EFFECTIVENESS OF DEMAND SIDE FINANCING ON INCREASING THE DEMAND FOR MATERNAL HEALTH CARE AMONG THE BANGLADESHI WOMEN: STUDY IN SELECTED AREAS

M Phil Thesis

Submitted By

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M Phil Examination Roll No. 03

Registration No. 484/2008-2009

Institute of Health Economics

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This Thesis is Submitted as a Partial Fulfillment of the Requirements for the Degree of Master of Philosophy at the Institute of Health Economics, the University of Dhaka

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I hereby humbly declare that this thesis entitled "Effectiveness of Demand Side Financing on Increasing the Demand for Maternal Health Care among the Bangladeshi Women: Study in Selected Areas" is based on research work carried out by me and no part of it has been presented previously for any higher degree and submitted elsewhere for academic award or publication. The research work was carried out under the guidance of honorable Professor Dr. Shamsuddin Ahmad, Institute of Health Economics, University of Dhaka.

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This is to certify that this thesis entitled "Effectiveness of Demand Side Financing on Increasing the Demand for Maternal Health Care among the Bangladeshi Women: Study in Selected Areas" is prepared by Jabun Naher at the Institute of Health Economics, University of Dhaka, under my supervision.

Her work is genuine and up to my full satisfaction.

Dr. Shamsuddin Ahmad, Ph.D

Professor

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Abstract

In developing countries like Bangladesh, Government health facilities provide free ANC, delivery and PNC services, but the related costs like medicines, transportation and treatment discourage many poor women from seeking these services. To tackle such financial barriers to access, these countries are implementing various demand-side approaches to financing health care that subsidize the poor pregnant women directly. The Government of Bangladesh has launched a DSF program or voucher scheme with vouchers being distributed to poor pregnant women ensuring them to access free antenatal, delivery, emergency referral, and postpartum care services.

The overall objective of the study is to assess the effectiveness of demand side financing on increasing the demand for maternal health care. The specific objectives are:

i) To assess the socio-economic status of respondents. ii) To see the health care seeking behaviour of woman with respect to ANC, delivery care & PNC in an experimental area (where DSF is performed) and a control area (where DSF is not performed). iii) To examine the effectiveness of DSF on increased utilization of ANC, delivery care, delivery care attended by skilled birth attendants, PNC and reduction of child and maternal mortality rate.

An experimental design of survey was conducted by purposively selecting Raipura upazila of Narshingdi district having DSF (voucher scheme) intervention as experimental area and Araihazar upazila of Narayangonj district having no DSF intervention as control area. A total of 480 women (240 from experimental area and 240 from control area) and 15 service providers (from experimental area) were interviewed during 01 September to 30 October 2013 for collection of primary data on the issue.

The study reveals that women in the experimental area have higher family income, higher family size, higher education but lower age compared to the control area.

More women in the experimental area have better knowledge about the recommended number of ANC visits than the control area. More than half of the women of experimental area received ANC three times during their last pregnancy but half of the women in control area did not receive ANC at all. About 84% of women of experimental area visited UHC for ANC check up but it is only 41.8% in control area who visited private hospital/clinic.

More women in the experimental area have TT injections (60.4%) and have pathological test (72.1%) than the control area (31.7% & 35.4% respectively). As expected complications experienced by the women are much lower (19.0%) in experimental area compared to control area (30.8%).

A larger proportion of women (48.3%) of experimental area went UHC for their delivery and most of the women (66.2%) of control area preferred home for delivery during their last pregnancy. Normal delivery is almost the same at both the areas but percentage of c-section is a little bit higher in experimental area than the control area. The deliveries conducted by the skilled personnel are higher in the experimental area (64.6%) compared to the control area (41.6%). About 6% women in experimental area and about 23% women in control area reported that they did not experience any complication during their last delivery.

31.7% of women in experiment area and 19.6% of women in the control area had a PNC visit. Most of the women (71.4%) received PNC by qualified person like Doctor, MA, nurses etc. at UHC in experimental area and majority of the women (59.6%) in the control area received PNC at private hospital/clinic.

The higher proportion of women in the experimental area compared to the control area have breastfed the last child and have had their child in taking of vitamin A capsule. The lesser proportion of women in the experimental area has experienced miscarriage or abortion or still birth or MR than the control area. Number of child death appears to be lower in the experimental area compared to the control area.

The maternal and child mortality rates appear to be lower in the experimental area due to consuming more MHC services by the poor women in comparison with the control area. However, cash incentives for the voucher recipients are found to be an important factor for the positive impact on the demand for and the utilization of MHC among the women in the experimental/ program area.

CONTENTS

List of Tables

List of Abbreviations

ANC	: Antenatal Care
BCC	: Behavior Change Communication
BTL	: Bilateral Tubal Ligation
CCT	: Conditional Cash Transfers
CSBA	: Community Skilled Birth Attendant
DFID	: Department for International Development
DGFP	: Directorate General of Family Planning
DGHS	: Directorate General of Health Services
DSF	: Demand-Side Financing
D&C	: Dilate & Curette
EC	: European Community
EOC	: Essential Obstetric Care
FP	: Family Planning
FWA	: Family Welfare Assistant
FWVs	: Family Welfare Visitors
GOB	: Government of Bangladesh
HAs	: Health Assistants
HC	: Health Care
HEF	: Health Equity Fund
HH	: Household
HIV	: Human Immune Virus
HNPSP	: Health, Nutrition and Population Sector Programme
ICAS	: Instituto Centro America de la Salud (Central American Health Institute)
ITN	: Insecticide-Treated bed Net
IUCD	: Intra-Uterine Contraceptive Devices
KFW	: German Development Bank

LDC : Less Development Country
LLIN : Long-Lasting Insecticide-Treated Bed Nets
MBBS : Bachelor of Medicine Bachelor of Surgery
MCH : Maternal & Child Health
MCWC : Maternal and Child Welfare Centers
MDG : Millennium Development Goal
MHC : Maternal Health Care
MMR : Maternal Mortality Ratio
MOHFW : Ministry of Health and Family Welfare
MOHFW : Ministry of Health and Family Welfare
MR : Menstrual Regulation
NGO : Non-Governmental Organization.
NVD : Normal Vaginal Delivery
OBA : Output-Based Aid
OD : Operational Health Districts
PBF : Performance Based Financing
PNC : Postnatal Care
RBM : Roll Back Malaria
RH : Reproductive Health
RHVP : Reproductive Health Voucher Programme
RMO : Resident Medical Officer
RTI : Reproductive Tract Infection
SACMO : Sub-assistant Community Medical Officer
SBA : Skilled Birth Attendant
SDIP : Safe Delivery Incentive Programme
SM : Safe Motherhood
SRH : Sexual and Reproductive Health
STIs : Sexually Transmitted Infections
TBA : Trained Birth Attendant
TNVS : Tanzanian National Voucher Scheme

TShs	: Tanzanian Shelling
TT	: Tetanus Toxoid
VMA	: Voucher Management Agency.
UNFPA	: United Nations Population Fund
UHC	: Upazila Health Complex
UHFPO	: Upazila Health and Family Planning Officer
USA	: United States of America
USD	: United States Dollar
UK	: United Kingdom
UHFWC	: Union Health and Family Welfare Centers
WHO	: World Health Organization

CHAPTER 1

Introduction

1.1 Background

Providing accessible and quality reproductive health services to the poor is critical for developing countries to make substantial progress towards achieving the Millennium Development Goal 5[1]. The increased use of maternity services such as antenatal care, attended deliveries, and post-natal care yield better maternal and infant outcomes (Lawn et al. 2009); increased family planning utilization allows for healthier birth spacing (Yeakey et al. 2009); and timely testing and treatment of sexually transmitted infections (STIs) reduce morbidity and mortality associated with STIs and HIV (Aral et al. 2006).

Bangladesh has achieved impressive progress in immunization coverage, reduction in fertility and child mortality over the last few decades (MOHFW 2001). Despite the improvements in child health and family planning outcomes, the maternal mortality ratio has remained relatively static at an unacceptably high level of around 194 per 100 000 live births (BMMS 2010). Deliveries attended by skilled personnel are also largely unchanged, remaining below 18% of all births (NIPORT 2007). Low utilization of maternal health services is one of the factors contributing to high maternal and neonatal mortality and morbidity in the country.

[1]MDG 5: improve maternal health
Target 5.A. Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio
Target 5.B. Achieve, by 2015, universal access to reproductive health

Pregnancy and delivery-related deaths account for 20 percent of all deaths among women of reproductive age in Bangladesh. Two-thirds of maternal deaths occur after delivery; one in ten occurs during delivery, and the remaining one in five occurs before delivery. The leading causes of maternal deaths are Haemorrhage (29 percent) and Eclampsia (24 percent). Other direct major causes of maternal deaths are prolonged/obstructed labor (NIPORT et al. 2003). The non-availability of trained providers, low uptake of services by women, and infrastructure difficulties all contribute to the high rate of maternal deaths in Bangladesh. (Rahman M et al.2009)

Utilization of antenatal care (ANC) and postnatal care (PNC) services can reduce maternal mortality and morbidity significantly. However, the utilization of maternity care provided by trained professionals during and after delivery is alarmingly low in Bangladesh. While there has been some improvement in recent years, about half of all pregnant women do not seek any ANC. The Government of Bangladesh recommends a minimum of three ANC visits, with one visit every three months. Only one in three pregnant women makes three or more ANC visits (NIPORT, Mitra Associates, and ORC Macro 2007). Among those who do access ANC, 31 percent receive services during the first trimester and 24 percent delay seeking care until the third trimester. The frequency of ANC visits and early initiation of ANC is higher among women with first births, women in urban areas, those who have completed secondary school, and those from the wealthiest households (NIPORT, Mitra Associates, and ORC Macro 2005).

68 percent of pregnant women received antenatal care at least once from a provider. The majority of women (55 percent) received care from a medically trained provider, like qualified doctor, nurse, midwife, paramedic, FWV, CSBA, MA, or SACMO (BDHS 2011). Reasons for not seeking ANC include perceptions that the service is not necessary (62 percent) and monetary constraints (21 percent). Other reasons are familial or religious constraints, non-availability of transport and service-related issues (NIPORT et al. 2003).

To reduce the health risks for mothers and their babies, it is important to increase deliveries by skilled providers with adequate medical supervision. BDHS (2011) data show that 29 percent of births in Bangladesh are delivered at a health facility: 15 percent in a private facility, 12 percent in a public facility, and 2 percent in an NGO facility. But, 71 percent of births are delivered at home.

In Bangladesh, medically-trained personnel (qualified doctor, nurse, midwife, family welfare visitor (FWV), or community skilled birth attendant (CSBA)) attend only 32 percent of deliveries. Additionally, trained traditional birth attendant assists 11 percent of deliveries. However, more than half of births are assisted by dais or untrained traditional birth attendants (53 percent), and 4 percent of deliveries are assisted by relatives and friends (BDHS 2011).

Only 29 percent of women with complications during delivery receive treatment from trained providers and 33 percent visit unqualified providers. The remaining one-third does not seek any care for maternal complications (NIPORT, Mitra Associates, and ORC Macro 2005). The proportion of institutional deliveries is higher among women of higher socio-economic status, women in urban areas, and women with secondary school or higher education (NIPORT, Mitra Associates, and ORC Macro 2007).

Several social, religious and economic barriers prevent women from seeking services during delivery at health facilities. Frequently-cited reason for not delivering in a facility is perceived absence of need (68 percent) followed by the cost of treatment (18 percent) (NIPORT et al. 2003). Other cited reasons include poor quality of services and lack of access or transportation problems. Less educated and poorer women are more likely to report cost as a reason for choosing not to deliver at health facilities (Rahman M et al.2009).

Only 21 percent of mothers get any postnatal checkups from trained providers within 42 days of delivery. Most women are checked up within the first two

days after delivery (NIPORT, Mitra Associates, and ORC Macro 2007). 27 percent of mothers received postnatal care from a medically-trained provider within the crucial first two days of delivery. Among them 21 percent of women received care from a qualified doctor, and 6 percent received care from a nurse, midwife, paramedic or family welfare visitor (FWV) within two days after birth. On the other hand, 72 percent of women who gave birth received no postnatal checkup within two days of birth (BDHS 2011).

The percentage of postnatal checkups is lower among women in rural areas, in those from lower socio-economic status, and in those who have no education (NIPORT, Mitra Associates, and ORC Macro 2007). The primary reason for not receiving a postnatal check-up is the perceived absence of need (56 percent) followed by cost of treatment (22 percent). Older women, women with higher parity, those with lower education, and those in poorer households report cost as a barrier for not seeking postnatal care (NIPORT et al. 2003).

“Three Delays" model identifies three factors that may delay a pregnant woman accessing services: i) delay at home in deciding whether to seek medical care; ii) delay on the road to reach the qualified medical practitioners or institutions; and iii) delay in receiving services after reaching the facility. This Model recognizes the different barriers that women face in achieving the timely and effective medical care needed to prevent complications and deaths occurring in pregnancy and childbirth. According to the “Three Delays” model, cost is one of the most important factors that affect decisions related to care seeking. Rob et al. (2006) also found that cost was one of the most important barriers for not seeking ANC and PNC services in Bangladesh. They suggested providing financial support to poor women to reduce catastrophic health expenditures, especially for delivery, Reproductive Tract Infections (RTIs), and Sexually Transmitted Infections (STIs) related services (Quoted in Rahman M et al. 2009).

Several reasons for the low utilization of maternal health care have been documented (Rahman L et al. 2006). The two main reasons are lack of knowledge about maternity care services (including antenatal, delivery and postnatal care) and economic barriers while seeking treatment from qualified service providers. These findings clearly indicate the need to improve maternal health services through the provision of education, counseling, referrals, and by providing financial support to poor women (Rahman M et al. 2009).

Supply-side problems and demand-side barriers are considered responsible for the low utilization of maternal health services in Bangladesh. Supply-side issues include non-availability of maternal and neonatal health services, drugs and commodities, discrimination against poor women and imposition of unofficial user fees. The cultural and social belief system, social stigma associated with pregnancy and birth, distance of the facility from home, lack of information on sources of care, lack of awareness on the value of maternal health services, and high access costs (e.g. direct and indirect costs) are considered important demand-side barriers (Ensor T 2004). A survey of women in four poorly performing districts of Bangladesh indicates that 27% of women did not use the supposedly free public health facilities for delivery due to lack of money (Mitra and Associates 2008).

Ministry of Health and Family Welfare (MOHFW) of Bangladesh is implementing a pilot demand-side financing (DSF) maternal health voucher program in 57 upazilas (sub-districts) around the country as part of its Health, Nutrition and Population Sector Programme (HNPSP). The program includes distribution of vouchers to pregnant women to access free antenatal care, delivery care, emergency referral, and postpartum care services, providing cash stipends for transportation and cash and in-kind benefits for delivering with a qualified health provider. The program also provides cash benefit to health care providers for identifying eligible women and providing maternal health services. Women who were identified as extremely poor are eligible for voucher when it was initially implemented in August 2006. The eligibility was

made universal in 9 upazilas in 2008. The objective of the program is to increase the use of qualified birth attendants and reduce the financial costs of delivery care to reach Millennium Development Goal 5 and achieve a 75% reduction in maternal mortality in Bangladesh by the year 2015.

1.2 Justification

A healthy mother can work properly at home or her office that increase the productivity of the family. She can also deliver a healthy baby that is highly expected by the family as well as the society or country. On the other hand, an ill mother is usually failed to serve the family and deliver an ill child who grows with low immunity, suffers from various health related complications and usually decrease the productivity. In addition, pregnancy related complications are the leading cause of death among women of reproductive age in Bangladesh.

But almost all these problems can be solved by providing maternal health care services like ANC, delivery services and PNC. Most of the poor women cannot take health care because of lack of money. DSF has become one of the popular alternatives to increase maternal health care of poor in the recent years to both Govt. and the NGOs in developing countries like Bangladesh. The aim of this study is to see the improvement of the level of utilization of ANC, delivery and PNC services by using of DSF. The findings of the study will provide empirical evidence to the policy makers on formulation plans for improving maternal health care system by properly using DSF.

1.3 Objectives of the study

The overall objective of the study is to assess the effectiveness of Demand Side Financing on increasing the demand for maternal health care. The specific objectives of the study are:

1. To assess the socio-economic status of respondents.

2. To see the health care seeking behaviour of woman with respect to ANC, delivery care & PNC in an experimental area (where DSF is performed) and a control area (where DSF is not performed).
3. To examine the effectiveness of DSF-

- whether DSF increases utilization of antenatal care of maternal health care
- whether DSF increases utilization of delivery care of maternal health care
- whether DSF increases utilization of postnatal care of maternal health care
- whether DSF increases the delivery care attended by skilled birth attendant
- whether DSF reduces the child mortality rate
- whether DSF reduces the maternal mortality rate.

In this study, the hypothesis is DSF increases the demand for and have utilization of maternal health care services like antenatal care, delivery care and postnatal care.

1.4 Plan of the study

The study has 10 chapters including the present one, which included the background, objectives and justifications. Chapter 2 presents the methodology of the study. Demand side financing in different countries are described in chapter 3. Literature review on demand side financing in MHC are discussed in chapter 4. A detailed description of the DSF program in Bangladesh is presented in chapter 5. In chapter 6, the study presents the background characteristics of respondents (women and service providers). Chapter 7 describes the utilization of antenatal care by women. Delivery care utilization by the women is discussed in chapter 8 and post-natal care utilization by the women is described in chapter 9. Chapter 10 tries to find out voucher related different problems, compared them with voucher related earlier studies in Bangladesh and finally recommended some ways to overcome the problems as well as to improve the voucher program.

CHAPTER 2

Methodology

2.0 Introduction

In any research, methodology is very important. To fulfill the objective of the study, methodology used here are i) the review of relevant literature, ii) sample survey of women using voucher and service providers involved with DSF and iii) collection of some information from the secondary sources. This chapter discusses design of the survey, sample size, place of study, data collection period, respondent's selection procedure, method of data collection, field work procedure, data management and data analysis technique.

2.1 Design of the survey

As the overall objective of the study is to assess the effectiveness of DSF on increasing the demand for maternal health care, experimental design, one area having DSF (voucher scheme) intervention and another area having no DSF intervention, was adopted for this survey. To assess the effectiveness of DSF, both the areas were selected according to some matching criteria.

2.2 Sample size

In any sample survey, the sample size must be estimated and this decision is very important. The sample size depends on the degree of precision i.e. how accurately we wish to know about the parameter of interest. In this study the standard formula of sample size estimation (Betty R. Krikwood) was used to calculate the adequate sample size.

The sample size of the study,

$$n= z^2pq/d^2$$

Where,

n = size of the sample.

z = the value of standard normal variate at a given level, 95% significance level is 1.96.

P = expected prevalence of a specific indicator, here the maternal mortality rate in Bangladesh, which is 0.194 (BMMS 2010).

d = the desired degree of precision i.e. the accepted level of accuracy.

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Now, if we assume for our study that z=1.96, d= 0.05, p= 0.194, q= 1-p=0.806, then by the above formula the sample size would be: n = 240.

A total of 480 women were considered as sample size out of which 240 women considered from experimental area and 240 considered from control area.

Besides these, 15 service providers from experimental area (Raipura upazila) were interviewed with a different questionnaire who are involved in DSF program.

2.3 Place of study

The study areas were Raipura Upazila of Narshingdi district as experimental area and Araihazar upazila of Narayangonj district as control area. Raipura Upazila was selected purposively as experimental area because the DSF program for MHC exists here and it is one of the low performing areas. The matching criteria utilized for selections of control area were geographical proximity (both the upazila situated beside each other), number of beds (31) in the Upazila Health Complex, and literacy rate (23%). Literacy rate represents demand-side characteristics by proxying for socio-economic status; bed capacity represents supply-side characteristics in terms of capacity; and geographic proximity captures some unobservable factors which are likely to be alike.

2.4 Data collection period

The data collection process of the study was conducted for the period of two months effecting from 01 September 2013 to 30 October 2013.

2.5 Respondent's selection procedure

In this study, the respondents were categorized into two types: eligible women of the experimental and control areas and service providers of the program area or experimental area.

2.5.1 Selection of women

The women were the respondents who have delivered baby within two years. With this, the study followed the DSF women selection criteria such as the respondent must be a permanent resident of the upazila, delivered baby for the first or second time, functionally landless i.e. owning less than 0.15 acres of land, monthly total family income not more than Tk. 2500, owning no productive assets like livestock, orchards, rickshaw or van. These selection criteria were followed in selecting women in both the experimental and control areas, which is at Raipura upazila in Narshingdi district and Araihazar upazila in Narayangonj district respectively. Eligible women were identified with the help of CSBAs, FWAs, HAs, other health workers and village residents.

2.5.2 Selection of service providers

Here, service providers from experimental area that is in Raipura upazila were selected. According to designation they ranged from the mastermind to field worker of the DSF program such as program director, medical officers, FWVs, FWAs, HAs, CSBAs, nurses, program assistant, office assistant etc.

2.6 Data collection technique

In this study, two types of techniques were used to collect data. These are i) interview method using structured questionnaires for selected women and service providers and ii) collection of relevant data from the secondary sources

such as UHC (both the experimental and control area), service statistics from the Directorate general of health Services (DGHS).

2.6.1 Survey Questionnaires

In order to achieve the objectives of the study two types of structured questionnaires were used: one for the eligible women of experimental area and control area and another for service providers of the experimental area. These questionnaires are given in Appendix B.

The first set of questionnaire was prepared to collect data from the voucher recipients of the experimental area and women of the control area. This questionnaire emphasized on the following variables: socio-economic and demographic variables, antenatal care or care during pregnancy (ANC), delivery care, postnatal care (PNC), and voucher related information (only for voucher recipients).

The second set of questionnaire was used to collect the data from the service providers in the experimental area on the following aspects: background characteristics, types of services provided, attitude towards the voucher recipients, constraints faced in providing services, suggestions and comments to improve the DSF program.

2.7 Field work

Field work of the study included of pre-testing of the questionnaires and data collection.

2.7.1 Pre-testing of questionnaires

Before collecting data, pre-testing of questionnaires were done in both the areas, Raipura and Araihazar. For this purpose pre-testing of three questionnaires were done in a nearby village of UHC. Women were identified with the assistance of a local CSBA in experimental area i.e. in Raipura upazila of Narsingdi district and the control area i.e. in Araihazar upazila of Narayangonj

districts. Service provider's questionnaires were pretested in Raipura upazila only. The aspects of the pre-testing of questionnaire were to find out of length of interview, identification of the respondents, problems of respondent selection, perception of interviewer and respondents, sequences of topics etc. Necessary modification and improvement of the questionnaire were done by consultation with the supervisor of this research.

2.7.2 Data collection

I personally collected data from different villages of both the experimental and control areas. One questionnaire was used for each respondent for collection of data by interviewing him or her.

I started collecting data from the nearest village/area of the UHC and continued it till fulfill the target of 240 women in each area. Villages were passed one by one of both the areas for this purpose which is shown in Appendix A. The respondents were identified with the help of the local HAs, FWVs, CSBAs and village residents. Informed consent of each woman was taken before interview. Providers at UHC who were involved in the voucher program were interviewed in Raipura upazila using the provider questionnaire.

