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The Nature of Receiving Obstetric Care among Rural Women in Northern Banglades

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THE NATURE OF RECEIVING OBSTETRIC CARE AMONG RURAL WOMEN IN NORTHERN BANGLADESH

PhD Dissertation

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NATURE OF RECEIVING OBSTETRIC CARE

THE NATURE OF RECEIVING OBSTETRIC CARE AMONG RURAL WOMEN IN NORTHERN BANGLADESH

A DISSERTATION SUBMITTED TO THE UNIVERSITY OF RAJSHAHI, BANGLADESH IN PARTIAL FULFILMENT OF REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN SOCIOLOGY

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June 2014

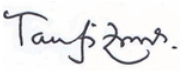
To

My Parents

DECLARATION BY THE RESEARCHER

June 23, 2014

I, the undersigned, have prepared this dissertation entitled "The Nature of Receiving Obstetric Care among Rural Women in Northern Bangladesh". This is an original work by me. This is herewith submitted to the Department of Sociology, University of Rajshahi, Bangladesh for necessary formalities leading to Doctor of Philosophy in Sociology. No part of this work, in any form, has been submitted to any other academic institute for academic award, or elsewhere for publication.



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DECLARATION BY THE RESEARCH SUPERVISOR

June 23, 2014

It is a pleasure for me to certify that this dissertation entitled "The Nature of Receiving Obstetric Care among Rural Women in Northern Bangladesh" is prepared by Md. Taufikuzzaman, a Doctoral Fellow in Sociology of session 2008–09 at the Department of Sociology, University of Rajshahi, Bangladesh.

With arduous efforts, he prepared this dissertation under my supervision. This is his original work. This dissertation is recommended and forwarded to the University of Rajshahi through its Department of Sociology, for necessary formalities leading to its acceptance in particular fulfilment of the requirements for the Doctoral Degree.

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Md. Taufikuzzaman

PREFACE

I, the researcher of this work, am currently working under Directorate General of Health Services (DGHS). As a part of my job responsibility, I come in contact with the child-bearing women in the rural area of Bangladesh where I frequently observe maternal health problem among pregnant women. This is mostly seen among women who live in rural areas and are deprived of Emergency Obstetric Care. Time and again, I observed pregnant women being victims of obstetric complications during pregnancy and delivery as a consequence of physical and economic milieu. This study is an attempt to unpack some issues that will contribute to take appropriate measures in reducing their sufferings and promoting health service programme in Bangladesh.

Author

TABLE OF CONTENTS

FRONT MATTER

TEXT

BACK MATTER

List of Tables

List of Figures

LIST OF ABBREVIATIONS AND/OR ACRONYMS

Abbreviation	In Full
ANC	Antenatal Care
BHB	Bangladesh Health Bulletin
BMMS	Bangladesh Maternal Mortality and Health Care Survey
BRAC	Bangladesh Rural Advancement Committee
CC	Community Clinic
DGFP	Directorate General of Family Planning
DGHS	Directorate General of Health Services
DH	District Hospital
EDD	Expected Date of Delivery
EmOC	Emergency Obstetric Care
EOC	Essential Obstetric Care
FWA	Family Welfare Assistant
FWV	Family Welfare Visitor
GD	Gram-doctor
GH	Government Hospital
GHF	Government Health Facility
HA	Health Assistant
HBP	High Blood Pressure
HNPSP	Health, Nutrition and Population Sector Programme
HPNSDP	Health, Population and Nutrition Sector Development Programme
HPSP	Health and Population Sector Programme
ICDDR,B	International Centre for Diarrhoeal Disease Research, Bangladesh
JICA	Japan International Cooperation Agency
IMNCS	Improve Maternal Neonatal and Child Health Survival
LMP	Last Minstrel Period
MCH	Medical College Hospital/ Maternal and Child Health
MCWC	Maternal and Child Welfare Centre
MDG	Millennium Development Goal
MIS	Management Information System
MMR	Maternal Mortality Ratio
MNCH	Maternal, Neonatal and Child Health
MNPI	Maternal and Neonatal Programme Index
MO	Medical Officer
MOHFW	Ministry of Health and Family Welfare
MTP	Medically Trained Provider
MTP_1 (OQD)	Medically Trained Provider (Only Qualified Doctor)
MTP_2 (EQD)	Medically Trained Provider (Excluding Qualified Doctor)
NGO	Non-Government Organization
NHW	Newborn Health Worker
SBA	Skilled Birth Attendant
SK	*Shasthya karmi*
SS	*Shasthya Shebika*
SSBA	Semi-Skill Birth Attendant
SSN	Senior Staff Nurse
TBA	Traditional Birth Attendant
UFPO	Upazilla Family Planning Officer
UHC	Upazilla Health Complex
UHFPO	Upazilla Health & Family Planning Officer
UHFWC	Union Health & Family Welfare Centre
UNFPA	United Nations Fund for Population Activities
UNICEF	United Nations International Children Emergency Fund
USAID	United Nations Agency for International Development
USC	Union Sub-Centre
WHO	World Health Organisation

ABSTRACT

This study is a predominantly qualitative scrutiny in the field of medical sociology to explore the nature of receiving obstetric care of the women who gave birth within one year during the study period. The study also seeks to assess the relative role of 'pre-disposing factors' (socio-economic and demographic status) and 'enabling factors' (available health services including social network) in determining women's nature of receiving obstetric care. The 'mixed method' has been employed to collect data from 104 women of two villages of Sadullahpur upazilla under Gaibandha district of Bangladesh. A number of health personnel (15) have also been included in the study. The study explored the fact that financial factor remains as the prime determinant of shaping peoples' nature of receiving health care but sometimes other factor, for instance, nature of household heads' occupation plays dominant role than that of the economic status. Similarly it is not a universal fact that the higher the education levels the higher the quality/quantity of receiving health care. Basically receiving obstetric care is not an independent issue rather it is interrelated with various factors. The factors affecting the nature of receiving health services are diverse and they play different roles in the case of different individuals or different segment of the population but availability of services around them definitely have great impact on remoulding their nature of receiving health services irrespective of their socio-economic background.

Chapter 1
Introduction

1. Background & Statement of the Problem

A nation's maternal mortality ratio is widely considered as an important indicator of the overall health status of the people in a given country. High Maternal Mortality Ratio (MMR) represents failure of a health system to provide services and care for women effectively. It also represents the failure of a society to keep the women in good health.

In the 21st century when the development of Medical Science has reached in a remarkable stage about 2,87,000 women die every year due to obstetric related complications around the world (WHO Fact sheet, 2012). Moreover, 95,00,000 women face pregnancy related complications each year and a large number of them develop disabilities caused by such complications (Hogan *et al.,* 2010). About three-fourth of these maternal deaths and disabilities could be prevented if the obstetric care services were ensured for them. To improve the lives of the women around the world, Millennium Development Goal (MDG)-5 has been adopted and committed to reduce maternal mortality. The original target for this goal is a three-quarter reduction of maternal mortality ratio (MMR) between 1990 and 2015. So it is a great concern whether this goal can be materialised in the target period. The reduction of maternal mortality levels is a key to Millennium Development Goal, but community based obstetric care remains limited in Bangladesh (Koenig *et al.,* 2007). Hence, the scenario is not safe and sound.

Bangladesh has an impressive history of achievements in public health. But maternal health failed to keep pace with the advancement. It has been estimated that moreover 11,000 women die for the complications during

pregnancy and child-birth each year (Koblinsky *et al.,* 2008), and the number of obstetric complications in Bangladesh is 4,54,380 (Management Information System, 2011). Among the maternal deaths, 31% women die from haemorrhage followed by 20% from eclampsia and 7% from obstructed or prolonged labour [Bangladesh Maternal Mortality and Health Care Survey (BMMS, 2010)]. In Bangladesh context, the MMR was 574 in 1990 which have to reach 143/100000 live birth within 2015 to achieve MDG-5 (Bangladesh Health Bulletin, 2011).

In this context the worldwide consensus is to reduce maternal mortality and morbidity essential obstetric services having good-quality must be integrated into strong health systems. Besides, Emergency Obstetric Care should be available and accessible to all pregnant women.

In order to mitigate the health hazard of the pregnant women, Government of Bangladesh has undertaken several programmes. Upazilla Health Complexes (UHC)[1], Union Health & Family Welfare Centres (UHFWC) and Community Clinics (CC) have been set up at Upazilla (sub-district), Union and Ward levels respectively. Moreover, eight Satellite Clinics (temporary) are designed to set up at each union for providing maternity care. Each satellite clinic provides Mother-Child health services fortnightly by rotation. These clinics are arranged at a local leader's house or in a school premise. Since 2000, the Community Clinics started functioning. It is noted that there is a provision of a Community Clinic for every 6,000 people.[2] Training programmes have also been implemented for the Skilled Birth Attendants (SBA) since 2003. The SBAs are assigned to conduct normal safe deliveries at home, identify risk factors, motivate and refer pregnant women to the nearby facilities where comprehensive Emergency Obstetric Care (EmOC) services are available. The training programmes are being carried out in 342

[1] UHC: Primary level hospital provides basic essential obstetric care service for the pregnant women. UHC is the 1st referral level hospital.

[2]There are 425 UHC, 87 UHFWC and 11,816 CC are functioning in Bangladesh [Bangladesh Health Bulletin (BHB), 2010; MIS, DGHS, Government of Bangladesh]

upazillas of 60 districts (BHB, 2012). Besides, Maternal and Child Welfare Centres (MCWC) have been set up at each district which provide comprehensive Emergency Obstetric Care (EmOC) services. Some of the Upazilla Health Complexes also provide EmOC services and most of the UHC refer women with complications to the district level hospitals. All District Hospitals (DH) and Medical College Hospitals (MCH) have EmOC facilities (BHB, 2010).

During the period 1998–2003, the Government implemented the Health and Population Sector Programme (HPSP) under the Health and Population Strategy. One of the major goals of this programme was lowering the rate of maternal mortality. Since 2003 the Government has been implementing 'Health, Nutrition and Population Sector Programme' [HNPSP] (2003–2006, extended till 2010) with the aim to achieve safe motherhood goal of reducing maternal deaths to 2.4 per thousand live births by the year 2010 (RPIP, 2005). Currently Health, Population and Nutrition Sector Development Programme [HPNSDP] (2011–2016) is being implemented (PIP, HPNSDP, 2011). Moreover, Bangladesh has become an important partner of global endeavour of mitigating pregnancy and child-birth related complicacy. According to the evaluation of Maternal and Neonatal Programme Efforts Index (MNPI), Bangladesh received a rating of 53 out of 100 for its service capacity to provide Emergency Obstetric Care. It was the highest among the 49 developing countries. But it is a great irony that the country received only 3 for uptake of treatment for obstructed labour and 28 for access to antenatal care (MNPI, 1999). The Third Service Delivery Survey (2003) reported that the rate of antenatal coverage declined from 79% in 1999 to 63% in 2003 (Cockcroft *et al.,* 2004). Only 23.4% of the pregnant women received four or more ANC visits in 2010 (BMMS, 2010). In this reality the present study tried to identify the nature of receiving obstetric care among the rural women in Bangladesh. It also tried to assess the relative roles of different factors in affecting the nature of availing such care.

1.1. Government's Health and Maternal Health Policies

As we mentioned earlier, both national and global efforts are obvious for reducing the challenge of maternity deaths. Bangladesh government and her Ministry of Health & Family Welfare (MOHFW) are responsible for national level policy, planning and decision making at macro level. The Ministry is also responsible for formulating policies, planning and implementing them by different executing and regulatory authorities. Among the several executing authorities and regulatory bodies under the MOHFW, the prominent executing authorities regarding maternal health are Directorate General of Health Services (DGHS) and Directorate General of Family Planning (DGFP). It is worthy to notify that the DGHS is the largest executing authority under this Ministry having over one hundred thousand officers and staff; it operates the health care delivery system for the ministry all over the country extending as low as up to village level for strengthening and ensuring services. In order to smooth implementation of health care services for the rural people and strengthening maternity health for poor rural women in particular, the distribution of health infrastructures under the DGHS has been divided into different tiers, i.e. national, divisional, district, upazilla, union, ward and village levels. In upazilla level, Upazilla Health & Family Planning Officer (UHFPO) manages all public health programmes in the upazilla and also looks after the upazilla hospital (31 to 50 beds). In the union level, one or other of the three kinds of health facilities may exist, i.e. Rural Health Centre, Union Sub-centre or Union Health & Family Welfare Centre (UHFWC). In a union health facility, there is a post of medical officer. All union facilities possess medical assistants to provide health service to the people. In the ward level, community clinic (CC), one for every 6,000 population is being established. Currently the domiciliary staff both from DGHS and DGFP share the responsibility of running the independent community clinics. However, full time community health care providers (CHCP) have been recruited to run the community clinics. The managerial

structure and health facilities under Directorate General of Family Planning also have more or less similar type of managerial structure from the national down to the ward levels (BHB, 2010). Along with the above efforts, the Government has taken 'National Strategy for Maternal Health 2001' for ensuring properly equipped and staffed EmOC services for handling required obstetric complications effectively. The Government has realised that it is essential to strengthen EmOC at UHCs and MCWCs which are already in service as EmOC centres. Through this policy, these centres are there to increase the numbers of Basic and Comprehensive Centres in every feasible facility at union and lower level. This ensures that properly equipped and staffed units are easily accessible every where in the country. Moreover, the concern body and other stakeholders felt the necessity of health voucher programmes. Accordingly it was enacted that pregnant women would be given vouchers to purchase antenatal, normal delivery and postnatal services from a designated provider of their choice for the first and second pregnancy. The target was to increase demand for maternal and neonatal health services and to ensure compensation for the costs of normal delivery by a skilled provider and emergency obstetric care. The providers would be reimbursed for their services from a special fund when they present the vouchers. The voucher scheme will help avoid the three delays.[3] The 'three delays frame work' denotes that most of the obstetric related deaths occur due to delays in (i) taking decision to avail EOC from an appropriate facility (ii) reaching the well equipped facility due to inadequate transport facilities (iii) commencement of treatment at the facility due to poor administrative management.

1.2. Obstetric Care Service Profile

All the Government Medical College Hospitals, District Hospital, Upazilla Health Complex, and Maternal and Child Welfare Centres provide Emergency Obstetric Care service. The service is provided in two forms,

[3]The 'three delays frame work', proposed by Thaddeus and Maine (1994).

such as: Comprehensive Emergency Obstetric Care (EmOC) and Basic Emergency Obstetric Care (EOC).[4] Currently, all Medical College Hospitals, 2 District Hospitals and 269 Upazilla Health Complexes provide EmOC while 59 District Hospitals and 132 Upazilla Health Complexes provide EOC. In collaboration with UNICEF, the Government of Bangladesh is providing such services. In addition to this, `Smiling Sun Franchise' programme funded by USAID, has been working in 61 districts where EmOC is available in 34 clinics. A good number of NGOs and private providers also provide similar services. Some development partners and NGOs are providing maternal health services in Bangladesh (such as: UNFPA, JICA, WHO, BRAC etc.). Under a programme jointly operated by Management Information Systems (MIS) of Directorate General of Health Services (DGHS) and UNICEF, EmOC related data are collected from the facilities and then translated into a format called United Nations Process Indicators for presenting as EmOC report (BHB, 2010). There are many obstacles remaining to achieve these targets. These include inappropriate selection and frequent transfers of trained doctors (i.e. trained in obstetrics or anaesthesiology), lack of qualified trainers, reluctance of trained female doctors to work in remote areas, significant absenteeism of health providers, particularly doctors in rural health centres, shortages of drugs and equipment, and transport to facilities. Many of these obstacles still hamper the functioning of high level EOC facilities around the country (Allison *et al*., 1999; Chaudhury and Hammer, 2004). Recent monitoring data also indicate that the EOC facilities remain substantially underutilised, partly because of the functional problems, and partly because the referral system is not working properly. More fundamentally, a key reason for the underutilisation of EOC services is prominently visible here. The communities do not yet accept that safe delivery can be assured only in a properly equipped and staffed institutional environment' (Streatfield *et al*., 2001).

[4] Here 'EmOC' refers to the Comprehensive Emergency Obstetric Care, and 'EOC' Basic Emergency Obstetric Care.

1.3. Maternal Health Status

Despite the expansion of infrastructural set up and service delivery, BMMS (2010) reported that maternal mortality rate is still as high as 194/1,00,000 live births. The report shows that 26.5% women received skill attendant (medically trained) at delivery. Only 19% women received complete maternity care (which includes: at least one ANC visit, delivery care, and PNC from medically trained provider). The report also shows that 32.1% pregnant women did not seek any treatment even in a life threatening condition during pregnancy and/or child-birth (BMMS, 2010). Over 71% of the deliveries still take place at home (BDHS, 2011). Although the BMMS (2010) reported that 26.5% births were attended by trained health personnel, yet the report of Bangladesh Health Bulletin (2011) revealed that a total number of 5,58,712 facility based deliveries occurred in 2010, which constituted only 15.0% of all reported deliveries. Out of such reported deliveries, 62.3% took place at public facilities and 37.7% at NGOs/ private clinics and hospitals. Out of the number of total deliveries at the major public facilities, 80,615 took place in Medical College Hospitals (23.1%); 78,555 in District Hospitals (22.6%); 1,45,071 in Upazilla hospitals (41.7%), 44,013 in Maternal and Child Welfare Centres (12.6%), 35,814 in NGO facilities and 1,71,943 in private clinics/hospitals (BHB, 2011). It was also found by Khanum and associates that despite the facilities of providing EOC services in Charghat Upazilla Health Complex, Rajshahi, only 4 to 5 women came to receive them in a day (Khanum *et al.,* 2003). From this data, it seems that there might be a dissonance between the policies theoretically adopted and practically implemented, or some community variables prevent women from receiving health services provided by the Government. Research shows that women had to encounter a series of difficulties before and after reaching health centre. It was also reported that along with practical difficulties women have some misconception about the services provided at UHC (Khanum, 2002). Against these backdrops, the present study tries to identify

the nature of receiving obstetric care among the rural women in a part of northern Bangladesh. For the convenience of the research only the obstetric care provided by the bio-medical sectors have been incorporated in the study. Home based services, especially ANC and attendance at childbirth have also been included because intervention of bio-medicine exists there since health workers provide preliminary obstetric care to each pregnant women in the research area by visiting their homes.

2. Objectives

General Objective: The present study seeks to discover the nature of receiving obstetric care among the rural women in northern Bangladesh. It also tries to identify the relative role of socio-economic and demographic status of the women and existence of health services around them in determining their nature of receiving obstetric care.

Specific Objectives: The specific objectives of the study are as follows:

- to identify the nature of availing antenatal services of the respondents in their last pregnancy
- to explore the types of obstetric complications during pregnancy
- to ascertain the places of delivery and types of birth-attendants
- to explore the nature of complications related to delivery
- to ascertain the steps taken by the women and their family members to overcome the obstetric complications during pregnancy, child-birth and soon after delivery
- to determine the causes of discontinuation of receiving obstetric services among the women.

3. Operational Definition of the Key Words

For the interest of the study the following key words have been adopted:

Predisposing factors: Predisposing factors include the socio-economic and demographic characteristics of the individuals. In the present study these have been considered as: women's age, education, economic status, occupation, gravida, family structure and occupation of the household head.

Gravida: Gravida refers to the number of pregnancy that a woman had during her life time. A woman's status regarding gravida is usually followed by a numeral designating of the number of times the woman has been pregnant including the current pregnancy.

Reproductive Status: In the present study only these aspects of the reproductive status have been incorporated which are closely related to the subject matter of the research, such as: status of receiving TT injection, current gravida of the women; history of previous pregnancy complications and its management, complications experienced during pregnancy & delivery, services received in current pregnancy and delivery periods.

Obstetric care: Obstetric care refers to the care provided to a pregnant woman including uptake of antenatal care (ANC), care at child-birth, management of complications arising during pregnancy, child-birth and soon after delivery.

EOC: Essential Obstetric Care (EOC) refers to the services relating to antenatal, child-birth, and postpartum care. It focuses on all pregnant women and is based on the idea that normal obstetric complications can be predicted and prevented without surgery.

EmOC: Comprehensive Emergency Obstetric Care (EmOC) includes more specific interventions than EOC; such as: blood transfusion, intravenous antibiotics, caesarean section and management of vacuum or forceps delivery. It focuses on the prompt identification, referral and treatment of the women with obstetric complications.

Continuation of ANC: The continuation of medical check up by minimum 4 visits to a medically trained providers as per WHO guidelines that corroborate with the first visit soon after conception.

Discontinuation of ANC: Discontinuity of receiving minimum 4 check up visits of pregnant woman as per WHO guidelines.

Nature of Obstetric Complication[5]: An acute condition arising during pregnancy and child-birth.

MTP_1: Medically trained providers refer to those who have graduation and above degree in medical science, such as: Bachelor of Medicine and Bachelor of Surgery (MBBS). They are recognised as qualified doctor.

MTP_2: Medically trained providers are not graduate in medical science but have diploma or paramedical degree. MTP_2 includes Nurse, Family Welfare Visitor, SACMO etc.

TP (Trained Providers): Trained Providers have no medical degree or licences and are not medically trained on maternity care but assigned to provide some of the obstetric services, such as: ANC, advice, counselling, refer to appropriate health facility. These health workers include Health Assistant (HA), Family Welfare Assistant (FWA), *Shasthya Karmi* (SK) etc.

4. Justification

To bring a revolutionary change in the development of maternal health status, a thorough understanding of the nature of seeking obstetric care of the targeted people and the existing condition, problem and prospects should be understood in its every details. This can pave the way for preventing a large number of obstetric complications. This is possible through raising awareness about receiving health services. An understanding of the obstetric care seeking process of the pregnant women can have a great impact upon the

[5] In pregnancy: Bleeding, Oedema, Leaking membrane, Convulsion, Severe vomiting, Anaemia, Headache, abdominal pain, Visual disturbances, and Flu symptoms with smelly discharge; In the period of delivery: Prolonged labour, Severe bleeding, Retained placenta, Mal-presentation of the foetus, Perennial tear.

formulation of health policy of a given country. This is more applicable in case of safe motherhood. Pregnant women's and their family members' awareness about life threatening complications, timely intervention and treatment could prevent a large number of obstetric deaths. This study aims at exploring all these facts of the purported field and the presentation of the findings can be invaluable in reaching a fruitful conclusion in the case of further studies to be conducted by future researchers. It is hoped that the study will help dispel many misconceptions about health facilities and be handy in raising awareness among the women which in the long run will hopefully encourage them to receive EmOC when needed. It is also expected that the study will add a new dimension to health promotion programmes through suggestions for probable effective strategies to reduce the difficulties women encounter in receiving EOC. Hence, the study might be proved to be fruitful in formulating an effective health policy.

5. Theoretical Framework

In recent decades, the use of models in research on the utilisation of health care services has been increasing. By using models, attempts have been made to organise many different determining factors into one explanatory concept. Two influential models have been developed in this field, these are: the Health Belief Model (Rosenstock, 1966) and the Health Care Utilisation Model (Andersen, 1968).

According to the health belief model, an individual's state of readiness to take action for a health condition is determined by four dimensions. Firstly, there is the perceived susceptibility to the condition and the probable severity of the condition, defined either in terms of physical harm or interference with social functioning. Secondly, there is the perception of benefits associated with actions to reduce the level of threat or vulnerability. Thirdly, there is the assessment of potential barriers, including physical, psychological and financial barriers, and finally, the general health motivations triggering

appropriate health behaviour, including internal cues such as symptoms and external cues like interpersonal interaction and mass media communication. The health belief model can be characterised as a process model. The purpose of this type of model is assessment of the decision-making process involved in the use of professional health care. It is a client-centred model, because the clients' perceptions of disease, barriers to and quality of care are the relevant determinants.

Andersen's Health Care Utilisation model (1968) is a prediction model which provides insight by predicting levels of utilisation and by describing patterns. In this model, three different categories of variables that influence the use of health care services are distinguished: need factors, enabling factors and predisposing factors.

Predisposing factors include demographic factors, social structure and health beliefs. Demographic factors are age, sex, reproductive status. Education, ethnicity, occupation, family size, religion etc. are included in social structure. Health belief, as a group of factors, was already named in the first model.

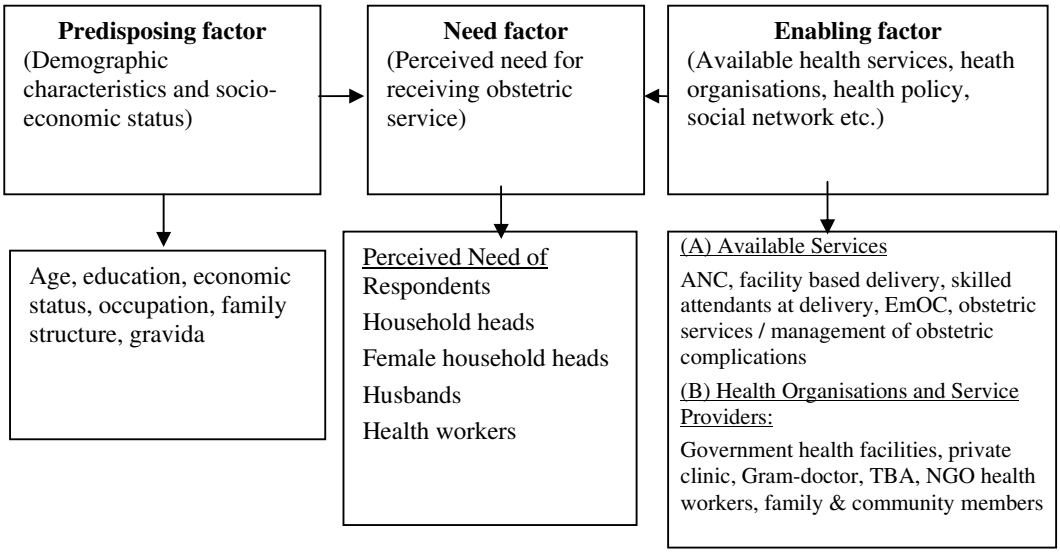
Need factors can be differentiated in perceived need, i.e. the personally experienced need, and evaluated need, i.e. the professionally established need. In fact, the personally experienced need can also be assessed, but the most important issue is to assess the extent to which professionally established needs meet the personally experienced needs. The evaluated need is representative of the biologically determined disease, and is necessary for standardised evaluation of the services used. In research on health seeking behaviour and the use of services, the perceived need is a better indicator for the patients' acts, and is therefore expected to provide better insight into the health seeking behaviour than the evaluated need.

The enabling factors consist of available health services, health organisations, service providers, health policy, social network etc.

The latest version of Anderson's model has been criticised for its lack of dynamic character. Feedback has been incorporated and outcome (patient's satisfaction) is an important factor that has been added. However, the main importance of the model still lies in the structuring of ideas about the use of health care services. It indicates how the multitude of factors can be organised.

Andersen's Health Care Utilisation Model assumes that health seeking behaviour is the result of interaction between characteristics of individuals, population and the surrounding environment. The model consists of mainly three components. Besides other factors such as, personal health care behaviour, outcomes, environment etc. are also included. Inequality exists if factors other than needs, such as enabling resources, are the dominants of health care utilisation. That means people utilise health services mainly because their resources allow them to seek care, but not because of the severity of their sickness (Trinh & Rubin, 2006).

According to the basic theme of the Andersen's Health Care Utilisation Model, the present study utilises it after necessary modification in response to the requirement of this study. The modified model is given below:



[Restructured from Andersen's Health Care Utilisation Model (1968)]

The framework consists of three main components, such as: Predisposing factors (i.e. age, education, economic status, family structure, gravida, occupation of the respondents and that of the household heads); Needs factors (i.e. perceived need of respondents and their kin); and Enabling factors (available health services, service providers and health organisations). For the requirement of the study only these demographic data have been incorporated which are closely related to the research, such as: women's age, family structure and reproductive status. Within reproductive status only gravida has been considered. Since 'age' and 'family structure' also fall in the domain of socio-economic status, in the present study the term 'reproductive status' has been used instead of 'demographic status'. In fact, the reproductive status also represents a part of the demographic characteristics. Similarly the term 'pre-disposing factors' could be interchangeable with the term 'socio-economic and reproductive status'. Hence, in the present study both the terms have been used simultaneously depending on the situations.

In the present study along with ascertaining women's nature of receiving obstetric care attempt has also been made to explore whether their such nature is influenced by their 'predisposing factors' (socio-economic and demographic characteristics) or by 'enabling factors' (existence of health services around them). The role of these factors on women and their family member's perception about need of receiving obstetric care has also been touched upon.

6. Adjunct Thought and Literature Review

Obstetric care is the care for which several basic measures are taken to protect the health of women during pregnancy, child-birth, and postpartum. It is an important aspect of maternal and infant protection and is carried out together with prenatal care of the foetus**.** Spectrums of obstetric care focus on antenatal care, basic and comprehensive emergency obstetric care (including

skilled attendance at each birth) and postpartum care. The services most often linked to reduction of maternal mortality include antenatal care during pregnancy, tetanus toxoid vaccination, professional child delivery (including emergency services access), postnatal care and family planning services (UNICEF, 1999). The high rate of maternal mortality continues to be a challenge for the Bangladesh health system as four million women became pregnant each year in Bangladesh, out of which 600,000 were expected to develop complications. There are about nine million women in the country who have survived the rigours condition of pregnancy and childbirth. But they often suffer from lasting complications, such as: fistulae, uterine prolapse, inability to control urination and painful intercourse. These reproductive morbidities diminish women's fertility, productivity and quality of life. In some cases, women with such chronic problems may also become social outcasts. They may even be turned out of homes and rejected by their husbands and families (Bangladesh Ministry of Health and Family Welfare, 1998). A large number of studies have done home and abroad relating to obstetric care during pregnancy and child-birth. Findings of some of these are stated below along with the thought concerned to medical intervention into the sectors.

6.1. Antenatal Care, Complicacy during Pregnancy and its Management

Antenatal care (ANC) refers to the care received by the women during pregnancy. This is a strategy that plays a key role in reducing maternal mortality. But millions of women in developing countries do not receive it (Simkhada *et al.,* 2008). The primary aim of ANC is the soundness of the mother's and child's health. Its target is to achieve a healthy mother and a healthy child at the end of a pregnancy. Ideally the care begins soon after conception and it continues throughout the pregnancy period. The objectives of ANC are: to promote, protect and maintain the health of the women during pregnancy; to detect 'high risk' cases and give them special attention; to

reduce maternal and infant morbidity and mortality; to teach the women about elements of child care, nutrition, personal hygiene, and environmental sanitation. Ideally the women should receive ANC once a month during the first 7 months; twice a month during the next month; and thereafter, once a week if everything is in normal condition (Park, 2009). During providing ANC, some specific services are focused such as, measurement of weight/body mass index (BMI) and assessment of nutritional status, detection of pre-existing conditions which may complicate pregnancy. Such other services include monitoring blood pressure, signs and symptoms of pre-eclampsia/eclampsia, and uptake of tetanus toxoid immunisation. Promotion of active management of the third stage of labour for the prevention of postpartum haemorrhage is the most important element of ANC. Besides prevention and treatment of anaemia (by iron/foliate supplementation for at least 6 months of pregnancy and 2 months at postpartum and de-worming medication in areas where parasites are common) and malaria are done by ANC in pregnancy. Recognition and treatment of sexually transmitted infections (STIs), confirmation of foetal position by 36 weeks of pregnancy, urinalysis in third trimester, detecting pre-eclampsia and birth preparedness along with complication readiness are also discussed in a standard ANC sessions (UNICEF, 1997). The World Health Organisation (WHO) recommends a minimum of four antenatal care visits, with the initial visit occurring by the fourth month of pregnancy (Koenig *et al.,* 2007). A multi-country randomised control trial led by the WHO and a systematic review showed that essential interventions can be provided over four visits at specified intervals, at least for healthy women with no underlying medical problems. The result of this review has prompted WHO to define a new model of ANC based on four goal-oriented visits. This model has been further defined by what is done in each visit, and is often called 'focused antenatal care' (Villar *et al.*, 2001). This was outlined in WHO clinical guidelines. According to the model, in the first visit (during 8–12 weeks of

pregnancy) women get confirmed about their pregnancy and Expected Date of Delivery (EDD). Then the women are classified for assessing their need of receiving basic ANC (four visits) or more specialised care. In the first visit, they receive treatment and preventive measures. They also develop a birth and emergency plan and receive advice and counselling from provider. In second visit (during 24–26 weeks) provider assesses maternal and foetal well-being, gives preventive measures, reviews and modifies birth and emergency plan, and provides advice and counselling. In third (32 weeks) and fourth visits (36–38 weeks) women receive services almost like the second visit.

By reviewing twenty-eight papers Simkhada and associates identified the following factors affecting antenatal care uptake: maternal education, husband's education, marital status, availability, cost, household income, women's employment, media exposure and having a history of obstetric complications (Simkhada *et al*., 2008). ICDDR,B (2008) reported that pregnant women who did not seek ANC mentioned the following reasons for the fact: ANC was not perceived as necessary; location of ANC; lack of money; not receiving advice for seeking ANC; and husband's disapproval. Fifty-three percent of the women did not feel that ANC was necessary (Khan *et al*., 2008). In fact, antenatal care from a medically trained provider is important to monitor the status of pregnancy and identify the complications associated with the pregnancy. BDHS report shows that in 2007 antenatal care coverage with a skilled provider was 52%; among them 36% of the women received antenatal care from a doctor, and 16% received care from a nurse, midwife, or paramedic. Around four in ten women did not receive any antenatal care. Many complications might occur in women's life during pregnancy, such as: Bleeding, Oedema, Leaking membrane, Convulsion, Severe vomiting, Anaemia, Headache, Abdominal pain, Visual disturbances, and Flu symptoms with smelly discharge (Park, 2009; Khanum *et al.*, 2000). Among them major obstetric complications during delivery are:

haemorrhage, prolonged labour, premature rupture of membrane, eclampsia, septic abortion, and obstructed labour. Park (2009) suggested that the pregnant women should be given clear-cut instructions during ANC. They should report immediately in case of any warning signal. But research shows that thirty-eight percent of the women, who had complications did not go to the hospital, did not know about that or about the services provided there (Ahmed *et al*., 1999). Seventy-four percent had history of home delivery out of which 26% were reported to the hospital. Majority of them (74%) were reluctant to go for institutional delivery. The major cause for that was financial burden, which seems to divert the major changing of health care seeking behaviour (Khan, 2002). To overcome obstetric complication, some steps were taken by the women. Treatment was sought from a medically trained provider for 43% of the cases that had maternal complications around delivery. Nineteen percent of women with complications did not seek any service (BDHS, 2007). Studies carried out to ascertain the nature of women's uptake of emergency obstetric care in Bangladesh depict a dismal picture. BMMS (2010) study revealed the fact that 11.6% women made at least four antenatal visits in 2001 which increased to only 23.4% in 2010. Khanum *et al.*'s (2003) study indicated that a large number (86.4%) of women were immunised during pregnancy but none of them received all sorts of antenatal care. Anwar *et al.* (2004) found that mean number of antenatal visits increased from 1.66 in 1997 to 2.05 in 2001. Hafez *et al.*'s (1999) study, covering 9 rural upazilla of Rajshahi, reported that 69.5% women did not take any antenatal service during their pregnancy since they viewed that as `not mandatory'. About half of the women who faced complications had sought assistance from skilled providers (Hafez *et al.*, 1999). Studies in other countries indicated higher percentage of care-seeking for maternal morbidities. For instance, in rural Haiti, 75% of pregnant women reported seeking care from the formal health sector for a pregnancy-related illness (White *et al*., 2006).

6.2. Places of Child-birth, Types of Attendant, and Complications during Delivery

Bangladesh Maternal Mortality Survey (2010) reported that 76% delivery occurred at home, ten percent in a public sector clinical facility (District hospital, Upazilla Health Complex, Maternal and Child Welfare Centre, or Union Health and Family Welfare Centre), and 11% in a private hospital or clinic. A common trend is seen that delivery in a facility was more common for women having their first child (34%). In case of women with education at secondary or higher it is 61% while for women in the wealthiest households 53% at any gravida. It was found that there was an association between frequency of antenatal care visits and place of delivery (BMMS, 2010). The study conducted by Akhter showed that among 6392 deliveries, only 1.5% was conducted at health centres (Akhter *et al.,* 1996), which increased to 9.79% in 2003 (Khanum *et al.*, 2003) and 23.4% in 2010 (BMMS, 2010). Khanum *et al.* (2003) found that among the hospital delivers, 8.78% were attended by health professionals (doctors, midwives). Of the home deliveries, 6.80% were attended by TBAs/SBAs and 81.75% by relatives/neighbours. It has been reported that only 5% of the total complicated child-birth could reach the medical facilities (Sultan *et al.*, 2001). In case of place of delivery, there are some related issues of risk and vulnerability. Issues like lack of money, lack of transport, sudden onset of labour, short labour, staff attitudes, lack of privacy, tradition and cultures and the pattern of decision-making power within the household were perceived as key determinants of the place of delivery (UNICEF).[6] Technical quality of care received in facilities can obviously affect maternal outcomes on an individual case basis (Rahman *et al.,* 2003). However the overall scenario developed with the passage of time as is seen in the studies conducted in 1994 and 2007. BDHS data show that 18% child-birth were attended by medically trained providers in Bangladesh and 63% by untrained birth assistants (BDHS, 2007). A study showed that if

[6]UNICEF ISSUES: Maternal Health in Bangladesh, http://www.unicef.org/bangladesh/MATERNAL_HEALTH.pdf

comprehensive health facility for delivery is within one kilometre, the occurrence of facility based delivery is over 10 times higher than those whose health facility is 20 kilometres away or above (Gabrysch *et al.,* 2011). Gazi *et al.* focused on the situation during delivery at the rural home level and identified the barriers to emergency obstetric care. They found a fear of sin that was attributed to the presence of unknown male doctors in the hospital. This obviously acted as a barrier. The hospital is an unfamiliar place for the rural people. Their first resort was a TBA, a *Fakir* or a village doctor. If they failed in this traditional attempt, only then the family members thought about hospitalisation. In-laws and neighbours were the decision makers in this situation (Gazi *et al.,* 1999). A study conducted in rural India showed that child delivery is usually managed by elderly women relatives and neighbours with the help of *dai* (TBA) except in difficult cases. Professionally trained nurse was rarely summoned if mother's life is in danger (Patel, 1994). Other small scale studies mainly focused on nature of women's uptake of antenatal services, factors associated with receiving such services, place of delivery and nature of birth attendants. The study carried out by Khanum *et al.* (2002) concentrated on Emergency Obstetric Care but it was limited to find out the association between husbands' knowledge on EmOC and the use of health facilities by their wives. Similarly, Barakat *et al.* (1995) carried out their study to ascertain the knowledge and practices relevant to the uptake of EOC. A study shows that access to Emergency Obstetric Care (EmOC) remained extremely poor mainly because of absence of services in union level Government health facility and high costs involved with transportation, medicine, and unofficial payment at UHC and Medical College Hospital (Khanum *et al.*, 2003). Besides, when referred to the district hospital, due to their unfamiliarity with the administrative procedures, women had to depend on brokers for enrolment, buying tickets etc. (Khanum, 2002). Besides some 'hidden cost' and 'out of pocket payment' involved in receiving obstetric care (Afsana, 2004). This unexpected practice forced a

large number of families to curtail their expenditure on food and education, which might create devastating impact on the families. Nahar and Costello reported that 27% of the families were spending 2–8 times of their monthly income for availing maternity care from a Government health centre (Nahar & Costello, 1998).

