs nearby their house. Twenty-eight percent of the women were aware of the availability of trained traditional birth attendants (TTBAs) in their community. Nearly one-fifth (19%) of women received information or were referred to take assistance from TTBAs during delivery. Of them, 64% received information about the use of TTBAs from their relatives, while 14% received such information from the DHs and only 2% from the CMs (Table 6).

Table 6. Women's knowledge on trained TBAs and source of information

Characteristic	Percentage (n=895)
Knowledge about availability of TTBAs	
Yes	28.3
No	71.7
Advised about taking assistance from TTBA during delivery	
Yes	19.2
No	79.8
Source of advice	(n=172)*
Relatives	64.0
DH	14.0
CM	2.3
FWA	1.2
Paramedic	2.3
MBBS doctor	2.3
TTBA	19.2
Husband	7.6
Parents	5.8

**Multiple responses were allowed*

With regard to the availability of trained TBAs, 28% of the husbands also knew about the availability of TTBAs in their areas, while only 15.4% husbands received information about asking TTBAs to attend their wives' delivery.

Antenatal Care

The Women and their husbands' knowledge about the necessity of antenatal care (ANC) and number of visits require during pregnancy was assessed. The care received during pregnancy, as reported by the women, is also presented here.

Necessity of antenatal care

Ninety-three percent of the women provided positive opinions about the necessity of routine antenatal care for the betterment of both mother and child, while 98.5% of the husbands possessed the same opinion. Of the women, 70% mentioned knowing about their own physical condition and that of the baby in the womb. Nearly half of them stated to know whether or not they are at any risk of complications, and one quarter of them mentioned that regular antenatal care is important to keep themselves healthy.

Knowledge on number of ANC visits required

The women and their husband's knowledge on the number of ANC visits required during pregnancy was assessed. Forty-six percent of the husbands and nearly 40% of the women said that at least three ANC visits by trained providers are required (Fig. 3). The findings also showed

that the husbands were more knowledgeable about the required minimum number of ANC visits during pregnancy than their wives.

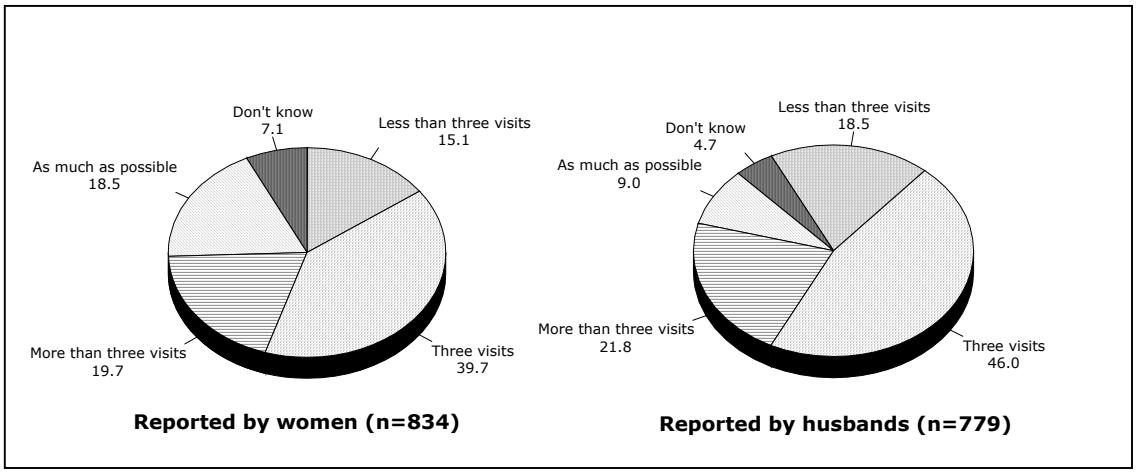

Fig 3. Percentage of women and their husbands' knowledge about number of ANC visits required

Further analysis of women who knew at least three antenatal visits by their age showed that it was higher among the women aged 20 -34 years compared to the younger and older women aged 35 years and above.

Use of antenatal care

The women were asked whether they had received any ANC services and/or advice from any trained or untrained providers during their last pregnancy. Eighty-two percent of the women reported obtaining ANC care or contact for ANC either from trained or untrained providers, while 64% of the husbands said the same for their wives regarding receiving ANC or contacted for ANC visit.

The women were also asked about the types of providers from whom they had received ANC services. More than half (58%) of the women received ANC services either from an institutional facility or from the trained providers. Of those who received ANC, more than half of them visited only once during pregnancy, and only 16% received three or more visits (Fig. 4).