2.8 Data Management

The data management activities included here are registration of filled-in questionnaire and data processing work.

2.8.1 Registration of filled-in questionnaire

Here, each filled-in questionnaire was entered in registers recording its identification number as soon as completed from the field.

2.8.2 Data processing

Data processing operation consists of editing, coding, tabulation etc.

2.8.2.1 Editing

In this study editing of collected questionnaire was done to verify that the survey questionnaire was correctly completed. The emphasized given here included that items of information recorded of responses obtained to interrelated questions were consistent; all the questions in the questionnaires were asked etc.

2.8.2.2 Coding

Coding is the conversion of entries on the questionnaire into symbols that can be used as input to tabulating equipments. During the categorization of the answers of the survey necessary coding is done. Thus, the questionnaires were completely coded before the data entry.

2.8.2.3 Tabulation

The collected data were then tabulated using the researchers own computer. Activities involved in the tabulation were entering data into computer, checking and ensuring that the data were correctly entered into the computer, preparation of output tables, ensuring that the output tables were accurate etc.

2.9 Technique of Analysis

For this study SPSS and MS-WORD were used. SPSS package was used for univariate analysis, to test the equality of means and chi-square test. MS-WORD were used for various purposes like report writing, tabulation etc.

CHAPTER 3

Demand Side Financing (DSF) in Different Sectors

3.0 Introduction

The study relates to the demand side financing (DSF) for maternal healthcare. In this chapter we like to spell out what is DSF and to identify the sectors where DSF program are being implemented in different countries.

3.1 Demand function for health care

In neoclassical economics it is assumed that three conditions are required for deriving demand function for any commodity-

A) Existence of a market for the commodity.

B) Bidding power and availability of choice to the consumer.

C) The sellers' actually charging price.

In the early age of neoclassical economics, the demand function was postulated as a unique, causal relationship between price and quantity of a commodity. The function was broadened to include as explanatory variables, in addition to price, income of the consumer, prices of other commodities, taste of the consumer, etc following Hicks' Value and Capital.

Demand for health care/medical care is a derived demand. Consumers consume health care not as an end in itself but they wish to be healthy. As Grossman (1972a: footnote 4) notes, a consumer derives utility not only from health-giving pursuits (e.g. medical care). Economic agents thus do not necessarily want to maximize their health, but their overall utility, and they are often willing to let their health suffer to realize other goals (e.g. by smoking).

"When an economist talks about the demand for medical care, or any other good or service, he is talking about willingness and ability to pay. The term should not be confused with 'need' or 'want' or 'desire', although these words are frequently used interchangeably with 'demand' by lay persons." (Fuchs 1968 quoted in Roy & Berg 2002).

There are three categories of factors influence the demand for health care.
Firstly, demographic and locational variables are significant (e.g. income group, race and where the respondent lives).
Secondly, the characteristics of the care provided are important (e.g. cost and distance from the respondent).
Finally, the characteristics of the illness (such as its severity) are important (Roy & Berg 2002).

On the demand side, the economic literature is dominated by adaptations of the Grossman model that analyze individual investment and consumption decisions to improve health and utilize health care (Grossman 2000). Demand is influenced by factors that determine whether an individual identifies illness and is willing and able to seek appropriate health care. From this, the demand function for health care can be stated as:

Qd = D (individual/household factors, community factors, prices)

- Individual (and household) factors include age, sex, income, education and knowledge about the characteristics of medical treatment.
- Community factors include cultural and religious influences and other social factors that affect individual preferences.
- Price is a complex variable and includes the direct price and distance cost, opportunity (time) cost of treatment since treatment can be time consuming and any informal payments made to the facility for commodities or to staff. Also included prices for substitute commodities that impact on health, since individuals have some scope for choosing healthy lifestyles, safer employment or better nutrition in order to improve health or reduce the probability of ill health (Ensor & Cooper 2004).

The above stated demand function do not represent the demand function for maternal health care purely in LDC, particularly like Bangladesh. Here, demand for maternal healthcare depends on a number of other variables, such as travel cost, travel time, severity of disease, availability/accessibility, quality of care, and health consciousness.

Though it is think that price and income are the main determinants of the demand function for healthcare like any other goods but yet no conclusive evidence been found from empirical analyses regarding the magnitude of influence of the two variables on demand for healthcare. According to Akin et al. (1984, 1987), Birdsall and Chuhan (1986), and Heller (1982), in a developing society prices are not important determinants of medical care. On the contrary, a number of important studies have concluded that prices are indeed important (Mwabu 1986, 1988, Alderman & Gertler 1988, Cretin 1988). Some studies carried out in developed countries also concluded that prices are important determinants of healthcare demand (Manning 1987). (Quoted in Howlader et al. 2000).

A Contradictory result observed by Gertler and Gaag (1990). They have shown that prices are more important determinants of healthcare demand in developed countries than in the developing ones, although the reverse seems to be more appropriate from the theoretical point of view. People are expected to be more sensitive to price when it constitutes a larger share of their budget. In developed countries, per capita income is much higher than in developing countries, and moreover, medical insurance is more or less universal in developed countries and almost nonexistent in developing countries. So, medical care is much smaller percentage of household budgets in developed countries due to a higher per-capita income and health insurance coverage than in developing countries. Besides this theoretical deduction, estimated income elasticities also suggest that price elasticities should be higher in developing countries (Deaton 1980, Musgrave 1983, Van 1982) (quoted in Howlader et al. 2000).

There is much evidence to suggest that distance to facilities imposes a considerable cost on individuals and may reduce demand. Transport as a proportion of total patient costs (including facility costs not financed by the user) was found to be 28% in Burkina Faso, 25% in northeast Brazil and 27% in the United Kingdom (Sauerborn et al. 1995; Frew et al. 1999; Terra de Souza et al. 2000) (quoted in Ensor & Cooper, 2004).

Another study in Bangladesh suggested that it was the second most expensive item for patients after medicines (CIETcanada 2000). Location and distance costs are often seen to negatively impact on service utilization. Study in Zimbabwe suggested that up to 50% of maternal deaths from haemorrhage could be attributed to the absence of emergency transport (Fawcus et al. 1996). At the same time, distance is also cited as a reason why women choose to deliver at home rather than at a health facility, for example; studies in the Philippines (Schwartz et al. 1993), Uganda (Amooti-Kaguna and Nuwaha 2000) and Thailand (Raghupathy 1996) (quoted in Ensor & Cooper, 2004).

When price of time become a determinant of demand for healthcare, then the costs or other prices involved here should also be considered. That includes cost of travel, cost of maintaining attendants, number of workdays lost, waiting time etc. and they may enter the demand function via the budget constraint.

Consuming health care can be time intensive. Both patients and relatives may have to give up long periods of work (or leisure) in order to receive treatment. This represents an important cost to individuals, particularly during peak periods of economic activity such as harvest time. A study in Australia found that indirect costs account for 60% of the costs of treatment for surgery for patients from rural areas (Rankin et al. 2001).

Opportunity costs vary for different groups. A recent study in Pakistan, for example, found that compliance is more easily improved in those who are not economically active since they are more likely to have time to attend for

treatment (Khan et al. 2002). In Uganda it was found that poorer patients were willing to travel considerable distances searching for better facilities, perhaps because their opportunity costs were lower (Akin and Hutchinson 1999). Financial barriers may also interact with other demand barriers.

Important implications of the demand function are twofold: first, increase in charged price or introduction of user fees is unlikely to reduce demand for healthcare to any considerable extent and second, reduction of the indirect price of healthcare, such as travel cost, travel time, and waiting time, can significantly increase demand for healthcare.

The important explanatory variables of the demand for healthcare as well as maternal health care function as listed by Howlader et al. (2000) are the following:

- Price of healthcare (doctor visit, service charge/cost, cost of clinical/ diagnostic test, medicine cost),
- Price of other consumption goods,
- Cost of traveling to health facilities,
- Cost of traveling to the market for consumption goods,
- Value of time lost due to travel to the health facility,
- Value of time lost due to travel to the market,
- Cost of maintaining attendance for a sick person,
- Value of time lost due to waiting at the health facility,
- Value of time lost due to marketing,
- Monetary gain accrued due to reduction of duration of disease affected by receipt of healthcare,
- Permanent income,
- Severity of disease,
- Quality of care,
- Level of education and motivation.

Government health facilities of developing countries like Bangladesh provide free ANC, delivery and PNC services, but the related costs of medicines, transportation and treatment for complications discourages many poor women from seeking these services. A major policy concern is the need to develop financing mechanisms, which are able to target the scarce resources to those who cannot afford to pay.

The challenge is to explore innovative ways by which government subsidies could be better targeted at those who cannot afford to pay, improve equity and efficiency of services, provide choice of providers and improve responsiveness and quality of care. To tackle financial barriers to access, developing countries are implementing various demand-side approaches to financing health care that subsidize the consumers directly. One such innovative approach is demand side financing, and a number of countries have recently started experimenting with it.

3.2 What is DFS? An overview

The examples of DSF contains with different terminologies in global literature such as output-based aid, conditional cash transfer, consumer-led DSF, provider-led DSF which used for slightly differentiated products. DSF can be consumer-led (vouchers, cash transfers, tax rebates) or provider-led (capitation payment, referral vouchers), and can be provided before or after service utilization. This system of output-based remuneration for services rendered in principle can improve efficiency in service delivery through competition (Ensor 2004). Another often-mentioned phrase in the literature is Output-based Aid (OBA), which is a combination of consumer-led and provider-led DSF (Brook and Smith 2001).

Beside these, another example of recent initiatives on DSF are Conditional Cash Transfers (CCT) which aim to reduce poverty by making welfare programmes conditional upon the recipients' actions (LaGuarde et al. 2007). The government transfers the money only to persons who meet certain criteria,

which may include, for example, getting regular screening for cervical cancer or receiving vaccinations (*Janani Suvidha Yojana* in India or Nepal's Safe Delivery Incentive Programme (SDIP)) (Gupta et al. 2010).

Demand-side financing (DSF) is a mechanism to increase the purchasing power of voucher-recipients to obtain specified health services or goods through the market system (Pearson 2001) or it is a way in which the government can finance private consumption of certain goods. Under demand-side financing, consumers receive a certain amount of money for specific expenditures (Janssen et al. 2004).

The DSF instruments include vouchers or coupons, health funds or insurance schemes. All the DSF instruments are intended to subsidize the target health services so that the out-of-pocket cost of medical care at the point of delivery becomes significantly lower than the market price or fee charged (Ahmed & Khan 2010).

The most commonly implemented DSF mechanism is one that uses vouchers, defined here as "a token that can be used in exchange for a restricted range of goods or services. Vouchers tie the receipt of cash to particular goods, provided by particular vendors, at particular times. Health care vouchers are used in exchange for health services (such as medical consultations or laboratory tests) or health care consumables (such as drugs)" (World Bank 2005). Health vouchers are seen as instruments that encourage the use of under-consumed services like family planning, treatment of infectious diseases, immunizations, mental health care, and maternal and child health services by subsidizing (fully or partially) health-care costs (Gorter et al. 2003).

Clients buy vouchers for a specified set of services or products at a pre-defined price, or obtain vouchers free of charge. Voucher holders can then exchange the vouchers for those services or products at participating providers. The price that voucher holders pay for voucher services at participating providers may

vary considerably depending on the degree of subsidy associated with the vouchers. Vouchers can also be used to cover other costs of accessing health services (such as transport, lost wages, and other opportunity costs) if these are important barriers to increasing the use of health services. Vouchers can therefore reduce financial barriers to using services by giving voucher holders a discount on the retail price of health services or by compensating other costs of using health services (Ahmed & Khan 2010).

There are several advantages to using voucher programmes. First, voucher programmes allow for the targeting of low-income or high-risk individuals in specific geographic areas or according to a means test (Ensor 2004).

Second, voucher programmes is the potential to grant purchasing power to low-income individuals who might otherwise be ignored in the market due to their lack of funds or knowledge of goods and services.

Voucher programmes typically engage the private sector and therefore can introduce greater competition in reproductive health services by increasing supply and improve consumers' choice (Bhatia & Gorter 2007). Another advantage is that minimum quality standards can be used to accredit facilities and encourage providers who do not qualify to make improvements to become eligible (Sandiford et al. 2005).

Lastly, voucher programmes can facilitate greater transparency through the review of administrative data that track voucher distribution, receipt of services, and performance measures. If information systems are set up properly when designing a voucher programme, providers can be monitored and financially rewarded for providing quality care (Sandiford et al. 2005).

Although demand side financing has its advantages, this approach also has number of limitations. Some of these are over-servicing because of the direct link between outputs and the receipt of subsidies, combined with moral hazard

and supplier-induced demand. Also, assuring that services are actually provided may be problematic. Cream skimming, where providers actively seek to avoid providing care to groups that require more services than others – is yet another problem that can be associated with demand side subsidies. The disadvantage of higher transaction and administrative costs because of the need to quantify outputs must not be forgotten (Bhatia et al. 2006).

The possibility for fraud at the provider level is another limitation to voucher programmes. However, fraud detection can also be built into a voucher programme, where voucher sales and services are monitored for unexpected spikes or patterns consistent with fraud and patients can be followed up to confirm they received services (Bellows NM 2010).

3.3 DSF in different sectors

In recent year's demand-side financing – as an alternative to supply-side financing has become more and more popular among governments in many countries (Janseen et al. 2004). Vouchers (or coupons) for reproductive health are not new; Taiwan and Korea successfully used them in the 1960s to increase access to family planning (Cernada & Chow 1969). There have been a number of examples of voucher schemes in developed countries. For example, in Wisconsin, in the United States of America (USA), vouchers were used among migrant Spanish-speaking workers to encourage them to access health care (Slesinger and Ofstead 1996). Meanwhile a study in Minnesota, USA, on the effectiveness of vouchers for breast cancer screening indicated that vouchers did improve screening rates (Stoner et al. 1998). There are many other examples from USA of vouchers being used to better target needy populations in housing, education and health (Varady and Walker 2003).

The majority of the Reproductive Health (RH) voucher programmes were located in Asia (Bangladesh, Cambodia, China, Korea, India, Indonesia, and Taiwan). Three additional RH voucher programmes were located in Africa (two in Kenya, one in Uganda) and 3 more were in Central America (all in

Nicaragua). Most of the voucher programmes offer more than one type of RH service (i.e., maternity services and family planning). Two programmes (Bangladesh and Cambodia) focused exclusively on maternity services, 2 delivered only family planning services (Korea and Taiwan), and 1 programme (Nicaragua) provided screening for cervical cancer. Most RH voucher programmes contracted with both public and private providers (including for-profit and not for- profit providers), some contracted only with public providers and some contracted only with private providers. External funders of RH voucher programmes included the World Bank and bilateral aid agencies from Belgium, Germany, the Netherlands, the United Kingdom, and the United States. (Bellows NM et al. 2010)

A voucher programme was piloted in Kenya to see the intake of Family Planning Methods/Health Services in 2005 named 'The Kenya RH-OBA voucher' in three rural districts and two Nairobi slums financed by the German Development Bank and the Government of Kenya. For voucher distribution in Kenya, community-based distributors sell safe motherhood vouchers to poor pregnant women who are identified using a poverty grading tool. Under the programme the Individuals are eligible to buy a FP (Family planning) voucher for long acting and permanent methods and a Safe Motherhood (SM) voucher for antenatal care (ANC), institutional delivery and postnatal care (PNC) services that can be redeemed at 54 public, private for-profit and private non-profit providers. The average voucher reimbursement rates were as follows: $13 for prenatal care, $66 for normal delivery, $276 for complicated delivery (incl. caesarean), $13 - $39 for family planning, depending on method. The study found that in Kenya, uptake of RH-OBA SM vouchers has been high. Between June 2006 and October 2008, 78,651 SM vouchers were sold and 60,581 women used it to deliver in a participating facility whereas, only 25,620 FP vouchers were sold of which 11,296 (41%) of these were used which was considerably lower than expected. Almost 60% (two thirds) of FP voucher users selected implants compared to a third (35%) that chose female sterilization (bilateral tubal ligation, or BTL) and only 5 percent opted for

intrauterine contraceptive devices (IUCDs). The study also found, the poor in Kenya prefer to use private for-profit and non-profit providers where Private non-profit providers appear an important source of surgical methods of Contraception which is 90 percent of all claims for BTLs and (45 %) for SM services (Gitonga et al. 2009).

Managua, the capital of Nicaragua, one of the poorest countries of Latin America, in order to encourage service uptake and effective treatment of STIs in high-risk groups, a competitive voucher scheme was set up and implemented in Managua by ICAS in 1995. The scheme was designed to increase the utilization of STI services by population at risk of HIV by increasing the financial accessibility of the services and reducing the associated stigma. It also served to strengthen the capacity of providers to deliver high (technical and human) quality care and to detect and treat a higher number of STIs. The ultimate aim was to contain the spread of the HIV virus within the high-risk groups and to other sectors of the population. For the purpose vouchers are distributed to sex workers, their regular clients and/or partners, transvestites and male glue-sniffers (male and female) in Managua at 6-monthly intervals which can be redeemed for up to 3 months after the initial distribution. They are then entitled to a range of free services from any one of between 7–12 private and NGO clinics contracted in advance by the voucher agency including a medical consultation, screening tests for Syphilis, and Trichomoniasis, Candidiasis, Gardenerella and cervical cancer (Papanicolaou smear) in the case of female redeemers; diagnosis of other STIs through physical examination; and health education including the provision of an information booklet, especially designed for sex workers, and 24 condoms during each visit. Presumptive treatment with a single-dose of 1 gram of Azithromycin is offered to all redeemers, which treats several STIs such as Chlamydia and Gonorrhoea. For patients testing positive for STIs and/or pregnant women an additional voucher is provided giving them the opportunity to return for a repeat consultation at a future date. Medical forms, exit interviews and parallel laboratory testing were carried out to ascertain the

quality of the services and treatment provided by the clinics and their effectiveness in reducing the prevalence of STIs. The research found that though the voucher scheme cost more than service provision in the absence of vouchers, it was successful in reaching high-risk groups, providing them with an affordable and high quality service and treating 92% of the four most frequent STIs where in the absence of vouchers only 15% of STIs would have been cured with obvious implications for the spread of STIs and ultimately HIV. This was made possible through the use of a highly effective treatment protocol (combining presumptive treatment, laboratory tests, clinical diagnosis and effective antibiotics) and by signaling to medical staff about the risk status of patients through vouchers. Syphilis prevalence decreased and service utilization increased among the target groups (Borghi et al. 2005).

Another study by Mouwissen et al. (2006b) shows that under the voucher programme over 2000 and 2001, 28711 vouchers were distributed at four markets in Nicaragua, outside 19 public schools and in 221 poor neighbourhoods to adolescents aged between 12 and 20, 16850 to girls and 11861 to boys. In total, 3301 (20%) vouchers were redeemed by girls: 34% for contraceptives, 30% for sexually transmitted infections, 28% for counseling, 27% for antenatal care, 17% for pregnancy testing and/or 15% gave other reasons. The vouchers gave free-of charge access to SRH care in any of the four public, five private and 10 clinics from non-governmental organizations, contracted by the Central American Health Institute. Voucher redeemers received a booklet on adolescent health, two condoms with supportive information as well as access to laboratory tests, treatment specific to diagnosis and contraceptives as required. The study found no relevant differences in characteristics of voucher receivers in sampled sites versus non-sampled sites. Older and sexually active girls, especially mothers and pregnant girls made more frequent use of SRH care and users-with-voucher compared with users-without-vouchers were younger. Evaluation of the impact of the intervention among female adolescents showed that voucher receipt increased use of SRH care among all groups and contraceptives and condoms in specific

groups. Of all SRH care-users 593 (87%) were satisfied with the care received of which 91% of users-with-voucher and 85% of users-without-voucher. Perceptions of the quality of reception was very strong in sexually active girls who were neither mothers nor pregnant and in girls who were not yet sexually active but absent in girls who were mothers or pregnant.

In Nicaragua, user satisfaction was significantly higher among voucher users than controls and some aspects of service quality improved over time. Additionally, among the contracted facilities, physicians' knowledge of contraceptives and recognition of STI symptoms increased during the programme, which is expected to yield better quality care (Meuwissen et al. 2006a). Nicaragua's cervical cancer screening programme exceeded established screening benchmarks in terms of reaching and treating high-risk women (Howe et al. 2005).

Malaria is endemic throughout most of Mozambique and is a major cause of morbidity and mortality. A recent study showed that 30.5% of all outpatient visited at two health facilities in southern Mozambique were due to malaria and most cases in young children. In August and September 2005, Mozambique's Ministry of Health implemented a national immunization campaign to provide measles and polio vaccines and vitamin A supplements to children less than five years of age that took place in two phases. During the first phase in August 2005, children were vaccinated against polio and measles and received a dose of vitamin A. During the second phase in September 2005, children received a second dose of polio vaccine but in Manica and Sofala provinces (excluding the city of Beira) they were also given a voucher that was redeemable for a free long-lasting insecticide-treated bed nets (ITNs) (LLIN) at a later date with the primary objective to reduce morbidity and mortality due to malaria in young children. A total of 247,268 vouchers were distributed as part of this campaign and in December 2005, 358,331 LLINs were distributed to HH (household) members upon the presentation of vouchers. In February 2006, a cross-sectional survey was conducted by Oliveira et al. (2010) to measure

pre-campaign HH ownership of bed nets of any kind, post-campaign HH ownership of bed nets of any kind and ITNs, and post-campaign usage among the Roll Back Malaria (RBM) target groups (children under five years of age and pregnant women). The results of the study shows increased HH ownership and usage of ITNs by children less than five years of age 50.2% and 60.3% respectively when data for both provinces are combined. HH ownership of bed nets of any kind increased from 20.6% to 55.1% in Manica with an improved equity ratio, whereas in Sofala it increased to 59.6%. These proportions are lower than those observed in Niger (>80%), where similar surveys were conducted one and nine months after an immunization campaign and bed net distribution. Another study by Grabowsky et al. (2007) suggests that integrated campaigns to distribute ITNs are able to rapidly increase HH ownership of ITNs and to maintain and further increase these high ownership rates other strategies such as ITN distribution at antenatal clinics and during children's regular immunization visits be undertaken as complementary efforts.

