

**UTILIZATION OF PRIMARY HEALTH CARE
SERVICES IN RURAL BANGLADESH:
THE POPULATION AND PROVIDER PERSPECTIVES**

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TO MY PARENTS

ABSTRACT

I

This thesis is about the Utilisation of Maternal and Child Health Care Services (MCH) in Rural Bangladesh. Investigations have been made to identify the underlying causes of low use of the MCH services provided through the public sector health care facilities, which is a major concern for the government of Bangladesh. This thesis focuses on the factors that are affecting the use of MCH services both from population and provider perspectives. Socio-economic condition of people, their knowledge and attitudes towards the public sector health care services are considered as population factors, while different aspects of quality of public health services, access to the service facilities and provider's behaviour are explored as the providers' factors.

Aims: The aim of this research was to provide policy recommendations for improving utilisation of the public health services at the primary health care level by redesigning more accessible, acceptable and quality health care services, especially for rural women and children.

Scope: Maternal health services: antenatal care; tetanus vaccination; place of child delivery; and postnatal care are considered in this study. While two major killer diseases: diarrhoea and acute respiratory infections, and immunisation of children under five years of age are included as child health care services.

Methods: A combination of qualitative and quantitative methods are used to collect data /information from 360 mothers, 28 formal and informal community leaders, 44 various types of health care providers and 22 public sector facilities in a rural area of Bangladesh. The World Health Organisation (WHO) recommended 30 cluster sampling method was used in sample design. Household survey, in-depth interview, informal and formal discussion, participant observation and document analysis have been carried out to obtain necessary information/data.

Data analyses: The quantitative data have been analysed by using STATA and SPSS statistical computer programme, performing descriptive, bivariate and logistic regression analysis. The qualitative information has been analysed in a descriptive way.

Results: The results show that the use of government health facilities: THC, FWC and VHCP is generally very low with an exception of the use of VHCP for TT vaccination to women and child immunisation. The use of VHCP is encouraging for the government policy makers and planners. THC is partially meeting the health care need of rural people and mainly serving the interest of people of relatively high socio-economic condition. FWC is the most unused health

care facility at the rural areas of Bangladesh. The majority of people (86%) received health care from non - qualified health care providers.

Among the socio-economic factors - family education and income were found to be significant both individually and jointly with the variations of use of MCH services.

The majority of the sample population does not have knowledge about the MCH service availability and possessed negative attitudes towards the public sector MCH services. These are attributable to the under utilisation problem. Nine gaps have been identified between peoples' 'reasonable expectation' and the 'existing' MCH service delivery system. Peoples' involvement in the health service organisation at the thana and union level was found almost nil. However their involvement in the operation of VHCP was encouraging. Low (2-3 minutes) consultation time, lack of privacy in treatment, unregulated involvement of public sector provider in private practice, lack of accountability, supervision and improper behaviour of providers deteriorating the quality of services hence decreases the use of public sector facilities. Unavailability of drug was found to be the single most important reason that deters people from using public facilities. Difficulties in access to quality services were found to be a major problem than access to the service facilities.

Conclusions: This thesis suggests that giving priority to improving the service qualities of the existing facilities rather than construction/ development of additional facilities at PHC level. It also suggests the initiation of behaviour change programmes for public sector health care providers. Secondly an effective mechanism needs to be developed to ensure peoples' involvement in the management and operation of public health care facilities to enhance accountability of public sector provider to the population and reduce the gap between them. Initiatives could be taken to improve the quality of non-qualified health care providers, as they are the main source of health care for the majority of population. Finally, increasing the education level of rural population particularly for women could increase the use of health services.

Key words: Quality, access MCH care, Utilisation, Primary Health Care, Bangladesh

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Acronyms

III

AHI: Assistant Health Inspector

ARI: Acute Respiratory Infection

BBS: Bangladesh Bureau of Statistics

CDD: Control of Diarrhoeal Disease

CHW: Community Health Worker

CPHC: Comprehensive Primary Health Care

CS: Civil Surgeon

DDFP: Deputy Director of Family Planning

DFID: Department for International Development

DGFP: Directorate General of Family Planning

DGHS: Directorate General of Health Services

EPI: Expanded Programme on Immunisation

EOC: Emergency Obstetric Care

FP: Family Planning

FPA: Family Welfare Assistant

FPI: Family Planning Inspector

FWC: Family Welfare Centre

FWV: Family Welfare Visitor

GOB: Government of the People's Republic of Bangladesh

GOBI: Growth Monitoring, Oral Rehydration Therapy, Breast Feeding and Immunisation

GR: Geographical Reconnaissance

HA: Health Assistant

HEU: Health Economics Unit

HI: Health Inspector

ILO: International Labour Organisation

IMR: Infant Mortality Rate

LSHTM: London School of Hygiene and Tropical Medicine

MA: Medical Assistant

MCH: Maternal and Child Health

MCWC: Maternal and Child Welfare Centre

MMR: Maternal Mortality Rate

MO: Medical Officer

MOHFW: Ministry of Health and Family Welfare

NGO: Non Governmental Organisation

OPD: Out Patients Department

ORS: Oral Rehydration Salt

ORT: Oral Rehydration Therapy

PHC: Primary Health Care

RMO: Residential Medical Officer

SACMO: Sub Assistant Community Medical Officer

SI: Sanitary Inspector

SPHC: Selective Primary Health Care

TBA: Traditional Birth Attendant

TH&FPO: Thana Health and Family Planning Officer

TFPO: Thana Family Planning Officer

THC: Thana Health Complex

TT: Tetanus Toxide

UNDP: United Nations Development Programme

UNICEF: United Nations Children Fund

VHCP*: Village Health Care Post

WHO: World Health Organisation

*The term Village Health Care post (VHCP) used this study to mean the merged EPI out reach centre and Satellite Clinic for family planning activities.

CHAPTER ONE

INTRODUCTION

1.1 Background

The health status of women and children is an important indicator of the general health and well being of the population of a country. Good family health depends upon the health of mother and child. Special attention to those groups is important because women during the period of pregnancy and children in their infancy experience the most critical time in their life. Moreover, the health of today's children affects not only the health, but also the educational attainment and productivity of tomorrow's workers (Costello 1994). Economic development is also directly linked with the maternal and child mortality and morbidity pattern of a country. As such health care services for mother and child receive priority both in developed and developing societies.

In Bangladesh, 64% of the total population are women and children under five years of age (49% and 15% respectively) (UNICEF 1999). Over forty eight percent (48.54%) of the total female population belongs to the reproductive age (15-49 years) group (BBS 1998). The progress of the nation is directly linked with the health status of this majority of population, those who are now in a vulnerable situation. Proper health care during pregnancy (mostly antenatal care, TT vaccination), ensuring safe delivery practice at home or in health centre, and post natal care could reduce significantly the risk of maternal and child mortality in Bangladesh.

To address these issues and to improve the health status of the population, especially women and child health, the government of Bangladesh made great efforts during the past two decades. Establishment of a 31 bedded hospital (Thana Health complex, THC) in each of 397 rural thana, a Family Welfare Centre (FWC) at the union level, and Village Health Care Post (VHCP),¹ are some examples of these initiatives. The main purpose of the expansion of the health infrastructure in rural areas was to create health care facilities for the majority (84%) of population, which lives in rural areas.

1.VHCP: Merge centre of EPI and Satellite clinic termed as VHCP in this study. It has no constructed physical facility. VHCP operates in a household of a village selected mainly by the local people.

The reduction of child and maternal mortality and morbidity has been set as the main objective in the country's previous plans and the current five year plan-1998-2003 (MOH&FW 1998). The countrywide health service networks have been developed based on the primary health care concept of the Alma-Ata Declaration. Priorities have been shifted from curative medical care to preventive and promotive services with the main emphasis on mother and child health.

Special categories of basic health care personnel have been recruited at the grass roots level, such as Health Assistant (HA) and Family Welfare Assistant (FWA) and also village health volunteers, to provide essential primary health care services. Various training programmes have been initiated to develop their skills (basic and refresher's training). These public sector health facilities, which include village health posts, are the main sources of largely "free" curative and preventive health care and services in rural areas of Bangladesh.

There have been some achievements in the area of child immunisation, and reduction in child, infant and maternal mortality (Table 1.1), though the country is still behind the target in reducing the maternal and child mortality rates, particularly in rural areas.

Table 1.1. Achievement and goal for 2000 for under five, infant and maternal mortality in Bangladesh.

Indicator	1990	1991	1992	1993	1994	1995	1996	1997	Goal for 2000
USMR	151	146	144	139	134	125	117	112	70
IMR	94	92	88	84	77	71	67	66	50
MMR	4.78	4.72	4.68	4.52	4.59	4.55	4.50	4.50	300

GOB&UNICEF 1998., MOHFW 1999.

1.2 Coverage and use of public health facilities

In spite of the large expansion in the provision of health care, the government has not yet reached the target set for the mid-decade goals (year 1995) to provide health care to 85% of its rural population (DGHS 1990). The health and population sector programme of the MOHFW (1998-2003) documented that less than 40% of the population has access to basic health care (MOHFW 1998). Service utilisation status of the two main public sector health care facilities: Thana Health Complex (THC), and Family Welfare Centre (FWC) in rural areas were reported only 6.7% and 5.6% respectively (BDHS 1997).

The data on maternal health are also not encouraging (MOH&FW 1999). National statistics show that coverage of maternal and child health is still unsatisfactory. Ninety five percent of deliveries occur at home (UNICEF 1999). Only 20.5 percent of rural women received antenatal care during their last pregnancy (BBS 1996). Five percent of births in rural areas are attended by trained personnel-either doctors (3.4%) or nurses, midwives, and family welfare visitor (2.1%) (BDHS 1997). According to the report of the "Baseline Survey for Assessment of Emergency Obstructive Care Services" of BIRPERHT (1995) in Bangladesh, only 2.2% of expected annual births were taking place in health facilities and 5% of the expected 6000,000 complicated cases sought services of the facilities

These unwanted situations raised the question of accessibility, the quality of health care for the mother and child, and utilisation of those facilities. In fact, the issue of utilisation of public sector health care services in rural areas is now a major concern for the government of Bangladesh. Policy makers, planners and international development partners have discussed this issue in various fora. From July 1998 the government of Bangladesh has taken a major step towards reorganising the health and population sector services, which is known as Health and Population Sector Programme (HPSP). In the HPSP document it has been clearly noted that generally low utilisation of government services is a major concern. The major issues raised by the Mid-term review mission of the fourth population and health project are: (i) poor utilisation of Government services (ii) questions of cost-effectiveness (iii) sustainability issues and (iv) the quality of services (MOH&FW 1998).

Some studies also suggest that poor utilisation of the existing primary health care services in rural areas is one of the major factors in the failure in achieving the targets in child and maternal health (Rahman 1981, Sabur 1990, Uddin 1995, HEU 1996, BDHS 1997). The report of the Director General of Health Services mentioned that the public sector primary health care facilities in Bangladesh are under-utilised (DGHS 1994). The Bangladesh Health and Demographic Survey reported that in rural areas only seven per cent of sick persons used public sector health facilities out of 89% of the sick population who received treatment in a given year (BDHS 1996).

A study on health care demand and health expenditure in Bangladesh reported that among the sick people who received some kind of treatment, only 4.8% of them

visited a health centre and 12.8% visited a government hospital (BIDS 1995). Another study revealed that 54% of the study population were suffering from various diseases, but only four percent of those patients attended primary health care facilities (Ali 1991). The bed occupancy rate of a 31 bedded hospital at the thana level is only 45 percent (DGHS 1990).

This situation is not confined to a particular year. This has prevailed for the last two decades. For instance, an UNICEF-WHO supported study in 1977 among 11489 households in Bangladesh reported that only 10% of households seek health care from a government health care facility (GOB 1977). After 20 years in 1997 the Bangladesh Demographic and Health Survey reported that 20% of health care visits are provided by government facilities, including hospitals and medical colleges. Individually the use of THC is 6% and FWC is 5% (BDHS 1997).

All this evidence provides a clear indication of low use of public sector health care facilities and highlights that it is a long-standing issue. It is evident that despite the continuous expansion of the health care infrastructure mainly at the rural level, very little consideration was given to the importance of the utilisation of facilities. Even in the fifth five year plan (1998-2003) the government has taken the initiative to construct a “community clinic” next to the FWC, while utilisation of FWC is very low, and most of the rural population can reach it on foot. ✓

Instead the majority of the rural people used alternative health care service facilities; qualified private doctors and unqualified traditional health care providers, by paying from their limited resources. Interestingly, even poorer people visited private qualified health care providers rather than use the “free” treatment from the government health centre (BIDS 1995). The common trend is for people to go either to a non-qualified private health care provider or to distant secondary and tertiary care facilities by - passing primary health care facilities. This happens even in the case of minor ailments.

Under utilisation of public health care services is affecting both the health system and the health status of the population, especially mothers and children. The health system is affected by gradually declining its efficiency, quality and ultimately losing the

peoples' confidence. This has been clearly stated in the national health policy¹: "people have lost their confidence to the existing health care system" (GOB 1998).

On the other hand peoples' health is affected due to non-utilisation of the existing health care services at the time of their health care need. The result is higher morbidity and mortality in the community.

1.3 Health status of women and children

Poor health is a severe problem in Bangladesh, which is more visible in case of women and children health. In spite of the success of expanded programmes on immunisation (EPI) and increased use of Oral Rehydration Therapy (ORT), the under five mortality rate is still high (112 per 1000 live birth). Pneumonia and diarrhoea are the most common causes of death with malnutrition increasing the deaths of children under five years of age. Rural children are at greater risk of death than urban children (UNICEF 1997). The Bangladesh Demographic and Health Survey reported that children in rural areas of Bangladesh experience a 36% higher risk of dying before age five than urban children (131 Vs 96 per 1,000 birth respectively). The infant mortality rates are 73 per 1000 live birth in urban areas while 91 in rural areas (BDHS 1997).

The national statistics showed that in Bangladesh, 74% of mothers suffer from iron deficiency anaemia (UNICEF 1999). According to the Ministry of Health and Family Welfare, it is estimated that 30,000 women die in Bangladesh every year due to pregnancy-related complications and childbirth. This is one of the highest rates in developing countries (MOHFW 1991). The maternal mortality is 4.5 per 1000 live births in Bangladesh compared to 0.8 in Sri Lanka (UNICEF 1999).

