

## Post-Partum Excessive Bleeding among Bangladeshi Women; Determinants, Perceptions, Recognition, Responses

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### Abstract

The study assessed post-partum blood loss among women in two areas of Bangladesh and explored community perceptions, recognition, and response. A cross-sectional survey among 840 women was conducted in two sites to estimate excessive blood loss in the study population. In-depth interviews were conducted among a sub-sample of women (n=34), husbands (n=15), mothers-in-law (15), and Traditional Birth Attendants (TBAs) (11). Two Focus Group Discussions (FGD) were held with TBAs and village health care providers. Among post-partum haemorrhage (PPH) cases, approximately 60% perceived blood loss as excessive. Multi-parity, Absence of Antenatal Care (ANC), delayed placental delivery, previous PPH, hypertension, and blood loss during current pregnancy were significantly associated with PPH. Community members are unable to recognize excessive bleeding in absence of means for assessment and misconceptions that exist among decision makers in the family and the community delay decisions to seek formal health care. Community members, including TBAs, should be equipped and trained with appropriate assessment tools that can be supplied in the delivery kits. Behavioral change and communication activities should be developed and implemented to increase timely recognition of PPH at the household level, increase utilization of health facilities, and encourage the transport of urgent cases to emergency care.

**Keywords:** Post-partum; Wome; PPH; Perception; Bangladesh

### Introduction

In Bangladesh, haemorrhage has been identified as one of the major causes of both maternal mortality [1,2] and morbidity [3,4]. The most recent maternal mortality and health care survey done in Bangladesh reported that maternal mortality ratio has declined from 322/100,000 live births to 194/100,000 live births between 2001 to 2010 but still only haemorrhage was responsible for 31% of maternal deaths [5]. Another national survey on maternal health care seeking behavior in Bangladesh found that half of women reported having one or more complication during pregnancy that they perceived as life threatening, while only one in three sought treatment from a qualified provider. This survey highlighted that more than three fourth of women with complications like excessive bleeding either failed to seek any treatment or sought treatment from an unqualified providers [6]. A study exploring barriers to immediate care for obstetric emergencies including haemorrhage reported that women themselves were not often aware of self care, a fear of sin that was attributed to the presence of unknown male doctors in the hospitals acted as one of the barriers for not availing formal care [7]. Another study done in Matlab, Bangladesh reported high fatality rates due to delay in care seeking at the time of such obstetric emergencies [8]. Moreover it is difficult to distinguish a point at which normal bleeding after childbirth become excessive and precise measurement of excessive blood is very challenging to obtain at community level [9,10].

Previous studies described delays to seeking and receiving care for obstetric emergencies including haemorrhage; (1) delay in the decision to seek care, (2) delay in arrival at a health facility, and (3) delay in the provision of adequate care [11,12]. Delays and low access to care in Bangladesh may explain results such as almost one quarter of women who died due to pregnancy related causes had not received any treatment prior to death [13]. In their work done in Bangladesh, Barkat et al. [14] demonstrated that the delays at family level in decision to seek care for maternal emergencies were associated with influence of women's husbands and in-laws [14]. Another study done in rural Bangladesh reported that approximately 67% of the study participants perceived a delay in deciding to seek care, while 12% and 24% perceived delays in access to transportation and in reaching the providers for care, respectively [15]. While, a study from northern India found that low

levels of health seeking was associated with poor problem recognition before and after delivery [16]. Postpartum care utilization has also been linked with the perceived nature and severity of the problem, [17] and socio-cultural factors, such as practice of seclusion [18-20]. Finally, the ambiguity that exists at the community level about how to distinguish normal from abnormal bleeding and the lack of clear measurement for identifying abnormal bleeding add to further delays [18].

Health care seeking for maternal health is low, particularly among poor women in Bangladesh [6,21]. One study suggested inadequate transportation system was associated with the 9-17% of the population who did not receive health services when they required it [22]. A study on maternal deaths in Matlab Bangladesh, reports that prior to their death, 42% of the women were attended by traditional practitioners, while 33% had not been consulted by any formal providers [23]. Poor women often sought health care initially from close relatives or traditional healers and approach trained health professionals only when their health problem persists [17]. Utilization of postpartum care has been found to be associated with maternal age, husband's occupation, gravidity, and number of desired pregnancies [24]. Mismanagement of PPH cases often exacerbates morbidity and mortality in resource poor settings due to the absence of antenatal care, inadequacy of primary health care training, inadequate referrals, lack of emergency facilities and equipments, and absence of blood transfusion facilities [25].