Tanzania is carrying a heavy malaria disease burden with an estimated 16 million clinical episodes per year and 100 000 child deaths (MOH 2002). The Tanzanian National Voucher Scheme (TNVS) is an innovative system by the country's Ministry of Health and Social Welfare in partnership with the National Malaria Control Programme that uses discount vouchers as a means of delivering insecticide-treated nets, launched at the end of 2004 and implemented at a national level since 2006 that targets pregnant women and their newly born babies by giving a voucher to pregnant women at their first antenatal visit. The value of the voucher was fixed at TShs 3,250 (equivalent to US$ 2.5) (MOH 2002). The women can use the voucher as partial payment toward the purchase of a net. In brief, each woman must first attend an antenatal clinic then be given a discount voucher, then use the voucher to buy a net ensuring that the purchased net is packaged with insecticide, use it to treat the new net and finally reach the desired outcome of sleeping under the treated net. Distribution of nets free of charge to under-five children was implemented through the national child vaccination campaign in July 2005 lasting for three

days. Every child below five years presenting for vaccination against measles, treatment of helminths and vitamin A supplementation received a free bed net bundled with an insecticide treatment sachet. The study found that net use varied across population age groups with excellent targeting of high coverage to the most vulnerable groups which was 62.7% overall, 87.2% amongst infants (0 to1 year), 81.8% amongst young children (>1 to 5 years), 54.5% amongst older children (6 to 15 years) and 59.6% amongst adults (>15 years). The biggest source of nets used by infants was purchased from the private sector with a voucher subsidy (41.8%) of which half of nets used by young children (50.0%) and over a third of those used by older children (37.2%) were obtained free of charge through the vaccination campaign. The largest source of nets amongst the population overall was commercial purchase (45.1%use) and the primary means was for protecting adults (60.2% use). The study has also shown that overall net use in study area was far higher than most other parts of Africa which provides further definitive evidence that net delivery strategies other than fully subsidized mass distribution to entire populations can achieve net coverage high enough to provide community level benefits. This study supports the view that high and broad ITN coverage including older children and adults is important for effective malaria control but show that market-based cost-sharing strategies utilizing voucher-targeted subsidies can also help achieve this goal (Khatib et al. 2008).

With the aim to find out whether vouchers were used appropriately or not, TAMI et al. (2005) conducted a study in Kilombero and Ulanga districts, southern Tanzania. They try to find out that: (1) whether vouchers issued by MCH clinics reached the intended beneficiaries (pregnant women and children), (2) whether vouchers were used to buy an ITN for the household of the intended beneficiaries, and (3) whether women and children under 5 years from households that had used a voucher to buy an ITN actually slept under a net. The study indicates vouchers as a feasible system to deliver targeting subsidies to vulnerable populations but leakage during the delivery process was the main form of misuse. Evidence of large-scale misuse is found in three of the 21

MCH clinics where sample vouchers are issued without names written on the originals or known to community leaders or neighbors and individuals had been overcharged purchasing a net, half of them at MCH clinics. These findings are not surprising as health infrastructures are poor in most African countries and the relatively high monetary value of the vouchers can incite mismanagement. Moreover, supervision of the scheme at clinic level was relatively poor and regular supervision and checking is likely to reduce misuse at clinic level. Training of MCH staff and ongoing promotion of the voucher scheme may need to focus on the right of each woman to receive a voucher. The study found that 100% (56) of people received a voucher used it to purchase an ITN, 80% of the under-five children in these households slept under a net and over 70% used a net purchased with a voucher. There was no evidence that nets were procured using more than one voucher per net or used to buy anything but a net. Importantly, in 20% of households the only existing net had been purchased with a voucher, over 90% of the women slept under a net during pregnancy and only 27% of them obtained a voucher while pregnant. Though many people in the study suggested increasing the value of the voucher but not as high as used by the Tanzanian National Voucher Scheme [Tsh 2750 (NMCP 2003)] and some women also suggested selling nets at MCH clinics for convenience as the largest problems of misuse were seen there.

Meyer et al (2011) conducted a systematic review to see whether voucher programmes effectively target populations of interest; increase utilization of health goods/services; the costs of delivering health goods/services in voucher programmes are more efficient than other forms of health aid distribution; result in improved quality of care; and improve the health of populations. The review shows, overall there is modest evidence that voucher programmes effectively target vouchers for health goods/services to specific populations and improve the quality of health services. But insufficient evidence is seen to determine whether voucher programmes deliver health goods/services more efficiently than competing health financing strategies. On the other hand, there is robust evidence that voucher programmes increase utilization of health

goods/services. The findings also indicates that voucher programmes do not have an impact on the health of populations, however this conclusion was found to be unstable and one positive finding on health outcomes would change this conclusion to robust evidence. Based on the sub-group analyses, the evidence suggests that voucher programmes delivering health services located in Asia and offering free health goods/services or using public and private providers have a positive health impact.

In 1992 the Government of Colombia initiated an educational voucher program for secondary education to increase the transition rate from primary to secondary education addressing one of the constraints faced by poorer students - the shortage of space in public schools especially in large cities by tapping into the capacity of private schools which were already enrolling 40 percent of students at that time. Five years after the program has started, involved more than one-fifth of the municipalities in the country and close to 2,000 private schools and supported more than 100,000 secondary students. Colombia's voucher program is targeted toward poor students who have already been attending public school and established to relieve the overcrowding in public schools but not to substitute for them. Its principal aim is to increase net enrollment without sacrificing quality. The voucher program is a partnership between the central government and local governments which was launched as part of shifting power from the central government to local institutions to expand the role of the private sector in the provision of public services. Municipalities may or may not participate in the program but if they do, they must co-finance the cost of the vouchers. The central government pays 80 percent of the cost of the voucher program and participating municipalities pay the remaining 20 percent. The voucher is designed to cover an annual matriculation fee and ten monthly tuition payments the value of which depends on the current tuition and matriculation fees in each school with a maximum set on this value each year. The participating students were selected through a specific criterion. The study by King et al. (1997) found that the number of students grew yearly by an average of 35 percent from 1992 to 1994 but fell by

an average of 5.5 percent per year from 1994 to 1996. Two factors explain the decline of students in the voucher program of which the first and key factor is the drastic reduction in the number of new vouchers and the second factor for the tapering off the number of renewed vouchers at which students drop out of the program. In other words, the voucher has lost some of its purchasing power and some students have had to supplement the voucher with out-of-pocket expenditures. Since some students are enrolled in private schools only because of the voucher program, the poorest of them have had to drop out of school. A quick inquiry carried out by the Ministry of Education during a World Bank mission in December 1996 demonstrated that the drop in the number of new vouchers is not a reflection of a large decrease in the demand for secondary education or in the public support of it but due to the decision by the Ministry of Education to limit the number of new vouchers to those funded by the World Bank loan project which provides 5,500 vouchers annually to selected municipalities.

Chile is one of the few developing countries to have used an educational voucher program. Although the final word on the success of this program is yet to come, the results from existing studies are instructive. The program introduced in 1980 in pre-school, primary and secondary schools provided a per-student subsidy equivalent to the average per-student expenditures of the Ministry of Education allowing students to enroll in the participating private school or public school of their choice. To participate, schools have to comply with norms governing the curriculum and infrastructure as established by the Ministry of Education; they also have to offer their educational services free of charge to their students. As part of the reform, administration of the government-owned public schools was transferred directly to the municipalities, administration of the vocational secondary schools was transferred to private non-profit organizations often associated with a specific industry, and private groups and individuals were encouraged to set up their own schools. Both privately and municipally-administered voucher schools are paid directly by the central government on the basis of their total enrollment, whereas the

vocational schools run by nonprofit organizations are paid lump-sum amounts (Schiefelbein 1991).

A few evaluations of Chile's program have been conducted where the impact on overall enrollment rates is not clear but private school enrollment appears to have risen sharply as a result of the program. The principal objection to the program is a charge that the program can be blamed for the widening of the gap in achievement among schools (Schiefelbein 1991; Prawda 1993, quoted in King 1997).

In 1990 the city of Milwaukee, Wisconsin, USA introduced a publicly-funded voucher scheme that allows low-income students to attend a non-sectarian, private school of their choice. Despite its small size (832 students enrolled in eleven schools in 1994), the program has received a great deal of attention and has been evaluated. The value of the voucher is set at the annual per-student subsidy given by the state to public schools ($2,987 in 1993-1994) which is received by private participating schools in lieu of tuition and fees from the students. The first evaluation of the program found that it appears to be well targeted – the average income of the beneficiary households is half the average family income in the city's public schools-- but the variance in test scores between public and private participating schools offers no clear evidence that choice schools produce better or worse students than public schools (West 1996; Witte 1996, quoted in King 1997).

Another evaluation obtained more positive results. Using a natural experiment generated by the voucher schools' use of a lottery to select qualified applicants, it found that "students enrolled in the choice schools for three or more years substantially outperformed, on average, a comparable group of students attending Milwaukee public schools" and that "attendance at a choice school enhances academic performance as measured by standardized test scores." (Greene et al. 1996, quoted in King 1997).

Education levels are low in Brazil. An estimated 17 percent of Brazilians over seven years of age are illiterate. According to a 1993 report, 63 percent of children drop out of primary school before completing it. One of the main reasons for such high dropout and repetition rates is the need for children to contribute to family income. In 1995, a pilot scholarship program was established in the federal capital, Brasilia to counter child labor and ultimately reduce school dropout. The stipend guarantees a minimum wage to every low-income family keeping its children aged 7 to 14 years in school. Additional incentives are built into the program contingent on regular school attendance and successful grade completion. These include a school savings program, which provides cash deposit into the savings account of each child whose family is a beneficiary of the scholarship program. In 1997, the *bolsa-escola* program operated in nine cities in Brasilia, sponsoring 22,493 families and benefiting 44,382 children (about 12 percent of public school enrollments in Brasilia in 1996). The cost of the program was about $29 million, which represents less than 1 percent of the federal district's total budget (Vawda 1997).

3.4 Conclusion

Individual demand for health care depends on household factors like age, sex, income, education, knowledge about medical treatment, community factors like cultural, religious, social factors and prices of the health care services. But in LDC like Bangladesh demand for maternal health care also depends on some other variables such as travel cost, travel time, severity of disease, availability/accessibility, quality of care, and health consciousness.

DSF is a mechanism to increase the demand for a product when the demand is very low due to lack of purchasing power of the consumers or the consumers do not feel because of some reasons that they need it. It provides direct subsidies to the poor for access to specified services. Generally, the subsidies are targeted at users rather than the service providers. The aim is both to protect

consumers from unaffordable costs and to increase the purchasing power of consumers.

DSF is being implemented to eradicate the disease like HIV & Malaria in Nicaragua, Managua, Mozambique and Tanzania, to augment the demand for reproductive health in Belgium, Columbia, China, Indonesia, Kenya, Uganda, Tanzania, to increase the demand for family planning methods in Korea, Taiwan and Nicaragua, to enhance the demand for education in Brazil, Chili and Columbia.

CHAPTER 4

Demand Side Financing in Maternal Health Care

4.0 Introduction

It is seen in the last chapter, DSF are being implemented in different sectors of different countries of the world. In this chapter, we like to review the literature on DSF in MHC in different countries including Bangladesh to understand its current situation, outcome, problem etc.

4.1 MHC in different countries

The pace of decline of the Maternal Mortality Ratio (MMR) in Pakistan has been slower than for the rest of South Asia. New approaches are needed to improve maternal health service delivery if the country wants to meet the Millennium Development Goal (MDG) target of reducing the MMR by 75% of its 1990 level or to 140 maternal deaths per 100,000 live births. In this situation a 12-month pilot project of maternal health voucher intervention was implemented to lower maternal mortality by increasing the use of maternal health services particularly delivery at a health facility among 2,000 pregnant low-income women in Dera Ghazi Khan City, located in Southern Punjab, Pakistan in 2009 under Performance Based Financing (PBF). The package of services included three ANC visits, normal delivery or referral for caesarian-section and a PNC visit and complete blood count and an ultrasound examination in addition. (Agha 2011a).

A pre-test/post-test non-experimental study was conducted by Agha (2011a) to assess the impact of the intervention. Household interviews were conducted with randomly selected women who delivered in 2008 (the year prior to the voucher intervention), and with randomly selected women who delivered in 2009. The findings of the assessment showed 21.6 % increase in institutional delivery in Dera Ghazi Khan City, after adjusting for demographic and

socio-economic factors, that is in the absence of the voucher scheme there may have been no increase in institutional delivery. The study showed very substantial differential in the institutional delivery rate between the poorest and the least poor women in Dera Ghazi Khan City (32% vs. 85%) within the course of a one-year maternal health voucher project by 2009 which was 53% vs. 87% in 2008. No maternal death was observed among women who received voucher booklets. The rough calculations of the study suggest that 5.5 maternal deaths may have been prevented by the project at a cost per life saved of $26,053 which was at 276 per 100,000 live births in Pakistan. Hence, a highly targeted PBF approach such as this one is likely to be considerably more cost-effective than the available alternatives. Participation in the voucher scheme was associated with a 35 percentage point increase in PNC. Programmatic variables unrelated to the voucher intervention such as travel time to the nearest health facility or television viewership did not have significant effects on institutional delivery or PNC use. However, being within five minutes of the nearest health facility was associated with higher use of ANC. Among non-program variables, parity and mother's education had consistently large effects on the use of maternal health services.

On the other hand, in August 2009 a demand-side financing project was initiated to assess the impact of a demand-side financing intervention to increase institutional deliveries among poor women (defined for this study as women in the two poorest quintiles) in a predominantly rural district Jhag of the Pakistani Punjab. The intervention addressed both financial and non-financial barriers to delivery care where outreach workers were hired and trained in promoting the use of maternal health services in 11 union councils of Jhang representing an estimated population of 330,000 and highly subsidized services accessed via vouchers were delivered between January 2010 and December 2010. The project was funded by Population Services International bearing the objective to determine whether a demand-side financing intervention could increase the utilization of ANC, PNC, institutional delivery and family planning among poor women in Jhang. The study does not assume

that all deliveries among poor women were through the use of vouchers but it does assume that significant changes in institutional delivery among poor women in the intervention union councils reflect the effects of the voucher scheme. The package of services available to study participants included three ANC visits, a normal delivery visit combined with a PNC visit, a referral for a caesarian-section, a PNC visit following the caesarian-section and a postnatal family planning visit provided through a coupon in the voucher booklet. Providers who received caesarian-section referrals were reimbursed by the project and the family planning visit could be used by the client to receive counseling or to receive a method. The booklet also contained two coupons for maternal tetanus and two coupons to enable clients to get their complete blood count and an ultrasound examination (Agha 2011a).

A pre-test/post-test quasi-experimental design was conducted by Agha (2011b) to assess the changes in the proportion of facility-based deliveries and related maternal health services among the poor. Household interviews were conducted with randomly selected women in the intervention and control union councils, before and after the intervention. The study shows that ANC use (3+ visits) increased by 15 percentage points among women in the fifth (poorest) quintile (from 23% to 39%) and 18 percentage points (from 31% to 49%) among women in the fourth quintile in the intervention area but did not change in the control area. Similarly the level of institutional delivery among women in the fifth and fourth quintiles increased by 16 percentage points (from 31% to 47%) and 21 percentage points (from 37% to 58%), respectively, in the intervention union councils but did not change in the control union councils. PNC use increased among poor women in the intervention area where women in the fifth quintile experienced a 6 percentage point increase in PNC use (from 7% to 13%) and women in the fourth quintile experienced a 13 percentage point increase in PNC use (from 12% to 23%) but no change observed among women in the same wealth quintiles in the control union councils. The study concludes that there were statistically significant increases in institutional delivery among poor women (defined as women in the fifth and fourth quintiles)

in the intervention but not in the control union councils during the period of DSF in Jhang and it was significantly greater among poor women relative to non-poor women but no evidence found of an increase in family planning use among women in the fourth or fifth quintiles in the intervention union councils. The findings decided that voucher intervention significantly reduced differentials in institutional delivery between the poor and non-poor in Jhang district, Pakistan.

In 2007 in Cambodia, the Ministry of Health and the Belgian Technical Cooperation initiated a voucher scheme to complement an existing Health Equity Fund (HEF) scheme for improving access to safe delivery for poor women in three rural health districts alongside other strategies such as performance-based contracting and delivery incentive schemes. The aim of the study is to assess to what extent voucher and HEF schemes have improved access to skilled birth attendants for poor women which was conducted in three rural health districts in Cambodia named Cheung Prey, Prey Chhor and Chamkar Leu operational health districts (ODs) in February, June and July 2007, respectively as part of an international research project, "Poverty and Illness". The study by Ir et al. (2010) examined the trend of deliveries in public health facilities as percentage of the expected number of births with the objective to improve access to safe delivery for poor women thereby contributing to the reduction of maternal and newborn mortality and morbidity. As part of the programme each eligible poor woman receives a voucher with five detachable coupons to free services at the health centre (for three antenatal care visits, delivery and one postnatal care visit) and transportation costs for five round trips between her home and the health centre and for referrals from the health centre to the referral hospital in case of complications. User fees and other related costs at referral hospitals are paid by the HEF. Voucher recipients are encouraged to use all five coupons for their pregnancy which is valid only for the current pregnancy but they are free to use only one or a few of them. At the end of each month, the VMA pay the contracted health centres on the basis of the number of coupons and the price of user fees (about USD7.5 for a

normal delivery and USD0.25 for each antenatal and postnatal care visit). The programme distributed a total of 2,725 vouchers in the three health districts within less than two years of operation of which 2,062 vouchers were used by poor pregnant women for ANC1, 1,498 for ANC2, 1,140 for ANC3, 1,280 for delivery and 684 for postnatal care. The study found that among the total of 5,611 facility deliveries in the intervention ODs in 2008, 4,391 (78.3%) happened in health centres and 1,220 (21.7%) in referral hospitals where vouchers supported 876 (19.9%) and HEF supported 549 (45%). In total, 1,425 poor pregnant women benefited from the programme which accounts for 25.4% of the total number of facility deliveries and it increased sharply from 16.3% in 2006 to 24.9% in 2007 and 44.9% in 2008 that was not only for voucher and HEF beneficiaries but also for self-paid deliveries. Moreover, facility deliveries of voucher beneficiaries increased by 195.9% within two years, from 2.4% in 2007 to 7% in 2008, while the figures for HEF beneficiaries and self-paid deliveries increased by 58.1% and 69.8% respectively within the same period and the highest increase observed in 2008 when all three interventions were put in place.

In late 2008, in Uganda, a Reproductive Health Voucher Programme (RHVP) was established in a partnership between the Government of Uganda, German Development Bank (KfW) and the Global Partnership on Output Based Aid introduced a “Healthy Baby” SM voucher for ANC, delivery and PNC in 12 districts. SM vouchers targeted to poor pregnant women. The SM vouchers are sold to women for the equivalent of $1.50 and RHVP vouchers can only be redeemed at private for-profit and non-profit providers. The average voucher reimbursement rates were as follows: $25 for a normal delivery including prenatal/postnatal care, $79 for a complicated delivery (incl. caesarean), $11 for STI testing and treatment. The programme sold 4,034 RHVP SM vouchers between February 2009 and June 2009 of which close to 2,451 (61%) used for ANC, institutional deliveries or PNC services. (Gitonga et al. 2009).

The study by Bellows NM (2010) found that the voucher program had a positive impact on overall utilization at contracted facilities in Kenya and Uganda. In Kenya both assisted deliveries and family planning visits at contracted facilities increased substantially in the first year of the program when combining figures for voucher and non-voucher clients and in Uganda it is found less than 60% of women who purchased 'Healthy Baby' voucher also make use of the voucher for a safe institutional delivery. Reasons for non-redemption are plenty –such as lack of transport especially at night, cultural and traditional reasons as well as fear that one may still be required to pay at the point of use. The study also found that voucher programs have raise awareness about the voucher program and increased health-related knowledge. Although Health improvements are difficult to observe as it require rigorous evaluation designs but several studies have found improvements in health associated with voucher programs.

4.2 MHC in Bangladesh

The Government of Bangladesh has launched a DSF scheme in 33 upazilas (sub-districts) with vouchers being distributed to pregnant women entitling them to access free antenatal, delivery, emergency referral, and postpartum care services, as well as providing cash stipends for transportation and cash and in-kind incentives for delivering with a qualified health provider. The program also introduces incentives to health-care providers to identify eligible women and provide maternal health services. The objective of the program is to increase the use of skilled birth attendants and to mitigate the financial costs of delivery, as part of Bangladesh's efforts to reach MDG 5 and to achieve a 75% reduction in maternal mortality by 2015 (Hatt et al 2010).

Rob U et al. (2010) considered a research to test the feasibility and effectiveness of introducing financial support (voucher scheme) in Bangladesh for poor rural women to improve utilization of antenatal care (ANC), delivery and postnatal check-up (PNC) from trained service Providers where a pretest-posttest design was utilized. A total of 436 women were interviewed

before and 414 after the intervention to evaluate the impact of interventions. In-depth interviews were conducted with users and nonusers of vouchers. Findings show that institutional deliveries have increased from 2% to 18%. Utilization of ANC from trained providers has increased from 42% to 89%. Similarly, utilization of PNC from trained providers has increased from 10% to 60%. The research broadly found that in the baseline survey, 79% of women sought at least one ANC visit whereas in the endline, 89% of women sought ANC services at least once. Baseline findings revealed that, among the women who delivered at home (n = 427), the most frequently cited reason was the monetary constraint (72%), 12% of cases it was the parents or in-laws and in 8% the husband. At baseline, only 6% of deliveries were assisted by a trained provider including a doctor (MBBS), nurse, paramedic, or skilled birth attendants. In the endline survey this proportion increased substantially and significantly to 22% of poor pregnant women. Only 45% of women reported having a postnatal check-up for themselves during baseline and this increased significantly to 60% after introduction of the interventions. In-depth interviews indicated the following reasons for not using the vouchers for ANC:

• Received voucher book at later stage of pregnancy.
• Health facility was closed.
• Service providers were not available at the facility.
• Women visited the health facility but did not access the service because of long queues.
• Fieldworkers did not inform them properly about how to use it.

Reasons for not accessing delivery care from a health facility included:

• Women did not feel there was a need for this service.
• Labor pains started suddenly, often in the night, and there was no opportunity to visit the facility.
• Family members were not available to accompany the women to the health facility.
• Women were not informed that delivery care could be accessed in exchange for a voucher.

• Previous experience (e.g., unavailability of service provider/health facility closed) discouraged pregnant woman from visiting the facility.
• Traditional birth attendant (dai) was more convenient and performed the delivery at home.
• Stayed at parent's house during delivery.
• Felt that the service provider might delay treatment and not provide medicine.

The following suggestions for improving the scheme were given by the respondents:
• Increase the amount of the medicine voucher to cover the full cost of medicines and/or provide the required medicines at each health facility.
• Increase transport costs for those who have to travel a long distance.
• Perform ultra sonogram free of cost.
• Ensure availability of caesarean delivery at the upazila level health facility.
• Ensure pleasant and friendly behavior from service providers.

Rahman M et al. (2009) conducted a research with the objective to examine the effect of fully subsidizing the cost of maternal health services through the provision of vouchers on the utilization of ANC, delivery and PNC services by poor pregnant women in two unions of Nabiganj upazila of Habiganj district in Bangladesh from October 2007 to June 2008. They found that knowledge on maternal health care issues, including life-threatening complications, sources of treatment for complications, place of safe delivery, intake of vitamin A capsule and duration of exclusive breastfeeding, had increased significantly compared to the baseline. The proportion of women who did not access any antenatal care services decreased from 21 to 11 percent and the proportion of women who received this service from a trained service provider increased from about 50 to 100 percent. Similarly, the proportions of women attending for first, second and third antenatal visits increased over time. A significant number of women received physical and medical examination facilities during antenatal care visits and immunization during pregnancy and supply of iron tablet/syrup also increased (from 63% to 72% and 20% to 77% respectively). At baseline,

trained providers attended only 5.5 percent of births, whereas at endline this proportion had increased to 22 percent. Similarly, the proportion of deliveries at health facilities increased to 18 percent from a baseline of 2.3 percent. The proportion of women who received postnatal care increased significantly to 60 percent at the endline; moreover, at the baseline, only one-fourth of women accessing postnatal care received it from trained providers, which increased to 100 percent at endline. The proportion of women using Vitamin A capsule has increased and the majority of women exclusively breastfed their baby immediately after delivery.