It has been revealed that half of all babies born in Bangladesh have a low birth weight (less than 2500 grams), which is one of the highest rates in developing countries (MOHFW 1991). WHO (1997) estimated that at least one in three births born with low birth weight indicating poor maternal nutrition condition.

1 A national health policy has been prepared and approved by the cabinet in 1998. It is yet to be approved by the parliament for its implementation at full length.

Twelve babies in every 1000 live births die within hours of birth, mainly from birth trauma/asphyxia.

Within the first month, prematurity and neonatal tetanus (23% as per disease incidence survey-1994) account for almost half (47%) of the neonatal deaths, which contributes to over 50% of the infant mortality rate (UNICEF 1999). Approximately 80 percent of the school children suffer from helminthic infestation particularly in the rural areas. Malnutrition is a serious public health problem in the country especially among children under five in the rural community. About ninety percent of children under five years of age suffer from malnutrition of different degrees, which influences the growth and disease processes (DGHS 1996).

Every year some 12 million children die before the age of five. Seventy percent of these deaths are caused by five common preventable or easily treatable childhood disorders: pneumonia, diarrhoea, measles, malaria, and poor nutrition (Costello 1997). In Bangladesh acute respiratory infection (ARI) is the number one killer disease. It represents a high burden for the health system and is a common reason for consultation and admission to health facilities. Eighteen percent of neonatal deaths are attributed to ARI per year (DGHS 1996). The annual report of the national ARI programme noted that ARI represented 15%-20% of cases reported from THCs and district hospitals in 1995 (DGHS 1997). Every year 148,000 children are dying due to ARI, mainly pneumonia (UNICEF 1998).

Similarly, diarrhoeal disease is another major cause of childhood morbidity and mortality in developing countries, accounting for approximately 4 million deaths each year in children under 5 years of age (Peters et.al.1992). It is recognised as a leading cause of illness and a major killer disease among children in Bangladesh. In spite of the significant reduction in child mortality (260,000 (1990) annual deaths of children under five years, to 110,000 (1997) over the last 7 years, diarrhoea mortality still remains high. The annual incidence of diarrhoea among children under five years of age is 3-5 episodes. Each episode may last from 2-3 days to 2 weeks or more, resulting in severe dehydration, malnutrition and sometimes death (UNICEF 1999)

A nation-wide mortality survey conducted by the National Control of Diarrhoeal Diseases (CDD) programme reported that 18% of deaths were due to diarrhoea, 16%

due to ARI and 7% were attributed to diarrhoea and ARI in combination (MOH&FW 1997). According to UNICEF (1999) fourteen-percent of death of children under five years of age are caused by diarrhoeal diseases. Measles is also a frequent cause of childhood death in Bangladesh.

The persistent high morbidity and mortality rates were the result of multiple factors and conditions such as high illiteracy, low education level of people specially the female population, malnutrition and poverty. Moreover, environmental pollution, frequent natural disasters and poor sanitary conditions also contribute to the poor health status of the population. Low utilisation of the available services particularly at the primary health care level may also contribute to these problems.

1.4 Justification of study

It is evident that the infant mortality rate (IMR), under five mortality rate and maternal mortality rate (MMR) are still at unacceptable levels. The demand for maternal and child health care is high, but the utilisation of the two main public sector facilities for MCH services; THC and FWC, are very low. In contrast the majority of the rural population use VHCP for two specific MCH services; immunisation of children and TT vaccination of women, although VHCP has no physical infrastructure like the THC and the FWC.

So it is important to obtain information about the maternal and child health services provided through the THC and the FWC to identify reasons for low utilisation of those facilities. At the same time it is important to understand the reason for use of VHCP by most of the people. It is essential to know the way public sector health care services are organised in the rural area, how health care providers are acting in the system, and to what extent they are acceptable to the community. Success of primary health care depends on joint efforts of the users and the providers. As stressed by Gill Walt "Primary health care succeeds where lay people and health professionals are able to establish confidence and respect for each other in order to solve health problems with complex causes "(Walt 1990).

Utilisation of services is influenced by a complex interplay of the individual care seeking behaviour (demand for services) which is influenced by people's characteristics and provider's attitudes and quality of services provided by them. It may be due to inadequacy of health facilities, inaccessibility to the services, bad management, and poor delivery or due to people's socio-economic and demographic characteristics and cultural barriers.

Little country specific analysis has been undertaken to identify the underlying factors in the low utilisation of health services, considered from population and provider perspectives. There are very few systematic data available on the pattern of utilisation of health services, particularly maternal and child health services and the factors affecting the utilisation in the study country. Some studies reviewed mentioned provider problems at the macro level. They did not provide qualitative information: the quality, efficiency, and behavioural aspects of the providers, which are necessary to understand the mechanism of the functioning of primary health care at micro level. Some country level studies mainly described the utilisation problems in relation to the characteristics of the users (Hussain 1987, Ali 1991, Sabur 1990, Uddin 1995). These studies have given little consideration to the views of the non-users, community leaders as well as the opinions of service providers. They did not pinpoint the problems related to provision of health resources, quality of care and characteristics of the providers, which are very important in understanding the issue of low utilisation. Moreover, their studies are not focussed on the utilisation issues of THC, FWC and VHCP for maternal and child health care.

In this context, this research aims to investigate the issues involved in the utilisation of health services both from users' and providers' perspectives. The focus is on mother and child health care services, because maternal and child health care is one of the main components of primary health care. Improvement in maternal and child health is an important aspect of any health care delivery system (Yesudian 1988). The success of primary health care mostly depends upon the reduction of maternal and child deaths. IMR and MMR is a measuring tool, which represents most of the efforts of rural primary health care in the country. Moreover, globally the maternal and child mortality rates are seen as an important indicator of overall status of women and children in a country (UNICEF 1999).

Thus, in Bangladesh, there is a research gap in this field due to inadequate research on the under utilisation issue from the perspective of users and providers. This study is an attempt to fill that gap. It is intended to provide a detailed understanding of the utilisation pattern of primary health care services in the rural areas of Bangladesh in general and MCH services in particular, the factors affecting utilisation and what should /and could be done to improve the situation.

1.5 Scope of study

This study examined issues relating to utilisation of the primary health care services in rural areas of Bangladesh both from provider and population perspectives. While considering provider perspectives, the focus was given to the provision of services, quality of care, access to the health services, and attitude of the providers towards the users.

In the population perspective, the socio-economic condition of population, demographic and cultural factors are taken into account. Moreover, people's perception of health, illness, knowledge and attitude towards the public sector health services and providers are also examined closely.

In the analysis, both health care provision and quality of resources and service provision are taken into account. Resources i.e. financial, human, logistics and provision of equipment, drugs and their quality and distribution mechanisms are analysed critically. Resource provision has been investigated at all stages of primary health care (thana, union, village level). But the main focus has been given on the Thana level, because all health activities including human resources for primary health care are mainly managed and deployed at this level. Service quality, availability of services at other stages of the primary health care; such as union and community level greatly depend upon the overall efficiency of the thana levels management.

Information on the quality of services has been gathered by observing the process of health services delivery closely. Availability and appropriateness of the resources are examined to understand adequacy of the resources in meeting the requirements of the population. The capability of the managers in organising services and managing

available resources, their skills, accountability, motivation, supervising, monitoring and controlling mechanism are investigated. The effect of the quality of services, resource provision, attitude of service providers on utilisation of services have been examined. Information on accessibility to the health facilities and services has been collected and analysed to estimate the difficulties for the population to reach the facilities. The characteristics of users and non-user of services and their expectation from the public sector health services have been explored. The issue of utilisation of the primary health care services has been looked at as a whole, but considering the time, and resource limits of doctoral work the main focus has been on the utilisation of maternal and child health related services.

Maternal health services including antenatal care, tetanus vaccination, child delivery practice and postnatal care have been considered in this study. Two major killer diseases of children in Bangladesh are acute respiratory infections and diarrhoea. Immunisation of children under five years of age is also considered under child health care services.

This is also because the majority of the services at the primary health care level are targeted at mothers and children. They are the main beneficiaries at this level. Moreover most morbidity and mortality that occurs in children and women is due to malnutrition, vaccine preventable, communicable diseases and pregnancy-related causes. They are vulnerable and health services utilisation rate among them is low (BBS 1996). This also applies to a range of preventive, promotive and curative services offered at the primary health care level.

In order to obtain data for this study both quantitative approaches (a household survey) and qualitative approaches (participant observation, document analysis and informal in-depth interviews) have been undertaken in one typical rural thana (sub-district) of Bangladesh. This study provides an overview of the present utilisation pattern of primary health care services especially maternal and child health services and identifies the factors affecting utilisation. An effective improvement of services can be achieved through an understanding of these issues in a more holistic way.

1.6 Aim, objectives, research questions and hypotheses

1.6.1 Aim

The aim of this research is to describe the pattern of utilisation of rural primary health care in Bangladesh, to identify the factors affecting utilisation of health services specifically MCH services from population and provider perspectives, and to provide policy recommendations for improving utilisation of health services at primary health care level.

1.6.2 Objectives

- Explore the availability of the health care services to mothers and children, which are meant to be provided through public health facilities at the primary health care (PHC) level
- Describe the utilisation pattern of health services at PHC level, mainly the maternal and child health care services along with factors that are important for people in choosing health care services
- Explore the relationship between the socio-economic, demographic and cultural characteristics of the study population and utilisation of public sector health care services
- Assess the knowledge of people about the public sector health care facilities, their attitude regarding the quality of health care providers and the services they provide
- Investigate the physical quality of primary health care facilities, and the service quality of those facilities including providers performance and private practice in order to estimate their influence on utilisation of services
- Investigate the influence of the physical accessibility factors: distance, means of transport and travel cost on health service utilisation
- Identify whether any gap exists between the people's 'reasonable expectations' and the reality in health care services.
- Provide policy recommendations in order to increase utilisation of maternal and child health care services at the primary health care level.

1.6.3 Research Questions

- What are the patterns of utilisation of primary health care services in rural Bangladesh?
- What are the causes of under-utilisation of primary health care services and in particular MCH services?
- What are the factors that deter people from using PHC services?
- What are the provider factors contributing to low utilisation of primary health care?
- What is the perception of people about the quality of maternal and child health care service at the primary health care level?

1.6.4 Hypothesis

Utilisation of health services depends upon several factors relating to population and the service characteristics. Many studies reported that socio-economic factors such as peoples' income and level of education have significant influence on the use of health services. (Hussain 1999, 1998, Leslie and Gupta 1989, Caldwell 1988, Elo 1992, Boerma 1992). These factors might have influence on the study population both in their choice and use of facilities. The majority (59%) of the population of age 7 years and above in rural areas of Bangladesh are illiterate (BBS 1998) and 46% of the total population were living below the absolute poverty line (i.e. consume less than 2122 kilocalories/ per day in 1995-96 (UNICEF 1999). In addition to that the majority of the population by profession either farmer or day labourer.

Apart from socio-economic factors, the knowledge of people's about the service facilities and attitudes towards services were also found to be important determinants of service utilisation during piloting the study. The preliminary findings provide an indication that the majority of the study population does not have clear idea about the service availability. On the other hand they have common believe that the qualities of public health services are poor and could not meet their expectations. Though there is no in-depth study on this particular issue in Bangladesh, which can explain the reasons for this feeling, but the available information indicates it influence on the use of services.

The different studies shows that the physical accessibility, such as distance, travel cost, and road communication are important factors that deter people from using them

even the service is available. These factors might have influence, as the road communication system in rural areas of Bangladesh is poor and in most case transport is not suitable for carrying pregnant women or sick children.

Based on the results of other studies and from the understanding about the characteristics of the study population and the health care services during pilot study, the following main hypotheses have been suggested, which might explain the reasons for underutilisation of public facilities at the primary health care level in Bangladesh.

- *Populations in higher socio-economic conditions are likely to use public sector MCH services more than are those relatively in low socio-economic conditions in rural Bangladesh*
- *Poor knowledge and negative attitude of people towards the public sector health care service decreases the use of MCH services in rural Bangladesh.*
- *Poor quality of MCH services decreases the use of public sector health care facilities*
- *Difficulties in access to the public sector health care facilities due to distance, means of transport and travel cost are deterring people from using MCH services*
- *Involvement of public sector health care providers in private practice, lowering the health care services, decreases the use of MCH services provided through the government health care facilities.*
- *There is a gap between peoples' 'reasonable expectations' and the reality of services that deterring people from using them*

All these hypotheses will be discussed and verified in the result sections based on the qualitative and quantitative data/ information collected through household survey, in-depth interviews, and observation and document analysis.