In a study Khanum & Taufikuzzaman reported that women's access to EmOC is delayed by a set of constraints which were emanated from their demographic set-up, economic status and weak institutional mechanism. Women encountered the constraints included distance; difficulties in accumulating money; poor transport facilities; embargo on visiting tertiary level hospital; unfamiliarity with administrative procedures; intervention of brokers; insufficient medicine, staff and services; misappropriation of medicine; apathy of the health care providers; unhygienic surroundings etc. They also found weak referral and linkage among service delivery tiers and out of pocket payment exacerbated the situation (Khanum & Taufikuzzaman, 2012).

Bringing the pregnant women in health facility does not always ensure proper care. As is found by Pitchforth, despite the availability of services in the health facility, the poor people could not afford maternity cost coupled with free care. There were `Poor Fund' and `Social Welfare Organisation' in the district hospitals but those were not operated smoothly. Rather those were on 'wait and see policy'. The procedures associated with those were bureaucratic. The poor could hardly avail the services overcoming such problems (Pitchforth *et al.,* 2007). Unavailability of or inability to hire a transport to transfer the women to the appropriate health centres also delayed or prevented women form availing EOC (Essendi, 2010). It has been noticed that disparity prevails in seeking EmOC in terms of wealth quintiles (Filmer & Pritchett, 2001). BMMS (2010) data also shows that 19% of rural women in the lowest wealth quintiles and 60% in the highest quintile sought treatment for a life threatening complication. Women's lack of autonomy

delayed or deterred women from receiving health services (Essendi, 2010). Basically women have hardly any ability to take their own health seeking decision, especially in case of complication during child-birth**,** which is predominantly taken by the male members of the households followed by mothers-in-law and health providers (Khanum *et al.*, 2003). Sikder also found that despite their willingness to receive EOC from a health facility it was hindered by their male family members (Sikder *et al.,* 2011). Embargoes on consulting or being examined by a male health personnel hinder women's access to medical care (Kay, 1980), which was also found in the case of Bangladeshi migrant women in Britain. Khanum noted that in spite of their inclination toward receiving EOC from Government facilities, a large number of women prevent themselves from availing that due to 'fear of being attended by a male staff' (Khanum, 1994). Hence, they prefer to give birth to a child in Bangladesh rather than in the UK.

Women and their family members' inability to recognise the sign of complication and the appropriate place for managing that caused delay in receiving EmOC. Only 23% had the knowledge of 3–5 danger signs (Ahmed *et al.*, 1997). Many complications might be occurred in women's life during delivery and after delivery, such as: prolonged labour, severe bleeding retained placenta, mal-presentation, perennial tear... (Khanum *et al.*, 2000). Anwar *et al.* refer that a large number of women with obstetric complication die at home or on the way to hospital due to their lack of awareness of and inability to identify danger sign of complication and ineffective referral system (Anwar *et al.*, 2004). BMMS (2001) data shows that among women, who perceived complications as life threatening, more than 6 in 10 had sought some sort of treatment but only one third of them received treatment from a medically qualified provider (Koenig *et al.*, 2007) and 68% parched a treatment to administer at home (Moran *et al.*, 2007). Killewo found 'three delays' happened because of delay in: deciding to avail EOC (69.3%), arranging transport (12.1%) and commencement of treatment after reaching

the health centre (24.6%) [Killewo *et al.*, 2006]. Rahman found that MNCH related health services were insufficient and modern health care facilities were not easily accessible (Rahman, 2009). Health providers' negligence towards women with obstetric complication also made feared women to receive it (Afsana, 2004; Essendi, 2010). Gill and Ahmed opined that expansion of service, effective training, quality assurance mechanism and strong referral system have a bearing on increased utilisation of EOC services (Gill & Ahmed, 2004).

6.3. Causes of Discontinuation or not Seeking EOC

Inability to understand the severity of the problem was identified as one of the major reasons for delay or not seeking service at the time of obstetric complications by different studies. In a study Deribe and associate discovered that some of the women who reported complications did not seek services due to their inability to judge the severity of the condition, distance/transport problems, cost considerations and use of traditional options at home (Deribe *et al*., 2010; Killewo *et al*., 2006). In another study, the reasons for not seeking service from skilled providers at the time of obstetric complications differed according to wealth gradient. Lack of money, inability to understand the severity of the problem, and use of home remedy were the top reasons among the poorest women, whereas perceived quality of service and transport problems were the main reasons for the wealthiest women. Women in the lowest wealth quintile were less likely to seek skilled providers at the time of complication compared with wealthier women in any other quintiles (Worku *et al*, 2013). Many studies indicate that women belong to the lowest economic status are highly associated with poor maternal service utilisation, especially during delivery and emergency conditions (Chowdhury *et al.*, 2007; Anwar *et al.*, 2006). In some studies it was found that economic status emerged as a crucial determinant of institutional care-seeking for child birth (Kesterton *et al.,* 2010). Cultural beliefs and practices reinforce health seeking behaviour including home delivery without skilled assistance. Men and women differed in their

perception of pregnancy and delivery: men are more concerned with expenses while women express fear of the whole process, including delivering at hospitals. People expected 'one-stop' maternal service from the community delivery centres by skilled personnel. Social support network is poor for health care service and referral linkages to higher facilities at the slum areas are inadequate, fragmentary, and disorganised (Ahmed *et al*., 2010).

It is apparent from the aforementioned studies that the pregnant women do not receive antenatal care as required, there is a discontinuation of receiving antenatal care, most of the deliveries do not occur in health facility or with the help of trained birth attendants, steps are not taken to overcome the obstetric complications etc. But all these studies were carried out before the implementation of a good number of new health programmes targeted to improve maternal health condition. The present study attempts to identify whether existence of newly implemented health services around them enabled the women to receive these obstetric care or their predisposing factors influence their nature of receiving such health services.

The next Chapters will focus as follows:

Chapter 2: This chapter discusses the methods, techniques and strategies adopted to collect data.

Chapter 3: This chapter describes the profile of existing maternal health service delivery in Bangladesh.

Chapter 4: This chapter discusses the predisposing characteristics of the respondents and the profile of maternal health delivery services in the study area.

Chapter 5: This chapter describes women's nature of receiving obstetric care during pregnancy in terms of uptake of antenatal visits and management of complications.

Chapter 6: This chapter explores the nature of receiving obstetric care during child-birth and at the time of obstetric complication

Chapter 7: This chapter deals with the concluding part of the study.

Chapter 2
Research Methods

This study is a medical sociological research. Considering this study on health seeking behaviour of the women, in terms of method, reliance was put on the available researches on related issues. The general concept of social science research may be applied to cover research in medical sociology dealing with human behaviour in seeking health care against a socio-cultural backdrop (Blalock & Blalock, 1982). Thus, the methods and tools of social research have been mostly used in the study.

The type of study may be considered from different angles and included under different classifications. There is no hard and fast classification of study type, they often overlap. Considering the different types of study, this is an ethnographic study. Ethnography is a descriptive account of social activities in a particular social system based on detailed observations of what people actually do. It is a research method that is used by sociologists often when studying groups, organisations, and communities that are a part of a larger complex society. Human behaviour is a complex of multiple factors. One method may not be adequate to unearth the factors involved. Multiple approaches are often necessary to know about human behaviour, state Patton (1990).[7] Adopting the theme of the behavioural/social scientist, the 'mixed method' (Patton, 1990) has been employed in this study to explore the nature of receiving obstetric care of the women in northern Bangladesh.

Hence, along with ethnography survey, observation, case study and reactive methods were used simultaneously. All these methods were at hand to unveil the expected facts. But considering the inevitability of ethnographic method,

[7] Patton (1990) conveys the importance for using pluralistic approaches by mixed methods to derive knowledge in social science research. For the mixed methods researcher, pragmatism opens the door to multiple methods, different worldviews, and different assumptions, as well as to different forms of data collection and analysis.

it has been employed elaborately. On the other hand, in order to get some quantitative data in a more structured way survey method has also been adopted. Through survey method attempts have been made to collect every detail of their activities related to obstetric care with the effect of socio-economic condition on it; views about different existing practices and introduction of new medical services etc. It has facilitated the course of my activities to deep into what has been aimed at. In addition, observation method was employed to know the existing health seeking behaviour of the women, their household members and the activities of the health staff in a given setting. This brought before us the condition of the women overtly shown in certain period. Through case study, complicated cases were explored with some astonishing information revealing the existing condition of the women during their pregnancy and childbirths. Through this method a researcher's intuition play the vital role in collecting data and analysing it in an objective way. Reactive method,[8] was also used in collecting data. At the time I had been deputed there (in Sadullapur) as a Health Information Personnel. Being a part of the Government health system, I could easily access the corners which are inaccessible to other many researchers, even female researchers. Permission for getting access to ANC corner and labour room at hospital was given generously by the higher authority. As a person working with health sector, it was possible for me to accompany the health workers, and other Government and NGO health staff. In contacting with the pregnant women at their resident, the access was similarly easy. When needed, it was easy for me to check register books and other documentary resources of the health facilities and that of the health workers from all levels. All the concern people felt easy and secured in providing information including the private issues. Generally at the facility usually the arrangements of child-birth are made by the nurses. During that time I had the opportunity to discuss with the doctors about the conditions and probable

[8] Reactive method is a type of observational method. Here the researcher becomes the part of the system of the study (Bernard, 2006).

complications of the women. When complication arose, I was allowed to accompany the doctor in the labour room with due permission for the sake of enrichment of the research work. Even sometimes the respondents felt secured in my presence and requested me to be there. In case of household delivery, generally outside male people are not allowed to meet or talk to the new mother immediate after delivery. But I was allowed to contact the new mother and receive the information needed being familiar to the respondents and their family members.

The study meant for all the women of the rural area of the northern part of Bangladesh. But the whole area could hardly be covered considering the practical constraints and limitations. Thus by delimiting the area within my reach, two villages namely Monduar and Shalaipur were selected from Sadullapur upazilla under Gaibandha district. The consideration behind the selection of the area was that, it was my native as well as working area which would enable me to make contacts with the women easily and effectively. It was also expected that there was a possibility of representing the whole northern part of Bangladesh through the study of the women from two villages having common life style and socio-economic condition of the entire area.

The scheduled time period of the fieldwork was February 2010 to January 2011. But in fact the informal fieldwork continued from the inception of the research to up to the writing up the dissertation because I had the opportunity to meet those women on and off. This enabled me to upgrade my knowledge and insight regarding the issues concerned and helped me to include updated information of my respondents.

Regarding the procedure of sampling purposive and random sampling were adopted as the situation permitted. For site selection, the purposive sampling was adopted for Gaibandha and Sadullapur. But in selecting the specific two villages, namely Monduar and Shalaipur, random sampling was employed to

ensure objectivity. At the first stage, all the pregnant women from two villages of Sadullapur have been listed to make sure that the complete picture would be revealed through the research. The list of all the pregnant women was collected from the register book of BRAC.[9] At the second stage, only those women who were at their 3rd to 5th months of pregnancy were selected as respondents. The total numbering of these women were 104. At the initial stage 116 women were registered but later 12 women were dropped out since 8 women left the place and 4 experienced miscarriage. Thus the number of the respondents was 104. In case of health staff convenient purposive sampling was adopted. The main consideration was availability and cooperative attitude of the staff. The expertise of the staff was also taken into account.

The data were collected from both primary and secondary sources. The sources of primary data were the women having pregnancy along with outcomes from the selected villages. They were personally contacted from time to time on regular basis and thus detailed data related to every stages of the pregnancy and delivery were collected. Besides them the workforces related with health facility in that level of Sadullapur upazilla were also contacted personally. Health Assistant, Family Welfare Assistant, Family Welfare Visitor, Senior Staff Nurse, Medical Officer and Upazilla Health & Family Planning Officer from Government sector along with *Shasthya Shebika* (SS), Newborn Health Worker, *Shasthya Karmi* (SK) and Manager of MNCH project from an NGO (BRAC) sector of Sadullapur upazilla were also the sources of data. For secondary sources, it was ceaseless effort to explore all the relevant available documents, register books and other documentary resources. I had the opportunity to go through the BRAC's health worker's (SK) registers, reports etc. for consolidating the ground of the research. Besides, related research papers, dissertation and books were

[9] BRAC is an NGO working in collaboration with the Bangladesh Government to provide maternal health services to the rural women. (viz Chapter 4.)

consulted to get an over all picture of the target group. All these primary and secondary sources paved the way for making the research a success.

Depending on the objectives and research design of the study mainly three types of the research instruments were used, such as: observational check list/health card, structured interview schedule, and in-depth interview outline. The description of research instruments are given below:

(1) Observational Check List (health card): Each pregnant woman was provided with a health card issued by BRAC. Women's pregnancy related information were recorded in their cards. Using this card I administered face to face formal interview with the respondents to collect more information which were not mentioned in the card. All such information were recorded in the health card. Data on selected pregnancy and delivery related issues of the respondents were collected through this instrument.

(2) Structural Interview Schedule: Those aspects which were not mentioned in the observational check list (i.e. related to socio-economic and reproductive) were included in this interview schedule. Formal interviews were carried out by this instrument along with observational check list.

(3) In-depth interview outline: The interview outline contained a set of questions that explored the existing situation of the study by digging deeper. Face to face formal in-depth interview was done with the help of in-depth interview outline. A separate in-depth interview outline was prepared for collecting data from the respondents within 42–60 days of their delivery. The relevant data were noted down with the help of respondent's health card. Whenever permission was granted by the respondents, some of the interviews were audiocassette recorded. Some of the interviews were photographed for documentation when the respondents granted permission.

All interview outlines were in Bangla, which facilitated communication with the interviewees and discussants, as Bangla is the mother language and medium of communication in Bangladesh. These research instruments were

finalised after necessary field-testing. A jot book was also used to take down notes in incidences, not directly related to subject matter of the study, but were thought to be of relevance of the research. In social science research McCracken recommends the use of jot book (McCracken, 1988).

An observational check-list was always at my hand for documenting the data in the list. In-depth interviews were also conducted in between 42 days to 60 days after delivery to get detailed information directly through face to face communication that ensured the substantiality of the data provided. This effort confirmed farther the substantiality of the data collected earlier through ethnography. My intuition was always there to confirm the conclusion drawn for the research. In this regard, all the ground works, paper works and the gradual development of notions were taken under consideration. In addition to these, camera and cell phone were always handy in conducting all the works of the research.

Technically the data collection period was divided into 5 spells. Starting with the 1st spell, the collection process went on thoroughly up to the post period of delivery of the respondents. The spells were as below: 1st spell- interview with women at their 3–5 months of pregnancy; 2nd spell- interview with the same women at their 7–9 months of pregnancy; 3rd spell- interview with them during delivery/within 7 days of delivery; 4th spell- interview (in-depth) with the newly mothers between 42–60 days of delivery; and 5th spell- interview covered only those women who faced complication during/soon after delivery. At the 1st spell of data collection, the register books of MNCH project of BRAC were consulted for getting the list of the pregnant women of the selected area. Then with a female research assistant I went from door to door for meeting the probable respondents. Among all the pregnant women, only those having pregnancy of 3 to 5 months were enlisted for the present research. Those who were pregnant for less than 3 months or more than five months were excluded from the selection process of the respondents. Every week we were in search of the women to be considered

for the complete work. This process of door to door communication continued for six months. Side by side with the 1st spell, 2nd/3rd/4th spell of data collection was ongoing because some of the respondents within that time period reached at their 7th month of pregnancy and some women had delivery outcome during that period. So the women having pregnancy of 7th month to soon after delivery were interviewed for getting data about existing physical condition; specially the complications arising in that period. It was closely observed how those pregnant women managed the pregnancy complications. Data were also collected regarding ANC including place, time and person associated with uptake of ANC. They were also asked about the causes of discontinuation of receiving ANC. The pregnancy related complications were under consideration and accordingly the problems were observed consecutively. It also supplemented the in-depth interviews conducted later on.

In the 3rd spell, data were collected during delivery and within 7 days of delivery. My utmost effort was to be present at the spot of delivery either at home or at health facility. The places of delivery were carefully marked. Besides the qualification and experience of the attendants at child-birth, complications occurred during delivery, overall management etc. were observed with rapt attention and the data were recorded with care. The referral chain in case of complications and management of complication were also observed and documented. In the health facility, a doctor and a nurse were consulted for collecting necessary data relating to the delivery of the respondents. It can be mentioned that being an employee of the health department of the Governments, I had the access, through proper channel, to the place of delivery in conducting sensitive and confidential issues. Considering the nature of the research and its far reaching positive impact on the health care of the pregnant women of rural areas as well as employing my persuasive skill, the respondents were thoroughly at ease in communicating with me and providing their information. Here the female research assistant

played a continuous supplementary role in facilitating the research successfully. In the 4th spell of data collection, I conducted in-depth interview with all the respondents within the 42 to 60 days of delivery. The respondents were approached door to door. The interviews were conducted thoroughly keeping in mind all the questions and check list that were used earlier. In that stage, the data were arranged in the required manner. Some missing data were recovered in this spell to fill in whatever the gap appeared to me. These interviews almost gave a completion to the data collection process regarding pregnancy and delivery along with the facilities, problems and complications. But still there was a farther spell to collect the data related to the complications during and soon after delivery with the impact of complications on the respondents later on. This was basically associated with delayed complications. This spell covered mainly those women who were suffering from delayed complications.

During data collection period, while women providing information, it was sometimes found that the respondents either forgot some facts or suppressed them or were unwilling to reveal some of the sensitive issues. But they were questioned again and again. Then they were found to express what was unexpressed earlier.

The information related to complications during pregnancy, delivery and post partum periods; and probable causes of those were collected from health personnel. Information on respondents' frequency of uptake of ANC and other obstetric services were reconfirmed by the health workers. All of those health staff allowed me to accompany them whenever I needed to meet or observe a woman in her critical conditions, even in the labour room as well.

The ethical clearance was obtained from the Management Information System (MIS), DGHS. In the case of respondents the purpose of the study was verbally described to them. The interviews were conducted after obtaining informed consent from them. Anonymity and confidentiality of the

study subject have been maintained and all ethical considerations have been taken care of. They were free to retract their consent at any stage of their participation. No coercion or deception was done in any way. No physical, chemical, psychosocial or biological intervention was given to study subjects/ participants. Plagiarism in any form has been avoided by duly acknowledging, citing and referencing, and other issues related to documentation.

It was not possible, due to resource constraints, to collect data on all the units of study population. These are the limitation of the study. Emphasis was given to qualitative analysis. Besides some descriptive statistics were also done about women's nature of receiving obstetric care during pregnancy, child-birth and after delivery. These are illustrated in tabular and graphical forms; and narrated textually. Both etic and emic interpretation were done to elucidate the information generated on analysis of data. The write up of this dissertation follows 'The APA' style using the United Kingdom English.

The discussion above has been presented in a chart in the next page.

Methods of the Research

Subject	Description
Research method	Mixed method (including ethnography, observation, survey, case study and reactive methods)
Study place	Two villages (Monduar & Shalaipur) from Bonogram Union under Sadullapur Upazilla of Gaibandha district, Bangladesh
Data collection period	February 2010 to January 2011 at Sadullapur
Sampling procedure & sample size	• For Site Selection: -Purposive (for selecting Gaibandha, Sadullapur)> Random (for Monduar & Salaipur) • For Respondents: (104) -Purposive (only those women were selected who were between >3 and <5 months of their pregnancy. Those women remained as respondents till their delivery, soon after delivery and within 60 days of delivery in certain cases) • For Health Staff: (15) -Purposive>convenient
Data source	Primary sources: • Women who had pregnancy outcome in certain period of time from particular two villages at Gaibandha district. • Health Staff of Government Health Facilities and MNCH project Secondary sources: Consultations of documents, register books and other documentary resources including- • BRAC health worker's register • EmOC registers of Sadullapur UHC • Government's Health MIS Reports • Related Research Reports, Books, Dissertations.
Research instruments	• Observational check list (health card) • Structured interview schedule • In-depth interview outline • Jot book, Camera, Recorder, Cell Phone • Intuition of the researcher
Strategies of data collection	At Sadullapur: • 1st spell- interview with the women at their <3–5 months of pregnancy • 2nd spell- interview with women at their 7–9 months of pregnancy • 3rd spell- interview with women during delivery/within 7 days of delivery • 4th spell- interview (in-depth) with the newly mother, between 42–60 days of delivery • 5th spell- interview covered only those who faced complications during/soon after delivery
Data analysis and interpretation	Emphasis was given to qualitative analysis. Some descriptive statistics were done too. These are presented illustratively and narrated textually. Both etic and emic interpretation were done to elucidate the information generated on analysis of data.

Chapter 3

Profile of Maternal Health Service Delivery in Bangladesh

Maternal health services in Bangladesh evolved over time, guided by global and national policies and plans. A brief description of maternal health service provision in the Government, NGO and private sector facilities are given below:

1. History of Government Maternal Health Service in Bangladesh

Bangladesh has a long history of Maternal Health activities. The first 'Maternal and Child Health' (MCH) unit was established in the Directorate of Health in 1952−1953. At that time, ten maternal and child welfare centres (MCWCs) started functioning, mainly at district level and some at the thana level. Between 1961 and 1971, 152 rural health centres (RHCs) were established, each with six MCH beds. In the 1975 MCH services were integrated with the health service, and a combined approach was adopted in the first population policy document in 1976. This approach promoted the construction of facilities at union and thana levels, utilisation of traditional birth attendants (TBAs), training of Family Welfare Assistants (FWAs) for maternity services, and an accelerated training programme for Family Welfare Visitors (FWVs). Since 1975, the previous RHCs were converted to Thana Health Complexes (THCs), and many new ones were built. These were the centres of maternal activity at upazilla level, supported by the MCWCs and District Hospitals offering obstetric services and referral at district level. At the union level, FWCs provided basic maternal health care, and the FWVs provided technical support to the FWAs and TBAs for community-based maternal services. Under this initial approach of providing low or intermediate level MCH facilities with training for field-level staff,

the primary focus was on the promotion of antenatal care, TBA training, risk identification, tetanus toxoid immunisation, iron and folic acid supplementation, clean delivery practices, and family planning. But there were relatively few actions to provide emergency obstetric care (EOC) for women who develop complications during pregnancy and delivery. This emphasis on provision of mid-level facilities advanced on the earlier approach, which focused on household deliveries. In the 1970s, TBAs handled most deliveries, so the Government took the initiative at that time to train these TBAs, who had generally not received any previous training in hygiene or proper delivery practices. The TBA training project trained women across the country, with the goal of providing one trained TBA for each of the 68,000 villages. An evaluation found that many negative and harmful practices continued despite the training, although these practices were less common among trained TBAs than among untrained TBAs (Akhter *et al.,* 1995). After some time it also became apparent that there was no decline in maternal mortality. One reason was that although more than 42,000 TBAs were trained, only about 6 percent of births were delivered by them. This evaluation highlighted numerous issues that persist today including problems of inadequate supervision and support and insufficient practical experience. Finally, the referral system was not sufficiently well developed to ensure the complicated cases, if identified by the TBAs, would receive adequate treatment as required (Chowdhury *et al.,* 2002). It was at this time that global policy shifted away from the 'risk approach', in which women with certain characteristics (very young or old, high parity, short birth interval, short height, poor pregnancy history, etc.) were defined as being at risk of a complicated pregnancy. In the late 1980s there was an immediate response to the new initiative, with many ongoing programmes adopting an EOC approach. The main avenue for developing the national initiative was the pilot project for the development of maternal and neonatal health care supported by the World Health Organisation (WHO). The project

targeted the upazilla level (31 upazillas in four districts), the most difficult level for implementing change. This effort emphasised training of health and community level workers for community mobilisation in addition to physicians, such as: anaesthetists and obstetricians as in other projects. At the same time, the UNFPA supported the Strengthening of Maternal and Child Welfare Centres (MCWCs) project, and the European Union supported the Thana Functional Improvement Pilot Project (TFIPP). The UNFPA project used a phased MCWC upgrading approach, starting in 1995 with 11 MCWCs to 62 in 2000. These formerly underutilised facilities, staffed mostly by females, showed an increase in mainly EOC indicators—antenatal care (ANC), delivery care, C-sections, postnatal care (PNC), and treatment of complications. There has been some overlap of services in upgraded MCWCs at the district level with services at nearby district hospitals. The TFIPP project, like the WHO pilot project, targeted the thana level, but was limited to 55 thanas (out of 460 nationwide) with a range of intensive and comprehensive interventions (NIPORT, 2003).

2. Recent Strategy of Maternal Health Services

Considering the importance of maternal health services Ministry of Health and Family Welfare (MOHFW), Obstetrics and Gynaecology Society of Bangladesh and UNICEF jointly (in 1993) developed a pilot project called 'Strengthening of EOC Services' in Bangladesh. The objectives of this project included establishing comprehensive EOC facilities at district hospitals, basic EOC facilities at UHCs, and obstetric first aid facilities at HFWCs and MCWCs. Another objective was to formulate a proposal for a national plan of action for reducing maternal mortality through provision of EOC services. As with many of the other approaches tried, this one concentrated primarily on the provision of high level EOC facilities. This has been further reiterated by the National Strategy for Maternal Health adopted in 2001. Increased access to EOC is the main thrust of this strategy for

reducing maternal mortality, which is based on the lessons like: all pregnant women are at risk of developing life-threatening complications, most complications can neither be predicted accurately nor prevented once a woman develops complications, needs prompt access to emergency obstetric care services if death or disability is to be prevented (MOHFW, 2001).

The strategy had five objectives to be achieved over the ten-year period (2001–2010). These are: (i) strengthening the provision of essential (including emergency) obstetric care and improving referral and utilisation of services, (ii) improving the nutritional status of women and adolescent girls, (iii) ensuring the right people with right skills are trained to provide quality maternal health services (MHS) at all levels of health system, (iv) promoting women-friendly health services and (v) bringing about positive changes in the perception and behaviour of individuals, family, service providers and the community to support women in the realisation of their right to safe motherhood and a life free of violence and discrimination.

To achieve the goal of safe motherhood, the Government of Bangladesh has a plan to ensure availability of Comprehensive Emergency Obstetric Care (EmOC) services, including caesarean section and blood transfusion services at all Government Medical College Hospitals, all District Hospitals (DHs), as well as at Maternal and Child Welfare Centres (MCWCs), and 201 Upazilla Health Complexes (UHCs). Provision has also been made for Basic EOC services (obstetric first aid, provision of manual removal of retained placenta and assisted vaginal delivery using vacuum extractor) at the remaining UHCs. The Government in its effort to further decentralise safe motherhood services including EOC services from central to peripheries also wants to increase the availability of female Skilled Birth Attendants (SBAs) at the community level, as a component of skilled attendance strategy, by arranging 6 months training, inclusive of theoretical and practical, in midwifery skills including selected basic Emergency Obstetric Care (EOC) services and skills. Around 15,000 community-based SBAs were expected to be trained by 2010.

Out of proposed community level female skilled birth attendants, around 4000 were trained as end of the year 2007. It is evident that vouchers are beneficial to improve the service utilisation in resource constraint countries and this system has already been tested in many countries including India (Bhatia *et al.,* 2006). The findings suggested positive effects among the target group regarding utilisation of key preventive health services. Bangladesh has also tested voucher scheme to find the impact on maternal health service utilisation. In this regard, a pilot financial incentive project was tested by Population Council to increase maternal health service utilisation among poor women of rural areas. The study findings suggested that financial subsidies had increased maternal care of rural areas from trained provider from 50 to 100%, delivery assisted by trained provider from 5.5% to 22%, and the proportion of delivery at health centre from 2.3% to 18% (Rahman *et al.,* 2009).

2.1. Maternal Health Centres from District to Community Level

Bangladesh has a well-structured health service delivery system from central to the grass root level. The Government offers a four-tier health care service structure for the people living in rural areas, which include domiciliary services, ward & union level institutional services, upazilla level institutional services and district level institutional services. Ward and union health level centre provide primarily outpatient services for the rural people and the staff of centres organises outreach activities; home visit by the community health workers and arrange satellite clinic at the community level. In every upazilla, there is an Upazilla Health Complex (UHC) and in every district there is a district hospital along with a Maternal and Child Welfare Centre (MCWC) which is equipped to provide better maternal health care services (Rob *et al.,* 2006). Every district have several health facilities which provide maternal health, such as: District Hospital, Maternal and Child Welfare Centre (MCWC), Upazilla Health Complex (UHC), FWC, USC, and CC provide maternal health services from Government sector. Maternal health services

are available in Bangladesh up to district level. The services include antenatal care (ANC), basic EOC, comprehensive EOC (EmOC), postnatal care (PNC) etc. However, not all types of maternal and services are available from all the health facilities. Rural women sometimes visit Medical College Hospital (MCH) to manage their severe obstetric complications. But most of the districts have no Medical College Hospital. From Government sector two wings (Health Services wing and Family Planning Services wing) provide maternity services from district level to community level, such as:

Administrative Level	Health Department	Family Planning Department
District	Distract Hospital	Mother and Child Welfare Centre
Upazilla	Upazilla Health Complex	MCH-FP unit of Upazilla Health Complex
Union	Union Sub-Centre	Union Health and Family Welfare Centres
Ward	Community Clinic	Satellite Clinic

At present Emergency Obstetric Care (EmOC) services are available in District Hospital and Mother and Child Welfare Centres at district level. Most of the Upazilla Health Complexes provide only Basic Essential Obstetric Care (EOC) Services at upazilla level.

2.2. Maternal Health Services Providers

In the public sector, most of the health staff are involved in providing preventive and curative health services. Human resources for maternal healthcare include Specialist Doctors, General Physicians, Nurses, Medical Assistants, Pharmacists, Medical Technologists, Family Welfare Visitors, Community-Based Skilled Birth Attendants, Family Welfare Assistants, and Health Assistants. Apart from Health Assistants and Family Welfare Assistants who provide care at the doorstep of the homes, others are based at facilities. There is no estimate of the proportion of general physicians providing maternal healthcare.

Qualification of different types of health providers involved in maternal healthcare services in Bangladesh has given in appendix. A description of responsibility of different types of health providers involved in maternal healthcare services in rural Bangladesh is given below:

Family Welfare Assistant (FWA): The FWAs implement the community-based distribution of family-planning methods. They are instructed to provide ANC and refer high-risk pregnancies, alongside their family-planning tasks. However, the FWAs work primarily as family-planning agents.

Health Assistant (HA): After completing 12 years of schooling an individual may recruited as Health Assistant. The HAs are also responsible for the delivery of primary healthcare, although their role primarily focused on immunisation of mothers and children.

Community Health Care Provider (CHCP): The CHCP provide health service from community clinic. After completing 12 years of schooling CHCP received 6 weeks of training on limited preventive and curative care for providing community health care service.

Family Welfare Visitor (FWV): The FWVs provide facility-based ANC, PNC, and basic EOC from the union and upazilla level facilities. They also provide service from satellite clinic. Although their training included development of midwifery skills, the focus of services by the FWVs gradually shifted to family planning as they were recruited by the Family Planning wing of the MOHFW and monitored against their performance in terms of family-planning services. Other maternal interventions were strongly guided by the WHO including screening of high-risk pregnancies through antenatal check-ups by the FWVs.

Community-based Skill Birth Attendant (CSBA): Since 2001 the Bangladesh Maternal Health Strategy has introduced a system of Community-based Skilled Birth Attendant to complement the facility-based strategy to home-based skilled delivery care.

Due to attrition of FWVs and FWAs, the existing workforce is failing to reach all those who need their services. The Community-based Skilled Birth Attendant programme was initiated in 2001, whereby the FWAs receive training to become CSBAs, has not been able to fill the gap nor will it be able to do that by 2015 given the slow production of CSBAs and relatively-low usage by women for delivery. In 2006, it was calculated that, if Bangladesh continues to develop CSBAs at the current rate and deploy them in the community, the CSBAs will be able to cover only 5% of all births in 2015. (Mridha, *et al.,* 2009; Koblinsky *et al.,* 2006). The role of Medical Assistant (MA) or Sub-Assistant Community Medical Officer (SACMO) and FWVs at the union-level clinics, and FWAs at the community level, are also vital in providing maternal healthcare. However, most SACMOs being male, they rarely receive further training on maternal health services.

3. NGO and Private Sector Maternal Health Centres, Providers and Services

A comprehensive programme to improve the maternal health status in Bangladesh the contributions of NGOs, for-profit-private sector, and informal service providers cannot be ignored. A description of these are given in this sector.

3.1. NGO Sector Maternal Health Centres, Providers and Services

Keeping pace with the national strategies and MDG targets, with the collaboration of the Government of Bangladesh and UNICEF, BRAC (an NGO) has initiated a five-year programme (2008–2012) for improving maternal, neonatal, and child survival (IMNCS) in the rural poverty-stricken areas of northern Bangladesh. BRAC scaled ten districts of Bangladesh for intervention. During the data collection period BRAC had undertaken a programme for improving maternal, neonatal, and child survival (IMNCS) in the rural areas of northern Bangladesh including the research area. The

programme/intervention covers intensive activities to improve maternal and newborn care. The service providers of IMNCS are:

Shasthya Shebika (SS): The community health volunteer, who is the front line service providers. *Shasthya Shebikas* are trained in basic preventive, health promotion and curative healthcare which are backed up by regular monthly refresher training from BRAC. They inspire the pregnant women to receive facility based delivery or delivery with skill birth attendants. If she attends at home of pregnant woman during delivery she gets incentive (Tk. 150) from BRAC. If she refers the pregnant women to health facility for delivery she also gets same amount from BRAC. They don't get fixed salary from BRAC.

Shasthya Karmi (SK): BRAC's health worker who are semi-qualified maternal health providers. They were trained by BRAC. They provide home based basic obstetric services i.e. ANC.

NGO Clinic: MTPs, specially paramedic are providing medical care for maternal health from NGO clinic

3.2. Private-sector Maternal Health Centres, Providers and Services

A large number of qualified and unqualified private practitioners such as Gynaecologist, Bachelor of Medicine and Surgery, Nurse with 1 year midwifery, Medical Assistant, and Family Welfare Visitor, Gram-doctor, Homeo practitioners etc. are involved in maternal health system in rural Bangladesh. Most of them provide obstetric care from their private chambers or different diagnostic centres and private clinics, such as:

Places of Services provider	Type of Services provider	Key maternal health services provided
Private Clinic & Diagnostic Centre for Obstetric Complication Management	Gynaecologist, MBBS Doctor, FWV, Nurse	C-section, Episiotomy, Ultrasonic, blood and urine test
Medically Trained Practitioner's Private Chamber for Obstetric Care	Gynaecologist, MBBS Doctor, FWV, Nurse	PVE, BP measure, providing prescription or advice
Unqualified Practitioner's Work Place for Obstetric Care	GD, TTBA, TBA, Homeo Practitioner	BP measure, providing prescription or advice, sell medicine

Private Clinic: Medically Trained Provider such as, gynaecologist, qualified doctor; nurse, medical technologist and paramedic provide maternal health services from affiliated private clinics

Private Chamber: Medically Trained Provider like gynaecologist, qualified doctor; paramedic provide medical care maternal health from private chamber

Gram-doctor: Gram-doctors are those practitioners who do not have any medical degree and licences but use allopathic drugs. They provide primary health care services to the rural people including pregnant women from their private chamber. They also make home visits.

Homeo Practitioner: Practitioners using homeopathic medicine most of them are self taught. They provide health care to the rural people including pregnant women.

FWV's Home: They are trained in formal institutions and provide maternal health service from union and upazilla level health facilities. Sometimes they provide maternal service from their residence as private practitioner on payment.

Traditional Birth Attendant (TBA): TBAs may not receive formal education and training in health care provision, and there are no specific professional requisites such as certification or licensure. They often learn their trade

through apprenticeship or are self-taught. They sometimes serve as a bridge between the community people and the formal health system, and may accompany women to health facilities for delivery. They usually work in rural, remote and other medically underserved areas. Some of the TBAs are trained by the NGO or GO for a short period.

In most cases, the women and their family members called on multiple providers and facilities to seek appropriate care and treatment. During child-birth usually a pregnant woman first calls on a Traditional Birth Attendant (TBA). If TBA detects an abnormality, she refers the patient to a Gram-doctor (who is not usually medically trained) or to the first referral level health centre, such as, a Union Health and Family Welfare Centre (UHFWC), and then to Upazilla Health Complex or private or NGO clinic. If none of the first referral level centres are able to provide appropriate care or treatment, the patient is referred to a District Hospital or Maternal and Child Welfare Centre (Huda, 2008). In the following chapters (Chapter 5 and 6) women's nature of receiving obstetric care has been discussed. The next Chapter presents a profile of respondents' socio-economic & reproductive characteristic and their maternal health delivery services in the study area.