Ahmed & Khan (2010) carried out a study to analyse the early lessons from the scheme and information was obtained through semi-structured interviews with stakeholders at the sub-district level, Sarishabari located in the district of Jamalpur in Bangladesh. Study shows that all the local level administrators interviewed knew the details of the DSF scheme quite well and they held very positive views on the potential benefits of the scheme & the implementation of the programme increased the demand for antenatal, delivery and postnatal care by poor women in the community. Institutional deliveries also increased due to the presence of the scheme in the area. The research found that with the implementation of the scheme the use of medical care services jumped significantly in the last 3 to 4 months of the first year compared with previous months. They also found some problem in DSF programme. The most significant problem faced by the scheme in the study area during its implementation phase was the delay in the release of funds which delayed the reimbursements. Due to late allocation of funds, voucher-supported service activities were hampered as both the beneficiaries and the health care providers did not receive the money they were supposed to get through the vouchers. Non-payment of incentives created mistrust between the administrators of the scheme and the beneficiaries. Most beneficiaries assumed that the administrators actually received the money but kept it illegally for themselves. Another problem of the programme was discontinuation of voucher distribution for few months. The cash incentive would encourage poor women to become

pregnant, so fertility rate is increased. Relatively high incentive payments for caesarean sections may also increase caesarean rates. On the otherhand, the scheme did not increase the supply of health care providers or management personnel, and therefore, the existing staff and health care providers had to assume a higher workload. Although the service providers received extra incentive payments, it appears that neither the providers nor the administrative personnel were happy with the incentive structure. The providers interviewed complained that the reimbursements were much lower than the fair level of payment for the services rendered.

Hatt et al. (2010) carried out a study of economic evaluation of DSF in Bangladesh. This evaluation (conducted over June-December 2009) focuses on the 21 upazilas (subdistricts) where the program was functioning by mid-2007 and thus covers two years of experience with the DSF program. The evaluation compares DSF program intervention upazilas to matched control upazilas, in order to evaluate demand-side and supply-side impacts of the program, and also conducts a focused assessment of program operations in DSF upazilas. The study based on a household survey in 16 DSF upazilas (8 universal[2] and 8 means-tested[3]) and 16 matched control upazilas covering 2208 women who delivered between February 1, 2009 and July 31, 2009. The evaluation shows women in the universal and means-tested sites had significantly higher likelihood of having at least one ANC visit during their last pregnancy (92% and 91% respectively) than women in the control group (76%). All three groups are more likely to use ANC than the national average, which is 60% (BDHS 2007). The percentage of women who had at least 3 ANC visits is 34% in the control group; in the means-tested group, 56% of women had at least 3

[2] "Universal" intervention Upazilas implies that all pregnant women on their first or second pregnancy who are permanent residents of the Upazila are eligible for the DSF program provided that women on their second pregnancy must have used contraception in between pregnancies.

[3] "Means-tested" Upazilas implies that eligibility is limited to extremely poor women only having family income not more than Tk. 2,500 per month or who own less than 0.15 acres of land, and who do not have any income from cow, poultry, fisheries, orchards, rickshaw, or van etc.

ANC visits, while 54% in the universal group did so. Women in the means-tested area who sought antenatal care were significantly more likely to see a qualified provider than women in the universal or control areas. At least 65% of women in the control area reported having the first ANC checkup from a qualified provider, compared to 76% in universal and 91% in means-tested upazilas. By way of comparison, according to the Bangladesh DHS 2007, 52% of women across Bangladesh received ANC at least once from a qualified provider.

The results showed that the DSF program is highly statistically significantly associated with increased rates of delivery with qualified providers. Only 27% of births in the control group were attended by a qualified provider in 2009 (which is higher than the national average of 18% recorded for 2007 [BDHS 2007]). In the intervention areas, 58% of births in universal areas and 70% of births in means-tested areas were attended by a qualified provider. 47% of complicated births in the control group were attended by a qualified provider, 87% and 82% of complicated births in the intervention and means-tested groups, respectively, received care from a qualified provider. 9% of women in the control group had a C-section at their last birth, which is comparable to the national average of 8% (BDHS 2007). A slightly higher proportion of women in the universal group (13%) received C-sections while there was no difference between control and means-tested groups (8%). In the control area, 10% of home deliveries were attended by a qualified attendant, the corresponding figures in the universal and means-tested areas are 27% and 58% respectively. 20% of women in the control area reported having a PNC care visit. The rate is 1.5 and 2 times higher in the universal and means-tested areas. In the intervention and means-tested groups, 84% and 90% of women, respectively, received PNC from a qualified provider (Hatt et al. 2010).

The study also found some mismanagement of DSF programme. Two means-tested upazilas, reported that eligibility criteria were not being followed. The most common complaint was “nepotism” in the distribution of vouchers;

this was clustered in one upazila. For selecting and certifying the poor, the local government makes politically biased decisions. Most of the providers believed that eligible women were receiving vouchers. But some providers felt that eligible women were being missed, mainly because the selection process was not implemented properly and because relatives of influential people were more likely to be selected. In three of the four universal voucher upazilas, focus group discussants felt that both poor and nonpoor women were receiving vouchers. In one universal intervention upazila, respondents felt that richer women were more likely to receive vouchers. Respondents in most of the means-tested upazilas generally felt that the poor were receiving vouchers, although some noted that wealthier women were receiving vouchers in some cases. The main challenge in distributing vouchers mentioned by providers was handling pressure from ineligible recipients. This type of pressure was experienced especially by FWAs, CSBAs, and FWVs in all the sampled upazilas; sometimes provider had been threatened by ineligible recipient. In two upazilas, a small number of providers mentioned that they had been pressured by local government officials to distribute vouchers to ineligible women (Hatt et al. 2010).

The gift boxes were not provided immediately following delivery and women had to return to the health facility to obtain it at a later date. This delay meant that the baby outfit was usually too small for the infant by the time it was received. Some difficulties faced with the provision of cash and in-kind benefits to beneficiaries. The most common difficulties were long delays in receiving cash advances from the government, resulting in long delays in paying beneficiaries; and lack of sufficient administrative staff to distribute cash benefits, resulting in long lines at health facilities on distribution days (Hatt et al. 2010).

4.3 Conclusion

It is seen above that DSF in maternal healthcare are being experienced in Bangladesh, Cambodia and Pakistan. In all countries, it is provided to increase the demand for ANC, delivery care and PNC services for the poor women. The literature suggests that after the implementation of voucher program the proportions of women using Antenatal care (ANC), Postnatal care (PNC), institutional deliveries, and deliveries assisted by trained providers among poor women increased significantly in all the three countries. Since evidence shows that delivery with a skilled birth attendant reduces the risk of maternal death, these results are very promising, especially in the Bangladesh context where maternal mortality ratios are very high. Reducing maternal deaths also saves newborn lives, and has substantial social and economic benefits to the family and society.

CHAPTER 5

Demand Side Financing (Voucher Scheme) in Bangladesh

5.0 Introduction

The literature on DSF in Maternal health care in Bangladesh has been reviewed in the last chapter. It suggests that DSF has increased the demand for ANC, delivery care and PNC services for the poor women. In this chapter, it is in order to know briefly how the DSF (voucher program) in Bangladesh works. This is what is done here through describing the program areas, funding & management, beneficiaries' criteria & identification, voucher distribution process, cash incentives to voucher recipients & service providers.

5.1 DSF Program areas

Though Demand Side Financing (DSF) program was initiated in July 2004 in Bangladesh, the program was not implemented until August 2006 due to various complications including delays in the receipt of donor funds. Then it was launched only in 2 upazilas (subdistricts). But in April and July 2007 the DSF activities were extended to 19 additional upazilas, and in 2008 an additional 12 upazilas were included. According to census (BBS 2001), the DSF program is running in 33 upazilas across 31 districts, covering a population of about 10.36 million. Finally in 2010, it is extended to 53 upazilas. In 2012, the DSF program became an integral component of the Bangladesh Health Care Financing Strategy (2012-2032).

5.2 Funding and Management structure

The DSF voucher program is implemented by the MOHFW using pooled funds; co-financed by the World Bank, United Kingdom, the European Community (EC), Germany, Sweden, Canada, Netherlands, and the United Nations

Population Fund (UNFPA). The World Health Organization provides technical assistance to the DSF program with co-funding from the UK's Department for International Development (DFID) which includes administrative and monitoring support through the posting of DSF organizers to each DSF upazila. The mentioned coordinators play a key role at the local level in assisting Upazila Health Complex (UHC) management to run the DSF program which is supervised by a National DSF Coordinator, based in the national DSF cell in Dhaka.

The DSF program funds are transferred from the Central level to Sonali Bank accounts in each DSF upazila to cover payments to providers and voucher beneficiaries, as well as the cost of procuring gift boxes for beneficiaries. There are four separate bank accounts at the upazila level: 1. Beneficiary cash account, 2. Transportation stipend account, 3. Provider benifit account, 4. "seed fund" account. Normally funds are transferred twice in a fiscal year. Each installment cover payments for two quarters, settled after accounting for vouchers redeemed. Any unused funds are returned to the treasury at the end of the fiscal year, June 30 due to GOB public finance regulations. Funds for the new fiscal year generally do not arrive on July 1. A one-time lump sum budget of US$1,000 was given to each DSF pilot upazila, deposited into the "seed fund" account to be used to improve the quality of care at UHCs, through infrastructure improvements or the purchase of medicines and equipment.

The National DSF Committee, provides strategic and policy oversight of the entire program is chaired by the Health Minister. The Secretary of the Ministry of Health and Family Welfare (MOHFW) is the designated Line Director for the program. The National DSF Program Implementation Committee is responsible for overall program operations.

The district-level Designation Bodies manage the selection and accreditation of participating health care providers in each pilot area. Upazila DSF Committees function as the financial and managerial core of the program, while Union DSF

Committees assist with identifying eligible voucher recipients, distributing vouchers and publicizing the program to the community.

Signing and approving vouchers and submitting them for reimbursement is the responsibility of the Resident Medical Officer (RMO) in each UHC, while the Upazila Health and Family Planning Officer (UHFPO) are responsible for distributing incentive payments to women and service providers.

5.3 Eligibility criteria of beneficiaries

As we know, to identify the poorest of the poor is a challenging, complex and difficult process. It is evident that collecting accurate information on income or consumption is difficult, especially in Bangladesh and so in most cases proxy indicators are being used. After reviewing criteria that have been adopted by organizations working in Bangladesh in providing subsidized health care services among the poor, some easily usable criteria were selected. If a household met any two of these four criteria, then any pregnant woman in that household was considered as poor and so eligible to receive the voucher book. The following criteria are eligible for the voucher program:

- Permanent residents of the union
- Pregnant for the first or second time, and having used family planning prior to the second pregnancy
- Functionally landless (owning less than 0.15 acres of land)
- Earning extremely low and irregular income or no income (less than Tk. 2,500 per household per month)
- Owning no productive assets, such as livestock, orchards, rickshaw or van.

In December 2007, by official government order, eligibility restrictions were relaxed in 9 “universal intervention” upazilas, making DSF benefits available to all permanent resident pregnant women of parity 1 or 2, regardless of poverty status.

5.4 Identification process of beneficiaries

The eligible beneficiaries are identified by government field workers known as Family Welfare Assistants (FWAs, who are under the supervision of the Directorate General of Family Planning [DGFP]), and Health Assistants (HAs, who are supervised by the Directorate General of Health Services [DGHS]) at the community level. Some of these FWAs and female HAs have received an additional six months training to qualify as Community Skilled Birth Attendants (CSBAs). FWAs, HAs, and CSBAs have their own demarcated working areas and a target number of households to which they make routine home visits. A preliminary list of eligible voucher recipients is prepared by them, ideally within women's first trimester of pregnancy, and submits it to the local Union Parishad (council) member or Chairman, who verifies and approves the list. The Union DSF Committee meetings review and approve the list. But often those meetings are not held regularly. In that circumstances, the field workers (FWA, HA, or CSBA) directly obtain approval from the Union Parishad Chairman. Then the list of eligible women's is forwarded to the upazila level and considered final. Any eligible woman who does not receive a voucher, she may petition the Union DSF committee.

5.5 Voucher distribution system

The voucher distribution system is not uniform across upazilas. At the beginning of the pilot program, all voucher booklets were to be distributed from the UHC, and this is still the standard practice in some upazilas. However, most voucher booklets are distributed to women at the community level by FWAs, HAs, and CSBAs which is common in areas that are farther from the UHC. Even village *dais* (traditional birth attendants) has also reportedly distributed vouchers. The distributor of the voucher booklet will inform women about the participating facilities and providers from which they can obtain covered services.

For each covered service under the program, women receive a booklet with separate "coupons" in triplicate. Providers keep two copies of the relevant voucher slip, one to submit for reimbursement and one to keep for documentation, and the third copy is returned to the woman when a service is sought.

5.6 Participating health care providers

As mentioned earlier, District Designation Bodies are responsible for selecting and accrediting eligible private and NGO providers in the pilot upazilas. Government facilities with the capacity to provide Basic and/or Comprehensive Essential Obstetric Care (EOC), including management of normal and problem pregnancies, surgical obstetrics, anesthesia, and blood transfusion (Mother Care policy brief), may be accredited to participate in the program. These include UHCs and Union Health and Family Welfare Centers (UHFWCs), the latter providing mainly antenatal, postnatal, and normal delivery care.

Accredited referral facilities may include District Hospitals, Maternal and Child Welfare Centers (MCWCs), and government Medical College Hospitals. Government-certified CSBAs with at least 6 months of training may also provide ANC and delivery services at home. NGO and private providers may also apply for accreditation. The Designation Body reviews whether they meet certain quality criteria (e.g., presence of operating theater and qualified providers) and determines whether they may participate. The inclusion of private and NGO facilities in the program is to stimulate competition among providers to attract voucher patients, which may lead to quality improvements though to date very few non-public facilities are participating in the voucher program. NGO and private providers are reimbursed at the same rate schedule as public providers.

5.7 Voucher benefits to consumers

The "voucher book" was designed in the intention that a pregnant woman would be able to receive a package of essential maternal health care services, as well as treatment of pregnancy and delivery-related complications. It contains six separate types of vouchers:

1) Three antenatal care visits
2) Management of pregnancy and delivery-related complications
3) Delivery care
4) Postnatal care checkup within 6 weeks of delivery
5) Medicines
6) Transport allowances.

During utilization of maternal health care from trained service providers, transportation costs are one of the major concerns for poor women. That is why; vouchers for reimbursement of transportation costs were included for three ANC visits, delivery care including referral for complications, and one PNC visit (see Table 5.1). Women were also encouraged to save their own money and a money savings box (coin box) was provided to each pregnant woman to recover the risk of pregnant women experiencing critical life-threatening complications.

Table 5.1 Structures of voucher benefits in maternal health care in Bangladesh

Structures of voucher benefits	
Entitlement of beneficiaries	**Taka**
3 ANC check-ups (@ Tk 100/visit)	300
Transport cost for having institutional delivery	100
Safe delivery (institutional/SBA at home)	2,000
1 PNC check-up	100
Gift box (baby soap, big towel, baby attire, and Horlicks)	500
Entitlement of voucher distributors/service providers	
Registration per pregnant woman	10
2 haemoglobin tests before delivery (@ Tk 35/test)	70
2 urine tests before delivery (@ Tk 35/test)	70
3 ANC check-ups (@ Tk 50/visit)	150
1 PNC check-up	100
Conduct of safe delivery	300
Other associated expendable costs	
Medicine cost	100
Cost subsidy for ambulance if referred from UHC to a designated service provider in the case of complications	500
Forceps delivery/vacuum extraction/ placenta removal by hand/dilatation & curettage (d&c)/eclampsia	1,000
Caesarian section	6,000

5.8 Cash and in-kind benefits to consumers and providers

According to the DSF guideline, a gift box containing a large Horlicks bottle, a big towel, and two sets of baby attire and baby soap to be distributed in kind to the beneficiaries for safe delivery by SBA or in a facility. The cost of gift box

will be equivalent to Tk. 500. The payment structures for the service providers are proportionately divided on the type of service provided and the category of service provider. The proposed amount for other associated expendable costs for forceps delivery/vacuum extraction/placenta removal by hand/D&C/eclampsia done in the UzHC, 50% will be deposited to the DSF seed fund.

In case of referral for complications, pregnant women can access services at specific hospitals with a referral certificate & they will be provided Tk. 500 to cover the cost of ambulance transport, fuel, or other vehicle rental for referrals. Though originally it was hoped that women would receive cash benefit for transportation after each facility visit and the Tk. 2,000 stipend and a gift box before discharge from a health facility, in fact they do not typically receive cash when receiving the service. Usually, all voucher recipients must come to the health facility to receive their reimbursement on specific dates. This means payments are typically received with a delay of several months. There is some evidence from the field that some women receive cash through the FWAs, HAs, and CSBAs at their homes.

The UHFPO is responsible for distributing cash payments to service providers which also usually occurs monthly.

5.9 Provider reimbursement and benefits

Health care facilities are reimbursed for providing voucher-covered services at fixed rates. Fifty percent of the reimbursement amount is deposited into the upazila “seed fund account”, while the remaining 50% is distributed to the government service providers who provided those services, as benefit.

The following table displays the breakdown of reimbursements and benefits for each type of service:

Table 5.2 Reimbursements and benefits to government service providers

Description of services	**Total reimbursement amount (Tk.)**	**Incentive payment (Tk.)**
Routine care		
Registration of eligible women		10
Two ANC blood tests	(35*2)=70	
Two ANC urine tests	(35*2)=70	
Three ANC check-ups	(50*3)=150	(25*3)=75
One PNC check-up	50	25
Normal delivery	300	150
Medicines	100	
Obstetrics complications		
Forceps delivery, manual removal of placenta, D&C, or vacuum extraction	1000	500
Medicines for management of eclampsia	1000	
C-section	6000	3000

Source: Hatt et al. (2010)

Benefits are distributed among providers according to the following charts (Table 5.3 shows routine services and Table 5.4 lists for complications):

Table 5.3 Benefits (Tk.) for service providers to provide basic maternal health services

Service provider	Registration	ANC check-up	ANC urine test	ANC blood test	Normal delivery (home)	Normal delivery (facility)	PNC check-up	Daily voucher program work
FWA	10							
HA	10							
FWV	10	25	17.50				25	
CSBA	10	25	17.50		75		25	
Facility-based clinician			17.50	17.50				
Doctor						60	25	
Nurse		25				40	25	
Aya/ward boy		25				25		
Cleaner						25		
UHC Clerk								30/day
Total per service across providers	10	25	17.50	17.50	75	150	25	30/day

Source: Hatt et al. (2010)

Note: For any one type of service, only one provider, who provides that service, will get the benefit; except for normal delivery, where the multiple providers listed all get cash payments as shown.

Table 5.4 Benefits (Tk.) for service providers to provide maternal health complications services

Service provider	Complications*	C-section
Doctor	300	
Nurse	100	
Aya/ward boy	50	100×2
Surgeon		1,100
Anesthetist		600
Operation assistant		500
Senior nurse		250×2
Cleaner	50	100
Total	500	3,000

*D&C, manual removal of placenta, forceps delivery, vacuum extraction.

Note that providers do not receive any benefit for eclampsia management; the reimbursement amount of Tk. 1,000 is to be used for medication only.

5.10 Conclusion

DSF in Bangladesh is a maternal health voucher program developed by the Ministry of Health and Family Welfare (MOHFW) with support from World Health Organization (WHO). The aim of this program is to increase utilization of maternal healthcare services particularly by poor women. The intervention was implemented through a cash subsidy to pregnant women to cover transport facility for antenatal care, institutional delivery, and postnatal care and to purchase medicines, while reimbursements for service providers were directed at boosting facility improvements, targeting specific population groups, such as the poor, rural, or other underserved groups.

Voucher distributors act as gatekeepers to determine eligibility for receiving a voucher whereas service providers are responsible for determining eligibility for subsidized services. The voucher recipients and service providers both are faces a number of problems such as delay receiving cash benefits, long queue for receiving services, unofficial payment, poor quality of services, lack of information, dropout etc. from the voucher recipients view point and insufficient reimbursement and manpower, lack of training, increase workload than before etc. from service provider's point of view.

CHAPTER 6

Background Characteristics of Respondents: Women and Service Providers

6.0 Introduction

In this study the respondents are of two categories: women and service providers. Background characteristics of them are very important to determine their socio-economics status as well as to determine the demand side factors for the women and supply side factors for the service providers. In this study, data on a number of background characteristics of women like age, religion, occupation, education, age at marriage, family size, monthly income etc. were collected by direct interview from both the experimental and control areas. With these characteristics of women a comparison is made to find the factors that influence the choice to take maternal health care like antenatal care (ANC), delivery care, postnatal care (PNC) etc. and usage of voucher for maternal health care. This chapter also describes the background characteristics of service providers related to voucher program in experimental area and their characteristics would help us to determine the quality of service provided by them.

6.1 Background characteristics of women

Background characteristics of women of experimental and control areas are discussed and presented in the following subsections.

6.1.1 Age

Table 6.1 shows that most of the women in the study are aged between 20-24 years. It is 62.5 percent in control area (Arihazar) and 60.8 percent in experiment area (Raipura). The second largest age group is 25-30 years, which is 32.9 percent and 29.2 percent respectively. Only 1.7 percent in control area

and 5.8 percent in experimental area of total women (480) are aged between 15-19 years. However, it is 2.9 percent and 4.2 percent of age group 30+ years in control and experimental areas. The mean age of women is significantly higher in the control area than that in the experimental area.

Table 6.1 Distribution of women according to their age

Age (in years)	Experimental area (Raipura)	Control area (Araihazar)
15-19	5.8%	1.7%
20-24	60.8%	62.5%
25-30	29.2%	32.9%
30+	4.2%	2.9%
Total	100.0	100.0
N	240	240
Mean age	22.71	23.32
Mean test: t-value= -2.281	P-value= 0.023	Comment: Significant

6.1.2 Religion

From table 6.2 it is found that almost all of the women are Muslim which is 95.8 percent in control area and 99.2 percent in experimental area. A tiny percentage of the women are Hindu in both areas. However, the experimental area is relatively Muslim dominated.