1.7 Bangladesh: The Country, Health Care Delivery System, MCH Care

1.7.1 Location and Demographic Characteristics

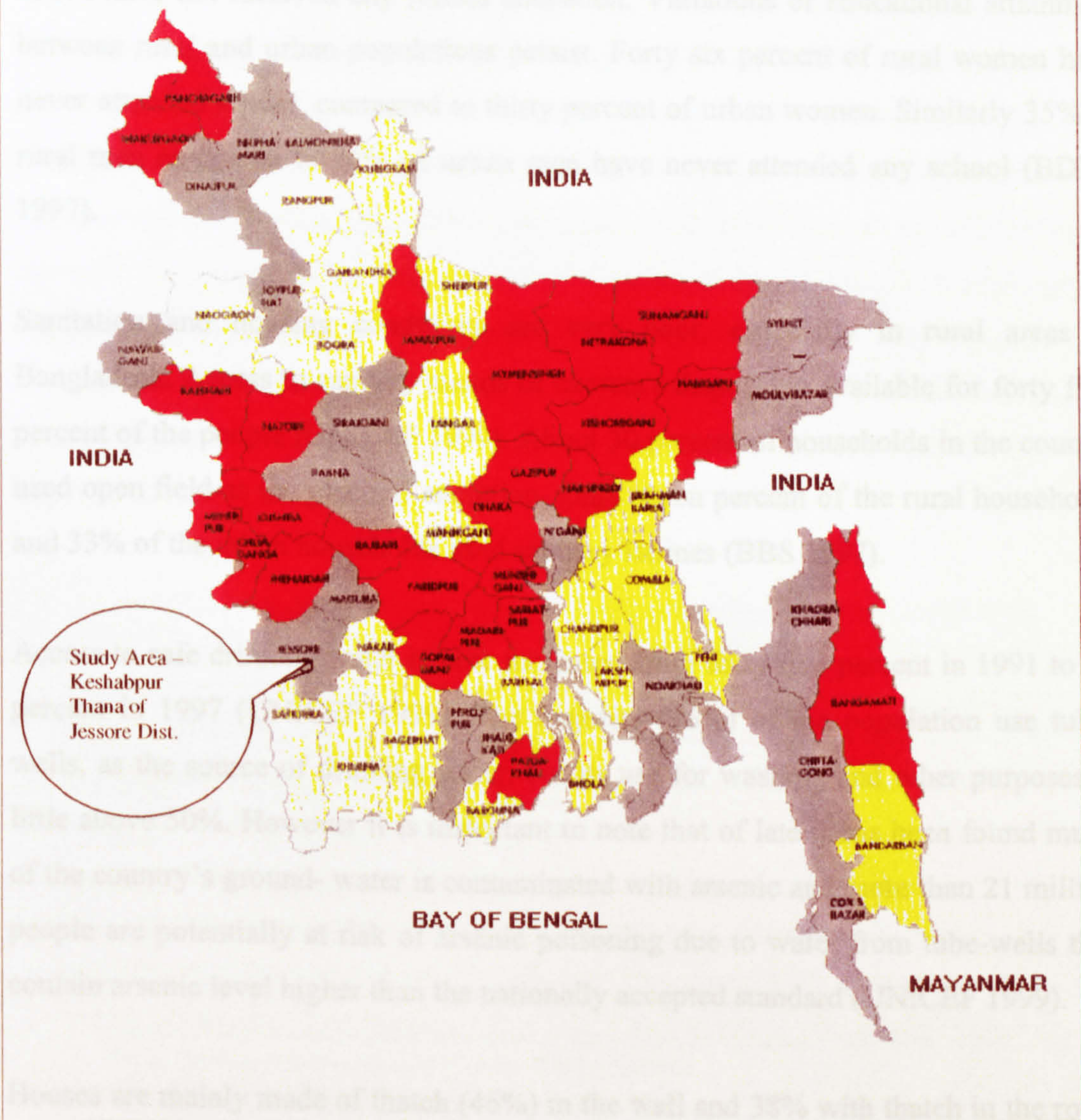
Bangladesh is located in the north-eastern part of South Asia and bounded by India, Myanmar and the Bay of Bengal. It has been an independent country since March 26 1971. The country has an area of 147,570 square kilometres and is divided into six divisions, 64 districts, 490 Thanas (397 rural thana), 4451 unions and 13500 wards for administrative purposes. The estimated population of the country in 1997 was 124.3 million that is more than double that of 1960 which makes it one of the most densely populated countries in the world. The density of population is 854 persons per sq. km. Bangladesh is one of the most densely populated countries in the world (UNICEF 1999). Sixty four million are male and 60.3 million are female. Sex ratio male per 100 female is 106. The annual growth rate of the population in 1998 was 1.50 % (BBS 1998). About sixteen percent (15.64%) of the country's population live in urban and 84.36 percent live in rural areas. The majority (about 90%) of population is Muslim. The population less than 15 years of age is 42.65 percent (male 42.4 and female 42.9 percent). Forty nine percent of the total population is female. Of these 48.54% belongs to the reproductive age (15-49 years). The total fertility rate is 3.5 children per women (BBS 1996; BBS 1997). The state language is Bengali, which is spoken and understood by all. The capital of the republic is the city of Dhaka.

1.7.2 Socio-Economic Conditions

Bangladesh ranked as one of the low-income countries in the world (World Development Report 1998). The GNP per capita in 1996 was 273 US\$ (BBS 1998) and the GDP annual growth rate is 5.3 percent. Inflation in 1997-98 was 5.6 percent. The economy of the country is mainly dependent on agriculture. Sixty-five percent of the rural population is engaged in the agriculture sector (BBS 1997). This sector directly contributes around 35% to the gross domestic product. Over sixty percent of the households do not have agricultural land. About forty six percent of the total population were living below the absolute poverty line (i.e. consume less than 2122 kilocalories /per day), while 29.2 percent were living below the extreme poverty line (i.e. consume less than 1805 kilocalories per day) in 1995-96 (UNICEF 1999). Such a low calorie in-take has resulted in malnutrition in a large proportion of the population, particularly women and children (Ministry of Planning, Perspective Plan, 1994).

BANGLADESH

Administrative map



BANGLADESH

LOCATION	: ASIA
AREA	: 147570 SQ. KM
POPULATION	: 124.3 MILLION (1997)
DENSITY OF POPULATION	: 755 /SQ. KM
SEX RATIO	: 100:106 (49% FEMALE)
RURAL POPULATION	: 84%
DIVISION	: 06
DISTRICT	: 64
THANA(397 RURAL THANA):	460
UNION	: 45000
WARD	: 13500
VILLAGE	: 68000

The level of educational attainment is still low in Bangladesh and there is a distinct gender bias. One third of men (33%) and 44 percent of women age six years and above have not received any formal education. Variations of educational attainment between rural and urban populations persist. Forty six percent of rural women have never attended school, compared to thirty percent of urban women. Similarly 35% of rural men compared to 17% of urban men have never attended any school (BDHS 1997).

Sanitation and housing conditions are very poor, especially in rural areas of Bangladesh. Access to sanitary means of excreta's disposal is available for forty four percent of the people (UNICEF 1999). About 30 percent of households in the country used open field as the place of excretion. Only seven percent of the rural households and 33% of the urban households used sanitary latrines (BBS 1997).

Access to safe drinking water is now increased from forty five percent in 1991 to 97 percent in 1997 (UNICEF 1999). The majority (96%) of the population use tube-wells, as the source of drinking water, but its use for washing and other purposes is little above 50%. However it is important to note that of late it has been found much of the country's ground- water is contaminated with arsenic and more than 21 million people are potentially at risk of arsenic poisoning due to water from tube-wells that contain arsenic level higher than the nationally accepted standard (UNICEF 1999).

Houses are mainly made of thatch (46%) in the wall and 38% with thatch in the roof. In the rural areas, only 1.14 percent of the houses are wholly made of cement. More than 80% of houses in rural areas have two rooms, while average number of family members per household is 5.6. The average floor space (in 1991) per bedroom and per person was 54 sq. ft in rural areas, and 62 Sq. ft. in urban areas (BBS 1998). Unhygienic housing conditions and crowding, lack of hygienic education, and unhygienic practices continue to result in high incidence of waterborne and other communicable diseases.

1.7.3 Financial Situation in the Health Sector of Bangladesh

Health care expenditure is gradually increasing in Bangladesh, due to extension of services and coverage of population and cost escalation of the materials. For instance,

during 1985-86, the total health and family planning budget was US\$102.0 million and in 1990-91, it was US\$ 268.7 million but in 1995-96 it stood at US\$ 374.2 million (HEU 1995, DGHS 1990). It has increased more than three fold in the last 10 years. The current health and population sector programme (1998-2003) estimated that US\$ 3373.20 million would be required for implementing the five years programme, sixty percent of which (US\$ 2033.00 Million) would be required for the implementation of the essential service package (ESP) component alone. It is assumed in the plan that in the next five years the government would allocate its health budget increasingly as indicated in Table 1.2 below (MOH&FW 1998). The HPSP may have to face financial constraints if the government is unable to allocate funds to the health sector in accordance with the assumption of HPSP. Moreover, it would be more difficult, if the flow of international funds does not continue as estimated.

Table 1.2 Estimates of domestic resources for the current five years plan (19980-2003)

Year	Domestic resource		External Resource	
	Tk. Million	US\$ Million	Tk. Million	US\$ Million
1998-99	17419.66	393.66		
1999-00	20560.43	464.64		
2000-01	24086.55	544.33		
2001-02	28084.91	634.69		
2000-03	32748.01	740.06		
Total	122,899.56	2,777.39	47,944.87	1,083.5

Source: Health and population sector programme. Programme implementation Plan, Ministry of Health and Family Welfare, 1998

1.8 Health Care Delivery System in Bangladesh

There are three major sectors: public; private; and NGO-s providing health and family planning services to the population of Bangladesh. Historically the East India Company introduced modern medicine in the Indian subcontinent. Before that people were mainly dependent on traditional health care providers; Kabiraj, Hakim and spiritualist. Kabiraj used to practise the Ayurved system of medicine, which is the original Indian traditional system. Unani system of medicine came to the Indian subcontinent through the Muslims who settled in India during the Moghul rule. Practitioners of this system are known as Hakim. Both these systems have religious

orientation. Most of the Hakims are Muslim, while almost all Kabiraj are Hindu. They still exist in the country and their presence in rural areas is more prominent.

After the Second World War, modern medicine gained popularity and started to reach the population of Bangladesh. The then government began to construct physical infrastructure for delivering modern health care during 1947-70. These service facilities were mainly concentrated in the urban areas and were biased toward curative care. The government efforts to provide health services to the rural population started in 1960. By 1970, there were 140 rural health centres (RHC), each containing six beds, including two beds for MCH services (Hussain 1983). Later in 1978 after the Alma-Ata declaration on PHC, the government of Bangladesh reorganised its health service based on the primary health care concept and priority has been shifted from curative to preventive services. Large expansions of health infrastructure have been made in the rural areas.

The current health system of Bangladesh follows the administrative pattern of the country, which has mainly four levels: National, Divisional, District and Thana levels. The Ministry of Health and Family Welfare is the highest authority at the National level, responsible for policy making and macro level planning. There are two Directors General under the Ministry of Health and Family Welfare. One is the Director General of Health Services, responsible for implementing health policies and programmes. The other is Director General of Family Planning, responsible for all family planning activities.

The health care system has been designed in a three-tier system; Primary, Secondary and Tertiary level care. Appendix 7 shows the three-tier health care delivery system in Bangladesh

Thana, the lowest administrative tier each with a population of about 0.25 million has been considered as the primary health care level (appendix 7.1). For each thana there is a 31 bedded hospital (Thana Health Complex, THC) (25 beds for general patients and 6 beds for MCH services) for providing curative and preventive health services. Currently, 397 THC are functioning in rural areas.

The primary health care network in the country has developed on the basis of the policy of the government to provide health care to the majority of under - served population i.e. those who live in rural areas. One of the main objectives of the health policy is to provide primary health care comprising treatment of simple ailments, care of children, facilities for mothers during pregnancy and child birth, family planning services, protection from communicable diseases, environmental sanitation, applied nutrition and health education (GOB 1998).

The district with population of about 1.7 million is considered as the secondary level of care and the national level of care has been considered as tertiary care.

At the secondary level, one district hospital in each district delivers health care. Bed facilities vary in different districts depending on the size and population of the district. The range is from 50 beds to 250 beds.

Tertiary level health care is being provided through Medical College Hospitals, Postgraduate Research Hospitals, and specialised institutes and hospitals such as, cardiovascular, cancer, tuberculosis, infectious disease hospitals.

1.8.1 Health Facilities

In 1997, there were 938 hospitals in Bangladesh of which 650 were government hospitals (BBS 1998). The total hospital beds in 1997 were 38106, which represent a rate of one bed for 3261 persons. In addition to the THC, there are 3275 Family Welfare Centres constructed at the union level all over the country. There were 27546-registered physicians in the country in 1997, of which 8747 work in the government health services.

1.8.2 Maternal and child health care services

As an important component of primary health care, Maternal and Child health service has been given highest priority in the health system for a long time. As a practical step, in the year 1975, the government of Bangladesh merged MCH services with family planning programme to create a MCH based family planning programme. Proper health care to mothers and children would increase survival probability of babies, which in turn would encourage women to control their fertility (BIDS 1995).

The priority of mother and child health was reaffirmed in the country's third five-year plan (1985-90) and started to create a countrywide physical infrastructure; FWC MCWC, MCH unit at the THC for providing MCH services.

The Fourth Five Years Plan (1991-95) stated that the main objective was to continue the efforts for a reduction in infant and maternal mortality and thus increase life expectancy and improve the quality of life (Planning commission 1991). The current five-year plan (1998-2003) also gives much importance to MCH services. It is noted in the HPSP document that the goal of HPSP is to contribute improvement of the health and family welfare status among the most vulnerable i.e women, children and poor of Bangladesh (MOH&FW 1998). In response to the persistent high maternal, infant, and child mortality, the government has taken the initiative to establish integrated Maternal and Child Health Care programmes all over the country to provide preventive, promotive and curative care to mothers and children.

The MCH services in rural areas are being provided through the primary health care network. Where health & family planning workers provide maternal and child health care through two static facilities, the Thana Health Complex (THC) and Family Welfare Centre (FWC) and Community services through home visit. The community level health workers of the health sector, Health Assistant (HA) and the family planning sector Family Welfare Assistants (FWA) work together to deliver maternal and child health services. A large number of trained and untrained Traditional Birth Attendants (TBAs) and village quacks also provide prenatal care to pregnant women, attend deliveries at home, and provide postnatal care to the mother at the community level.

At the union level, maternal and child health services are provided through the Family Welfare Centre. The main functions of this centre related to MCH care are to provide antenatal care, normal delivery, and postnatal care, immunisation of children and treatment of minor illness. A family welfare visitor (FWV) and a sub-assistant community medical officer/ Medical Assistant (SACMO/MA) are mainly responsible for providing maternal and child health care at this level. There are 250 medical officers (Family welfare) also working in the Family Welfare Centre for MCH service.

At the Thana level, the MCH unit of the THC is responsible for providing health care to pregnant women and the under-fives, and family planning services. One Medical officer (MCH) heads the maternal and child health unit and other trained supporting personnel, such as FWV, work under his/her guidance. The MCH unit provides antenatal care, post natal care and family planning services to the women. This unit is better equipped than FWC and it works as the referral point for providing emergency obstetric care (EOC) at the primary level.

However, the smooth functioning of Maternal and Child Health services at the PHC level is being hampered in many ways. Firstly the complexity in the management of the services, plays a role. The THC manager has little administrative control over the manpower of the MCH unit, but he has control over the physical facilities such as MCH beds and the operating theatre of THC, where MCH unit provides services. The personnel of the MCH unit is controlled by the Deputy Director of Family Planning whose office is located far away at the district level.