Chapter 4
Predisposing Characteristics of the Respondents and the Profile of Maternal Health Delivery Services in the Study Area

The present chapter describes the predisposing i.e. socio-economic & reproductive characteristics of the respondents and existing obstetric care services in the research area. The study has been carried out at two villages of Sadullapur upazilla under Gaibandha district which situated in the northern region of Bangladesh. The socio-economic & reproductive conditions of the pregnant women who were involved in the study have been described at the first section. The brief description of the research area including maternal health related facilities, services and role of service providers in the area have also been discussed at the last section of the chapter.

1. Socio-economic & Reproductive Characteristics of the Respondents

For the interest of the study, the social and economic facets that have been considered are – women's age, age at first marriage, level of education, occupation, monthly family income, occupation of the household heads, main earning person of the family, religion, and family structure of the women. These have been discussed in the socio-economic condition section. Data were also collected from their current and previous reproductive health related characteristics. The status of receiving TT injection, current gravida of the women; history of previous pregnancy complication and its management, services received in current pregnancy have also been discussed in the reproductive status section.

1.1. Socio-economic Status of the Respondents

Table 1 shows that the highest number of pregnant women belonged to the age group 15–19 years (42.3%) while the women in second highest group

were aged 20–24 years (33.7%). Most of them got their first marriage between the age of 15–19 years (89.4%). It is remarkable that a few women (2.9%) got marry before 15 years of age. The legal age of marriage of a girl is at least 18 years in Bangladesh. The study finds that most of the pregnant women belonged to the 15–19 years of women. It is assumed that due to low literacy rate most of the pregnant women got marry before 18 years of age. Compare with the women their husbands' age were higher. Most of the respondents' husbands (33.7%) were in age group 25–29 years. Majority of the respondents (34.6%) and their husbands (32.7%) had no formal education (32.7%). About 29.8% of the women completed pre-primary level of education and 16.3% Junior high School level. In terms of occupation, most of the women were house wife (96.0%). Three women were service holder and one engaged in small business. Most of the women's family earned below Tk. 5001 per month. Majority of them (39.4%) belonged to lowest income family (Tk. 1001–3000). The socioeconomic status of the women was assessed in terms of the estimated amount earned by a family. Around 40% respondent`s families earned less than Tk. 3,000, followed by 31.7% Tk. 3,001 to 5,000. The women's families had diversified source of income, such as: agriculture related work, business, day labour, construction labour, rickshaw pulling, service and others. Most of the family's income sources were agriculture (28.8%) and rickshaw pulling (26.0%). The main earning members of the families were their husbands (94.2%), fathers-in-law (4.8%) and one was respondent herself. Among the respondents 97.1% were Muslim and the rest were Hindus. Majority of the women were living in nuclear family (80.8%).

Table 1. Socio-economic Status of the Pregnant Women (N=104)

Category		n	%
Women's Age (in Year)	15–19	44	42.3
	20–24	35	33.7
	25–29	14	13.5
	30–34	7	6.7
	35–39	4	3.8
Age at First Marriage	<15	3	2.9
	15–19	93	89.4
	20–24	8	7.7
Women's Education (Completed)	None	36	34.6
	Pre-primary	31	29.8
	Primary	14	13.5
	Junior high School	17	16.3
	SSC	4	3.8
	HSC	2	1.9
Women's Occupation	Business	1	1.0
	House Wife	100	96.2
	Services	3	2.9
Monthly Family Income (in Taka)	1001–3000	41	39.4
	3001–5000	33	31.7
	5001–7000	20	19.2
	7001–9000	9	8.7
	9001+	1	1.0
Occupation of the Household Heads	Agriculture	30	28.8
	Construction worker	3	2.9
	Day Labour	10	9.6
	Rickshaw Puller	27	26.0
	Service	9	8.7
	Small Business	19	18.3
	Others*	6	5.8
Main Earning Member of the Family	Father in Law	5	4.8
	Husband	98	94.2
	Self	1	1.0
Women's Religion	Hindu	3	2.9
	Islam	101	97.1
Family Structure	Extended	20	19.2
	Nuclear	84	80.8

* Furniture maker, saloon worker, piling worker etc.

1.2. Reproductive Status of the Respondents

Table 2 depicts the current and previous reproductive health related characteristics of the study women. The status of receiving TT injection of the respondent was impressive. Most of the women (60.6%) received complete doses of TT injection and the rest of the women had received at least 2 doses of TT injection.

The other reproductive history of the respondents was relating to the number of their gravida. Out of all respondents majority of them (42.3%) conceived for the first time, that means they were at their 1st gravida during the data collection period. Next to that 30.8% women were at their 2^{nd} gravida. It is worth noting that one woman conceived for the 7^{th} time during data collection period.

According to the previous history of complications data shows that 55% women faced complications during their previous pregnancy or at child-birth period. It should be noted that this information was not applicable for 42.3% of the total respondents who became pregnant for the first time during the data collection period. The nature of previous complications of the women were abortion, anaemia, oedema, excessive bleeding, retained placenta, fever for 3 or more days, prolong labour, leaking membrane, delivered low weighted baby, high blood pressure, severe vomiting, and delivered dead child (still birth). The complication from which highest portion of the women were suffering was anaemia faced by 14 women (42.4%). Among the respondents who faced complications during previous child-birth or soon after delivery, 23.6% did not take any step to overcome their complicacy. The rest of the women mostly visited Gram-doctor (70.0%), went to Upazilla Health Complex (20.0%) and District Hospital (10.0%).

Table 2. Reproductive Background of the Pregnant Women (N=104)

Category		n	%
Gravida of the Women (N=104)	1	44	42.3
	2	32	30.8
	3	16	15.4
	4	5	4.8
	5	4	3.8
	6	2	1.9
	7	1	1.0
TT Dose Completed (N=104)	2	15	14.4
	3	16	15.4
	4	10	9.6
	5	63	60.6
Previous History of Complications (n=60)	No	27	45.0
	Yes	33	55.0
History of Types of Complications at Past Delivery (n=33)	Abortion	1	3.0
	Anaemia	6	18.2
	Anaemia & Oedema	2	6.1
	Anaemia, Oedema, Excessive Bleeding, Retained Placenta & Fever 3Plus Days	1	3.0
	Anaemia, Oedema & Prolong Labour	2	6.1
	Anaemia, Leaking Membrane & Prolong Labour	1	3.0
	Anaemia & Prolong Labour	1	3.0
	Anaemia, prolong Labour, Excessive Bleeding & 4Neonatal Death	1	3.0
	Delivered low wait baby	1	3.0
	Oedema	4	12.1
	Oedema & High BP	1	3.0
	Oedema & Prolong Labour	4	12.1
	High Blood Pressure	1	3.0
	Leaking Membrane During Pregnancy	1	3.0
	Prolong Labour	1	3.0
	Severe Vomiting	3	9.1
	Severe Vomiting & Oedema	1	3.0
	Still Birth & Abortion	1	3.0
Step Taken to Overcome the Previous Complications (n=20)	Visited GD	14	70.0
	Went to District level Hospital	2	10.0
	Went to UHC	4	20.0

2. Geographic and Administrative Description of the Research Area

Gaibandha is a district under Rangpur division with an area of 2179.27 sq km, is bounded by Kurigram and Rangpur districts on the north, Bogra district on the south, Jamalpur, and Kurigram districts and Brahmaputra river on the east, Dinajpur and Rangpur districts on the west. Literacy rate among the town people is 61.9%. Administration of Gaibandha district was established in 1984. The district consists of 7 upazillas, 3 municipalities, 18 wards, 82 union parishads, 1101 mouzas, 56 mahallas and 1244 villages (Bangladesh Population Census 2001). The public health facilities in Gaibandha includes district hospital (1), maternal & child welfare centre (1) and upazilla health complex (6). A FWC or/and USC and community clinics were functioning in each union and ward level respectively. A few private clinics and NGO hospital are functioning which provide maternal health care. The upazillas are Fulchhari, Gaibandha Sadar, Gobindaganj, Palashbari, Sadullapur, Sughatta and Sundarganj. Sadullapur Upazilla with an area of 227.97 squire kilometres, is bounded by Sundarganj and Mithapukur upazillas on the north, Palashbari and Gaibandha sadar upazillas on the south, Gaibandha Sadar and Sundarganj upazillas on the east, Pirganj (Rangpur) upazilla on the west. This upazilla consists of Barind tract and Tista alluvial soil; Ghaghat is the main river. Sadullapur (Town) consists of four mouzas.[10] The area of the town is 6.38 sq km. It has a population of 10461 among which 50.71% are male and 49.29% female. Population density is per sq km 1640. Literacy rate among the town people is 33.2%. Concerning administration, Sadullapur thana, (now an upazilla) was established in 1857. The upazilla consists of 11 union parishads, 166 mouzas and 172 villages. Population of this upazilla is 243,012, among which 50.4% are male and 49.6%female. Majority of the people are Muslim (90.05%). Rest of them are Hindu (9.65%), Christian (0.02%), Buddhist (0.03%) and others 0.25%. There are 448 Mosques and 32 temples. Average literacy rate

[10] http://www.in2bangla.com/indexUpazila.php?id=422

is 33.4%, among this 42.5% for male and 25.7% for female. There are 8 colleges, 48 secondary schools, 5 junior schools, 91 madrasas, 90 Government primary schools, 105 non-government primary schools, 10 satellite schools, 2 KG schools, and 8 community schools. Communication facilities indicates that 24 km roads are *pucca* , 26 km semi *pucca* , 470km are mud roads and 12 km are railways. A good number of NGOs are working there. Operationally important NGOs are BRAC, CARE, ASA, PROSHIKA, Swanirvar Bangladesh, Ganakalyan Kendra, Save the Genesis and Gana Chetana. In this upazilla there is 1 Upazilla Health Complex (UHC), 6 union health sub-centres , 10 family welfare centre, 35 Community clinics and 88 Satellite clinics. Bonogram is sadar union of Sadullapur upazilla. Sadullapur UHC is situated in this union. The study carried out on two villages namely Monduar and Salaipur which located under Bonogram union. There were around 1500 households in these two villages. The villages were divided into 10 sub-divisions each have 150 household. One sub-division was working place for one community health volunteer (SS).

3. Maternal Health Services Delivery (MHSD) in the Research Area

3.1. Government Sector Maternal Health Service Delivery System

District Level Facilities: Around Fifty percent women need treatment for complications during childbirth, and specialist in gynaecology and obstetrics are responsible to treat obstetric complication complications. But, both district level facilities (DH & MCWC) were not sufficient in providing proper services. To address this issue, the Government initiated one-year training for medical graduates (MBBS) in each of these specialties. Despite these initiatives, the Government failed to develop enough skilled manpower, deployed, and retained comprehensive EOC at the upazilla level. Essential obstetric care is the term used to describe the elements of obstetric care needed for the management of normal and complicated pregnancy, delivery and the postpartum period. Essential Obstetric Care is defined for two different levels of the health care system: Basic essential obstetric care

(EOC) services at the health centre level should include at least the following: parenteral antibiotics, parenteral oxytocic drugs, parenteral sedative for eclampsia, manual removal of placenta, and manual removal of retained products. Comprehensive emergency obstetric care (EmOC) is available at the district level Government hospital includes all EOC the services with surgery, anaesthesia, and blood transfusion (Mridha, *et al.,* 2009). Under the Family Planning wing, Gaibandha MCWCs offer comprehensive EOC services including caesarean-section surgery. Adequacy of Basic EOC and Comprehensive EOC facilities based on WHO recommendations, district hospital of Gaibandha under the Health Services wing also provide comprehensive EOC that responsible to provide emergency services and make it accessible in district town. The rural areas still remain without adequate coverage of comprehensive EOC. Sadullapur UHC provides only basic essential obstetric care services. Women with complication of Sadullapur upazilla receive comprehensive essential obstetric services from district level hospitals.

Upazilla Health Complex (UHC): An UHC is designed to serve a population of around 250,000–300,000. Sadullapur UHC operates a 50 bed full hospital, which provides in-patient and out-patient health services, including reproductive health and family planning services. Normal deliveries take place in Sadullapur UHCs but no infrastructure and manpower available to provide EmOC services. Generally, an UHC has a provision of 9 medical doctors with varying field of specialisations but absentee rate for medical doctors is very high. The other medical staff at UHC include: Nurses (4 year training including one year midwifery); Medical Assistants or SACMO (minimum 3 years training); Family Welfare Visitors (FWVs) and senior FWVs (minimum 18 months training), pharmacists and lab technologists. FWVs are supposed to be primarily involved with reproductive health issues and public health programmes and Nurses are involved for safe normal delivery at UHC. Sadullapur UHC remains open from 8:30 AM to 2:30 PM

on working days. However emergency services are available beyond office hours for 7 days a week. Officially 9 doctors are posted in Sadullapur Upazilla Health Complex, but up to 70% are absentees during office hours and scarcely any doctors are available in the afternoon, evening and night.

Union level Health Facilities: An Union Sub-Centre (USC) and a Family Welfare Centre (FWC) provide free of cost service at the Union level to about 30,000 population. These provide outpatient care, particularly basic primary health care, antenatal, post-natal services, immunisation and basic EOC services. These are managed by the paramedics (MA/SACMO) and FWV (Family Welfare Visitor). A community clinic provides free of cost service at the Ward level to about 6,000 population. These are operated by Community Health Care Providers (CHCP).

3.2. NGO and Private-Sector Maternal Health Service Delivery System

A few NGOs and private sectors also provide maternal health services in the research area. The present study has conducted in the IMNCS intervention area under Gaibandha districts. The major components of the IMNCS programme include developing the capacity of Community Health Workers (CHW); empowering communities with informed choice to demand for MNCH services; improving quality of MNCH services and care; strengthening systems for timely referral to quality MNCH services especially in emergencies; building partnerships among private providers, local authorities, community leaders, other NGOs and civil society to strengthen service delivery (Afsana *et al.,* 2009). NGO sector provides intensive for maternal health care in the study area by using local manpower who provide a wide range of domiciliary maternal health services. These services include health and nutrition education, water and sanitation, family planning, immunisation, ANC, and referral for complications. The community health volunteers, *Shasthya Shebikas* (SS) and *Shasthya karmi*

(SK) are main health service providers of the BRAC at rural areas. *Shasthya Shebikas* (SS) are the front line service providers who are supervised by the *Shasthya Karmi* (SK). They are trained in basic preventive, health promotion and curative healthcare which are backed up by regular monthly refresher training (Ahmed, 2008). SKs are comprehensively trained community health female paramedics and they are supervised by the programme organisers (PO) while POs are supervised by the upazilla and district managers of BRAC. In the study area SS, SK and Newborn Health Workers (NHW) provide a wide range of MNCH services at household level. These services include early identification of pregnancy and antenatal care; conducting home delivery; postnatal care for mothers and neonates; under-five care; detection, management and referral of maternal, neonatal and child health complications to the hospitals. NHW is an additional community health worker who is usually trained traditional birth attendant and conducts home delivery. Along with providing extensive door to door service for MNCH care they also undertake verbal and social autopsies to find out medical and social causes of maternal and neonatal deaths. A detailed description of the services delivered by the BRAC is presented (Khan *et al.,* 2012) in the following table

Available Services, Activities and Providers Focused on Maternal Health

Services	Activities	provided by
Pregnancy Identification	Assist mothers to identify pregnancy, Inspire mothers to get ANC, Inform SK	SS
Antenatal Care	• Identify pregnant mother, record reproductive history, Pulse rate, Blood pressure, Weight measurement, Height measurement, Foetal position, Fundal height, Foetal heart beat on the ANC card which is provided to mother • Advise mothers on pregnancy related care and immunisation, make aware about maternal danger signs, mobilise for receiving TT injection • Provide mother with BCC materials sticker, poster demonstrating the maternal danger signs • Also provide piggy bank and advise to save to the time of child-birth • Check pulse, Blood pressure, Weight measurement, Height measurement, Foetal position, Fundal height, Foetal heart beat • Advise mothers to take Iron tablet, Pholoc acid, de- worming, vitamin A, TT vaccine, take rest, Record in ANC Card, Provide mother- steaker	SK, SS
Birth Planning	Make aware about the danger signs , advice mother to arrange for transport, blood donor, birth attendant, delivery centre -tell what things to be prepared during delivery	PO
Delivery Care	Clean and safe delivery, Introduce misoprostol (400 µg)	NHW, SS
PNC	• Examine Pulse, Blood pressure, Anaemia, Measure newborn weight, Measure mother's height, Help to breast feed • Provide Vitamin-A/Iron Tablet, Given advice on nutrition, newborn care, cleanliness, make aware about postnatal and newborn danger signs, postpartum contraception • Provide advice on family planning, breastfeeding	SK, SS, PO
Referral	• Arrange transport, blood, effort to reduce delay. • If any complicacy arise [Excessive bleeding at the time of pregnancy, delivery or after delivery, Retained placenta, Convulsion at the time of pregnancy, delivery or after delivery. Prolonged labour (>12 hours), hand or leg prolapsed] refer to the public hospital	SK, SS, NHW, PO

Referral Expenditure and Financial Support: IMNCS programme arranges financial support for the pregnant women. When a woman came up with complications they were referred to the appropriate facilities through the

BRAC referral network. A wealth ranking was carried out at the beginning of the intervention to find out which family is poor. If a pregnant woman belongs to a poor group based on the wealth ranking, she would get supports on spending for treatment of complications. During ANC visit SK ranked each pregnant woman and during the 7–9 months of pregnancy each household was revisited and the grades were re-judged by the Programme Organiser (PO). The IMNCS programme provides financial support to the poor household for transportation, purchasing medicine, or arranging blood to address complications. All these expenses were fully borne by the IMNCS programme for poor mothers belonged to Grade-C households (who are not economically solvent, has less than 10 decimal of agricultural land, *kancha* house; has very few durable asset; main occupation of whose household heads are rickshaw pulling/van driving, begging; members of socially excluded people & indigenous people are considered as eligible to receive financial supports.

Criteria of Receiving Financial Support from IMNCS Programme[11]

	'A' Grade:	'B' Grade	'C' Grade
Criteria of Household Ranking	– Economically solvent – Has more than 50 decimal of agricultural land – *Pucca* or semi-*pucca* house – Has durable asset as : Television, mobile phone, motor cycle, car – Main occupation: business or service	– Not economically solvent – Has less than 50 decimal of agricultural land – Tin-shade house – Has durable asset not more valuable than : mobile phone, bicycle, radio – Main occupation: petty business or low class service, sell labour 100 days in a year	– Not economically solvent – Has less than 10 decimal of agricultural land – *kancha* house – Has very few durable asset – Main occupation: Rickshaw pulling/ van driving, begging or Socially excluded people, indigenous people
Financial Support Type	No financial support from IMNCS programme	Sharing of total cost. They will receive following support: Exact transport expenditure and Partial sharing on the medical expenditure	Full cost to be borne by the IMNCS programme

The IMNCS intervention the programme is targeted to reduce the three delay and create an induced demand for referral to prevent predicted mortality and, or morbidity. Referral of complications is crucial for saving lives of mothers, neonates and under five children. In this project, BRAC has an established referral system by connecting communities with facilities. Target families are given cell numbers of BRAC health staff, especially ones who are designated as Referral Programme Organisers and work at hospitals to support patients coming from villages. A birth plan is maintained for the families as part of the antenatal card, where information on pre-selected vehicle, person accompanying to hospitals, cell number of BRAC project staff (associated with referrals), the place of delivery and person attending delivery are recorded. Women and families with the support of CHWs contact BRAC staffs' in case of emergencies for their referral and ensuring better care in the hospitals. In IMNCS programme the total cost of the intervention was BDT

[11] *Math Porjaer Nirdeshika, Ma Nobojatok O Shishu Shastho Unnayan Prokolpo*, BRAC Health Programme (Cited from Khan *et al.,* 2012)

91,317,741 in Gaibandha district. The average cost of per ANC, including the opportunity cost of volunteer services, provided by the IMNCS programme is BDT 79.2 (USD 1.1). The average cost of four ANCs along with the pregnancy identification in the IMNCS programme is BDT 337.5 (USD 4.9). The average cost of home delivery conducted by the NHW in the IMNCS programme is BDT 1,457 (USD 21.1) including the value of the volunteer services of the community health worker (CHW). If it did not consider the waiting time for conducting the delivery care the average cost would be BDT 351 (USD 5.1) (Khan *et al*., 2012). If SS and NHW attend during delivery or refer the pregnant women to Government facility they each get Tk. 150 as incentive from BRAC.

The Medically Trained Providers (MTP) specially qualified doctor; nurse and paramedic provide maternal care from the private clinics. There is no private clinic in Sadullapur upazilla. A few private clinics exist at the district level. Private clinics do not have regular doctors in attendance. Such clinics arrange pair of emergency obstetric care provider (Gynaecologist and Anaesthetist) when a patient is admitted. The private clinics provide C-section, Episiotomy and other surgical procedure. On the other hand diagnostic centre provide different pathological services like ultrasonic test, blood and urine test etc.

Medically Trained Practitioners (Gynaecologist, Graduate Doctor, FWV, Nurse...) also provide obstetric care from their private chamber on payment. The services which are provided include identifying danger sign, par-vaginal examination, monitoring blood pressure, giving prescription or advice etc.

Unqualified Practitioner's also provide obstetric care from their work place or by paying visit to the women's home. The services which they provide include measuring BP, giving prescription or advice, selling medicine etc. Gram-doctors provide primary health care services from private chamber and/or home for the rural people including pregnant women. They have no medical degree and licences but use allopathic drugs. Traditional Birth

Attendant provides basic care, support and advice during and after pregnancy and childbirth. They live in the rural area and attend at home based delivery. Homeo Practitioners also provide health care to the rural people including pregnant women, especially at the onset of labour pain.

Six categories of providers were involved in providing obstetric services in the study area, such as: MTP_1 who are qualified allopathic doctors (at least MBBS) in the public and private sector, MTP_2 (including SSN, FWV, paramedics etc.), trained providers (SK, SS, NHW, TTBA) unqualified practitioners including Gram-doctors (GD), homeopaths, and traditional birth attendants (TBA). These providers played important roles in providing pregnancy related services. Though Gram-doctors and homeopaths did not conduct delivery directly, they were frequently called on by the TBAs to quicken labour. The research area has one EPI centre and a community clinic in the public sector but there is no private clinic. There were one primary and two secondary level facilities at respective upazilla and district levels from where people receive obstetric care. Trained doctors and midwives were available in the public sector facilities. Comprehensive maternal health services were run by the BRAC health programme on case by case basis.

A Table given in the appendix is a representation of a comprehensive profile of maternal health service of Sadullapur upazilla.

Chapter 5
Nature of Receiving Obstetric Care during Pregnancy

In the present chapter the nature of receiving obstetric care during pregnancy of the respondents has been discussed. Obstetric care during pregnancy is frequently called antenatal care (ANC). Antenatal care is recognised as a major component of comprehensive obstetric care. In the first section of the chapter, the purpose of ANC, elements of ANC, the recommended number and timing of ANC according to guideline of World Health Organisation (WHO) have been discussed. The discussion also covers the status of uptake of ANC by the respondents and causes of discontinuation of receiving ANC. Association between respondent's predisposing factors and status of receiving obstetric care during pregnancy has also been explored in this section. Besides, types of complications occurred during pregnancy and steps taken for the management of pregnancy complications have also been analysed at the last section of the chapter.

1. Antenatal Care (ANC)

Antenatal care is the check up of the pregnant women by the trained provider which can prevent and treat complications of pregnancy. Ideally this care begins soon after conception and continues throughout the pregnancy. The purposes of antenatal care (ANC) are to provide service and health education on key issues. Most important purposes of antenatal care are to encourage women to delivery with skilled attendance and discuss about plans for emergency transport for reaching service centre. This care also covers the area of funding in the case of an emergency and identifying the nearest site of Emergency Obstetric Care. A link between women and the health care system during pregnancy and delivery is also made through ANC.

Antenatal care is a key strategy for reducing maternal mortality. The ideal situation is that all pregnant women should receive ANC anyway whether

they have a problem or not. This is to detect problems early, to give information about the complications of pregnancy and to advise how the woman should respond if danger signs occur. Bangladesh National Maternal Health Strategy recommends that all pregnant women should make at least three or more antenatal visits to a medically trained or skilled provider, and the first visit should take place within the first trimester of pregnancy (BMMS, 2001). The World Health Organisation (WHO) recommends a minimum of four antenatal care visits, with the initial visit occurring by the fourth month of pregnancy (Koenig *et al.,* 2007). The timing of ANC is recommended in accordance with the four-visit ANC model outlined in WHO clinical guidelines, like First visit at 8–12 weeks, Second at 24–26 weeks, Third at 32 weeks and Fourth visit at 36–38 weeks.[12] According to the recommendation of WHO, fistula care training module suggested ANC timing as follows:[13]

• First visit: On the confirmation of pregnancy

• Second visit: 20–28 weeks (4 to 7 months)

• Third visit: 34–36 weeks (8th month)

• Fourth visit: before the expected date of delivery or when the pregnant woman feels she needs to consult the health worker.

Many health problems of the pregnant women can be prevented, detected and treated during antenatal care visits to the trained health workers. Globally, during the period 2005–2012, over 50% of the women received the recommended minimum antenatal care.**[14]** In low-income countries, only 39% of pregnant women received four or more antenatal visits during the period 2000–2008.**[15]** Bangladesh Maternal Mortality Survey (2010) data show that only 11.6% women made at least four antenatal visits in 2001 which increased to 23.4% in 2010 in Bangladesh. A study indicated that a large

[12] http://www.who.int/pmnch/media/publications/aonsectionIII_2.pdf

[13].http://www.fistulacare.org/pages/pdf/Training/Module_4_Essential_Components_of_ANC_and_EMOC_Fistula_Care.pdf

[14] http://www.who.int/gho/maternal_health/reproductive_health/antenatal_care/en/

[15] http://www.who.int/gho/urban_health/services/antenatal_care_text/en/

number (86.4%) of women were immunised during pregnancy but none of them received required number of antenatal care (Khanum *et al*., 2003). Another study, covering nine upazillas of Rajshahi, reported that 69.5% women did not take any antenatal service during their pregnancy since they felt that it was not necessary (Hafez *et al*., 1999).

1.1 Status of Receiving ANC of the Study Women

The study has been carried out to ascertain the nature of women's uptake of antenatal care (ANC) in the rural area in northern Bangladesh. The data show that most of the women received various services from different providers at different places in multiple visits for the betterment of them and their unborn child's health. A large number of women started receiving ANC before 4th month of pregnancy. Almost all women measured their weight, monitored blood pressure (BP) and assessed nutritional status with the help of trained NGO health worker (*Shasthya Karmi)*[16] at home. Some of them received such services from medically trained providers i.e. MTP (qualified doctors, FWV, Nurse etc.) at health facility or at their private chamber. Normally TP (trained providers) detect the problems occurring during pregnancy. Such problems include infections, hypertensive disease and maternal anaemia. In that case, the health providers provide health information to women and their families and suggested them to visit MTP. Following this detection of the problems, the MTPs provide treatment of problems during pregnancy. Through regular contact with the MTP or formal health care system, women could easily get effective services during delivery or obstetric complications. It is during an antenatal care visit that most of the women in the study were informed or awared about the danger signs of pregnancy. Health providers discussed about related issues with the women and relevant family members and advised them accordingly including issues like place of delivery and referral of women with complications.

[16] *Shasthya Karmi (SK*) are semi-qualified maternal health providers. They are trained and assigned by the BRAC to provide home based primary health service including obstetric services to the rural women.

1.1.1. Continuity of Receiving Antenatal Check up as per Guideline of WHO

All pregnant women in the study received more or less ANC from trained providers. Among them, 76.0% received 1st ANC at due time while 2nd, 3rd and 4th ANC recipients were 97.1% (during 4th to 7th month of pregnancy), 79.8% (during 8th month of pregnancy) and 88.5% (after 8th month up to the expected date of delivery) respectively. Three-forth number (75%) of the women received four ANCs at standard time schedule, and 77.9% received additional visits from trained providers during pregnancy (Table 3). The following services were focused during ANC visits:

In the first visit women got confirmed about their pregnancy, received ANC card; maternal, neonatal and child health (MNCH) information book; MN poster; danger sign sticker; and EDD (Expected Date of Delivery) sticker. Women were also informed of the use of those tools. They also developed a birth and emergency plan and received advice and counselling from the provider.

In the second visit service provider measured women's weight and assessed their nutritional status, detected pre-existing conditions which might lead to complicated pregnancy. The provider also monitored blood pressure and signs and symptoms of pre-eclampsia/eclampsia which were helpful to assess maternal and foetal well-being. At that stage service provider classified women for providing basic ANC (by her) or more specialised care (by MTP), reviewed and modified birth and emergency plan. The women were encouraged to receive routine tetanus toxoid immunisation, iron/folic supplementation for at least 6 months of pregnancy. They were also provided with advice and counselling. Along with these services, they received advice about de-worming medication. The health provider promoted the service of active management of the final stage of labour for the prevention of postpartum haemorrhage.

In the third and fourth visits, women received service almost similar to the second visit. In addition, providers became confirmed and informed the women about foetal position by 8–9th month of pregnancy. During the period of providing ANC, when signs of pre-eclampsia were seen, urinalysis for proteinuria was done. The women were advised about birth preparedness and complication readiness. The health provider discussed about sexually transmitted infections (STIs) to be sure of it to know whether the women were suffering from these disease or not. Accordingly, advices were provided about the steps to be taken in this regard.

During conformation of pregnancy by the health worker (*Shasthya Karmi)*, the women were provided with first antenatal service at that time. Women were registered for the study soon after conception upto the preceding time period of 5th month of pregnancy. In the process, more than three-forth of the respondents were registered before 4th month of their pregnancy. *Shasthya Karmi* (SK) advised the pregnant women to receive at least three ANC check up from MTP and encouraged them to arrange child-birth in the health facility. Almost all women received second visit from health worker (SK) at due time because they got a long span of time starting from 4th to 7th month. The *Shasthya Karmi* visited every woman's residence once a month. In that period, pregnant women and health worker were supposed to meet three times. So, 97.1% could easily avail the service. The three women who failed to avail the service had specific problems or unavoidable situations of their own. One of them went to Dhaka for job purpose and other two went to natal home after registration. But they came back during their 8th month of pregnancy. In the advance stage of pregnancy, most of the women received ANC, because during 1st and 2nd visit, the health workers raised awareness among the women about receiving services regularly till delivery. Another cause may be that health workers tried to visit women's home just before delivery to fulfil their professional requirement. A large number of women received four more ANC from *Shasthya Karmi*. Most of them received ANC

two or three times during 4th to 7th month of pregnancy. Some women received such service once or more than once after 8th month when they felt any need to consult with health worker. Only 9.6% women received four or more ANC from medically trained provider at due time.

Table 3. Status of Continuity of Receiving 4 ANC Check up as per Guideline of WHO

Timing of ANC (Recipient from trained providers)* (N= 104)	**n**	**%**
1st ANC recipient (soon after conception up to 4th month of pregnancy)	79	76.0
2nd ANC recipient (from 4th to 7th month of pregnancy)	101	97.1
3rd ANC recipient (during 8th month of pregnancy)	83	79.8
4th ANC recipient (after 8th month up to expected date of delivery)	92	88.5
Four ANC recipient at standard time	78	75.0
4+ ANC recipient (additional visit during pregnancy)	81	77.9
Four or more ANC recipient from MTP at standard time	10	9.6

*Multiple responses

1.1.2. Sources of Receiving ANC

The primary source of receiving antenatal care was *Shasthya Karmi*. All women received at least one ANC from *Shasthya Karmi* at home. Besides they received care from Gram-doctors (33.7%), medically trained providers' chamber (13.5%), Government service providers at UHC (9.6%), private & NGO clinics (4.8%), homeo practitioners (2.9%) etc. Over one-third women received ANC only from *Shasthya Karmi* at home. Among the unqualified providers, Gram-doctor (GD) provided services to the highest number of women. In case of medically trained providers, the highest number of services were provided by the MTPs at their private chambers (Table 4).

Women were asked about the nature of antenatal advice from *Shasthya Karmi*, almost all women reported that they received advice about diet, rest, danger sign, vaccination, avoiding heavy work. They were also advised to report to the MTP for complication management. About 83% women were aware of at least 2 danger signs. Women were also asked whether they think

antenatal check up was needed during pregnancy; majority of them responded in affirmative. Some women indicated that it was needed only in case of complications. Women also received ANC from Health Assistant (HA) or Family Welfare Assistant (FWA) during receiving Tetanus Toxoid (TT) vaccination at Expanding Programme for Immunisation (EPI) centre. They also got advice from HA and FWA especially about danger signs of pregnancy and were asked to report to the MTP_1 for complication management if necessary. Around one-third of the women received service from Gram-doctor for monitoring their blood pressure and managing constipation and anorecia, Women normally received services from Gram-doctor when they missed *Shasthya Karmi*'s routine ANC visit. In rural community of Bangladesh, women use to visit natal home during pregnancy. In that case, for missing health workers visiting schedule, women received ANC from Gram-doctor. A few women received ANC from homeo practitioner at their private chamber. They felt homeo medicine was safe in pregnancy. Some of the women visited NGO clinic and private clinic to asses the foetal position and to have some diagnostic procedure (blood and urine test; ultrasound etc.). Around one-fifth women received ANC from UHC or MTP's chamber. Women normally visited MTP after arising any danger sign during pregnancy. As first initiative, women reported to UHC according to the advice of SK or SS. Family Welfare Visitor (FWV) or Senior Staff Nurse (SSN) or sometimes Medical Officer (in case of emergency) investigated women and gave them advice. Sometimes women got some free medicine (iron, folic acid...) from health complex and a prescription to buy medicine from market. Most of the women experienced negative feelings in getting services from Government hospital due to long waiting time, crowd and lack of privacy.

In one case, Ambia visited UHC for receiving ANC during her seven month of pregnancy. First she did not know about where the service was provided and who would be the provider. After asking a person, she reported to a Nurse. At that period, the Nurse was very busy with indoor patients because she was only one Nurse for 50 bedded hospital at indoor department. After waiting for sometime, Ambia went to a FWV's working place in that health complex. Again after a long time of staying, she was checked up by the FWV and instructed to wait for receiving iron and folic acid. During consultation, the provider was rude and unsympathetic, and did not show respect to her privacy, opined Ambia. So, she did not wait and came back home without receiving that medicine and decided that she would not go there for delivery. But later she had to go to UHC for the management of delivery complication.

Most of the respondents opined that those who had good relation with hospital staff received satisfactory ANC from UHC. Some women received ANC from MTP's private chamber because they felt medically trained providers were bit relaxed and more caring than those in public hospital. Women got satisfactory service during check up there. They got adequate advice and ensure their privacy. The waiting time was quite short.

Due to certain socio-economic factors, fear and embarrassment, a few of the rural women eluded treatment from MTP for obstetric complications during pregnancy, and relied on Gram-doctors and traditional healers who are generally trustworthy, accessible and affordable to them. The Government of Bangladesh arranges several promotional items like Iron and Folic Acid tablets for every pregnant women of the rural area in the country and these are provided to them by the Government and NGO employees at free of cost. But the tablets are not well covered and get up is not attractive. The Gram-doctors promoted different products by different pharmaceutical companies having smart look. The Gram-doctors could get profit/commission by recommending and promoting those products of different pharmaceuticals. Women preferred to receive those medicine than

that of given by the Govt./NGO health service providers free of cost. It was also found in the other study that since Gram-doctor provided low cost services, sometimes responded house call and accepted modest fee, some pregnant women relied on Gram-doctor instead of MTP (Taufikuzzaman, 2007). This trend was common in the study area as well.

Table 4. Source of Antenatal Care (Providers and ANC Receiving Places)

Source of Antenatal Care (N=104)		**n**	**%**
Source	**Providers and Places***		
Trained Providers	NGO Health Worker at Home (*Shasthya Karmi*)	104	100.0
	Health Assistant at EPI Centre	2	1.9
	FWA at EPI Centre	4	3.9
Unqualified Providers	Gram-doctor's Chamber	35	33.7
	Homeo Practitioners at Chamber	3	2.9
Medically Trained Providers	NGO Clinic	3	2.9
	MTP's Private Chamber[17]	14	13.5
	Private Clinic	2	1.9
	Govt. Providers at UHC	10	9.6

*Multiple Responses

1.1.3. Predisposing Factors and ANC Receiving Places

It has been discussed that all women received ANC at home from *Shasthya Karmi*. In addition, most of them received one or more services from different places, such as: MTP's private chamber, Homeo-practitioner and Gram-doctor's chamber. They also visited different Government, private or NGO facilities. Concerning women's predisposing factors and the available services, i.e. places of rendering services (in addition to the services provided by the *Shasthya Karmi* at home) it was found that there was a variation in receiving services from different places by the women coming from different socio-economic background. Table 5 illustrates these variations, such as:

[17] MTP's Chamber: The allopathic qualified practitioners with Bachelor of Medicine and Bachelor of Surgery, Nurse with 1 year midwifery, Medical Assistantship trained, and Family Welfare Visitor when they provide obstetric care from private chamber.

MTPs' Private Chamber: Among all respondents only 13.5% women received ANC from MTP's chamber. The highest recipients were women belonged to age group 20–24 year (6.7%), women those who had no formal education (6.7%), those who had monthly family income Tk. 1001–3000 (6.7%), those who came from rickshaw pulling family (4.8%) and those who were at their 2nd gravida (5.8%). They believed that the MTPs provide better services at their private chamber. At first or second time of pregnancy, women and their family members tried to take special care to ensure safe delivery. Thus they preferred to receive MTPs services at their chamber. At the 2nd gravida, women were more likely to receive services from qualified providers (MTP or Govt. providers at facility) rather than unqualified practitioners (Gram-doctor). Women who had history of complications at 1st gravida received services from qualified providers in the next gravida (Figure 1). Exceptions are not rare. Golapi was receiving ANC from Gram-doctor at her seventh gravida although she had complications at her previous pregnancies. She believed that Gram-doctor's treatment could ensure her safe delivery because she received services from MTP in the past which did not help her.

