

DHS Further Analysis Reports No. 100



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Perspectives on the Value of and
Experiences in Using Antenatal Care
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Abstract

This complementary qualitative study to the 2014 Bangladesh Demographic and Health Survey (BDHS) was conducted with an objective to understand women's value perceptions regarding antenatal care and how these perceptions affect use of this care. The study was conducted in two purposively selected divisions of Bangladesh, using a sub-sample of women interviewed in the 2014 BDHS. A total of 25 in-depth interviews were conducted with women who had given birth in the 12 months preceding the 2014 BDHS. Overall, most of the women interviewed held a positive view of the benefits of seeking antenatal care; however, some did not find antenatal care relevant for women who were apparently healthy. The prevalence of women's contacts with the health care system during pregnancy was high, even though the timing and frequency of contacts were grossly inadequate. Most of the women had contacts with community health workers at home, while some made visits to health facilities for services. The type of services the women received fell short of the standards of antenatal care recommended by the World Health Organization (WHO), raising questions about the quality of the services that women received. Generally, most women perceived hospitals as a better place for receiving services compared with home services; some considered home-based care as "second best," when barriers to facility services are considered.

Acronyms

ANC	Antenatal Care
BDHS	Bangladesh Demographic and Health Survey
BRAC	Bangladesh Rural Advancement Committee
CC	Community Clinic
CHW	Community health worker
CSBA	Community Skilled Birth Attendant
DH	District Hospital
DHS	Demographic and Health Survey
DSF	Demand Side Financing
EA	Enumeration area
EPI	Expanded Programme on Immunization
ERC	Ethical Review Committee
FWC	Family Welfare Center
FWV	Family Welfare Visitor
GoB	Government of Bangladesh
HIV	Human Immunodeficiency Virus
HPNSDP	Health Population Nutrition Sector Development Programme
HW	Health worker
MA	Medical Assistant
MCWC	Maternal and Child Welfare Center
MOHFW	Ministry of Health and Family Welfare
MTP	Medically trained provider
NGO	Non-government organization
RDRS	Rangpur Dinajpur Rural Services
SACMO	Sub-Assistant Community Medical Officer
SC	Satellite Clinic
STI	Sexually transmitted infection
TT	Tetanus Toxoid
UHC	Upazila Health Complex
USAID	United States Agency for International Development
WHO	World Health Organization

1. Introduction

Bangladesh has made remarkable progress in the health and population sector in recent years. The progress has been measured through different national surveys conducted since the country's independence in 1971. The Bangladesh Demographic and Health Survey (BDHS) is one of those surveys, providing national estimates of nutrition, fertility, family planning, and maternal and child health in every three-year interval, with flexibility of collection of additional information using supplementary survey questions or qualitative studies. The 2014 BDHS is the seventh such survey in Bangladesh, with data collected between July and October 2014 in a nationally representative sample of about 18,000 ever-married women of reproductive age (15-49 years).

Three complementary qualitative studies were added to the 2014 BDHS to provide some additional in-depth information on family planning and antenatal care (ANC) that the standard survey could not collect. This report presents findings from one of these three studies. The broader objective of this study was to understand women's value perceptions regarding ANC and how their perceptions affect the use of ANC. In particular, the study explored women's perceptions regarding the importance of seeking care during pregnancy, collected in-depth information on the timing and contents of care received and on the providers they had visited, and also explored the decision-making process on seeking or not seeking care and on choosing a particular provider.

2. Background and Rationale

The term “antenatal care” refers to the health services that are provided to women during pregnancy. The primary aim of ANC is to ensure healthy outcomes for mother and newborn. While there is a continued debate about the effectiveness of ANC on maternal and neonatal health and about the ideal number of antenatal visits in resource-poor settings, the World Health Organization (WHO) recommends a standard model of four antenatal visits, based on a review of effectiveness of different models of ANC (WHO 2002). According to WHO guidelines, the first visit should be made in the first trimester, preferably before 12 weeks of pregnancy, given the need for early identification of pre-existing medical conditions that may affect the health of the mother and the newborn. The second visit should be made close to week 26. The third visit should be made in or around 32 weeks, and the fourth and the final visit should take place between 36 and 38 weeks.

WHO guidelines are also specific on the contents of these visits, which should include:

- clinical examination
- blood testing to detect syphilis and severe anemia (and other tests such as HIV and malaria depending on country context)
- estimation of gestational age and uterine height
- taking blood pressure
- recording maternal weight/height
- performing a detection of symptomatic sexually transmitted infection (STI) urine test
- requesting blood type and Rh factor; giving tetanus toxoid
- providing iron/folic acid supplementation, and
- providing recommendations for emergencies

In Bangladesh ANC is a basic form of maternal health service provided by the government, non-government organizations (NGO), and the private sector. Both formal and non-formal providers, with and without medical training, provide ANC services. In terms of use of ANC services, overall, there has been slow but steady progress in the use of any ANC among Bangladeshi women in recent years (Koenig et al. 2007; NIPORT, Mitra and Associates, and ICF International 2015). During the last 10 years or so, the use of any antenatal care has increased by 21 percentage points, from 58% in 2004 to 79% in 2014. There has been an increase in use of ANC from both medically trained providers¹ (from 51% in 2004 to 64% in 2014) and non-medically trained providers (from 7% in 2004 to 15% in 2014). While the public sector remains a prime source of ANC, ANC from the private sector is on the rise, from 37% in 2007 to 52% in 2014. The percentage of women receiving ANC at home also increased during the same period, from 12% in 2007 to 16% in 2014 (NIPORT, Mitra and Associates, and ICF International 2015).

The 2014 BDHS shows that not only are more women receiving ANC but they are also receiving care more often. The percentage of women who made the recommended four or more antenatal visits

¹ Includes qualified doctor, nurse, midwife, paramedic, family welfare visitor (FWV), community skilled birth attendant (CSBA), medical assistant (MA), or sub-assistant community medical officer (SACMO).

doubled during the last 10 years, from 16% in 2004 to 31% in 2014. Despite this improvement, the proportion of women making the minimum number of standard antenatal visits is low compared with the government's Health Population Nutrition Sector Development Programme (HPNSDP) target of achieving four or more ANC visits among 50% of pregnant women by 2016 (MOHFW 2011).

The shift in the place and type of provider of ANC has raised concerns about the quality of services. According to the 2014 BDHS, among women who made at least one antenatal care visit, the majority were weighed and blood pressure was measured, but few received other recommended services, such as urine or blood tests, or receiving information on signs of pregnancy complications. The type of services women received also varied widely by the type of provider and/or type of the place where ANC was received (NIPORT, Mitra and Associates, and Macro International 2009).

Previous studies have identified factors affecting the use of ANC in different settings (Pallikadavath, Foss, and Stones 2004; Mumtaz and Salway 2007; Say and Raine 2007; Finlayson and Downe 2013). In general, maternal age, parity, educational attainment, and economic status affect the use of ANC (AbouZahr and Wardlaw 2003; Houweling, et al. 2007; Simkhada, et al. 2008). Perceptions of risk associated with pregnancy and the importance of seeking care during pregnancy have also been shown as important in attending care during pregnancy. Distance to a health facility, long waiting time, poor staff attitude, and perceived quality of services also have strong associations with attending pregnancy care (Finlayson and Downe 2013). In some cultures the traditional practice of moving to the woman's natal home for delivery is a reason for making fewer antenatal visits than recommended, as women lose continuity of service and are unaware about the location of services close to their natal home (Khan et al. 2014).

The present study aims to shed lights on the reasons for the inadequate use of ANC in Bangladesh that could not be ascertained from the standard DHS survey. Specifically, it investigates women's value perceptions about the use of ANC; their attitudes about pregnancy as a "normal" state or one benefitting from pregnancy care; the types of services women receive as pregnancy care; women's preferences for different types of services and providers for ANC; perceived quality of care they receive via community-based field workers at home and through health facilities, including clinics and hospitals, and how decisions are made as to whether or not to seek care and where to go for care.

The study attempts to answer three sets of key research questions:

1. What are women's risk perceptions regarding pregnancy? How do pregnancy risk perceptions relate to seeking or not seeking care during pregnancy?
2. How does the perception of "everything is normal" relate to seeking or not seeking care? What are the other reasons for not seeking ANC?
3. How do pregnant women decide where to go for care during pregnancy? How do they decide how many antenatal visits to make and when to make them? Is getting care during pregnancy at home a hindrance for seeking outside care from a facility?

3. Methodology

3.1. Selection of Study Sites and Study Participants

This qualitative study was conducted in two selected divisions of Bangladesh, using a sub-sample of women who were interviewed in the 2014 BDHS standard survey and were eligible for collection of information on the use of ANC. The study sites were selected at two levels: a) divisional level, and b) cluster level within a division.

The selection of study divisions was guided by the objectives of the study. One of the objectives was to understand the reasons for increasing use of ANC at home and increasing use of care from non-medically trained providers. Therefore, we selected one division with the highest utilization of ANC from medically trained providers and another division with little use of ANC from medically trained providers (MTPs) but high use of care at home. According to the 2011 BDHS, Khulna division has the highest coverage of ANC from a MTP (65%), with most women receiving care from health facilities. In contrast, Rangpur division has the second-lowest coverage of care from a MTP, with the highest use of care from NGO workers who provide services at home. We thus selected Rangpur and Khulna divisions for this study.

Since urban and rural areas of Bangladesh have different service contexts, and issues around accessing care during pregnancy also differ between rural and urban settings, we decided to limit our study to rural areas only. In Khulna and Rangpur divisions there are some Upazilas that have an ongoing Demand Side Financing (DSF) program for maternal health. Because the DSF program provides incentives for the use of ANC, Upazilas that have a DSF program were excluded from the study sample.

The 2014 BDHS used a multi-stage, probability-based design to select nationally representative sample of 18,000 households from 600 clusters.² Fieldwork for the 2014 BDHS was completed in four batches, with each batch including randomly selected clusters from all divisions. After applying the eligibility criteria of women age 15-49 who had given birth in the last year (eligibility criteria for this study) in the BDHS 2011 sample, we expected to have 3.0 eligible women per rural cluster in Rangpur division and 2.4 eligible women per rural cluster in Khulna division in the 2014 BDHS sample. Given that the estimated sample size for this study was 25-30, we expected to have these numbers from the clusters in the first two batches of data collection. As such, the 2014 BDHS data management firm provided us with a list of 71 eligible women from 32 rural clusters of Khulna and 76 eligible women from 28 rural clusters of Rangpur from the first two batches of sampled clusters.