Literature has shown that cultural views held by the community regarding the causes of postpartum complications are different from

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those in the biomedical field [26-28]. In Nepal, community perceptions of bleeding and the associated meanings vary among different members of the family [29]. Heavy postpartum bleeding is often believed to be beneficial to the mothers' health [18], yet such beliefs may impede timely seeking and treatment of such a life threatening problem.

In Bangladesh, little is known about community beliefs and perceptions of blood loss, its significance as a danger sign during pregnancy, delivery and postpartum periods, and no study in Bangladesh has yet to estimate amount of blood loss after childbirth at the community level. In this context, the present study estimated postpartum blood loss and identified factors associated with it. It explored community level beliefs and perceptions regarding PPH. This study also explored the ability of key community figures to recognize danger signs of PPH and investigate their influence in the decision making process of health care utilization. The study was expected to generate relevant information that can be utilized for designing appropriate prevention interventions that will increase early recognition of PPH and encourage quick response at the community.

## Methodology

This paper describes the findings from the formative research done before a large community-based study on the feasibility, acceptability, and programme effectiveness of misoprostol for use in the prevention of postpartum haemorrhage. The study took place in two rural areas of Bangladesh; villages of Matuail and Abhoynagar sub-district from 2005 through 2006. Study participants were pregnant women between the ages of 15 to 45, who were recruited through household visits. Women were enrolled in the study on the basis of their Expected Date of Delivery (EDD) and intended place of delivery; all women with an EDD between July 01, 2005 through September 30, 2005 and with intention to deliver in the study areas and provided informed consent for participation in the study were enrolled. Participants were interviewed by eight trained female research assistants through a structured questionnaire. The research assistants had paramedic background, who also received intensive training on PPH, its causes and consequences, data collection techniques and techniques of blood loss measurements.

To assess the amount of blood loss, the research assistants supplied a standardized delivery mat (Quaiyum's mat) and five (05) pre-weighed standard sanitary pads for blood collection after delivery to each of the pregnant woman. Women were advised to preserve the soaked mat and all soaked pads in a sealable container that had been provided by the study. All women complied with instructions provided by the study staff members. The study staff members visited participants within 24 hours after learning of the delivery from the participants' family members as arranged during enrollment. Before field implementation of the study the delivery mat and pad were standardized among 682 women in a hospital setting. The standard dry weight of a mat was  $40 \pm 2$  gram and pad weighed  $16 \pm 1$  gram, while a fully soaked mat retained  $448.0 \pm 58.2$  ml and a fully soaked pad  $60.2 \pm 2.1$  ml of blood. To estimate blood loss and identify possible cases of PPH (defined as loss  $>500$  ml), the soaked mat and all soaked pads were weighed by the research assistants within 24 hours of delivery using an electronic postal scale prior to disposal. Blood loss was calculated by subtracting the dry weight of the mat and pads from total weight of the soaked mat and pads. Survey data was analyzed using SPSS software. Chi-squared tests and 95% Confidence Intervals (CI) were calculated to assess the association between PPH and other variables of interest such as age, parity, education, receipt of Antenatal Care (ANC), prolonged labour, and delayed placental delivery. As the data set included only a small numbers of women (7) having Antepartum Haemorrhage (APH), non-

parametric test (McNemar) was performed to estimate the association between PPH and APH. Information on APH, anaemia, and high blood pressure were self reported by the study women.

For qualitative research, a subgroup of participants and other key figures were selected to take part in in-depth interviews; this included women who experienced PPH (we included first (22) and those without PPH (12), their husbands (15) and mothers-in-law (15), and TBAs (11) to explore their perspectives on postpartum haemorrhage. In addition, two focus group discussions FGDs were held separately among village doctors and another among TBAs to ascertain their views as they are the most preferred primary level service providers in the locality. FGDs assisted us to understand role of TBAs and village doctors in management of such problems. Sample selection for each category of participant was purposive and the final sample size for in-depth interviews in each group was dependent on research redundancy. Qualitative data was collected by research investigators using a guide of open-ended questions. In-depth interviews and FGDs were conducted in Bangla language, audio recorded and later transcribed for analysis. Original transcripts were analyzed by content analysis investigators identified multiple themes and sub-themes and data was coded accordingly. Data was cross checked and compared among the different groups of participants for consistency or divergence and the investigators identified different patterns in the data. Results were then translated into English.