This dual administration and power conflict between health and family planning managers, has some negative effects in providing maternal and health services that run smoothly. There is poor institutional co-ordination and support between the two sectors. The field level health and family planning workers do not put their best efforts in providing services to the people, which leads to low utilisation of public sector facilities. Fig.4 appendix 8 shows the organisational structure of MCH services at the primary health care level in Bangladesh.

1.9 Alternative sources of health care in rural Bangladesh

Apart from the public sector health services, there are various types of other qualified and unqualified private providers in rural areas. They are the major health care providers for most of the rural people. They can be broadly categorised into the following major groups:

(i) Qualified and semi-qualified public sector private provider

Medical graduate and diploma holders involved both in private and public practice. These health care providers are employees of the government health care facilities;

THC, FWC and in VHCP, but they also practice privately. They have a strong social position in the rural areas due to their attachment with the public sector health facility. They have better knowledge about modern health care compared to unqualified allopathic and traditional practitioners, and they play a dual health care role in the community. Most of them are involved in private practice officially after office hours, and unofficially at any time of the day.

(ii) Qualified private health care provider

These are medical graduates, who are not involved in a government job. Though these types of private practitioners are small in number, their existence could not be ignored. They are mainly retired medical graduates who practise in rural areas in the later stages of their life.

(iii) Unqualified allopaths

Untrained allopaths usually known as palli-chikitshak, village quacks or village doctors have a strong hold in the rural areas. They are usually local residents. People have easy access to them any time of the day and night. Moreover, they are very acceptable to the rural people, as they are the part of the community and belong to the same cultural background. Most of them provide medical consultation “free” but they earn money by selling medicine (Claquin 1981). They show respect and sympathy to people during consultations and afterwards. Payment in kind or delayed payments due to immediate cash shortage is an option preferred and adopted by farmers whose incomes are seasonal, and poor wage labourers waiting for the next season of work (Chowdhury et al 1980). A nation wide survey showed that more than half of sick people received services from untrained allopaths (BBS 1997). They often prescribe antibiotics in less than recommended doses and for fewer days than the recommended period. Improper dose schedules and poor compliance, which in turn might cause primary treatment failures, and possibly resistance to the drug. The practices of unqualified allopaths may do harm to the health (Ashraf et.al 1982; Ronsman et al 1991).

(iv) Traditional Practitioners

Some other traditional healers also provide health care to rural people. They are usually known as Kabiraj and Hakim. Rural people have easy access to them and they

are both culturally and socially closer to them. They mainly provide herbal medicines, which are popularly known as Ayurvedic and Unani medicine. They charge no fee or nominal fee for consultation. The government of Bangladesh also took an initiative to produce manpower and to improve the quality of this traditional medicine, as there is still a demand for them in the country, along side modern medicine. A Unani and Ayurvedic college and hospital have been established in the country to produce manpower in this discipline. Homeopaths are also common in rural areas though the most of them have no institutional training or professional degree on homeopathic treatment. The government has also established a Homeopathic College and Hospital to produce qualified manpower in this discipline as well.

1.10 Thesis Outline

This thesis is organised in nine chapters. Chapter one provides an introduction, the background statement of the problem and justification of the study, scope of research, aims and objectives, and the profile of the country where the study was undertaken. It also provides information on the health care delivery system of the country in general, its historical background, organisation, structure, management system. The country's primary health care delivery system and more particularly the maternal and child health care delivery system and alternative source of treatment are described. The current situations of maternal and child health care are also reviewed.

Chapter two presents a critical review of existing literature in this field to identify the research gap. Chapter three describes the detailed methodology followed to gather data and information as well as the procedure for analysis of the findings.

Population related data are analysed in chapter four and five and findings are presented in these two chapters. Chapter four provides the findings of the quantitative analysis. The 'results' section shows the association between the socio-economic variables and the use of maternal and child health care services. Chapter five containing details of the qualitative analyses shows how knowledge and attitudes of the population deter them from using public sector facilities.

Chapters six and seven relate to provider factors that affect the use of public sector health care facilities. In chapter six quality aspects of the health services are analysed and findings presented in a qualitative descriptive way. In chapter seven the issues of accessibility to the health facility are analysed and findings presented both in quantitative and qualitative descriptive way. Main findings are reviewed and critical analyses are presented in chapter eight. Finally, recommendation and conclusions are presented in chapter nine.

CHAPTER TWO

REVIEW OF THE LITERATURE

2.1 Introduction

The general purpose of this study is to investigate the utilisation of primary health care services in Bangladesh, in which utilisation of maternal and child service has taken an example of PHC services. The reasons are the maternal and child health care is one of the important components of primary health care. Many developing countries including Bangladesh have designed their MCH services within the overall primary health care delivery system. Success of maternal and child health care services is greatly depends upon the successful implementation of the strategy of primary health care. So it would be worthwhile to review the global development of the concept primary health care, responses and actions of different countries and development partners towards this approach in order to understand the acceptability of the primary health care across the globe. It would also provide an understanding of the organisation of maternal and child health services within the primary health care system in different countries.

With this end in view, this review considered the literature on the utilisation of maternal and child health care (MCH) services along with the literature on the development of the primary health care approach.

This review has been organised in two major sections. Section one provides a brief historical review of the development of the concept of primary health care, its definition, and the debate regarding this approach. In the second section, focus has been given to reviewing available research on the utilisation of primary health care services in developing countries including Bangladesh, focusing on the pattern and determinants of utilisation of Maternal and Child Health Services in developing countries.

Relevant literature has been searched through electronic media (i.e. internet), Medline, Popline, and BIDS, as well as manually. Efforts have been made to detect available research work and the limitation and the gaps in this field in Bangladesh.

2.1.1 Historical development of primary health care

The primary health care approach evolved slowly from different experiences in different countries. It was not a sudden revelation (Walt 1982). Primary health care is an 'old-new' branch of health care. Because as long as medicine existed, so there has always been a health care practitioner to act as a first contact of care, service, and advice. They tended to live in the community and to work for them. Examples are general practitioners in Britain and family medicine doctors in USA. This oldest form of care was neglected for generations. It was considered as a Cinderella of medicine, until 1978, when it was strongly promoted by the World Health Organisation (WHO) and UNICEF after the Alma-Ata conference (Fry 1980).

Although only given prominence in the late 1970's, the conception of primary health care had earlier roots. For example at the League of Nations Bandung Conference held in Indonesia in 1937 (WHO 1979), recommendations were made such as health services should be nearer to the people, to gain confidence, ensure participation of the people, and to ensure support of the local and voluntary health agencies in order to use local people and available materials and resources. All these were related to the elements of the primary health care approach adopted through the Alma-Ata conference.

These elements were also addressed in the Bhore Committee Report in India, which was formed in 1943 to find out the causes of deaths and find a way to improve the future health status of the people. In its 1946 recommendations, the committee gave priority to the creation of preventive, curative and promotive health services easily accessible to the people. It also stressed the need for co-operation among the people, professionals and administration (Khan 1990).

The Director General of World Health Organisation, Dr. Halfdan Mahler (1973-1988) also played an important role in setting the direction for the PHC approach. In his declaration he stressed the importance of basic health services with a strong link between health and socio-economic development. In 1975 WHO launched the vision of "Health for all by the year 2000" and stressed Primary Health Care as the means of attaining this goal (Collins 1994).

In the same year, WHO and UNICEF published a seminal report (Djukanovic eds 1975) on alternative approaches to meeting basic needs including in developing countries, based on case studies of services to rural population in ten countries which was clearly a harbinger of Alma-Ata conference (Roemer 1986). This report on health services strongly criticised the emulation of western-style centralised and conventional health services by developing countries and called for a fresh look at the priority health problems and alternative solutions (Collins 1994).

In 1977 the World Health Assembly reaffirmed WHO's constitutional objectives and decided that "the main social target of governments, international organisations and the world community in the coming decades should be the attainment by all peoples of the world by the year 2000 of a level of health that will permit them to lead a social and economically productive life" (WHO 1978).

As a first practical step, the WHO-UNICEF conference at Alma-Ata recommended in its declaration that primary health care should be the method by which the health of the people should be improved (Fry 1986). The Alma-Ata declaration stated health as a basic human right and an integral component of national development (LaFond 1995).

There are many other contributing factors to the development of the primary health care concept: Change of development theories during 1960; considering population as a burden of the country; shifting of importance from technological medical solutions to social, physiological, behavioural and economic factors; involvement of communities in their health care; international efforts of WHO, UNICEF, ILO specially the firm commitment of Director General of WHO; and finally the World Bank health policy of 1974 to provide funds to health projects (Walt 1982).

Some observed that the primary health care approach grew from a world-wide recognition that primary medical care has little influence on the overall health of a community or nation, and would continue to have minimal impact even if all the problems outlined were magically solved (Jacob 1989, Roemer 1986, Werner 1997).

From this brief history it may be concluded that the concept of primary health care developed gradually through a long process, which offered a practical approach to the development of the health of the world population. This old branch of health care was reborn in 1978 with the hope that it would offer accessible, available health services, which would be cheaper than hospital services (Fry 1980, WHO 1978). The concept of primary health care was introduced in response to wide recognition that the western medical model, as practised in the Third world, was failing to adequately improve levels of health (Werner 1997).

2.1.2 Primary Health Care: What does it mean?

The meaning of primary health care has changed over the time. Originally it was applied simply to primary medical care (the contribution of doctors outside hospitals) and community health services (the contribution of health workers outside the hospital setting) (Lee K 1983).

Many people are still confused about the meaning of primary health care, because it has different meanings in different contexts, which have changed over time. The early definition of primary health care contained two elements. One focused on the level of services provided by first contact front line worker such as Chinese barefoot doctor and other focused on activities, involving simple diagnosis and treatment (Walt 1982).

According to the Declaration of Alma-Ata, primary health care is; *“essential health care based on practical, scientifically sound and socially acceptable methods and technology, made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self determination”* (WHO 1978).

Primary health care was also considered a **philosophy** (WHO 1984), incorporating certain fundamental values to the overall development process, health as an integral part of overall development. Various factors such as income, education, housing food production, sanitation have influence on it (Rifkin 1986). As such only initiative from the health sector was not enough to address health of people. Dr Mahler (1981) rightly

emphasised that “ actions undertaken outside the health sector can have health effects much greater than those obtained within it”. Primary health care was concerned with equity to ensure that health and social resources such as water supply, education and food supply are distributed properly with due consideration to those whose needs are greatest (WHO 1984).

Primary health care was also considered a strategy (WHO 1984), which advocated establishing such a health care system, which will meet the essential needs of the majority population. It aimed at achieving full coverage with essential health care at the lowest cost. The PHC strategy involved other sectors such as education, agriculture, environment, food, water supply and sanitation by creating awareness about their role in the development of health status of the population. A great deal of health improvement required actions outside the health sector (Ebrahim 1988). It has also been concerned with the involvement of individuals and the community to understand their potential for acquiring better health through their own efforts. Primary health care was also described as a level of care (Walt 1982, WHO 1984, Goicoechea 1996), which has been used to refer to the most peripheral level of the health system, the level to be offered to the public when seeking treatment.

Primary health care was based on five basic principles (Walt 1982): equity, health promotion and prevention, community participation, appropriate technology and multisectoral approach. It included eight main components: 1) provision of adequate supply of safe water and sanitation 2) promotion of food supply and nutrition 3) maternal and child health care including family planning. 4) Immunisation against the major infectious diseases. 5) Prevention and control of locally endemic diseases 6) education concerning the prevalent health problems and the methods of their prevention and control. 7) Appropriate treatment for common diseases and injuries. 8) Provision of essential drugs (WHO 1978).

Primary health care was perceived to be the key in the pursuit of health for all (Chen 1986). It was seen to be capable of relating closely to the community in a flexible and responsive way. Its goal, in addition to care and relief and comfort of the sick, was supposed to include health promotion and maintenance, disease prevention, rehabilitation, care of the physically and mentally handicapped and chronically ill

people, elderly people and those who were dying. It was meant to be available, accessible, efficient and effective (Fry 1986). Primary health care was seen as a possible means of providing first contact care to most people at a lower cost, which is flexible and delivered to people where they live and work (Goicoechea 1996).

Primary health care was intrinsically population based. It implied activities far beyond the limited scope of medical services, it also encouraged the community to participate in designing and evaluating their health services. Primary health care was as a health - focused development strategy (Braveman 1994).

In summary, there were many ways to look at PHC. Some considered primary health care as care which care is given in the community, health centres, private offices and hospitals. Others thought of primary health care in terms of programme such as immunisation, oral rehydration therapy, etc. For others it was a strategy, which included levels and programme, but it was more than this. It was a direction, a philosophy (WHO 1990).

However broadly convinced, the primary health care movement was an international effort to expand and redirect health services programmes in Third World countries. The goal was to make substantial inexpensive and rapid improvements in the delivery of curative and preventive health services at the community level in rural areas (Akin 1985). Pronounced by international donors and national governments, PHC was expected to be affordable, accessible and appropriate for the community and the country. Three important parameters; equity, efficiency and effectiveness were essential for primary health care (WHO 1990).

In spite of a comprehensive definition of primary health care given by WHO (1978), it still suffers considerable misinterpretation and confusion. It is equated with first level of care, which has failed to give pre-eminence to the philosophy and principles of primary health care (Collins 1994). Due to its different meaning, it was not universally used or implemented (Lee K 1983).

Finally, whatever definition we consider it is clear that primary health care is an integral part of socio-economic development. It addresses the main health problems of the community. It is promotive, preventive, curative and rehabilitative. As such the importance of primary health care can be seen both as a concept and as a component of any health care system.

2.1. 3 Primary Health Care: Is it Selective or Comprehensive?

Just after the Alma-Ata declaration, Walsh and Warren (1979) published an article on selective primary health care (SPHC) as an interim strategy for disease control and a cost-effective form of medical intervention for the least developed countries. Their argument was that the money and the personnel required for implementing primary health care defined in the Alma-Ata declaration was beyond the reach of most developing countries. So it would be more sensible to treat a selected number of diseases on a priority basis. The priority should be selected by looking at the prevalence and morbidity or severity of disability, risk of mortality, in addition to the efficacy of their control programmes or interventions (Walsh and Warren 1979).