The next step was to select clusters to be visited. We followed certain criteria for selection of clusters. First, we chose clusters that had four or more eligible participants for the study. This criterion gave us a list of six clusters in Khulna and eight clusters in Rangpur. Priority was given to select clusters from the same ward/thana/Upazila, so that the time needed for transportation could be minimized. In Khulna we found one cluster distantly located compared with five other clusters and therefore decided to visit five clusters in Khulna to achieve the required sample size. For Rangpur, of the eight clusters, two were far away from other six, and thus we decided to visit these six clusters to have the required number of participants from Rangpur division. However, in Rangpur we achieved the required sample size after visiting four clusters and thus did not visit the remaining two.

We also considered the number of eligible participants available per household. If more than one participant was eligible in one household we considered selecting only one of them. All these criteria were considered capturing variations in the experiences of seeking care during pregnancy.

² A cluster is either an enumeration area (EA) or a segment of an EA with 30 households.

Figure 1. Map of study divisions and clusters



Although prior consent was taken to revisit a sample of women who were interviewed in the BDHS main survey for this follow-up qualitative study, we experienced some refusal (n=4). A few women were not available for interview, as they were absent or busy with household chores (n=5). Even though our original plan was to interview only two participants per cluster, in reality we ended up interviewing more than two participants in some clusters. At the end, we completed interviewing 12 women (of 28 eligible women) from five clusters in Khulna division. Similarly, we completed interviewing 13 women (of 40 eligible women) from eight clusters in Rangpur division. (See Appendix 1 for a complete list of eligible women, number of interviews completed, and reasons for non-inclusion in the study.)

3.2. Sample Size, Data Collection Method, and Data Collection Instrument

We planned to conduct 12-15 in-depth interviews in each division, giving a total of 25-30 interviews for this study; however, we were also mindful about reaching the “point of saturation”. We completed 25 interviews in total and felt that the point of saturation had been achieved.

The primary informants of this study were women age 15-49 with a live birth in the preceding year who were interviewed in the BDHS main survey. Based on the study objectives, a guideline was developed for the in-depth unstructured interview, which was pretested and finalized during the training of researchers.

3.3. Research Team and Training of Researchers

The study team included nine members: three principal investigators, one co-investigator, four junior researchers, and one field assistant to help the field research team in locating and contacting eligible participants. The field research team was composed of six female members (two investigators and four junior researchers), all with a master's degree in anthropology. The team members were involved in training, data collection, data editing, transcription and translation of the transcripts, and coding of the data. The principal investigators and co-investigator led the data analysis and prepared this study report, while the other members of the team were available to respond to any clarification needed concerning the data.

A 10-day training session was arranged before starting the fieldwork. The main focus of the training was to have in-depth discussion on the key research questions and how best to frame those questions to collect the information needed. At the beginning of the training, a brief overview was given on the health systems and provision of services related to maternal health in Bangladesh. The training included discussion on basic qualitative methodology and data collection process, sampling techniques and sample selection, selection of eligible informants, ethical procedures, and field management. The training included classroom discussion, role play, and field testing. Based on the experiences of field testing, guidelines were modified. Researchers were given feedback on interview techniques. An emphasis was placed on probing, note taking, transcription, translation, and writing up and elaboration of field notes. The research team was briefed about collecting basic demographic information of the informants, and also had a separate 7-day training on data coding and analysis.

3.4. Field Data Collection

Field data collection took place from December 2014 to March 2015. The field research team used the addresses generated by the BDHS 2016 survey firm to locate the participants. Before the field research team visited participants, a male member of the study team made a visit to identify the cluster and to make initial contact with the eligible informants and key members of their family, to brief them about the purpose of the study. He also fixed a date and a time for the field research team to do the interview. This process saved a lot of time for the field research team.

On the day of the appointment, a member of the field research team visited the selected household and introduced herself to the participant and her family. After the consent process, interviews were conducted in a venue according to informants' preference—generally either inside the house or in the family backyard. All the interviews took a broad approach in the beginning, which reflected on women's lives in general and their reproductive health in particular. This provided the context necessary to understand the women's experiences before getting into the details of using ANC during the last pregnancy. The interviews were conducted in Bangla. Most in-depth interviews took from 60 to 90 minutes, while informal discussions took 15 to 30 minutes. The field research team also took brief notes designed to help understand the social context of the study area, including transport network, availability of health services and service providers, including community health workers, and the overall socio-economic condition of the area. Appendix 2 provides a brief description of all study clusters, including the overall economic condition and development of each area, remoteness of the area including access to road network, and availability of health services, including presence of government and other health service providers.

3.5. Data Management and Analysis

The field research team made an audio recording of the interview, which was transcribed verbatim into Bangla, word-by-word. Transcripts were reviewed by the investigators on an ongoing basis and feedback was given to the field research team. Thirty percent of interviews were translated into English

so that one English-speaking principal-investigator could assist in the analysis and interpretation of the research findings and in preparing the study report. Once data collection was completed, a coding system was developed, capturing the main research themes and concepts generated through the data. Interviews were coded on Atlas.ti, a text-organizing software, and the data were organized according to the codes and sub-codes developed.

After completion of coding, a content analysis framework was used to identify trends of key concepts in the coded data. Two separate data analysis workshops were held to analyze and interpret the data. During each workshop half of the interviews were analyzed using codes and sub-codes. Narratives were also read to interpret the findings. Themes and sub-themes were identified and findings were grouped as per the objectives of the study.

3.6. Ethical Issues

Ethical clearance for the study was obtained from the ethical review committee (ERC) of icddr,b, and the Institutional Review Board (IRB) of ICF International which follows international ethical standards to ensure confidentiality, anonymity, and informed consent. The standard process of obtaining written informed consent was followed for all participants in this research, and interviews were conducted only after informed consent was obtained. During the consent-taking process, informants were made aware of the use of the audio-recorder and how and why it was being used. As indicated in the consent forms, all efforts were made to conduct the interviews in a private location and to maintain confidentiality of the information collected. We also made it clear that informants could refuse to respond to questions or could terminate interviews at any time if they did not feel comfortable or had reservations about responding to any particular question.

3.7. Challenges

Despite many precautions were taken for smooth field operation, the field research team faced a number of challenges during data collection. The first challenge was related to availability of eligible informants. Our initial plan was to select two participants per cluster and to select nearby clusters, to reduce field cost and transportation time. However, because of randomness of the selected clusters in the BDHS main survey from which the study participants were selected, the clusters with eligible informants were scattered. Moreover, some women refused participation in the study even after making the appointment for the interview. Some other women were not available during the pre-scheduled interview date. As mentioned, the study was restricted to women who had given birth in the last 12 months. Because of the time lag between the BDHS interview and interview date for this study, some women became ineligible.

Remoteness of some selected clusters and finding suitable accommodation for the female researchers was another challenge. The team had to stay in a nearby town and commute daily to the field site. For some clusters it took almost 2 to 3 hours (one way) to arrive at the study cluster.

Severe political unrest during January and February 2015 pushed back the actual date for data collection by 2 months. While the team started data collection in late December 2014, they had to stop data collection temporarily during January and early February 2015. After a gap of almost 2 months, data collection began again in late February 2015; however, continued political unrest and sporadic violence across the country made the field research team fearful about their safety during field visits.

4. Results

This chapter presents key study results, organized in eight sections: 1) socio-demographic profile of the study participants; 2) women's value perceptions regarding care during pregnancy; 3) women's knowledge and perceptions on ANC, including antenatal visits, content of care, and providers of care; 4) women's use of ANC during the last pregnancy; 5) women's knowledge and use of tetanus toxoid (TT) immunization; 6) women's knowledge, perceptions, and use of ultrasound during pregnancy; 7) women's perceptions on the quality of ANC and satisfaction with services; and 8) decision-making regarding ANC.

While the study was conducted in two administrative divisions, the study results are presented by themes and sub-themes without making any distinction between the two divisions; however, if an apparent difference was observed between the two divisions, the disparity is highlighted.

4.1. Profile of Study Participants

Table 1 presents the socio-demographic profile of women in the study. Most of the study participants were age 30 or younger and had secondary or less education. All were housewives. Two-thirds of the women married before age 18, the legal age at marriage for girls in Bangladesh. One-third of participants had one child and the rest had two or more children. All of the participants were married to husbands older than themselves. Like the participants, most of the husbands were age 30 or younger. About half of the husbands had more than primary education and most worked as farmers or day laborers. About half of the women lived with their own families; the rest lived with either in-laws or parents, and thus belonged to an extended family. There were no apparent differences in the background profile of respondents from the two study sites, Khulna division and Rangpur division. Appendix 3 provides a detailed table containing key socio-demographic characteristics of study participants.

Table 1. Socio-demographic profile of study participants

Characteristics	N	Characteristics	N
Woman's age		Husband's age	
≤20	7	≤20	0
21-30	16	21-30	17
30+	2	30+	8
Woman's years of schooling		Husband's years of schooling	
0	4	0	7
1-5	6	1-5	5
6-10	13	6-10	10
11-12	1	11-12	2
12+	1	12+	1
Woman's occupation		Husband's occupation	
Housewife	25	Farmer	11
		Day laborer/driver	5
Age at marriage (in years)		Small business	3
≤15	13	Service	2
16-17	7	Other	4
18+	5		
Parity		Type of family	
1	7	Nuclear	12
2-3	18	Extended	13

4.2. Women's Value Perceptions Regarding Care during Pregnancy

4.2.1. Perception of risk during pregnancy

Overall, most of the participants (18 of 25) considered pregnancy as a risky condition. They considered it risky because women may develop different health complications during pregnancy, which may also affect their baby in the womb, potentially leading to death among women and/or their baby. Most women could name several health problems that may develop during pregnancy. These include: convulsion (*khichuni*), bleeding, water leaking, swelling of feet, malposition of the baby, obstructed labor, etc. They considered pregnancy period as risky based on their own past experiences and/or hearing of the experiences of others who had suffered from pregnancy complications.