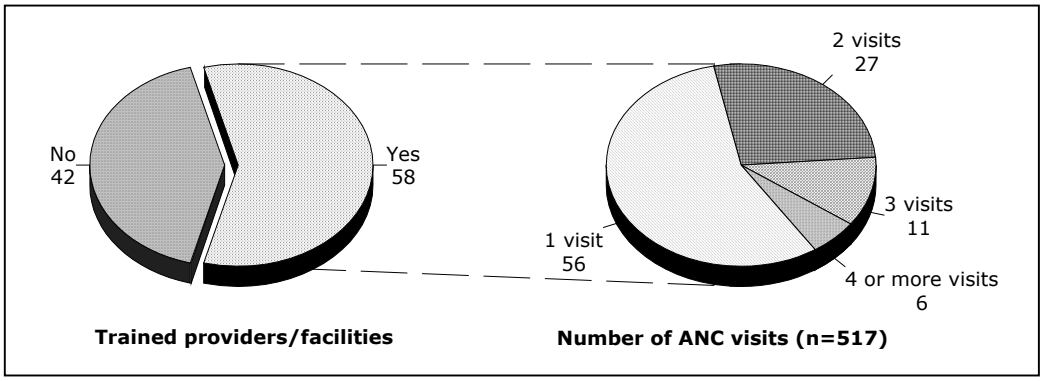

Fig. 4. Percentage of women who received antenatal care by number of visits

Source of antenatal care

Of those women who received ANC, more than half of them received it from a combined EPI/SC spot of BAMANEH followed by UHC. Almost 15% visited the static clinic of BAMANEH. Only 10% reported receiving ANC from doctors and 7% from paramedics (Table 7).

Table 7. Women who received ANC by types of trained providers or facility visited

Source of ANC	Percentage (n=517)
SC+EPI	53.0
UHC	19.0
H&FWC	9.1
District hospital	2.3
Private clinic	2.7
NGO clinic	14.7
SC	3.7
MBBS doctor	10.1
FWV	7.3

Multiple responses were allowed

Association between ANC visits by women's background characteristic

Analysis of the women received ANC from trained providers by their background characteristic showed that the women aged less than 20 years were slightly more likely to take care from the trained providers during pregnancy compared to other age group of women who were interviewed. Women's education had a positive association with visiting trained providers for ANC. However, the average monthly expenditure showed a curvilinear association (Table 8). But, these differences were not significant.

Table 8. Association between women received ANC by their characteristic

Characteristic	ANC received from	
	Trained providers (n=517) (%)	Untrained providers (n=216) (%)
Age (in years)		
>20	71.8	28.2
≥20	70.4	29.6
Education		
No education	68.0	32.0
Primary	71.0	29.1
Secondary	76.5	23.5
Monthly expenditure (in Taka)		
<2000	73.2	26.8
2000-4000	68.2	31.8
>4000	70.5	27.0

Types of antenatal care services received

The women who either received ANC services from the trained providers or visited any health facility were asked about the types of services they had received. Over half of them received an abdominal check-up, advice for taking sufficient food intake, were weighed, and had their blood pressure measured. The majority of women reported that they had obtained tetanus toxoid

during their last pregnancy. More than one-third were advised to seek institutional care if any pregnancy and childbirth-related complications occurred. However, blood test to detect anaemia and urine tests for albumin were done for a very negligible percentage of women (Fig. 5).