Government Health Facility: Among all the women only 9.6% received ANC from medically trained providers (including qualified doctors, Nurse, FWV, MA) at Government health facility. The highest recipients from Government health facility were women aged between 15–29 (2.9+2.9+2.9%), those who completed junior high school, women having monthly family income Tk. 3001–5000, those who came from small business family (3.8%) and those who were at their 1st (2.9%) & 2nd gravida (2.9%).

Gram-doctors' Chamber: Among all the respondents 33.7% received ANC from Gram-doctors. The highest recipients from Gram-doctors were women in age group 15–19 (11.5%). Women those who completed pre-primary level of education (21.2%), those who had monthly family income Tk. 100–3000 (13.5.%), whose household heads' occupation was agriculture (10.6%), who

lived in nuclear family (28.8%) and those who were at their 1st gravida (12.5%) received highest number of ANC from Gram-doctors. It is worth noting that all the women having different educational attainment received ANC only at home more than other sectors but women who had completed pre-primary level received more ANC from Gram-doctors (21.2%) than home visitor (3.8%).

Only at Home from *Shasthya Karmi*: A large number of women (35.6%) did not receive ANC from any other source except *Shasthya Karmi* at home. The highest proportion of this group were women those who were aged between 15–19 years (18.3%); had no formal education (18.3%) and came from lowest income family (16.3%). Most of their household heads' occupation was agriculture (14.4%) and majority of them were at their 1st gravida.

As it appears from the table that the rate of receiving ANC from private clinic, NGO clinic and homeo-practioners is negligible, discussion on these sectors has been left out. However, it appeared that there is a relationship between higher education and higher rate of availing ANC from Government health facility.

It is apparent from the Table 5 that a large number of women relied on only *Shasthya Karmi* and almost all of them belonged to low income family (16.3%: Tk. 1001–3000 and 11.5%: Tk. 3001–5000). This indicates that financial constraints prevented them from receiving more services. But data also show that a substantial number of women (7.6%) belonging to higher income group (Tk. 5001–9000) did not visit any other place for getting services except receiving that from home visitor.

On the other hand, the table depicts that occupation of household head has a bearing on receiving services from different sectors. For instance, women from agriculture family received highest proportion of ANC from only *Shasthya Karmi* at home (14.4%) and Gram-doctor (10.6%). Both the places were within their locality. They hardly visited MTP's chamber (1%) or

Government Health Facility (1.9%). In contrast, a total of 13.5% women received services from MTP's chamber and women from rickshaw pulling family were found to be the highest segment (4.8%) of the total recipients and the second highest recipients of services rendered from Gram-doctors (7.7%) [Table 5].

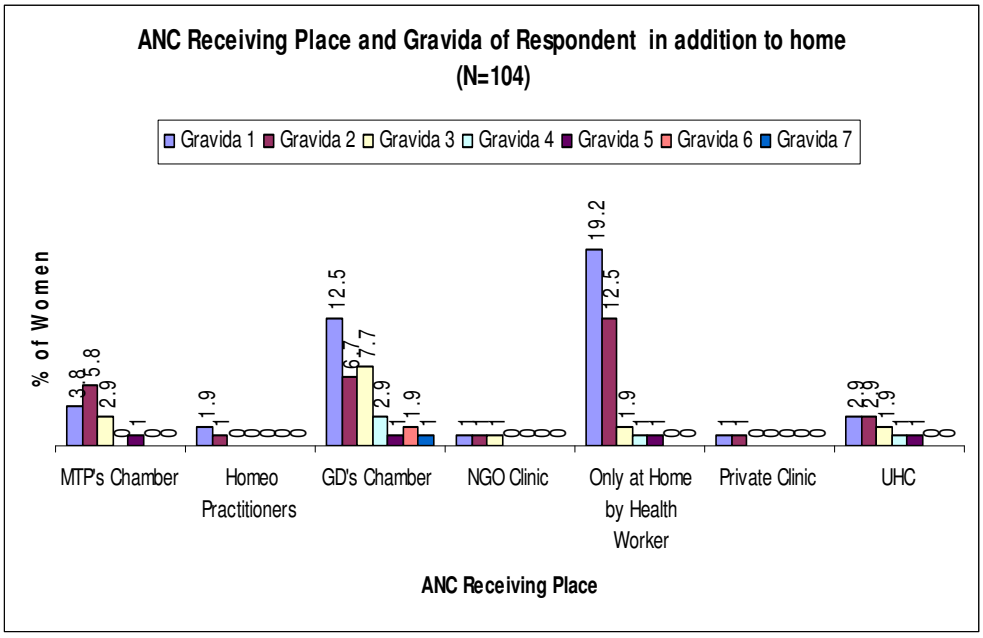
The reasons behind the women visiting MTPs' chamber most from rickshaw pulling family are multifarious. The rickshaw pullers have greater mobility in the area. They know quite well about the location of the MTP's chamber. Often they carry patients to hospitals or chambers. They have greater mobility in and familiarity with the location and services. All these factors facilitated this kind of communication. This picture clearly shows that they were conscious about the necessity and availability of the services provided by the MTPs.

Besides, the highest recipients of 4+ ANC from MTP's chamber came from service holders' family. Similarly women from small business family visited Government health facility more (3.8%) than the women whose household heads were engaged in any other occupation. This indicates that those who have greater mobility and more contacts with people are more capable of receiving more services despite their low economic status. It is also clear from the table that Gram-doctor still remains as a resort for pregnant women for availing services (33.7%) followed by the Government health facility (9.6%).

Table 5. Relationship between Predisposing Factors and Place of Receiving ANC

Predisposing Factors		Places of Receiving ANC (in addition to home) [N=104]							Total
		MTP's Chamber	Govt. Health Facility	Private Clinic	NGO Clinic	Gram-doctor's Chamber	Homeo Practitioners	Only at Home by Health Worker	
Age (in Year)	15–19	5.8	2.9	1.0	1.9	11.5	1.0	18.3	42.3
	20–24	6.7	2.9	1.0	1.0	8.7	1.0	12.5	33.7
	25–29	.0	2.9	.0	.0	5.8	1.0	3.8	13.5
	30–34	1.0	.0	.0	.0	4.8	.0	1.0	6.7
	35–39	.0	1.0	.0	.0	2.9	.0	.0	3.8
	Total	13.5	9.6	1.9	2.9	33.7	2.9	35.6	100.0
Education (Completed)	None	6.7	1.0	.0	1.0	7.7	.0	18.3	34.6
	Pre-primary	.0	1.9	1.0	.0	21.2	1.9	3.8	29.8
	Primary	1.9	.0	.0	.0	1.9	1.0	8.7	13.5
	Junior High School	1.9	5.8	1.0	1.9	2.9	.0	2.9	16.3
	SSC	1.9	.0	.0	.0	.0	.0	1.9	3.8
	HSC	1.0	1.0	.0	.0	.0	.0	.0	1.9
	Total	13.5	9.6	1.9	2.9	33.7	2.9	35.6	100.0
Monthly Family Income (in Taka)	1001–3000	6.7	.0	1.0	1.0	13.5	1.0	16.3	39.4
	3001–5000	3.8	4.8	1.0	.0	9.6	1.0	11.5	31.7
	5001–7000	1.9	1.9	.0	1.0	10.6	.0	3.8	19.2
	7001–9000	.0	2.9	.0	1.0	.0	1.0	3.8	8.7
	9001+	1.0	.0	.0	.0	.0	.0	.0	1.0
	Total	13.5	9.6	1.9	2.9	33.7	2.9	35.6	100.0
Occupation of the Household Heads	Agriculture	1.0	1.9	.0	.0	10.6	1.0	14.4	28.8
	Construction Worker	.0	.0	.0	.0	1.9	1.0	.0	2.9
	Day Labour	2.9	.0	1.0	.0	5.8	.0	.0	9.6
	Rickshaw Puller	4.8	1.9	.0	1.0	7.7	1.0	9.6	26.0
	Service	2.9	1.9	.0	.0	1.9	.0	1.9	8.7
	Small Business	1.9	3.8	1.0	.0	3.8	.0	7.7	18.3
	Others	.0	.0	.0	1.9	1.9	.0	1.9	5.8
	Total	13.5	9.6	1.9	2.9	33.7	2.9	35.6	100.0
Family Structure	Extended	3.8	.0	.0	1.0	4.8	.0	9.6	19.2
	Nuclear	9.6	9.6	1.9	1.9	28.8	2.9	26.0	80.8
	Total	13.5	9.6	1.9	2.9	33.7	2.9	35.6	100.0
Gravida	1	3.8	2.9	1.0	1.0	12.5	1.9	19.2	42.3
	2	5.8	2.9	1.0	1.0	6.7	1.0	12.5	30.8
	3	2.9	1.9	.0	1.0	7.7	.0	1.9	15.4
	4	.0	1.0	.0	.0	2.9	.0	1.0	4.8
	5	1.0	1.0	.0	.0	1.0	.0	1.0	3.8
	6	.0	.0	.0	.0	1.9	.0	.0	1.9
	7	.0	.0	.0	.0	1.0	.0	.0	1.0
	Total	13.5	9.6	1.9	2.9	33.7	2.9	35.6	100.0

Figure 1. Place of Receiving ANC (in addition to home) and the Number of Gravida



1.1.4. Continuation of Receiving Obstetric Care during Pregnancy

Table 6 shows that although a trained provider (*Shasthya Karmi*) visited all pregnant women's home each month for providing ANC after their conception, around 60.0% women did not receive ANC on regular basis (one visit at each month) from her. Among the respondents, 25.0% received services one to three times and 40.4% seven or more times from different providers. Seventy six percent women received 1st ANC before 4th month of their pregnancy. WHO recommended that a pregnant woman should receive at least four antenatal cares from a medically trained provider, and the initial visit should occur within the fourth month of pregnancy. But at Sadullahpur, around ninety percent of the women did not follow the guideline. Only 9.6% received four or more ANC from medically trained providers.

Table 6. Number and Types of Receiving ANC

Category		**n**	**%**
Number of ANC Received from Any Trained Provider[18] (N=104)	1–3 Visit(s)	26	25.0
	4–6 Visits	36	34.6
	7+ Visits	42	40.4
ANC Starting Month (N=104)	After 4th Month	25	24.0
	Before 4th Month	79	76.0
4 or more ANC received from MTP (N=104)		10	9.6
At Least 1 ANC from MTP		21	20.2
ANC Received only from *Shasthya Karmi* at Home		37	35.5

1.1.5. Predisposing Factors and Number of ANC Received from Any Trained Provider

The number of ANC received by pregnant women from trained providers and their predisposing status have been presented in Table 7. The aim is to identify the status and trends of this care during pregnancy. Regarding the number or frequency of receiving ANC, the respondents have been classified into three categories (i.e., 1–3, 4–6 & 7+ visits group).

It is expected that those who received 7+ ANC from *Shasthya Karmi* were remained under monitoring to assess any complication and if necessary they were sent to the Medically Trained Providers for management of such complications. Similarly recipients of 4–6 ANC from *Shasthya Karmi* had a possibility to be monitored but less than 4 ANC receivers did not have that possibility. From this point of view, in the present study 7+ ANC is considered as 'required number' of ANC, 4–6 ANC as 'minimum required number' of ANC and 4+ from a MTP as 'standard number'. Table 7 shows that 40.4% of the women received required number of ANC i.e. 7+, 34.6% received minimum required number (4–6 times) and 25% women received less than 3 ANC.

With regards to age, maximum recipients of 7+ ANC belonged to the age group 20–24 years while 4–6 ANC receivers were 15–19 years. It was noted

[18]Any providers include Medically Trained Providers (Qualified doctor, Nurse, MA, FWV, Paramedic, SBA), Trained Providers (FWA, HA, SK) and Unqualified Providers (Gram-doctor, Homeo practitioners).

that the frequency of receiving ANC was high among 20–24 years age group women (14.4%), and the number of women receiving ANC was high in 15–19 age group (18.3%). It can be assumed that the women aged between 15−19 were supposed to be at their 1st gravida and were more likely to receive services from qualified providers as they got special care. But data show that women belonging to the age group 20–24 years received services from MTPs more (6.7%) than the women of the age group 15–19 (5.8%). It was also found that women in higher age group received more 'required number of ANC' than minimum 'required number' while in the case of women belonging to the lowest age the situation was opposite. For instance, women aged 20–24 received more 7+ ANC (14.4%) than 4-6 ANC (11.5%) whereas women aged 15–19 received more 4–6 range ANC (18%) than 7+ (9.6%). Similarly women at their 2nd gravida received more services from MTPs (5.8%) than those who were at their 1st gravida (3.8%).

In terms of education the table demonstrates that the highest number of 7+ ANC recipients were women those who had no formal education and those who did not complete primary level (13.5+13.5=27.0%). But if the frequency of receiving 7+ ANC is considered it will be apparent that women with higher educational attainment (completed pre-primary) received more `required number' of ANC, i.e. 7+ (13.5%) than the range of 4–6 (6.7%) while women with no education received more `minimum required' number of 4–6 (16.3%) than the 'required number', i.e. 7+ (13.5%). Similar trend was found among the women who had completed junior high schooling, they received more 7+ ANC (5.8%) than 4–6 (4.8%). This supports the fact that education has some impact on receiving high range of ANC.

Previous studies found that women's family income was a considerable factor in receiving ANC (Simkhada et al., 2008). But field data show that the women belonged to lowest income family (Tk. 1001–3000) received maximum times (7+) ANC (15.4%) more in comparison to even higher

income group family, i.e. having monthly income Tk. 3001–5000 (11.5%). Then again if we consider the frequency/range of receiving ANC within each group, it is apparent that women having lowest income (Tk. 1001–3000) received the range of 4–6 more (19.2%) than 7+ (15.4%) while women from higher monthly family income (Tk. 5001–7000) received more 7+ (9.6%) than 4–6 (1.9%). But an opposite picture can be observed if we consider the frequency of receiving 7+ within each group. It is apparent that the total number of women having monthly family income Tk. 1001–3000 was 41. Within this group (16 out of 41) 39.4% received 7+ ANC. On the other hand the total number of women having monthly family income Tk. 3001–5000 was 33. Within this group (12 out of 33) 36.4% received 7+ ANC. This clarifies the fact that the tendency of receiving higher range of ANC was higher among the women who had lower monthly family income compared to those who had higher family income. But this trend is not universal. There is a possibility that a different picture could be found in analysing other slab of the table. Hence, it can be said that income can play different roles in different situation.

The field data also show that there was a significant difference in receiving ANC in terms of household heads' occupation. As we see, the highest proportion of 7+ ANC recipients were women from agro-based family (13.5%). But a substantial number of women from rickshaw puller family and small business family also received more 7+ANC (8.7% for each group) which is 2nd highest among those women who received 7+ ANC.

In terms of family structure, it was observed that women from nuclear family received 7+ ANC more (35.6%) in comparison to women from extended (4.8%) family. Frequency of gravida has also played significant impact in receiving ANC as it was observed that majority of the women having gravida less than three received more ANC 4–6 times (18.3+12.5%) than 7+ (9.6+9.6%) but women having gravida more than two received more ANC

7+ (11.8+3.8%) than the range of 4–6 (1.9+1.0%). Thus it is clear that the more the gravida occurred, the more the ANC receiving practice increased. It is mainly because they had bitter experience during their previous pregnancies.

> *Marjina lost her second child for the reason of not receiving proper ANC from trained providers during pregnancy. During her 1st pregnancy, she received advice from Gram-doctor, and at the time of delivery, she was attended by a TBA at home. She thought that there was no need for ANC from trained provider. In her second gravida, she was anaemic and could not sense her pregnancy complication. Her membrane ruptured before delivery. After having prolonged labour pain, she delivered an unhealthy child who died. Hence, at her third gravida, she was receiving regular ANC from NGO Shasthya Karmi (health worker) at home.*

However, the overall findings show that in some respects there is an association between higher level of education and nature (in terms of number and frequency) of receiving more ANC but it is not an universal fact that the higher the economic status the higher the level of receiving more 'required number' of ANC.

Table 7. Relationship between Predisposing Factors and Number of ANC Received from Any Trained Provider

Predisposing Factors		Number of ANC Received from Any Trained Provider (N=104)						Total	
		1–3 Times		4–6 Times		7+ Times			
		n	%	n	%	n	%	n	%
Age (in Year)	15–19	15	14.4	19	18.3	10	9.6	44	42.3
	20–24	8	7.7	12	11.5	15	14.4	35	33.7
	25–29	3	2.9	4	3.8	7	6.7	14	13.5
	30–34	0	.0	1	1.0	6	5.8	7	6.7
	35–39	0	.0	0	.0	4	3.8	4	3.8
	Total	26	25.0	36	34.6	42	40.4	104	100.0
Education (Completed)	None	5	4.8	17	16.3	14	13.5	36	34.6
	Pre-primary	10	9.6	7	6.7	14	13.5	31	29.8
	Primary	4	3.8	5	4.8	5	4.8	14	13.5
	Junior High School	6	5.8	5	4.8	6	5.8	17	16.3
	SSC	1	1.0	1	1.0	2	1.9	4	3.8
	HSC	0	.0	1	1.0	1	1.0	2	1.9
	Total	26	25.0	36	34.6	42	40.4	104	100.0
Monthly Family Income (in Taka)	1001–3000	5	4.8	20	19.2	16	15.4	41	39.4
	3001–5000	10	9.6	11	10.6	12	11.5	33	31.7
	5001–7000	8	7.7	2	1.9	10	9.6	20	19.2
	7001–9000	3	2.9	2	1.9	4	3.8	9	8.7
	9001+	0	.0	1	1.0	0	.0	1	1.0
	Total	26	25.0	36	34.6	42	40.4	104	100.0
Occupation of the Household Heads	Agriculture	5	4.8	11	10.6	14	13.5	30	28.8
	Construction Worker	0	.0	3	2.9	0	.0	3	2.9
	Day Labour	1	1.0	4	3.8	5	4.8	10	9.6
	Rickshaw Puller	10	9.6	8	7.7	9	8.7	27	26.0
	Service	2	1.9	4	3.8	3	2.9	9	8.7
	Small Business	7	6.7	3	2.9	9	8.7	19	18.3
	Others	1	1.0	3	2.9	2	1.9	6	5.8
	Total	26	25.0	36	34.6	42	40.4	104	100.0
Family Structure	Extended	6	5.8	9	8.7	5	4.8	20	19.2
	Nuclear	20	19.2	27	26.0	37	35.6	84	80.8
	Total	26	25.0	36	34.6	42	40.4	104	100.0
Gravida	1	15	14.4	19	18.3	10	9.6	44	42.3
	2	9	8.7	13	12.5	10	9.6	32	30.8
	3	2	1.9	2	1.9	12	11.5	16	15.4
	4	0	.0	1	1.0	4	3.8	5	4.8
	5	0	.0	1	1.0	3	2.9	4	3.8
	6	0	.0	0	.0	2	1.9	2	1.9
	7	0	.0	0	.0	1	1.0	1	1.0
	Total	26	25.0	36	34.6	42	40.4	104	100.0

1.1.6. Predisposing Factors and Recipients of 4 or more ANC from MTP

ANC from a MTP (medically trained provider) is very significant for ensuring safe motherhood. It is important to monitor the status of a pregnancy and identify the complications associated with the pregnancy (BDHS, 2011). But in the study area this rate is very poor. The Table 8 shows that only 9.6% women received four or more ANC from MTPs. However, this ratio varied on the basis of respondents' predisposing factors i.e. socio-economic & reproductive status.

Among the ANC receivers from MTPs, there is a significant variation as we found that maximum ANC recipients from MTP belonged to age group 20–24 (3.8%). Similarly women from comparatively low income group (Tk. 3001–5000 monthly) received highest number of ANC (4.8%) from MTP. Similar tendency is also observed in nuclear family and among the members of service holder families. It is observed that in nuclear and service holder families, this trend is high. Perhaps it is because of the fact that the women in such families do not get any barrier from their elderly family member(s). Pregnant women who live in service holder family get better suggestions from their husbands as they (husbands) get opportunity to share the idea with some educated people in their work place or elsewhere in the society.

Over ninety percent respondents did not receive four or more ANC from medically trained providers. But a large number of them received required number of ANC from trained providers. This is due to the availability of home based ANC services provided by the NGO health worker (*Shasthya Karmi*). When *Shasthya Karmi* (SK) visited and followed up the pregnant women for ANC every month, she suggested all pregnant women to consult with MTP for check up more than once during pregnancy. Women from nuclear family having their 1st gravida were likely to consult with MTP during pregnancy. Women who suffered from complications during their previous pregnancy consulted with MTP during their recent pregnancy.

It is advised that the pregnant women should be given clear-cut instructions during ANC that she should report immediately in case of any warning signal (Park, 2009). In the present study, it was found that trained providers provided clear-cut instructions that women should report to the health worker or at facility immediately in case of any danger signs. Bangladesh Demographic and Health Survey (2007) reported that antenatal care coverage with a skilled provider was 52%. Among them, 36% of the women received antenatal care from a doctor, and 16% from a nurse, midwife, or paramedic. NIPORT report indicated that around six in ten women received antenatal care (NIPORT, 2009). But the present data shows that (along with home service provided by the *Shasthya Karmi*) standard antenatal care coverage, i.e. 4 or more ANC from a medically trained provider is only 9.6%, even at least one time by MTP in his private chamber, clinic or Government facilities is 20.2%. This rate is far below than the rate reported by BDHS (2007) or NIPORT (2009).

Table 8. Relationship between Predisposing Factors and Women's Uptake of 4 or more ANC from MTP

Predisposing Factors		**Uptake 4 or more ANC from MTP (N=104)**	
		No (%)	**Yes (%)**
Age (in Year)	15–19	40.4	1.9
	20–24	29.8	3.8
	25–29	10.6	2.9
	30–34	6.7	.0
	35–39	2.9	1.0
	Total	90.4	9.6
Education (Completed)	None	33.7	1.0
	Pre-primary	26.9	2.9
	Primary	12.5	1.0
	Junior High School	13.5	2.9
	SSC	2.9	1.0
	HSC	1.0	1.0
	Total	90.4	9.6
Monthly Family Income (in Taka)	1001–3000	38.5	1.0
	3001–5000	26.9	4.8
	5001–7000	18.3	1.0
	7001–9000	6.7	1.9
	9001+	.0	1.0
	Total	90.4	9.6
Occupation of the Household Heads	Agriculture	27.9	1.0
	Construction Worker	2.9	.0
	Day Labour	7.7	1.9
	Rickshaw Puller	24.0	1.9
	Service	5.8	2.9
	Small Business	16.3	1.9
	Others	5.8	.0
	Total	90.4	9.6
Family Structure	Extended	18.3	1.0
	Nuclear	72.1	8.7
	Total	90.4	9.6
Gravida	1	37.5	4.8
	2	29.8	1.0
	3	13.5	1.9
	4	3.8	1.0
	5	2.9	1.0
	6	1.9	.0
	7	1.0	.0
	Total	90.4	9.6

1.2. Causes of Discontinuation of Receiving Antenatal Care

Focus group discussion sessions undertaken in a study conducted by BRAC and LSHTM (London School of Hygiene & Tropical Medicine) revealed that pregnancy was not considered to be a risky event in Bangladeshi communities. So, regular uptake of services was not considered necessary (Rahman, 2003). Khan also reported that street dwellers pregnant women did not seek ANC for various reasons, such as: ANC was not perceived as necessary; location of ANC; services were unknown to them; lack of money; not told to seek ANC; and husband's disapproval. Fifty-three percent of the women did not feel that ANC was necessary (Khan, 2008). In the present study pregnant women reported a number of reasons for discontinuation of receiving ANC, which are described below.

1.2.1. Main Causes of not Receiving ANC from MTP according to the WHO Guideline

The pregnant women who did not receive four or more ANC from MTP mentioned a series of reasons for that, such as: financial constraints (38.3%), workload at home (26.6%), distance and lack of transport (7.5%), bitter experience in previous visit (7.4%), embargo from husband and senior family members (6.4%), and fear & embarrassment (3.2%). On the other hand, 10.6% of the women did not feel that the ANC was necessary (Table 9).

Table 9. Main Causes of not Seeking ANC from MTP in Accordance with WHO guideline

Main Causes of not Seeking 4 or more ANC from MTP (n=94)	**n**	**%**
Financial Constraints	36	38.3
Workload at Home	25	26.6
Felt No Need	10	10.6
Distance & Lack of Transport	7	7.5
Bitter Experience at Previous Visit	7	7.4
Embargo	6	6.4
Fear and Embarrassment	3	3.2
Total	94	100

Women mentioned financial constraints as the predominating reason for not receiving ANC from MTP. Most of the women reported financial scarcity and maintaining household work as the prime causes of not visiting ANC from MTP. Lack of understanding about the need of services was also cited as reasons for not accessing antenatal care, such as: 10.6% women felt that antenatal care would not provide any benefit to them or to their children. A few women said that they did not feel any need for that. Among them, a few women had negative attitude towards modern medicine. Some of them did not use biomedicine for the fear of side effects. This reason also indicates a lack of understanding of the potential preventive benefits of ANC.

1.2.2. Predisposing Factors and Main Causes of not Receiving ANC from MTP in Accordance with WHO Guideline

Table 10 shows that women's predisposing factors prevented them from receiving ANC from medically trained providers. Women who did not receive 4 or more ANC from MTP reported different causes for that, which have been discussed below:

Financial Constraint: Majority of the women reported financial factor as a main cause of not visiting MTPs (38.3%). Women who had lowest family income (Tk. 1001–3000) reported that reason more (28.7%) than that of all other income groups. The equal proportion of women from agriculture and

rickshaw puller families mentioned the same reason (13.8% in each group). Women who were at their 1st gravida (19.2%) reported financial constraints as the main cause for not receiving four or more ANC from MTP more compared with those who were at their higher number of gravida.

Bangladesh is predominantly a rural country having around 150 million people and a vast majority of them live under poverty (BHW, 2012).

Antenatal check up costs in MTP's private chamber or hospitals was shown as remarkable reason for not receiving treatment. Although government health facilities provide free services, the real out-of-pocket cost of medicines, cost of transport for reaching health facilities or MTP's work place negatively affect service utilisation among the low income group (Rob *et al.,* 2006). Transport costs and time costs result in terrible expenditures and debt, particularly in the event of complications. In the present study it was also found that the nature and availability of vehicles, road condition, time of urgency, season etc. affected the whole issue and consequently the receiving of services was affected. Here the question of financial condition also played a role in determining the nature of vehicle which helped to reduce or sometimes unfortunately augment the pregnancy complication.

Workload at home: Those women completed junior high school education and those who had an higher monthly family income i.e. Tk. 5001–7000 (9.6%) reported work load at home as a main barrier to receive ANC compared with those who had no education and whose monthly income was lower, i.e. Tk. 1001–3000 (6.4%).Women in the lower age group, i.e. age between 15–19 (13.8%) and women at their first gravida (17.0%) reported this reason more than the women in higher age group and having more gravida. The women of the rural area are incumbent to carry out various types of household activities, like cooking, raising poultry, rearing cattle, cleaning yards, arranging rooms, bringing lunch in the work field of male members etc. Besides, they are responsible for looking after their children

and elderly members, collecting fire wood, vegetables, washing cloths and even taking care of the guests. All these factors debarred one-fourth of the women from receiving ANC from MTP's work places or health facilities. They were found to discontinue the visit to health facility for receiving services.

Embargo: Embargo was not seen as a common cause for not receiving ANC from MTP. Because *Shasthya Karmi* visited pregnant women's home every month for providing ANC. She built awareness among the pregnant women and their family members during ANC season about the importance of receiving obstetric care from MTP. But a few women did not receive ANC from MTP because of embargo from senior family members and neighbours (6.4%). Embargo was reported by those women whose family income was lowest, i.e. Tk. 1001–3000 (4.3%) and most of them maintained that it was basically due to financial reason. It is worth noting that none of the women from rickshaw pulling family faced any embargo.

In a few cases the elderly women suggested the pregnant women that biomedicine would create harm at the delivery period. Vitamin and mineral stimulate the foetus size which would lead c-section delivery. But there was a changing trend found in the attitude towards the embargo as the respondents as well as the family members could realise the necessity of these services. Some peculiar embargoes have also been traced in this regard. A few pregnant women thought that if once they visit MTP's place they would had to visit health facility or MTP's work place on regular basis. This could hamper their everyday activities. Surprisingly violation of *purdah* was hardly found as a cause of embargo. Only one woman's father-in-law opined that visiting health facility would come contrast with his religious faith and path since there was a possibility of meeting religiously forbidden male people on the way or in the facility. Still another cause was related to the prestige of the so-called aristocratic, conservative family. Similarly going to health facility or thinking of it was considered as sin by Shahida's family but later on she

had to go to the UHC for management of her delivery complication. It was found that once awareness was built and the paths were shown, the pregnant women hardly held back, rather they received services as quickly and appropriately as possible.

Felt No Need: A small portion of respondents felt that they did not need to receive more than 4 ANC from MTP (10.6%). Surprisingly women having comparatively higher educational attainment (pre-primary & primary- 3.2% for each group) mentioned that cause more than the women having no education (2.1%). Even women who completed junior high school also maintained this attitude (2.1%) similar to the women who have no education. Pregnancy was not considered as a risky event by the women and the others around who felt no need of qualified service during this period. Those who reported this cause, majority of them were from agriculture family (4.3%), and were at their 2nd gravida. Khan found that fifty-three percent of street dwellers pregnant women did not feel that ANC was necessary (Khan, 2008). The present data is considerably similar to that data. It may be because street dwellers and rural women in the study have almost same socio-economic background. Both of them had similar educational status and socialisation which might be the causes of the same response from them.

Fear and Embarrassment: Only 3.2% reported fear and embarrassment as a cause of not receiving ANC from MTPs. Women having monthly family income Tk. 5001–7000 were the highest among all income groups who reported this cause as prime. Women who pointed out the cause, all were at their 3rd & 4th gravida. Sometimes women became reluctant to receive obstetric care even from *Shasthya Karmi* due to over monitoring by the project personnel. Rojina (wife of an army person) did not receive ANC from *Shasthya Karmi* because she thought that if she involved with ANC activities she might have to talk with male monitoring officer of the BRAC about her pregnancy related information. She and her family member thought that it would hamper her privacy and modesty.

Distance & Lack of Transport: Distance to a health facility plays a crucial role in health service accessibility. ICDDR,B reported that longer distance was associated with reduced access to health facilities. Lack of transport proved to be a major barrier in increasing facility-based health services (ICDDR,B, 2005). In the present study, it was not common cause for not receiving ANC from MTP, because most of the respondents live in nearest village of upazilla headquarter. There is a Government health facility in Sadullapur upazilla which provides obstetric care. A few women faced distance as a cause for discontinuation of receiving ANC from MTP due to their residence on the bank of the river (4.3%). In a small portion of the study area, roads are very narrow and distorted. As usual, people of this area go to the upazilla town on foot. In case of pregnant women, they use *Van* or Rickshaw to reach hospital. For this reason, the respondents of this area thought that distance between village and hospital are very long. Other vehicles such as ambulance or micro bus, auto-rickshaw are not available. Distance from the residence to the health facility or medically trained provider (MTP)'s work place was considerably important factor for them. This is crucial impediment to receive ANC from MTP at their private work places or health facility. This problem has been found to contribute to pregnancy related morbidities in the research area in only a few cases.

Previous Bitter Experience: Health staff's apathy or rude behaviour at previous consultation influenced a few women for not receiving ANC from medically trained providers (MTP). Rahima went to UHC for management of her previous delivery complication. But at that time, service providers did not behaved well with her. Besides, doctors and nurses became angry and misbehaved with her husband when he asked immediate service for his wife. So, in current pregnancy, she decided not to seek any service from health centre. But later on she had to go to District hospital again for the management of complications during child-birth. This cause was reported only by those women who were at their 3rd gravida (7.4%).

Table 10. Relationship between Pre-disposing Factors and Causes of not Seeking 4 or more ANC from MTP

Predisposing Factors		Main Causes of not Seeking 4 or more ANC from MTP (n=94)							Total
		Financial Constraints	Workload at Home	Felt No Need	Distance & Lack of Transport	Bitter Experience at Previous Visit	Embargo	Fear and Embarrassment	
Women's Age (in Year)	15–19	20.2	13.8	5.3	2.2	.0	2.1	1.1	44.7
	20–24	14.9	8.5	1.1	4.3	3.2	1.1	.0	33.0
	25–29	1.1	3.2	3.2	1.1	3.2	.0	.0	11.7
	30–34	2.1	.0	.0	0	1.1	2.1	2.1	7.4
	35–39	.0	1.1	1.1	0	.0	1.1	.0	3.2
	Total	38.3	26.6	10.6	7.5	7.4	6.4	3.2	100.0
Women's Education (Completed)	None	23.4	4.3	2.1	2.2	1.1	3.2	1.1	37.2
	Pre-primary	8.5	6.4	3.2	2.2	6.4	1.1	2.1	29.8
	Primary	3.2	3.2	3.2	3.2	.0	1.1	.0	13.8
	Junior High School	3.2	9.6	2.1	0	.0	.0	.0	14.9
	SSC	.0	3.2	.0	0	.0	.0	.0	3.2
	HSC	.0	.0	.0	0	.0	1.1	.0	1.1
	Total	38.3	26.6	10.6	7.5	7.4	6.4	3.2	100.0
Monthly Family Income (in Taka)	1001–3000	28.7	6.4	.0	2.1	.0	4.3	1.1	42.6
	3001–5000	5.3	5.3	10.6	3.2	3.2	2.1	.0	29.8
	5001–7000	3.2	9.6	.0	1.1	4.3	.0	2.1	20.2
	7001–9000	1.1	5.3	.0	1.1	.0	.0	.0	7.4
	Total	38.3	26.6	10.6	7.5	7.4	6.4	3.2	100.0
Occupation of the Household Heads	Agriculture	13.8	2.1	4.3	4.3	3.2	1.1	2.1	30.9
	Construction Worker	1.1	1.1	.0	1.1	.0	.0	.0	3.2
	Day Labour	2.1	1.1	1.1	0	1.1	3.2	.0	8.5
	Rickshaw Puller	13.8	8.5	1.1	0	3.2	.0	.0	26.6
	Service	1.1	3.2	1.1	0	.0	1.1	.0	6.4
	Small Business	5.3	6.4	3.2	1.1	.0	1.1	1.1	18.1
	Others	1.1	4.3	.0	1.1	.0	.0	.0	6.4
	Total	38.3	26.6	10.6	7.5	7.4	6.4	3.2	100.0
Family Structure of the Women	Extended	6.4	7.4	2.1	1.1	1.1	2.1	.0	20.2
	Nuclear	31.9	19.1	8.5	6.4	6.4	4.3	3.2	79.8
	Total	38.3	26.6	10.6	7.5	7.4	6.4	3.2	100.0
Gravida of the Women	1	19.1	17.0	2.1	3.2	.0	.0	.0	41.5
	2	12.8	8.5	4.3	4.2	.0	3.2	.0	33.0
	3	4.3	.0	2.1	0	7.4	.0	1.1	14.9
	4	.0	.0	1.1	0	.0	1.1	2.1	4.3
	5	2.1	.0	.0	0	.0	1.1	.0	3.2
	6	.0	.0	1.1	0	.0	1.1	.0	2.1
	7	.0	1.1	.0	0	.0	.0	.0	1.1
	Total	38.3	26.6	10.6	7.5	7.4	6.4	3.2	100.0

1.2.3. Main Causes of Discontinuation of Receiving ANC from Home Visitor

Most of the women received ANC from BRAC's health worker who was not medically trained but semi qualified/ trained. The BRAC's health worker (SS) visited home every month for providing ANC to the pregnant women. The main purpose of the visit was to identify any abnormality or risks symptoms. She also gave them special advice (mainly referred to the qualified providers) but a large number of women totalling 62 (59.6%) could not follow that advice for receiving all ANC. Among them, 37.1% felt that such care was not necessary, 45.2% went outside and 17.7% went to the natal/relatives' home during provider's visits (Table 11). Majority of women did not receive 7 or more ANC from home visitor and they could not maintain continuation of receiving that service from her. In the research area, home visitors (SK/SS/NHW) were trained by BRAC as community-based providers for care during pregnancy, childbirth and the postnatal period. Several capacity-building programmes, such as refreshers training, orientation have been initiated, and in some cases, *Shasthya Karmi*s are used as community-based counsellors. They are also responsible for monitoring mother and child complications before and after delivery for possible referral. They are easily accessible, not only in terms of being in the neighbourhood, but also in terms of costs (because service is free). In addition, they are appreciated for their affection and motherly manner. Their service is necessary in many settings as they have the potential to bridge between the community and the modern health system. *Shasthya Karmi* was officially obligated to provide ANC service to every pregnant woman in their catchments area. If any woman was registered before 4^{th} month of her pregnancy, she had the opportunity to receive seven or more ANC from home visitor. They visited the households regularly, even then a large number of women (n=62, out of 104) did not receive all sorts of ANC from them.