“It is a time of great danger when a child is coming out from a woman...a human being is coming out from another human being. Some mothers even die during this time. Many mothers become severely sick, many have their hands and feet swollen; they suffer from Khichuni or bleeding. Some women face the problem of not delivering the placenta.” – P5 [age 22, 5th grade education, multipara, Khulna]

“It is not only risky but also painful. Mothers face problem during this time, (they) can even have serious problem during delivery. Some mothers develop convulsion (tonkar) during delivery, sometimes baby is not in the proper position for delivery and mothers face problem.” – P8 [age 29, master-level education, multipara, Khulna]

A few women perceived that the risk during pregnancy and delivery depends on God. They live with good faith, that whether to face any complication or to recover from it all depends on God.

“There is nothing to be worried about whether a pregnancy is risky or not. If Allah wants a woman will have obstructed labor...the child's head will not come out, legs will come out first...delivery might not take place and the woman might have to go through a C-section.” – P24 [age 35, 3rd grade education, multipara, Rangpur]

“It is God who give babies and place them in the womb. If you survive, that will be by the wish of Allah, if you die that will also be the wish of Him. If I die while delivering then nobody has anything to do.” – P24 [age 35, 3rd grade education, multipara, Rangpur]

A very few women were ambivalent in answering whether a pregnancy is risky or not. One woman said that it is important to know the condition of the baby especially for the first birth but could not relate it with pregnancy risk. Another woman said she did not think that pregnancy is a risky condition, as she did not face any problem during her last pregnancy.

4.2.2. Perceived importance of seeking care during pregnancy

Overall, most of the women held a positive view about the importance of seeking care during pregnancy. A variety of reasons were given in favor of seeking care during pregnancy. These included: a) checking the health of the baby and the mother; b) checking the position of the baby; c) monitoring the growth of the baby; d) identifying complications and treatment of complications, and e) identifying the type of delivery (normal vaginal delivery or c-section).

“It is good to do the check-ups in all sense. You will be able to know how the baby is doing, whether there is (enough) water in the womb. If you do not do check-ups, then a mother may have khichuni, or blood deficiency...the mother remains good if you do the check-ups.” – P3 [age 22, 4th grade education, multipara, Khulna]

“It is important to do check-ups because you need to know the position of the baby as it can be upside down anytime.” – P21 [age 30, no formal education, multipara, Rangpur]

Most women held the view that pregnancy care is a means to identify complications and treatment of complications during and after pregnancy. These are achieved by measuring weight and blood pressure and doing some tests to identify potential complications so that appropriate measures can be taken to restore the health of the mother and the baby.

“It is good to do the check-ups during pregnancy so that you can avoid complications during delivery.” – P2 [age 21, 8th grade education, primipara, Rangpur]

“If you go for check-ups, the doctor will advise you, examine how the mother and the child are doing, advise you for follow-up visits, review your condition during the next visit, refer you to any test like blood.” – P23 [age 30, 7th grade education, multipara, Rangpur]

Many participants viewed pregnancy care as a way to have a smooth delivery; it helps the mother to know whether the baby will be delivered normally or needing assistance (c-section).

“It is important to see doctors to know how the baby is doing in the womb and if the baby is healthy, if the delivery is going to be normal.” – P2 [age 21, 8th grade education, primipara, Khulna]

While most of participants held a positive view about the importance of seeking care during pregnancy, whether a woman would seek care depends on consideration of perceived health during pregnancy. Some women (11 of 25) perceived that all women should seek care during pregnancy, irrespective of their health condition, since health complications may arise at any time. Some women stressed the preventive aspect of ANC.

“It is important to know how the child is doing...no matter whether you are doing good or not, it is important to do the check-ups...I think pregnant mothers should go for check-up and to know everything.” – P2 [age 21, 8th grade education, primipara, Khulna]

“You have to go to the doctor (even if you are doing fine), because it does not matter if the mother is doing good or not, you have to know what is happening inside, in what condition the child is in the womb. The doctor is able to identify if the child is in water, or less of water. To know all these, you should go for check-up. It does not matter if the mother is doing all right, it is about the child, s/he needs to be healthy as well.”
– P23 [age 30, 7th grade education, multipara, Rangpur]

Some other women (6 of 25) perceived that if a woman is healthy and does not have any health problem during pregnancy she does not need to seek care.

“You do not need to go for check-ups if you do not face any problems. Care seeking is important when you are sick. The child remains good in the womb if the mother is well.” – P5 [age 22, 5th grade education, multipara, Khulna]

“If someone does not face any problem, she lives well and her movement is good, so why should she go? It’s not necessary.” – P4 [age 19, 9th grade education, multipara, Khulna]

“Nobody wants to visit the doctor when well. Someone runs to a doctor only when there is problem.” – P11 [age 22, 8th grade education, multipara, Khulna]

“Only Allah knows if you are going to face any problem or not. If I feel good in every sense, I will understand that I am doing fine (and hence there is no need to go to doctors).” – P10 [age 29, no formal education, multipara, Khulna]

For some women interference with work was considered as a measure of “problems needing care”.

“Many pregnant mothers face swollen hand and leg, but I didn’t face this problem. Moreover, I did not feel sick while doing work throughout my pregnancy. I was in sound health. I could perform all household chores. Hence I did not seek care.”
– P23 [age 30, 7th grade education, multipara, Rangpur]

For most women delivery at home is desirable, but facility delivery is valued in case of emergency, therefore ANC in later months of pregnancy (at facility) is geared toward confirming whether home delivery will be possible. Registering for delivery care by obtaining a “card” at a desirable hospital in case it is needed is also a passive reason for going to a hospital, where ANC may be received incidentally.

“If I have the card then I would get the service at low cost (for delivery). I discussed it with my husband. We jointly decided to have a card. We paid 200 taka for the card.”
– P2 [age 21, 8th grade education, primipara, Khulna]

“I had to know whether my child would deliver normally at home or I would need c-section. I had to find out the way of survival.” – P23 [age 30, 7th grade education, multipara, Rangpur]

A few women connected pregnancy care with affordability. One woman said that it is important to go for care during pregnancy—provided that the family has enough money.

“If someone has the ability (to pay), she should go. There is another pregnant woman here now. She has not gone to any doctor yet...Look, there is a money issue here. If I have enough money then I would go to a doctor even with slightest pain. And if I do not have money, then I would not go to a doctor even if I am about to die.” – P7 [age 20, 5th grade education, multipara, Khulna]

4.3. Women's Knowledge and Perceptions about ANC

4.3.1. Knowledge and perceptions about the timing and number of visits

Women's knowledge about the timing and the number of antenatal visit varied widely. While some mentioned visiting every month during pregnancy, others were in favor of starting the visit at a certain month of pregnancy and then continuing until the delivery; some women recommended visits as per the need of the woman, and a few did not know how many visits a pregnant woman should make and when a pregnant woman should start the visit.

"Check-up should be done every month...pregnant mothers go through some improvements and some deterioration every month which need to be checked."

– P15 [age 20, 7th grade education, primipara, Rangpur]

"When a woman becomes pregnant she should start (check-up) from the fifth month and need to visit for the rest of her pregnancy. You should do check-up every month to know whether the mother's health is alright and to see whether the child's health is alright." – P12 [age 25, 5th grade education, multipara, Khulna]

A few women said that women should get a check-up regularly at a 3-month interval. This is needed to monitor the condition of the child's health as well as the mother's health condition.

"Making visits at 3 months interval is important, so that they (health care provider) could monitor the growth and the position of the baby in the womb." – P17 [age 20, 6th grade education, primipara, Rangpur]

A few women mentioned about making visits according to the need of the woman:

"A woman may have different kinds of problems. Doctors should suggest the timing of visit as per her needs. If it is not possible to visit doctor every month, she should make visit at 2-3 month intervals." – P20 [age 27, 5th grade education, multipara, Rangpur]

A few women had no idea about the number of visits women should make during pregnancy. One respondent said,

"No, I cannot say. I couldn't remember whether they (CHWs) said about it or not. Maybe they told but I cannot remember. It is tough to remember all things when you have little children!" – P3 [age 22, 4th grade education, multipara, Khulna]

4.3.2. Knowledge and perceptions on the content of ANC

Most women mentioned they learned from community health workers that certain things need to be done during a pregnancy check-up. They mentioned checking blood pressure, measuring weights, doing blood and urine tests, and taking TT vaccine as part of services women should get during pregnancy. A few mentioned doing blood grouping as they may need blood transfusion in case a c-section is warranted. It is likely that women's knowledge on what needs to be done was influenced by their experiences of getting certain services in the past.

“Suppose cesarean (c-section) was needed for delivery, you may need blood and if you know the blood group you would collect blood easily and infuse to patient’s body.”

– P12 [age 25, 5th grade education, multipara, Khulna]

“They check the (blood) pressure of the mother. If mother have low pressure then they advise to take lots of food to keep it to normal.” – P22 [age 31, 12th grade education, multipara, Rangpur]

4.3.3. Knowledge and perception on place/providers of care during pregnancy

When asked about the place and/or the providers who can provide care during pregnancy, most participants stated that they were aware that government and NGO health workers (BRAC in particular in Rangpur division) provide home services in their communities. The services that the health workers provide include: measuring blood pressure, taking weight, and advising on taking nutritious food and doing light household chores. For TT vaccine and medicines like iron, vitamins, and calcium, pregnant women need to go to the community clinic or other health centers. For doing different tests (such as blood and urine tests) women need to leave the village and go to the Upazila level. Some women also visit private clinics, Upazila Health Complex (UHC), or Maternal and Child Welfare Center (MCWC) that are far away from their community. For any kind of complication during pregnancy and delivery, women need to go to District Hospital.

4.4. Utilization of ANC

4.4.1. Pregnancy identification

According to the WHO standard of ANC, the first antenatal visit should be made before 12 weeks of pregnancy. Therefore, it is important to know when the study participants could identify that they were pregnant. Most of the women could identify that they were pregnant and used a pregnancy test to confirm their pregnancy status (22 of 25). This was done as early as the first month of pregnancy and as late as the fifth month (Table 4.2).

“When I started feeling like vomiting my neighbors advised me to do a pregnancy test. My husband also told me to do the same. Then before going to Surjer Hasi clinic I went to a village doctor. I bought a pregnancy stick and did the test. I got positive report. I was one month pregnant at that time.” – P9 [age 17, 3rd grade education, primipara, Khulna]

Most of the time women themselves initiated the process of doing the test by collecting pregnancy testing kits from NGO community health workers, or by sending their husband to collect the kits from a nearby pharmacy. In a few instances women collected the kits from neighbors or relatives.