Table 6.2 Distribution of women according to their religion

Religion	Experimental area (Raipura)	Control area (Araihazar)
Muslim	99.2%	95.8%
Hindu	0.8%	4.2%
Total	100.0	100.0
N	240	240
x^2 (Chi-square)= 5.47 d.f= 1	P-value= .019	Comment= Significant

6.1.3 Occupation of women and Husband's occupation

My study data reveal that about all of the women are involved in house work and it is 96.2 percent in control area and 99.2 percent in experimental area (Table 6.3) though it is slightly higher in experimental area. No significant difference is observed among the women in the two areas with respect to occupation.

Table 6.3 Distribution of women according to their occupation

Occupation	Experimental area (Raipura)	Control area (Araihazar)
House work	99.2%	96.2%
Others	0.8%	3.8%
Total	100.0	100.0
N	240	240
x^2 (Chi square)= 11.10 d.f= 6 P-value= .085 Comment= Insignificant		

The study has found that women's husbands are involved in different occupations. According to table 6.4 the highest number (43.3%) of husbands is involved in day labour and small business is the second highest (26.7%) profession in control area. Here about 11.2% are involved in transport worker, 7.9% work in agriculture. On the other hand, in experimental area agriculture works is the highest (28.3%) in position, then comes transport worker (17.1%), day labour (16.2%), small business (13.3%) and handicrafts (7.1%). The other professions are NGO job, teacher, garment worker, house help, waiver (tati) etc. where a small portion is involved in both the areas. However, husbands in the experimental area are different from the control area in major occupations.

Table 6.4 Distribution of women according to their husband's occupation

Husband's occupation	Experimental area (Raipura)	Control area (Araihazar)
House work	1.2%	1.7%
NGO job	0.8%	2.1%
Small business	13.3%	26.7%
Teacher	3.3%	0
Agricultural works	28.3%	7.9%
Garment worker	2.5%	2.5%
Handicrafts	7.1%	0
Day labour	16.2%	43.3%
House help	3.8%	0
Transport worker	17.1%	11.2%
Waiver (Tati)	0.8%	0.8%
Others	5.6%	3.7%
Total	100.0	100.0
N	240	240
x^2 (Chi square)= 1.14 d.f= 12 P-value= .000		Comment= Significant

6.1.4 Educational qualification of women and their husbands

Educational qualification of women and their husband's is an important indicator to receive maternal healthcare. In this study, data from table 6.5 reveal that more than fifty percent (58.3%) of women is in secondary level (class 6-10) in experimental area whereas it is 26.2% in control area. In control area the largest number of women (46.7%) is at primary level (class 1-5) which is 20.4% in experimental area. 'No education' is about to near in both the areas which is 18.3% in experimental area and 26.2% in control area. At the level of higher education (class 11+) it is 2.9% and 0.8% respectively. The average educational level of women appears to be higher in the experimental area than the control area.

Table 6.5 Distribution of women according to their educational qualification

Educational qualification	Experimental area (Raipura)	Control area (Araihazar)
No education	18.3%	26.2%
Primary(1-5)	20.4%	46.7%
Secondary(6-10)	58.3%	26.2%
Higher(11+)	2.9%	0.8%
Total	100.0	100.0
N	240	240
x^2 (Chi square)= 60.01	d.f= 3 P-value= .000	Comment= Significant

Husband's educational qualification of women shows remarkable difference at the level of 'no education' with 25.4% in experimental area and 40.8% in control area as shown in table 6.6. In experimental area the highest number is at the primary level (38.8%) then secondary level (31.2%) and higher level is 4.6%. Secondary education level appears to be the same in both the areas (experimental area 31.2% and control area 30.4%). The average educational level of husbands appears to be higher in experimental area than in control area.

Table 6.6 Distribution of women according to their Husband's education

Husband's education	Experimental area (Raipura)	Control area (Araihazar)
No education	25.4%	40.8%
Primary(1-5)	38.8%	26.7%
Secondary(6-10)	31.2%	30.4%
Higher(11+)	4.6%	2.1%
Total	100.0	100.0
N	240	240
x^2 (Chi square)= 16.24	d.f=3 P-value= .001	Comment= Significant

6.1.5 Age at marriage

Data from table 6.7 reveal that most of the women in the study married at the age between 15-19 years (89.6% in experiment area and 74.6% in control area) which is not supported by the WHO and the mean test also shows insignificant differences at 5% level of significance. At the age group of 20-24 year it is 25.4% in control area which is much higher than experimental area (9.6%). There exists no difference in average age at marriage between the experimental area and control area.

Table 6.7 Distribution of women according to their age at marriage

Age at marriage (in years)	Experimental area (Raipura)	Control area (Araihazar)
15-19	89.6%	74.6%
20-24	9.6%	25.4%
25-30	2%	0
Total	100.0	100.0
N	240	240
Mean age	18.66	18.59
Range	14-28	17-23
Mean test: t-value= 0.487	P-value= 0.627	Comment: Insignificant

6.1.6 Living child

Table 6.8 Distribution of women according to their number of living children

Number of living children	Experimental area (Raipura)	Control area (Araihazar)
1	49.2%	50.8%
2	50.8%	49.2%
Total	100.0	100.0
N	240	240
Mean no. of children	1.51	1.49
Mean test: t-value= 0.364	P-value= 0.716	Comment: Insignificant

Number of living children are apparently same in both the areas (Table 6.8). The mean number of children is 1.51 in experimental area and 1.49 in control area.

6.1.7 Family size

The study reveals that more than 47% women have family size of 1-4 members and another 47% have family size of 5-7 members in experimental area (table 6.9). Beside this, in control area 62.5% women have family size 1-4 and another 33.3% have 5-7 persons in number. However, the mean family size of women is significantly higher in experimental area than that of control area.

Table 6.9 Distribution of women according to their family size

Total family size	Experimental area (Raipura)	Control area (Araihazar)
1-4	47.9%	62.5%
5-7	47.5%	33.3%
8+	4.6%	4.2%
Total	100.0	100.0
N	240	240
Mean family size	4.79	4.49
Mean test: t-value= 2.366	P-value= 0.018	Comment: Significant

6.1.8 Monthly income

Data from table 6.10 shows that 99.2% women in experimental area and 96.2% in control area have no income. Rest of the women's income of both the areas ranged up to Tk. 1200 monthly. The mean test shows significant difference on total monthly income of women. However, the women in the experimental area have significantly lower average monthly income than those in control area.

Table 6.10 Distribution of women according to their monthly income

Respondent's monthly income	Experimental area (Raipura)	Control area (Araihazar)
No income	99.2%	96.2%
<1000	0.4%	1.2%
1001-1200	0.4%	2.1%
1200+	0	0.4
Total	100.0	100.0
N	240	240
Average monthly income(Tk.)	7.5	42.42
Mean test: t-value= -2.313	P-value= 0.021	Comment: Significant

6.1.9 Total family income

It is also clear from the data of table 6.11 that almost all the women of the study area financially depend on their husbands or other family members and hence decision making of the women is highly influenced by others in the family.

Table 6.11 Distribution of women according to their total family income

Total family income	Experimental area (Raipura)	Control area (Araihazar)
<1500	2.1%	4.6%
1501-2000	23.3%	54.2%
2001-2500	74.6%	41.2%
Total	100.0	100.0
N	240	240
Average monthly income(Tk.)	2279.38	2005.5
Mean test: t-value= 10.228	P-value= 0.000	Comment: Significant

But total family income of the women must not exceed Tk. 2500 monthly so as to fulfill the eligibility criterion for the voucher program. Table 6.11 reveals that 74.6% women's total family income per month ranged from Tk. 2001-2500, 23.3% from Tk. 1501-2000 and 2.1% below Tk. 1500 in experimental area. In the control area the scenario is about to the same. Here, 4.6% respondent's monthly total family income is below Tk. 1500, 54.2% from Tk. 1501-2000, 41.2% from Tk. 2001-2500. However, average monthly total family income of the women is significantly higher in the experimental area compared to the control area.

6.2 Background characteristics of service providers

Service providers are essential part of the program and everybody from the mastermind to field level play an important role in the effective implementation of the program.

6.2.1 Number and position

In all, 15 service providers in experimental area are interviewed, of whom MOs 02, Surgeon 01, Nurses 04, FWVs 02, FWAs 02, HAs 01 and the rest are program director, program assistant and office assistant of the experiment area.

Table 6.12 Position of service providers

Position	**Number**
Program Director (DSF) & UHFPO	1
Medical Officer	2
Nurse	4
FWVs	2
FWAs	2
HAs	1
Program Assistant	2
Office Assistant	1
Total	15

6.2.2 Age

The data revealed that about half of the service providers aged from 20-27 years and aged 30-39 years stands in the second largest position. Remaining of them aged from 40-59 years. The mean age of the service providers is 39.5 years.

Table 6.13 Distribution of service providers according to age

Age (in years)	**Frequency**
20-29	7
30-39	4
40-49	1
50-59	3
N	15
Mean Age	39.5

6.2.3 Length of services

The service providers interviewed have been involved with the DSF program for about 3.5 years on average. 7 providers are involved with the program for about 4-5 years or beginning of the program, 5 persons are working from 2- 4 years and rest 3 providers are working for a short period from 10 days to 2 years.

Table 6.14 Distribution of the service providers by length of services

Length of services	**No. of service providers**
10 days to 2 yrs	3
2 yrs to 4 yrs	5
4 yrs to 5 yrs	7
N	15
Average Length of services	3.5yrs

6.2.4 Knowledge about the program and job responsibilities

The service providers are interviewed to ascertain the knowledge about the program they are working and their main job responsibilities. About all of the interviewed service providers seem to be well known about the program they are working. They are also found sensitive and active in their responsibilities. Finding out the right pregnant women maintaining the program criteria, issuing voucher book timely, counseling them to come to the UHC and satellite clinic for MHC are their main responsibilities described by about all of them. Maternal health care includes ANC, Delivery care and PNC mentioned by the service providers. Consuming pathological test and TT injection during pregnancy, family planning methods after pregnancy and sharing knowledge about child care with foods immediately after pregnancy with women are also their responsibilities mentioned by most of the service providers.

6.3 Discussion

In this study, one type of respondents are women who have experienced their last pregnancy within two years in both the experimental and control areas. The mean age of the women of control area is slightly higher (23.32 years) than the experimental area (22.7 years) and all the women are in reproductive age. Most of them fall within the age between 20-24 years in both the areas. By religion almost all of the women are Muslim and only a few of them believes in another religion like Hinduism.

The study found that house work is the primary profession of the women of both areas and it is a little higher in experimental area than the control area. Among these professions (agricultural work, day labour, small business, transport works) husbands involved in agricultural works and transport workers are higher in experimental area than the control area. But in control area, husbands engaged in day labour and small business is higher than the experimental area. The other professions of husband includes in both the areas are house works, NGO job, teacher, garment workers, handicraft, house help, waiver (Tati) etc.

Educational qualification is an important determinant to consume maternal healthcare. In control area, the largest number of women completed primary level of education. On the otherhand, the largest number of women in experimental area completed secondary level of education. Higher level of women's education is seen in experimental area than the control area. In contrast, illiteracy rate is low in experimental area than the control area. Beside this, husband education is also important to make a decision in favour to take maternal health care. Similar to the women education, higher education among the husbands is also seen in experimental area than in the control area.

In Bangladesh, the minimum age at marriage is 21 for boys and 18 for girls. Most of women of both study areas, the age at marriage falls between 15-19 years, though it is higher in experimental area. There is no difference among the women of age at marriage between the two study areas.

About 50% of women of both the area have one or two living children. In experimental area, having one living child in the family is slightly lower than the control area.

Mean family size of women of control area (4.49) is lower than that in experimental area (4.79). Almost all the women of both the experimental and control areas have no monthly income and have total monthly family income which does not differ but do not exceed Tk. 2500 in both the areas.

The study also interviewed 15 service providers of the voucher program in experimental area designated from mastermind to field worker. Age of service providers interviewed range from 20-59 years, of which most of them (7 in number) from 20-29 years and the mean age is 39-59 years. The duration of working in the program of service providers also shows variation which ranged from 10 days to 5 years and they have proper knowledge about their job responsibilities.

6.4 Conclusion

The study of the background characteristics reveals that women in the experimental area have higher family income, higher family size, higher education but lower age. All these factors induce the women in the experimental area to have a higher demand for maternal and child health care services compared to the control area. With respect to other background characteristics, there exist no significant differences among the women between two areas.

The service providers are mature and have adequate knowledge about their job responsibility. They are well trained and experienced to provide maternal and child health care services to the women who are being supported by voucher scheme in the experimental area.

CHAPTER 7

Antenatal Care (ANC) Utilization by Women

7.0 Introduction

In the last chapter it is seen that the women in the experimental area have higher demand for maternal health care services. In chapter 5 it is mentioned that DSF for maternal health care in Bangladesh was introduced in 2004 in the form of voucher scheme. This voucher scheme subsidizes the women in receiving three services: ANC, delivery care and PNC. In this chapter, we like to examine the extent of utilization of ANC services by the women in the experimental area vis-a-vis the control area.

Antenatal care refers to the regular medical and nursing care recommended for women during pregnancy. The importance of antenatal care is often overdone in most households as the would-be mothers flooded with advice about what is right what is wrong for her. It is said that a woman should make her first visit to an antenatal care centre as soon as possible after a missed period to ensure professional help whenever she need. In this study women of both experimental and control areas were asked a number of questions to understand their access to ANC, problem faced by them to take the service, to understand and evaluate attitude of women towards service providers, role of DSF or voucher program to promote ANC. Their responses are discussed in the following sections.

7.1 Antenatal care (ANC) utilization

Antenatal care seeking behavior of women of experimental and control areas are discussed and presented in the following pages.

7.1.1 Knowledge about recommended number of ANC visits

The women were asked if they know the recommended number of ANC visits. In answer 22.9% women of experimental area said they don't know and it is

55% in control area (Table 7.1). In experimental area the highest 53.8% women answered it is 1-3 times and 23.3% said more than three times. In contrast, 9.6% answered for 1-3 times and 35.4% for more than three times in control area. The chi-square test shows significant difference at 5% level of significance of knowledge about recommended number of ANC visits of women of both areas. The women in the experimental area have better knowledge about recommended number of ANC visits than in the control area.

Table 7.1 Distribution of women according to their Knowledge about recommended number of ANC visits in the experimental and control areas

Knowledge about recommended number of ANC visits	Experimental area (Raipura)	Control area (Araihazar)
Don't know	22.9%	55%
1-3	53.8%	9.6%
3>	23.3%	35.4%
Total	100.0	100.0
N	240	240
x^2 (Chi-square)= 51.94 d.f= 2	P-value= .000	Comment= Significant

7.1.2 Number of received ANC visits

Number of received ANC by the women is higher in experimental area than the control area as described in table 7.2. In experimental area 53.8% women received ANC three times during their last pregnancy. Here, 28.3% received ANC for two times, 2.5% for a single time, only 0.8% more than three times and 14.6% didn't receive any ANC visit. On the other hand, 49.2% women did not receive any ANC visit during their last pregnancy in control area which is very high in contrast with the experimental area (14.6%). In control area 2.9% women visits for single time, 20.4% two times, 22.9% three times and 4.6% more than three times. The mean test shows significant difference at 5% level of significance on number of ANC received by the women of experimental area.

That is, women of experimental area received more ANC visits than the control area.

Table 7.2 Distribution of women according to number of ANC visits in the experimental and control areas

Receive ANC	Experimental area (Raipura)	Control area (Araihazar)
No	14.6%	49.2%
1	2.5%	2.9%
2	28.3%	20.4%
3	53.8%	22.9%
3>	0.8%	4.6%
Total	100.0	100.0
N	240	240
Mean test: t-value= -8.737	P-value= 0.000	Comment: Significant

7.1.3 Reasons for not receiving any antenatal checkup

The women of both the experimental and control areas were asked about the reasons for not receiving any antenatal checkup during pregnancy and the answers are shown in table 7.3. A number of reasons are said. 'Have no knowledge about ANC' said 62.9%, which is highest in experimental area. Here, other answered for 'thought no need of ANC' (42.9%), 'short of money' (25.7%), 'had no health problem during pregnancy' (22.9%), 'husband does not like' (11.4%), 'costs too much' (8.6%), 'fear at facility' (17.1%). Compared to experimental area, in control area the highest number of women said, 'thought no need of ANC' (48.3%). 'Short of money' is the cause for not receiving ANC said 40.7% women. The other said for 'had no health problem' (27.1%), 'husband does not like', 'costs too much' (11.0%), 'no knowledge about ANC' (3.4%), and ‘parents-in law do not like' (4.2%) etc.

Table: 7.3 Distribution of women according to the reasons for not receiving any antenatal checkup during pregnancy in the experimental and control areas

Reasons for not receiving any antenatal check up	Experimental area (Raipura)	Control area (Araihazar)
No knowledge about ANC	62.9%	3.4%
No knowledge about the sources of ANC services	14.3%	0%
No time to go	2.9%	0%
Thought no need of ANC	42.9%	48.3%
Husband does not like	11.4%	11.0%
Parents-In-laws do not like	5.7%	4.2%
Short of money	25.7%	40.7%
Had no problem	22.9%	27.1%
Costs too much	8.6%	11.0%
Fear of facility	17.1%	1.7%
Transportation problem	8.6%	0%
Others	2.9%	1.7%
N	35	118

7.1.4 Time of first ANC visit

The women were asked in which month of pregnancy they took 1st ANC visit. In experimental area, 27.3% answered it in the 6th month of pregnancy, 22.9% at 5th month, and 15.1% at 7th month of pregnancy (Table 7.4). Here, most of the women started to ANC visits from 4th to 7th month of pregnancy. In control area the highest 41.8% women started ANC visit from 5th month of pregnancy. Among others 25.4% at 6th month, 19.7% at 7th month and 3.3% at 3rd and 8th months. The study reveals that women of experimental area started to ANC visits earlier than the control area and it is statistically significant.

Table 7.4 Time of first ANC visit taken by the women in the experimental and control areas

First ANC visits at month of pregnancy	Experimental area (Raipura)	Control area (Araihazar)
3	12.2%	3.3%
4	21.0%	6.6%
5	22.9%	41.8%
6	27.3%	25.4%
7	15.1%	19.7%
8	1.5%	3.3%
Total	100.0	100.0
N	205	112
x^2 (Chi-square)= 28.75	d.f= 5	P-value= .000 Comment= Significant

7.1.5 Place of ANC check-ups

Table 7.5 describes different health care facilities where the women took ANC check-up. In experimental area most of the women took ANC from UHC

Table 7.5 Place of ANC checkup taken by the women in the experimental and control areas

Place of ANC checkup	Experimental area (Raipura)	Control area (Araihazar)
District/Sadar hospital	0.5%	0%
Upazilla Health complex	84.4%	41.8%
FWC	6.3%	0%
Community clinic	2.0%	7.3%
Govt. Satellite clinic	2.4%	2.5%
Private hospital/clinic	1.5%	25.4%
Own home	2.9%	23.0%
Total	100.0	100.0
N	205	112
x^2 (Chi-square)= 1.6	d.f= 6	P-value= .000 Comment= Significant

(84.4%). One of the causes of this tendency may be due to the presence of voucher program. It is also the highest in control area (41.8%) but less than the experimental area. Among the women of control area 25.4% took ANC from private hospital/ clinic and 23.0% at own home. Lack of proper counseling and absence of voucher program thought to be a possible reason for this unwillingness to go to UHC in control area.

7.1.6 Persons who provided ANC check-ups

The highest numbers (45.1%) of women in control area are provided ANC by doctors and it is 28.8% in experimental area (Table 7.6). In experimental area nurse provided 34.6%, FWV 31.7% ANC checkups, which are comparable to 12.3% and 6.6% respectively in control area. Furthermore, 2.5% women in control area received ANC check-up from village doctor and 20.5% from others (non-qualified) which is only 0.5% and 0% respectively in experimental area. So, it can be said that in experimental area the women are provided ANC by more skilled persons than the control area.

Table 7.6 Person who provide ANC check-ups taken by the women in the experimental and control areas

Person who provided ANC checkup	Experimental area (Raipura)	Control area (Araihazar)
Doctor	28.8%	45.1%
Medical assistant	4.4%	12.3%
Nurse	34.6%	12.3%
FWV	31.7%	6.6%
CSBA	0	0.8%
Village doctor	0.5%	2.5%
Others	0	20.5%
Total	100.0	100.0
N	205	112
x^2 (Chi-square)= 1.6	d.f= 6 P-value= .000	Comment= Significant

7.1.7 Travel time and travel cost for ANC visits

Travel time and travel cost are other two important determinants for seeking MHC services. From table 7.7 the study found that the highest 50% of women needed 5-30 minutes travel time to take ANC services in the experimental area and 27.1% needed about 31-60 minutes. In contrast, the highest 32.9% women of control area needed 31-60 minutes and only 5.8% required 5-30 minutes travel time to take the ANC services. Furthermore, 61-90 minutes time is required to 4.2% women in experimental area and it is only 0.4% in control area. Whereas, 0.4% women of both the areas needed 91-120 minutes for travel time. The mean travel time for ANC visits is a little bit higher in experimental area than the control area.

Table 7.7 Travel time for ANC visit in both areas

Total travel time (Minute)	Experimental area (Raipura)	Control area (Araihazar)
5-30	50.0%	5.8%
31-60	27.1%	32.9%
61-90	4.2%	0.4%
91-120	0.4%	0.4%
N	205	112
Mean travel time	37.76	34.34
Mean test: t-value= 1.129	P-value= 0.260	Comment: Insignificant

From table 7.8 the study reveals that most of the women of both the areas spent upto Tk. 50 to consume ANC services during their last pregnancy. It is 86.2% in experimental area and 66.2% in control area. In experimental area travel cost of Tk. 50-100 stands in the second highest position (9.6%) but it is 15.8% in the control area which stands in 3rd position. In control area the second highest 17.9% women's travel cost is ranged from Tk. 101-150 which is only 2.5% in experimental area and stands at third highest position. The mean travel cost is higher in control area compared to experimental area.

Table 7.8 Travel cost for ANC visit in both areas

Total travel cost (Tk.)	Experimental area (Raipura)	Control area (Araihazar)
0-50	86.2%	66.2%
51-100	9.6%	15.8%
101-150	2.5%	17.9%
150+	1.7%	0.0%
N	205	112
Mean travel cost	34.63	74.80
Mean test: t-value= 8.006	P-value= 0.000	Comment: Significant

7.1.8 TT injection

The women were asked whether they take TT injection during their last pregnancy or not. In answer, 60.4% said 'yes' and 39.6% said 'no' in experimental area. Compared to this, only 31.7% answered 'yes' and 68.3% said 'no' in control area (Table 7.8). The study reveals that more women in experimental area took TT injection than the control area during their last pregnancy.

Table 7.9 TT injection taken by the women in the experimental and control areas

Whether given TT injection	Experimental area (Raipura)	Control area (Araihazar)
Yes	60.4%	31.7%
No	39.6%	68.3%
Total	100.0	100.0
N	240	240
x^2 (Chi-square)= 42.22 d.f= 1	P-value= .000	Comment= Significant

Beside this, those who received TT injections in their last pregnancy, among them 63.4% consumed it for a single time and 36.6% for two times in experimental area. But, in control area, it is 3.9 % and 96.1% respectively (Table 7.10). The women in the experimental area took TT injections more

times than those in the control area.