Some individuals as well as donor agencies advocate the concept of selective primary health care. Some of the donor agencies abandoned comprehensive primary health care and picked up the idea of selective primary health care (SPHC) (Werner 1997). For example USAID joined the Child Survival programme of UNICEF. They provided money to single intervention programme such as immunisation. The simple reason is that they found it easier to support a focused investment strategy rather than the sweeping and long-term reform of health care operations required under primary health care (LaFond 1995). Warren (1997) described that “no sooner had the dust settled from the Alma Ata Conference in 1978, when top-ranking health experts in the North began to trim the wings of primary health care. They asserted that, in view of the global recession and shrinking health budget, such a comprehensive approach would be too costly. If any health statistics were to be improved, they argued, high groups must be “targeted” with a few cost-effective interventions. This new politically–sanitised version of PHC was dubbed Selective Primary Health care” The selective approaches are understandably popular with donor agencies, as it is often

thereby possible to show that 'some thing has been done' about specific health problem (Fry 1986).

The selective approach fits the technological and political orientation of some donor agencies, which look for concrete objectives and measurable outcomes achieved in a relatively short period of time (Bryant 1988). Unger and Killingsworth (1986) pointed out those selective primary health care appealed to donors because of the 'cost-effective' arguments, promoted use of advanced technologies which benefited multinationals and maintained the financial and institutional status quo.

The selective primary health care approach was criticised by different researchers such as Rifkin and Walt (1986), Unger and Killingsworth (1986), Gish (1982), (Barker and Turshen 1986) and (Berman (1982). Gish (1982) suggested that selective primary health care was old wine in new bottles. He pointed out that selective primary health care did not directly address the nature of the wide development process and lacked a social science perspective. According to Berman selective primary health care was not relevant or desirable alternative for most countries. He also felt that the efficacy of medical technology should be balanced with individual needs and social context and cost countries can afford (Berman 1982).

The World Health Organisation also raised concern about the selective primary health care (SPHC) approach and mentioned three negative aspects of this approach; 1) it involves technology, 2) it does not address directly the concerns of the people and 3) it is essentially a vertical programme (Warren 1988). According to Rifkin and Walt 'comprehensive primary health care and selective primary health care are both 'irreconcilable' and 'diametrically' opposed'(Rifkin and Walt in Warren 1988 p.894). Their criticisms were also based on the fact that selective primary health care saw health improvements as a result of programmes based on medical and technological interventions but advocates of CPHC saw health as a process dependent on individual knowledge and choice, of which medical intervention is only one, and often not the most important input. Another fundamental difference was temporal, in that advocates of SPHC programmes expected relatively immediate and visible results (Rifkin and Walt 1986).

Primary health care has so far stressed its comprehensiveness character. But the selective intervention denies this comprehensive character by focusing on particular diseases and health problems (Collins 1994). This has been noticed in different developing countries. For example, in Bangladesh vertical programmes like diarrhoea, tuberculosis and malaria control child immunisation have been implemented with the assistance of different donor agencies etc, to reduce the burden of these diseases. Most of these programmes in developing countries are financed by international development partners which are time bound conditional and are target oriented. They may yield some benefits but are difficult to sustain. UNDP /WHO financed intensification of primary health care programme in Bangladesh, DANIDA supported pilot project for essential drug programme in Bangladesh are some of examples. These programmes had some positive effect but had to be abandoned after withdrawal of funds. Another example is the Bamako initiative, which was successful to some extent in generating community financing, but it is not clear if the quality of services can be sustained with fee income alone after the donor investment has gone (Costello 1996).

Selective primary health care did not consider the issue of equity, it was more concerned about priority of disease following some criteria (prevalence, morbidity, mortality, and feasibility of control including efficacy and cost). While CPHC recognises that health need a multisectoral approach and other sectors' contribution are required to secure health, SPHC focuses on mobilising health resources to attack specific diseases. Community involvement is considered as an essence of health care in comprehensive primary health care (Mahler 1981). On the other hand to the advocates of SPHC, community involvement is only significant in terms of getting large groups of people to accept the medical intervention the professionals have selected to use (Rifkin and Walt 1986).

Although the selective primary health care concept was criticised vigorously in various quarters, there were some that support this idea as well. For example (Evans Hall and Warford 1981) considered health improvement in the developing countries as a matter of scarcity and choice. Boland and Young, (1982) considered the political and economic issues in health care improvement.

UNICEF, one of the main organisers of the Alma-Ata conference, also advocated a selective approach by initiating the programme called GOBI (Growth monitoring, Oral rehydration therapy in case of diarrhoea, Breast-feeding and Immunisation). Costello (1999) described the GOBI approach as a piecemeal mix of vertical interventions pushed by UNICEF in the early 1980s. Werner (1997) explained this issue by stating that unwillingness of major donor agencies and health ministries to seriously promote the radical PHC model, and the socially retrograde political climate of the 1980s, compelled UNICEF to shift from comprehensive to selective primary health care approach. This shift was criticised arguing that UNICEF was mistaken in believing that its emphasis on selective primary health care represented the 'leading edge' of comprehensive primary health care. He concluded that UNICEF's GOBI approach should be abandoned or integrated into comprehensive primary health care programmes (Wisner 1988). However major donor agencies (WHO, USAID) supported SPHC. For example in 1978 WHO introduced Diarrhoeal Diseases Control (DDC) programme for prevention and treatment of diarrhoea, the single biggest killer disease in the developing world. In 1980s it introduced acute respiratory infection (ARI) control programme.

Selective primary health care was usually imposed from outside by the donor agency and tended to bypass communities in the selection and implementation of programmes. Moreover selective programmes tended to focus on short-term processes when some of the important community development processes are necessarily long-term (Bryant 1988).

2.1.4 Summary

- The concept of primary health care evolved slowly from the health experiences of different countries. Though the concept gained prominence in the late 1970's, it had earlier roots. For example, recommendations of the League of Nations Conference held in Indonesia in 1937, and report of the Bore committee in India. Those advocated preventive, curative and promotive health services easily accessible to the people. The dynamic leadership of Dr. Halfdan Mahler, Director General of WHO (1973-88) was remarkable in this respect.

- The concept of primary health care was introduced in response to the recognition that the western model of medical care, as practised in the developing world could not provide adequate health care to the people.
- Primary health care was defined and explained in many ways. To some it is a first level of care, which is given in the community, health centre, private establishment and hospitals. Some others thought of primary health care in terms of programmes such as immunisation, control of diarrhoea etc. For others it was a strategy, which included levels and programme. Actually it was more than those, it was a direction, a philosophy.
- Primary health care was conceived as a comprehensive strategy, which called for a greater social equity and strong popular participation (Warner 1997), has systematically been derailed to a selective primary health care approach. Immediately after the Alma-Ata declaration the comprehensive approach was criticised by the advocators of the selective approach. Donor agencies started advocating selective PHC. Even UNICEF, the main organiser of Alma-Ata conference changed their comprehensive strategy by declaring 'child survival revolution' and supported only four interventions, known as GOBI. The selective approach gained popularity among the governments of the developing countries mainly for two reasons; first it promised to improve selective health indicators like child mortality, which was politically useful for those in power. Second there was no choice other than to accept that approach by the donor-dependent countries.
- In spite of fundamental changes occurred that in the world during the 22 years after the Alma-Ata conference, the importance of primary health care concept remains as important as ever because:-
 - The Alma-Ata conference in 1978 has provided a motivational and unifying concept of international health development through primary health care and made an important contribution to achievements of better health, which occurred around the world.
 - It marked the beginning of new international understanding of the real dimensions of the health care need, especially in developing countries. It also opened up new prospects for international co-operation in health, it demonstrated not only the

advantages, but the necessity of sharing information and strategies for promoting health and preventing and controlling diseases (Venediktov 1998).

- The primary health care approach focused on the need to expand and gave attention to rural health services. Emphasis has been given to preventive services, community participation, and multisectoral collaboration. Many low-income countries have reorganised their health services based on PHC, created community health care workers, organising training programmes for traditional midwives and basic health workers such as Health Assistants and Family Welfare Assistants in Bangladesh. A number of countries- China, Costa Rica, Sri Lanka and the Indian State of Kerala have made significant improvements in the health of all population groups (WHO 1994). In general, indicators of access to PHC such as, immunisation coverage, trained attendance at childbirth, water supply and sanitation have also been improved in some developing countries such as Bangladesh (WHO 1995).

In the following section literature on the utilisation of primary health care services has been reviewed with specific emphasis on maternal and child health care service utilisation. The review is mainly concentrated on four main issues: socio-economic condition of population, attitudes of people, quality of service and access to health facilities and their influences on the use of health services.

2.2 Utilisation of primary health care services

Primary health care won widespread acceptance, among both governments, international and non-governmental organisation since 1978 (Tarimo 1994). Different countries restructured their health system based on the primary health care concept (DGHS 1990; Diallo 1993). A wide range of basic services has been organised at the grass root level for improvement of the health status of the population particularly maternal and child health. However the utilisation of those services is still low in developing countries including Bangladesh. This issue of under-utilisation has been reviewed in different countries and various reasons for it have been found. Available studies are show that utilisation of health services is influenced by individual, communities as well as health care delivery system of the country.

Utilisation of health services is expressed as the proportion of people in need of a service who actually receive it in a given period, usually a year. For example, the proportion of children at risk who are immunised, the proportion of pregnant women who receive prenatal care or have their deliveries supervised by a trained attendant (Bindari 1992). The review of health services utilisation is important for many reasons; such as guidance in operation, planning new facilities and identification of research needs (Kloos1990).

Utilisation depends upon the health care need of the population, which can be analysed broadly in two ways: **curative health care needs** and **preventive and promotive health care needs** (Yesudian 1988). Variation in the pattern of utilisation can be seen between these two sets of health care needs. **Curative health care needs** are more likely to create discomfort and pain, which ultimately hamper day-to-day activities of the people. As such, people normally put high importance on health care and use health services. On the other hand preventive health care need may not be perceived as urgent, as it may not have immediate effect on daily life. It is more visible in rural areas of developing countries where people live in low socio-economic condition. They may use health services according to the priority of their perceived health care needs depending on its severity, as well as economic, physical and cultural accessibility to the services. Symptoms, which are perceived serious, may be taken care of first.

2.2.1 Factors affecting health services utilisation

Utilisation of health care services is affected by various factors (Sabur 1990, Rahman 1981). For example in Ethiopia it was shown that there are geographic, socio-economic and cultural barriers between patients and modern health services. The scarcity of these services and the ready availability of traditional medicine have been associated with their under-utilisation in both rural and urban Ethiopian communities (Kloos 1990).

Yesudian (1988) suggests four broad categories of factors, which have influence on health services utilisation (a) economic factors (b) demographic factors (c) cultural factors and (d) organisational factors. Economic factors play a major role in deciding the pattern of utilisation especially in the developing countries. Medical expenditure

such as cost of medicine, consultation fees, investigation charges and travel cost often became deciding factors for seeking healthcare. Demographic factors such as age and sex also affect utilisation. For example people at certain ages i.e. children or old people and a group of the population i.e. women may need more health care than others. At the same time, in societies where people have many religious and traditional values (taboo, ritual beliefs, custom), these may deter them from use of modern facilities. Finally organisational factors such as bureaucratic procedure involved in seeking health care, location of facilities, attitude and behaviour of the health care providers can act as barrier to seeking services.

Others divide influencing factors in to two broad category; (a) **service factors** and (b) **user factors** (Leslie 1989). Those variables primarily associated with service delivery systems or facilities are designated as service factors such as availability, accessibility of services and quality of care. On the other hand variables primarily associated with the circumstances and characteristics of the client are designated as user factors such as age, sex, education, income, parity, cultural and attitudinal factors. Both service factors and user factors affect utilisation of health services (Leslie 1989). All these issues have been reviewed more in the following sections.

2.3 Health services utilisation model

Kroeger (1983) suggests two main categories of health services utilisation model. One is a Pathways model and other is a Determinant model. The pathway models describe different steps in decision making and in the process of illness behaviour. Different people describe various stages of decision making process. For example Fabrega mentioned nine stages and stresses the importance of different illness concepts and medical orientations in non-western culture (Fabrega in Kroeger 1983). Igun (1979) explained ten stages from illness to recovery and rehabilitation. Chrisman (1977) has identified five components. He found that cultural and social factors have important roles in decision making. Past medical experiences and the orientation of people as well as social norms and ethnicities have also important roles as mentioned by Geertsen et al (1975). According to Lee K (1983) there are four phases leading to utilisation: needs; felt needs; demand and finally utilisation.

Determinant models focus on a set of determinants¹ that are associated with the choice of different forms of health services. Different scholars have identified various determinants. Shuval (1981) mentioned that “perceived seriousness and potential consequences of symptoms, the threshold of their visibility, the availability of information and assumptions concerning their causation” are vital for individuals in seeking health care. According to Unschuld (1975) economic factors, communication gaps and structural and conceptual differences are important for health seeking behaviour in the traditional societies in developing countries. Anderson (1968) classified determinants into three broad categories) Predisposing factors such as demographic characteristics, household and family composition, smoking, education, attitudes, responsibility for health related decisions) ii) enabling factors e.g. accessibility of regular sources of care, health insurance, income security and iii) health services system factors, that is the structure of the health care system and its link to a country’s social and political macro system.

2.4 Education and Utilisation

The use of antenatal services has significant association with the level of women’s education. Education also has effect on institutional delivery, postnatal and infant care services (Abbas 1986). This is also confirmed in a study in Peru, where maternal education was found to have a positive effect on the use of health care services. Caldwell (1979) first proposed that maternal education acts as an independent determinant of child mortality and is normally a proxy for other social variables.

Studies in Jordan (Abbas 1986., Obermeyer et.al. 1991) on utilisation of maternal health care showed that mothers education, average level of education of the household members, place of residence, standard of living (measured by characteristics of the dwelling, possession of appliances and household composition, number of household member and number of children in the household) have significant effects on prenatal care.