In a study done in Nepal, Pigg described dynamics of 'belief' models in illness behavior [30]. In his paper, Bury presents the importance of illness narratives of the patients that is linked with health care responses [31]. In the present study to analyze the qualitative information on health care utilization, we have adopted health care utilization model described by [32]. This model categorizes some predisposing, enabling and need factors that are thought to be linked with outcome of health service use or responses to illness. Predisposing factors are like demographic backgrounds, awareness and knowledge towards health services and perceptions on illness. Enabling factors are like availability of services, financial resources, family and social support. Need factors are perceived severity of the illness, fatal episodes, number of sick days, support and care needed from others. Responses to illness are self care, home treatments, traditional care, and formal health care.

Both quantitative and qualitative data collection was anonymous. Informed consent was obtained prior to enrollment and data collection. A system for referrals was established with a higher level facility offering emergency obstetric care for any complication that arose during and after delivery. The study was approved by the Research Review Committee and Ethical Review Committee of icddr,b.

## Results

### Quantitative findings

**Characteristics of women who experienced PPH:** A total of 840 women completed the survey and there was no significant difference in characteristics of women in two study areas in terms of age groups, education, and family income. Several factors were significantly associated with PPH, including multi-parity, absence of antenatal care during the studied pregnancy, and delayed placental delivery beyond 30 minutes (Table 1). PPH was not associated with age or education of the women.

Table 2 displays association between PPH and APH; women with a history of PPH were more likely to experience PPH during their current pregnancy ( $\chi^2=104.5$ ,  $p<0.001$ ) and women with past experience of PPH tended to experience APH during the current pregnancy

Variables	Non-PPH n=616% (CI)	PPH n=224% (CI)
<b>Age in years</b>		
≤ 20	29.7 (26.1-33.3)	33.5 (27.3-39.7)
20+	70.3 (66.7-73.9)	66.5 (60.3-72.7)
<b>Education</b>		
No education	23.4 (20.1-26.7)	17.4 (12.4-22.4)
1-5 years	31.7 (28.0-35.4)	37.9 (31.5-44.3)
6+ years	45.0 (41.1-48.9)	44.6 (38.1-51.1)
<b>Gravity*</b>		
Single	27.4 (23.9-30.9)	34.4 (28.2-40.6)
Multiple(RC)	72.6 (69.1-76.1)	65.6 (59.4-71.8)
Received antenatal check-ups*		
Yes	28.2 (24.6-31.8)	34.8 (28.6-41.0)
No (RC)	71.8 (68.2-75.4)	65.2 (59.0-71.4)
<b>Prolonged labour (&gt;12 hours)</b>		
Yes	7.1 (5.1-9.1)	8.0 (4.4-11.6)
No	92.9 (90.9-94.9)	92.0 (88.4-95.6)
Delayed placental delivery (>30 minutes)*		
Yes	2.4 (1.2-3.6)	5.8 (2.7-8.9)
No (RC)	97.6 (96.4-98.8)	94.2 (91.1-97.3)
<b>Hand insertion by TBA</b>		
Yes	37.7 (33.9-41.5)	42.4 (35.9-48.9)
No	62.3 (58.5-66.1)	57.6 (51.1-64.1)
<b>Mal presentation</b>		
Yes	3.9 (2.4-5.4)	2.2 (0.3-4.1)
No	96.1 (94.6-97.6)	<b>97.8 (95.9-99.7)</b>
Reported blood pressure**		
Yes	1.9 (0.8-3.0)	2.7 (0.6-4.8)
No (RC)	98.1 (97.0-99.2)	<b>97.3 (95.2-99.4)</b>
Reported Anaemia**		
Yes	13.8(11.1-16.5)	<b>12.1(7.8-16.4)</b>
No (RC)	86.2(83.5-88.9)	<b>87.9(83.6-92.2)</b>

Non-PPH defined as blood loss ≤ 500 ml; PPH defined as blood loss >500 ml; \*P<.005;\*\* p<.001, CI (95% Confidence Interval), RC-Reference Category

**Table 1:** Selected characteristics of women experiencing PPH and those without PPH in Matuail and Abhoyagar, Bangladesh.