“My husband bought the pregnancy stick from pharmacy to do test at home.”
– P9 [age 17, 3rd grade education, primipara, Khulna]

One woman even tested twice to confirm the state of pregnancy:

“After 4 months when a health worker came from BRAC to visit my house, I told her to give me a stick (pregnancy test stick), she asked me the reason. I then told her that my period was stopped for a few months and I had vomiting. Then I tested urine and found two marks there. I also went to the government hospital. I had test there and they also said that I was pregnant.” – P2 [age 21, 8th grade education, primipara, Khulna]

4.4.2. *Timing of first contact³ with health care provider/system during pregnancy*

As Table 4.2 shows, all participants had some form of contact with health care providers at some point during their last pregnancy. However, they had varied experiences as to when they had the first contact with the health care system. Three women had the first contact in the second month of pregnancy; nine women in the third month; four women in the fourth month; eight women in the fifth month; and one woman had her first contact with a health care provider when she went to a government hospital to get a card in her seventh month of pregnancy. Thus, if we compare the timing of study participants' first contact with any kind of health care provider or health system with the WHO recommendation of first antenatal visit, about half of the women (11 of 25) came in contact with any health care provider within 12 weeks of pregnancy (approximately 3 months).

In general, women who were contacted at home had contact with health care providers earlier than the women who went to a facility for seeking care. Sixteen women were first contacted by NGO/GoB health fieldworkers and then had contact with other service providers at the facility level; four women were contacted by fieldworkers at home and went to a health facility/center/clinic in the same month of pregnancy. The remaining four went to a facility or clinic before they were contacted by a health worker at home. One woman did not have any contact with community health worker; she went to a government hospital twice to receive care.

4.4.3. *Number of visits/contacts⁴ with health care provider during pregnancy*

The study participants had a varied number of contacts with a variety of health care providers during their last pregnancy. Overall, the participants had one to 13 contacts with health care providers during the whole pregnancy period (Table 4.2). The number of contacts varied enormously based on the type of the providers that women visited. Women who were visited at home by community health workers had the highest number of contacts compared with those who went to facilities or hospitals. Overall, community health workers made one to seven visits during the pregnancy period. With few exceptions, most women received at least four visits by these workers at home. Sometimes women could not recall the exact number of home visits.

³ Excluding contact for pregnancy test

⁴ Except contact for pregnancy test or contact for ultrasound only

Table 2. Pregnancy test and number and place of ANC visits

ID	Pregnancy test		1 st contact/visit (in month)	Last contact/visit (in month)	# of contact/visit			Total	Place of contact/visit
	Yes/No	Month			1 st trimester (1-3) months	2 nd trimester (4-6) months	3 rd trimester (7-9) months		
P1	No	-	6	9	0	1	1	2	Home; private clinic
P2	Yes	1	3	9	1	1	3	4	Home; NGO clinic; FWC; private clinic
P3	No	-	5	9	0	3	6	9	Home; CC
P4	Yes	2	5	9	0	4	5	9	Home; CC; private clinic
P5	Yes	1	3	9	1	3	4	8	Home; NGO clinic
P6	Yes	3	5	9	0	2	3	5	Home; DH
P7	Yes	2	4	9	0	3	3	6	Home; Govt. hospital
P8	Yes	2	3	9	1	3	3	7	Home; CC; MCWC
P9	Yes	1	2	9	1	3	3	7	Home; NGO clinic; CC; private clinic
P10	Yes	1	7	9	0	0	2	2	Govt. hospital
P11	Yes	2	5	5	0	1	0	1	Home
P12	Yes	2	5	9	0	2	3	5	Home; FWC
P13	Yes	2	3	9	1	6	4	11	Home; CC; private doctor
P14	Yes	3	3	8	1	3	2	6	Home; CC
P15	Yes	2	2	9	1	3	5	9	Home; UHC; private clinic
P16	Yes	1	2	7	1	3	2	6	Home; CC; private clinic
P17	Yes	5	5	8	0	4	4	8	Home; EPI center; FWC; private clinic
P18	Yes	3	4	8	0	4	3	7	Home; UHC
P19	Yes	2	3	9	1	5	4	10	Home; CC; UHC
P20	Yes	3	3	9	1	4	5	10	Home; NGO hospital
P21	Yes	4	4	9	0	4	4	8	Home; UHC
P22	Yes	1	4	9	0	7	6	13	Home; SC; CC
P23	Yes	3	3	7	1	2	1	4	Home; EPI center
P24	No	-	5	9	0	2	2	4	Home; CC
P25	Yes	3	5	9	0	5	5	10	Home; CC; UHC

CC= Community Clinic; SC= Satellite Clinic; FWC= Family Welfare Center; UHC=Upazila Health Complex; MCWC=Maternal and Child Welfare Center; DH= District Hospital

The number of visits made by pregnant women to a fixed site facility such as community clinic (CC), satellite clinic (SC)/EPI center, or any other higher level government hospitals or NGO or private clinics is relatively low, ranging from one to five. Only two women visited CC four times or more. Three women made four or more visits to a higher-level facility such as Upazila Health Complex (UHC), Maternal and Child Welfare Center (MCWC), NGO clinic, or private clinic for seeking antenatal care.

4.4.4. Providers and places of seeking care during pregnancy

The type of health care providers that the study participants had contact with included medically trained providers (MTP) (doctor, nurse, midwife, paramedic, family welfare visitor, CSBA and Health Assistant/SACMO)⁵ and non-medically trained providers, including government and NGO community health workers. As mentioned earlier, most of the women (24 of 25) had one or more contacts with community health workers, either from the government or nearby NGOs, who visited them at home to provide some services. Three different NGOs were named by the study participants: BRAC (17), Surjer Hasi (Smiling Sun) (2), and Rangpur Dinajpur Rural Services (RDRS) (1). Surjer Hasi (Smiling Sun) was mentioned by participants from Khulna division, whereas RDRS was mentioned by Rangpur participants. BRAC workers were mentioned by participants from both divisions. Three women could not tell the name of the NGO from which community health workers came to visit them.

Twenty-four women visited different types of health facilities to receive services. These include visits to CC, SC/EPI centers, FWC, UHC, MCWC,⁶ district hospitals (DH), other government hospitals, NGO clinics, and private clinics/hospitals. Of the 25 participants, 19 had one or more visits to FWC or higher-level government or NGO facilities or private clinics. These include visits to FWC (2), UHC (5), MCWC (1), DH (1), other government hospital (2), NGO clinic/hospital (4), and private clinic/doctor (8).⁷ Twelve women made one or more visits to CC, SC, and/or EPI center during pregnancy.

4.4.5. Services received during pregnancy

The study participants received a range of services during pregnancy. These include measurement of weight and blood pressure, blood and urine tests, abdominal examination, advice on danger signs of pregnancy, counseling on work, diet and rest during pregnancy, advice on taking vitamins, iron, and folic acid, distribution of vitamins, iron, and/folic acid, advice on doing ultrasound, TT immunization, and distribution of delivery kit as a preparation for the delivery. However, the services that the participants received depended on the place and type of providers they visited or were contacted by. Women who were contacted at home by health workers mostly measured weight and blood pressure and conducted abdominal examination.

“With her hand she checked me and tried to understand baby’s condition...she placed a thing into her ear and checked with a round thing on my abdomen (use of stethoscope to monitor foetal heart sound).” – P2 [age 21, 8th grade education, primipara, Khulna].

⁵ In most cases study participants could not identify the exact designation of the service provider who provided service; we therefore make assumptions about the type of service providers by the type of facility these women visited.

⁶ One woman visited district hospital (DH) for ultrasound; thus not included.

⁷ Some women visited more than one facility.

Table 3. Place of ANC and type of services received during ANC visits

Total # of contact/visit made	Place(s) of contact/visit		Service(s) received during contact/visit												
	Home	Health facility	Measuring weight	Measuring blood pressure	Abdominal exam	Urine test	Blood test	TT	USG	Advice	Iron/vitamin	Delivery kits	Registration card		
P1	2	x	Private clinic	x	x	x	x	x	x	x	x	x	x		
P2	4	x	NGO clinic, FWC, private clinic	x	x	x	x	x	x	x	x	x	x		
P3	9	x	CC	x	x	x	x	x	x	x	x	x	x		
P4	9	x	CC, private clinic	x	x	x	x	x	x	x	x	x	x		
P5	8	x	NGO clinic	x	x	x	x	x	x	x	x	x	x		
P6	5	x	DH	x	x	x	x	x	x	x	x	x	x		
P7	6	x	Govt. hospital	x	x	x	x	x	x	x	x	x	x		
P8	7	x	CC, MCWC	x	x	x	x	x	x	x	x	x	x		
P9	7	x	NGO clinic, CC, private clinic	x	x	x	x	x	x	x	x	x	x		
P10	2	-	Govt. hospital	x	x	x	x	x	x	x	x	x	x		
P11	1	x	-	x	x	x	x	x	x	x	x	x	x		
P12	5	x	FWC	x	x	x	x	x	x	x	x	x	x		
P13	11	x	CC, private doctor	x	x	x	x	x	x	x	x	x	x		
P14	6	x	CC	x	x	x	x	x	x	x	x	x	x		
P15	9	x	UHC, private clinic	x	x	x	x	x	x	x	x	x	x		
P16	6	x	CC, private clinic	x	x	x	x	x	x	x	x	x	x		
P17	8	x	EPI center, FWC, private clinic	x	x	x	x	x	x	x	x	x	x		
P18	7	x	UHC	x	x	x	x	x	x	x	x	x	x		
P19	10	x	CC, UHC	x	x	x	x	x	x	x	x	x	x		
P20	10	x	NGO hospital	x	x	x	x	x	x	x	x	x	x		
P21	8	x	UHC	x	x	x	x	x	x	x	x	x	x		
P22	13	x	SC, CC	x	x	x	x	x	x	x	x	x	x		
P23	4	x	EPI center	x	x	x	x	x	x	x	x	x	x		
P24	4	x	CC	x	x	x	x	x	x	x	x	x	x		
P25	10	x	CC, UHC	x	x	x	x	x	x	x	x	x	x		

CC= Community Clinic; SC= Satellite Clinic; FWC= Family Welfare Center; UHC=Upazila Health Complex; MCWC=Maternal and Child Welfare Center; DH= District Hospital

Some community health workers provided iron tablets and advised women to take rest. Some women mentioned receiving advice to visit a nearby NGO clinic to make a “card” to be eligible for a reduced fee for delivery at the NGO facility.