Table 7.10 How many times TT injection taken by the women in the experimental and control areas

How many times taken TT injection	Experimental area (Raipura)	Control area (Araihazar)
1	63.4%	3.9%
2	36.6%	96.1%
Total	100.0	100.0
N	145	76
x^2 (Chi-square)= 1.05	d.f= 2	P-value= .000 Comment= Significant

When they asked the reason for not taking TT injection, a number of causes are said. 'No need' is the cause of not taking TT injection stands the highest position in both the areas (51.6% in experimental area and 46.3% in control area). Like this 'taken TT injection before last pregnancy' is the second highest cause in both areas too (25.3% and 38.4% respectively). The other causes they answered are 'lack of money', 'fear to injection' and 'don't know' (Table 7.11).

Table 7.11 Reasons for not taking TT injection by the women in the experimental and control areas

Reasons for not taking TT injection:	Experiment area (Raipura)	Control area (Araihazar)
Taken TT injection before last pregnancy	25.3%	38.4%
Lack of money	6.3%	12.8%
No need	51.6%	46.3%
Fear to injection	2.1%	0.6%
Don't know	14.7%	1.8%
Total	100.0	100.0
N	95	164
x^2 (Chi-square)= 1.58	d.f= 9	P-value= .000 Comment= Significant

7.1.9 Pathological test

At this stage the women are asked if they have done any pathological test during their last pregnancy. Table 7.12 describes that 72.1% women did pathological tests at that time in experimental area and only 35.4% in control area. The proportion of women who did pathological test is significantly higher in experimental area than that of control area.

Table 7.12 Done any pathological test during last pregnancy of the women

Done any pathological test	Experimental area (Raipura)	Control area (Araihazar)
Yes	72.1%	35.4%
No	27.9%	64.6%
Total	100.0	100.0
N	240	240
x^2 (Chi-square)= 65.63	d.f= 2 P-value= .000	Comment= Significant

The women of both the areas are also asked the reasons for not taking any pathological tests during their last pregnancy. A number of answers are given as described in table 7.13. 'No need of any pathological test' is the highest (52.2%) cause in experimental area, but this cause is the second highest (39.2%) in control area. On the other hand ' lack of money' is the biggest reason for this in control area but the second highest in experimental area. Beside this, 'had no health problem during pregnancy', 'Husband did not allow' etc. are the other causes for not doing any pathological test during the last pregnancy of women in both areas.

Table 7.13 Reasons for not doing any pathological test during last pregnancy of the women

Reasons for not doing any pathological test	Experimental area (Raipura)	Control area (Araihazar)
No need	52.2%	39.2%
Lack of money	41.8%	48.4%
Had no health problem	0	4.6%
Husband didn't allow	1.5%	4.0%
Others	4.5%	3.8%
N	67	153
x^2 (Chi-square)= 1.57	d.f= 4 P-value= .000	Comment= Significant

7.1.10 Problems faced by women while receiving ANC

The women of both areas are asked to do they face any problem at the time of receiving ANC. The answers are as shown in table 7.14 where 4.4% faced a problem during ANC check-up in experimental area and 5.8% in control area. The more women from control area faced problems compared to the experimental area during receiving ANC check-up in their last pregnancy.

Table 7.14 Problem faced to receive ANC check up by the women in the experimental and control areas

Face any problem to receive ANC check up	Experimental area (Raipura)	Control area (Araihazar)
Yes	4.4%	5.8%
No	95.6%	63.3%
Total	100.0	100.0
N	205	112
x^2 (Chi-square)= 28.49	d.f= 1 P-value= .000	Comment= Significant

They mentioned a number of problems at the time of receiving ANC check-up including 'Long waiting time', 'Long queue' etc. in control area. 'Transportation problem' is the one suffered by the women of both areas, but it is 100% in experimental area and only 35.7% in control area (Table 7.15).

Table 7.15 Type of problem faced to receive ANC check up by the women in the experimental and control areas

Type of problem faced to receive ANC check up	Experiment area (Raipura)	Control area (Araihazar)
Long queue	0	28.6%
Long waiting time	0	35.7%
Transportation problem	100%	35.7%
N	9	14

7.1.11 Complications during last pregnancy

Women of both experimental and control areas asked whether they faced any complication during their last pregnancy. Their answer is shown in table 7.16 where among the women 19% in experimental and about 30% in control area have suffered any type of complication during last pregnancy. That is, fewer women of experimental area experienced any complications than those of the control area and it is statistically significant.

Table 7.16 Experienced any complications during last pregnancy by women in the experimental and control areas

Experienced any complications during last pregnancy	Experimental area (Raipura)	Control area (Araihazar)
Yes	19.0%	30.8%
No	81.0%	69.2%
Total	100.0	100.0
N	240	240
x^2 (Chi-square)= 11.64 d.f= 1 P-value= .001 Comment= Significant		

The women of both areas also asked about the types of complication they experienced during their last pregnancy. In answer, they have mentioned a number of complications, including high fever, severe headache/blurred vision, swelling of hands and face, convulsion/fit, severe abdominal pain, vaginal bleeding, reduced movement of baby etc (Table 7.17).

Table 7.17 Type of complications experienced by women during their last pregnancy in both areas

Type of complication experienced during last pregnancy	Experiment area (Raipura)	Control area (Araihazar)
High fever	7.1%	6.8%
Severe headache/ blurred vision	9.5%	2.7%
Swelling of hands and face	16.7%	29.7%
Convulsions/fit	7.1%	2.7%
Severe abdominal pain	33.3%	32,4%
Any amount of vaginal bleeding	19.0	4.1%
Reduced movement of the baby	7.1%	14.9%
Others	0	6.8%
Total	100.0	100.0
N	42	74
x^2 (Chi-square)= 26.41 d.f= 7	P-value= .001	Comment= Significant

Furthermore, the women of both areas are also asked if they visited any health facility for treatment of their complications in last pregnancy. Their answers are shown in table 7.18. Women who experienced any complications during last pregnancy, among them in experimental area the largest number (61.9%) visited the UHC, whereas, in control area, it is private hospital (44.6%) they visited most and 'did not visit any health facility' stands in second largest position in both areas. According to table 7.18 it is clear that women of experimental area visited any types of health facility for their complications during last pregnancy than the control area and it is statistically significant at 5% level of significance.

Table 7.18 Health facility visited for treatment of complications by women during their last pregnancy in both areas

Visit health facility for pregnancy complication	Experiment area (Raipura)	Control area (Araihazar)
Did not go any health facility	23.8%	31.1%
UHC	61.9%	18.9%
Private hospital	11.9%	44.6%
Others	4.8%	4.2%
Total	100.0	100.0
N	42	74
x^2 (Chi-square)= 32.15 d.f= 3 P-value= .000 Comment= Significant		

7.2 Discussion:

Antenatal care from a medically trained provider is important to monitor the status of a pregnancy and identify the complications associated with the pregnancy. The data from BDHS 2011 show that antenatal care from any provider has increased by 17 percent over the past few years (from 58 percent in 2004 to 68 percent in 2011), antenatal care from a medically trained provider during the same period has increased by 7 percent only (from 51 to 55 percent, respectively) (BDHS 2011).

This study reveals that women of experimental area have more knowledge about the recommended number of ANC visits than the control area. About half of the women of control area did not receive any ANC during their last pregnancy. In contrast, more than half of the women of experimental area received ANC three times during their last pregnancy and the number is only 22.9% in control area. In experimental area 28.3% received ANC for two times, 2.5% for a single time. On the other hand, in control area 2.9% visits single time and 20.4% for two times. The reasons for not receiving any ANC mentioned by the women of both areas are 'no knowledge about ANC', 'thought

no need of ANC', 'husband does not like', parents-in-laws do not like', 'short of money', 'had no health problem during pregnancy', 'costs too much', 'fear of facility' etc.

In experimental area, number of first ANC visit taken during third and fourth month of pregnancy is remarkably higher than the control area. But, in the fifth month of pregnancy, it is about to same in both the areas. Similarly, in the sixth, seventh and eighth month of pregnancy the number of visits for ANC is also high among the women of experimental area and it is statistically significant.

About 84% of women of experimental area visited UHC for ANC check up but it is only 41.8% in control area. No women of control area visited FWC for this purpose. On the contrary, private hospital/clinic and own home are the second choice of women of control area for antenatal care. That is, a greater proportion of women of control area have chosen private hospital/clinic and own home than the women of experimental area for ANC check up. One of the reasons for this may be the existence of DSF program in the experimental area. Beside this, ANC checkups by a qualified or recognized healthcare provider are provided to more women of experimental area than the control area and it is also statistically significant.

Travel time and travel cost are another important determinant that influence healthcare seeking behavior of patient especially maternal and child health. Data from the study revealed mean travel time is higher in experimental area than the control area and mean travel cost is higher in control area compared to experimental area.

During pregnancy the Tetanus Toxoid (TT) vaccine is given to women for the prevention of tetanus. Antibodies formed in the body, after the vaccination, are passed to their baby and thus protect baby for a few months after birth. It also prevents premature delivery. In the first pregnancy, doctor recommends at least two doses of the TT vaccine. The data of this study show that the rate of taking

TT injection among the women of experimental area during their last pregnancy is much higher than the women of control area. But, receiving TT injection for only one time in their last pregnancy is more in experimental area and for the two times is higher in control area. The reasons for not taking TT injection during their last pregnancy mentioned by the women of both areas includes 'taking TT injection before last pregnancy', 'lack of money', 'no need', 'fear to injection', don't know' etc.

More than 72 percent of women did pathological test during their last pregnancy in experimental area and over 64 percent women in control area did not do any pathological test at that time. The major causes for that in the both areas includes 'no need', 'had no health problem', 'husband didn't allow' and 'lack of money' etc.

Most of the women of both the areas did not face any problem to receive ANC checkups. Transportation problem is the only problem mentioned by a few women of experimental area. Whereas, 'long queue', 'long waiting time' etc. is the problems mentioned by some women of control area including transportation problem.

Complications experienced by the women during their last pregnancy are much lower in experimental area compared to the control area and it is statistically significant. The major complication during their last pregnancy is 'severe abdominal pain' in experimental area and 'swelling of hands and face', 'severe abdominal pain in the control area. The other complications during that time includes 'high fever', 'severe headache/blurred vision', 'convulsions/fit', 'any amount of vaginal bleeding', 'reduce movement of the baby among the women of both the areas.

Interestingly, 23.8 percent women in experimental area and 31.1% women in control area did not visit any health facility for their complications during last pregnancy. More women with complications during their last pregnancy visited

UHC in experimental area than the control area. One of the reasons for this may be the existence of DSF program in experimental area. However, women of control area visited private hospital/clinic more for their complications during last pregnancy.

7.3 Conclusion

In sum, more women in the experimental area have better knowledge about ANC, have more ANC visits, visited UHC for ANC check-ups, have been provided with ANC services by a qualified/recognized health care providers, have TT injections, have pathological tests, have faced no problems to receive ANC services, have no complications during last pregnancy and have visited UHC for treatment of complications than in the control area. The more utilization of ANC services by the women in the experimental area may be attributed to the financial support provided to the women under DSF (voucher scheme).

CHAPTER 8

Delivery Care Utilization by Women

8.0 Introduction

The DSF program (voucher scheme) in Bangladesh finances three MHC services: ANC, delivery care and PNC. In the last chapter it is found that more women have utilized the ANC services in experimental area than those in the control area. In this chapter, we like to examine to what extent women in the experimental area have utilized the delivery care under the voucher program.

8.1 Delivery care utilization

The stage of delivery or labor is the most important part of pregnancy. By providing proper delivery care with professional health care provider almost all of the complications and unexpected situations can be avoided. To increase delivery care in a recognized health care centre with a professional bodies' supervision is one of the important aspects of voucher program. Women from both the experimental and control areas were interviewed to evaluate the care during delivery of their last pregnancy. Delivery care utilization by women of experimental and control areas are discussed and presented in the following sections.

8.1.1 Place of last delivery

The women of both areas were asked about the place of their last delivery and the answers are displayed in table 8.1. In experimental area, the highest number of women (48.3%) delivered their last baby at UHC, but in control area the highest 40% did it at 'own home' which is 33.3% in experiment area and stands second highest here. In control area, only 20% deliveries of women occurred at UHC which stands at 3rd position there and much less than compared to experimental area. Delivery at 'own home' and 'parents home' is also higher in control area compared to experimental area. Beside these, delivery at 'private

hospital/clinic' is higher in control area than experimental area. However, delivery care at the health facility is much higher in the experimental area (52.1%) than control area (33.5%).

Table 8.1 Place of last delivery of women in both areas

Place of last delivery	Experimental area (Raipura)	Control area (Araihazar)
Own home	33.3%	40%
Parents home	12.9%	25.4%
Relative's home	1.7%	0.8%
Sadar Hospital	1.7%	1.7%
UHC	48.3%	20%
Private hospital/clinic	2.1%	12.1%
Total	100.0	100.0
N	240	240
x^2 (Chi-square)= 57.129	d.f= 5	P-value= 0.000 Comment= Significan

8.1.2 Type of Delivery

Normal vaginal delivery (NVD) during the last pregnancy of women of both experimental and control areas are about the same (81.7% and 82.5% respectively) (Table 8.2).

Table 8.2 Type of delivery of women in both areas

Type of delivery	Experimental area (Raipura)	Control area (Araihazar)
Normal	81.7%	82.5%
C-section	16.2%	14.2%
Instrumental delivery	2.1%	3.3%
Total	100.0	100.0
N	240	240
x^2 (Chi-square)= 1.045	d.f= 2	P-value= .593 Comment= Insignificant

Delivery by c-section is also about the same in both areas but, slightly high in experimental area (16.2%) than control area (14.2%). There exist hardly any difference in types of delivery between the experimental and control area.

8.1.3 Person conducted last delivery

The women of both study areas are also asked about the person who conducted delivery during their last pregnancy. Their answers are shown in table 8.3. The largest 46.7% women in experimental area conducted their last delivery by nurse which is only 15% in control area. On the other hand, in control area the largest 31.7% women have done it by TBA/Dai, which are higher than the experimental area (27.5%). Though delivery conducted by doctor is a little bit high in control area compared to experimental area, but percentage of delivery conducted by FWV, TTBA, mother-in-law/relatives are lower in experimental area than in control area. The deliveries conducted by the skilled professional persons are higher in the experimental area (64.6%) compared to the control area (41.6%). The chi-square test on who conducted delivery is statistically significant at 5% level of significance.

Table 8.3 Person who conducted women respondent's last delivery

Person who conducted delivery	Experimental area (Raipura)	Control area (Araihazar)
Doctor	16.7%	20.4%
Nurse	46.7%	15.0%
FWV	0.4%	0.8%
TTBA	0.8%	5.4%
TBA/Dai	27.5%	31.7%
Mother-in-law/relative	7.5%	26.7%
Total	100.0	100.0
N	240	240
x^2 (Chi-square)= 78.31	d.f= 5	P-value= 0.000 Comment= Significant

8.1.4 Reasons for delivery of the last child at home

Women of both the experimental and control areas asked for the reasons of delivery last child at home. A number of reasons are mentioned by the women of both areas (Table 8.4). Most of the women (60.8%) of control area thought it is not necessary to go health facility for delivery of child. Though it is the most frequent cause at both areas, but much higher in control area than the experiment area (60.8% and 29.6% respectively). 'Costs too much', 'husband/ family did not allow', 'did not get enough time', 'fear of facility', 'transportation problem', 'traditional birth attendant (*dai*) was more convenient', 'stayed at parent's house during delivery' etc. are the other reasons mentioned by the respondents of both areas.

Table 8.4 Percentage distribution of women by reasons for delivery last child at home in both experimental and control areas

Reasons for delivering the last child at home	Experimental area (Raipura)	Control area (Araihazar)
Not necessary to go facility	29.6%	60.8%
Costs too much	5%	19.6%
Husband/Family did not allow	2.1%	5%
Did not get enough time	7.1%	5.4%
Fear of facility	3.8%	4.6%
Transportation problem	8.3%	2.9%
Traditional birth attendant (dai) was more convenient	3.3%	22.5%
Stayed at parent's house during delivery	6.7%	4.6%
Others	3.3%	1.2%
N	115	159

8.1.5 Travel time and travel cost for delivery care

For the utilization of delivery care, travel time and travel cost are two important determinants. The study (Table 8.5) found that, most of the women of both the experimental and control areas spent 31-60 minutes travel time to take the delivery care from the healthcare centre or hospital during their last pregnancy. But, in compared to experimental area this percentage is much higher in control area (33.8% and 85.1% consecutively). In experimental area, 16.9% women needed 5-30 minutes travel time to consume delivery care whereas, in control area it is only 6.4%. Travel time of 61-90 minutes for this purpose is low in control area (2.1%) and in experimental area, it is a little bit high (5.2%). Besides these, 15.6% women required a travel time of 91-120 minutes in experimental area but, it is only 6.4% in control area. The mean travel time for the utilization of delivery care is higher in control area (44.89) in contrast to experimental area (37.76) and it is statistically significant.

Table 8.5 Travel time for delivery care in both areas

Total travel time (Minute)	Experimental area (Raipura)	Control area (Araihazar)
5-30	16.9%	6.4%
31-60	33.8%	85.1%
61-90	5.2%	2.1%
91-120	15.6%	6.4%
N	77	47
Mean travel time	37.76	44.89
Mean test: t-value= -3.351	P-value= 0.001	Comment: Significant

Table 8.6 demonstrates that the highest 50.6% of women of experimental area required Tk. 0-50 as a travel cost to utilize the delivery care and it is only 14.9% in control area. In control area, the highest 57.4% women spent Tk. 101-150 for the same purpose, but in experimental area, it is only 1.7%. Beside these, the travel cost ranges from Tk. 51-100 is almost about to the same in both the experimental and control areas (28.6% and 27.1% consecutively).

Data from table 8.6 also demonstrates that the mean travel cost for the utilization of delivery care is much higher in the control area than the experimental area (Tk. 98.94 and Tk. 34.63 respectively).

Table 8.6 Travel cost for delivery care in both areas

Total travel cost (Tk.)	Experimental area (Raipura)	Control area (Araihazar)
0-50	50.6%	14.9%
51-100	28.6%	27.7%
101-150	1.7%	57.4%
150+	9.1%	0.0%
N	77	47
Mean travel cost	34.63	98.94
Mean test: t-value= 0.605	P-value= 0.545	Comment: Insignificant

8.1.6 Problem faced during their last delivery

Women of both areas who went to health facility for delivery during their last pregnancy faced a few problems. Only 5% in experimental area and 3.8% of women in control area said they faced problems to take delivery care in health facility during their last pregnancy (Table 8.7). The significantly higher proportion of women (47.5%) faced no problem taking delivery care in the experimental area than in the control area (32.1%).

Table 8.7 Problem faced by the women during their last delivery in both areas

Faced any problem to receive delivery care	Experimental area (Raipura)	Control area (Araihazar)
Yes	5%	3.8%
No	47.5%	32.1%
N	240	240
x^2 (Chi-square)= 13.56	d.f= 1 P-value= 0.01	Comment= Significant

8.1.7 Type of problems faced during last delivery

The women are then asked to mention the type of problems they faced. Their answers are shown in table 8.8. It reveals that women of experimental area mentioned only one problem and that is transportation problem. On the otherhand, women of control area said 'long queue', 'long waiting time', 'transport problem', 'doctor did not come timely', 'so crowded' are the problems they faced to consume the service.

Table 8.8 Type of problems faced by the women during their last delivery in both areas

Type of problems faced to receive delivery care	Experimental area (Raipura)	Control area (Araihazar)
Long queue	0	(22.2%)
Long waiting time	0	(22.2%)
Transport problem	100.0%	(33.3%)
Doctor did not come timely	0	(11.1%)
So crowd	0	(11.1%)
Total	100.0	100.0
N	240	240
x^2 (Chi-square)= 21.0 d.f= 4	P-value= 0.002	Comment= Significant

8.1.8 Sources of medicine used during last delivery

Table 8.9 describes the sources of medicine used during the last delivery of women. The study found that, most of the women bought medicine from any other places outside hospital (87.5% in experimental area and 70.4% in control area). In control area about 27% women bought medicine from that hospital, but none of them bought medicine from the hospital in experimental area. Only a few women said they got free medicine from the hospital, probably from the Govt. facility.

Table 8.9 Sources of medicine used during the last delivery of women

Sources of medicine	Experimental area (Raipura)	Control area (Araihazar)
Bought from private hospital	0	26.7%
Got free from Govt. hospital	12.5%	2.9%
Bought from outside hospital	87.5%	70.4%
Total	100.0	100.0
N	240	240
x^2 (Chi-square)=82.73 d.f=2 P-value= 0.000 Comment= Significant		

8.1.9 Complications during last delivery

Only 5.8% women in experimental area said they experienced any complications during their last delivery. In contrast, 22.9% of women in control area experienced problems at this time (Table 8.10). The data reveal that women of control area experienced more complications during the delivery of their last pregnancy than the experimental area and it is statistically significant. That is a lesser proportion of women in the experimental area have experienced any complications compared to the control area.

Table 8.10 Experience of any complication during last delivery of women in both areas

Experienced any complication during delivery	Experimental area (Raipura)	Control area (Araihazar)
Yes	5.8%	22.9%
No	94.2%	77.1%
Total	100.0	100.0
N	240	240
x^2 (Chi-square)= 28.45 d.f= 1 P-value= 0.000 Comment= Significant		

The women of both areas were asked about type of complications they experienced during delivery of their last pregnancy. Their answers are shown in

table 8.11. Complications experienced by them are 'excessive vaginal bleeding', 'severe headache/blurred vision', 'prolonged labor', 'convulsions/fit', 'obstructed labor', 'no labor pain', 'mal presentation', 'leaking membrane before delivery' etc.

Table 8.11 Type of complications experienced by women during last delivery in both areas

Type of complications experienced during last delivery	Experimental area (Raipura)	Control area (Araihazar)
Excessive vaginal bleeding	21.4%	9.1%
Severe headache/ blurred vision	7.1%	18.2%
Prolonged labour (labour pain for more than 12 hours)	21.4%	3.6%
Convulsions/fit	7.1%	5.5%
Obstructed labor	7.1%	16.4%
No labor pain	21.4%	32.7%
Mal presentation	14.3%	5.5%
Leaking membrane before delivery	0	7.3%
Others	0	1.8%
N	14	55

Women of both areas who experienced complications during delivery of their last pregnancy were also asked about what types of health facility they visited for treatment. The table 8.12 reveals that, among this group, all the women of experimental area visited any type of health facilities of which highest 85.7% visited the UHC. But in control area, 12.7% women did not go any health facility and rest of them went to the UHC, private hospitals etc. to solve the complications. There is none in the experimental area who did not visit any health facility for treatment while they experienced complications during last pregnancy.