Variables	Number of women (%)	Chi-squared	P-value
<b>History of previous PPH</b>	21 (33.3)	104.5	<0.001
<b>Experience of current PPH</b>	42 (66.7)		
History of previous PPH	63 (90.0)	43.2	<0.001
Experience of current APH	7 (10.0)		
Current PPH	224 (97.0)	201.9	<0.001
Current APH	7 (3.0)		

Approximately 60% of the PPH cases were unaware that the amount of blood lost during postpartum period was, in fact, excessive (Table 3).

**Table 2:** Associations between past and current experiences of postpartum and antepartum haemorrhage.

( $\chi^2=43.2, p<0.001$ ). Women with APH during the current pregnancy were also likely to experience PPH during the study ( $\chi^2=201.9, p<0.001$ ).

**Amount of blood loss:** Of the 840 participants, 224 (26.7%) had blood loss more than 500 ml. The mean total blood loss for entire group was  $449.9 \pm 199.9$  ml (Mean  $\pm$  SD). The distribution of blood loss among study participants is shown in table 3; mean blood loss for PPH group was  $691.2 \pm 189.6$  ml (Mean  $\pm$  SD) and for the non-PPH group was  $349.4 \pm 85.7$  ml (Mean  $\pm$  SD).

**Community perceptions on normal and abnormal bleeding after delivery:** The community members generally defined heavy bleeding

by the amount and pattern of bleeding that varied among different groups of respondents. Heavy bleeding is generally termed as '*beshi rokto*' or '*khun bhang*' in the local language. *Bod rokto* (clotted blood) is believed to be harmful; therefore it is beneficial to be expelled out of the body. Women who experienced heavy postpartum bleeding were aware of the risks and quantified the warning signs as, "*blood loss amounting to 5 kg or 10 kg is abnormal*" and others described an excessive amount as "*one or two fully soaked chala* (jute bags) or *bed sheets including sharee* (garments)", referring to a traditional practice of keeping jute bags or thick layers of cloth under the back of recently delivered women. A few women expressed personal experiences as "*bleeding was like waves of water*" or "*like the bleeding after animal slaughtering*". Women who had not experienced PPH, did not consider postpartum bleeding abnormal if it was not continued 10 days beyond delivery thus could not perceive early PPH as an endangering condition.

Most of the mother-in-laws considered heavy blood loss to be "*more than normal bleeding*" but could not specifically explain the distinction between a normal and an abnormal amount. One woman who had not personally experienced heavy postpartum blood loss but heard from others attempted to quantify it as "*if there is pitcher full of blood lost or blood flows like tap water after delivery then it is known as heavy bleeding*" while some others referred to a common proverb: "*to deliver a baby one has to lose one pitcher full of blood*". Disagreement in the estimation of excessive blood loss did occur among participants; unless it is unmanageable or women become extremely sick due to blood loss, community people do not consider blood loss as excessive. One mother in law contested her daughter-in-law's diagnosis of PPH (objectively defined case of PPH) stating,

"*My daughter in law thinks she had excessive bleeding but I don't think so, I don't understand why she thought it was excessive*" and further questioned, "*Can a woman give birth without having such little amount of bleeding?*" In contrast, a few TBAs could estimate the amount of heavy blood loss using the expression "*within one minute of time, a nekra* (pieces of old cloth that are used as sanitary napkin) *is fully wet*".

However, TBAs often fail to convince the family members that blood loss is excessive without having appropriate tools in hand as a proof. Husbands generally did not recognize postpartum excessive bleeding as a possible danger sign, nor could they quantify it. TBAs and village doctors, by contrast, often agreed that excessive postpartum blood loss is a critical health indicator for these women; however, they could not reach to a consensus as to how to properly define it.