“BRAC woman came to check me at my house. She only measured my (blood) pressure, checked my belly by placing hand and asked me whether I wanted to have a card. She provided brown color medicine. She gave those tablets which I took for months... I took those (medicines) 3 months during pregnancy and 3 months after pregnancy. She also told me to eat fruits and take rest at least for 2 hours. She also forbade pulling heavy thing, avoiding hard chore.” – P2 [age 21, 8th grade education, primipara, Khulna]

Some health workers left their phone numbers and asked women to call them at the time of delivery.

“On that visit (9th month of pregnancy), she asked me, do I have any physical problem? I said, no. Then she told me to call her over mobile phone at the time of delivery. She will come. One of them told me to arrange an auto-rickshaw before, so that I could go to the hospital when labor pain starts.” – P19 [age 30, 10th grade education, multipara, Rangpur]

Some NGO workers advised women to visit the nearby clinics for additional services. One NGO organized satellite clinics in the study community where women came for ANC visits and where some services such as measuring weight and blood pressure were done. Women were then advised to visit to its fixed clinic to do some more tests and make a card to conduct delivery in the clinic.

“Six month was running. She told me about the card but that time she did not have the slip and asked me to go again at seventh month. So I went there next month and she gave the slip and I went to the hospital. I went next day to make the card...there (NGO clinic) I had to submit the slip to a female doctor then she gave me a card. After providing the card they measure my pressure, they then tested my blood and urine and told me to visit again next month. She checked my abdomen with her hand and also with a cord which she put on her ear and there was a round thing that she touched on my abdomen and said that the baby was in good condition and I would have normal delivery. She also talked about delivery kit - blade, plastic sheet, thread, clip were there.” – P2 [age 21, 8th grade education, primipara, Khulna]

While health workers made several visits to the pregnant women’s house, the services they provided were mostly limited to measuring weight and blood pressure, doing abdominal examination to monitor fetal heart (with a stethoscope in some cases and with bare hands in some cases), and advising on food and rest. A few women also were advised to visit health facilities/hospitals for other kinds of services. Women did not receive certain types of recommended ANC services, such as blood test or urine tests, from health workers. Women who visited CC or SC/EPI services also did not receive these two services (blood test and urine test).

The women who visited FWC or higher-level government facilities, such as UHC, MCWC, or NGO clinics, received a more comprehensive package of services compared with those who were visited at home by community health workers or visited CC, SC, or EPI center.

Four women who visited NGO clinics received urine and blood tests and were provided with a card for delivery. Two of them were advised to do an ultrasound. Of the two women who visited FWC, only one had recommended blood and urine tests done. Of the five women who visited UHC for ANC, two received both tests and one was advised to do an ultrasound and received safe delivery kits. One of the women had urine test only. The other two women received other services, such as measuring weight

and blood pressure, advice on food and rest, but not urine or blood tests. Of the two women who went to a private clinic, one had both urine and blood tests whereas the other had only urine test done.

Despite the fact that most of the women had more than four recommended contacts with health care providers during pregnancy, only nine women received most of the WHO recommended package of ANC, including urine and blood test, during one or more visits. Two more women received urine test but not blood test. Only four women received blood and urine tests in more than one visit. Only one woman received urine test from an NGO worker. The rest received these services from FWC, UHC, MCWC, NGO clinic, or private clinic.

Two women received delivery kits during pregnancy; one received the kit from a BRAC health worker in her ninth month of pregnancy when the health worker visited her at home, and the other received it during her visit to an UHC when she was 8 months pregnant.

4.5. Knowledge and Use of Tetanus Toxoid (TT) Immunization

Most the women were immunized against the disease, as they received five doses of TT (14 of 25 women); some of them completed the scheduled before the last pregnancy, while others completed the five-dose schedule during the last pregnancy. Four women received four doses of TT, three women received three doses, two women had two doses, one woman received one dose, and one woman had never received a dose during her lifetime. The participants from Khulna division had higher coverage of complete or near complete TT doses compared with participants from Rangpur division. Of a total 12 participants from Khulna, eight had completed five-dose schedules; three had four doses, and one had not had any TT during her lifetime. In contrast, of the 13 participants from Rangpur, six had completed five doses and one had four doses of TT. The other six women had three doses or fewer of TT vaccine.

While most women were aware of the importance of getting TT vaccination and knew that TT needs to be taken during adolescence, the exact benefits of getting the vaccine were not known to many. Some could mention preventing tetanus, which they had heard from community health workers; however, others mentioned avoiding any harm to the baby and preventing birth defects but could not mention the type of defect they referred to. Some women could correctly mention five doses of the vaccine, while others were not sure about the number and timing of the vaccination.

“Five vaccines need to be taken before childbirth. This five-doses of vaccine are provided to adolescent girls...I took those to prevent ‘tonkar’ (tetanus) during delivery. It will prevent complication during delivery.” – P12 [age 25, 5th grade education, multipara, Khulna]

“It’s the injection which needs to be administered at the age of 15. I thought if any injection (dose) is left then they would administer it during pregnancy. Hence I went to take the injection...I went there but they didn’t give any because it was less than one year since I took the last dose. So she (health provider) asked me to go after delivery to get the remaining injection (dose).” – P2 [age 21, 8th grade education, primipara, Khulna]

4.6. Knowledge, Perceptions, and Use of Ultrasound during Pregnancy

Overall, the study participants had a positive perception about doing ultrasound during pregnancy. The commonly held view is that doing ultrasound during pregnancy is important to know the condition, position, and growth of the unborn child and to know the sex of the child.

“Ultrasound is good to know child’s condition at mother’s womb, know whether its hand, legs are ok or not...whether the baby grow up perfectly or not will also be known.” – P5 [age 22, 5th grade education, multipara, Khulna]

A few women held a different view—that women who do not have any physical problem do not need to do ultrasound. Women who have any health problem need to know the status of their health and the consequences of mother’s ill-health on the health of the unborn.

“I did (at 9th month) it as I was sick, my dysentery didn’t cure for long time, I took medicine then I went to do ultrasound. Moreover, I wanted to know how the child was doing in the womb. I heard from many women that a child may not be in good condition in the womb, can be in reverse position or the fluid may become dry. To know all of these I went (to do ultrasound).” – P10 [age 29, no formal education, multipara, Khulna]

“If there is any pain in the abdomen then you need to do ultrasound.” – P13 [age 24, 10th grade education, multipara, Rangpur]

Some women perceived that ultrasound should be done at the later stage of pregnancy, like 6 or 9 months, mainly to know the sex of the child. Ultrasound will also help in assessing the overall condition of the baby so that a decision can be made about the place of delivery.

“I used to know that pregnant mother do ultrasound at 7 and 9 months of pregnancy but now I have come to know that ultrasound can be done at any stage of pregnancy. Pregnant women can do ultrasound whenever she faces any problem, or want to know the condition of the baby. Sometime women do ultrasound to know the sex of the baby.” – P2 [age 21, 8th grade education, primipara, Khulna]

Thirteen participants had done ultrasound during the last pregnancy, and two had done it twice. Of the 11 women who had done it once, 5 had done it at 9 months of pregnancy, 2 at 8 months, 3 at 7 months, and 1 at 3 months of pregnancy. One woman did the test twice at 9 months and the other woman who had the test twice did it at 5 months and then at 7 months of pregnancy. It is important to note that 11 of these women went to either a private or NGO facility to do the ultrasound. When asked the reasons for doing the ultrasound, one woman who did it at 9 months of her pregnancy said,

“I was told at the community clinic that ultrasound should be done at 8 or 9 months. I was told that it would be good for knowing the condition of my baby.” – P4 [age 19, 9th grade education, primipara, Khulna]

Some other reasons were also mentioned:

“I wanted to hear the sound and see the picture of my baby; especially my concern was to know the position and condition of my baby. I also wanted to know the sex (of my baby).” – P2 [age 21, 8th grade education, primipara, Khulna]

“I told my husband that many women develop complications, the child could also be in reverse position in the womb; at least I would know whether it was a boy or girl, he said you need not to do that as we have belief in Allah. It is better to depend on Allah as we cannot change anything (sex of the child). As he said this I did not go for an ultrasound.” – P12 [age 25, 5th grade education, multipara, Khulna]

The practice of doing ultrasound was more prevalent among women from Khulna division compared with women from Rangpur division (9 of 12 women in Khulna compared with 3 of 13 women in Rangpur).

4.7. Perceived Quality and Satisfaction about Facility-based and Home-based ANC

When asked about the quality of the services they received during pregnancy, women valued how health care providers spoke with them, whether they took time for providing services or rushed, whether they talked to them in “good manner”, provided information about self-care, provided medicines, and provided reasons for doing certain tests or explaining the results of the tests to them. The level of satisfaction was related to the perceived quality of services they received.

As mentioned earlier, most women were visited by community health workers at home and they received some services during these visits. Some of the women also went to one or more facilities to receive services. Therefore, when asked about the quality of services and/or satisfaction, reference was made to the type of the providers and the places where the services were provided and comparisons between the various services.

4.7.1. Facility-based services

In general, the study participants perceived hospitals or facilities as a better place for receiving services compared with home services. They liked the professionalism and knowledge of doctors at facilities above community health workers. Some mentioned availability of “skilled” providers in hospitals who can deal with complications.

“Actually we have no doctor here except village doctors. And doctors are available in Satkhira. There are some good quality doctors in the maternity of Satkhira. I know one doctor there, called Lipika, who is well known and also rewarded from abroad. So many doctors are there and so I went there. Most women go there and seek care from the maternity. Besides our own choice workers of this clinic also suggest women to go to the maternity.” – P8 [age 29, master-level education, multipara, Khulna]

“Seeking care at a hospital is better than home. Doctors can tell you many things in the hospital. They will measure weight, pressure, and they also give tablet. They give advice. So it is better to go to a hospital...At home, health workers also measure pressure, but every service is free of charges at the hospital. We found doctors there...Hospital has free delivery service.” – P12 [age 25, 5th grade education, multipara, Khulna]

“In the clinic, they do check-ups in a very good way, unlike at home. They also discuss about many danger signs and advise how to address them.” – P14 [age 18, 6th grade education, primipara, Rangpur]

“Going to a hospital is better... more beneficial... you will find senior doctors in the hospital. Conversely at home just two women come and they do not understand the problems properly. Doctors in the hospitals understand all problems.” – P24 [age 35, 3rd grade education, multipara, Rangpur]

Some women saw the benefits in receiving care at home because health centers are far away, and to avail themselves of those services women need to have suitable transportation means and bear transportation costs. Some of the women mentioned that during the advanced stage of pregnancy

women become heavier, have difficulty in walking, and that is another reason for women for not going to a health facility for check-up.