Table 8.12 Health facility visited for treatment of complications during delivery of last pregnancy by the women in both areas

Visit health facility for delivery complication	Experimental area (Raipura)	Control area (Araihazar)
Did not go any health facility	0	12.7%
UHC	85.7%	41.8%
Private hospital	7.1%	41.8%
Others	7.1%	3.7%
Total	100.0	100.0
N	14	55
x^2 (Chi-square)= 11.225 d.f= 3 P-value= 0.024 Comment= Significant		

8.2 Discussion

2011 BDHS reported that 29 percent of births in Bangladesh are delivered in a health facility, 12 percent in a public facility, 15 percent in a private facility, and 2 percent in an NGO facility (BDHS 2011). Data of this study revealed that women of both the areas delivered their last child at different places. UHC is the major choice for the delivery of their last child among the women of experimental area. On the otherhand, own home is the first choice for delivery of their last child among the women of control area and parents home stands the second choice for this purpose. Beside this, more than 12 percent of women went private hospital/clinic for their delivery during last pregnancy in control area and which is only 2.1 percent in experimental area. So, a larger proportion of women of experimental area went UHC for their delivery during last pregnancy in comparison with the control area. In contrast, most of the women of control area preferred own home, parents home and private hospital/clinic for delivery during their last pregnancy.

Type of delivery shows a small variation as the study expected. Percentage of normal delivery is almost the same at both the areas but percentage of c-section is a little bit higher in experimental area than the control area. More than 63 percent delivery conducted by health care professionals like Doctor or nurse among the women of experimental area, but this rate is very much lower in control area. In control area, more than 58 percent of delivery conducted by TBA/Dai and mother-in-law/relative.

Though thinking of 'not necessary to go a health facility' is the main reason for delivery outside a healthcare facility in both the areas, the rate is very high in control area in comparison with experimental area. About 20 percent women of control area against only 5% in the experimental area think 'it costs too much' to conduct the procedure in a health care facility and hence avoid it. So, rate of delivery at home during their last pregnancy is higher in control area than the experimental area. Both the mean travel time and mean travel cost of delivery care are higher in control area comparison with experimental area and home delivery is lower in experimental area than the control area.

Women of experimental area faced only transportation problems during their last delivery. But, women in control area mentioned a number of problems such as 'long queue', 'long waiting time', 'transport problem', 'doctor did not come timely', 'so crowed' etc.

Main sources of medicine is mainly 'purchasing from outside' with out-of-pocket expenditure among the women of both the areas during their last delivery. Though little, free medicine from hospital during last delivery is supplied as reported by more women in experimental area because most of the deliveries occur in UHC.

Lesser proportion of women of experimental area experienced any complications during their last delivery in contrast to control area. The most frequent complications experienced by women of control area are 'severe

headache/blurred vision', 'no labour pain', 'obstructed labour' etc. The complications like 'excessive vaginal bleeding', 'prolonged labour', 'no labour pain' etc. is experienced by women of experimental area. Women who experienced complications during delivery of last pregnancy, all visited health facilities mainly UHC in experimental area. One of the causes of this may be the existence of DSF program in experimental area. On the otherhand, the rate of visiting UHC and private hospital are the same among women of control area due to complications during delivery of their last pregnancy.

8.3 Conclusion

A greater proportion of women in the experimental area have used health facilities for delivery care in their last pregnancy compared to the control area. Moreover, the higher proportion of deliveries in the experimental area in comparison with control area have been conducted by skilled professional health personnel like doctor, nurse, FWV, TTBA. The lesser proportion of women in the experimental area has faced any problem to receive delivery care and have experienced fewer complications than in the control area. However, the higher utilization of delivery care services in the experimental area compared to the control area may be attributable to the greater demand for such services in the experimental area which is generated by the voucher program.

CHAPTER 9

Postnatal Care (PNC) utilization by Women

9.0 Introduction

Three MCH services: ANC, delivery care and PNC are being financed by the DSF program (voucher scheme) in Bangladesh. In the last two chapters we found that more women have utilized the ANC and delivery care services in the experimental area than those in the control area. In this chapter, it is in order to discuss to what extent women in the experimental area have utilized the PNC under voucher program.

9.1 Postnatal Care (PNC) utilization

The postnatal period last for six to eight weeks, beginning right after the baby is born. During this period, the mother goes through many physical and emotional changes while learning to care for her new born. Postnatal care involves getting proper rest, nutrition and vaginal care or obstetrical care. In developing countries like Bangladesh, care during pregnancy, that is prenatal and post natal care is low. Though Bangladesh is doing well in this sector during last few years, yet the overall picture of post natal care is not at a satisfactory level. Postnatal Care (PNC) utilization of women of experimental and control area are discussed and presented in the following sections.

9.1.1 Received PNC by the women

The women of both areas are asked whether they received any postnatal care (PNC) after their last delivery. The answers in table 9.1 reveal that only 31.7% women in experimental area and 19.6% in control area received PNC after their last delivery. The rate of receiving PNC is low in both the areas and it is statistically significant. However, the percentage of women receiving PNC is higher in the experimental area than the control area.

Table 9.1: Postnatal care utilization by the women in both areas

Received PNC	Experimental area (Raipura)	Control area (Araihazar)
Yes	31.7%	19.6%
No	68.3%	80.4%
Total	100.0	100.0
N	240	240
x^2 (Chi square)= 9.79	d.f= 1 P-value= .002	Comment= Significant

9.1.2 Reasons for not receiving PNC

After that they who did not receive PNC are further asked for the reasons of not receiving any PNC. A number of reasons are mentioned that shown in table 9.2.

Table 9.2 Reasons for not receiving postnatal check up by the women in both areas

Reasons for not receiving postnatal check up	Experimental area (Raipura)	Control area (Araihazar)
No knowledge about PNC	31.3%	9.8%
Thought no need of PNC	33.7%	75.6%
Husband does not like	3.7%	6.2%
Parents-In-laws do not like	1.8%	1.0%
No companion	1.2%	3.1%
Short of money	2.5%	28.0%
Had no problem	21.5%	51.3%
Fear of facility	4.9%	0.5%
Transportation problem	13.5%	0
Don't know	23.9%	0.5%
Others	2.4%	1.0%
N	163	193

'Thought no need of PNC' (33.7%), 'no knowledge about PNC' (31.3%), 'don't know' (23.9%) are the three major reasons for not receiving PNC in experimental area. In contrast, 'thought no need of PNC' (75.6%), 'had no problem' (51.3%), 'short of money' (28.0%) are the three major reasons for this in control area. 'Transport problem' (13.5%) is the reason said only by the women of experimental area. Other causes they mentioned are 'husband does not like', 'parents-in-laws do not like', 'no companion', 'fear of facility' etc.

9.1.3 Place of PNC check-up

The women of both areas are asked about the place of PNC check-up. Responses to the question are shown in table 9.3. Most of the women who received PNC after their last pregnancy in experimental area went to the UHC (71.4%) and in control area private hospital/clinic is the frequent choice (59.6%) after which stands the UHC (34.0%). Among other health care facilities the choice includes community clinic, Govt. satellite clinic, qualified doctor's chamber etc. The greater proportion of women in the experimental area went to UHC for PNC check-up than the control area.

Table 9.3 Percentage distribution of women of both areas on place of PNC

Place of PNC checkup	Experimental area (Raipura)	Control area (Araihazar)
UHC	71.4%	34.0%
Private hospital/clinic	1.3%	59.6%
Community clinic	7.8%	0
Govt. satellite clinic	13.0%	0
Qualified doctor's chamber	1.3%	2.1%
Others	3.9%	4.2%
Total	100.0	100.0
N	77	47
x^2 (Chi square)= 65.1	d.f= 5 P-value= .000	Comment= Significant

9.1.4 Person conducted PNC check-up

Furthermore, the women of both areas are also asked about the person who conducted PNC check-up after the last pregnancy. The answers are in table 9.4. Doctor's conducted PNC check-up more in Araihazar, the control area (59.6%) whereas, in Raipura, the experimental area, it is second in position (29.9%) and nurses conducted the highest number (36.4%) of PNC check-up here. Others name they included here are medical assistant, FWV, paramedic etc. The greater proportion of women gets the PNC services from the skilled health professionals in the experimental area than in the control area.

Table 9.4 Percentage distribution of women of both areas on person conducted PNC check-up

Person who provided PNC checkup	Experimental area (Raipura)	Control area (Araihazar)
Doctor	29.9%	59.6%
Medical Assistant	20.8%	27.7%
Nurse	36.4%	10.6%
FWV	2.6%	0
Paramedic	6.5%	0
Others	3.9%	2.1%
Total	100.0	100.0
N	77	47
x^2 (Chi square)= 21.85	d.f= 5	P-value= 0.03 Comment= Significant

9.1.5 Travel time and travel cost for PNC visits

Data from table 9.5 reveals that in experimental area most of the women (14.2%) needed 31-60 minutes travel time to consume PNC after their last delivery which is also highest in the control area (32.8%). Only 2.5% women in control area spent 5-30 minutes for this and it is 12.9% in experimental area which is much higher than the control area. Beside these, 1.7% women of experimental area needed 61-90 minutes for PNC and it is only 0.8% in control

area. From the table it is clear that the mean travel time for PNC of the women is more in experimental area than the control area.

Table 9.5: Travel time for PNC visit

Total travel time (Minute)	Experimental area (Raipura)	Control area (Araihazar)
5-30	12.9%	2.5%
31-60	14.2%	32.8%
61-90	1.7%	0.8%
91-120	2.9%	0%
N	205	122
Mean travel time	48.96	34.34
Mean test: t-value= -0.718	P-value= 0.474	Comment: Insignificant

Table 9.6 shows that travel cost for PNC of the women ranges from Tk. 0-50 stands highest in both the areas which is 91.7% in experimental area and 67.2% in control area. In experimental area 4.2% women spent Tk. 51-100 and 2.9% from Tk. 101-150 which is 10.7% and 22.1% respectively in control area for the same purpose. The mean travel cost for PNC after their last delivery is higher in control area in compared to experimental area and it is statistically significant at 5% level of significance.

Table 9.6 Travel cost for PNC visit

Total travel cost (Tk.)	Experimental area (Raipura)	Control area (Araihazar)
0-50	91.7%	67.2%
51-100	4.2%	10.7%
101-150	2.9%	22.1%
150+	1.2%	0.0%
N	205	122
Mean travel cost	45.97	74.80
Mean test: t-value= 6.992	P-value= 0.000	Comment: Significant

9.1.6 Problem faced to receive PNC check-up

The women were asked if they face any problem in receiving PNC check up after their last delivery and only 2.6% in experimental area and 10.6% in control area said positively (Table 9.7). That is, more proportion of women of control area than the experimental area faced problems in receiving PNC check-up after their last delivery.

Table 9.7 Problem faced by women of both areas receiving PNC check-up after their last delivery

Faced any problem to receive PNC check up	Experimental area (Raipura)	Control area (Araihazar)
Yes	2.6%	10.6%
No	97.4%	89.4%
Total	100.0	100.0
N	77	47
x^2 (Chi-square)= 3.55	d.f= 1 P-value=0 .169	Comment= Insignificant

9.1.7 Types of problem faced to receive PNC check-up

Types of problem faced receiving PNC by the women in control area mentioned includes 'long queue' (20%), 'didn't get doctor timely' (20%) and 'transport problem' (60%) (Table 9.8). 'Transport problem' (100.0%) is only the problem mentioned by the women of experimental area to receive the service. So, women of control area faced different types of problem to receive PNC after their last delivery compared to the experimental area.

Table 9.8 Percentage distribution of women who faced different types of problem in receiving PNC check-up after their last delivery

Types of problem faced to receive PNC check up	Experimental area (Raipura)	Control area (Araihazar)
Long queue	0	20.0%
Didn't get doctor timely	0	20.0%
Transport problem	100.0%	60.0%
N	2	5
x^2 (Chi-square)= 4.51 d.f= 2 P-value= .211 Comment= Insignificant		

9.1.8 Family planning method used

Women of both the experimental and control areas are asked about family planning methods they used and their answers are shown in table 9.9. The data reveal that 82.1% respondents did not use any family planning method in Araihazar, the control area. The percentage is much lower (44.6%) in Raipura, the experimental area.

Table 9.9 Distribution of women by use of family planning method in both areas

Used family planning method	Experimental area (Raipura)	Control area (Araihazar)
No use	44.6%	82.1%
Pill	48.3%	13.8%
Condom	7.1%	1.2%
Injectable	0	2.9%
Total	100.0	100.0
N	240	240
x^2 (Chi-square)= 89.68 d.f= 3 P-value= .000 Comment= Significant		

Here, in experimental area 48.3% women used contraceptive pill which is only 13.8% in control area. The use of condom as family planning methods is 7.1% in experiment area and only 1.2% in control area. The study found that the proportion of women using FP methods is higher (55.4%) in the experimental area than in the control area (17.9%).

9.1.9 Colostrums to newborn

Women of both areas are asked if they gave colostrums to the last newborn. Table 9.10 reveals that 98.8% women in experimental area and 93.3% in control area gave colostrums to their newborn. Though the rate is high in both the areas, but slightly more in experimental area than the control area and it is statistically significant.

Table 9.10: Distribution of women according to whether colostrums are given to newborn

Given colostrums to newborn	Experimental area (Raipura)	Control area (Araihazar)
Yes	98.8%	93.3%
No	1.2%	6.7%
Total	100.0	100.0
N	240	240
x^2 (Chi-square)= 9.26	d.f= 1	P-value= .002 Comment= Significant

9.1.10 Diet of child at 1st 6 months

The answers of the question about diet of child at 1st six months are given in table 9.11. The study found that exclusively breastfed is the option chosen by 90.8% women in experimental area and 65.8% in control area during their last child. That is, more proportion of women of experimental area choose exclusively breastfed as a diet for their last child in 1st six months than those in control area. Breastfeeding side-by-side consuming other milk is the second highest choice of women of both the experimental (6.2%) and control (27.9%)

areas. The study found that the proportion of women who do not breastfed is significantly lower in the experimental area than that in the control area.

Table 9.11 Distribution of women according to diet of child at 1st 6 months

Diet of child at 1st 6 months	Experimental area (Raipura)	Control area (Araihazar)
No breast feeding	1.7%	2.5%
Exclusively breastfed	90.8%	65.8%
Breastfeeding and plain water only	0.8%	0.4%
Breastfeeding and consuming non milk liquids	0.4%	0.4%
Breastfeeding and consuming other milk	6.2%	27.9%
Breastfeeding and complimentary food	0	2.9%
Total	100.0	100.0
N	240	240
x^2 (Chi-square)= 52.28 d.f= 5 P-value= .000 Comment= Significant		

9.1.11 Intake vitamin A capsule

The women of both areas then were asked if their last child received vitamin-A capsule.

Table 9.12: Distribution of women according to their baby's intake of vitamin-A capsule

Women's baby receive vitamin A capsule	Experimental area	Control area
Yes	85.8%	51.2%
No	14.2%	48.8%
Total	100.0	100.0
N	240	240
x^2 (Chi-square)= 66.25 d.f= 1 P-value= .000 Comment= Significant		

In answer 85.8% women in experimental and 51.2% in control area said it positively (Table 9.12). The data reveal that vitamin-A capsule intake of the last child in experimental area is significantly higher than the control area.

9.2 Overall impact of voucher program on child death and maternal death

Overall impacts of voucher program on child death and maternal death are discussed in the following sections.

9.2.1 Dead child

Lesser proportion of women have experienced child death after birth in the experimental area (2.5%) compared to the control area (4.2%) (Table 9.13). Although chi-square value is insignificant, this information supports the reduced child death rate in the experimental area compared to the control area.

Table 9.13: **Distribution of women according to their child death after birth**

Any child died after birth	Experimental area (Raipura)	Control area (Araihazar)
Yes	2.5%	4.2%
No	97.5%	95.8%
Total	100.0	100.0
N	240	240
x^2 (Chi square)=1.034	d.f=1 P-value= .309	Comment= Insignificant

From table 9.14 it is also found that most of the child deaths occur within the age of one year to three years after birth in both the areas. Besides this, percentage of child death within one year of birth is much high in control area (2.4%) compared to experimental area (0.8%).

Table: 9.14 Distribution of women according to age of child at death

Age of child at death	Experimental area (Raipura)	Control area (Araihazar)
Within 1 years	0.8%	2.4%
1-3yrs	0.8%	0.8%
More than 3yrs	0.8%	0.8%
Total	2.5%	4.2%
N	6	10

9.2.2 Miscarriage/abortion/still birth/MR

The study shows, the women in the experimental area has experienced apparently lower (6.2%) miscarriage/abortion/still birth/MR than in the control area (10.0%). Although the chi-square value is insignificant, this information is indicative of better ANC services received by women in the experimental area in comparison with control area.

Table 9.15 Distribution of women according to experienced miscarriage/abortion/ still birth/ MR

Ever experienced miscarriage/ abortion/stillbirth/MR	Experimental area (Raipura)	Control area (Araihazar)
Yes	6.2%	10.0%
No	93.8%	90.0%
Total	100.0	100.0
N	240	240
x^2 (Chi square)= 2.26 d.f= 1 P-value=.133 Comment= Insignificant		

9.2.3 Number of child death

Table (9.16) shows the number of child deaths (under 5) occurred during the last five years as reported by the selected women in the experimental and control areas.

Table 9.16 Number of child deaths (under 5) in the experimental and control areas

Year of death	Experimental area (Raipura)	Control area (Araihazar)
2013	0	0
2012	0	3
2011	3	1
2010	1	1
2009	1	4

It reveals that, except the year 2011, the number of children died appears to be lower in the experimental area compared to the control area. The lower child death in the experimental area is likely to be contributed by the better utilization of maternal and child health care services under the voucher scheme.

9.2.4 Utilization of ANC, delivery care and PNC at Upazila Health Complex

The table 9.17 shows service statistics collected from the Directorate General of Heath Services (DGHS) at Dhaka. The greater number of women has received ANC, delivery cares both normal and C-section, PNC services in UHC of the experimental area than that in the control area during 2011-2013 (Table 9.17). Such higher utilization of maternal health care services at UHC observed during the last three years may be attributable to the existence of voucher scheme in the experimental area.

Table 9.17 Utilization of ANC, delivery care and PNC in Upazila Health Complex, 2011-2013

Year	*Service utilization*	Experimental area (Raipura)	Control area (Araihazar)
2013	No. of ANC service recipients	7530	4011
	No. of Cesarean Section	241	0
	No. of normal deliveries	848	344
	No. of live births	1066	336
	No. of total deliveries	1093	344
	No. of PNC service recipients	2550	598
2012	No. of ANC service recipients	7675	3152
	No. of Cesarean Section	150	0
	No. of normal deliveries	872	369
	No. of live births	1095	369
	No. of total deliveries	1112	376
	No. of PNC service recipients	3040	538
2011	No. of ANC service recipients	7242	3025
	No. of Cesarean Section	356	0
	No. of normal deliveries	957	419
	No. of live births	1145	404
	No. of total deliveries	1316	419
	No. of PNC service recipients	3300	592

Source: DGHS

9.3 Provider perceptions of the program impacts

Most of the service providers think that demand for maternal health care like ANC, Delivery care, PNC increased due to the program. They think that due to the program, women from all over the areas are coming to hospital or health care centre more than the usual. They are receiving ANC, Delivery care, PNC, doing necessary investigations during pregnancy, taking TT injection, gathering knowledge about child care, especially immediately after birth and family planning methods etc. Though all of those services are usual but due to the existence of voucher program more women are coming to receive the services then usually they do. As a result, maternal and child death rate is decreasing thought by the service providers. Moreover, cash incentives also play an important role to overcome the financial pressure during that time of the voucher recipient's family thought by most of the service providers.

9.4 Discussion

The DSF program is strongly and significantly associated with higher utilization rates of PNC services, e.g. 19.6% of women in the control area against 31.7% of women in experimental area had a PNC visit. So this result shows the positive impact of DSF. The 2011 BDHS data show that 29 percent of mothers in Bangladesh receive PNC from a medically trained provider within 42 days after delivery (BDHS 2011). My study found that overall PNC utilization and PNC under trained personnel, both are high among the women of experimental area compared to control area. The study also revealed that there are some reasons for not receiving PNC such as ‘short of money’, ‘no knowledge about PNC’, ‘husband and parents-in-laws do not like’ etc. But, most of the women in both the areas thought PNC services necessary.

Most of the women who received PNC after their last delivery in both areas received PNC by qualified person like Doctor, MA, nurses etc at UHC (71.4% in experimental area) and at a private hospital/clinic (59.6% in control area).

The study found mean travel time is higher in experimental area compared to control area and mean travel cost is higher in control area compared to experimental area.

2.6% women in experimental area and 10.6% women in control area faced problem to receive PNC check-up. The main problems are 'transportation problem', 'long queue', 'didn't get provider timely' etc.

In Bangladesh, the proportion of married women using a family planning method to avoid pregnancy increased from 8% in 1975 to 61% (BDHS 2011). In this study the data reveal that more women in experimental area have used family planning methods compared to the control area. In the experimental area more than half of the women or their husbands use FP method. They are likely to use contraceptive pill (48.3%) and condom (7.1%). On the otherhand, 82.1% of women and her husband in control area did not use any FP method. Rest of the women in this area used contraceptive pill (13.8%), condom (1.2%) and injectable (2.9%) method.

Breast milk is the best source of all the nutrition needed by children in the first six months of life. Also colostrums are nature's perfect first food. It supplies immune and growth factors, along with a perfect combination of vitamins and minerals to ensure the health, vitality and growth of the newborn. In the study, 98.8% women in experimental area and 93.3% women in control area gave colostrums to their newborn. The exclusively breast milk for the first six months of life is met 90.8% in experimental area and 65.8% in control area. Other infants are given water, liquids, infant formula, and complimentary food with breast milk in both areas.

Vitamin A is the key for good vision, a healthy immune system and cell growth. Severe vitamin A deficiency can result in childhood blindness. About 85.8% women in experimental area and about half (52.2%) of the women in control area gave their baby vitamin A capsule.

Women those experienced miscarriage or abortion or still birth or MR is low in experimental area than the control area. Moreover, rate of child death after birth is higher in control area than the experimental area.

The maternal and child death rate is decreased during the program due to consuming more MHC services by the pregnant women and cash incentives for the voucher recipients is an important factor in this positive impact. However, no negative impact of the voucher program is mentioned by service providers.

9.5 Conclusion

The higher proportion of women in the experimental area compared to the control area have utilized PNC services, received PNC at UHC, have had more travel time, have given colostrums to their newborn, have breastfed the last child and have had their child in taking of vitamin A capsule. However, a lower proportion of women in experimental area has faced a problem in receiving PNC services and has experienced lesser types of problems compared to the control area. The lesser proportion of women in the experimental area has experienced miscarriage or abortion or stillbirth or MR than the control area. Moreover, numbers of child deaths appear to be lower in the experimental area compared to the control area. Thus, increased utilization of PNC by the women in the experimental area is associated with DSF program (voucher scheme).

CHAPTER 10

Voucher Related Problems and Recommendations

10.0 Introduction

In Chapter 5 it is seen that voucher program was introduced in Bangladesh in 2006 in 33 upazilas. Since then a number of studies were conducted on the issues related to voucher program as we have mentioned in Chapter 4. In that study a number of problems were identified. Do these problems exist in the experimental area of this study? The present chapter has made an attempt to examine these questions in the light of the opinion/responses of the voucher recipients and relevant service providers and to suggest remedies for improving the situations.