Village doctors, they are unqualified practitioners in the rural areas who may or may not have paramedic training, described the technical difficulties associated with the identification and quantification of PPH blood loss during their practice: male doctors are not permitted, which is a part of cultural proscription, to directly examine female patients to assess the amount of bleeding and therefore are fully dependent on the judgments of the TBAs. One village doctor informed the study team that while treating such cases, his wife often accompanied him so as to evaluate the women's blood loss. Furthermore, during home deliveries,

Measurements and perception of blood loss	Non-PPH women n=616	PPH women n=224
Women perceived that they had PPH % (CI)	3.4 (2.0-4.8)	40.6 (34.2-47.0)
Women did not perceive that they had PPH % (CI)	96.6 (95.2-98.0)	59.4 (53.0-65.8)
Mean amount of blood loss (ml) Mean $\pm$ SD	349.4 $\pm$ 85.7	691.2 $\pm$ 189.6

CI-Confidence Interval; SD: Standard deviation; ml- milliliter

**Table 3:** Proportion and perception of women who did and did not experience during the current pregnancy.

Categories of causes of heavy bleeding	Perceived causes of heavy bleeding	Suggested actions for the problem
Physical causes	-weakness of body	-use of iron supplements and/or treatment with other medicines are recommended
	-weak uterus	- follow advice of physician
	-heavy work during pregnancy	-avoid heavy work or strenuous activity during pregnancy
	-lack of vitamins or quality nutrition	-consume nutritious foods
	-lack of rest	-take rest during pregnancy
	-mental stress or anxiety	- avoid stressors or anxiety
	- disrespect or negligence on the part of the husband	- husband should take care
	too much blood in the body	-nothing can be done
	-early marriage	-avoid early marriage
	-pregnancy at early age	-avoid early pregnancy
Delivery related causes	-prolonged delivery	-delivery should be assisted by doctors
	- <i>'fahul pore na'</i> (retained placenta)	-consult doctors at time of delivery if any complication
	- <i>dai</i> (birth attendant) inserted hand inside and caused harm to uterus and vagina	-delivery should take place at hospital
	- torn placenta, cord, or uterus caused by <i>dai</i> during the delivery process	- <i>dai</i> should not pull the cord or placenta
	- <i>'fahul shukna'</i> ("dry placenta"): meaning the woman's water breaks early and placenta becomes dry	-consult doctor
	-placenta had a <i>shikor</i> (root) like a plant	-go to hospital
Personalistic causes	- <i>'kharap batas'</i> (bad or evil wind)	- <i>'kabiraj'</i> * should be consulted
	- <i>'kaler dosh'</i> (explained in text)	- <i>'kabiraj'</i> should be consulted
	-attack by something ' <i>zeen</i> ' or ' <i>shaitan</i> ' (evil)	-amulet can be used to ward off spirit
	- the woman had disobeyed rules that are to be followed during pregnancy	-women should follow the rules during pregnancy ' <i>beche chola</i> '

**Table 4:** Perceived causes and suggested actions to prevent excessive postpartum blood loss.

it is often the TBAs who assess the condition of the women, and only when they feel it is necessary will they call upon a village doctor.

**Perception on causes and consequences of excessive bleeding after childbirth:** Irrespective of the subgroups, the present study participants identified a number of causes for heavy blood loss that can be grouped in three categories that include: physical causes, causes directly related to delivery process, and personalistic causes (Table 4). Often these reported causes are thought to be overlapping. Reported physical causes included physical changes that follow childbirth. Personalistic causes are referred to those that are attributed from outside, something thought to be non-human or supernatural. The third category of causes is reported to be directly linked with delivery process. Most commonly cited physical cause was referred to physical weakness. It was commonly explained that “pregnant mother [who is] too weak during her pregnancy has excessive bleeding” or “it happens due to the weak uterus”. Older mother-in-laws thought that diets lacking in vitamins would lead to heavy bleeding, as could lack of mental peace or lack of physical rest. Most of the women without prior experience of PPH could not identify specific causes of heavy bleeding, whereas women with past histories of heavy blood loss described biological causes directly related to delivery process such as a torn umbilical cord (*nar chire*), torn uterus, injured birth canal/vagina, or non-expulsion of placenta (*'fahul pore na'* or *'fahul baija pore'*).

In general participants also described personalistic causes linked to PPH; more mystical in nature, participants believed that heavy blood loss after delivery could be caused either by attacks from *zeen*, *shaitan* (evil spirits, bad wind) during pregnancy or by *kaler dosh* (an attack from the evil spirit) at onset of menarche that may cause irregular or heavy menstruation and may ultimately affect a woman even after delivery. Furthermore, traditional rules are expected to be followed during the pregnancy to ensure a healthy delivery and disobeying such rules are thought to lead to negative outcomes such as excessive postpartum blood loss. One rule, for example, advises pregnant women not to go leave the house during evening or during mid-day with her hair untied. As a suggestive action amulet can be used to ward off spirit

women should follow the rules during pregnancy '*beche chola*'. For such a problem '*kabiraj*' (traditional healer) also be consulted.