Irrespective of the type of provider or the place they visited, women liked the professional tests and exams with equipment over manual exams.

“Their service provider [CC at in-laws’ house] only did check-up by hand. That’s why I went to the community clinic of my parental house...They used machines for my check-up. They did check-up by using stethoscope...” – P9 [age 17, 3th grade education, primipara, Khulna]

Despite high regards on the facility-based services some participants expressed reservations in receiving services from health facilities due to the distance to the health facility, availability of suitable transport, workload at home, privacy concern due to presence of other people, and non-friendly attitude of some health care providers.

“That woman (doctor) is from high status and has an attitude. She was dealing with so many patients. I was feeling like I could have my life back by leaving that place. When I entered there she touched my belly. I was scared. She understood that. She asked me whether I was scared. I answered I was feeling pain in my belly and I requested her not to touch my belly again. Then she said, ‘ok then, as you said I would not see’ ...and I left.” – P7 [age 20, 5th grade education, multipara, Khulna]

The cost implication of taking services was also mentioned by some women complaining about high cost of services in the hospitals.

“I was satisfied but she could have provided better service...she does cesarean (c-section) at the maternity, but if she wishes she could do it at the government hospital (where she works). She did it in a private clinic so that she gets commission from there.” – P8 [age 29, master-level education, multipara, Khulna]

Yet, women were able to give an extra effort (in terms of money or transportation) to get the service at their preferred point of care availed themselves of that service.

“Although the road to there [Satkhira maternity] is not good women go there for their better treatment [compared with their local community clinic]. The road was worse while I was pregnant than now. I went there monthly for check-ups.” – P8 [age 29, master-level education, multipara, Khulna]

4.7.2. Home-based services

Overall, most of the women expressed satisfaction with the services they received from community health workers. Women valued how health workers talked to them by visiting their house. However, some of them expected more from the health workers. They expected more time from the workers and expected that they would talk in a “good manner”. This expectation was more prevalent among participants from Khulna division, while participants from Rangpur expressed satisfaction with the care provided by community health workers. They expressed satisfaction about the extensive advice they received on self-care, suggestions about doing tests with a clear explanation of reasons for doing the tests. They were also satisfied that the health workers completed physical examination and took weight and checked blood pressure at home. Moreover, the health workers suggested visiting a higher-level facility if there was any complication.

“She did the check-up and told me to go to a doctor. I asked her the reason to see a doctor. She said that I had severe pain and without a good doctor no one would be able to give me any medicine as I was pregnant. She said if any quack see me and give me drugs, then growth of my child in the womb will be hampered, even I could die.”

– P2 [age 21, 8th grade education, primipara, Khulna]

Some women perceived limits to the care community health workers can provide, especially doing some tests, as suggested by the following quote.

“She couldn’t do more than she did...This is sufficient as they provided the service in the house. They couldn’t bring the machine [computer]...They couldn’t do blood test...They came and gave advice.” – P21 [age 30, no education, multipara, Rangpur]

Yet, they did not complain, as it was free and given at their doorstep. Some women considered home-based care as “second best” when barriers to facility services are considered.

“She did all the things within her ability...She did according to her job rules. I did not expect anything more from her.” – P7 [age 20, 5th grade education, multipara, Khulna]

“Getting the service at home is more beneficial than to go somewhere, otherwise I had to go there on foot, during pregnancy it is hard to walk anywhere.” – P21 [age 30, no education, multipara, Rangpur]

Some were dissatisfied that community health workers do not do more (like urine or blood tests) or that necessary extra services entail costs, as they need to go to hospital for extra services. Some women complained about not having enough discussions, while others complained about uncertainty of health workers visits.

“When she [CHW] came to my home, she only touched my abdomen and measure the pressure and she did not talk to me. She did not measure the weight or anything. On the other hand, they [clinic] took my pressure, weight, and talked about a lot of things, I mean they advised me many things.” – P14 [age 18, 6th grade education, primipara, Rangpur]

“She measured my pressure, laid me down on bed and touched my belly by hand and then written something into a card (which she kept) and then went away. She didn’t tell me anything. She didn’t tell me anything whether I have high pressure or low pressure or whether I am in a good position. She didn’t have any fixed date to come. Sometime she came after one week and sometime after one month. She didn’t give any date of visit.” – P7 [age 20, 5th grade education, multipara, Khulna]

4.8. Decision-making Regarding ANC

One of the objectives of the study was to understand how women make decisions to seek care during pregnancy. Overall, making decisions about using or not using ANC services, as well as choosing a particular provider or a group of providers, is a complex process. Using data from in-depth interviews, we attempted to examine patterns in the decision-making process. We propose that the decision-making process of seeking care starts with women’s perceptions of the meaning and importance of ANC; their perceptions about the relevance of care to themselves and taking a stance on whether or not to seek care; choosing a provider or a mix of providers for the care; and seeking the care at the final stage. Factors that play roles in the decision-making process include workload at home, past experience of

pregnancy complications, and experience in seeking or not seeking care during pregnancy, economic condition, perceived cost of the service, and support from the family.

The way of understanding both the meaning and the importance of seeking ANC greatly influenced the subsequent process of deciding whether to seek care. In general, women's perceptions about the usefulness of ANC fell into three categories: a) those who viewed it as a preventive measure (go for care even if there is no health problem) that was helpful for both child and mother; b) those who saw it as a curative measure (go for care when there is a health problem); and c) those who considered it as a means for achieving certain specific purpose, such as obtaining a "card" for facility delivery, getting TT immunization, or doing ultrasound.

While holding a particular perception about the meaning and importance of ANC, the study participants rationalized the degree to which ANC was personally relevant to them. Some women found it relevant because they were having some physical problems; others who viewed it as a preventive measure also found it relevant in order to check the status of the baby and the mother. Others, who felt healthy without any recognizable complications, were reluctant to seek care. Some women viewed it in the light of their past bad experiences. When women knew the value of a particular service or test, they actively sought those services.

"One vaccine was due from the first pregnancy. And I need to take that vaccine... There was no provision at my natal house to take that vaccine. So when I went to the camp, she told me that I need to take that vaccine." – P23 [age 30, 7th grade education, multipara, Rangpur]

"We took the service by going there [community clinic] by ourselves. I told them of my pregnancy situation and requested them to give TT injection..." – P4 [age 19, 9th grade education, multipara, Khulna]

As mentioned earlier, most women had their first contact with health workers at home; therefore, the pregnant women had little say about getting or not getting home services. These services did not incur any cost and, unless the pregnant woman or any other member in her family objected to receiving services from community health workers, who made household visits as per their schedule and provided specific services (measuring weight and blood pressure and doing abdominal examination), and women passively accepted the care.

"There is nothing to take decision as she [BRAC health worker] came to my house to provide the service." – P21 [age 30, no education, multipara, Rangpur]

Receiving home services made some women feel no need to go out of their house to receive any additional services, as they were either satisfied with the services or did not see any other reasons to go to other places.

"I didn't go (to any facility) because that health worker apa always visits my aunt's house to do their job. Both of them work at family planning office. At that time my aunt told the apa to do my check-up. That's why I didn't need to go to hospital." – P2 [age 21, 8th grade education, primipara, Khulna]

However, most of the women who were visited by health workers at home (23 out of 24), also made an active effort to go out of their home to seek services from health facilities, suggesting that home visits did not prevent them from making visits to health facilities for ANC. In this regard, women seldom made decisions independently; a supportive environment determined whether ANC would be sought outside of home. The supportive environment included support from husband and in-laws and workload

at home. Having a supportive family (husband and or in-laws) helped women in seeking care outside of home.

“I discussed it with my husband and asked him...then we jointly took the decision of doing the card.” – P9 [age 17, 3th grade education, primipara, Khulna]

“My older sister in law, husband and mother in law told me to go [to CC]. They told me and I went there with my husband because he knows every place.” – P4 [age 19, 9th grade education, multipara, Khulna]

Even for home-based care, where the decision is “passive,” women needed support from family members in receiving the service.

“Yes, we had [discussion regarding health worker’s services]. My husband told me to get the service from her, he said, ‘ok, if the BRAC lady come, you will check the weight and other thing she said.’ He even asked me to go home as I was working outside the house when she came. My husband was at house then. He went to call me and said that the lady had come, go to her.” – P23 [age 30, 7th grade education, multipara, Rangpur]

“No, I didn’t face any problem [with husband or in-laws not allowing]. My husband never made any problem for this. I have chosen my doctor and I just told him that I need to go there and he took me there. Moreover, in my husband’s house all of the family members are concerned about sickness and took us to doctors if we get sick.” – P9 [age 17, 3th grade education, primipara, Khulna]

An exception to the pattern was found in one woman.

“I told him [husband][that maternity center gives free delivery service if ANC is taken from there], but he said, ‘I am too busy. I don’t have time to go with you. Delivery will happen at home.’” – P23 [age 30, 7th grade education, multipara, Rangpur]

Mothers-in-law were sometimes a barrier to seeking care if they thought that care was unnecessary, outright prohibiting care and making it clear that “in their day, women experienced pregnancy without such interventions”. In this regard, two women shared their experience of seeking pregnancy care in their last pregnancy when they were in their natal house; their in-laws’ family did not support them going outside home to seek care for the last pregnancy.

“My parent’s house is in Lalmonirhat. I visited maternity center in my previous pregnancies from my natal house. My parents also wanted me to go there and do the card. I didn’t go there from my in-laws’ house.” – P23 [age 30, 7th grade education, multipara, Rangpur]

“I moved to Kolaga [for ultrasound at 9 months] because it is near to my natal house. Moreover there was no one who could accompany far off along with me [at husband’s house].” – P9 [age 17, 3th grade education, primipara, Khulna]

Other factors that directly or indirectly affected the decision-making process included: time and workload, distance to the facility, someone to accompany, and cost of services. If the woman’s husband or mother-in-law was not supportive and excuse her from doing household chores, the woman could not seek care outside the home even if she considered it as important.