Table 11. Main Causes of Discontinuation of Receiving ANC from Home Visitor (Received less than 7 Times)

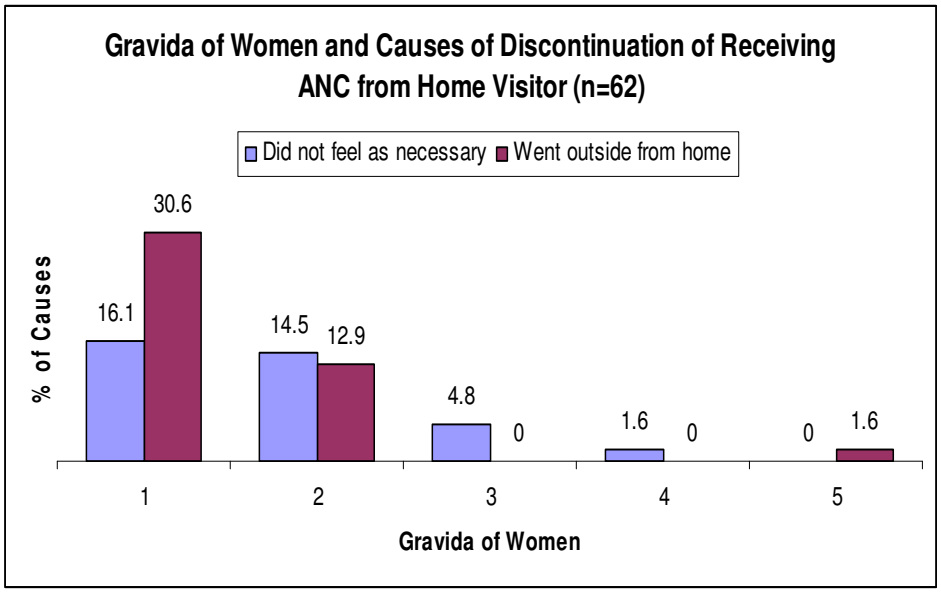
Main Causes of Discontinuation of Receiving ANC from Home Visitor (ANC Received less than 7 Times) [n=62]		**n**	**%**
Did not Feel as Necessary		23	37.1
Not Stayed at Home	Went outside for Collecting Fuel, Water, Stuff from Paddy/Potato Field etc.	28	45.2
	Went to Natal/Relative's Home	11	17.7

1.2.4. Predisposing Factors and Main Causes of Discontinuation of Receiving ANC from Home Visitor

Table 12 shows that among the irregular women, 37.1% felt that regular ANC was not necessary. Women were asked about the reasons why they did not receive ANC from *Shasthya Karmi*. They said that most of their senior female family members and neighbours suggested them that normal pregnancy is not a risky issue. When complications arise, only then they would need to seek care. Only one woman mentioned about 'inconvenient timing of services' and 'absences of equipment' (weight machine[19], BP monitoring machine...) with *Shasthya Karmi* as a reason for not availing ANC. The rest of the women were not sincere about pregnancy check up hence did not stay at home when service providers visited them. Some women went outside (45.2%) for collecting fuel and necessary stuff while others went to natal or relatives' home (17.7%).

[19] *Shasthya Karmi*(SK) was instructed to carry a weight machine when she visited pregnant women to provide ANC. But the machine was so weighty. Sometimes SK of the research area did not carry it during moving with bicycle.

Figure 2. Gravida of Women and Causes of Discontinuation



Concerning gravida, Figure 2 shows that 'going outside home' was reported by those women who were at their 1st gravida. It may be because of that there is tradition in rural community that pregnant women pay visit to natal home for long time especially during the 1st gravida. So some women might have missed routine ANC from *Shasthya Karmi*.

Table 12. Relationship between Predisposing Factors and Causes of Discontinuation of Receiving ANC from Home Visitor (n=62)

Predisposing Factors		**Main Causes of Discontinuation of Receiving ANC from Home Visitor (n=62)**			Total
		Did not feel as necessary	Went outside for collecting necessary stuff	Went to Relative's Home	
Women's Age (in Year)	15–19	19.4	24.2	11.3	54.8
	20–24	11.3	16.1	4.8	32.3
	25–29	6.5	3.2	1.6	11.3
	30–34	.0	1.6	.0	1.6
	Total	37.1	45.2	17.7	100.0
Women's Education (Completed)	None	11.3	21.0	3.2	35.5
	Pre-primary	11.3	8.1	8.1	27.4
	Primary	6.5	8.1	.0	14.5
	Junior High School	4.8	8.1	4.8	17.7
	SSC	1.6	.0	1.6	3.2
	HSC	1.6	.0	.0	1.6
	Total	37.1	45.2	17.7	100.0
Monthly Family Income (in Taka)	1001–3000	14.5	16.1	9.7	40.3
	3001–5000	12.9	19.4	1.6	33.9
	5001–7000	8.1	6.5	1.6	16.1
	7001–9000	.0	3.2	4.8	8.1
	9001+	1.6	.0	.0	1.6
	Total	37.1	45.2	17.7	100.0
Occupation of the Household Heads	Agriculture	6.5	14.5	4.8	25.8
	Construction Worker	3.2	1.6	.0	4.8
	Day Labour	1.6	4.8	1.6	8.1
	Rickshaw Puller	16.1	6.5	6.5	29.0
	Service	4.8	3.2	1.6	9.7
	Small Business	3.2	9.7	3.2	16.1
	Others	1.6	4.8	.0	6.5
	Total	37.1	45.2	17.7	100.0
Family Structure of the Women	Extended	12.9	9.7	1.6	24.2
	Nuclear	24.2	35.5	16.1	75.8
	Total	37.1	45.2	17.7	100.0
Gravida of the Women	1	16.1	30.6	8.1	54.8
	2	14.5	12.9	8.1	35.5
	3	4.8	.0	1.6	6.5
	4	1.6	.0	.0	1.6
	5	.0	1.6	.0	1.6
	Total	37.1	45.2	17.7	100.0

2. Nature and Types of Obstetric Complications during Pregnancy

According to the standards of the World Health Organisation, 'All pregnant women should have a written plan for birth and for dealing with unexpected adverse events, such as: complications or emergencies, and should discuss this plan with a skilled attendant at each antenatal assessment and at least one month prior to the expected date of birth' (WHO, 2006). Many complications might occur in women's life during pregnancy, such as: bleeding, oedema, leaking membrane, convulsion, severe vomiting, anaemia, headache, abdominal pain, visual disturbances, and flu symptoms with smelly discharge (Park, 2009; Khan, 2000). BMMS 2010 data shows that more than half of the women experienced complications at any stage in their last pregnancy in Bangladesh. The major complications were oedema, prolonged labor, severe bleeding and convulsion. But only 28.5% of women with complications received treatment in a health facility (NIPORT, 2011).

2.1. Complications during Pregnancy

2.1.1. Types of Complications Occurred during Pregnancy

In the study area out of the total respondents, 41.3% experienced pregnancy related complications (Figure 3). The major complications were anaemia (32.6%), high blood pressure (25.6%), oedema (20.9%), severe abdominal pain (11.6%), convulsion (7.0%), and severe vomiting (4.7%). A few women faced two or more complications (Table 13).

Figure 3. Percentage of Women with Complications during Pregnancy

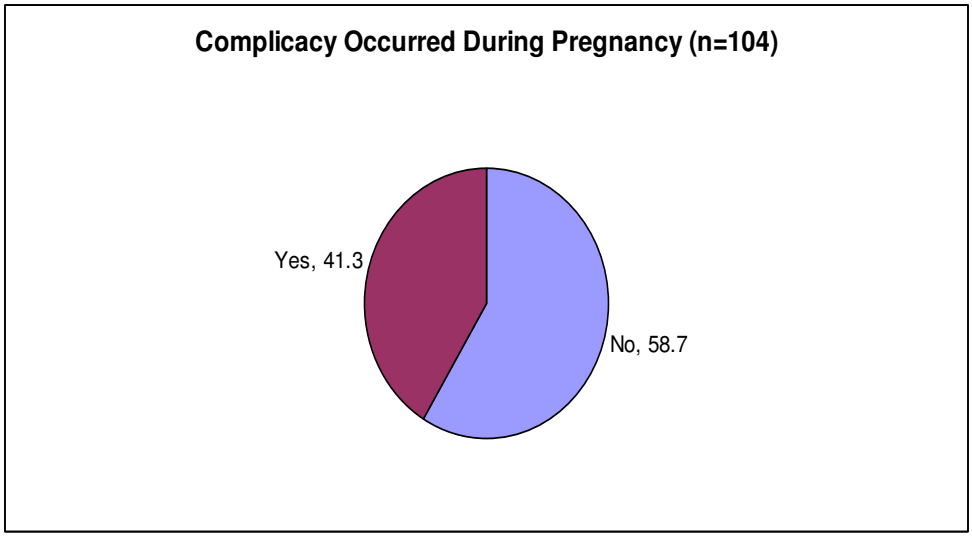
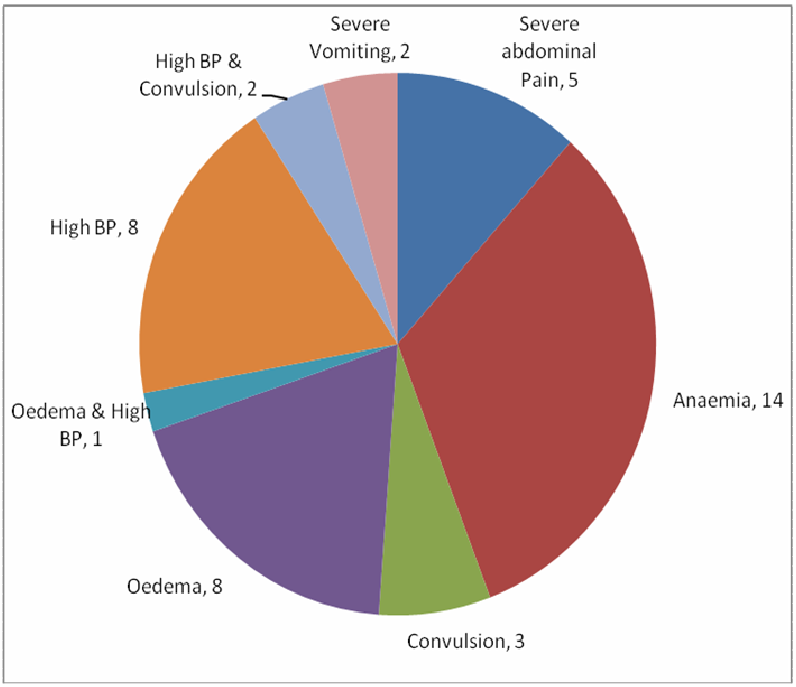


Table 13. Types of Complication Occurred during Pregnancy

Types of Complications Occurred During Pregnancy (n=43)	**n**	**%**
Anaemia	14	32.6
Oedema	8	18.6
High BP	8	18.6
Severe abdominal Pain	5	11.6
Convulsion	3	7.0
Severe Vomiting	2	4.7
High BP & Convulsion	2	4.7
Oedema & High BP	1	2.3
Total	43	100

Figure 4. Types of Complications Occurred during Pregnancy (n=43)



2.1.2. Predisposing Factors and the Types of Complications Occurred During Pregnancy

Table 14 shows that the women who faced complications during pregnancy majority of them were younger in age, i.e. belonged to age group 15–19 years (41.9%). Women who did not complete primary education and those who were at their 1st gravida were most likely to face complications during their pregnancy. The reason might be that the women at their 1st gravida normally became low aged. In addition, they had lower educational attainment. They were not aware of danger sign(s) of pregnancy due to their low level of education. They hesitated to explain the pregnancy complications and also felt fear because they conceived for the first time.

Women's age and gravida had some influence on types of complications. Out of these 43 women, 32.6% developed anaemia during pregnancy. Among them, 25.6% belonged to age between 15 to 24 years. None of the women having more than 3 gravida experienced convulsion, high blood pressure, high blood pressure with convulsion, severe abdominal pain or severe

vomiting. But all of them experienced anaemia and oedema. It was observed during the data collection period that women who faced oedema during pregnancy lived in a particular location. Nine (8+1) women developed oedema. Among them, eight lived in the same village (in one SS's working area). They were from low income family. Their monthly income was less than Tk. 5,000. Among them, seven women were at their 4th or more gravida. It may be assumed that geographical location might be a cause for oedema. On the other hand, if we compare with gravida, it may also be assumed that more gravida indicated the possibility of big family, scarcity of food, low scope of taking rest. Ultimately women became anaemic and developed oedema. Mehenur developed oedema with high BP at her pregnancy. During delivery, she developed convulsion and after 14 days of delivery, she died. She was over 35 years of age, illiterate, member of a low income family, lived in nuclear family and she was at her 5th gravida. A study conducted by BRAC and LSHTM revealed that there was recognition that pregnant women could face complications that would eventually lead to the need for expert services (BRAC, 1997). It has also been reflected here, almost half of the respondents faced complications and they needed to seek services for management of that.

Table 14. Relationship between Predisposing Factors and the Types of Complications Occurred during Pregnancy

Predisposing Factors		Types of Complications Occurred During Pregnancy (n=43)								Total
		Anaemia	Oedema	High BP	Severe Abdominal Pain	Convulsion	Severe Vomiting	High BP with Convulsion	Oedema with High BP	
Women's Age (in Year)	15–19	16.3	.0	14.0	2.3	2.3	2.3	4.7	.0	41.9
	20–24	9.3	2.3	4.7	4.7	2.3	2.3	.0	.0	25.6
	25–29	.0	4.7	.0	4.7	2.3	.0	.0	.0	11.6
	30–34	4.7	7.0	.0	.0	.0	.0	.0	.0	11.6
	35–39	2.3	4.7	.0	.0	.0	.0	.0	2.3	9.3
	Total	32.6	18.6	18.6	11.6	7.0	4.7	4.7	2.3	100.0
Women's Education (Completed)	None	9.3	7.0	4.7	4.7	.0	.0	.0	2.3	27.9
	Pre-primary	4.7	7.0	4.7	7.0	2.3	2.3	4.7	.0	32.6
	Primary	4.7	2.3	.0	.0	2.3	.0	.0	.0	9.3
	Junior High School	14.0	.0	9.3	.0	2.3	2.3	.0	.0	27.9
	SSC	.0	2.3	.0	.0	.0	.0	.0	.0	2.3
	Total	32.6	18.6	18.6	11.6	7.0	4.7	4.7	2.3	100.0
Monthly Family Income (in Taka)	1001–3000	9.3	11.6	9.3	2.3	.0	.0	4.7	.0	37.2
	3001–5000	4.7	4.7	2.3	9.3	4.7	4.7	.0	2.3	32.6
	5001–7000	14.0	.0	4.7	.0	.0	.0	.0	.0	18.6
	7001–9000	4.7	2.3	2.3	.0	2.3	.0	.0	.0	11.6
	Total	32.6	18.6	18.6	11.6	7.0	4.7	4.7	2.3	100.0
Occupation of the Household Heads	Agriculture	7.0	4.7	4.7	.0	.0	2.3	2.3	.0	20.9
	Construction Worker	2.3	.0	.0	.0	2.3	.0	.0	.0	4.7
	Day Labour	2.3	7.0	.0	2.3	2.3	.0	2.3	.0	16.3
	Rickshaw Puller	7.0	4.7	2.3	7.0	.0	2.3	.0	2.3	25.6
	Service	7.0	.0	.0	.0	.0	.0	.0	.0	7.0
	Small Business	4.7	2.3	7.0	2.3	2.3	.0	.0	.0	18.6
	Others	2.3	.0	4.7	.0	.0	.0	.0	.0	7.0
	Total	32.6	18.6	18.6	11.6	7.0	4.7	4.7	2.3	100.0
Family Structure of the Women	Extended	14.0	.0	2.3	2.3	.0	2.3	.0	.0	20.9
	Nuclear	18.6	18.6	16.3	9.3	7.0	2.3	4.7	2.3	79.1
	Total	32.6	18.6	18.6	11.6	7.0	4.7	4.7	2.3	100.0
Gravida of the Women	1	23.3	2.3	9.3	.0	4.7	4.7	2.3	.0	46.5
	2	2.3	.0	7.0	.0	.0	.0	2.3	.0	11.6
	3	.0	2.3	2.3	11.6	2.3	.0	.0	.0	18.6
	4	2.3	4.7	.0	.0	.0	.0	.0	.0	7.0
	5	2.3	4.7	.0	.0	.0	.0	.0	2.3	9.3
	6	2.3	2.3	.0	.0	.0	.0	.0	.0	4.7
	7	.0	2.3	.0	.0	.0	.0	.0	.0	2.3
	Total	32.6	18.6	18.6	11.6	7.0	4.7	4.7	2.3	100.0

2.2 Management of pregnancy complications

2.2.1. Steps Taken for the Management of Complications

Trained providers detected 43 pregnant women as suffering from complications and advised them to receive services from MTP. Table 6 represents that only 21 women received service from MTP (by paying at least one visit). Out of them, 11 had complications. It indicates that 32 women were still vulnerable who needed qualified service for the complication management. Although adequate ANC does not substitute EmOC, yet if pregnant women would receive all ANC services from qualified practitioners, they might be risk free or could have taken appropriate measure during their child-birth. In the present study, we found that the women who faced complications during child-birth in most of the cases they had history of pregnancy complications (viz Chapter 6).

As mentioned, 43 women experienced one or more complications during their last pregnancy. Most of them managed that by taking advice from home visitor (37.2%) and Gram-doctors (37.2%). Out of the reported women with complications, a few of them received services from qualified doctors (11.6%). Around forty percent respondents received service from Government health facility. Among them 11.6% received services from FWV and 2.3% visited Nurse for the management of complications (Table 15).

Table 15. Step Taken to Overcome Pregnancy Complications

Step Taken to Overcome Pregnancy Complication (n=43)		**n**	**%**
Received Advice from Home Visitor (*Shasthya Karmi*)		16	37.2
Visited Gram-doctor		16	37.2
Service Received from MTP_1 (Qualified Doctor)		5	11.6
Govt. Health Facility	Visited FWV	5	11.6
	Visited Nurse	1	2.3

The majority of the women mentioned that all of them received advice from home visitor. In addition, they received advice and treatment from Gram-

doctor. Over one-forth of the women mentioned Medically Trained Provider (including qualified doctors, FWV and Nurse) as a source of services for the management of obstetric complications during pregnancy. Relationship between women's predisposing factors and nature of receiving treatment for management of complicacy has been discussed in the following section.

2.2.2. Predisposing Factors and Management of Pregnancy Complications

One of the major objectives of the study is to explore the steps taken by the pregnant women and their family members in response to perceived complications. All women who had reported one or more complications were asked a series of questions concerning taking steps in relation to the most recent complications during the obstetric period before delivery. Considering women's socio-economic characteristics, Table 16 shows that only a few women received treatment from qualified doctors for the management of pregnancy complication. According to the socio-economic status, data suggested that women aged below 25 years (25.6%), those who completed junior high school (9.3%), those who had monthly family income between Tk. 5000–7000 (4.7%) and those who were at their 2nd gravida (9.3%) were more likely to receive qualified doctors' services for the management of complications more than the others. It is assumed that women at their 1st gravida would receive special care for the management of complications and they would receive services from qualified doctors but in reality it was found that most of them visited Gram-doctor (16.3%) due to their inability to bear the expenses to consult qualified doctor.

Women who completed at least junior high school became aware about their obstetric complications and tried to receive better treatment. Surprisingly women from highest income group (Tk. 7001–9000) received treatment from Gram-doctor (4.7%) and FWV (4.7%) more than they received that from MTP_1, i.e. qualified doctors (2.3%). A large number of women with

pregnancy complications did not report to qualified practitioners. Among them, women aged between 15−19, without formal education, from lowest income group and having 1st gravida mostly depended on home visitor for their complications management. On the other hand, women who completed pre-primary education and had monthly family income Tk. 3001−5000 visited Gram-doctors for complication management. Women having 3rd gravida with pregnancy complication preferred Gram-doctor for their complicacy management. Main sources of receiving treatment for management of complication are explained below:

Medically Trained Provider (MTPs): Out of 43 women only 25.5% of them received treatment from MTPs. Among them 11.6% received treatment from MTP_1, i.e. qualified doctors (at their private chambers) and rest of them from MTP_2, such as: 11.6% from FWV and 2.3% from Nurse (at Government Health Facility). The highest recipients from MTP_1 were women aged between 15–19 (7.0%), completed junior high school (9.3%), having monthly family income TK. 5001–7000 (4.7%), occupation of household was small business (7.0%) and women who were at their 2nd gravida. It is worth noting that women those who were at their 2nd gravida and experienced complications, all of them received treatment from qualified doctor and none of them visited Gram-doctor or Government health facility. On the other hand, none of the women, who were at their 3+ gravida received treatment from qualified doctors. Again none of the women from rickshaw puller family visited MTP_1's for management of complication while they were the highest recipients of service rendered from MTP_1's chamber (Table 5) and second highest recipients of 7+ ANC from trained providers (Table 7).

Gram-doctor (GD): Around 37.2% of the women received treatment from Gram-doctors. Among them the highest receivers were women belonging to age group 15–24 (23.2%), those who have completed pre-primary (16.3%), occupation of household head was day labour (9.3%) and rickshaw pulling

(9.3%), having monthly family income Tk. 3001–5000 (18.6%) and those who were at their 1st (16.3%) and 3rd gravida (11.6%). It is worth mentioning that women from highest income group (Tk. 7001–9000) also received more treatment from Gram-doctor (4.7%) than that of from qualified doctors (2.3%)**.** The highest proportion of services were rendered by Gram-doctor.

Home Visitor *(Shasthya Karmi)*: A large number of women (37.2%) relied only on receiving advice from *Shasthya Karmi* for management of complicacy. Among them the highest number of women belonged to age group 15–19 (18.6%), without formal education (16.3%), having monthly income Tk. 1000–3000 (23.3%), came from rickshaw pulling family (11.6%) and were at their 1st gravida (18.6%).

In the present study, the tendency of seeking care from qualified practitioners for the management of obstetric complications was higher among those who have completed junior high school as compared with other groups. Women who had complications in current pregnancy and had history of complications in the past delivery were more likely to seek care more than those with no history of complications. However, it was observed that there was a relationship between women's lower age, higher educational attainment & having 2nd gravida and higher rate of receiving better services for management of obstetric complications. But there was no strong relationship between having higher income and receiving more quality services because women from highest income group, i.e. Tk. 7001–9000 also received more treatment from Gram-doctor (4.7%) than that of from qualified doctors (2.3%).

Table 16. Relationship between Predisposing Factors and Main Step Taken for the Management of Pregnancy Complication

Predisposing Factors		Main Step taken for the Management of Pregnancy Complications (n=43)					Total
		Received Advice from Home Visitor	Visited Gram-doctor	Service received from Qualified Doctor (MTP_1)	Govt. Health Facility		
					Visited FWV (MTP_2)	Visited Nurse (MTP_2)	
Women's Age (in Year)	15–19	18.6	11.6	7.0	4.7	.0	41.9
	20–24	7.0	11.6	4.7	2.3	.0	25.6
	25–29	2.3	4.7	.0	4.7	.0	11.6
	30–34	9.3	2.3	.0	.0	.0	11.6
	35–39	.0	7.0	.0	.0	2.3	9.3
	Total	37.2	37.2	11.6	11.6	2.3	100.0
Women's Education (Completed)	None	16.3	9.3	.0	.0	2.3	27.9
	Pre-primary	9.3	16.3	2.3	4.7	.0	32.6
	Primary	2.3	7.0	.0	.0	.0	9.3
	Junior High School	9.3	4.7	9.3	4.7	.0	27.9
	SSC	.0	.0	.0	2.3	.0	2.3
	Total	37.2	37.2	11.6	11.6	2.3	100.0
Monthly Family Income (in Taka)	1001–3000	23.3	9.3	2.3	2.3	.0	37.2
	3001–5000	4.7	18.6	2.3	4.7	2.3	32.6
	5001–7000	9.3	4.7	4.7	.0	.0	18.6
	7001–9000	.0	4.7	2.3	4.7	.0	11.6
	Total	37.2	37.2	11.6	11.6	2.3	100.0
Occupation of the Household Heads	Agriculture	9.3	7.0	.0	4.7	.0	20.9
	Construction Worker	2.3	2.3	.0	.0	.0	4.7
	Day Labour	4.7	9.3	2.3	.0	.0	16.3
	Rickshaw Puller	11.6	9.3	.0	2.3	2.3	25.6
	Service	2.3	4.7	.0	.0	.0	7.0
	Small Business	4.7	2.3	7.0	4.7	.0	18.6
	Others	2.3	2.3	2.3	.0	.0	7.0
	Total	37.2	37.2	11.6	11.6	2.3	100.0
Family Structure of the Women	Extended	9.3	9.3	.0	2.3	.0	20.9
	Nuclear	27.9	27.9	11.6	9.3	2.3	79.1
	Total	37.2	37.2	11.6	11.6	2.3	100.0
Gravida of the Women	1	18.6	16.3	2.3	9.3	.0	46.5
	2	2.3	.0	9.3	.0	.0	11.6
	3	4.7	11.6	.0	2.3	.0	18.6
	4	7.0	.0	.0	.0	.0	7.0
	5	4.7	2.3	.0	.0	2.3	9.3
	6	.0	4.7	.0	.0	.0	4.7
	7	.0	2.3	.0	.0	.0	2.3
	Total	37.2	37.2	11.6	11.6	2.3	100.0

Conclusion

It is apparent from the study that over half of the women did not receive necessary number of ANC and only 9.6% received WHO recommended number, i.e., at least 4+ ANC from a medically trained provider.

Financial constraint was the main reason for not seeking obstetric care from qualified providers during pregnancy. Over two-fifth women experienced complications during pregnancy. The selection of provider or facility for the management of complication always did not depend on women's socio-economic, & demographic condition because it was found that in a large number of cases women from lower economic group or having lower education level received more services, or more qualified services than that of women from higher economic or higher education level. But in certain cases it was apparent that occupation plays a significant role in getting services from different sectors. such as: women from rickshaw puller family were the highest recipients of services rendered from MTP's chamber (4.8%) and women from small business family visited Government health facility more (3.8%) than the women whose household heads were engaged in any other occupation (Table 5). Similarly the and second highest recipients of 7+ ANC were women from rickshaw puller family and small business family (8.7% for each group) [Table 7]. Again the highest recipients of 4+ ANC from MTP came from service holder families (Table 8). People from these three groups of occupations have greater mobility which made them aware about the place of receiving appropriate services and enabled their women to avail treatment. However, the data do not entirely support the fact that lowest economic status are always highly associated with poor health service utilisation, as mentioned by Deaton and Paxton (1999) and Deaton (2003).

Chapter 6
Nature of Receiving Obstetric Care during Child-birth

1. Obstetric Care during Child-birth

In this study, the term ‘obstetric care’ has been used to refer the content of services that should be provided to the pregnant women in general and to the short list of services that can save the lives of women with obstetric complications. Similarly in the present research the spectrum of obstetric care has mainly been centred round delivery care. Emergency Obstetric Care (including skilled attendance at each birth) is important element of it. Two levels of such care are defined, such as: Basic and Comprehensive Emergency Obstetric Care. Basic Emergency Obstetric Care is called Essential Obstetric Care that refers to the services including antenatal, child-birth, and postpartum care. It focuses on all pregnant women and is based on the idea that normal obstetric complications can be predicted and prevented without surgery. Basic Essential Obstetric Care (EOC) does not include every service that ought to be provided to women with complicated pregnancies. It is the list of services that can save the lives of the majority of pregnant women in general. Comprehensive Emergency Obstetric Care (EmOC) is the content of services that should be provided to women with complicated or problem pregnancies. EmOC refers to the short list of services that can save the lives of the majority of women with obstetric complications. Components and levels of EmOC are: core skill obstetric first aid, skilled attendance, normal pregnancy and childbirth, administration of antibiotics for infection, administration of antihypertensive and anticonvulsant medication, manual removal of placenta, assisted vaginal delivery, advanced surgical skills, and blood transfusion. Many women 'at risk' never develop complications and a significant number of women who

are at 'low risk' do. A woman can move from low to high risk (or vice versa) throughout pregnancy and postpartum. World Health Organisation (WHO, 2006) estimated that around 40% of the pregnant women had some complications; up to 15% needed emergency obstetric care to manage life threatening complications and between 10–15% of the women needed a caesarean section to deliver their child safely. Comprehensive Emergency Obstetric Care (EmOC) includes more specific interventions than EOC, such as, intravenous antibiotics, caesarean section, and the management of vacuum or forceps delivery. It focuses on the prompt identification, referral, and treatment of women with obstetric complications. International goals for EmOC are to ensure skilled attendance at every birth. At least 4 Basic EmOC sites (within 4 hours) and 1 Comprehensive site (within 12 hours) for every 5,00,000 population must be available. At least 15% of births should take place in a health facility and case fatality in health facilities should be less than 1% (UNICEF, 1997). The main difference between Basic and Comprehensive EOC is the provision of caesarean sections and blood transfusions in Comprehensive EOC facilities. Since obstetric complications are unpredictable, it is important that women should have access to life-saving EOC procedures round the clock. Analysis of local patterns in EOC availability may show that EOC coverage is actually lower than the number of facilities would imply. In such cases, expanding the hours when services are available is strongly recommended (WHO, 1997). Bangladesh Maternal Health Services and Maternal Mortality Survey (2001) apprehended that in Bangladesh, annually around 3.8 million births occurred, and even more pregnancies. About 15 percent of these are expected to have complications requiring facility-based care: two-thirds need basic EOC (B-EOC) and one-third needs comprehensive EOC (C-EOC) for life-threatening conditions, particularly caesarean sections or blood transfusions (NIPORT, 2003). The latest maternal mortality survey (2010) highlighted that MMR came down to 194 in 1,00,000 live births. Bangladesh has to reduce MMR further to 143 by

2015 to achieve MDG 5. However, a relatively small percentage of the population received formal maternal care, such as: 54% received ANC and 26.5% delivery care (NIPORT, 2011).

2. Nature of Receiving Obstetric Care during Child-birth

In this section an attempt has been made to describe the relations of women's predisposing factors and their nature of receiving obstetric care during delivery. In this regard, the places of child-birth, types of birth attendants, complications that occurred during child-birth & soon after delivery have been discussed. Pregnant women and their family members' steps taken for the management of complications and causes of discontinuation of receiving EmOC have also been explored.

2.1. Place of Child-birth

Delivery at facility is an important element to save the lives of pregnant women because of the availability of Medically Trained Provider (MTP) and necessary logistic supports. But in the present study it was found that over three-fourth of the women delivered at home (Table 17). The possibility of remaining skilled attendants and other necessary supports at home is rare. Only one-forth delivery occurred at facility which included Government health facility, private clinic and NGO hospital. Only 16.3% women delivered at Government health facilities. One woman delivered on the way to hospital.

Table 17. Place of Delivery

Places of Delivery		**n**	**%**
Delivery at Facility [26 (25.0%)]	Govt. Hospital	17	16.3
	Private/NGO Hospital	9	8.7
Delivery at Home		77	74.0
Delivery on the way to hospital		1	1.0
Total		104	100

2.1.1. Predisposing Factors of the Respondents and Place of Child-birth

Since overwhelming proportion of women delivered at home, in this section focus will be given to other sectors of the place of delivery excepting home.

Considering age and gravida it was found that except two, none of the respondents of age group above 30 years and having more than three gravida got the opportunity of receiving institutional delivery care. Those two delivered at private/NGO hospital. According to the level of education, women those who completed junior high school delivered at Government hospital more than other sectors (5.8%). It is surprising that women with lower educational attainment were more likely to deliver at NGO or private clinics than those who had higher education. Similarly women from lowest family income group delivered at private clinics or clinics run by the NGOs. At a later stage it was revealed that it happened due to the provision of availing financial support from the NGO. One woman from lowest income group delivered on the way to hospital. In terms of occupation of household head it was found that those who delivered at Government Hospital the highest number of them came from agricultural and small businessman families (5.8% for each group). Concerning economic status the highest number of Government hospital users were those women who had monthly family income Tk. 3001−5000, whereas as mentioned earlier women from lowest income group (Tk. 1001−5000) delivered at private/NGO clinics.

Among the women who delivered at private clinic or NGO facility, 3.8% were from extended family & 4.8% from nuclear family. Women in their 1st gravida preferred Govt. Hospital (11.5%) more than the private clinic (4.8%). The following section describes why women preferred home as a place of delivery.

Table 18. Predisposing Factors of the Respondents and Place of Delivery

Predisposing Factors		Place of Delivery (N=104)								Total	
		Govt. Hospital		Home		On the Way		Private/NGO Hospital			
		n	%	n	%	n	%	n	%	n	%
Women's Age (in Year)	15–19	11	10.6	27	26.0	0	.0	6	5.8	44	42.3
	20–24	4	3.8	29	27.9	1	1.0	1	1.0	35	33.7
	25–29	2	1.9	12	11.5	0	.0	0	.0	14	13.5
	30–34	0	.0	6	5.8	0	.0	1	1.0	7	6.7
	35–39	0	.0	3	2.9	0	.0	1	1.0	4	3.8
	Total	17	16.3	77	74.0	1	1.0	9	8.7	104	100.0
Women's Education (Completed)	None	5	4.8	27	26.0	1	1.0	3	2.9	36	34.6
	Pre-primary	4	3.8	24	23.1	0	.0	3	2.9	31	29.8
	Primary	1	1.0	12	11.5	0	.0	1	1.0	14	13.5
	Junior High School	6	5.8	9	8.7	0	.0	2	1.9	17	16.3
	SSC	1	1.0	3	2.9	0	.0	0	.0	4	3.8
	HSC	0	.0	2	1.9	0	.0	0	.0	2	1.9
	Total	17	16.3	77	74.0	1	1.0	9	8.7	104	100.0
Monthly Family Income (in Taka)	1001–3000	4	3.8	30	28.8	1	1.0	6	5.8	41	39.4
	3001–5000	8	7.7	23	22.1	0	.0	2	1.9	33	31.7
	5001–7000	3	2.9	17	16.3	0	.0	0	.0	20	19.2
	7001–9000	2	1.9	6	5.8	0	.0	1	1.0	9	8.7
	9001+	0	.0	1	1.0	0	.0	0	.0	1	1.0
	Total	17	16.3	77	74.0	1	1.0	9	8.7	104	100.0
Occupation of the Household Heads	Agriculture	6	5.8	22	21.2	0	.0	2	1.9	30	28.8
	Construction Worker	1	1.0	2	1.9	0	.0	0	.0	3	2.9
	Day Labour	1	1.0	8	7.7	0	.0	1	1.0	10	9.6
	Rickshaw Puller	2	1.9	22	21.2	1	1.0	2	1.9	27	26.0
	Service	0	.0	7	6.7	0	.0	2	1.9	9	8.7
	Small Business	6	5.8	12	11.5	0	.0	1	1.0	19	18.3
	Others	1	1.0	4	3.8	0	.0	1	1.0	6	5.8
	Total	17	16.3	77	74.0	1	1.0	9	8.7	104	100.0
Family Structure of the Women	Extended	4	3.8	12	11.5	0	.0	4	3.8	20	19.2
	Nuclear	13	12.5	65	62.5	1	1.0	5	4.8	84	80.8
	Total	17	16.3	77	74.0	1	1.0	9	8.7	104	100.0
Gravida of the Women	1	12	11.5	26	25.0	1	1.0	5	4.8	44	42.3
	2	3	2.9	28	26.9	0	.0	1	1.0	32	30.8
	3	2	1.9	13	12.5	0	.0	1	1.0	16	15.4
	4	0	.0	5	4.8	0	.0	0	.0	5	4.8
	5	0	.0	3	2.9	0	.0	1	1.0	4	3.8
	6	0	.0	1	1.0	0	.0	1	1.0	2	1.9
	7	0	.0	1	1.0	0	.0	0	.0	1	1.0
	Total	17	16.3	77	74.0	1	1.0	9	8.7	104	100.0

2.1.2. Main Causes of Home Delivery

There is a point needs to be cleared. Necessity for facility based delivery had been felt by a large number of respondents and their family members, such as: respondents (67.3%); respondents' husbands (65.0%), household heads (48.1%), female household heads (26%), and health workers (88.5%) felt need for facility based delivery (Table 26). But due to some practical difficulties women could not reach the health facility for delivery. The reasons for that have been stated below but `felt no need' has not been considered as a cause for home delivery because majority of the respondents and their family members felt the need.

Table 19 depicts that the most common reason for home delivery in the study area was financial constraints (63.6%). Other causes were embargo from household members (10.4%), distance between home to facility and lack of transport (9.1%); fear and embarrassment about hospital environment and male health providers (5.2%). In few cases the health workers (SS and NHW) advised the women for home delivery due to their ability to ensure safe delivery (5.2%). This is also a reason for home delivery. Other reasons include previous bitter experience about facility based health services (2.6%) and availability of emotional as well as associated supports at home (3.9%).

It is a rural tradition that women prefer to deliver child at home with the help of traditional birth attendants. But it is harmful and hazardous for them. Realising it, many NGOs have come forward to ensure facility based delivery or home based delivery with the help of skilled birth attendants. But data show that sometimes SS & NHW influence some respondents not to go to facility for delivery, the reasons for that will be discussed at the section Referral**.** In some cases, the pregnant women got emotional support thinking that they could get services like getting hot water, milk, green coconut, lemon, massaging etc. at home provided by their near and dear one's. But in hospital they could not get those necessary services which would strengthen their mental strength.

Table 19. Main Causes of Home Delivery

Main Causes of Home Delivery	**n**	**%**
Financial Constraints	49	63.6
Embargo	8	10.4
Distance & Lack of Transport	7	9.1
Fear and Embarrassment	4	5.2
Health Worker's Assurance	4	5.2
Emotional and Associated Support at Home	3	3.9
Previous Bitter Experience	2	2.6
Total	77	100

According to the socio-economic background of the women, the highest percentage of the respondents delivered at home because of financial constraints. The women who reported financial constraint as main reason for home delivery the highest number of them fall in the age group under 25 years (42.9%), had not completed primary education (40.3%), had monthly family income below Tk. 5,000 and most of their household heads were engaged in agricultural labour (22.1%). Majority of the women from nuclear family (54.5%) and those who were at their 2nd gravida (24.7%) mentioned financial constraints as a cause of home delivery (Table 20).

About nine percent women reported distance and lack of transport as a cause of home delivery, among them more than fifty percent were low aged (15–19), majority of them belonged to lowest income group (1001–3000), large portion of their household heads' occupation was rickshaw pulling and over half of them were at their 1st gravida. It is surprising that women from rickshaw puller family mentioned this cause more than those women whose household heads were engaged in other occupations. The reason for that was clear from a rickshaw pullers' wife. She mentioned that her husband was familiar with the road condition. Thus he thought that it would be risky for a pregnant woman in labour to travel by rickshaw through a cracked road. Ambulance was not available and they could not afford to hire a micro bus.