Determinant or explanatory variables: A variable, which explains or influences the observed variance of dependent variables. (Kroeger 1983)

Evidence from various studies suggests that maternal education is an important determinant of use of health services in developing countries (Cleland 1990, Becker 1993, and Raghupathy 1996). In a study in south India, Bhatia and Cleland (1995) found that women with higher education are more likely to use formal pregnancy-related health care than educated women.

So the education level both of the mother and family members have strong influences on utilisation of services (Bolam et al 1998, Obermeyer 1991, Prakash 1994). The knowledge and attitude of the decision-makers towards maternal and child health care practices appear to have a significant role in deciding utilisation of available health care facilities and hence in determining the outcome of pregnancy in the community. Literacy influences all aspects of life and maternal and child health care practices.

Another study in Brazil found that lower occupational group with less formal education use MCH services less than other with higher income and education. Education and income were considered as the factors for utilisation (Cesar et. al 1986).

A study in Nigeria, found maternal education has little advantage where health services are not easily accessible, it is more advantageous where health services are available. Education empowers women to take personal responsibility for their and their children's health: educated women undergo a conversion from 'maternal indulgence' to 'maternal protective action' (Caldwell 1979).

In analyses of the influence of maternal education on use of reproductive services in four countries; Thailand, Peru, Guatemala and Bangladesh one study concluded that maternal education is one of the strongest factors associated with the likelihood of receiving antenatal care and formal assistance at delivery (Hussain 1998).

2.5 Income, cost and utilisation

Household income is considered a major influence on utilisation of health services in West Bengal, India (Ghosh and Mukherjee in Prakasam 1995) though different evidence exists in this respect. For example a study in Indonesia found that low

household income is a barrier to utilisation of modern health services, even where they are publicly provided and provision of modern health services is a necessary but not sufficient condition for equitable access to these services by the population (Chernichovsky 1986). A care seeking pattern study in Bangladesh revealed that those who have more income visited health care facilities more than lower income groups (Uddin 1995). However a different picture was found in India that income is not a major factor for non-attending prenatal care but it plays an important role in choosing the place of prenatal care. Heller (1982) found that increased cash income did not significantly alter the total demand for health services rather the effect was felt in an increased demand for private modern care relative to public services, and a substantial increase in the consumption of prenatal care.

In explaining the relationship between increased income and medical visits, Akin (1985) suggested that “an increase in income raises the household’s capacity to purchase medical care, but if the added income is used instead to purchase other goods which improve the household’s health status, total medical visits may actually drop”. On the other hand if households members spent their increased income on unhealthy consumables, for example tobacco, alcohol, etc. this will increase health care need in the long run. Another study in Philippines, revealed that income was not a statistically significant determinant of the choice of health facility.

Cost (consultation fees/ user charges, travel cost)

Cost and consultation fees are considered to be a deterrent factor for utilisation of health services. The PHC in many developing countries including Bangladesh is provided free or for nominal charge, but there are some hidden cost that deter people greatly from using them. Nahar and Costella (1998) in an urban-based study on the hidden cost of ‘free’ maternity care in Bangladesh have found clearly that considerable hidden cost (unofficial medical charges, the cost of porters and ayas, travel and food expenses) are involved in ‘free’ care in Bangladesh that may be a major contributor to low use of maternity services, especially among low-income groups. The opportunity cost of time, is also a dominant factor in whether to see a doctor. In Bangladesh, only 8 percent of the sick persons visited public sector PHC facilities for treatment and other 18% did not visit any facilities, and paucity of money accounts for one half (BBS 1997). Evidence also shows that low utilisation PHC can

be the result of patients' inability to pay the monetary cost of modern medicine (Alam 1999).

A recent review of the immunisation programme in Bangladesh reported that "even when health services are provided free, the cost of accessing health care may not be negligible for the poorest households. Time and financial costs of getting to health facilities increase as distance to health centre increase. This cost imposes a greater burden on the more economically disadvantaged groups, negatively affecting their health-care-seeking behaviour" (Kanta Jamil et al 1999).

The developing countries including Bangladesh have been confronted with the problem of increased health care needs and decreased available resources (Santon and Clemens 1989). The ambitious promises for improvement in health care, which have been articulated in the aftermath of the Alma-Ata declaration of 'Health for All by the Year 2000' draw attention to the fact that available domestic and international resources may not be capable of supporting such major programmes (Santon 1989). In this context, introduction of 'user fees' as an option of cost recovery suggested by different health economists and international bodies (World Bank 1987, Donaldson 1986, and Heller 1982). This approach has been tested in some countries and the results are not found always positive. For example a longitudinal study in a rural community in Zaire shows that the utilisation of health services had diminished by close to 40% over five years (1987-91) and that 18-32% of this decrease is explained by cost (Fournier and Haddad 1995). A study in Uganda reported that user charges worsen staff attitudes and increase the real cost of accessing services (McPake et al 1999). Another study on the possible impact of 'user fees' in Bangladesh reported that there is evidence that introduction of fees may impede access of the most needy (poor and women) to medical care (Santon et.al 1989). Many other studies show that utilisation decreased due to the introduction of a fee for services (Creese 1991, Huber 1993, Thomason 1994).

A report from the Ministry of Health (Philippines) states that the fear of monetary cost is a key deterrent to the utilisation of health services by the poor in both rural and urban areas in Philippines (Mangay-Angara 1981 in Leslie and Gupta 1989). Another study in Nigeria reported the devastating effects of fee increases on the utilisation of a

public sector facility that had previously been free (Attah 1986). A recent study on the impact of health care seeking behaviour of the cost-sharing policies introduced in Ghana (1985-1992) conclude that "although most of the people would prefer to attend orthodox clinic, they report that they have been restrained by the high user charges and the cost of drug" (Okyere et al 1998 pp 187). This study also found that cost of orthodox health care is increasingly becoming a hindrance to many health care seekers, leading them to look at alternative providers or self-medication. But this is not the case everywhere. For example experience in Ghana found that attendance fell when user fee system introduced, but it started picking up and has risen up to the pre-fee level. For instance after introduction of user charges the total out patient attendance increased from 447693 in 1992 to 4828501 in 1995, an increase of 3.5%. This is mainly due to improvement in the supply of drugs (Okyere et al 1998). However, this study does not take into account of population growth as estimated 3.12% (1993) and the disease pattern. The picture could have been different if they considered those issues in calculating outpatient visits.

The mode of payment is an important issue in society where people have limited scope to have cash money. For example payment in kind to the traditional healer is easier in some societies (e.g. Bangladesh) than finding cash for utilising modern facilities for the rural people those are mainly farmer by profession. A study on the utilisation of rural hospitals in India (Howard 1978) reported that financial arrangement for payment play a large part in the ability of the indigenous practitioner to delay or prevent villagers from using hospitals. The main reason is that the hospital requires payment in cash, while indigenous practitioners accept locally available commodities such as rice, chicken and fruit. Moreover indigenous practitioners are very relaxed about collecting payment.

The another important issue is transportation cost. Though most people in rural area travel to get medical care by foot, bicycle or cart, they still have to spend quite large sums of money for this purpose. Akin (1985) showed that a large proportion of the total cost of modern medical treatment in the third world is transport costs. In Uganda a study found that 75% of the total outpatient cash outlays were for transportation. An interesting picture was found that the total amount inpatients and outpatients spent for transportation exceeded half the hospital annual operating budget (King 1966).

Waiting time, food costs, travel and time in travelling to a health facility, all have effect on utilisation.

2.6 Quality of health services and utilisation

The decision to choose health care is determined not only by its availability, accessibility, and affordability but also by the quality of the services offered (Costello 1993, Leslie 1989). The components of quality of services are efficacy of the treatment it offers, the availability of supplies and equipment, the characteristics of its personnel, and the nature of its management and organisational structure. Each of these components affects the utilisation of health services.

Different studies show that perceptions of poor quality care have tremendous effect on the use of health services (LaFond 1995, Habib and Vaughan 1986 Akin et.al 1987). But the low quality of modern rural health services is common. In rural Ethiopia people by-passed the referral system and approached the better equipped hospital services for primary health care in spite of the large distance (Kroeger 1983). In Nigeria (Murphy 1981), and Java (Young 1981) found that poor quality of rural health services deterred people from using them. In Guatemala the utilisation of health posts was low due to the poor quality of services (Annis 1981). A study in Ghana showed that poor quality of care and lack of immunisation services at most clinics were responsible for low utilisation of health services. Mothers felt that it was waste of time and money to go there where good services were not available (King 1979).

Waiting time is seen as a determinant of utilisation of services. One study in India found that on an average a patient had to wait about 72 minutes for 1.4 minute's consultation with a doctor, which included examining the patient and writing a prescription. A similar picture was found in two studies in Bangladesh where treatment time given to any patient was only 1.3 minutes (Sabur 1990), and for outpatient's 3 minutes (Guyon 1994). A study in the port city of Sudan (Seed 1984) reported that the average time spent by the provider in an out patient department is two minutes, that is 0.6 minutes for history taking and 1.4 minutes for drug prescription and for physical examination of the patient if it is done at all. Less than 1% of the patients were examined for 5 minutes or more. This has considerable effect of the use of Primary health care facilities in Sudan.

In Pakistan and Ghana it was found that the limited range of services offered, staff shortages and the non-availability of drugs in particular were reasons for low attendance in government facilities. Service quality in Uganda is probably the major cause of low hospital bed occupancy (around 20-30 percent) (LaFond 1995). One study in Bangladesh shows inadequate supply of medicine and its poor quality, and poor behaviour of clinic personnel are the factors for non utilisation of health services (Rahman 1981).

A hospital based study in Nigeria looking at the factors that influence patients to choose the hospital found seven different reasons for choice of a particular hospital. In order of preference these were - nearness, quality of service, relative living in the hospital town, finance, ease of transport, religion and connection with hospital staff.

So it is evident that quality of services is an important determinant of use of health services. These issues have not yet been studied in-depth at the primary health care level in Bangladesh.

2.7 Availability of and accessibility to the health facilities and utilisation

Availability and accessibility are the first steps of utilisation (Leslie 1989). Accessibility of primary health care implies that it should be geographically, financially, culturally, and functionally within easy reach of the of the whole community in rural as much as in urban settings (Lee and Mills 1983). Utilisation indicates that the service is accessible (Ying 1993). Availability of health services mainly refers to its physical presence. On the other hand accessibility reflects the extent to which services can be obtained at the time of requirement. Available services can be inaccessible due to the physical condition, age and sex of the users, long distance, lack of transportation and social custom. For example in Nigeria it was found that utilisation is highest among the under 20s and those over 50 years of age. (Okafor 1983). It was found that males tend to travel further for treatment than females and adults tends to travel a longer distance than children (Stock 1983). Opening time has been found to be an important factor in utilisation of the facilities. It

is reported in Bangladesh that the reasons for reluctance of mothers to use MCH clinic facilities are partly the clinics operating only during busy hours of family work (Islam 1993). So availability does not always ensure utilisation of services. To some extent it depends upon the acceptability of the services by the targeted population. For example in a study in Greece the authors pointed out that “rural people may not have confidence in their local doctor and his services are therefore under-utilised (Bakoula 1983).

2.8 Distance, location and utilisation

Distance has been considered as one of key determinant for utilisation of health services particularly maternal and child health care services. It is an important factor in two respects; it influences both the choice of facility for care and the ability to reach the facility of choice in time for example at the onset of labour (Nwakoby 1992). This distance factor is more significant in some conditions, that is, in countries where the density of the modern health facilities is low, patients mainly prefer to go to the facilities by foot and where traditional medicine is within the reach of the population (Stock 1983). Another study in Iraq revealed that perceived distance is one of the most important factors for utilisation As distance increases the level of utilisation decreases and vice versa (Habib and Vaughan 1986).

Studies in Nigeria (Nwakoby 1992; Stock 1983) Pakistan (Schmidt 1983), and Zaire (Duale et.al.1988) revealed that distance has an adverse effect on the utilisation of services. A study in Korea found significant relationships between distance and utilisation of maternal health services. It was found that the more convenient the mode of transportation and shorter the travel distance, the greater the utilisation (Kitacksuh 1982). Another study in Sudan showed that distance is a major factor for utilisation of health services in the health centres established for providing primary health care but it is also found that distance does not appear to be a limiting factor for the hospital Out Patients Department (OPD) (Saeed 1984). Some studies found that patients may be prepared to travel longer distances for a presumed higher quality of care. Distance may not be a deterrent if people perceive that the quality of services to be good. For instance, in Nigeria people travelled from outside the service area of a Christian mission dispensary due to the perceived quality of its services (Stock 1983).

Distance may be measured in different ways. For example it can be measured along the straight line joining the points of origin and destination or the actual measured journey. It can be measured by travel cost or travel time (Stock 1983).

Physical distance has been found to be the primary factor in many studies mentioned earlier but other mediating factors also need to be considered. For example transport cost and ease of movement has a great influence. A study in Imo State in Nigeria found that poor road communication and transport contributed more to health services use than distance (Attah 1986).

Location

Location of facilities may also be an important factor for service utilisation (Hassinger 1976). Primary health care is more frequently needed and involves less cost than secondary and tertiary care. In appropriate location of the health facilities in Pakistan and Nepal also accounted for low utilisation of health services (La Fond 1995).

2.9 Socio-cultural aspects and utilisation

Specific relationships exist between socio-cultural factors and the use of health services (Hassinger 1976). In developing countries, obstacles to utilisation range from traditional attitudes toward health and healing to community perceptions of the health service itself (LaFond 1995). One study in Bangladesh on utilisation of MCH services, revealed that the reasons for discontinued use of contraceptives is disapproval of the husband (Rahman 1981). This study also found that non-utilisation of maternal and child health services related to lack of knowledge on availability of services, unconcern/ indifference towards self and family members, particularly in relation to delivery of babies at health centres.

Women in traditional societies such as Bangladesh are not willing to see a male doctor in the hospital, when they are in critical conditions. *"in rural areas, it is not uncommon to hear of a family refusing to refer a seriously ill women to hospital where it is believed that she will be exposed to men and lose her honour. Better to die at home rather than to live in dishonour is the rational"*(Blanchet in GOB 1989).