“I didn’t go because I was busy with household chores and with work in the field. I have to manage both house and field. I didn’t go for any check-up, blood test, urine test or measuring my weight...” – P23 [age 30, 7th grade education, multipara, Rangpur]

“Doctor gives a number of advices. If I listen to him and lie down, then how will my family run? How the household chores will be completed?” – P11 [age 22, 8th grade education, multipara, Khulna]

Economic condition of the family also played a role in decision-making about seeking pregnancy care.

“We are poor people, where will we get money from? If there is money, then people do it. If not, they don’t. If there is money, then all kind of desires arises but when there is no money, what is the use of knowing any desire? We wished to do (ultrasound), but there is no use wishing when there is no ability.” – P11 [age 22, 8th grade education, multipara, Khulna]

5. Discussion

This chapter presents main study findings and discusses implications of these findings. The study findings can be categorized under three headings: women's value perceptions about using care during pregnancy; their personal experiences in seeking care; and perceptions of quality of care and satisfaction in using the care.

With the exception of a small number of women, a general consensus prevailed in perceptions about the importance of seeking care during pregnancy. Generally, most women held a positive view about the benefits of seeking ANC; however, some did not find it relevant for them, as they were apparently healthy without any recognizable signs or symptoms of complications. These findings are in agreement with other studies where pregnancy was viewed as a normal life event rather than a medical condition requiring professional monitoring and supervision (Nahar 1997; Chowdhury, Mahbub, and Chowdhury 2003; Khan et al. 2004). This was especially true for multiparous women who had experienced one or more healthy pregnancies (Ndyomugenyi, Neema, and Magnussen 1998; Griffiths and Stephenson 2001; Matsuoka et al. 2010).

From the study, it appears that most of the participants had limited knowledge about the desirable timing and number of visits to be made for ANC. They were not aware of the type of services they needed and “ideal” places to go for obtaining these services. This is not surprising given that these women are housewives, live in rural areas, have low-level education, and have limited access to information about health services in general and ANC services in particular.

Bearing in mind that a complication can develop at any stage of pregnancy, holding a positive view about benefits of ANC is not sufficient in itself. To obtain the full benefits of ANC, not only does every woman need to be aware of the signs and symptoms of pregnancy complications, but they should also know when and where to go if complications appear. They also need to be aware of the benefits derived from making timely and sufficient number of ANC visits. Even though most of the participants had one or more contacts with the health care system, either through home-based community health workers or facility-based health professionals, they did not receive sufficient information on the purpose and schedule of ANC visits. Relevance of the care was also not explained to them. Therefore, the study participants missed an opportunity to become educated about the benefits and schedule of getting standard care during pregnancy; on the other hand, health care providers also missed a chance to provide appropriate information and services to these clients.

The study found women's high level of contacts with health care system, either through their active visits to fixed site clinics/hospitals or through home visits by community health workers, or both. All participants had some form of contact with a variety of health care providers at some point during their last pregnancy. Most of the women who received home visits by community health workers also visited fixed site clinics, which is an indication that home visits did not prevent women from visiting facilities. The study women had varied experiences in the timing of first contact, total number of contacts/visits made, and the services that they received from these contacts/visits. Overall, half of the women had first contact within 12 weeks, the WHO recommended timing for the first visit; one to seven contacts with health workers at home, and one to five visits at a fixed site health facility, and in most cases women received very limited services, such as measuring blood pressure and abdominal examination.

Our findings are in agreement with the BDHS and other studies, which have showed an increasing trend in the use of ANC in Bangladesh in recent years. According to the 2014 BDHS, 89% of women in Khulna and 81% in Rangpur received any ANC (NIPORT, Mitra and Associates, and ICF International 2016). Some other women (approximately 5%) reported having visits by health workers at home when they were pregnant, but did not report these as “check-ups”. The BDHS and other surveys collect information on the use of ANC as perceived by the respondents. The structured format of the questionnaire may provide less flexibility to probe or to ask additional questions if a respondent cannot

answer the question or does not understand the meaning of the question. For example, in the DHS questionnaire respondents were asked whether the respondent had any “check-up” during her last pregnancy. Even though data collectors were trained to explain the word “check-up” in greater detail, if a respondent failed to understand the meaning of “check-up” she also missed reporting the use of ANC. On the other hand, the qualitative nature of the present study gave flexibility to ask multiple questions, verify answers by cross-checking and triangulate information gathered from different sources. Moreover, we have counted any contact with the health care system as care during pregnancy, which may not match with women’s perceptions about the use of ANC or “check-up”.

We are, however, mindful about the selective nature of the study sample. It may be likely that the clusters that we have selected have better access to health care services compared with the overall sample covered in the DHS surveys or the country as a whole (both in terms of the presence of community health workers and the availability of fixed health facilities). Overall, Rangpur has a high concentration of NGOs working in maternal and child health programs. BRAC and RDRS are two of these NGOs working extensively in Rangpur division. All of our clusters from Rangpur division reported to be covered by BRAC and RDRS, which may explain high coverage of antenatal care in the Rangpur clusters. Smiling Sun (Surjer Hashi) and BRAC provide services in Khulna division. Of the five selected clusters in Khulna division, four had the presence of NGOs (see Appendix 2). Therefore, the presence of NGO field workers in the study clusters may explain the high level of use of ANC found in this study.

While the study findings indicate a high coverage of ANC, it says little about the type of services women received. In our study, only 11 women received urine test and nine women received blood test during one or more visits. These two particular tests are essential components of ANC but were not provided by community health workers during home visits. The study participants had these tests only if they made active efforts to go outside home and visited FWC or other higher level health facilities. The 2014 BDHS data show higher use of urine and blood tests in Khulna and Rangpur divisions (rural) (57% urine test and 43% blood test) compared to our study findings. These findings suggest that our study women may have less chance of getting urine and blood test as they were visited by community health workers at home.

We observed variations in the services provided by community health workers at the household level. Some provided limited services, whereas others provided a few more services and referred clients to a nearby facility for additional services. Some spent sufficient time with clients and explained all the directives in greater detail. These had a direct effect on the satisfaction of their clients.

While there is a limit to the extent of services community health workers can provide, presence of these providers in the community should be taken as an opportunity rather than an obstacle in increasing the use of ANC. Community health workers can play a key role by identifying all pregnant women in the community and provide counseling on healthy lifestyles, birth planning, complication readiness, and the need for ANC and skilled care at birth. By referring and linking pregnant women to fixed-site facilities for additional care, community health workers can help creating linkages between the community and health care systems.

In most cases, women expressed satisfaction with the services they received from community health workers. Acknowledging the limits to the type of services that community health workers can offer, most of the women did not complain, as the services were free and available at their doorstep. They considered it as the “second best” option, especially at the later stage of pregnancy when women are heavier and it is difficult for them to go to health facilities on foot or by locally available transport. It should be mentioned that with exception to one or two study clusters government or NGO facilities that could offer a comprehensive package of services to pregnant women were distantly located.

The high level of coverage of TT vaccination among the study participants is consistent with results from the BDHS surveys. However, this high coverage was achieved without women’s understanding about the specific disease against which they are immunized. Most of the participants could not mention

the disease that is prevented by TT vaccination. A slightly better coverage of complete or near complete TT doses was observed among women living in Khulna division compared with Rangpur division. Because of limited sample size, however, we cannot comment further about the completeness and overall coverage of TT in these two divisions.

Overall, the study participants held a positive view about the use of ultrasound during pregnancy. Some perceived that it should be done at the later stage of pregnancy to ascertain the overall condition of the baby (including position and sex of the baby) so that a decision could be made about the place of delivery. More than half of the participants had ultrasound during the last pregnancy and the practice was more prevalent among women in Khulna division compared with Rangpur division. While the WHO-recommended package of ANC services does not include ultrasound, antenatal ultrasound is widely used in many developing countries, including Bangladesh, for confirmation of gestational age, identification of multiple pregnancy, and screening for fetal anomalies. There are debates whether the benefits of routine ultrasound justify their costs. This is of particular importance in low-income settings where scarce resources need to be carefully allocated.

Barriers to the access and uptake of ANC are both cultural and financial. Women and their families incur substantial opportunity costs when pregnancy care requires travel and long waiting hours. Our study findings confirm that women need a supportive environment to seek care, especially when the service is located outside of the home. While some in-laws were reported not to be supportive of their daughter-in-law's use of ANC, most women expressed satisfaction about the support they get from their mother-in-law in receiving services. Most husbands were also supportive of using care during pregnancy, even though some did not accompany their wives to the health facility.

Pregnancy care often represents the first opportunity for a woman to establish contact with the health care system. Several health conditions that are prevalent among Bangladesh women, such as iron deficiency anemia, sexually transmitted infections (STIs), tuberculosis, hypertension and diabetes can be easily identified and treated during antenatal visits. Bangladesh has made remarkable progress in the reduction of maternal mortality in recent years. The reduction has been achieved through decreased deaths due to direct obstetric causes such as puerperal sepsis, hemorrhage, and hypertensive disorders; however, indirect obstetric deaths still remain high. Identification and treatment of pre-existing medical conditions through antenatal check-ups will identify and treat pre-existing conditions and thus decrease maternal morbidity and mortality related to these conditions.

6. Conclusion

Using a qualitative approach, this study provided a detailed picture of timing and patterns of utilization of ANC in two selected divisions of Bangladesh. It also provided information on women's perceptions of and experiences in utilizing ANC services. After reviewing and discussing the results, we can draw five major conclusions:

1. The prevalence of beliefs about the positive benefits of ANC is high among women, although variations in the perceived purpose and relevance of ANC are noted.
2. Although there are several limitations in the health care system delivering care to pregnant women, it is clear that a large majority of women have contact with the health care system during pregnancy. However, the timing and frequency of the care are generally inadequate.
3. Pregnant women have multiple contacts with the health care system; yet, opportunities arising from these contacts are not properly utilized for the benefit of the mothers and newborns.
4. The nature of services that women receive as ANC fall short of the standard recommended by WHO, which can be explained by lack of adequate structural organization of health services, limited health care resources, and lack of knowledge and demand from users asking for certain type of services.
5. Women's preference for and satisfaction with facility-based ANC is clear; home-based care is considered as the "second best" when barriers to facility based care are considered.
6. Home visits by community health workers do not prevent pregnant women from seeking care outside of the home; however, they do not receive some essential components of pregnancy care, such as urine and blood test, unless they make an effort to go outside of the home to seek care from a health facility.