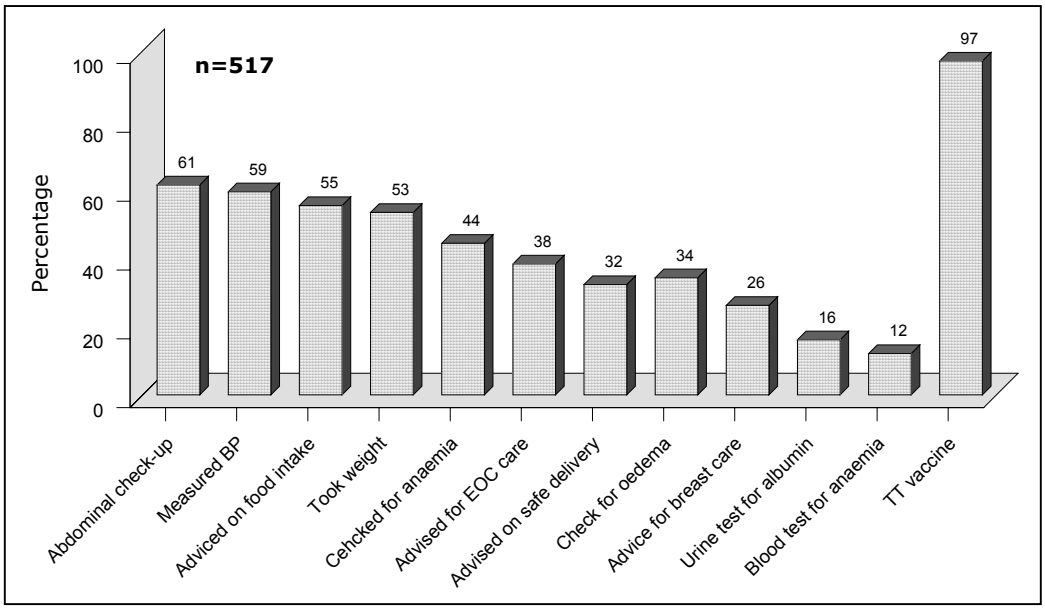

Fig. 5. Types of ANC services received by women from trained providers and/or visited health facility

Knowledge of TT Vaccine

Almost all the women were aware of the importance of receiving TT vaccine during pregnancy. Sixty percent of the women said that it would protect both baby and mother from tetanus, 18% mentioned such protection for the mother only, and another 18% said it would protect only the baby from tetanus. The table also shows that 54% of the women knew that five doses of TT are required to protect against tetanus. Nearly half of the women mentioned for two doses are required for complete protection against tetanus. More than three-quarters of the women knew that second trimester is the time when a pregnant women needed to get the TT vaccine to protect them from tetanus (Table 9).

Table 9. Distribution of women having knowledge about TT vaccine

Knowledge	Percentage (n=895)
Required TT vaccine during pregnancy	
Yes	99.9
No	0.1
Reasons for TT	
To protect baby from tetanus	17.5
To protect mother from tetanus	18.0
To protect both mother and baby from tetanus	60.2
Other	3.2
Number of vaccine required	
One	0.7
Two	44.7
Five	54.0
Six or more	0.7
Duration of pregnancy when TT is required	
First trimester	8.0
Second trimester	77.7
Third trimester	13.4

Postnatal Care

Nearly one-third (32%) of the respondents obtained some form of postnatal care services. Of them, only 21% visited the health facility for postnatal care. More than a quarter of them received services from village practitioners who practise both allopathy or homeopathy. Two- thirds of the women received postnatal care services at home. Nearly one-third of the women who received postnatal visits reported receiving iron tablets, and 88% received other medicines. One-fifth of the women under-went physical examination (Table 10).

Table 10. Percentage of women received postnatal care, and type of providers consulted and services received

Characteristics	Percentage (n=895)
Postnatal care received	32.0
Types of provider/facility visited	(n=287)
At home	66.0
Facilities	21.2
Village practitioners	26.0
Types of PNC advice received	
Advice for extra food for mother	15.7
Breastfeeding	8.4
Family planning	2.8
Immunization	8.7
Physical examination	20.0
Iron tablets	31.4
Other medicines	88.0

Multiple responses were allowed

Obstetric Complications Encountered

Obstetric complications reported by women and husbands

The women were asked whether they had encountered any complications relating to their last pregnancy and childbirth. Their husbands were also asked whether their wives experienced any complication during her last pregnancy and/or childbirths. More than one-third (35%) of the women reported that they experienced at least one complication relating to either pregnancy, delivery, and /or after-delivery. While only 16% of the husbands reported that their wives had experienced obstetric complications. Of the women who had experienced obstetric complications, 52% reported pregnancy and/or postnatal complications, while 29 and 23.6% of the husbands reported that their wives had experienced pregnancy and postnatal complications respectively. Of 16% of the husbands, 56% reported that their wives experienced delivery-related complications, while less than half of the women who had complications reported delivery-related complications (Table 11).

Table 11. Obstetric complications experienced as reported by women and husbands

Complications relating to pregnancy, delivery, and after delivery	Reported by women (n=895) (%)	Reported by husbands (n=791) (%)
Any complication	35.5	16.0
	(n=318)*	(n=126)*
Pregnancy	55.0	28.9
Delivery	42.8	56.0
Postpartum	55.7	23.6

**Multiple responses were allowed*

Number of complications reported

Fig. 6 shows that the husbands reported less number of obstetric complications than their wives. This indicates that either the husbands were less aware of their wives' problems or their wives may not feel necessary to share complaints with their husbands.