Similar attitudes have been reported among the women in Jordan, who are reluctant to be examined by male physicians (Obermeyer 1991). A study in Yemen found that Yemeni women prefer to give birth at home because they like the friendship and support of female relatives and neighbours, which is absent in institutional delivery. They feel that health care facilities are unwelcoming and staffs treat them with little respect (Annica Kemple et.al 1996). **Beliefs and attitudes:** Beliefs about health services are closely related to health service utilisation (Hassinger 1976). One study in Nigeria suggested that people regard the efficacy of western medicine in respect of certain ailments as less reliable than native medicine (Okafor 1983). In the case of Bangladesh, villagers believed that some diseases could be prevented through observing certain rules, wearing amulets, drinking sanctified water or performing religious rites (Ashraf 1982). Their knowledge about causes of illness guides them to choose health care. Stewart et al (1994) reported that in Bangladesh parents, who believe evil spirit caused ARI, go to a faith health healer for treatment rather than to modern doctors

The influence of mothers-in-law in seeking maternal care is important in the rural Asian culture. They are often honoured specially for their experiences in maternal and childcare. A study in India demonstrated that 56% of the decisions were taken by the mothers- in law in seeking MCH services (Prakash 1994). Thus in countries where the mothers in-law is the decision maker, her Knowledge and attitude of on maternal and child health care practices may have significant influence in deciding whether or when available health care facilities will be used.

Perceived sickness has been found to be an important factor for utilisation of health services in Iraq (Habib and Vaughan 1986). A study in India showed that peoples **knowledge and ignorance** about the scientific cause for illness are the main reasons for non utilisation of MCH services in rural Rajasthan and lead to high infant mortality rates (Bhandari 1989). This study was limited only to looking at the relationship between infant mortality and utilisation of services. A household study in Papua New Guinea suggested that ignorance is one of the main factors for non-utilisation of immunisation services. This study also found that location of the clinic and lack of confidence due to cancellation of the clinics were causes of low

utilisation. So discontinuity and availability of services is affecting utilisation in this instance (Karel 1994).

In a cross sectional study in Colombia it was found that lack of confidence towards health workers is one of the main factors for non consultation with the Community Health Worker (CHW). The study shows that the consultation rate is only 6-7% with the community health worker for their illness (Engelkes 1991).

A study in Egypt revealed that those of low socio-economic and educational level have low utilisation of MCH services was due to a lack of understanding about the importance of antenatal care. And where there were traditional midwives, women had greater confidence and respect for them, which explained why 80% did not use MCH services for delivery. Dissatisfaction with the quality, an unkindness of the provider, and inadequate provision of services in comparison with traditional midwifery was mentioned the study (Zeid 1985).

Patient satisfaction is an important factor for utilisation of primary health care. A study on utilisation of primary health care services in Riyadh city found that patients are dissatisfied due to wrong working time, distance, cost of using services, non availability of speciality clinics, language barriers with the physicians deterring the people from attending primary health care facilities though most of the people want to use PHC facilities as first choice (Ali 1992).

2.10 Conclusion

The literature on health care utilisation is extensive. Many studies have been carried out in different parts of the world. It was found that reasons for under-utilisation of health services range from individual behaviour, community characteristics as well as health system of the country. The pattern of utilisation is not moulded by one to one relationships of variables. It is a complex relationship among those variables that decide the utilisation of health services. Most studies were conducted to examine the factors of utilisation from the users' perspective. Little attention has been given to provider perspectives. Few studies examine the problem of under-utilisation from both users and providers perspectives.

The few studies done in Bangladesh (as referred in the earlier review) have reported users' dissatisfaction and perceptions of low quality services. However few have attempted to explore the aspects of low quality and provider and provision factors that contribute to low utilisation of services in general particularly in rural areas. There is research gap in this area and this study is an attempt to fill that gap.

CHAPTER THREE

METHODS

3.1 Introduction

The purpose of this research is to describe the pattern of utilisation of primary health care services in rural Bangladesh in general, and maternal & child health care services (MCH) in particular, to identify the factors affecting utilisation of services from both the population and providers perspective. To achieve this purpose, two types of study were conducted using different data collection techniques: the first a community-based study and the second a health facility-based study. The community based survey was undertaken to understand the utilisation pattern of the health services, to explore the characteristics of the population, such as their knowledge and attitudes regarding health and health services, in order to identify the factors affecting utilisation of services.

To investigate the service related factors, which affect service utilisation an observational study was carried out in three different types of health care facilities; thana health complex, family welfare centre and village health care post at the primary health care level. Quality of the health services, access to those service facilities and attitudes of the providers towards users and to services were examined closely. The coverage of health service providers in this study was restricted only to public sector providers but attempts have been taken to include examples of other private sector providers such as non-qualified village doctor, traditional healers; kabiraj, hakim.

An integrated methodological approach employing both qualitative and a quantitative approach was used. A quantitative household survey was undertaken at the community level to understand the problems relating to utilisation of health services from the user perspectives, while qualitative methods were used in the facility level study. Both the user and the provider' related factors were analysed in order to estimate the most important factors hindering utilisation of the public sector MCH services.

This chapter describes the methods used to investigate the pattern of MCH services, utilisation of those services and the determinants of utilisation. It gives details of sample design for the household survey, questionnaire design, pre-testing, the data collection procedure, the procedure of the in-depth interviews, health facility observation and data management.

The chapter begins with the description of the methods used for collecting data, information and ends with the description of data management and analysis.

3.2 Methods

Three main methods were employed in this study:

- 1. Community based household survey**
- 2. Facility based observational study.**
- 3. In-depth interview of (i) mothers (ii) Community leaders and (iii) providers**

1. The Community based household survey was conducted among 360 households to understand the utilisation pattern of the health services, characteristics of the users and non users of MCH services, their knowledge of and attitudes to health and health services and the factors affecting utilisation of these services at the primary health care level.

2. The Facility based observational study was carried out in one thana health complex, (THC), nine family welfare centres (FWC) and twelve Village health care posts (VHCP).

3. In-depth interviews were carried out to strengthen and validate the quantitative data collected through the household survey. Eighteen mothers were interviewed in-depth. Nine of them were MCH service user mothers and nine were non-user. They were chosen randomly from the list of user and non-user mothers. In-depth interviews were carried out to verify the information gathered from the household survey and to understand the views of the mothers towards the available MCH services in the primary health care level provided by the public sector. Semi-structured in-depth interview guide was used for interviewing those mothers (see appendix 4).

Twenty-eight community leaders were also interviewed. Twenty were informal leaders and 8 leaders were formal. The twenty informal community leaders included teachers, religious leaders and village heads and were identified by the mothers during the household survey. Out of the eight formal leaders, three were Union Council chairman and five were ward commissioners of the union council.

Forty health care providers were also interviewed. They were in three different categories. One group included managers from district to thana level such as the civil surgeon, deputy director of family planning, thana health and family welfare officer and thana family planning officer. The second group included technical persons directly involved in providing health care, such as medical officers at THC and paramedics at the FWC level. The third group consisted of field level health and family welfare workers involved in providing health and family planning services at the door step. At the national level the director of Primary Health Care at the Directorate General of Health Services (DGHS) and the Director of Maternal and Child Health of the Directorate of Family Planning (DGFP) were also interviewed to get their views about the MCH care services at the PHC level

In the following sections, study setting and study methodology for each of the components mentioned above is discussed in detail.

3.3 Study Setting: Rural Bangladesh

The study was conducted in a rural thana in Bangladesh (a thana is a sub district with a population of about 250,000. There is a total of 397 rural thanas in the country). The study thana was Keshabpur in Jessore district. This thana was chosen because it is located in a rural area and its demography, geography, the education level of the people and the availability of the health facilities at the time of selection were similar to most all-rural thanas in the country. (See Map of Bangladesh for the study location page 15).

There were various reasons for choosing a rural thana as the place for the study. First, the Government's overall development activities are concentrated at this level, where 84 percent of the total population lives. Second, in the health care delivery system, the thana has been considered as the primary health care level of health services. (See

health care delivery system appendix 7). The first referral centre for primary health care is the Thana Health Complex (THC) which is located at thana level. The majority of the country's female population (85%) and children under five years of age (89%) live in rural areas (BBS 1997). It was hoped that the findings of this research would help in improving the health care services for this vast section of population.

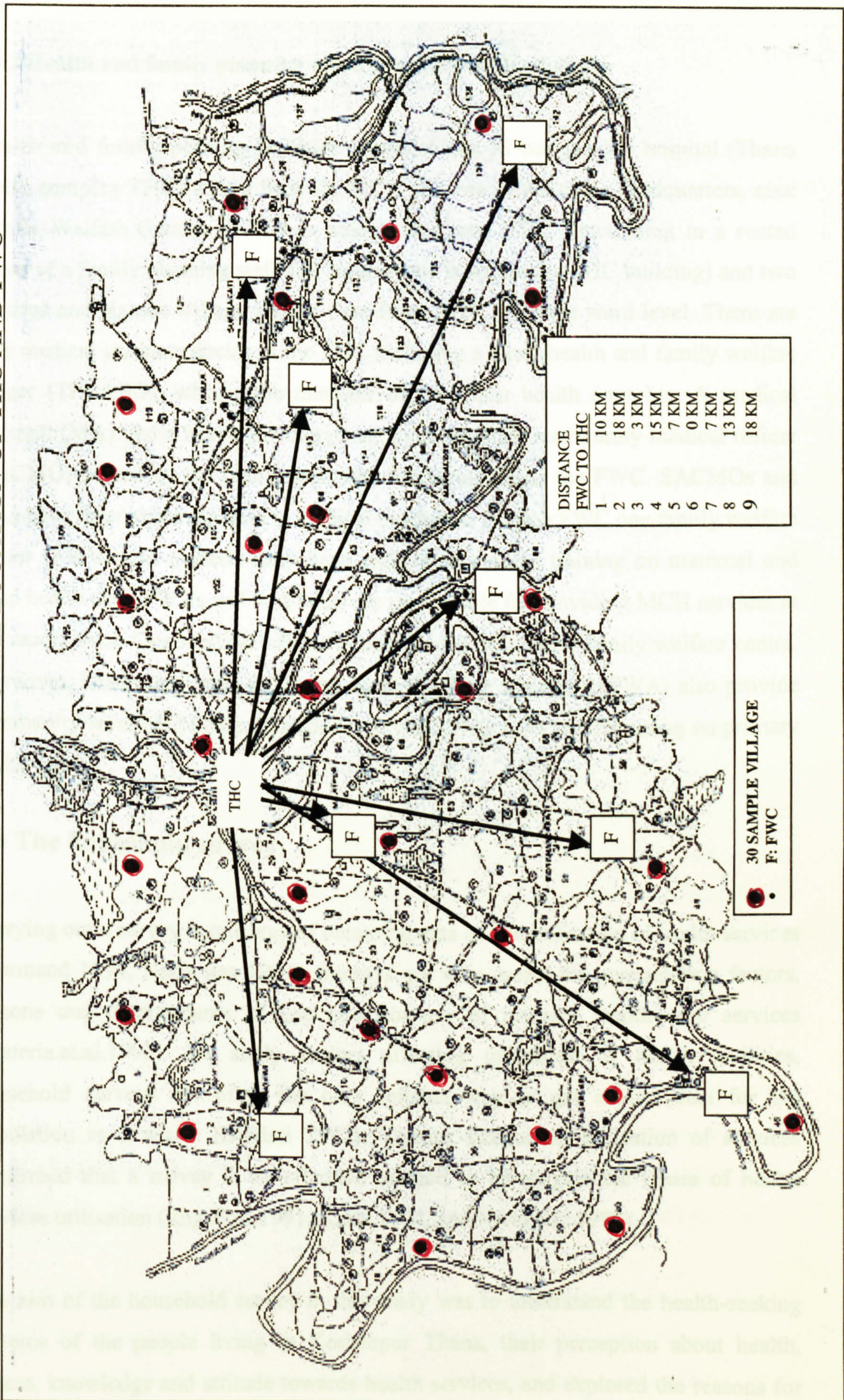
3.3.1 The Keshabpur thana

Keshabpur thana¹ is located in the southern part of the country. It is about 30 km from the Jessore district headquarters and about 300 km from Dhaka, the capital city of Bangladesh. Agriculture is the main source of income. The total population is 230,000 residing in 38,000 households. Thirty nine percent of the population over 7 years old are literate, where the overall national literacy rate for population over 7 years is 47.3 percent (BBS 1998). Communication systems include a bus route to the headquarters of the thana and village pathways; bus, van, motorcycle, 'helicopter'², bicycle, and bull cart are the main forms of transport in the area. Administratively the thana is divided into 9 unions and 27 wards. Thana Nirbahi Officer (TNO) is the administrative head of the thana. The thana has nine union councils each of which headed by an elected Union Council Chairman and 27 members usually called ward commissioners.

1. Thana: The last administrative unit of the country.

2. Helicopter: Basically a bicycle with two additional facilities for carrying passengers. One passenger sits in front of the driver and other behind him. This form of transport is popularly called a helicopter.

MAP OF KESHABPUR THANA SHOWING THE LOCATION OF THC AND FWC



3.3.2 Health and family planning service facilities at Keshabpur

Health and family planning facilities comprise one 31 bed general hospital (Thana health complex THC) with 6 beds for MCH services in the thana headquarters, nine Family Welfare Centres (FWC) in nine unions (one FWC functioning in a rented house of a family planning staff and another one is within the THC building) and two hundred and sixteen Village Health Care Posts (VHCP) at the ward level. There are nine medical graduate doctor in the THC including a thana health and family welfare officer (THF&PO), who is the manager of the thana health complex. A medical assistant (MA) under health directorate or a sub assistant community medical officer (SACMO) posted by the family planning directorate heads the FWC. SACMOs and MAs have three years diploma in medical discipline. In each FWC one family welfare visitor (FWV) was posted. They have eighteenth months training on maternal and child health care. FWVs and SACMOs are responsible for providing MCH services at the union level. One medical officer is also posted in a union family welfare centre. Moreover, health assistants (HA) and family welfare assistants (FWA) also provide community level MCH care through home visit. They have basic training on primary health care.