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Appendices

Appendix 1. Number of Eligible Informants, Number Interviewed, and Reasons for Not Including as Study Participants

Division	Cluster #	Number of eligible informants	Number of informants interviewed	Reasons for not including
Khulna	K1	4	2	Informant for Adolescent Childbearing Study=1; Refused=1
	K2	6	2	One of the first clusters visited; followed two informants per cluster criteria
	K3	4	3	Divorced=1 and not eligible
	K4	4	3	Informant for Adolescent Childbearing Study=1
	K5	4	2	Not present at home=2
	K6	6	0	Did not choose this cluster; distantly located from other clusters
Rangpur	R1	5	4	One household had two eligible participants and, we interviewed one
	R2	6	2	Refused=3; Not present at home=1
	R3	4	3	Not present at home=1
	R4	5	4	Not present at home=1
	R5	6	0	Far from other clusters
	R6	4	0	Did not choose this cluster; number of eligible women was higher in other clusters
	R7	6	0	Did not choose this cluster; achieved targeted number from other clusters
	R8	4	0	Did not choose this cluster, number of eligible women was higher in other clusters

Appendix 2. Summary Information on Study Clusters

Khulna

Cluster K1: The village is beside a highway, and the distance from the nearest district town is not too far. The road in the village is made with bricks and mud. Villagers use vans, bicycles, and motorcycles as mode of transport. For going to the nearest town they use bus and van. The villagers seem to be economically sound, as most of the houses are made of brick wall with tin roof, and there are a few two-storied buildings as well. There is an agriculture information center in the village, which has a great impact on their agricultural production. The main occupation of the villagers is agriculture and many are involved in raw agricultural product business. There is one primary school and also one girl-only school in the village. However, there is no health facility within the village. For all kinds of health services, residents of the village need to travel to the government Upazila Health Complex (UHC), which is 2-3 kilometers from the village. There are a few medicine shops and a private clinic at the bazaar (market), which is 1.5 kilometers away from the village. BRAC health workers, who come from outside the village, provide services to pregnant women, distribute family planning methods, and provide TT vaccine to pregnant women. These services are provided on a monthly basis.

Cluster K2: This village is far away from the district town and very close to the Indian border. All roads are made of mud and become totally unusable during the rainy season. Even though road communication is not good, and most of the houses are made of mud with a high base to protect them from water during the rainy season, the overall economic condition of the villagers seems good. Agriculture is their main mode of production. Inside the village there are a few small shops and one primary school. Periodic EPI center takes place at the primary school, where health workers from the nearby community clinic (CC) of next village come to provide services at the EPI center. They also supply family planning methods and advise pregnant women to take antenatal care. When needed, villagers visit the community clinic situated in the neighboring village. A satellite clinic also takes place in the village every 3 months. A village doctor provides different maternal and child health services. With a gap of 2-3 months, community health workers from Smiling Sun (a local NGO) make home visits to provide services. BRAC has a micro credit program in the village; however, key informants seemed unaware of any health program of BRAC in the village. Government health facilities and diagnostic centers are available at the upazila but those are far away from the village and hard for the villagers to reach due to the poor communication system.

Cluster K3: Roads in this village are made of bricks, and villagers use paddle and engine vans as their main mode of transport. There is one primary school and one high school in the village. The main occupation of the villagers is agriculture. Most of the houses are made of mud and straw. Micro credit programs from many NGO's (ASA, BRDB, BRAC, and Ad-din) are running in the village, and most of the families are involved with their programs. There is no health facility in the village, and a few medicine shops are at local village market situated one kilometer away. The nearest UHC is 11 kilometers away, and the FWC is located one kilometer away from the village. However, health workers from a NGO clinic (CSS) come to the village and provide health service to pregnant women. Satellite clinics are held once in a while in the village.

Cluster K4: The village has paved road and the main mode of transportation is engine-driven van. Sometimes villagers hire minibuses as well. The main occupation of the villagers is agriculture. Houses are made of bricks, mud, and tin. There is a community clinic in the village, which remains closed most of the time due to unavailability of providers and logistic supports. However, community health workers from the community clinic make home visits to distribute family planning methods. There is a medicine shop in the nearby local market (bazaar), where a village doctor is available. That doctor provides medicine for general illnesses and supplies family planning methods if needed. The nearby UHC is 40 kilometers away from the village; private clinics and other health facilities like ayurvedic, and homeopathic practitioners are also available in the Upazila (close to UHC). However, people only visit those places for complications and emergency health needs.

Cluster K5: This is a big village far away from the district town. However, a highway passes through the village and inside roads are made of mud. The main mode of transport is paddle van, engine van, and motorcycle. People also hire minibuses for urgent needs. The main occupation of the villagers is agriculture. There is one primary school, one high school, and one madrasa (religious school) in the village. There is also one community clinic in the village. BRAC runs different health programs in the village; BRAC health workers visit door-to-door distributing family planning methods and providing services to pregnant women. A government UHC is located 1.5 kilometers away from the village. There is another UHC in a nearby Upazila from a different district, and people also visit that UHC, which is four kilometers away from the village. The latter UHC provides “quality” services, as reported by key informants, and villagers visit that UHC for health problems.

Rangpur

Cluster R1: Roads are mixed type: muddy in some places and brick-made in others. Auto-rickshaw, bicycle, and motorcycle are the main means of transport. Houses are made of bricks, tin, and mud. Agriculture is the main means of production. Health workers of BRAC make door-to-door visits to provide antenatal care. They also attend home delivery. There is one primary school, one secondary school, and one madrasa (religious school) in the village. There is one community clinic in the village, which is situated half a kilometer from the nearby village market (bazaar). Upazila Health Complex (UHC) is at a distance of 10 kilometers. In case of emergency, villagers take pregnant women to UHC by auto-rickshaw, while those who can afford it call an ambulance. Grameen Bank, BRAC, and ASA work in the area. Grameen Bank and ASA provide microcredit service in the village.

Cluster R2: Inside the village there are roads of bricks and mud, where paddle-van, bicycle, and motorcycle are the main modes of transport. Agriculture is the main means of production. Houses are made of bricks, tin, mud, and thatch. There is one primary school, one high school, and one madrasa. Community Clinic is located one kilometer away and Upazila Health Complex is five kilometers away from the village. A BRAC health worker provides door-to-door services to pregnant women, along with selling delivery kits. She also gives advice on the use of family planning methods and attends home delivery.

Cluster R3: This is a big village with one primary school and one government high school. Agriculture is the main occupation of the villagers. Most of the people are educated. A number of NGOs—BRAC, AS, RDRS, TMSS—provide microcredit services. The condition of the roads is mixed; it is muddy in some places and paved in other places. Motorcycle and bicycle are the main modes of transport. Houses are made of bricks, tin, and hay. Health workers from BRAC and RDRS make house-to-house visits and suggest conducting home delivery and provide delivery kits. Though Upazila health complex is within three kilometers, women mostly use antenatal care from RDRS hospital situated in the village. Home deliveries are mostly attended by BRAC’s health workers.

Cluster R4: In this village raw roads permit only auto-rickshaws and bicycles to enter the village. Houses are made of tin, brick, and leaves. Tobacco cultivation is the main means of production. Almost every house is filled with tobacco leaves. Roofs, yards, roads are also covered with tobacco leaves. A number of NGOs, including RDRS, BRAC, Grameen bank, ASA, and TMSS provide microcredit services. MCWC and community clinic provide antenatal care services. BRAC health workers provide door-to-door service to pregnant women and ‘*Sastho Sebika*’ attend home delivery. The UHC is situated 6 kilometers away from the village. Usually, women use services from the facilities situated inside the village to avoid making a long journey.

Appendix 3. Socio-demographic Profile of Study Participants

ID	Type of family	Woman's information					Husband's information				
		Age in years	Education	Age at marriage in years	Parity	Number of living children	Age of last child	Age in years	Education	Occupation	
P1	Extended	27	Class-10	15	2	2	11 months	30	Class-10	Farmer	
P2	Nuclear	21	Class-8	19	1	1	11 months	24	Class-5	Day labor	
P3	Nuclear	22	Class-4	13	4	3	12 months	30	Class-9	Van puller	
P4	Nuclear	19	Class-9	14	2	1	14 months	24	No school	Small business	
P5	Nuclear	22	Class-5	15	2	2	9 months	28	No schooling	Farmer	
P6	Nuclear	30	Class-6	13	4	4	13 months	40	No schooling	Small business	
P7	Nuclear	20	Class-5	12	2	2	15 months	30	Class-5	Van driver	
P8	Nuclear	29	Masters	21	2	2	10 months	40	Class-10	Farmer	
P9	Nuclear	17	Class-3	14	1	1	11 months	25	Class-6	Van puller	
P10	Extended	29	No schooling	15	3	2	11 months	33	No schooling	Farmer	
P11	Extended	22	Class-8	13	2	2	12 months	30	Class-9	Farmer	
P12	Extended	25	Class-5	16	2	2	11 months	30	No schooling	Van driver	
P13	Extended	24	Class-10	17	2	2	14 months	35	Class-12	Farmer	
P14	Extended	18	Class-6	13	1	1	12 months	21	Class-5	Farmer	
P15	Extended	20	Class-7	18	1	1	13 months	23	Class-7	Unemployed	
P16	Nuclear	19	Class-7	17	1	1	12 months	25	Masters	Owner of madrasa	
P17	Extended	20	Class-6	16	1	1	8 months	25	Class-8	Small shopkeeper	
P18	Extended	26	No schooling	16	2	2	12 months	30	No schooling	Farmer	
P19	Nuclear	30	Class-10	20	2	2	12 months	35	Class-12	Private services	
P20	Extended	27	Class-5	13	3	3	14 months	30	Class-5	Wright	
P21	Nuclear	30	No schooling	16	2	2	10 months	40	Class-8	Farmer	
P22	Extended	31	Class-12	17	3	3	14 months	30	Class-8	Worker of a rice mill	
P23	Extended	30	Class-7	14	5	3	15 months	35	Class-7	Worker of a shop	
P24	Nuclear	35	No schooling	13	3	3	12 months	40	No schooling	Farmer	
P25	Extended	26	Class-8	18	1	1	14 months	30	Class-4	Farmer	