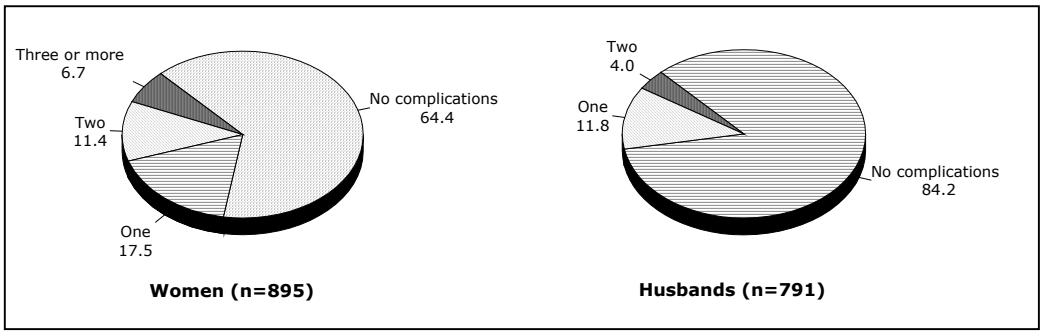

Fig. 6. Percentage of the number of obstetric complications reported

Types of obstetric complications encountered

One-quarter of the women who had suffered from pregnancy-related complications mentioned lower abdominal pain, and 15% had suffered from pre-eclamptic toxemia. Anaemia was reported by one-quarter of the women. The women also reported that they suffered from weakness and/or restlessness which they perceived as pregnancy-related complications (Table 12).

Table 12. Women's reported complications during pregnancy, delivery and after delivery

Types of complications	Percentage*
During pregnancy (n=175)	
Bleeding	7.4
Swollen feet, severe headache and/or blurring of vision	15.0
Leaking membrane before time	4.6
Convulsion	2.9
Severe vomiting	11.4
Anemia	4.0
Lower abdominal pain	25.1
Weakness	18.3
Body ache/ restlessness	16.5
Jaundice /diarrhoea	4.6
Others	17.6
During delivery (n=136)	
Prolonged labour	70.0
Severe bleeding	6.6
Retained placenta	8.1
Mal-presentation	11.0
Perennial tear	1.5
Unconsciousness	1.6
Low pain	8.8
Obstructed labour	4.4
Others	3.0
After delivery (n=177)	
Fever more than three days	10.7
Convulsion	4.5
Severe bleeding	10.2
Smelly vaginal discharge	1.1
VVF/RVF	1.2
Prolapsed uterus	5.1
Weakness	22.0
Severe abdominal pain	23.2
Anemia	4.1
Others	29.0

**Multiple responses were allowed*

Table 12 also shows that, of the women who reported experiencing delivery-related complications, 70% reported prolonged labour, followed by malpresentation of the foetus. Severe bleeding, retained placenta, or perennial tear were each mentioned by only less than 10% of the respondents.

Ten percent of the women who had a pregnancy outcome during the reference period had fever for more than three days, or severe bleeding within 42 days of delivery. Foul smelling discharge, convulsion and prolapsed uterus as postnatal complications were also reported by a small percentage of the women. More than one-fifth of the women mentioned severe abdominal pain and weakness as postnatal complications which may not be directly related to their reported complications (Table 12).

Care-seeking behaviour for complications

Less than one-fifth of the women who had reported experiencing pregnancy-related complications, consulted the MBBS doctors, and more than one-fourth consulted the untrained providers. Very few of them visited a health facility for the management of that complications. Similar trends were found in the care of management of complications relating to delivery and after-delivery. Table 13 also shows that the majority of the women consulted village practitioners, who did not have any relevant professional training, for the management of obstetric complications. However, 27% of the women with pregnancy-related complications, 26% with delivery-related complications, and 12% with postnatal complications neither sought any care nor visited any health facility for managing their complications (Table 13).

Table 13. Type of providers chosen for management of obstetric complications

Type of providers	Percentage		
	Pregnancy (n=175) (%)	Delivery (n=136) (%)	After delivery (n=177) (%)
H&FWC	7.0	--	0.6
UHC	8.6	6.6	5.1
District hospital	1.1	3.7	0.6
NGO clinic	6.3	1.5	2.3
Private clinic	--	4.4	2.3
Doctor (MBBS) consulted	19.4	5.1	12.4
EPI/SC	2.8	--	0.6
Village practitioner	27.4	29.4	61.6
Homeopath	7.4	15.4	6.2
Kabiraj	5.7	4.4	3.4
TTBA/TBA	-	11.7	0.6
Others	2.3	2.0	1.2
Not received any care	27.4	25.7	11.6

Multiple responses were allowed

The women who had experienced complications during pregnancy, and/or delivery and/or after-delivery were asked whether they were informed about and/or referred to any trained providers or to visit any health facility for the management of their obstetric complications. Of them, only less than one-fifth (18.5%) reported that they had received referral-related information for better services.