More than 10% women reported embargo, imposed by the family members, as a main cause of home delivery. Embargo was faced by those women who were low aged (15−19), belonged to low income family (1001−3000) and those who were at their 1st gravida.

Women those who reported fear and embarrassment all were in low aged (15−24) and belonged to lower income family. Among them 2 women were at their 1st gravida while 2 at their 3rd.

Only two women reported their previous bitter experiences as a cause for not going to health facility for child birth. One woman was at her 1st gravida and she had bitter experience at the time of receiving ANC from health facility. It is worth noting that a number of women also mentioned about their bitter experiences at health facility but they did not report that as a main cause of home delivery.

Women those who depended on health worker's assurance about safe home delivery, all of them (4) were in lower age group (15−29) and 2 were at their 1st gravida. There was no variation in terms of education because 2 of them had no education while 2 had completed Junior high school.

However, a detail description of these constraints have been discussed in the section 'Causes of not Receiving Obstetric Care during Child-birth and Obstetric Complications'.

Table 20. Relationship between Predisposing Factors of the Respondents and Main Causes of Home Delivery

Predisposing Factors		Main Causes of Home Delivery (n=77)														Total	
		Distance & Lack of Transport		Embargo		Fear and Embarrassment		Financial Constraints		Health Worker's Assurance		Previous Bitter Experience		Emotional and Associated Support at Home			
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Women's Age (in Year)	15–19	4	5.2	4	5.2	2	2.6	14	18.2	2	2.6	1	1.3	0	.0	27	35.1
	20–24	3	3.9	3	3.9	2	2.6	19	24.7	1	1.3	0	.0	1	1.3	29	37.7
	25–29	0	.0	0	.0	0	.0	10	13.0	1	1.3	1	1.3	0	.0	12	15.6
	30–34	0	.0	1	1.3	0	.0	5	6.5	0	.0	0	.0	0	.0	6	7.8
	35–39	0	.0	0	.0	0	.0	1	1.3	0	.0	0	.0	2	2.6	3	3.9
	Total	7	9.1	8	10.4	4	5.2	49	63.6	4	5.2	2	2.6	3	3.9	77	100.0
Women's Education (Completed)	1.None	2	2.6	4	5.2	1	1.3	16	20.8	2	2.6	0	.0	2	2.6	27	35.1
	2.Pre-primary	2	2.6	3	3.9	2	2.6	15	19.5	0	.0	2	2.6	0	.0	24	31.2
	3.Primary	1	1.3	0	.0	0	.0	11	14.3	0	.0	0	.0	0	.0	12	15.6
	4.Junior High School	2	2.6	0	.0	1	1.3	4	5.2	2	2.6	0	.0	0	.0	9	11.7
	5.SSC	0	.0	0	.0	0	.0	2	2.6	0	.0	0	.0	1	1.3	3	3.9
	6.HSC	0	.0	1	1.3	0	.0	1	1.3	0	.0	0	.0	0	.0	2	2.6
	Total	7	9.1	8	10.4	4	5.2	49	63.6	4	5.2	2	2.6	3	3.9	77	100.0
Monthly Family Income (in taka)	1001–3000	4	5.2	4	5.2	2	2.6	17	22.1	2	2.6	0	.0	1	1.3	30	39.0
	3001–5000	1	1.3	3	3.9	1	1.3	16	20.8	0	.0	1	1.3	1	1.3	23	29.9
	5001–7000	2	2.6	1	1.3	1	1.3	12	15.6	0	.0	1	1.3	0	.0	17	22.1
	7001–9000	0	.0	0	.0	0	.0	4	5.2	2	2.6	0	.0	0	.0	6	7.8
	9001+	0	.0	0	.0	0	.0	0	.0	0	.0	0	.0	1	1.3	1	1.3
	Total	7	9.1	8	10.4	4	5.2	49	63.6	4	5.2	2	2.6	3	3.9	77	100.0
Occupation of Household Heads	Agriculture	1	1.3	2	2.6	1	1.3	17	22.1	1	1.3	0	.0	0	.0	22	28.6
	Construction Worker	0	.0	0	.0	0	.0	1	1.3	0	.0	1	1.3	0	.0	2	2.6
	Day Labour	1	1.3	1	1.3	0	.0	5	6.5	0	.0	0	.0	1	1.3	8	10.4
	Rickshaw Puller	4	5.2	2	2.6	1	1.3	12	15.6	1	1.3	1	1.3	1	1.3	22	28.6
	Service	0	.0	1	1.3	1	1.3	4	5.2	0	.0	0	.0	1	1.3	7	9.1
	Small Business	1	1.3	2	2.6	0	.0	8	10.4	1	1.3	0	.0	0	.0	12	15.6
	Others	0	.0	0	.0	1	1.3	2	2.6	1	1.3	0	.0	0	.0	4	5.2
	Total	7	9.1	8	10.4	4	5.2	49	63.6	4	5.2	2	2.6	3	3.9	77	100.0
Family Structure of Women	Extended	0	.0	2	2.6	1	1.3	7	9.1	1	1.3	0	.0	1	1.3	12	15.6
	Nuclear	7	9.1	6	7.8	3	3.9	42	54.5	3	3.9	2	2.6	2	2.6	65	84.4
	Total	7	9.1	8	10.4	4	5.2	49	63.6	4	5.2	2	2.6	3	3.9	77	100.0
Gravida of Women	1	4	5.2	2	2.6	2	2.6	15	19.5	2	2.6	0	.0	1	1.3	26	33.8
	2	3	3.9	3	3.9	0	.0	19	24.7	1	1.3	2	2.6	0	.0	28	36.4
	3	0	.0	2	2.6	2	2.6	8	10.4	1	1.3	0	.0	0	.0	13	16.9
	4	0	.0	1	1.3	0	.0	4	5.2	0	.0	0	.0	0	.0	5	6.5
	5	0	.0	0	.0	0	.0	2	2.6	0	.0	0	.0	1	1.3	3	3.9
	6	0	.0	0	.0	0	.0	0	.0	0	.0	0	.0	1	1.3	1	1.3
	7	0	.0	0	.0	0	.0	1	1.3	0	.0	0	.0	0	.0	1	1.3
	Total	7	9.1	8	10.4	4	5.2	49	63.6	4	5.2	2	2.6	3	3.9	77	100.0

2.1.3. Main Decision Maker about the Place of Delivery

Husband was the major decision maker (60.6%) about where the women would be mothered. Besides, BRAC health worker (17.3%), female household head (8.7%), household head (other than husband) (3.8%) and respondent herself (9.6%) also decided the place of delivery. Though the percentage was poor (9.6%), the women were able to execute their opinion in decision making process (Table 21). It is obviously a mark of development. But sometimes other relatives prevented women from going to hospital for delivery despite having health worker's referral and respondent's inclination to have facility based delivery.

> *In case of Habiba, it so happened that she was in a critical condition during her delivery at home in the presence of SS, TBA and Gram-doctor. Considering the seriousness of her condition, the attending SS secretly whispered to the respondent to initiate to go to hospital. That was somehow heard by her elder sister-in-law. She told Habiba not to even think of going to hospital. She also passed some negative messages to Habiba about the environment of the hospital. It was like that she would be slapped and misbehaved in the hospital by the staff. She also emphasised that Habiba should employ her energy to force the baby out. She also reminded her that she would have to do the same thing in the hospital too. So Habiba was not taken to the hospital and the baby died just after delivery. At that stage, her father-in-law became infuriated with the SS for her inability to handle the situation effectively. He threatened her to file a case against her in this connection. The result was that, the SS was frightened. She did not pay any visit for further enquiry later on. As a result the post delivery services were not provided to her and Habiba developed a series of complications including fistula. It is worth noting that Habiba belonged to a high income family and completed SSC but she had to succumbed to her in-law's decision making power.*

Table 21. Main Decision Maker about the Place of Delivery

Main Decision Maker about Place of Delivery (N=104)	**n**	**%**
Husband	63	60.6
BRAC Health Worker	18	17.3
Respondent herself	10	9.6
Female Household Head	9	8.7
Household Head	4	3.8
Total	104	100

Table 21 depicts that husbands were the prime decision makers for almost in all cases about where the pregnant women would deliver their child. In Bangladesh, traditionally husbands are senior to their wives in age. Besides, it is also a male dominating society. Husbands play vital role in different decision making process. In a period of child-birth, a vital event of a family, traditionally husbands exercise the decision making power especially in case of low aged, illiterate and economically depended wives.

Table 22 shows that husbands were the prime decision maker for the women in all aged group but it is also apparent that the female household head had a control over the daughters-in-law and they exercised their decision making power in case of lower aged women (15–24). But it was also observed that those pregnant women who were able to execute their decision also belonged to lower age group and they were at their 1st gravida. Surprisingly they had lowest educational attainment. It was also found that women with higher educational attainment were succumbed to their female household head's decision (2.9%) rather than executing their own decision (1.9%).

In terms of income, women who were succeed to execute their decision, 2.9% came from those family who had almost highest family income (Tk. 7000–9001). But it was also found that equal proportion of women, who could execute their decision belonged to those families whose monthly family income was lowest, such as: TK. 1001–3000 & Tk. 3001–5000 (2.9% for each group)**.** This indicates that this is not the fact that higher education

and higher level of income ensure women's empowerment, especially in terms of exercising their decision making power. Some other community variables play important roles in this regard.

Table 22. Relationship between Predisposing Factors of the Respondents and Main Decision Maker about the Place of Delivery

Predisposing Factors		**Main Decision Maker about the Place of Delivery (N=104)**				
		Husband (60.6%)	BRAC Health Worker (17.3%)	Respondent Herself (9.6%)	Female Household Head (8.7%)	Household Head (3.8%)
		%	%	%	%	%
Women's Age	15–19	20.2	10.6	3.8	3.8	3.8
	20–24	20.2	5.8	2.9	4.8	.0
	25–29	11.5	.0	1.9	.0	.0
	30–34	5.8	.0	1.0	.0	.0
	35–39	2.9	1.0	.0	.0	.0
Women's Education (Completed)	None	25.0	2.9	2.9	1.9	1.9
	Pre-primary	22.1	3.8	2.9	1.0	.0
	Primary	9.6	1.9	.0	1.9	.0
	Junior High School	3.8	6.7	1.9	2.9	1.0
	SSC	.0	1.9	1.0	1.0	.0
	HSC	.0	.0	1.0	.0	1.0
Monthly Family Income (in Taka)	1001–3000	27.9	4.8	2.9	1.9	1.9
	3001–5000	19.2	3.8	2.9	3.8	1.9
	5001–7000	10.6	6.7	1.0	1.0	.0
	7001–9000	2.9	1.9	2.9	1.0	.0
	9001+	.0	.0	.0	1.0	.0
Occupation of Household Heads	Agriculture	21.2	2.9	1.0	1.9	1.9
	Construction Worker	1.9	.0	1.0	.0	.0
	Day Labour	6.7	1.9	1.0	.0	.0
	Rickshaw Puller	19.2	2.9	2.9	1.0	.0
	Service	1.0	1.9	1.9	1.9	1.9
	Small Business	8.7	5.8	1.9	1.9	.0
	Others	1.9	1.9	.0	1.9	.0
Family Structure of Women	Extended	3.8	1.0	1.9	8.7	3.8
	Nuclear	56.7	16.3	7.7	.0	.0
Gravida of Women	1	20.2	6.7	6.7	5.8	2.9
	2	19.2	8.7	.0	1.9	1.0
	3	11.5	1.0	1.9	1.0	.0
	4	4.8	.0	.0	.0	.0
	5	1.9	1.0	1.0	.0	.0
	6	1.9	.0	.0	.0	.0
	7	1.0	.0	.0	.0	.0

2.2. Types of Birth Attendants

The home visitor *(Shasthya Shebika)* visited the respondents on regular basis during the month of expected birth of delivery (EDD). She inspired the pregnant women to be prepared for overcoming the problem specially who had history of complications. BRAC appointed one woman as *Shasthya Shebika* (SS) for each 150 households and one Newborn Health Worker (NHW) for each 300 households. In the process of selection, the interested women with the experience of delivery were preferred. Besides there are elderly and experienced TBAs in the community who help during delivery. In some cases, these TBAs become quite popular with the people owing to their familiarity and neighbourhood. For these reasons, they are invited during delivery. Usually the Gram-doctors don't play any direct role in these fields. They provide medicine on the basis of the observation and assessment of the TBAs or other unskilled and semi skilled birth attendants for the quick and safe delivery. Taufikuzzaman *et al.* reported that Gram-doctors often made serious mistakes while providing treatment to the rural women which worsened the condition, even sometimes caused death of the women or the child. (Taufikuzzaman *et al.*, 2013). In the present study the situation was same. It was also found that, in many cases, a communication gap and misunderstanding happened. Sometimes the birth attendants failed to assess the condition and gave wrong information about the condition of the cervix of the uterus. In such cases when the Gram-doctors provided medicine that consequently lead to further complications. In case of severe complications, the foetus/ new born were died.

Other study shows that pregnant women usually did not take any preparation for delivery beforehand. They used to consider every pregnancy normal until complications arose (Choudhury *et al.,* 2009). In the present study, most of the women perceived need for facility based delivery, especially if they had had a complicated delivery previously. But in most of the cases they had to rely on TBAs and family members during delivery. Women first shared the

information with close family members. Only when labour pain became unbearable, they informed that to other professionals. They believed that the more people heard about the impending delivery pain, the delivery would be more delayed resulting in prolonged and difficult labour for the mother.

Only four women were attended by relatives and neighbours. One of them was respondent's mother.

> *That was Nasima's first gravida. As the relationship with her husband was bitter, she was staying at her natal home. To avoid unavoidable questions, Nasima's mother did not expose the matter of pregnancy to any other excepting Shasthya Karmi (SK). The SK provided her ANC service and also necessary medicine regularly ensuring secrecy. The SK gave instructions to Nasima's mother about how to attend a delivery. Ultimately the mother attended Nasima during her delivery with her knowledge and experience. Data had been collected regarding her ANC activities through in-depth interview with the woman and her mother after delivery.*

The highest proportion of births (44.1%) were attended by NGO health workers (SS, NHW or Trained TBA) at home. The second highest percentages of birth-attendants were medically trained providers which were near about one-third of the total delivery (Nurse and FWV 22.1% and qualified doctor 8.7%). Nearly one-fifth of the women delivered with the assistance of Traditional Birth Attendants (TBA). It is worth noting that only 3.9% births were attended by female family members, relatives and/or neighbours (Table 23). Sometimes traditional service providers do more harm than good for the women with obstetric complications. It was also found in the present study. During delivery, it is essential to expand the vaginal outlet for facilitating the successful completion of the delivery. In rural areas of Bangladesh the TBAs use coconut oil in the vaginal outlet for that.

In case of Lipi, it was winter season and the oil got condensed. There was a niddle in the bottle. As the tradition goes that to keep the niddle rust free, the villagers preserve them in an oil bottle. The TBA asked for oil and she was given a bottle. First she took some oil with her finger and applied it inside the vaginal outlet. Then she needed more. This time, she took the bottle at hand and shook it to sprinkle oil directly there. In that stage, a part of the head of the baby came out. One niddle got stuck on the head of the child and bleeding started. Ultimately the child got injured and gradually became sick after delivery. Serious complications cropped up and the family members rushed to the hospital with the neonate for better treatment but ultimately the child died.

Table 23. Main Attendant at Child-birth

Birth Attendants (N=104)	**n**	**%**
NGO Health worker (SS, NHW, Trained TBA)	46	44.1
MTP_2 (Nurse/FWV/SBA)	23	22.1
TBA	22	21.2
MTP_1 (Qualified Doctor)	9	8.7
Relatives and/or Neighbours	4	3.9
Total	104	100

2.2.1. Predisposing Factors of the Respondents and Types of Birth Attendants

Table 24 depicts that in all age group, except 1, NGO health workers were the main attendants at childbirth. Next to that, women in lower age group (between 15–24) 18.3% were attended by MTP_2, 15.4% by TBA and 5.8% by MTP_1. On the other hand, women belonged to higher age group (25–29) were attended by MTP_2 and TBA at an equal rate (2.9% for each group of the attendants)

According to the educational status, among the women who were attended by MTP_2, majority of them did not have formal education (10.6%). Those who were attended by MTP_1 (qualified doctors) all of them had lower educational attainment and there was no variation among the women who had no education upto those who completed Primary. This point could be made more

clear by the data presented in the Table 25. In fact, Table 25 is a more specific representation of the issues described in the Table 24. Hence, Table 25 also shows that education had no impact on having more qualified attendants, such as: the women who were attended by MTP_1, all had lower educational attainment (up to Primary) and there was no variation among the women who had no education and those who completed Pre-primary or Primary (33.3% for each group). On the other hand none of the women with higher educational attainment (from Junior to HSC) attended by MTP_1. Similarly women those who attended by MTP_2, the highest portion of them had no education (47.8%). There was no variation between the women who completed Pre-primary and Junior high school (21.7% for each group) and between Primary and HSC (4.3% for each group). Women those who were attended by TBA highest proportion of them completed Pre-primary (45.5%). Surprisingly none of the women from higher educational attainment attended by MTP_1.

Concerning income, Table 24 shows that women who had a higher monthly family income were attended by the less qualified attendants compared to those whose family income was lower. For instance, 9 women belonged to highest income group, (Tk. 7001–9000). Out of them 3 were attended by MTP_2 (Nurse, SBA) but none of them by MTP_1 (qualified doctor), even 1 was attended by her relatives. On the other hand, 41 belonged to the lowest income family (Tk.1001–3000). Among them 26.8% (11 out of 41) were attended by MTP_2 and 7.31% (3 out of 41) by MTP_1 [Table 24].

It was seen that women having household heads engaged in different occupations also got different personnel as attendants during their delivery. Women from rickshaw puller family were attended by MTP_1 (qualified doctors) and MTP_2 (Nurse, FWV, SBA) at a similar rate (3.8% of each category) while women from agriculture family were attended by MTP_2 (10.6%) more than MTP_1 (3.8%). None of the women from extended family were attended by a qualified doctor. According to the birth order NGO health

workers attended child-births for the women having less than three gravida which was the highest (18.3+18.3=36.6%)**.** It is seen that in case of 1st gravida, majority of the women were attended by TBA (11.5%), which is next to NGO workers (18.3%) but in the second gravida the tendency was different. More women selected MTP_1, i.e. qualified doctors (3.8%) and MTP_2 (5.8) more than TBA (2.9) as attendants. From this, it can be assumed that women perhaps faced some complicated situations during their first gravida and they became aware by SK to receive qualified services. For this reason, they went to qualified doctors in the second gravida.

The degree of educational attainment and the monthly family income of the women hardly showed any relation with availability of attendants having particular status but occupation of the household head and number of gravida have some impact in selecting the attendants during delivery.

Table 24. Relationship between Predisposing Factors of the Respondents and Types of Birth Attendants

Predisposing Factors		Birth Attendant (N=104)											
		MTP_1 (Qualified Doctor)		MTP_2 (Nurse/FWV/ SBA)		NGO Health Worker*		TBA		Relatives and/or Neighbours		Total	
		n	%	n	%	n	%	n	%	n	%	n	%
Women's Age (in Year)	15–19	3	2.9	10	9.6	18	17.3	11	10.6	2	1.9	44	42.3
	20–24	3	2.9	9	8.7	18	17.3	5	4.8	0	.0	35	33.7
	25–29	1	1.0	3	2.9	6	5.8	3	2.9	1	1.0	14	13.5
	30–34	1	1.0	1	1.0	3	2.9	1	1.0	1	1.0	7	6.7
	35–39	1	1.0	0	.0	1	1.0	2	1.9	0	.0	4	3.8
Women's Education (Completed)	None	3	2.9	11	10.6	15	14.4	6	5.8	1	1.0	36	34.6
	Pre-primary	3	2.9	5	4.8	11	10.6	10	9.6	2	1.9	31	29.8
	Primary	3	2.9	1	1.0	6	5.8	4	3.8	0	.0	14	13.5
	Junior High School	0	.0	5	4.8	9	8.7	2	1.9	1	1.0	17	16.3
	SSC	0	.0	0	.0	4	3.8	0	.0	0	.0	4	3.8
	HSC	0	.0	1	1.0	1	1.0	0	.0	0	.0	2	1.9
Monthly Family Income (in Taka)	1001–3000	3	2.9	11	10.6	17	16.3	9	8.7	1	1.0	41	39.4
	3001–5000	2	1.9	7	6.7	15	14.4	7	6.7	2	1.9	33	31.7
	5001–7000	4	3.8	2	1.9	8	7.7	6	5.8	0	.0	20	19.2
	7001–9000	0	.0	3	2.9	5	4.8	0	.0	1	1.0	9	8.7
	9001+	0	.0	0	.0	1	1.0	0	.0	0	.0	1	1.0
Occupation of the Household Heads	Agriculture	4	3.8	11	10.6	10	9.6	5	4.8	0	.0	30	28.8
	Construction Worker	0	.0	1	1.0	1	1.0	1	1.0	0	.0	3	2.9
	Day Labour	0	.0	0	.0	7	6.7	2	1.9	1	1.0	10	9.6
	Rickshaw Puller	4	3.8	4	3.8	9	8.7	8	7.7	2	1.9	27	26.0
	Service	0	.0	1	1.0	6	5.8	1	1.0	1	1.0	9	8.7
	Small Business	1	1.0	4	3.8	10	9.6	4	3.8	0	.0	19	18.3
	Others	0	.0	2	1.9	3	2.9	1	1.0	0	.0	6	5.8
Family Structure of the Women	Extended	0	.0	6	5.8	8	7.7	5	4.8	1	1.0	20	19.2
	Nuclear	9	8.7	17	16.3	38	36.5	17	16.3	3	2.9	84	80.8
Gravida of the Women	1	1	1.0	10	9.6	19	18.3	12	11.5	2	1.9	44	42.3
	2	4	3.8	6	5.8	19	18.3	3	2.9	0	.0	32	30.8
	3	2	1.9	5	4.8	5	4.8	3	2.9	1	1.0	16	15.4
	4	1	1.0	1	1.0	1	1.0	2	1.9	0	.0	5	4.8
	5	1	1.0	1	1.0	1	1.0	0	.0	1	1.0	4	3.8
	6	0	.0	0	.0	1	1.0	1	1.0	0	.0	2	1.9
	7	0	.0	0	.0	0	.0	1	1.0	0	.0	1	1.0

*SS, NHW, Trained TBA

Table 25 Types of Birth Attendants and Respondents' Predisposing Factors

Predisposing Factors		Birth Attendants										Total (n=104)	
		MTP_1 Qualified Doctor (n=9)		MTP_2 (Nurse/FWV) (n=23)		NGO Health Worker (n=46)		TBA (n=22)		Relatives and/or neighbours (n=4)			
		n	%	N	%	n	%	N	%	n	%	n	%
Women's Age (in Year)	15–19	3	33.3	10	43.5	18	39.1	11	50.0	2	50.0	44	42.3
	20–24	3	33.3	9	39.1	18	39.1	5	22.7	0	.0	35	33.7
	25–29	1	11.1	3	13.0	6	13.0	3	13.6	1	25.0	14	13.5
	30–34	1	11.1	1	4.3	3	6.5	1	4.5	1	25.0	7	6.7
	35–39	1	11.1	0	.0	1	2.2	2	9.1	0	.0	4	3.8
Women's Education (Completed)	None	3	33.3	11	47.8	15	32.6	6	27.3	1	25.0	36	34.6
	Pre-primary	3	33.3	5	21.7	11	23.9	10	45.5	2	50.0	31	29.8
	Primary	3	33.3	1	4.3	6	13.0	4	18.2	0	.0	14	13.5
	Junior High School	0	.0	5	21.7	9	19.6	2	9.1	1	25.0	17	16.3
	SSC	0	.0	0	.0	4	8.7	0	.0	0	.0	4	3.8
	HSC	0	.0	1	4.3	1	2.2	0	.0	0	.0	2	1.9
Monthly Family Income (in Taka)	1001–3000	3	33.3	11	47.8	17	37.0	9	40.9	1	25.0	41	39.4
	3001–5000	2	22.2	7	30.4	15	32.6	7	31.8	2	50.0	33	31.7
	5001–7000	4	44.4	2	8.7	8	17.4	6	27.3	0	.0	20	19.2
	7001–9000	0	.0	3	13.0	5	10.9	0	.0	1	25.0	9	8.7
	9001+	0	.0	0	.0	1	2.2	0	.0	0	.0	1	1.0
Occupation of the Household Heads	Agriculture	4	44.4	11	47.8	10	21.7	5	22.7	0	.0	30	28.8
	Construction Worker	0	.0	1	4.3	1	2.2	1	4.5	0	.0	3	2.9
	Day Labour	0	.0	0	.0	7	15.2	2	9.1	1	25.0	10	9.6
	Rickshaw Puller	4	44.4	4	17.4	9	19.6	8	36.4	2	50.0	27	26.0
	Service	0	.0	1	4.3	6	13.0	1	4.5	1	25.0	9	8.7
	Small Business	1	11.1	4	17.4	10	21.7	4	18.2	0	.0	19	18.3
	Others	0	.0	2	8.7	3	6.5	1	4.5	0	.0	6	5.8
Family Structure of the Women	Extended	0	.0	6	26.1	8	17.4	5	22.7	1	25.0	20	19.2
	Nuclear	9	100.0	17	73.9	38	82.6	17	77.3	3	75.0	84	80.8
Gravida of the Women	1	1	11.1	10	43.5	19	41.3	12	54.5	2	50.0	44	42.3
	2	4	44.4	6	26.1	19	41.3	3	13.6	0	.0	32	30.8
	3	2	22.2	5	21.7	5	10.9	3	13.6	1	25.0	16	15.4
	4	1	11.1	1	4.3	1	2.2	2	9.1	0	.0	5	4.8
	5	1	11.1	1	4.3	1	2.2	0	.0	1	25.0	4	3.8
	6	0	.0	0	.0	1	2.2	1	4.5	0	.0	2	1.9
	7	0	.0	0	.0	0	.0	1	4.5	0	.0	1	1.0

2.2.2. Need Felt by the Respondents and their Kin for Skilled Birth Attendants

In the present study only the respondents were approached by the researcher for collecting required information. So the data for the research collected were mainly from the pregnant women. That means they provided information about themselves, family members and other concerned with it. Sometimes other relatives supplemented the information.

Among the respondents, 67.3% felt the need for facility based delivery. Similarly respondents' husbands (65.4%), household heads (48.1%), female household heads (26.0%), and health workers (88.5%) also felt need for institutional delivery. It was seen that nearly half of the household heads felt the necessity of facility based delivery for the respondents but only one-fourth female household head felt it. Respondents and their kin also provided their opinion about the desirable birth attendants. Over forty-four percent respondents felt need for skilled attendants or Medically Trained Providers (MTP) during their delivery. Similarly, husbands (50.0%), household heads (32.7%), female household heads (26.9%), and health workers (55.8%) felt necessity for skilled attendants at delivery for the respondents (Table 26).

Table 26. Felt Need for Receiving EmOC

Need felt by-* / Need felt about	Respondents	Husbands	Household Heads	Female Household Heads	Health Workers
	%	%	%	%	%
Facility based delivery (N=104)	67.3	65.4	48.1	26.0	88.5
Delivery with MTP (N=104)	44.2	50.0	32.7	26.9	55.8
Management of delivery complication by MTP (n=27)	92.6	88.9	74.1	70.4	100.0

*Multiple responses

3. Delivery Complications and its' Management

3.1. Complications during Child-birth

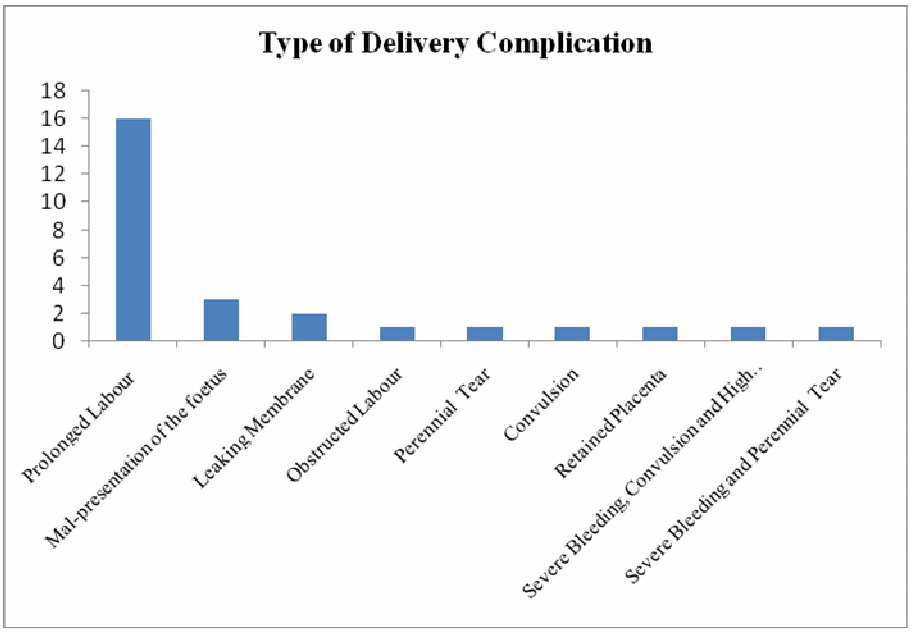
3.1.1. Types of Delivery Complications

During delivery, 26.0% women developed complications. The types of complications were convulsion, leaking membrane, mal-presentation, obstructed labour, perennial tear, prolonged labour, retained placenta, severe bleeding, and high Blood Pressure. Prolonged labour was the common complication (59.3%) for the respondents. The second type of complication was mal-presentation (11.3%). A few women faced two or more complications during delivery. Less commonly reported complications included convulsion, leaking membrane, obstructed labour, perennial tear, retained placenta, severe bleeding, and high BP. (Table 27).

Table 27. Types of Complication during Child-birth

Category		**n**	**%**
Complication Occurred at Delivery (N=104)	No	77	74.0
	Yes	27	26.0
Types of Delivery Complication (n=27)	Prolonged Labour	16	59.3
	Mal-presentation of the foetus	3	11.1
	Leaking Membrane	2	7.4
	Obstructed Labour	1	3.7
	Perennial Tear	1	3.7
	Convulsion	1	3.7
	Retained Placenta	1	3.7
	Severe Bleeding, Convulsion and High BP	1	3.7
	Severe Bleeding and Perennial Tear	1	3.7

Figure 5. Types of Delivery Complication (n=27)



3.1.2. Predisposing Factors and Types of Delivery Complications

It was observed that out of 27 women who faced complication during delivery 18 were younger aged (below 20 years). Even two got married before the age of 15 years. Most of the women (20 out of 27) did not complete primary education, 10 were illiterate. Except one, all of them were housewives. Twenty-one (11+10) women's monthly family income was below Tk. 5,000. About the occupations of household heads majority of them (9) were agricultural labour followed by rickshaw pullers (7) and small businessmen (5). Husbands of all the women were the sole earning members of their family. Most of the respondents were Muslim (25). Majority of them lived in nuclear family (22). Fourteen women were at their 1st gravida. Eleven women did not complete all doses of TT injections. It was observed that those two women who were got married before the age of 15 years, both of them faced complications in their last delivery. One woman faced retained placenta and the other one experienced mal-presentation of the foetus (Table 28).

Table 28. Types of Delivery Complications and Respondents' Predisposing Factors

Predisposing Factors		Types of Delivery Complication (n=27)									Total
		Convulsion	Leaking Membrane	Mal-presentation	Obstructed Labour	Perennial Tear	Prolonged Labour	Retained Placenta	Severe Bleeding+ Convulsion+High BP	Severe Bleeding+ Perennial Tear	
Women's Age	15–19	1	1	2	1	0	12	1	0	0	18
	20–24	0	0	1	0	0	3	0	0	0	4
	25–29	0	0	0	0	1	0	0	0	1	2
	30–34	0	1	0	0	0	1	0	0	0	2
	35–39	0	0	0	0	0	0	0	1	0	1
	Total	1	2	3	1	1	16	1	1	1	27
Age at First Marriage of the Women	<15	0	0	1	0	0	0	1	0	0	2
	15–19	1	2	2	1	1	16	0	1	1	25
	Total	1	2	3	1	1	16	1	1	1	27
Women's Education (Completed)	None	1	0	1	0	0	7	0	1	0	10
	Pre-primary	0	1	2	0	1	4	1	0	1	10
	4.Junior High School	0	1	0	1	0	4	0	0	0	6
	SSC	0	0	0	0	0	1		0	0	1
	Total	1	2	3	1	1	16	1	1	1	27
Women's Occupation	Business	0	0	0	0	0	0	0	1	0	1
	House Wife	1	2	3	1	1	16	1	0	1	26
	Total	1	2	3	1	1	16	1	1	1	27
Monthly Family Income	1001–3000	1	0	1	0	0	9	0	0	0	11
	3001–5000	0	1	2	1	1	2	1	1	1	10
	5001–7000	0	1	0	0	0	3	0	0	0	4
	7001–9000	0	0	0	0	0	2	0	0	0	2
	Total	1	2	3	1	1	16	1	1	1	27
Occupation of the Household Heads	Agriculture	0	1	1	1	0	5	1	0	0	9
	Construction Worker	0	0	0	0	0	1	0	0	0	1
	Day Labour	0	0	1	0	0	1	0	0	0	2
	Rickshaw Puller	1	0	1	0	1	3	0	1	0	7
	Small Business	0	1	0	0	0	3	0	0	1	5
	Others	0	0	0	0	0	3	0	0	0	3
	Total	1	2	3	1	1	16	1	1	1	27
Religion	Hindu	0	1	0	0	0	1	0	0	0	2
	Islam	1	1	3	1	1	15	1	1	1	25
	Total	1	2	3	1	1	16	1	1	1	27
Family Structure	Extended	0	0	0	1	0	4	0	0	0	5
	Nuclear	1	2	3	0	1	12	1	1	1	22
	Total	1	2	3	1	1	16	1	1	1	27
Gravida	1	0	1	3	1	0	9	0	0	0	14
	2	0	0	0	0	0	4	1	0	0	5
	3	1	0	0	0	1	2	0	0	1	5
	4	0	1	0	0	0	0	0	0	0	1
	5	0	0	0	0	0	1	0	1	0	2
	Total	1	2	3	1	1	16	1	1	1	27

Regarding the places of delivery, the women who faced complications in their recent child-birth, 15 delivered at Government hospital, 7 at home and 5 at private clinics & NGO hospital. Out of those 16 women who suffered prolonged labour, 9 delivered at Govt. health facilities and 4 at private clinic/ NGO hospital. Other women who delivered at Govt. health facilities suffered from mal-presentation (3), leaking membrane (1), obstructed labour (1) and severe bleeding with perennial tear (1).

Despite experiencing complications a few women delivered at home. They were suffering from prolonged labour (3), leaking membrane (1), retained placenta (1), perennial tear (1) and severe bleeding, convulsion & HBP (1). Husbands were the prime decision makers about selecting the place of delivery for the women with obstetric complications. NGO health workers influenced eight women for choosing place of delivery. Six women decided herself about their place of recent child-birth (Table 29).

Table 29. Types of Delivery Complications and Places of Delivery

Category		**Types of Delivery Complications (n=27)**									
		Convulsion	Leaking Membrane	Mal-presentation	Obstructed Labour	Perennial Tear	Prolonged Labour	Retained Placenta	Severe Bleeding + Convulsion+ High BP	Severe Bleeding + Perennial Tear	Total
Place of Delivery	Govt. Hospital	0	1	3	1	0	9	0	0	1	15
	Home	0	1	0	0	1	3	1	1	0	7
	Private/NGO Hospital	1	0	0	0	0	4	0	0	0	5
Total		1	2	3	1	1	16	1	1	1	27
Decision Maker about Place of Delivery in Response to Nature of Complications	Female Household Head	0	0	0	1	0	1	0	0	0	2
	Health Worker	1	0	0	0	0	7	0	0	0	8
	Household Head	0	0	0	0	0	1	0	0	0	1
	Husband	0	2	1	0	1	3	1	1	1	10
	Respondent herself	0	0	2	0	0	4	0	0	0	6
Total		1	2	3	1	1	16	1	1	1	27

3.1.3. Comparison between Obstetric Complications during Pregnancy and Child-birth

A total of forty eight women developed complication during pregnancy and childbirth. Among them forty three had been suffering from complications during pregnancy. Table 30 shows that out of them only 11 women received emergency obstetric care (EmOC) for the management of complication. On the other hand during delivery, 27 women developed complications while 23 received EmOC. It was noted that 32 (74.4%) women at the period of pregnancy and four women (13.8%) during their delivery did not receive EmOC, even in their life threatening condition. During pregnancy, the women faced complication like anaemia, high blood pressure, oedema, convulsion, and severe vomiting while during delivery, the complications were like convulsion, leaking membrane, mal-presentation, obstructed labour, perennial tear, prolonged labour, retained placenta, severe bleeding and high blood pressure. A few women faced two or more complications during pregnancy or child-birth. The study showed some specification in complications during both the periods, such as: during pregnancy, 14 women suffered from anaemia. Among them, 4 faced prolonged labour during delivery but 9 of them were without any complications at their delivery stage. Eight women suffered from HBP during pregnancy. Among them, 7 suffered prolonged labour during delivery. So, HBP may be a vital reason in causing prolonged labour. Three women had mal-presentation during child-birth. Among them, one had convulsion and another had severe vomiting during their pregnancy but one of them did not face any complication at pregnancy period. Those who suffered from severe vomiting in pregnancy (2) developed mal-presentation and obstructed labour. Three women were suffering from abdominal pain in pregnancy. Out of them, two had perennial tear during delivery (Table 30).

It was revealed from the study that some complications during pregnancy period perhaps prompted some other complications at the delivery period.