The study respondents thought that women with excessive bleeding may lead to other physical outcomes such as fainting episodes, convulsions, and vertigo, commonly believing that these women could become so weak that they are unable to breast feed or work and could be identified by their paleness of skin. Such women, it was also believed, could also develop blindness or tetanus. It is also believed, that for cases of retained placenta, the placenta may be fixed inside gall bladder and this may ultimately lead to the death of a women.

**Suggested actions for preventing excessive postpartum blood loss:** The study participants made a number of suggestions for PPH that were linked with the various perceived causes. To address personalistic causes, the participants recommended consuming nutritious food, using vitamin and iron supplements, ensuring adequate rest, avoiding heavy work, and avoiding mental anxiety during. Some of the participants believed that PPH could be caused by the *dai*'s (TBA's) use of improper procedures of during the delivery process may lead to the tearing of the uterus, vagina, cord or placenta and as a result, participants suggested that delivery should be assisted by doctors. Meanwhile, for situations in which PPH is thought to be associated with evil spirits, the suggested method of prevention was treatment by a spiritual person known as '*kabiraj*' or '*hkonkar*', traditional healers who use herbal medicines for treatments. In such cases they felt that formal medical treatments would not function as a cure.

### Decision making and care seeking for PPH

A birth attendant's role is critical during the decision making process to seek health care for postpartum blood loss and TBAs personally assess the delivery and advise family members accordingly. When manual attempts to remove a retained placenta by the TBA failed, TBAs advised family members to seek the assistance of a village doctor or *kabiraj* but rarely suggested the hospitalization. Several attempts were made at home by participants to remove the placenta and bring blood loss to cessation. Birth attendants invariably applied fundal pressure, inserted a hand inside birth canal, and attempted to

manually to remove the placenta. In a few instances, the placentas were fragmented by TBAs. Women reported being fed kerosene, hot water, raw eggs, or turmeric paste, and others reported that hair was put inside mouths of the women to induce vomiting and thus expulsion of the placenta from increased abdominal pressure. One mother-in-law explained the financial implications of TBAs' behaviour, "A *dhoruni* [TBA] never wants to lose a *poati* [pregnant mother] by sending her to a doctor, if she herself can manage the delivery she will get money, clothes and will have sufficient food to eat". In some cases, neighbours were also consulted prior to deciding to seek health care services for women experiencing PPH. In a few cases, neighbours encouraged the family members to hospitalize the PPH woman, while some actively assisted in the transportation process.

Family members, particularly in-laws and husbands, consulted other TBAs who were reputable having long professional experiences, though these women were not necessarily trained. In-laws and husbands were reluctant to seek care from formal provider for three reasons: fear of the expensive costs of treatment and care, apprehension towards allowing male practitioners to treat a woman, and lack of confidence in formal treatment provided in hospitals for delivery care. Lack of financial means was a major factor in the delay or failure seeking hospital care for a PPH woman. One women (aged 19 years, 10 grade passed, giving birth to second child) expressed her opinion as "after my delivery I experienced heavy bleeding, I felt that I need to go to hospital, but my husband did not take me there because of money problems".

Village doctors reported being prohibited from physical examinations including direct observation on the amount of blood loss and are forced to rely on TBAs' assessments. Only when the village doctor or TBA deemed a case unmanageable, they thought about referring the woman to the hospital. Role of women facing the problem is found to be very little in the entire decision making process.

Results from the study revealed a common pattern of decision making and treatment seeking practices for the care of PPH; this pattern is illustrated in figure 1.

### Response to PPH

A range of actions were seen among participants in response to heavy postpartum blood loss and are described in figure 2. Twenty-two women who experienced heavy vaginal bleeding after delivery had home deliveries by untrained birth attendant. Of these women, 17 received treatment while five did not seek consultation nor received any treatment. Six of the women receiving treatment were treated in the home: five had called upon village doctors at home and one purchased medicine from pharmacy as per individual decision and consumed the medicines.