Decision-makers

The respondents were asked how did they make decision with regard to consulting any providers for the management of their obstetric complications. They were proved to get to know who was the main influential person for making decision for seeking care. The husbands were the major decision-makers for the management of complications relating to their wives' pregnancy and childbirth followed by their relatives/neighbours. A very small percentage of the women took decisions by themselves for seeking care or discussed it with their husbands (Table 14).

Table 14. Decision-makers for seeking care for management of obstetric complications

Decisions-makers	Seeking care for the complication management		
	Pregnancy (n=127) (%)	Delivery (n=101) (%)	Postnatal (n=156) (%)
Husband	65.4	51.0	68.6
Self	8.0	3.0	2.0
Husband and wife	2.4	6.0	2.0
Parent	3.4	7.8	7.7
Inlaw	7.1	11.8	3.2
Relative/neighbour	13.4	22.5	16.0
TTBA	1.6	2.0	2.0
Others	2.4	2.0	--

Multiple responses were allowed

Information Received on Referral Reported by Husbands

The husbands were asked whether they received information and/or were referred to any health facility for the management of obstetric complications of their wives. More than one-third of the husbands reported receiving advice and/or were referred to a health facility or to the trained providers at any time during pregnancy, while 22% reported that they themselves visited a health facility or consulted the trained providers for the management of obstetric complications of their wives, but were not informed by anyone (Table 15).

Of the husbands who received the information, 88% reported that their wives visited the referral centre either for the treatment of complications or for routine pregnancy care. Of the rest of the husbands whose wives had not visited any health facility, 84% did not feel it necessary to go to any facility for obstetric care of their wives (Table 15).

Table 15. Percentage of husbands received referral-related information, acceptance of referral for complication management for their wives

Referral-related information	Percentage (n=791)
Received information on referral	
Yes	35.0
No	43.0
Self	22.0
Acceptance of referral by wives reported by husbands	(n=277)
Yes	88.4
No	11.6
Reasons for non-acceptance of referral	(n=32)
Not felt necessary by husband	84.3
Far away from home	6.3
Fear of expenses	6.3
Others	3.1

Source of Referral-related Information

Of the husbands who were informed about referral for the treatment of their wives' obstetric complications, regardless of occurrence of any complications, the majority of them received information from their relatives followed by the DHs. A small percentage of the husbands also mentioned about the GoB field workers as a source of information (Fig.7).