Those are likely to be related factors. More research are needed to address this issue.

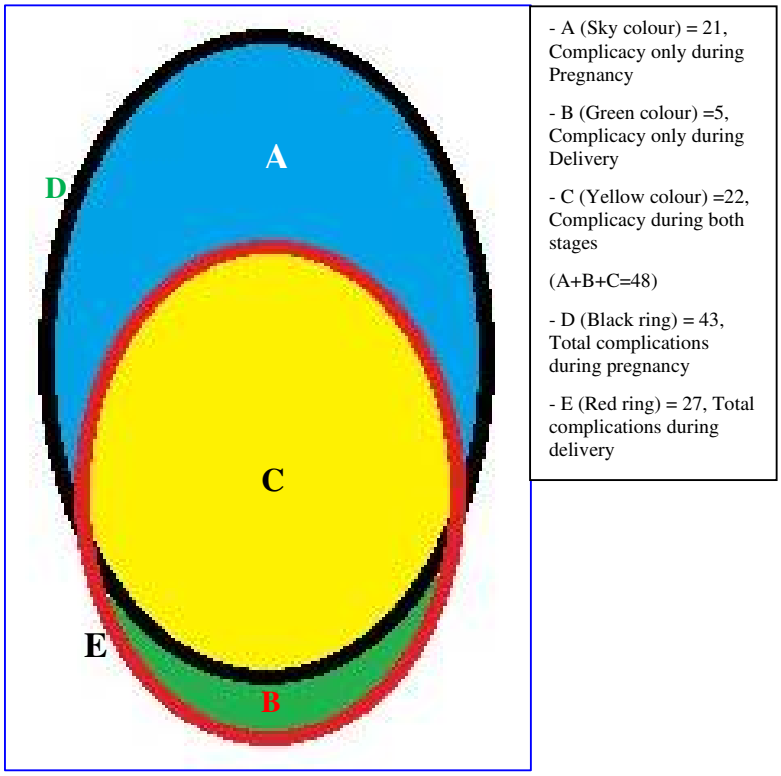
Table 30. Comparison of Obstetric Complications during Pregnancy and Child-birth

Category		Types of Complication [Both Stages (Delivery & Pregnancy) =22, Only at Delivery =5, Only at Pregnancy =21] (N=48)																	
		Complications during Pregnancy																	
		Convulsion (1)		Leaking Membrane (2)		Mal-presentation (3)		Obstructed Labour (1)		Perennial Tear (1)		Prolonged Labour (16)		Retained Placenta (1)		Severe Bleeding, Convulsion & High BP (1)		Severe Bleeding & Perennial Tear (1)	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Type of Complications Occurred During Pregnancy	Abdominal Pain (5)	0	.0	0	.0	0	.0	0	.0	1	2.1	1	2.1	0	.0	0	.0	1	2.1
	Anaemia (14)	0	.0	1	2.1	0	.0	0	.0	0	.0	4	8.3	0	.0	0	.0	0	.0
	Convulsion (3)	0	.0	0	.0	1	2.1	0	.0	0	.0	0	.0	0	.0	0	.0	0	.0
	Oedema (8)	0	.0	0	.0	0	.0	0	.0	0	.0	1	2.1	0	.0	0	.0	0	.0
	Oedema & High BP (1)	0	.0	0	.0	0	.0	0	.0	0	.0	0	.0	0	.0	1	2.1	0	.0
	High BP (8)	1	2.1	0	.0	0	.0	0	.0	0	.0	7	14.6	0	.0	0	.0	0	.0
	High BP & Convulsion (2)	0	.0	0	.0	0	.0	0	.0	0	.0	1	2.1	0	.0	0	.0	0	.0
	Severe Vomiting (2)	0	.0	0	.0	1	2.1	1	2.1	0	.0	0	.0	0	.0	0	.0	0	.0

Figure 6 and Table 31 show that among all the respondents (104) totalling 48 women faced complications during obstetric period (i.e. in both periods). A point needs to be cleared that all of them did not suffer in both stages. During pregnancy period, 43 women faced complications. Out of those 43 women, 22 again faced complications during delivery. So, 21 women could overcome their problems of pregnancy period by being aware and taking proper care and treatment. The achievement of the women overcoming the complications is perhaps due to support, suggestion, cooperation and visit from SK, SS,

FWA, FWV, HA as well as the positive approach of the respondents and their family members in receiving the treatment they required at that period.

Figure 6. Complications during Pregnancy and Delivery (n=48)



A. Sky colour represents the number of those women who experienced complications only at pregnancy (21)

B. Green colour represents the number of those women who faced complications only at delivery (5)

C. Yellow colour represents those who had been suffering from complications during both the stages, i.e. at pregnancy and delivery (22)

A=21, B=5, C=22; (A+B+C=48)

D. Black Ring represents the total number of women who were suffering from Complication during Pregnancy (43). Among them 22 again faced complications at delivery and 21 did not experienced during delivery

E. Red Ring represents those who experienced Delivery Complication (27). 22 women out of these 27, were those who faced complications during pregnancy; and 5 women did not faced any complication during pregnancy.

This clearly indicates that those women from rural area have advanced much so far their awareness. Similarly availability of health services around them enabled them to receive treatment. This advancement also indicates that the steps taken in the field of maternal health or obstetric care are proving effective despite the existing limitations. However, 27 women faced complications during delivery, who were out of those 48 women who were suffering from complications at different periods. Among them, 5 women were included in the list who were free from complications during pregnancy period. Emergency may arise at any time during pregnancy. Hence, thorough preparedness is necessary for the concerned persons. But it was seen that 22 women suffered from different complications at both stages. This is undoubtedly a dismal picture. This adverse situation occurred for different reasons. Those women who experienced complications during pregnancy were more likely to suffer during delivery too. So they needed even more awareness and preparedness for probable emergency. But somehow they lacked in their effort for prevention. Such lacking was perhaps due to their indifference to earlier complications and lack of awareness of existing advantages, advanced health care system and efforts from different corners of the health sectors.

Table 31. Complications during Pregnancy and Delivery (n=48)

Category		**Complicacy Occurred During Delivery**					
		Yes		**No**		**Total**	
		n	%	n	%	n	%
Complicacy Occurred During Pregnancy	Yes	22	45.8	21	43.8	43	89.6
	No	5	10.4	0	.0	5	10.4
	Total	27	56.2	21	43.8	48	100.0

3.2. Management of Delivery Complications

One of the major objectives of the study is to understand women's nature of health seeking behaviour in response to perceived complications. All women who had reported one or more complications were asked a series of questions concerning care seeking behaviour in relation to the complications during the reference period (i.e. last delivery). It was found that the steps taken for the management of complications were different in the case of different respondents.

3.2.1. Steps Taken for the Management of Complication during Child-birth

Women had managed their delivery complications by visiting different places. Some of them received service from more than one provider. Almost all of them initially tried to solve the problems by utilising locally available services, such as: visiting Gram-doctor, homeo practitioners, untrained TBAs. But finally almost all of them went to receive treatment from medically trained providers at health facilities. A few of them depended on only trained health worker's advice. In this section the steps taken to receive treatment which were only rendered by the trained and medically trained providers have been considered. Women those who faced complication during child-birth 85.2% of them had taken steps for its management from MTPs or any trained providers. On the other hand 14.8% women faced obstetric complications but did not take any step (Table 32). Studies in other countries indicated higher percentage of care-seeking for maternal morbidities. For instance, in rural Haiti, 75% of the pregnant women reported seeking care in the formal health sector for obstetric complications (White *et al.*, 2006). The present data are consistent with the study. It may be due to the contribution of the IMNCS project in the study area. It was found that majority of the women with complications went to the Upazilla Health Complexes (47.8%). Women also went to District Hospital (21.7%), Maternal & Child Welfare Centre (8.7%), NGO (BRAC) hospital, and

private clinic (13.1+4.3=17.4%). It was seen that in some cases the NGO health personnel (SS along with other health staff of IMNCS project) made the women enable to reach the Government hospitals. Most of the complications were managed by the mid-level health care providers (nurses or FWVs) at Government health facilities. Because, Upazilla Health Complex is the common place where skilled providers and experienced health professionals are available.

Table 32. Final Step Taken for the Management of Complications during Child-birth

Management of Delivery Complication (n=27)			**n**	**%**
Steps Taken for the Management of Delivery Complications			23	85.2
No Step Taken			4	14.8
Total			27	100
Final Step Taken for Receiving EmOC from→ (n=23)	Private/NGO Sector	Called SBA at Home	1	4.3
		Went to NGO (BRAC) Hospital	1	4.3
		Went to Private Clinic	3	13.1
	Government Sector	Went to District Hospital	5	21.7
		Went to MCWC	2	8.7
		Went to UHC	11	47.8
	Total		23	100

Table 33 shows that majority of the women with complications received obstetric care from Government health facilities (82.6%) followed by private clinics (21.7%), NGO health facility (8.7%) and private health providers (8.7%).[20] Despite the insufficient medical services in the Government hospitals, most of the women went to their nearest Government hospitals. Although the public hospitals are supposed to bear all the expenses relating to the treatment and diagnostic procedures in the inpatient wards, but the reality is different from expectation. Inspite of that Government hospitals are still the mainstream complicacy management service facilities for the rural women in Bangladesh.

[20] Multiple responses were counted.

Table 33. Place of Service Received for the Management of Delivery Complications

Place of Service Received for the Management of Delivery Complications *(n=23)	**n**	**%**
Government Health Facilities	19	82.6
Private Clinics	5	21.7
NGO (BRAC) Health Facility	2	8.7
Private Health Providers (SBA/FWV)	2	8.7

*Multiple responses

3.2.2. Predisposing Factors of the Respondents and Management of Delivery Complications

According to the socio-economic characteristics of the respondents, Table 34 shows that out of those 23 women who received treatment for management of complications 82.6% went to the Government hospital, 21.7% private clinics, 8.7% visited private health providers and 8.7% NGO (BRAC) health facilities. This indicates that majority of the women's first preference was Government hospitals. Besides, the highest users of private clinic's were women aged between 20–24 years. This group did not take any service from NGOs hospital. The women belonged to age group 25–29 received service from all types of medical facilities, such as: 13.0% from Government hospital, 4.3% from NGOs clinic and 4.3% from private clinic. Only two women from the age group 30–34 faced complicacy and received service from private clinic and NGO hospital.

This Table also manifests that all the women with higher educational attainment (from junior high school to HSC), except 1, received treatment from only Government hospitals (21.7%) and none of them visited NGOs hospitals or private clinics. There is an opposite scenario in the case of the women with lower educational attainment (Pre-and primary), such as: 21.7% of them received treatment from private clinics. It is noticeable that one woman who had completed SSC level only depended on health worker's advice and did not visit any medically trained provider.

Regarding economic status of the women, Table shows that women those who had a higher family income (Tk. 7001–9000) received treatment from only Government health facility and none of them visited private clinics whereas 8.6% from lowest income group (Tk. 1001–5000) received treatment from private clinic. Again women from middle income family (Tk. 5001–7000) received equal amount of treatment from Government health facility (13.0%) and private clinic (13.0%). Only one woman from highest income group (Tk. 9000+) experienced complication during pregnancy but she did not receive any treatment from qualified sector and depended on only private health provider's advice.

The Table also manifests that occupation of the household head was very significant in taking the services. Women from rickshaw puller family received services from all available sectors and did not depend on health workers, such as: Government hospital (17.4%), NGOs clinic (4.3%) and private clinic (4.3%). Women those who visited Government hospitals for management of delivery complication, 17.4% (among all respondent) came from rickshaw pulling family which was second highest among the recipients of services provided by the Government health facility. Women from rickshaw puller family and small business family received equal proportion of treatment from Government health facility (17.4% for each group) and private clinic (4.3% for each group). It is worth mentioning that only 4.7% women from agriculture family visited Government health facility for management of complications during their pregnancy (Table 16) but in case of delivery complication 39.1% received treatment from Government health facility.

The Table also illustrates that women from nuclear family with obstetric complication (16 women out of 23) did not depend only on private health provider's advice. They went to the Government hospital (69.6%), private clinic (21.7%) and NGOs clinic (4.3%).The picture was opposite in the case

of extended family. The women from extended family received services only from Government health facility 13.0% and two of them only depended on private health providers to manage obstetric complication.

The Table also shows that women those who were at their 2nd gravida, 13.2% of them went to private clinic, which was next to the Government hospital (17.4%), and highest among the recipients of private clinic. Only two women faced complication at their fourth gravida. They received service from Government hospital and private clinic. The noticeable point is that most of the women received their service for the management of complications from Government hospitals.

A point needs to be cleared. Table 32 demonstrates the place from where women were able to manage their obstetric complications but before that, i.e, taking a final decision they visited several places simultaneously. Table 33 & 34 represents these steps taken by the women.

Table 34. Relationship between Socio-economic and Reproductive Status of the Respondents and Place of Receiving Services for the Management of Delivery Complications

Socio-economic and Reproductive Status		Place of Receiving Services for the Management of Delivery Complications* (n=23)							
		Govt. Health Facilities		NGO Health Facility		Private Clinics		Private Health Providers	
		n	%	n	%	n	%	n	%
Women's Age (in Year)	15–19	10	43.5	0	0.0	1	4.3	0	0.0
	20–24	6	26.1	0	0.0	2	8.7	2	8.7
	25–29	3	13.0	1	4.3	1	4.3	0	0.0
	30–34	0	0.0	1	4.3	1	4.3	0	0.0
	Total	19	82.6	2	8.7	5	21.7	2	8.7
Women's Education (Completed)	None	7	30.4	0	0.0	0	0.0	1	4.3
	Pre-primary	3	13.0	1	4.3	2	8.7	0	0.0
	Primary	4	17.4	1	4.3	3	13.0	0	0.0
	Junior High School	4	17.4	0	0.0	0	0.0	0	0.0
	SSC	0	0.0	0	0.0	0	0.0	1	4.3
	HSC	1	4.3	0	0.0	0	0.0	0	0.0
	Total	19	82.6	2	8.7	5	21.7	2	8.7
Monthly Family Income (in Taka)	1001–3000	7	30.4	0	0.0	1	4.3	1	4.3
	3001–5000	7	30.4	1	4.3	1	4.3	0	0.0
	5001–7000	3	13.0	1	4.3	3	13.0	0	0.0
	7001–9000	2	8.7	0	0.0	0	0.0	0	0.0
	9001+	0	0.0	0	0.0	0	0.0	1	4.3
	Total	19	82.6	2	8.7	5	21.7	2	8.7
Occupation of the Household Heads	Agriculture	9	39.1	0	0.0	3	13.0	1	4.3
	Rickshaw Puller	4	17.4	1	4.3	1	4.3	0	0.0
	Service	1	4.3	0	0.0	0	0.0	1	4.3
	Small Business	4	17.4	1	4.3	1	4.3	0	0.0
	Others	1	4.3	0	0.0	0	0.0	0	0.0
	Total	19	82.6	2	8.7	5	21.7	2	8.7
Family Structure of the Women	Extended	3	13.0	1	4.3	0	0.0	2	8.7
	Nuclear	16	69.6	1	4.3	5	21.7	0	0.0
	Total	19	82.6	2	8.7	5	21.7	2	8.7
Gravida of the Women	1	11	47.8	0	0.0	1	4.3	1	4.3
	2	4	17.4	1	4.3	3	13.0	1	4.3
	3	3	13.0	1	4.3	0	0.0	0	0.0
	4	1	4.3	0	0.0	1	4.3	0	0.0
	Total	19	82.6	2	8.7	5	21.7	2	8.7

*Multiple responses

3.2.3. Assessment of Nature of Complications Management during Pregnancy and Delivery

Table 35 shows that in many cases, the nature of management of complications was different in different stages. Out of 43 women, 16 visited Gram-doctor for the management of complication during pregnancy. Only 5 women visited qualified doctors and 3 FWV. In case of 2 women the FWVs were called upon at home for such purpose (viz Table 15). On the other hand at the time of delivery, out of 27 women **11** women went to the UHC, 5 went to district hospital, 3 went to private clinics, **one** woman called SBA at home while another 2 women went to the MCWC for complication management during delivery. Five women, who did not face any problem during pregnancy, among them one did not refer but called SBA at home for management of delivery complication**.**

Table 35. Management of Obstetric Complications during Pregnancy and Child-birth

Category		**Management of Delivery Complication (27)**						
		No step taken	**Called SBA at Home**	**Went to BRAC Hospital**	**Went to Private Clinic**	**Went to District Hospital**	**Went to MCWC**	**Went to UHC**
Management of Pregnancy. Complication	Called on FWV at Home	0	0	0	0	1	0	0
	Received Advice from Home Visitor	2	0	1	0	1	0	2
	Reported Nurse	0	0	0	0	0	0	1
	Visited FWV	0	0	0	0	0	1	1
	Visited Gram-doctor	1	0	0	1	2	0	3
	Visited Qualified Doctor	0	0	0	2	1	1	1
	Complication Not Occurred at Pregnancy	1	1	0	0	0	0	3
	Total	4	1	1	3	5	2	11

3.2.4. Felt Need for the Management of Child-birth & Obstetric Complications

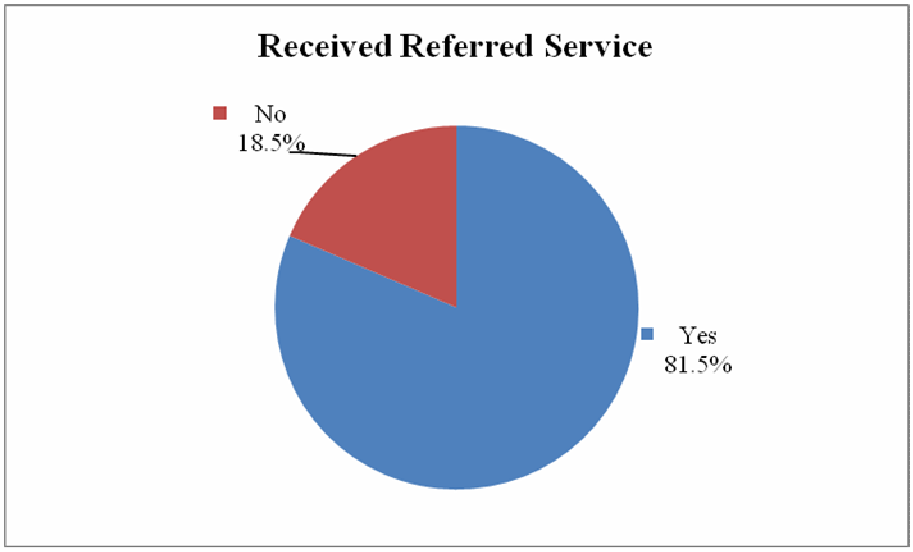
In this research, only the respondents were approached for required information. So the data were collected from the pregnant women. That means they provided information about themselves, family members and other concerned with it. Sometimes their family members also provided information during informal discussion. Among the respondents, 67.3% felt need for institutional delivery. Respondents' husbands (65.0%), household heads (48.1%), female household heads (26.0%), and health workers (88.5%) also felt necessity for facility based delivery. Al most all health workers felt this necessity but only one-fourth female household head felt it. Respondents and their family members provided their opinion about the necessity of trained birth attendants. Forty-two percent respondents felt need for skill attendants or Medically Trained Providers (MTP) during their delivery. Similarly, Husbands (50.0%), household heads (32.7%), female household heads (26.9%), and health workers (55.8%) also felt that. Respondents and their family members also expressed their opinion about the steps to be taken for management of delivery complications. Over ninety-two percent respondents felt the need for medically trained provider's services for that. On the other hand, 88.9% husbands, 74.1% household heads and 70.4% female household heads felt for that. All the health workers felt the need of trained provider's services for all women who faced complications during delivery (Table 26).

3.2.5. Mode of Referral Service

Women having complications during child-birth were referred to various facilities, such as: Upazilla Health Complex, District Hospital, Maternal and Child Welfare Centre, NGO hospital and private clinic. A few women were referred to more than one facility for the management of complication. Figure 7 shows that out of those 27 women who had been suffering from obstetric complications during delivery, 22 (81.5%) had been referred to the

appropriate or upper level facilities (Figure 7). Five women did not refer among them one called SBA at home and the rest of the 4 women did not take emergency services from medically trained providers.

Figure 7. Referral Service



Most of the respondents were referred by the *Shasthya Shebika* (SS). A few women were referred by FWV (Table 36). The respondents were referred to the places where higher treatment facilities could be obtained depending on their availability. Sometimes SS intentionally made delay in referring women to appropriate facilities. Because there was no provision of incentive for referral rather an amount of Tk. 150 was allocated for attending delivery at home. In addition they might get tips from women's family. So, in many cases they were not interested to refer, rather they tried to assist at home based delivery. After realising the reality, the IMNCS project revised its' implementation policy. At present an incentive is provided to the SS and/or NHW for referring women to the facility for delivery or management of obstetric complication (that has been implemented after completing the major part of the field work of research).

Table 36. Referral System

Referral System (n=22)	**n**	**%**
FWV's home to UHC	1	4.5
SS to BRAC Hospital to Private Clinic to District Hospital	1	4.5
SS to BRAC Hospital	1	4.5
SS to District Hospital to Private Clinic	2	9.1
SS to MCWC to District Hospital	1	4.5
SS to MCWC	2	9.1
SS to UHC	10	45.5
SS to UHC to Private Clinic to District Hospital	1	4.5
SS to District Hospital	2	9.1
SS to UHC to Private Clinic	1	4.5
Total	22	100

It was observed that during delivery when condition worsened, the patient was referred to the hospital. During this period, sometimes disagreement arose between SS and Gram-doctor regarding the referral place. The SS wanted to refer the women to the Government hospital because she would get incentive for that. On the other hand, the Gram-doctor wanted to refer the patient to the private clinics as he would get commission from clinic's authority for sending her to the clinic. The SS and the Gram-doctor wanted to refer them to different places for their personal financial benefit.

> *In case of Bilkis one Gram-doctor convinced her to go to a private clinic for her mal-presented obstetric complication. The doctor of private clinic claimed Tk. 10,000. Being unable to pay the amount she was transferred to the MCWC (Government hospital) by her husband. She had gone through a caesarean-section over there. The delivery charge and associated cost was only Tk. 4,000.*

3.2.6. Referral Chain for the Management of Complications

For the management of delivery complications, different individuals resorted to different service providers and health facilities. In this study, there was a

tendency among women and their family members to shift the patient from one service provider to another for management of complications (Table 37). A few of such examples are given below.

During her delivery Shahana was attended by her relatives first. Then a TBA was called upon. After that she confided in FWV. Finally she was transferred to the UHC. She had labour pain for 12+ hours and ultimately had still-birth.

Almost the same happened with Ambia. After failure of relatives and TBA' efforts she was sent to NGO health worker's (NHW) place. But the situation was beyond her capacity. Finally she was taken to the UHC. She delivered twin child but experienced convulsion during delivery and developed fistula later on.

In case of Beauty, first she was attended by a TBA. But after the failure of TBA her husband brought medicine from a homeo practitioner. The medicine was supposed to quicken the delivery. Still the effort was failed. Finally a Gram-doctor was called upon who provided some medication and instructions to the TBA. After that she had a normal delivery.

Shapla relied on relatives first. Then a TBA was called upon. After that, she resorted to a Gram-doctor. Unfortunately the Gram-doctor made mistake and his all efforts were failed. Then she was transferred to the MCWC. The delivery occurred in that Government hospital. Shapla was dissatisfied with the quality of services provided to her. She was suspicious about proper treatment of her neonatal. At last she went to a clinic for her neonate and received services from a qualified doctor stealthily.

At a first stage Shajina was attended by BRAC health worker (SS). Then she was sent to the UHC. Being dissatisfied with the service, she came back to a Gram-doctor and finally took medicine from a homeo practitioner. She had a normal delivery but developed obstetric fistula.

Shahinur was attended by her relatives and SS at first stage. In the second stage, she was transferred to a NGO hospital. She had labour pain for 18

hours and mal-presentation of the foetus. She had to gone through a caesarean section. After delivery, she received treatment from Gram-doctor for her post delivery complications.

Meherun was attended by a TBA first. Then she sought help from NHW. Finally she resorted to a Gram-doctor. She had six hours of labour pain and had symptom of pre-eclamsia. She died after 14 days of delivery.

Alefa, resorted to SS first. Secondly, she was sent to the UHC. She experienced six hours of labour pain. She had retained placenta and excessive bleeding which were managed by a Nurse.

Anjina was attended by her relatives. Then first a TBA, after that a NHW and later on a Gram-doctor were called upon. Finally she was transferred to the UHC. It took around 12 hours. She delivered a baby successfully but she had to pay tips of Tk. 600 to the *aya*, word boy and broker.

In case of Rupa, at first she was attended by a TBA. Then her relatives came forward to assist the TBA. After that, first a Gram-doctor and later on a FWV were called upon. At the fifth step, she was shifted to a clinic. Here all the efforts were failed. At sixth stage, she was transferred to Medical College Hospital (MCH). She did not come out successfully there. She again came back to FWV. Here she also failed. Finally she received medicine from a homeo practitioner. After all these efforts, it was found that the Gram-doctor had made mistake in her case also and ultimately she delivered a died child.

Dholi was attended by a TBA first. Next she got help from SS. Then she was shifted to a Gram-doctor. The Gram-doctor made mistake and failed to solve the problem. She was sent to the UHC. But the problem remained unsolved. She was then shifted to the district hospital. Finally she went to a clinic. All these steps took 24 hours. She had to go through a caesarean section and the cost for that was Tk. 12,000**.**

Nilufa was attended by her relatives first. Then the Gram-doctor visited her at home. Finally, she was sent to a clinic. All these process took twenty-four

hours. She had history of anaemia and at a later stage leaking membrane arose. She had to go through a caesarean but the child was dead.

Sumi was attended by NHW first. Then she was sent to the BRAC hospital. She had twenty hours of prolonged labour. She had an episiotomy. Post delivery management was not done properly. After delivery, she received service from SK. Finally she resorted to a Gram-doctor.

Khodeja was first referred to FWV's home for the management of prolonged labour. But due to shortage of necessary equipment FWV failed to manage the complication at her home and referred her to the Upazilla Health Complex.

Lima received service from NGO (BRAC) hospital during her previous delivery. At that time a relationship was built with the doctor, nurses and support staff. Although she had still birth at present delivery, she was highly satisfied with NGO hospital services.

Table 37 shows that the NGO health worker, relatives and TBA contributed jointly at the first step. In case of failure of the first step or to strengthen them, the Gram-doctors were called and as a last resort women were transferred to the Government hospital or clinics where EmOC, provided by the medically trained personnel, were available.

Table 37. Chain of Services Received for the Management of Complications during Delivery

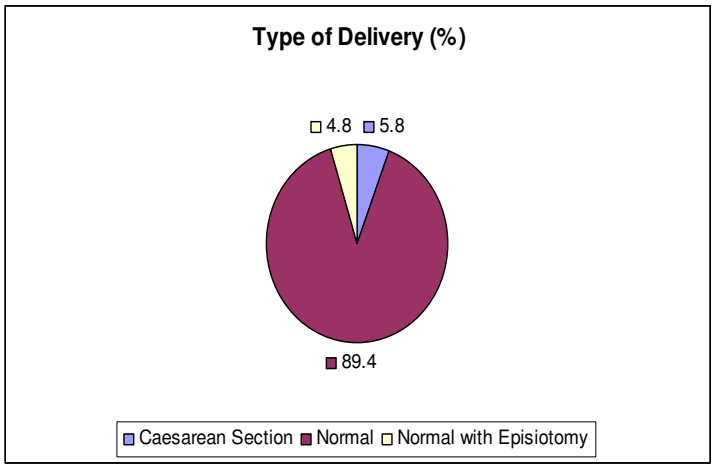
Name of a few of the Women with Complications	Place of Receiving Services											Duration of Labour Pain and Result	
	Relatives	TBA	NGO (SS,NHW,SK)	Gram-doctor	Homeo	SBA/FWV/MA	UHC	DH/ MCWC	MCH	NGO Hospital	Private Clinic	Duration above 6 Hours	Result
Shahana	1	2				3	4					12+h	Still Birth
Ambia	1	2	3				4						Twin baby, Convulsion
Beauty	2	1		4	3								Normal
Saplala	1	2		3				4			5		Gram-doctor made mistake
Shajina			1	3	4		2						Symptom of Fistula 3 months after delivery
Shahinur	1		1	3						2		18h	Mal-presentation: Caesarean
Meherun		1	2	3								6+h	Pre-eclamsia: Death after 14 days
Alefa-Nurjamal			1				2					6+h	Retain placenta & excessive Bleeding: managed by SSN
Anjina	1	2	3	4			5					12h	Attended by Nurse, Tips Tk. 600
Rupa	2	1		3	8	4 then 7			6		5	10h	Gram-doctor made mistake. Attended by FWV at her home: Neonatal death at MCH
Dholi		1	2	3			4	5			6	24h	Gram-doctor made mistake: Caesarean - cost Tk. 12,000
Rahima	1	2	3	4				5					Gram-doctor made mistake: Episiotomy at Government health facility
Nilufa	1			2							3	24+h	Anaemia, Leaking Membrane, Complicated history: Caesarean, Neonatal death
Sumi			1 then 3	4						2		20+h	Episiotomy, Post delivery management not done properly for walking soon after child-birth
Nurjahan	1		2				3					12+h	Leaking Membrane & Oedema: managed after delivery at UHC

(Here 1=1st step, 2=2nd step, 3=3rd step...8=8th step)

3.2.7. Type of Delivery

About ninety percent women gave birth by normal vaginal delivery, and the rest of them delivered with surgical procedure. Around six percent women delivered in caesarean section and about five percent with episiotomy (Figure 8).

Figure 8. Type of Delivery



3.2.8. Women Experiencing Prolonged Labour and its Management:

Sixteen women experienced prolonged labour during delivery. Their socio-economic and reproductive characteristics are described below:

Socio-economic Status: Data shows that out of those 16 women, 12 belonged to age group 15–19 years. Seven women had no education. All of them were housewives. Most of their (9 out of 16) monthly family income was Tk. 1000–3000 and husbands were the prime earning members for all of them. All women were Muslim except one. Twelve women lived at nuclear family. Eleven women received complete dose of tetanus toxoid (TT) vaccination. Nine women were at their 1st gravida while a few were at their 5th or more gravida. Among them, five had history of complication. One or more complications were faced by the women during their previous delivery, such as: anaemia, severe vomiting, excessive bleeding, retained placenta, prolong labour, leaking membrane, high BP, oedema and prolong labour. Among the

five women with obstetric complication, one did not take any step from qualified provider to overcome the complications, two women received services from district hospital, one from UHC and another one received services from Gram-doctor and came round.

Pregnancy Status: Out of 16 women who experienced prolonged labour during their delivery, 7 women along with the complicacy also experienced high blood pressure, 4 anaemia (HBP), 1 abdominal pain, 1 oedema and 1 HBP & convulsion. Among them 2 did not face any problem during their pregnancy. The women who faced complications in their recent delivery, most of them (22 out of 27) also faced complications in their pregnancy period. A few women suffered from more than one complication during pregnancy. Eight women suffered from only high blood pressure, one HBP with oedema and another faced HBP with convulsion, which were symptoms of pre-eclamsia. Hence, a total of 10 women had HBP. Among them, 7 suffered from prolonged labour during delivery. So, HBP may be a vital reason in causing prolonged labour. Similarly 5 women had symptoms of anaemia during pregnancy. Out of them 4 also faced prolonged labour during their delivery. In the period of recent child-birth, 1 woman faced severe bleeding, convulsion & HBP and another 1 suffered from prolonged labour.

Delivery Status: Sixteen women faced prolonged labour having different experience for its management during delivery. So far the place of delivery is concerned, 9 availed treatment from Government hospital and delivered at the same facilities, 4 went to private/NGO hospital and rest of the 3 delivered at home. In case of decision making about the places of delivery, among 16 women, BRAC representative (SS, NHW & SK) decided for 7 women, 4 women selected the place for themselves, husband decided in 3 cases, 1 was decided by female household head while another one by household head. Considering the types of delivery, 11 women had normal vaginal delivery, 3 had caesarean while two had normal with episiotomy. Concerning birth attendants, for those 16 women who were suffering from prolonged labour,

10 births were attended by MTP_2 (Nurse/FWV), 5 by MTP_1 (qualified doctors) and one by trained TBA (Table 29, 30, 37, 38).

It was seen that despite sincere efforts of the doctors, all the complications could not be managed. However, the sufferers were suggested to come later after a period. In a later spell of interviews, they were found in a miserable condition. Most of them faced complications in controlling urination. Within three months, after going through surgery they were interviewed again. It was found that they were not cured completely and facing continuous physical and mental complexities in their personal life.

Table 38. Types of Delivery Complications and Reproductive Characteristics

Category		Types of Delivery Complications (n=27)									
		Convulsion	Leaking Membrane	Mal-presentation	Obstructed Labour	Perennial Tear	Prolonged Labour	Retained Placenta	Severe Bleeding +Convulsion+High BP	Severe Bleeding + Perennial Tear	Total
Types of History of Complications at Previous Delivery	Anaemia+Oedema +Exessive Bleeding+Retained Placenta+Fever 3Plus Days	0	0	0	0	0	1	0	0	0	1
	Anaemia+Oedema +Prolong Labour	0	0	0	0	0	0	0	1	0	1
	Anaemia+Leaking Membren+Prolong Labour	0	0	0	0	0	1	0	0	0	1
	Anaemia+prolong Labour+Excesive Bleeding+4Neonatal Death	0	0	0	0	0	1	0	0	0	1
	Oedema+High BP	0	0	0	0	1	0	0	0	0	1
	Oedema+Prolong Labour	1	0	0	0	0	0	0	0	0	1
	Leaking Membrane During Pregnancy	0	0	0	0	0	1	0	0	0	1
	Severe Vomiting+Oedema	0	0	0	0	0	1	0	0	0	1
Type of Delivery	Caesarean	1	0	0	1	0	3	0	0	0	5
	Normal	0	2	2	0	1	11	1	1	1	19
	Normal with Episiotomy	0	0	1	0	0	2	0	0	0	3
Birth Attendants	MTP (Nurse/FWV)	0	1	3	0	0	10	0	0	1	15
	Qualified Doctor	1	0	0	1	0	5	0	0	0	7
	TBA	0	1	0	0	1	0	1	1	0	4
	Trained TBA/NHW	0	0	0	0	0	1	0	0	0	1

Those women who experienced prolonged labour pain all of them had been suffering from labour pain for more than 12 hours. Among them, three women delivered at home at last, 2 of them attended by FWV & Nurse. Majority of the women delivered at health facility. Among them, nine women delivered at Government hospital and the rest four at private clinics or NGO hospitals. One woman (Shova) did not want to go to the facility due to fear and embarrassment towards hospital and male doctor, but SS and family members convinced her to go and at last she went. Almost all women received obstetric services from various sources. Among them, 10 women received treatment from Government health facility.

4. Causes of not Receiving Obstetric Care during Child-birth and Obstetric Complications

It was apparent from the Table 26 that majority of the respondents and their family members felt need for receiving obstetric care during childbirth and for management of obstetric complicacies but some socio-economic factors prevented them from availing that. Causes of not receiving obstetric care during childbirth and related complications have been described in this section.

Financial Constraints: Financial constraints were found actively related to all other problems. This factor determined the nature of vehicle, place of delivery, quality of service and medicine, assurance of better service etc. In selecting transport, financial condition and willingness to spend money played a vital role. In the present study 63.6% respondents reported that financial hardship was the main cause of home delivery. Majority of the women (24.7%) belonged to the age group 20–24 identified financial constraints as main cause. Women those who had monthly income between Tk. 1001–3000 and Tk. 3001–5000 reported financial constraints as main cause (respectively 22.1% and 20.8%). Those who reported financial constraints as main problem most of their household heads were engaged in agriculture (22.1%). Most of the respondents informed that they were often asked to buy expensive medicine and other necessary materials on emergency. But often those who were incapable of buying them were insulted, harassed or they faced difficult situations. Giving *Bakshish* (tips) for ensuring better services was found to be a common practice. The better capable were better provided and less capable were less provided. It was found that financial crisis increased gradually with the number of gravidas. It was assumed that the crisis arose and increased as the number of family members increased. Besides, daily life expenditure, increasing demands of the children, increasing medical expenditure of the elder and growing

members; social, political and financial complexities added to the financial crisis. Under these circumstances the women with financial hardship are prone to deliver at home. Sometimes elderly household head became reluctant to spend on receiving obstetric services. In case of Momena, it was made sure that the foetal died before delivery. The doctor suggested her for caesarean section which was supposed to cost about Tk. 10,000. In that state, her father-in-law disagreed to spend that much money. He insisted that the Momena should try for manual delivery. He even commented that one new daughter-in-law could be brought by spending Tk. 10,000. Although there was a provision of providing financial support to the pregnant women but only seven women received that. Often the real information about financial help was suppressed because the management thought that if the information is disseminated, they would not be able to provide proposed financial support to all the women which might give rise to dissatisfaction and misunderstanding among the patients. But there are rationales behind the poor service in the hospital as the monthly budget allocated for IMNCS project by BRAC for every upazilla was only Tk. 20,000 and it was increased to Tk. 25,000 later on. But on an average, the number of delivery was at least 50 and subsequently the number of service seeker pregnant women remained 300 on an average every month. In case of pregnancy and delivery complication, women were given services within the aforesaid budget. In fact, because of the budget constraints, the service providers could hardly satisfy the service seekers. In case of home delivery, BRAC provides kit box through SS at a cost of Tk. 35. But often it was found that some women and their family members had misconception about that, they expected the kit free of cost and were unwilling to spend that small amount.