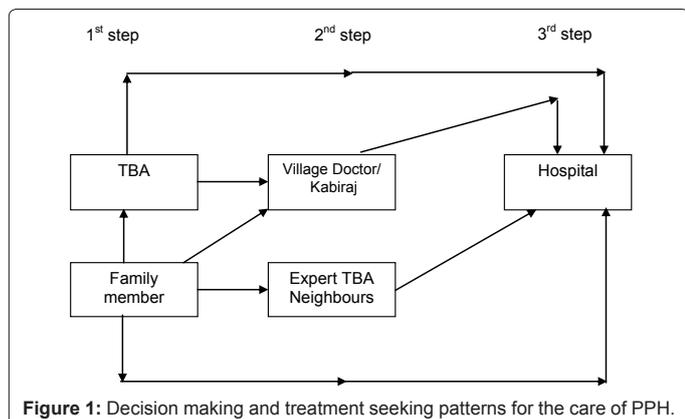


Figure 1: Decision making and treatment seeking patterns for the care of PPH.

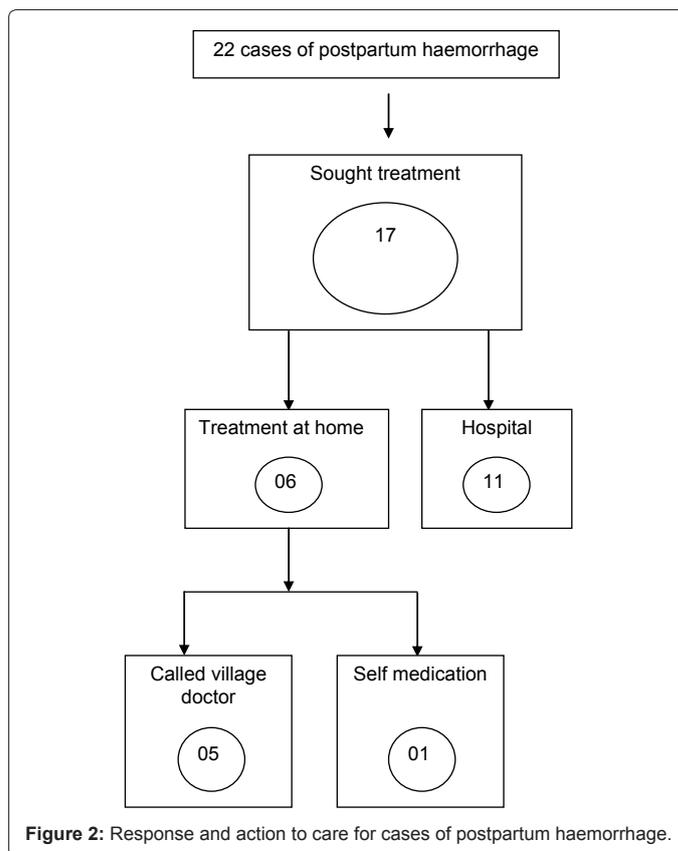


Figure 2: Response and action to care for cases of postpartum haemorrhage.

One of our respondents, an uneducated, 30 years old women giving birth to her 5<sup>th</sup> child expressed her experience of having excessive bleeding after delivery.

There were many problems during my last delivery. At home the delivery was performed by Dai. After delivery placenta didn't come out. Dai insert hand into the vagina to bring out the placenta, but she could half of the placenta Dai I inserted some hair into my mouth and fed me kerosin oil (cooking fuel) to make me vomit so that placenta get out, but she failed.

Another Dai was called upon, she tried to bring out the placenta by inserting her hand into the vagina and some pieces of placenta came out. Dai thought full placenta was out. I became very sick at that moment and had shivering, fever, distended belly. Finally I was unconscious. So my relatives took me to the hospital considering my condition. Another respondent (age 28 years, third grade passed, giving birth to 3<sup>rd</sup> child) described her situation after facing problem with retained placenta and heavy bleeding. She described that after delivery placenta did not come out. TBA and one of her neighbors (woman) inserted hand and brought the placenta out, I was bleeding heavily. My family members called upon a doctor (village doctor), he gave medicines and saline (intravenous fluid) then gradually bleeding stopped.

### Discussion

The present study describes experiences of women with PPH. The influence, perceptions, and response of key family and community figures are also described. Information generated by this study is expected to inform the development of appropriate programs and policy changes to address the issue at the community level. Common themes revealed confusion as to how to identify PPH, therefore interventions should provide tools and relevant information to the community for

early recognition of PPH and encourage timely response for women in need of emergency care. As TBAs are the primary pattern or resort for women when they deliver, it is desirable to improve their capacity at an urgent basis. However, role of mother in law is also pertinent in decision making process, so they must have relevant information towards early recognition of problem.