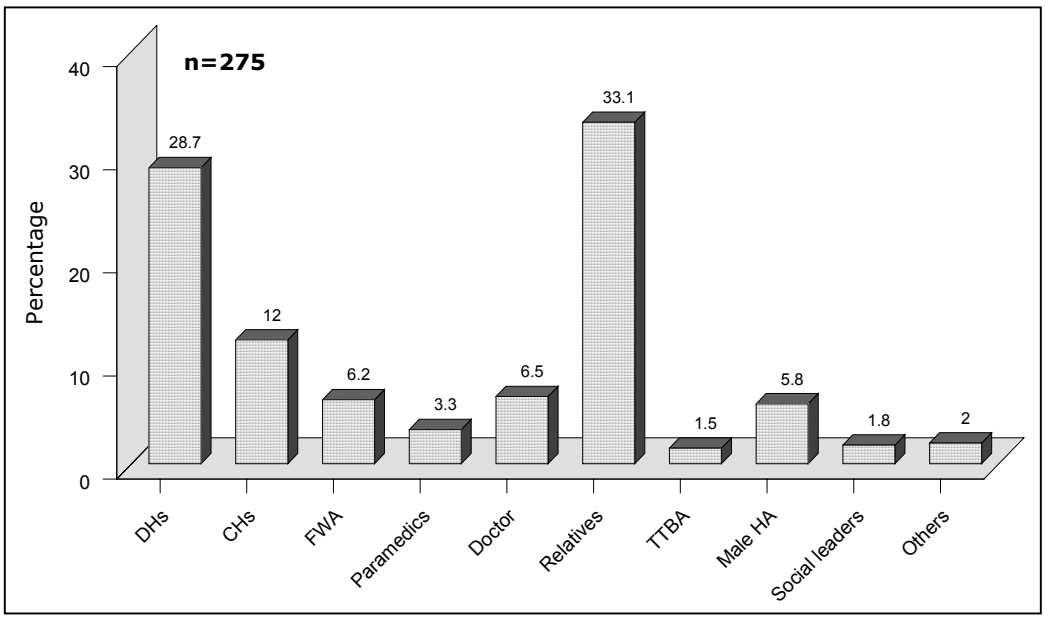

Fig. 7. Source of referral-related information reported by husbands

Delivery-related Care

Intended birth attendant and place of delivery

The women and their husbands were asked whether they had any preference for the place of delivery and birth attendant before the last delivery took place. Table 16 shows that nearly three-quarters of the women preferred to deliver at home, while 96% of the husbands possessed the same opinion like their wives. Only a small percentage of both husbands and their wives reported a facility as the intended place for delivery (Table 16).

With regard to a birth attendant, more than half of the women expressed intention to attend their delivery by untrained birth attendants, while one-third did not decide about the birth attendant. Table 16 also shows that more than three-quarters of the husbands' intention was untrained birth attendants, like relatives and dais (untrained TBAs), for attending their wives' delivery.

Table 16. Intended providers and place of delivery by women and their husbands

Place and birth attendant	Reported by women (n=891) (%)	Reported by husbands (n=791) (%)
Intended place of delivery		
Not decided	25.0	1.9
At home	73.5	96.0
Facility	1.4	2.1
Intended birth attendant		
Relative	23.8	15.3
UTBA	32.1	63.0
TTBA	8.3	10.2
Trained provider	--	2.9
Not decided	33.7	8.3
Others	2.1	0.4

Pregnancy outcome, place of delivery, and birth attendant

Fig. 8 shows that 95% of the babies were born alive and 98% of the deliveries took place at home. Of the deliveries, only 14% were attended by the trained providers such as TTBAs (11%), paramedics, and nurse or doctor (3%). The rest of the deliveries was either attended to by the untrained providers or was unattended.

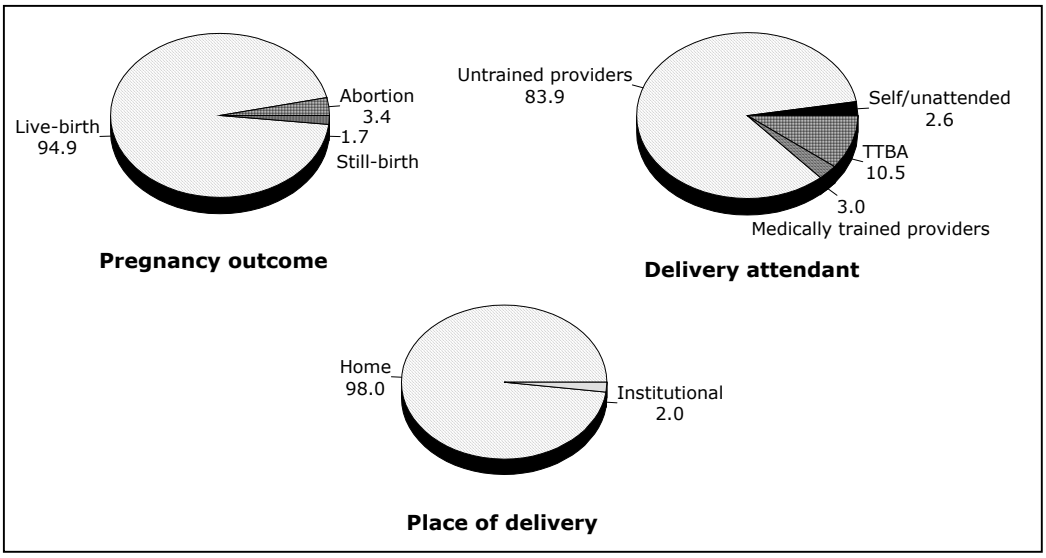

Fig. 8. Pregnancy outcome, place of delivery, and birth attendant

Results of analysis also showed that the women with secondary or above level education were more likely to use the institutional facilities (53%) for child-birth compared to the women with no education (11%). This difference was highly significant at $p<0.0005$. The average monthly expenditure was significantly associated with the place of childbirth at $p<0.05$. Of the women who delivered at the hospital, 68.4% belonged to the higher income group (Tk 4,001 and above), 26.3% to the middle income group (Tk. 2,000-4,000), and only 5.3% had monthly expenditure of less than Tk.2,000. Influence of ANC visits from the trained providers was also significant with regard to the place of delivery and the trained birth attendant used.