Hidden Cost: Some hidden cost were traced regarding the services in the facilities. This can be found in ensuring bed rather than floor for staying of the women, frequent visits of nurses and *aya*s and tips for trolley man, *aya*, word boy, brokers etc. It was frequently reported that the nurses and *aya*s

demanded and confirmed an amount while wearing gloves for delivery purpose. If a dead child is delivered, the transaction was over. But in case of birth of a baby girl, another amount was demanded again. In case of a baby boy, the demand was even more. To pay such tips was hard for many of them. To avoid the tips, in one case a new mother denied to recognise her husband and introduced him to the hospital staff as a rickshaw puller who had taken her to the hospital. It was observed that during delivery, perennial tear occurred for one woman. At that stage, the nurses demanded extra amount in round about way. When her husband expressed his inability to give the money, which was demanded, they became reluctant to provide her with any treatment and suggested her to go to the better facilities in distant places though the complication could be managed by them. At one stage, considering different factors like expenditure, distance, hidden cost in the newly referred place, they were bound to give considerable amount.

Distance and Lack of Transport: Lack of transport to reach a health facility is common in developing countries. UNFPA reports that lack of transport is a key component in the 'three delays' model of maternal mortality in low-income countries (UNFPA, 2008). Delay in reaching an appropriate obstetric medical facility is affected by the availability and cost of transport and road conditions. In the present study only 9.1% respondents reported distance and transport as main cause of home delivery. The women in 15–24 years age reported distance and unavailability of transport as the core cause (9.1%). On contrast, women from other age groups did not mention that as a problem. It is noteworthy that comparatively more educated respondents (completed SSC and HSC) of the study did not mention the distance and lack of transport as main cause. Similarly those women who had monthly family income were more than Tk. 7,000 did not report distance and lack of transport as a main cause of home delivery. It was also observed that women at their 1st and 2nd gravida reported lack of transport and distance as main cause. It was not common cause for not receiving EmOC from facility,

because almost all respondents live in nearest village of upazilla health complex. There is a Government health facility in Sadullapur upazilla which provides EOC. A few women faced distance as a cause for discontinuation of receiving EOC from facility as their residence is situated at remote areas. In a small area of the study, roads are very narrow and distorted. As usual, people of this area go to the upazilla town on foot. In case of pregnant women, they use *Van* or Rickshaw to reach hospital. For this reason, the respondents of this area think that distance between village and hospital is very long. Others vehicles such as: ambulance, micro bus, auto-rickshaw are not available. This is important impediment to receive EOC from MTP or at health facility. This problem has been found to contribute to pregnancy related morbidities in research area. A majority of women reported that *Van* or Rickshaw as their primary means of transport are used during delivery, and emergencies which exacerbated the complications (viz case 3: Sumi).

Embargo: Embargo was not seen as a common cause for not receiving ANC from MTP. Because SK visited pregnant womens' home every month for providing ANC. But during child-birth it played a vital role for not receiving EOC from facility (10.4%). Service providers advocated pregnant women and their family members during ANC session about the importance of EOC. But some of the women did not think about hospitalisation due to embargo from senior family member(s). In this perspective, neighbours of the respondents often played important role in refraining from receiving EOC from facility. They suggested the pregnant women that if they go to the hospital, doctors would compel them to go through a caesarean section. In case of receiving obstetric services, some complicated and peculiar embargoes have been traced in course of the research. In the study women in lower age group (15–24) reported embargo as main cause of home delivery (9.1%) which is highest in all category of age group. On the other hand, all women, except 1, in older age group (35–39) did not face any embargo. It is noticeable that women who had next highest monthly income group (Tk.

7001–9000) did not face embargo but women with higher educational attainment (completed Junior high school) also faced embargo for institutional delivery.

Fear and Embarrassment: There was question of 'fear and embarrassment' among the pregnant women and their family members concerning the hospital environment and services. Some feared a hospital wrongly thinking that often people died when they visited hospital. Again some found it embarrassing to talk to male person about information related to pregnancy and delivery. Some even thought it was indecent to reveal the personal information in presence of other people. Some women's misconception was that no cloth was kept over the body of the women during delivery in the hospital.

Previous Bitter Experience: A few of the respondents had bitter experiences concerning their privacy, behaviour of the health staff and some other embarrassing situations. In the case of Rahima, she went to UHC for the management of her previous delivery complications. But the service provider's behaviour was not acceptable or up to the mark to her. Besides, the doctors and nurses behaved rude with her husband for entering the female ward of the hospital. For this bitter experience, she decided not to receive services from Government facility. In case of Hasna, she experienced false labour pain because of having intercourse in the previous night. She did not want to disclose this private matter to any of the other family members. But as an *aya* insisted to know the matter and she made it public in front of Hasna's mother and mother-in-law, she became embarrassed and ashamed. She decided not to visit hospital in future.

Workload at Home: The women who were from nuclear family were sole responsible for carrying out various household activities including looking after their children. Husbands of some of the women worked outside home for a longer period. In case of emergency, relatives may come to help in

household work for a short period of time. Hence, it was also a cause for not receiving emergency obstetric care during child-birth.

Dissatisfaction with Government Services: Often it was found that most of the Government service users were not satisfied with the services they got. They got the impression that private clinic and even familiar Gram-doctors provided them with better care and services. Sometimes, a major part of the medicines bought by the patient's attendants were remained unused because most of the time they were asked to buy more medicine and associated items than what were needed. The remaining medicine was kept by the nurses who later on sold them to the patients of similar nature. This exacerbated the financial constraints.

Unhygienic Surroundings: In most cases the surroundings of Government facilities were found unhygienic. Bad smell often spread from different corners which caused discomfort among the pregnant women and their attendants.

All these factor discouraged women to deliver their child at facility but in case of management of complications they made their all efforts to get treatment from Government health facility.

Conclusion

The chapter depicts that significant progress has not been achieved in the case of institutional delivery. Most of the women delivered at home, only 16.3% at Government facilities and one on the way to hospital. A total of 30.8% deliveries were attended by medically trained providers and 44.1% by trained providers (TP). Only 21.2% births were attended by traditional TBAs and 3.9% by relatives & neighbours. BMMS (2010) reported that 26.5% births were attended by a skilled attendant while the present study shows the rate was around 75%. During delivery over one-fourth (26.0%) of the women developed different types of complications. Among the women with obstetric complications, most of them experienced prolonged labour (59.3%). Among

the institutional deliveries, large part was occurred at Government health facility and for management of delivery complication they visited the same facility. Women those who visited Government hospitals for management of delivery complication, 17.4% (among all respondent) came from rickshaw pulling family which was second highest among recipient of services provided by the Government health facility (Table 34). How much care and other facilities a pregnant woman can enjoy depend on the attitude and approach of the female household head (Khanum, 2000). In many researches, it was found that the mothers-in-law discourage the pregnant women in receiving obstetric care. But in case of this study, a good number of mothers-in-law themselves felt the necessity for emergency obstetric services for their daughters-in-law. The overall condition of the society has changed over time. Now embargo from different corners on the pregnant women has lessened. Inspite of that most of the women with complication faced problem from household as well as from health centres. The remarkable causes of discontinue or not receiving obstetric care during child-birth at household was financial constraints which influence arranging transport to reach the facilities to receive EmOC. On the other hand, women also faced several problems from the facilities. The notable constrains faced by the women during delivery were out of pocket payments, fear and embarrassment and uncomfortable environment at Government health facility. Inspite of these constraints women tried to receive services, especially for the management of obstetric complication from Government health facilities. It is worth noting that during their pregnancy women received highest proportion of services from Gram-doctors (37.2%) but in case of delivery complications none of them relied on Gram-doctor. A good number of them received services from Gram-doctor at first stage of complicacy but ultimately they went to receive treatment from MTPs. It was also found that after taking treatment from MTPs some of the women had to discontinue that because of financial

constraints and again returned to the Gram-doctors despite their inclination to receive services from the hospital.

It is also mentionable that majority of them went to Government hospital and a small portion of them to private clinic but none of them went to MTP's private chamber. Ahmed reported that thirty-eight percent of the women did not know about the services provided at different facilities and they did not go to the hospital despite having complications (Ahmed *et al.,* 1999). But majority of the respondents in this study knew from the advice of home visitor about the places or providers of complicacy management and most of them had taken steps to manage their complications.

Chapter 7
Conclusion

Nature of receiving health care is usually determined by individual's demographic set up, socio-economic status, education as well as availability of the health services. Similarly, ability and/or willingness of the household head to pay for all the costs are associated with such treatment. The objective of this research was to describe the nature of receiving obstetric care of the rural women in a part of northern Bangladesh. It also tried to ascertain the relative role of 'socio-economic & demographic status' and 'existence of health services around people' in influencing women's nature of availing such services. All pregnant women (in a certain stage of their pregnancy) from two villages (Monduar & Shalaipur) of Sadullahpur upazilla under Gaibandha district have been included in the study. Mixed Method was used to collect data from 104 women aged between 15 and 39 years. At the first stage complete enumeration and then purposive sampling were adopted to select the respondents. Fifteen health providers were included in the study by adopting convenient purposive sampling. The study reports that most of the women did not complete primary education, were unemployed and they belonged to the low income family. A large number of women conceived for the first time during the study period.

For safe motherhood it is recommended that a pregnant woman should receive minimum 4 times Antenatal Care (ANC) from medically trained providers but receiving 7 or more times ANC from Trained Providers (TP) could create a possibility of bringing women under monitoring, detecting any complication and sending them to the MTP, if necessary. There is a small possibility of that for the women who received 4 or more ANC from trained providers (*Shasthya Karmi*). From this point of view in the present study 7+ ANC from trained providers has been considered as 'required number' of

ANC while 4+ as 'minimum required number'; and 4+ from medically trained provider as 'standard number' of availing ANC.

Less than half of the women received required number of ANC (7+ times) and nearly one-third minimum required number (4–6) while only one-tenth received 4+ ANC from MTP. Almost all women considered ANC necessary but they were not conscious about receiving it for 7+ times at home or 4+ from MTP, as required. They thought that receiving ANC 3–4 times from home visitor (*Shasthya Karmi*) was enough until complications arise. The differences of quality of services between medically trained provider and trained provider (*Shasthya Karmi*) were not clear to majority of them. It was noted that more than half of the women did not receive 7+ from home visitors, among them over one-third women did not feel the necessity of receiving ANC that many times even from home visitor.

The major places for receiving ANC were home, Government hospital, the chamber of medically trained provider and that of Gram-doctor. All women received more or less ANC from BRAC health worker (*Shasthya Karmi*) at home. In addition, they received that from the Government health facilities, Gram-doctors and Homeo Practitioners. Only one-fifth women received at least 1 ANC from medically trained providers and less than one-tenth received WHO recommended four or more ANC from MTP at the standard time. Nearly one-third women received ANC only from home visitor (SK) and did not visit any other place.

Financial constraint was found to be the crucial cause for not receiving four or more ANC from medically trained providers. Workload at home, the feeling that the qualified services were not necessary, probable preconceived fear and embarrassment in presence of the male doctors, embargo from family members, distance and poor transport facilities, bitter experience at previous visit(s) in health facility etc. were also found responsible for such discontinuation (Table 9 & 10). In their recent pregnancy, more than two-

fifth of the women experienced pregnancy related complications. Most of them managed it by taking advice from home visitor and visiting Gram-doctors. On the other hand, only near about one-fourth received qualified service for the management of pregnancy complications. It indicates that three-fourth of the women with pregnancy complication were still vulnerable who needed qualified service for the management of complication.

Women's uptake of ANC services seems to be good but majority of them do not have the opportunity of getting institutional delivery services. Three-fourth of the women delivered at home and only a few of them at Government and/or private facilities. One woman delivered on the way to hospital. Financial constraints were mostly reported cause for home delivery. Other causes were distance between home to facility and lack of transport, embargo, fear about hospital and embarrassment about the male health providers, NGO health workers' advice and previous bitter experience about the services at facility etc. Emotional and associated support at home, issues of risk and vulnerability, health staff's rude behaviour, lack of privacy and unhygienic surroundings at facility were also perceived as key determinants of home delivery. When all efforts made by TBA, relatives or Gram-doctor failed, only then the family members thought of hospitalisation. Mainly husbands, in-laws and BRAC health workers jointly took the decision. Sometimes traditional service providers induced more harm while providing service. In some cases, it was found that women were made to try for manual labour even after 12 hours of prolonged labour pain. The result was perennial tear, fistula and other complications. Even then, measures were taken late and often it took 24 hours.

Among the facility based delivery, two-third of them were occurred at the Government health facilities. Delivery in a health facility was substantially higher among women who had at least completed junior high school. It was also higher among those who were at their 1st gravida.

Less than one-third births were attended by medically trained providers and nearly half by the trained providers. So, a large number of women were delivered with the assistance of trained attendants. This is a significant achievement indeed. Around six percent women delivered in caesarean section. This rate of delivery in caesarean section is within the normal level of United Nation process indicator. For better management of child-birth, more than one-fifth respondents were referred from home or lower level health facilities to the upper level. The prominent referrer was *Shasthya Shebika* (BRAC health personnel) and Upazilla Health Complex was the 1st referral point.

During delivery, more than one-fourth women developed different types of complications. Among them, over half of the women faced prolonged labour (12 to 24+ hours). Higher obstetric complications were found among women from poorest economic background or among those who had not completed primary education. Higher complications were also found among the women who were at their 1st gravida and who were in lowest age group (Table 14).

Women managed those delivery complications by visiting one or more health facilities, like Upazilla Health Complex, District hospital, Maternal & Child Welfare Centre, NGO hospital and private clinic. More than one-tenth (14.8%) did not receive any treatment from MTP, even in a life threatening condition during and soon after child-birth.

It was observed that Gram-doctor occupied a substantial part of providing maternal health services during women's pregnancy. They were called upon to assist delivery by providing medicine but sometimes they made serious mistakes leading to obstetric complication. It is interesting that during pregnancy women received highest proportion of services from Gram-doctors but for complicacy related to delivery none of the women relied on Gram-doctors' services.

Most of the women were willing to have facility based child-birth. But they could not do so because of their financial constraints and work load at home. In fact some socio-cultural barriers, including lack of decision-making power of the women within their households, poverty, and poor infrastructure remained considerable barriers to receive obstetric care services in Bangladesh. It is a matter of hope that the embargo regarding facility based delivery has decreased now a day. It was hardly seen that women did not go to facilities just for the cause of *purdah*. The existing embargos were basically related to financial constraints.

Although the public hospitals are supposed to bear all the expenses relating to the treatment and diagnostic procedures in the inpatient wards, in this study the reality was found to be different from the expectation. Due to hidden costs at the facility, a large number of women with obstetric complication could not afford to use services. It was also found that when women arrived at Upazilla Health Complex with obstetric complication, the attending nurse was found lacking in skill in the management. For calling another experienced nurse, extra amount was demanded. When women were referred by the *Shasthya Shebika/ Shasthya Karmi* to the health facility for delivery, women's expectations of health services in facility often turn out to be negative because of their previous negative experience. Often health care providers were rude, unsympathetic, and uncaring at Government health facility. The experienced women presented and communicated their ideas to the new service seekers. In spite of all these limitations women viewed Government hospital as a resort for management of obstetric complications and they made utmost efforts to avail services from this sector. They preferred receiving treatment from Government hospital more than other sectors in the case of management of complication related to child-birth. It is worth noting that during pregnancy women tried to solve their complications at home first and next to that they went to the Gram-doctor. But for management of delivery complication none of the women relied on Gram

doctor's service. In such cases ultimately they visited Government health facility. The health workers of BRAC enabled them to overcome administrative bureaucracy and procedural difficulties.

The study makes it clear that the rate of receiving health service delivered by Government is very low but still it remains as a mainstream health service providing sector.

However, the satisfactory achievements have not been made in terms of promoting through NGO health workers about receiving delivery related services but in case of receiving ANC significant attainment is seen. Because it was found that although the rate of 4+ ANC from a medically trained provider was far below the WHO recommended standard but it is indeed a great achievement that nearly half of the women received required number of 7+ ANC from trained provider, thus they were more or less under a safety net. It also indicates that if those women would get the opportunity to receive ANC from medically trained provider they would have received that since they were eager to receive required services. It was also found that the women who were at their 2nd gravida received highest number of service from MTP's chamber. The increase of visit in 2nd gravida was mainly related to their earlier experiences at 1st gravida which resulted in still birth and/or obstetric complications. During the 2nd gravida, the home visitor (SK) explained the necessity of receiving ANC to the women and made them understand the related issues. Women those who received ANC only from home visitors, there was a possibility of that they would have been remained without any ANC if the provision of home visits were not available to them.

Similarly, though it was found that there was no relationship between higher uptake of ANC and higher rate of institutional delivery but it indicates that if the opportunity of institutional deliveries would have been available to the rural women, majority of them would receive that since they had availed the opportunity of receiving ANC. However, around three-fourth of the women

got the opportunity of being attended by the trained birth attendants at home. It was possible due to the availability of services, i.e. initiatives of MNCH project at raising awareness of and providing access to ANC and skilled child birth attendants at home.

About financial support, there was an information gap between the service providers and the receivers. Though all the women did not get financial support, they received many other facilities like building bridge between providers and the receivers, necessary information, instruction and timely referral etc.

Among all the respondents nearly half of the women faced complications during obstetric period (from onset of pregnancy to till soon after delivery). But all of them did not suffer in both the stages. Those women who suffered from complications during delivery, majority of them also experienced complications during their delivery. On the other hand, who suffered during pregnancy, nearly half of them could overcome their complications by being aware and taking proper care and treatment, hence did not experienced any complication during delivery. The achievement of the women in overcoming the complication was perhaps due to the support, suggestion, cooperation and visit from different health providers as well as the positive approach of the respondents and their family members in receiving what they required at that period. This clearly indicates that those women from rural area have advanced much so far their awareness and change of outlook are concerned. This advancement also indicates that the steps taken in the field of obstetric care are proving effective despite the existing limitations.

The study indicates that women could reach the appropriate facilities if the situation demands. For instance, women from agriculture family mostly depended on *Shasthya Karmi* at home and Gram-doctor for receiving ante natal care. They rarely visited MTP's chamber or Government Health Facility. In case of management of pregnancy complications none of the

women from agriculture family visited qualified doctor or Nurse. But in case of complicacy management at delivery over one third of these women went to the Government health facility and over one tenth private clinic. It shows that they can reach the appropriate facilities in case of necessity. But they were not sincere about receiving qualified services during pregnancy or initial stage of delivery. In that case they need to be motivated through strengthening awareness building programme.

In collaboration with UNICEF and the Government of Bangladesh BRAC has taken different initiatives to raise awareness among the women of different parts of Bangladesh including the study area. These programmes had much impact on the pregnant women and their family members and they started their visit to the Government hospital to receive services. But often they got disheartened by the service provided in the hospital. It is clear that awareness was raised almost in the appropriate way, but the facilities and service qualities in the hospital had hardly been developed. Often the service providers misbehaved with the services seekers when they demanded services as they were said by the home visitor or other NGO personnel. This hampered the nature of receiving services. The women who were informed about the bitter experiences grew aversion towards Government hospital. On the other hand sometimes NGO health worker was found to be blamed by the service seekers, even were threatened with filing a case which had devastating effects on the women at post-partum period (viz. Chapter 6: case of Habiba**).**

Despite some adverse situations the over all condition of the society has changed over time. Now embargo from different corners on the pregnant women has lessened and sense of necessity has strengthened. In certain cases the mothers-in-law themselves had taken initiatives to bring their daughters-in-law to the appropriate facility for availing emergency obstetric services (case of Nilufa). This is indeed inspiring.

From the ongoing discussion it can be gleaned that women's nature of receiving treatment has been influenced to a large extent by the programmes undertaken in the health sector. In terms of enabling factors, the study revealed the fact that existence of health services definitely expanded women's access to health services. Concerning the predisposing factors, it was found that economic factors, i.e. financial constraints played important roles in deterring women from receiving appropriate health services but sometimes women could overcome this barrier if they find services around them. Due to this reason, association between higher level of educational attainment and high ANC attendance or association between higher economic status and receiving high quantity& quality of services were not commonly found. But in certain cases a relationship between occupation and uptake of high quality as well as high number of ANC and other services were apparent. For instance, in some context it was found that education had positive impact in receiving ANC from Government hospitals but it was not commonly found. Data also demonstrated that there was no strong relation between higher level of education and higher number of receiving more ANC [Table 7 & Table 5) or having more qualified attendants at the time of child birth (Table 24 & 25). In terms of income data also shows that it is not a universal fact that the higher the economic status the higher the level of receiving health services (Table 16, 24 & 25).

On the other hand, it is apparent from the study that those women were able to receive more services (in terms of quality & quantity) whose household heads were engaged in such occupations which demand greater mobility. Expansion of the sphere of mobility made them aware about the place of receiving appropriate services and enabled their women to avail treatment.

The core findings of the study is that women's economic status still remains as a crucial factor in determining the nature of receiving obstetric care but sometimes other factors supersede it, like occupation. This also manifests the fact that availability of service around people and disseminating information

about it could enable them to avail such services despite their low socio-economic and educational status.

Based on the findings of the study it can be summed up that receiving obstetric care is not an independent issue rather it is interrelated with various factors. The factors affecting the nature of receiving services are varied that can be found within and outside the receivers. Similarly they play different roles in the case of different individuals or different section of the population but availability of services around them have definitely great impact on determining their nature of receiving health services irrespective of their socio-economic background.

Since the study is pre-dominantly qualitative in nature the association between different factors has been analysed mainly in a qualitative way rather than showing a strong relationship or absence of that by utilising large data or advanced statistical application. Hence, the study can not demand that findings of the research is universal, but it only paved the way to look at other aspects of the reality and can question the stereotype idea of 'education and income always play dominant role in accessing health care'. It would encourage other researchers to conduct study on the issue and establish the fact in a more suitable way.

In order to expand women's access to obstetric care the Government needs to take an integrated approach with a view to uplift women's socio-economic status through creating more income-generating opportunities for them. Because it was apparent from the study that those women were able to receive more treatment whose household heads were engaged in such occupations which demand greater mobility. Hence, if women get the opportunity of getting involved with income generating activities, it would expand their sphere of mobility on the one hand and would reduce their financial constraints for receiving treatment on the other. It would also enhance their decision making power. It is a matter of fact that adequate

utilisation of health services care cannot be achieved only by establishing health centres and initiate maternal health programme; women's overall status needs to be considered.

Awareness-raising efforts in the community regarding the obstetric complications and available services need to be extended and strengthened. It was found that only one-tenth of the women did not feel the necessity of receiving ANC from MTP, among them one-fifth had higher educational attainment (completed Junior High School). This indicates that they have shaped their own health belief system despite receiving information from the health visitors. Only continuous motivation can change their perception of health and illness as well as necessity of receiving obstetric care. This again call for availability of health services including dissemination of information.

A source of financial support for poor women is also essential as they suffer the greatest impact of payments, and are more likely to be deterred from seeking care. Hence the pregnant women should get health voucher as well. If complication arises and home visitors refer the patient to the facility, they should be awarded with incentive. In order to reduce the constraints related to cost and unavailability of transport, a provision of providing free ambulance service for transferring pregnant women from home to health centre should be initiated. Besides, healthcare providers need to be trained and motivated to identify the complicated cases and make timely reference to the appropriate facilities. Services should be ensured with friendly and familiar attitude to the women who need treatment.

In terms of widening the coverage of health sector more unqualified health providers could be integrated into the mainstream health sector. It was found that the highest proportion of services were rendered by the Gram-doctors (Table 4). Despite their limitation and controversial activities they played important roles during women’s pregnancy period. They also provided information about the available service at facilities to the rural women.

Sometimes they acted as a bridge between the rural women and medically trained providers. Hence in order to make their contribution effective they could be incorporated in to the list of 'trained providers' and should be given appropriate training on preliminary obstetric care.

The Government or NGO should build capacity through formation of community health team to overcome financial constraints and poor transport facilities. The team can contribute in strengthening institutional mechanism in both community and national level to ensure good quality essential obstetric services for the rural pregnant women. Health care providers need to take initiative in arranging dialog with the household heads about the necessity of receiving obstetric care. This can motivate the family members to take away embargo on visiting qualified practitioners during pregnancy and child-birth. Uplift of women's socio-economic status along with wider coverage of health promotion programme can enable women to receive obstetric care and ensure safe motherhood.

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APPENDIX

Appendix 1. Case Studies

Few Case Studies Relating to Complication Management

Case Study 1. Shahana, age 24 years, gravida: 1; husband's occupation: construction worker; monthly income: Tk. 3,000.

At the inception of pregnancy, Shahana suffered from abdominal pain. After the expected date of delivery, she felt labour pain at home. At first, her mother-in-law and TBA tried to deliver normally. But they did not succeed. They decided to go to UHC. This was not easy for them because of long distance, insufficient vehicles and distorted roads. They did not get any vehicles. They had to walk on foot more than one kilometre. Later, they had taken Shahana with rickshaw at UHC. Even they did not know the administrative procedure of UHC. A programme organiser (health) of BRAC helped them to contact with nurses of UHC. Nurses of UHC tried to deliver normally more than 4 hours. But they also failed to do that. At last, they went to their known Sr. FWV who provided ANC once a time. She also tried to deliver. The FWV observed that there was no movement and heart-bit of the foetus. She asked an *aya* (support attendant) to deliver the dead foetus. Shahana was feeling severe pain on her two legs, which happened due to prolonging delivery. She thought that it occurred due to the negligence of the nurses and attendants at UHC. In addition, she had to pay total six hundred taka unofficially (three hundred for nurses, two hundred for FWV and one hundred for *aya).*

Case Study 2. Shahinur, age 29 years, gravida: 3; husband's occupation: rickshaw pulling; monthly income: Tk. 3,000.

After inception of labour pain, Shahinur's relatives and SS tried to deliver for 10 hours. Cervix of uterus was opened up but foetal was mal-presented. For this reason, delivery did not succeed. After the advice of SS, she was taken to the NGO hospital (BRAC hospital). It was very hard to reach the hospital for

them. At first, they went by van-rickshaw some way and rest of the way by auto- rickshaw. Doctors observed her for 10 hours and tried to deliver normally. At last, they had decided to go for caesarean section. But during operation she developed severe bleeding. To control the bleeding and save the life of Shahinur, doctor suggested removing her uterus. Shahinur's husband agreed to their decision. She stayed at hospital for 7 days. The total expenditure for this purpose was around Tk. 10,000. BRAC gave her Tk. 7,000 as a grant and she borrowed Tk. 4,000 from Grameen Bank as loan. After coming back home, she received medicine for one month as advised by Gram-doctor. Later she had to sell her mango tree to repay the lone.

Case Study 3. Sumi, age 19 years, gravida: 1; husband's occupation: small business; monthly income: Tk. 3,000.

Sumi lived in a remote village where there was no transport communication. No electricity was available. During inception of her labour pain, SS and NHW came to her home. Her husband went to call for a Gram-doctor but he did not come because of long distance and unavailability of transport. NGO personals tried more than 10 hours for normal delivery. After failing, they suggested her to go for necessary emergency obstetric care from a facility. After 20 hours she was motivated and arranged some money to go to BRAC hospital for getting EmOC. She mortgaged her nose pin to a shop keeper. Doctor did episiotomy to deliver the child. After one day she came back home. She got down from rickshaw (van) with her newborn at a place about half km distance from her home. She reached home by walking. After reaching home she felt severe pain at her episiotomy area. She did not take any medicine for that pain. After four days, SK came and opened the bandage of the affected organ. She (SK) observed that the stitches became loose. She suggested her to go to the hospital. Then she went to BRAC hospital again, repaired that stitches and came back home carefully with the help of her husband. After few days, she felt various problems such as: pain, itching in the area, weakness, etc. At that period she consulted a Gram-doctor

and started treatment. She had to discontinue taking medicine after a few days.

Case Study 4. Nilufa, age 24 years, gravida: 5; husband's occupation: rickshaw pulling; monthly income: Tk. 3,000.

Nilufa was severe anaemic during her pregnancy. It was her 5th gravida but she had no living child. She had to go through a blood transfusion during her pregnancy. She had history of obstetric complication. Gram-doctor and SK suggested her to consult with doctor. She also sought treatment from private clinic. She had no labour pain during expected date of delivery (EDD). Her membrane had leaked but she did not inform that to the family members or others. After three days, her mother-in-law was informed and arranged to go to a private clinic. At last Nilufa delivered there by c-section. She spent around Tk. 20,000 for service at clinic. They were not happy with doctor's behaviour and nature of care. Ultimately the newborn died after 5 days. Her mother-in-law played vital role in receiving obstetric care such as: decision making about place of delivery, attendant, arranging money and helping person. But she became disappointed about Nilufa's carelessness in this respect, i.e. hiding the occurrence of leaking membrane (LM). She opined that if she was informed earlier about leaking membrane, she would have been able to take action in due time and the newborn would have been survived.

Case Study 5. Nurjahan, age 19 years, gravida: 1; husband's occupation: agriculture related work; monthly income: Tk. 4,500.

After conformation of pregnancy, Nurjahan came to her natal home. She suffered from oedema during the last trimester of her pregnancy. She felt labour pain at evening and her membrane ruptured before 7 days of EDD. First her natal family members tried to deliver the child and next to that a SS was called upon. Due to absence of her father at home, she could not move to the hospital at night. Family members and SS tried the whole night but did

not succeed. They did not call any Gram-doctor. Because, a few years back during her elder sister's delivery, Gram-doctor mishandled and ultimately that newborn was died. Next day at morning Nurjahan went to UHC with SS and family members. BRAC helped them for mental support and in building communication with UHC staff. But they did not provide any financial assistance, because her family was relatively solvent. She delivered a healthy baby normally at UHC. Two nurses attended the delivery. After delivery the nurses claimed Tk. 1,500 as tips, but after haggling they paid Tk. 1,000. The same day she came back to home in the evening with advice and discharge letter from doctor. After delivery her oedema reduced and she could walk normally. The family members realised that by visiting health facility for delivery, she remained healthy physically and mentally.

Case Study 6. Dholi, age 20 years, gravid: 1; husband's occupation: garments worker; monthly income: Tk. 4,500.

Dholi got early married when she was 15 years old. During the state of seven months of pregnancy, she went to her natal home. There she received services from SK of BRAC. There was a family feud regarding dowry. Her husband did petty job in Dhaka. Her labour pain started in the afternoon. She suffered from severe labour pain for 24 hours. At first she was attended by a TBA, next to that a NGO health worker (SS & NHW) and finally Gram-doctor were called upon. Depending on the observation and assessment of the TBA, the Gram-doctor administered injection before the opening of the surface of uterus. As a result, some more complications arose. The whole night was spent trying manually but in vain. In the morning, she was sent to the UHC. The nurses asked whether she was given any injection. At first her relatives did not disclose the fact. But the nurses became sure of having injection by seeing the scare in the hand. They rebuked them and referred her to the district hospital. Then she had caesarean operation. The charge of the caesarean and associated costs were Tk. 12,000. During the absence of her husband, Dholi's father spent the total money. Then he asked for the money

from his son-in-law, but he refused to pay that. But later on the son-in-law was compelled to pay the money as it was settled in a meeting arranged by the rural elites. It is apparent that Dholi first reported to a TBA than NGO health workers (SS, NHW...), Gram-doctors, UHC and finally District Hospital.

Case Study 7. Rahima, age 24 years, gravida: 2; husband's occupation: electrician; monthly income: Tk. 7,000.

Rahima first reported to her sister-in-law. As the second step, she called the TBA; at the third step, she received NGO health worker's services at home. At the 4th stage a Gram-doctor was called upon. Rahima became ill due to pumping tube well to fetch water during her pregnancy. She received ANC from SK at home and MTP from NGO clinic. She had her blood test and ultra-sonogram from NGO clinic. A Gram-doctor evaluated the reports and ensured that the foetal position was normal. Her normal labour pain started in the evening. At the first stage the SS, NHW & her mother attended and tried delivery manually. After 6 hours of inception of pain, a Gram-doctor came to her home and asked NHW about the position of cervix of the uterus. NHW failed to assess the real condition. She replied that it was opened. So Gram-doctor gave five different injections and saline to stimulate labour pain. But actually that time the cervix of the uterus did not open. All supporting people tried whole night but they were not successful. At last she was sent to the MCWC next day morning. She delivered a child with the help of MTP by episiotomy. Rahima stayed at a female ward. No male allowed there. So her husband could not meet her. The hospital environment was unhygienic. The behaviour of doctor and nurses was not satisfactory as she expected. They had to pay a good amount unofficially. This was why she returned home after one day without any consultation of hospital authority. After coming back, she sought treatment from Gram-doctor but ultimately she had to come round to the hospital again.

Case Study 8. Samina, age 23 years, gravida: 2; husband's occupation: small business; monthly income: Tk. 3,500.

Samina was not taken to the health facility even after 12 hours of prolonged labour pain. The manual delivery by the TBA caused her perineum tear. Even after that, she was not brought to the hospital immediately, rather she was taken there after 24 hours. The doctor on duty of the MCWC gave necessary treatment. But they failed to manage all the complications. However, they suggested them to come back after three months for the management of her complications. When she was interviewed on the 6th day after delivery, she was in a measurable condition. She was quite unable to control her nature's call. After three months, she was again interviewed. The operation on her was conducted successfully, but she was not fully cured. She faced continuous complexities in her personal life which include painful intercourse due to narrowness of vaginal orifice. In addition, still she could not control her nature's call.

Appendix 2. Relevant Tables

Appendix Table 1: Qualification of different types of Government sector health providers involved in maternal healthcare services in Bangladesh

Qualification of various types of Government sector maternal healthcare providers			
Type of healthcare provider	**Requirement for entry**	**Qualification**	**Key services provided**
Specialist in gynaecology and obstetrics	MBBS	Minimum 4 years of training and education for MS and FCPS degrees 2 years of training and education for diploma	ANC, BEOC, CEOC
Anaesthesiologist	MBBS	Minimum 4 years of training and education for MD and FCPS 2 years of training and education for diploma	Anaesthesia
General Physician (GP)	12 years of schooling	5 years of training on medicine, surgery, gynaecology and obstetrics 1-year internship in medicine, surgery, gynaecology and obstetrics wards	ANC, BEOC, PNC, MR, AC, FPS
Nurse/Midwives	10 years of schooling	Training on nursing for 3 years Midwifery training for 1 year	ANC, BEOC, PNC, MR, AC, FPS
Medical Assistant MA/ SACMO	10 years of schooling	3 years of training on treatment of common disorders/diseases	ANC, BEOC, PNC, FP
Family Welfare Visitor (FWV)	10 years of schooling	18 months of training on MCH, family planning, and contraception	ANC, BEOC, PNC, MR, AC, FPS
Family Welfare Assistant (FWA)	10 years of schooling	30 days of training on family planning	ANC, PNC FPS
Health Assistant (HA)	10 years of schooling	3 months of training on limited preventive and curative care, immunization	Tetanus toxoid
Community-based SBA	FWA or Health Assistant (Female)	6 months of training on BEOC and ENC	ANC, BEOC, PNC, FPS
CHCP	12 years of schooling	6 weeks of training on limited preventive and curative care. 3 weeks for theoretical and 3 weeks for practical	PHC
AC=Abortion care**;** ANC=Antenatal care; BEOC=Basic essential obstetric care; CEOC=Comprehensive essential obstetrics care; CHCP=Community Health Care Provider; ENC=Essential newborn care; FCPS=Fellow of College of Physicians and Surgeons; FPS=Family-planning services; MCH=Maternal and child health; MD=Doctor of Medicine; MR=Menstrual regulation; MS=Masters of Surgery; PNC=Postnatal care; PHC=Primary Health Care			

The Table is a representation of a comprehensive profile about maternal health of Sadullapur upazilla

Appendix Table 2: Maternal Health Related Statistics of Sadullapur Upazilla in 2011[1]

Variables			Total
Population			306640
Household			78666
Expected new pregnancy identification			8280
Number of new pregnant women identified			7816
New pregnant women identified in 1st trimester			5876
Expected total pregnant women (old+new)			49680
Total number of pregnant women (old+new)			39013
ANC given to pregnant women by SK			36826
ANC given to pregnant women at facility			9832
No. of abortion			914
Expected total delivery			7668
Total delivery in the year			6450
Delivery	Facility delivery	Govt. hospital	1208
		NGO/Private hospital	400
		Total	1608
	Home delivery by	NHW	1977
		BRAC CSBA	225
		Doctor	0
		Nurse	1
		FWV	72
		Govt. CSBA	21
		NGO CSBA	1
		SACMO	0
		Untrained TBA	2545
		Total delivery at home	4842
Number of Delivery attended by skilled personal			1928
Mode of delivery	Vaginal delivery	Normal delivery (NVD)	5725
		Episiotomy	203
		Total	5928
	C-section		522
Misoprostol given to delivered mother			4010
Delivered mother received 4 or more ANC			5116
No. of delivered mother protected by TT			5502
Delivered mother had birth plan			5262
PNC visit	1st visit	Within 24 hours (SK)	5057
		Within 48 hours (SK)	5305
	2nd visit	Within 2-7 days	4848
	3rd visit	Within 8-28 days	5127
	4th visit	Within 29-44 days	5310
	5th visit	Within 45-60 days	4211
Mother developed complication			1876
Complication	During pregnancy	High BP	35
		Bleeding	46
		Convulsion	5
		Severe anaemia	24
		Diabetes	0
		Jaundice	7

[1] Data collected from MNCH program office of BRAC, Sadullapur, Gaibandha

		Heart disease	4
		Others	42
		Total	163
	During delivery	Bleeding	52
		Convulsion	14
		Prolonged labour	1097
		Obstructed labour	213
		Retained placenta	54
		Cord prolapsed	16
		Hand prolapsed	8
		Leg prolapsed	5
		Twin pregnancy	4
		Others	117
		Total	1580
	During post partum period	High BP	17
		Bleeding	40
		Convulsion	3
		Puerperal sepsis	37
		Severe anaemia	5
		Diabetes	0
		Jaundice	1
		Heart disease	3
		Others	27
		Total	133
Referral outcome	During pregnancy	Under treatment	162
	During delivery	Under treatment	1580
	During post partum period	Under treatment	133
Total number of maternal death		Home	1
		On the way (from home)	0
		On the way (from facility)	2
		Referral centre	6
		Total	9

Appendix 3. Some Relevant Photographs