10.1 Knowledge about the DSF program

Hatt et al. (2010) was conducted a survey within 1,104 women in the intervention area. They were asked if they heard about the DSF program and in answer 86% women said positively.

In my study, at the same question, 96.7% women in experimental area answered positively and 97.5% in control area said it negatively (Table 10.1).

Table 10.1 Percentage distribution of women of both areas if they have heard about voucher program

Heard about voucher program	Experimental area (Raipura)	Control area (Araihazar)
Yes	96.7%	2.5%
No	3.3%	97.5%
Total	100.0	100.0
N	240	240
x^2 (Chi-square)= 4.257	d.f= 1 P-value= 0.000	Comment: Significant

My study found that knowledge about the DSF program increased than earlier in the intervention area, though people of area without the program know a little about this.

Later on, they were also asked about the necessity of voucher program. In experimental area 95.8% respondents think it is necessary (Table 10.2). But in control area those who have heard about the voucher program, has reported it to be necessary. However, insignificance of chi-square value suggests that there is no difference between the two areas about the necessity of voucher program among those who have heard about it.

Table 10.2 Percentage distributions of women of both areas whether they think voucher program necessary

Think voucher program is necessary	Experimental area (Raipura)	Control area (Araihazar)
Yes	95.8%	100.0%
No	4.2%	0
Total	100.0	100.0
N	230	6
x^2 (Chi-square)= 0.052	d.f= 1 P-value= 0.819	Comment: Insignificant

10.2 Responses of voucher recipients at withdrawal of voucher program

In this stage the voucher recipients were asked if the financial support through voucher book is withdrawn, though they go to the health facility. Table 10.3 reveals that 87.5% voucher recipients would like to go to health facility even after withdrawn of financial support through voucher book and only 12.5% comments negatively.

Table 10.3 Distribution of voucher recipients by their comments about withdrawn of financial support through voucher

Go to health facility if financial support was withdrawn	Experimental area (Raipura)
Yes	87.5%
No	12.5%
Total	100.0
N	200

After then, the voucher recipients further asked will they suggest another to receive voucher. Information displayed on table 10.4 demonstrates that 99.5% of voucher recipients keeps in mind that they will suggest another to receive voucher during their pregnancy.

Table 10.4 Distribution of voucher recipients by their comments if they would suggest others to receive voucher

Suggest to another to receive voucher	Experimental area (Raipura)
Yes	99.5%
No	0.5%
Total	100.0
N	200

10.3 Some voucher books not used

Rob et al. (2010) shows that, about 10% of voucher recipients did not utilize vouchers for maternal health services. For this, they indicated different reasons such as received voucher book at the later stage of pregnancy, closed health facility, non-availability of service providers, long queue, do not know how to use it.

In my study, table 10.5 demonstrates that among the total number of women (240) in experimental area (Raipura), 11.2% (27 in numbers) women have no voucher cards. Rest of 88.8% (213 in number) women have voucher cards but 5.4% (13 in numbers) women did not use it during their last pregnancy.

Table 10.5 Percentage distribution of voucher recipient in Raipura (only for experimental area)

Voucher user	Experimental area (Raipura)
Had no voucher	11.2%
Used voucher	66.2%
Not used voucher	5.4%
Not yet getting money	17.1%
Total	100.0
N	240

Women of experimental area those having a voucher book, but not used it (5.4%) are asked about the cause. Their answers are distributed at table 10.6. Received voucher book at a later stage of pregnancy is the frequent cause mentioned by 66.6% women and 33.3% said that field workers did not inform properly about how to use it.

So it is seen that drop-out or unused voucher book problem still exists but less than earlier. The causes of this are about to the same found before.

Table 10.6 Percentage distribution of voucher recipients by causes of not using voucher books

Why not use voucher book	Experimental area (Raipura)
Received voucher book at later stage of pregnancy	66.6%
Fieldworkers did not inform properly about how to use it	33.3%
Total	100.0
N	13

Recommendation

The marketing for DSF program should be more effective with proper counseling to the voucher recipients and regular training, monitoring and meeting with the field worker will be helpful to minimize the problem.

10.4 Problems faced by the voucher recipients to receive cash benefits

Hatt et al. (2010) found that 21% of women had problems receiving the cash benefit. When they asked for specifying the problems faced, the majority of them mentioned that there was a delay in the reimbursement (19.7%). Another type of problems they mentioned was received partial reimbursement (7%), did not receive any benefit (0.5%), and had to pay extra or unofficial payment (2.2%).

My study found that 32.7% of voucher recipient women faced problems in receiving cash benefits in experimental area and 67.3% did not face any problem (Table 10.7).

Table 10.7 Percentage distribution of voucher recipients by problems faced by them in receiving cash benefit

Face any problems for receiving cash benefit	Experimental area (Raipura)
Yes	32.7%
No	67.3%
Total	100.0
N	159

When they asked to specify the type of problems faced, most of them said about the delay in receiving reimbursement or benefit (86.5%) and 13.5% had to pay extra or unofficially.

Table 10.8 Distribution of voucher recipients by types of problem faced by them in receiving cash benefit

Type of problems faced receiving cash benefit	Experimental area (Raipura)
Delay/did not receive immediate reimbursement	86.5%
Had to pay extra	13.5%
Total	100.0
N	52

In comparing to earlier research, problems to receive cash incentives or reimbursement by the voucher recipient increased than before. Here, still the main problem is the delay in reimbursement or cash incentives. Unofficial or extra payment is remaining still but problem of partial reimbursement exists no more.

Recommendation

Delay in reimbursement or cash incentives is the major complaint against the program. This is due to delay in issuing money/cheque for reimbursement or cash incentives from the government. Only on time delivery of the money/cheque for this can solve the problem. So, the mastermind of the program, the Government and financing group of the program must concentrate their efforts to solve the problem that the program can run more smoothly, effectively and increased popularity.

To stop unofficial payment the service providers should bear their morality to the job and the voucher recipient's awareness should be increased. Here, again the field workers can change the situation with their greatest effort. Finally, an effective monitoring system should be included.

10.5 Use cash benefit

Beside this, they were also asked about how they used the cash benefit received against voucher book. The most frequent ways are 'purchased food for newborn' (11.2%), 'purchased nutritious food for herself' (10.4%), 'saving for the child's education' (8.8%), 'paying off a loan' (7.1%), 'purchased other household items' (7.1%), Others (13.3%). The least frequent ways are 'purchased food for family', 'investing in the family business', 'repairing home', 'don't know' etc. (Table 10.9).

Hatt et al. (2010) found that 78.3% women used cash benefit in approval item & 49.8% in unapproved item. In my study, 37.1% women used cash benefit in approval item & 62.8% in unapproved item.

Table 10.9 Percentage distribution of voucher recipients by how did the voucher recipients use cash benefit

How did respondent use cash benefit	Experiment area (Raipura)
Purchased nutritious food for herself	15.7%
Purchased food for family	1.3%
Purchased food for newborn	17.0%
Purchased other household items	10.7%
Spent money on medication	2.5%
Spent money for baby's care	1.9%
Investing in the family business	0.6%
Saving for the child's education	13.2%
Repairing the home	5.0%
paying off a loan	10.7%
Given money to husband	0.6%
Don't know	0.6%
Others	20.1%
N	159

The use of cash benefit of the voucher recipients in approval item decreased about 41.2% compared to earlier and at the same time purchasing of unapproved items increased about 13%.

Recommendation

To minimize the problem, instead of cash incentives the beneficiary may be issued another voucher to purchase some approved items (i.e. nutritious foods, medicines, cloth etc.) which will be redeemable at some selected facilities/ stores where the DSF program existing.

10.6 Unofficial payment

Hatt et al. (2010) found that 2.2% of voucher recipients had to pay extra or made unofficial payments to receive cash benefits.

In my study, the voucher book holders are questioned if they had to pay any unofficial/ extra payment to get the services included. 89.9% of them said that they did not pay any unofficial payment while 10.1% needed it to consume the services included in a voucher book (Table 10.10).

Table 10.10 Distribution of voucher recipients by unofficial payment to consume the services

Need to provide unofficial payment	Experimental area (Raipura)
Yes	10.1%
No	89.9%
Total	100.0
N	159

After that, they also asked to mention the amount of money they had to pay unofficially. They said most of them (68.8%) had to pay Tk. 1-100, 18.8% paid Tk. 101-200 and 6.2% paid Tk. 201-300 and Tk. 401-500 as unofficial payment (Table 10.11).

Table 10.11 Distribution of voucher recipients by amount of unofficial payment to consume the services

Amount of unofficial payment	Experiment area (Raipura)
1-100	68.8%
101-200	18.8%
201-300	6.2%
301-400	0.0%
401-500	6.2%
Total	100.0
N	16

Moreover, they requested too to mention the reasons of unofficial payment. The answers are displayed in table 10.12. The most frequent reason is 'to get voucher book' (50%). The other causes are for serial to get the service (18.8%), due to service personnel demand (18.8%) and to get the money (cash benefit) earlier (12.4%).

Table 10.12 Distribution of voucher recipients by causes to unofficial payment to consume the services

Reasons for unofficial payment	Experiment area (Raipura)
For serial	18.8%
Service personnel demanded	18.8%
To get money earlier	12.4%
To get voucher book	50.0%
Total	100.0
N	16

Unofficial payment or extra payment in DSF program still exists and it increased about 7.9% compared to earlier.

Recommendation

Increased reimbursement of service providers may be one of the ways to minimize the problem. Beside this, the service providers should bear their morality to the job and the voucher recipient's awareness should be increased. Here, again the field workers can change the situation with their greatest effort. Finally, an effective monitoring system should be included.

10.7 Long queue

Voucher book holders are inquiring for any long queue to consume the services included. Among them, 64.5% recipients said that they have to wait in long queue and 35.5% said not to wait long queue to consume the services included (Table 10.13).

Table 10.13 Percentage distribution of voucher recipients who experiences long queue to consume services

Wait for long queue	Experimental area (Raipura)
Yes	64.5%
No	35.5%
Total	100.0
N	200

Further, they are also requested to mention the causes for long queue. In answer, 89.9 percent of them blamed crowd of patients and only about

Table 10.14 Percentage distribution of voucher recipients by causes of long queue to consume services

Causes of wait for long queue	Experimental area (Raipura)
Crowd of patients	89.9%
Less personnel	10.1%
Total	100.0
N	129

10 percent to fewer service personnel (Table 10.14) for long queue to receive the services included in the voucher book during their last pregnancy.

Recommendation

Including more skilled, trained service personnel in the program can minimize the problem.

10.8 Quality of care

The beneficiary of voucher recipient's perception in the question of quality of care is mined in the study conducted by Hatt et al. (2010). In five of the upazilas, focus group discussants indicated that they felt the voucher program had led to improved behavior on the part of doctors and nurses. Women in two upazilas felt that provider behavior had always been good and there had been no change since the inception of the program. In the other three upazilas, respondents uniformly indicated that provider behavior was very negative and had not improved under the voucher program. Women reported about providers telling voucher holders to wait for extended periods, accusing them of coming just to take money, and neglecting them because they were poor.

At the same matter, my study found that, 81.5% of voucher recipients comments good doctor's behavior and 18.5% appreciated it as 'very good' (Table 10.15).

Table 10.15 Percentage distribution of voucher recipients by pattern of Doctor's behavior

Doctor's behavior	Experiment area (Raipura)
Very good	18.5%
Good	81.5%
Bad	0.0%
Total	100.0
N	200

On the otherhand, 91.5% of service personnel are commented as 'Good' and 8.0% as 'very good' (Table 10.16). As a whole, most of the voucher recipients said that Doctor's and service personnel behavior is good.

Table 10.16 Percentage distribution of voucher recipients by service personnel behavior

Behavior of service personnel	Experiment area (Raipura)
Very good	8.0%
Good	91.5%
Bad	0.5%
Total	100.0
N	200

But, they have complaints against long queue and demanded for free medicine, free child care services and a non-hazarding female friendly environment.

From both the studies, it is seen that service quality, behavior of Doctor’s, nurses and service personnel is improved now than before but not out of questions.

The problem of long queue to consume the services is still remaining, but neglecting the voucher recipients as poor by the service personnel is no more. That is, an attitude of service personnel to the voucher recipient is improved.

Recommendation

Service personnel should be trained up properly and regular training, including BCC and meeting with them is necessary. More service personnel should be included in the program.

10.9 Difficulties faced by the providers

Hatt et al. (2010) shows that key informant reported difficulties with the provision of cash and in-kind benefits to beneficiaries. The most common difficulties mentioned were long delays in receiving cash advances from the government, resulting in long delays in paying beneficiaries; and lack of sufficient administrative staff to distribute cash benefits, resulting in long lines at health facilities on distribution days. About all of them expressed concerns about human resource shortages at health facilities, including shortages of clinical staff, shortages of administrative and support staff (cleaners, accountants, office administrators), and a lack of sufficient training for clinicians. They also mentioned about their increased workload because of the voucher program which they mentioned as “double workload” i.e. increased number of deliveries, check-ups, and paperwork etc.

In my study, the service providers are also asked about the difficulties they faced to run the program. Most frequent problems they mentioned includes delays in receiving cash incentives from the government that result in long delay paying beneficiaries, selection criteria of voucher recipient women, shortage of manpower/resource persons, inadequate reimbursement to service providers, inadequate cash benefit of voucher recipients, lack of training to service providers. They also mentioned (Table 10.17) that workload is increased compared to before (73.3%), such as increased number of deliveries (13.3%), increased check-ups (13.3%) etc.

Table 10.17 New problem faced by the service providers to run the project

New problem faced by the service provider to run project	Experimental area (Raipura)
Work load is too much compared to before	73.3%
Increased number of deliveries	13.3%
Increased check-ups	13.3%
Others	33.3%
N	15

Compared to earlier study, problem of long delays in receiving cash and in-kind benefits, shortage of service personnel, lack of training for human resources and over work-load still exists. Moreover, selection criteria of voucher recipient women, inadequate reimbursement for service personnel and voucher recipients arises as new problems.

Recommendation

The main problem of the program is a long delay in getting beneficiary money from the government. Only government, donor group and mastermind can solve the problem.

Due to delay in getting a gift box for the baby the clothing does not fit for them when they get it. Here my recommendations are, gift box for the baby must be delivered immediately after birth as it can not be used usually when they get. Otherwise, the amount of money allotted for gift box may be used in the following ways:

a) The amount of money can be given to the baby's emergency take care or the gift will be in cash.

b) This money can be used in family planning purposes like counseling and a free supply of contraceptives (for some initial months) as it is somewhat at less concentrated both by the side of program and voucher recipient.

To solve the problems in selection criteria of voucher recipients the mastermind may think about the revision of the eligibility criteria for the program. Here my suggestions are-

a) Monthly family income restriction may limit up to Tk. 5000, according to the present socio-economic condition of Bangladesh.

b) Restrictions on ownership of land/asset limit may be omitted or reschedule.

c) The age limit of first conception must not less than 20 years of age may add here to reduce the hazards and complications of early pregnancy.

Finally the government and the mastermind of the program may involve more trained human resources in the program with a satisfactory reimbursement to the service providers and voucher recipients in comparison to the present socio-economic concerns of Bangladesh.

10.10 Dropped out or fail to seek services included in voucher booklet

In the study by Hatt et al. (2010) also shows that, providers are asked to assess the extent to which beneficiaries "dropped out" or failed to seek covered voucher services after receiving a voucher booklet. About one quarter of providers thought that drop-outs did occur. It is reported that women are more likely to seek antenatal services, but that deliveries often still occurred at home and postnatal care might not be sought. Providers hypothesized that family and social barriers continued to present obstacles, and that transportation is an issue. Poor quality services and human resource shortages in facilities are also mentioned as possible reasons for drop-outs.

At the same question in my study, the providers noticed some causes of which most frequent is family did not agree to take the services (40%) offered by voucher booklet (40%) (Table 10.18). After than 'staying at father's home' and 'lack of transport' are the second most frequent causes of dropout. They also said about delivery at home, not to understand by the voucher recipients how to use the booklet, lack of proper communication with pregnant women, social barrier, fail to deliver the service in appropriate time suppose, when delivery

occurs at mid night are also reasons of dropped out after receiving a voucher booklet.

Drop-out of voucher recipient problem still existing in the program. The causes for this are the same that of earlier, but some new causes such as not to understand by the voucher recipients how to use the booklet, lack of proper communication with pregnant women, fail to deliver the services in appropriate time (e.g. when delivery occur at mid night) have found in my study.

Table 10.18 Distribution of service providers by causes of dropped out or fails to seek services covered by voucher booklet

Causes of dropped out	Experimental area (Raipura)
Family did not agree to take the services	40%
Due to social barriers	6.7%
Lack of transport	20%
Others	53.3%
N	15

Recommendation

Dropped-out problem cannot be overcome as a whole, but proper counseling to the voucher recipients and her family member, more awareness about the problem with its complications and co-operation with all of the society can minimize this problem. For this, a different page may include with PNC booklet. Free medicine, essential neonatal care should be included. These initiatives will influence the voucher recipients to keep in touch with the program.

Transportation problem can be minimized to some extent by providing motorized (e.g. Ambulance) or non-motorized (e.g. van, rickshaw) vehicles for the voucher recipient women especially for ANC, delivery and PNC services.

10.11 Satisfaction of voucher recipients on the services delivered

The voucher recipients are questioned about their satisfaction of the services delivered. In answer, 93.5% of the voucher recipients said they are satisfied with the services delivered (Table 10.19). Among them, 4.5% are satisfied with some extend and 2.0% are not satisfied.

Table 10.19 Percentage distributions of voucher recipients by their satisfaction on the services delivered during their last pregnancy

Satisfied with the services	Experimental area (Raipura)
Satisfy	93.5%
Satisfy with some extend	4.5%
Not satisfy	2.0%
Total	100.0
N	200

The voucher recipients are also requested to mention the reasons for satisfaction and their answers are displayed in table 10.20.

Table 10.20 Percentage distribution of voucher recipients by reasons of satisfaction on the services delivered during their last pregnancy

Reasons of satisfaction	Experimental area (Raipura)
Cash incentives	10.8%
Free services	14.6%
Services at nominal cost	36.7%
Free medicines	5.4%
Medicines are at nominal cost	5.0%
Required care is available	68.8%
Maintain confidentiality	6.7%
Good behaviors of providers	15.4%
N	187

The most frequent reason of satisfaction is 'required care is available' (68.8%) and 'services at nominal cost' (36.7%). The other reasons are 'cash incentives', 'free services', 'free medicines', 'medicines are at nominal cost', 'maintain confidentiality', 'good behaviors of providers' etc.

Furthermore, they are ask about the reasons of dissatisfaction. The voucher recipients who are dissatisfied with the services provided among them 75% blamed on time consuming and others 25% (Table 10.21).

Table 10.21 Percentage distribution of voucher recipients by reasons for dissatisfaction on the services delivered during their last pregnancy

Reasons of dissatisfaction	Experimental area (Raipura)
Time consuming	75.0%
Others (unofficial payment)	25.0%
Total	100.0
N	4

10.12 Providers reimbursement process

Most of the provider (11 of 15) thinks that the current provider reimbursement process is efficient and only four of them disagreeing with it. Those disagree with it argued that the process is somehow right but the amount of reimbursement is very low in comparison to present socio-economic condition of Bangladesh. Lack of manpower with high work load and delay in reimbursement are the problems they think.

10.13 Suggestions of voucher recipients for improving the service

The voucher recipients are asked to suggest some measures to improve the service. Their responses are tabulated in Table 10.22. A large majority of voucher recipients (54.2%) did not give any suggestion. Some of recipients (6.2%) suggested that the voucher program would be more popular if the

service quality is increased. 'Need more female service provider' suggested some respondents (5.8%). 3.8 percent suggested that client should inform about the service properly. The voucher program would be more effective at the poor people, some of them suggested that if the program includes free child treatment besides maternal care and give free medicine. However, other suggestions in this regard are 'should give the cash incentive without delay', 'increase their cash incentives' and 'include more resource person in the program'.

Table 10.22 Distribution of Suggestions of voucher recipients for improving the service

Suggestions for improving the service	Experimental area (Raipura)
Need to increase service quality	6.2%
Need more female worker	5.8%
Need to inform about services	3.8%
Free child treatment	4.6%
Give free medicine	3.8%
Give the money without delay	2.5%
Increase cash incentives	1.2%
Need more resource persons	1.2%
No comments	54.2%
N	213

10.14 Overall comments of voucher recipients about voucher scheme

In a reply to the question of what is their comment about DSF scheme, most of the recipients said that this program is very much useful for the poor people. Some of them said that they are satisfied about the service. They said that they are lucky because of the DSF program is available at their upazila. Among the voucher recipients only two of women said that this program is no need for them.

10.15 Suggestions to improve the voucher program related services by service providers

The service providers are requested for their suggestions to improve the service. In response they mentioned a number of suggestive instructions. About all of them think to increase reimbursement of service provider, increase cash incentive to the voucher recipient, on time delivery of reimbursement and cash incentives, improve awareness of pregnant women along with their family member and mastermind of the society, reschedule selection criteria of voucher recipient in view of present socio-economic condition, increase manpower specially in field level, on time delivery of gift box especially clothing of baby as it does not fit to baby when delivered or giving money in cash for this purpose, arranging frequent training and meeting for/with the field workers, include other services like child care, family planning are some initiatives that can improve service quality as well as the program.

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Appendix – A
Tables

Table : A1 Name of villages where women are interviewed in Raipura upazila

Name of village	No. of women	Name of village	No. of women
Tolatuli	60	Brahmonertek	2
Methikanda	10	Algi	2
Boalmara	11	Begnabaj	1
Shahebnagar	26	Polashtoli	2
Bahadurpur	4	Nobuarchor	1
Bangalimara	14	Borochor	2
Sayedabad	31	Gobindopur	6
Uttor Bakhornagar	10	Ratanpur	1
Morjal	12	Lobonpur	6
Jamtoli	6	Rajnagar	5
Fultoli	3	Raipura	2
Sasiamara	8	Shrinagar	2
Horipur	4	Shriampur	3
Jahangirnagar	1	Modhonagar	1
Kalipur	1	Fuldi	1
Mejerkandi	1	Khakchok	1

Table: A2 Name of villages where women are interviewed in Araihazar upazila

Name of village	No. of women	Name of village	No. of women
Daburpura	12	Baroipara	9
Borokanda	5	Gajipura	3
Khamarchor	11	Lalurkandi	10
Dokkhin para	6	Turkini	11
Doripara	8	Bailatkandi	13
Dorigao	1	Mahmudpur	1
Araihazar	4	Mukundi	7
Bakhanagar	12	Kandapara	3
Loshkordi	8	Shingarpur	11
Sultansadi	5	Nekahon	17
Chowthar agarpara	18	Kayimpur	30
Uchipura	4	Chowtharkanda	7
Fowjakanda	2	Madardia	4
Alishadi	9	Bijoynagar	4
Gurubdi	4	Balapur	1