Association between pregnancy outcome by their background characteristic

When analyzing pregnancy outcome by various characteristics, the respondent's age was found to be an influential factor. Results of the analysis showed that live-births were relatively lower and still-birth was higher among the women aged less than 20 years compared to the women aged 20 years and above. Of the women who received ANC from the trained providers, 97.5% had live-birth, while 91.5% of the women who gave live-birth, but received ANC are from the untrained providers or not received such care at all. This differences was highly significant at $p<0.0005$ (Table 17).

Table 17. Association between pregnancy outcome by characteristic of women

Characteristic	Pregnancy outcome		
	Live-birth	Still-birth	Abortion
Age (in years)*			
>20	93.5	4.3	2.2
≥20	95.0	1.4	3.5
Women's education			
No education	96.0	1.2	3.0
Primary	93.8	3.1	3.1
Secondary and above	93.8	1.3	5.0
Monthly expenditure (in Taka)			
<2000	93.1	--	7.0
2000-4000	95.2	2.1	2.7
4001 and above	95.2	1.5	3.3
Antenatal care received**			
Trained providers	97.5	1.9	0.6
Untrained providers	91.5	1.3	7.2

**p =0.09, ** p=0.0005*

Discussions

Women and their Husbands' Knowledge

It is very clear from the results that except in few cases, the level of knowledge of both women and their husbands was similarly poor on life-threatening obstetric complications which are required care from medically-trained providers. It is also observed that comparatively women were more knowledgeable than their husbands. The percentage of women, who knew five and/or more symptom of complications, was two times higher than their husbands. Results of analysis also showed that the women aged less than 20 years, having no schooling and the women from the lower income group were less knowledgeable about the obstetric complications. The study conducted in ORP field sites in 1997 showed that use of EOC services was more likely to be higher among those who had knowledge about three or more types of complications compared to those who did not have knowledge of obstetric complications (10). Thus, more the women know about symptoms of obstetric complications, the more increase the probability of the use of trained caregivers for the management of complications.

Women's knowledge on the government healthcare facilities for the management of obstetric complications was higher than NGO facilities. The majority of the respondents were knowledgeable about the UHC for the management of obstetric complications relating to pregnancy and childbirth. A small percentage of the women and their husbands mentioned a NGO clinic as a source of care. The village practitioners were also mentioned by a considerable percentage of the husbands compared to their wives as caregivers for the management of complications.

Safe-delivery Practices

With regard to the three aspect of hygienic delivery, the majority of the women was aware of one procedure of cleanliness, such as use of boiled blade for cutting and thread for tying umbilical cord. More than half of the women studied in Abhoynagar and 40% of the women in Mirsarai were aware of the availability of trained TBAs in their community (14) whereas only 28% of the women in Chandina was aware of it. In Chandina, only 11% of the deliveries were attended to by the TTBAs which was two times higher in Mirsarai and Abhoynagar, the field sites of ORP in 1998-1999. This suggests that the women's knowledge on the availability of TTBAs and the importance of obtaining their assistance during delivery needs to be increased. The DHs and the CMs can play an important role in informing the community about the importance of the using the services of a TTBA as a delivery assistant, since they are in direct contact with pregnant women.

There exists a wide gap among the women with regard to their intended and actual place for delivery and birth attendant. The findings of the study showed that only 2% of the deliveries were conducted at institutional facilities which was lower than Chittagong division (2.5%) and also lower from the national average of 4% (4). Since the women and their husbands are aware of the availability of health facilities where obstetric care services are provided, it is, therefore, necessary to mobilize the community to use these services.

Health Care-seeking for Obstetric Complications

Of the women who encountered obstetric complications, the majority of them consulted the untrained providers, such as village practitioners and homeopaths, who did not have any professional training for the management of obstetric complications. The next most consulted providers were qualified doctors. Only a small percentage of the women with complications used the government health facilities, particularly the UHC. This finding conforms with the findings of several other previous studies (6,9,10,14,15). On the other hand, women and their husbands were aware of the facilities where EOC services are available, but a very small percentage of the women used these for the treatment of their reported complications. Therefore, more effort needs to be given on the use of facilities in case of complications. This suggests strengthening of behaviour change communication activities. In addition, men, particularly husbands, also need to be targeted since they are the decision-makers for the treatment of their wives' complications.