Although a substantial proportion of women were identified as PPH cases, these women often failed to independently recognize that blood loss was excessive and, consequently, many remained untreated, and were at risk of self-medicating that is often insufficient/improper, or at risk of anaemia and related consequences. Women, who prefer self medication, usually collect some anti spasmodic from the pharmacy, which does not help to recover them from the problem of PPH. Furthermore, the perception that blood associated with the delivery should be expelled from the body was common among study participants and is also corroborated by previous studies [19,33]. Such misconceptions can potentially delay care seeking and result in fatal consequences for a woman experiencing PPH. The bigger problem is that it is difficult for everyone involved, including healthcare providers at community level, to quantify when blood loss becomes excessive and indeed dangerous. The study found that often at stages women with excessive bleeding became unconscious or semi unconscious and at that situation they were transferred to a formal health care facility. Community members are often unable to recognize excessive bleeding particularly because of the absence of means to assess although they described a variety of methods for identifying excessive blood loss based on the amount or pattern of blood loss or other personal judgments. Similarly, another study from Bangladesh found that rural women often described excessive bleeding by the characteristics of blood flow [34]. Therefore, provision of specific tools and proper guidance at the community level is recommended to enable identification of bleeding that has become excessive.

The study participants attributed PPH to a wide range of factors. Some participants understood the implications of improper birthing procedures and the application of harmful practices by birth attendants that can lead to local tears and blood loss. The present study reported associations between PPH and reported high blood pressure and anemia, also APH and PPH in current and past pregnancies, similar to the findings of previous studies [35,36] and reinforces the need for targeting of prevention programs to women with histories of such risk factors through existing ante natal care programs.

Several important misconceptions as to the causes of PPH were prevalent among the participants and have been previously described in studies from the region [33,34]. For example, evil spirits, were often held responsible for the occurrence PPH and, therefore, it was presumed that healing could be assisted in a better way by a *kabiraj* or spiritual healers. This belief in evil spirits and the inability of individuals to control such influences serve as yet another potential barrier to seeking care from a formal health care provider. A study conducted in Bangladesh on delays in seeking emergency care for prolonged labour also found that 39% of the women sought care from a traditional or spiritual healer [8]. The present study highlighted that personalistic and naturalistic explanations of PPH are often overlapping. Although the participants recommended for actions to be under taken linked with specific causes, in practice, these were not sole factors for not availing formal health care, rather there were other barriers like financial problem or lack of confidence on health care facility which, often prevented them from formal care-seeking.

In-laws, husbands, and neighbors are key decision makers for

health related issues of the women but these figures were often found to be least aware about seriousness of the problem. Although there was general agreement that formal health care should be sought for any maternal emergency, including PPH, in reality husbands and in-laws were reluctant to consult formal health providers, often for financial reasons.

A limitation of the study is that only primary PPH occurring within 24 hours of delivery was captured. Additionally, there may be variations in weights measurement by different study staffs; however intensive training of the study staff and use of the same scale throughout the study suggests variation should be minimal. Another study limitation was the inability to track women who delivered outside of the study areas.

The Pathfinder International has developed a comprehensive model to address PPH that includes multiple programmatic components like advocacy, clinical intervention, and particular emphasis has been given to community engagement [37].

The present study highlighted ambiguity in recognition of heavy post partum bleeding and danger signs after child birth at the community level. It shows mismatch between community assessments and actual biological measurements in recognition of PPH. Therefore, community based interventions should be designed to raise awareness among those who are involved in the decision making process. Such interventions may include mass media campaigns, formation of community groups, and awareness building activities among women, men, TBAs, and village level health providers. Community members, including TBAs, should be equipped with and trained on the use of appropriate tools, including the delivery mat and sanitary pads, to enable identification of PPH in the home. These mats and pads should be standardized, premeasured, and pilot tested for community acceptability and feasibility. Tools can be supplied in the delivery kits for distribution among TBAs and provided with trainings as to the proper use. Clear guidelines for assessment of PPH and referral should also be provided to TBAs with incentives for early and appropriate referral to health facilities. Finally, community mobilization of funds for the transfer obstetric emergency cases to health facilities is a novel intervention [38,39] that should be pilot tested for use in rural Bangladeshi communities.

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