Antenatal and Postnatal Care

The results concerning ANC, a component of EOC was encouraging as more than half of the women received at least one antenatal visit from the trained providers. This is nearly two times higher than the findings reported in the 1996-1997 BDHS (3). Analysis shows that the number of live-births was significantly higher among the women who received ANC from the trained providers compared to those who did not receive ANC. In the Fifth Five-Year Plan 1997-2002, it is targeted to achieve 80% coverage of antenatal care (16) which is quite far from the current situation. In addition, it is mandated that all pregnant women should receive at least three antenatal visits from trained providers, while little more than a quarter of the women received three or more visits. However, a very small percentage of the women received blood test for detecting anaemia and their urine was tested for detecting albumin which are essential components of ANC.

The women in the BAMANEH working areas were knowledgeable about taking TT vaccine during pregnancy to protect them and their babies from tetanus. The majority of the women and their husbands knew about the necessity of using EOC services in case of complications; programme intervention needs to be emphasized for ensuring use of facility while complications occur. It is worth mentioning that, in the BAMANEH working areas, more than a quarter of the women received ANC from the government facilities. These could be that women were inadequately informed of the availability of services provided by BAMANEH or the services are not accessable when it is required. In addition, contacts from DHs and/or CMs for ANC from BAMANEH clinic/SC was very poor. Therefore, besides making the services available, the community needs to be informed and motivated to use them.

Referral

Referral for any services relating to EOC from the community to a higher level was poor as reported by both women and their husbands. Advice for taking assistance from a trained TBA during delivery was reported by only 19% of the women. Of them, very few received that message from the health providers, particularly from the DHs and CMs. With regard to the obstetric care management, only one-third of the husbands reported receiving information on referral. Relatives, followed by the DHs, again played an important role for disseminating such information. It is also found in another study that the acceptance rate of referral from the UHC to the higher level was 97%, while only one-third of the 95 women referred from the community

level visited UHC (9). This is again emphasizes the community awareness raising activities on the use of EOC services without delays. Since the Fifth Five Year Plan emphasizes to develop an effective referral mechanism with a follow-up system of the referred cases, the existing referral mechanism, therefore, needs to be strengthened.

Conclusions and Programme Implication

It may be concluded that women and their husbands in the BAMANEH working areas were knowledgeable about the symptoms of only a few selected obstetric complications which are life-threatening. Results of analysis showed that the women aged less than 20 years were less knowledgeable about symptoms of obstetric complications. A considerable percentage of the women and their husbands had misunderstandings about actual obstetric complications which require medical intervention. The findings also showed that the husbands were more knowledgeable about the existing health facilities where EOC services are available than their wives. The use of an institutional facility or trained providers to manage obstetric complications is still limited even though the husbands were aware about the availability of the facility where EOC services are available. Thus, intervention should target the males particularly, the husbands for their support in decision-making for seeking prompt care for treatment of their wives. In this regard, the husbands need to be informed about the symptoms of complication and the importance of the use of facility on time, since they are the decision-makers for their wives' use of services. The opinion about the use of ANC and PNC was positive among both women and their husbands. It is observed that use of ANC from the trained providers has a positive effect on pregnancy outcome. Thus, the emphasis needs to be given on targeting the husbands for their wives' receiving ANC visits from the trained providers. A full range of antenatal care services also need to be made available where the quality of care could be ensured. In addition to raising community awareness about increasing knowledge on obstetric complications, intervention must address the motivational factors for the use of EOC services, including ANC and PNC services. Easy access to the health facility and services, and proper understanding of the problem and its consequences in one's life are crusicial for improving maternal health.

Based on the situation, the ORP has designed and implemented the said intervention in the BAMANEH working areas in Chandina upazila. Under the intervention activities, awareness raising about the complications relating to pregnancy and childbirth among pregnant women and the community has been undertaken. A pictorial card and a poster depicting the signs of complications relating to pregnancy and childbirth is being introduced as tool for raising community awareness. Beside the greater involvement of DHs, CMs and paramedics of BAMANEH in providing maternal health services, the formal and informal community leaders of that area have also been involved for mobilizing the community. These will influence the increased use of health service facilities for obstetric care. Furthermore, village practitioners, who are often consulted for the management of obstetric complications, need to be oriented to refer clients with obstetric complications to the appropriate facility if any one seeks services from them.

Implementation of Intervention

As part of the intervention activities, the ORP jointly collaborated with the MOHFW and RSDP-conducted orientation workshops for the clinic staff, CMs, DHs and Clinic Aids in January 2000. The orientation of different formal and informal group leaders, selected Imams, TBAs, and village practitioners of the BAMANEH working areas in Chandina upazila was also completed in April 2000.

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