3.4 The household survey

Carrying out a survey is one way of obtaining data on the utilisation of health services (Normand 1994, Nachmias 1994). Surveys are very useful for investigating factors, reasons and determinants of use and non-use of primary health care services (Materia.et.al.1993). To study factors affecting utilisation of health facilities, household surveys are often the only reliable way to get crucial data for the population as a whole (Bindari 1992). Various studies on utilisation of services confirmed that a survey is an effective method to investigate the issues of health services utilisation (Engelkes 1991, Karel 1994, and Nwakoby 1992).

The aim of the household survey in this study was to understand the health-seeking patterns of the people living in Keshabpur Thana, their perception about health, illness, knowledge and attitude towards health services, and explored the reasons for use and non-use of public health facilities.

3.4.1 Questionnaire design for household survey

A structured questionnaire (appendix 1) was designed for the household survey to obtain information on the demographic, socio-cultural and economic characteristics of the users, illness experiences and use of health services, the knowledge and attitude of the people towards health services, and the cost of using services.

The questionnaire was divided into five parts. The first contained sample identification and information on household members including the respondent. The second part covered background information on the respondent, including age, education, religion, occupation, availability of the basic amenities and housing conditions, land and income. The third part contained 24 questions relating to the respondent's perception of health and disease and their health seeking behaviour. The fourth part was related to the morbidity and mortality patterns of the household. Questions relating to chronic illness, hospitalisation, physical disability and death were included. The final part contained questions relating to maternal and child health care that includes antenatal care, delivery, post-natal care, immunisation of children and expectant mother, acute respiratory infection (ARI) and Diarrhoeal diseases. The distance, costs for using those services both direct (travel, medicine, consultation cost) and indirect (wage loss, travel time, waiting time) were included in this part. Questions relating to physical accessibility to the facility, mode of transport, cost of travel, knowledge and attitude of the people towards maternal and child health care services provided at the primary health care level were also included in this part. In addition to that a separate question was included to the respondent's mother to identify the informal community leader.

Initially the questionnaire was prepared in English and subsequently translated into Bengali, as the respondents could not speak English. Altogether 130 questions were asked to the respondent. Open ended and pre coded questions were used in the questionnaire. Open-ended questions were coded after categorisation of all responses.

A household survey manual covering all questions was prepared for the interviewers and for the supervisors. Detailed explanation of each question, and instructions on how to approach respondents and definitions of technical terms were included in the manual.

Table 3.1 Definitions of the terms used in the household survey questionnaire

Sl.No	Terms	Definitions
1.	Users:	Those who at least once visited a primary health care facility for any ailment of their own or of their children
2.	Non users:	Those who never visited health facilities for any illness.
4	Household member:	Those who sleep and take meals together in a family
5	Occupation:	Work performed by each member of the family
6	Household Head:	He or She who is the leader of the household for all purpose
7	Respondents:	Mothers (Age 15-49 years) who have a child under 5 years of age
8	Community leader: (Formal)	Community leader (Formal): Elected representative of the community such as Union Council Chairman, Members of the Union Council, and Member of the Parliament (MP)
9	Community leader: (Informal)	Religious leader, Head of the community, Teachers.
10	Relation:	Relationship of the household member with the respondent mother
10	Family :	
	Single:	Family comprises with husband, wife and children
	Combined:	Family comprises with husband, wife, children and other relatives like parents, mother-in-law brother, and sister.

3.4.2 Questionnaire pre-testing (piloting)

In order to check the wording, quality and appropriateness of questionnaire it was pre-tested in a pilot survey. The pilot survey was conducted four weeks before starting the final fieldwork. Piloting was done in a similar situation with 45 respondents. A few changes were made to improve pre-coding and record entry for interviewees on the basis of the field experiences of the interviewers, supervisors and the researcher.

3.4.3 Reliability test of the questionnaire

Reliability is the relative absence of errors of measurement in a measuring instrument (Mark 1996). Several procedures are used to measure the reliability of the instrument, such as test-retest method, multiple or alternate forms method, split half method, and internal consistency measures. In this study, to test the reliability of the questionnaire, “Test-Retest” method was followed, as the main advantage of this method is that it is quick, simple, and practical. In this process the same questions were asked to the 20

mothers twice with two weeks of interval in a similar situation. Responses were compared for variation in wording or content.

3.4.4 Sampling technique and sample size for the household survey

Objectives

The household survey provides data on attitudes to and choices of services and providers in the study area. The main objective was to demonstrate the pattern of choice of health services for the whole population of the study thana. In deciding on the sample size and design for the household survey the criteria were first, that it should provide reliable evidence of the patterns of service use and attitudes to services, and second, that it should be representative of the whole population of the thana.

Sampling Techniques

Sample size calculations were based on the need to demonstrate the pattern of choices and opinions in choice of health care provider. To ensure that the sample was typical of all parts of the thana it was designed following World Health Organisation's (WHO 1991) 30 cluster sampling method. This method has been shown to be practical for most surveys, where taking a simple random sample of individuals across the country/ area is difficult (Bennett et. al 1991). It allows the findings from a relatively small sample to be generalised to the population, and ensures that the diversity of the study area is described (WHO 1991).

Following a systematic cluster sampling technique, 30 clusters village with twelve households ($30 \times 12 = 360$ households) from each cluster were selected. From a total of 143 village of the thana, thirty cluster samples of villages were selected through probability proportional to size (PPS) basis to ensure equal spread of population across the selected thana following the steps mentioned in 3.4.5. The clusters were found to be distributed all over the thana (see map in page 55).

The expected precision of (the usual way to measure the precision of an estimate is by its standard error, Bennett 1991) the survey has estimated following the calculation below:

$$\text{Standard error} = S = \sqrt{[p(1-p)D/n]}$$

Where

p = Prevalence of utilisation of health services

It was assumed that the prevalence of utilisation is 50%. The main advantage of this guess is that it maximises S and hence errs on the safe side.

So

$p = 50\% = 0.5$, gives largest value of S

n = total number of sample ($30 \times 12 = 360$)

D = is known as design effect

b = number of sample per cluster = 12

$D = 1 + (b - 1) \rho$

ρ = is the rate of homogeneity (0.1 estimated)

$D = 1 + 11 \times 0.1 = 2.1$

Hence $S = \sqrt{0.5 \times 0.5 \times 2.1 / 360} = 0.038 = 4\%$

This indicates that with the 360 sample size we can be 95% certain that the true proportion of MCH service use will lie within $\pm 7.6\%$ (2 standard errors) of our estimate.

Sample size The sample was chosen to demonstrate clearly the pattern of service use and opinions. On the other hand, it is also interesting to answer the question of why this pattern of use of services exists. Whilst it has been possible to carry out analysis of the relationships of choices and a range of social, economic and health factors, since this was not anticipated in the sample size calculations, it is possible to carry out only exploratory analyses of the causes and relationships. However it provides lot of interesting information about the reasons for use and non-use of facilities by different categories of population.

The data show clearly that services provided to meet important goals of health policy are poorly used. It is therefore interesting to consider the causes of this low utilisation for different population groups, the different services and the different service providers. Since the numbers in some categories are very small (eg those having TT vaccination at FWC), it is not possible to carry out any definitive studies of the low

utilisation. Some exploratory work has been tried, and hypotheses for future research have been identified.

3.4.5 Sampling steps

Step -1. Selection of clusters

All the villages of the Thana were listed with population and household data taken from the Census report, 1996. The cumulative population of the listed 143 villages was calculated and it was divided by 30 (as 30 clusters were selected) to get the sampling interval. Then a random number between 1 and the sample interval was chosen from the table developed by the World Health Organisation (WHO 1991) for this method. That number then fitted into the cumulative population in the list to identify the first cluster in the sample. Then the initial random number was added with a sample interval to identify the second cluster. In this way 30 clusters were identified. The chosen clusters were distributed all over the Thana (See the map of Keshabpur in page 55).

Step-2

Selection of Household

The household was considered as the basic sample unit. 360 households were selected from 30-selected Clusters with 12 households selected from each cluster. A central point of the cluster (village) was located and then the number of household from the central point to the edge of the village was counted. One household in the middle of village was selected randomly as a starting point and identified the first household. The rest of the eleven households selected provided widespread coverage of the village.

3.4.6 Field work for the household survey

Two female interviewers and one supervisor were recruited for this study. Adequate training was provided to them through a five days training session before starting the actual survey. The training related to interview and supervision technique, explanation of the questionnaire and the way of collecting relevant information for the study. The ratio of supervisor and interviewer was 1:2. The supervisor was responsible for identification of the village and starting point for interview. He also observed two complete interviews each day and ensured quality of data instantly in the field. Each

interviewer interviewed four households in a day. A revisit was not required for interviews as mothers were at home all the time and responded spontaneously. It took about 45-60 minutes to complete each interview.

From the household survey questionnaire, user and non-user mothers were identified. At the same time Community leaders were also identified from the interview schedule.

In the second round, the trained interviewers undertook in-depth -interview of the mothers and I myself undertook interviews of the informal community leaders and formal community leaders.

3.4.7 Quality control of the household data

Regular supervision was done by the researcher to ensure the quality of data in addition to the work of the supervisor. A 5% sample of households was re-interviewed by the researcher to check the validity and reliability of the data. No significant variation was found, responses of the respondents were the same except for wording. A total of 18 mothers were re-interviewed at this stage. The sample was taken randomly from all 9 union of the study area, with two respondents from each union ($9 \times 2 = 18$) to cover all the population. Staff meetings were organised regularly to discuss and solve the problems faced by the interviewers and supervisor during the survey.

3.4.8 Problems faced during household survey

There was not much problem in the household survey. It was advantageous that the respondents were all mothers, and they were available at home all the time. Only few of them were unwilling to respond. The main difficulty the interviewers faced was to make mothers concentrate during their interview, because of preoccupations with household work. Also preventing others from answering the questions was sometimes as problem. In some instances we had to request the head of the household to manage the situation. Rural culture obviated the possibility of doing interviews confidentially. Travelling was another problem, because the households were scattered and there was no alternative to a long walk to find the sample mothers.

3.5 In-depth interview

According to Maier (1994) the in-depth interview is “conversation in which the researcher encourages the respondent to relate in their own terms, experience and attitudes that are relevant to the research problem”. It is described as “ a conversation with a purpose” (Khan & Cannell 1957), and this is a useful way to get large amount of data quickly (Marshall 1995). In-depth interview is a data collection method relied on extensively by qualitative researchers

There are three types of interview techniques used in qualitative research: the informal conversational interview, the general interview guide approach and the standardised open ended interview (Patton 1990). The informal in-depth interview was conducted among the sample mothers and the community leaders who have influence in health care decisions in rural Bangladesh.

3.5.1 In-depth interview of mothers

In this study both informal conversation and a general guide approach were used to get the information required for this study. The main purpose of the in-depth interview of mothers was to understand knowledge and perception about existing MCH services, attitudes towards providers and quality of services. It also helped to understand their health seeking behaviour and overall socio-cultural aspects the community. Altogether 18 mothers were interviewed. Of them 9 were in the user category and the other 9 were in the non-user category. Those mothers were chosen from the list of 360 sample mothers.

3.5.2 Sample design: in-depth interview of mother

To select the user and non-user mothers, 360 household interview schedule were checked first. Then the respondents were categorised into three groups, those who never used any public sector health care facilities for any health care need, (group no 1), those who used any one of the health facilities like THC, FWC, VHCP for any kind of illness (Group 2) and user of all three or at least two types of facilities (Group 3). For this study I have taken sample from 1st and 3rd groups of mother. Two

respondents (one user and one non-user) mother was chosen from each union randomly.

3.5.3 Interview guide/ checklist

An interview guide was prepared for taking in-depth interviews of mothers. The main focus of the guide was to understand their perception on health, illness, knowledge and attitudes about the health facilities, availability of the services, their attitude towards the providers and to know the reasons for use and non-use of the facilities in case of illness. Information that was collected through household survey was also verified during in-depth interviewing.

3.6 In-depth interview of the community leaders

Community leaders were interviewed as in the plan. A total of 28 community leaders were interviewed. Of them 20 informal community leaders, and 8 formal community leaders. The latter included Chairmen and ward commissioners of the union council, people elected all for in five years term. Nine union council chairmen and 27-ward commissioners were found in the union councils. The mothers during the household survey identified informal community leaders. They were teachers, religious leaders, village heads, and respectable people of the locality.

3.6.1 Sample design: In-depth interview of community leaders

(i) Formal community leader

Out of 9-elected union council chairman 3 were selected for interview, and out of 27 Ward commissioners, 5 were selected for this study. The leaders were selected from the list given by the Thana Nirbahi officer (TNO). Importance was given to their age, education and previous experiences as chairman and ward commissioner. (see detailed background characteristics of community leaders in chapter five).

(ii) Informal community leader

To select informal community leaders a question was asked to mothers during the household survey about the name of the person to whom they go for advice especially during a health problem. A comprehensive list of community leaders was prepared from the household survey questionnaire. Ranking was done on the basis of the

frequency of responses towards them. Then first 20 community leaders were selected from that list on the basis of their rank for this purpose.

3.6.2 Interview guide for the community leaders

An interview guide (appendix 3) was also prepared for conducting interview of the community leaders. The guide includes the background characteristics of the leader, their perception on health and health care, attitudes towards the health facilities and the providers in their localities, places where they visit for health care and provide advice to people on where to go for health care. In addition some open questions were asked as and when required to gather more in-depth information on the quality of the services and utilisation of MCH care services.

3.6.3 Field work and field manpower

The in-depth interview was conducted and managed by the researcher as principal investigator. Two research assistants were recruited for this purpose to assist the researcher. During recruitment of the research assistants consideration was given to their basic educational qualification, previous knowledge of interviewing people, note-taking skills, audio and video recording knowledge and understanding ability of the rural people, their culture, language and other criteria as relevant to this study.

Three day's comprehensive training on note taking, tape recording and video recording and technique for approaching providers and methodology was given to the Research Assistants. An instruction manual was also prepared for them describing how to record information systematically during interviews.

3.6.4 Problems faced during interview with community leader

The main problem was to get the formal leaders at home as most of them were busy during the day either at work or different kinds of social activities. As such most of the interview were undertaken at their homes at night. It took a time to make them understand that this study was not an official enquiry against health care providers. Some of the formal leaders were not willing to speak about the health care providers, but others expressed their views more openly and showed a hostile attitude to the providers. Some of the informal leaders were straightforward and were willing to provide information about the health care facilities as well as the providers.

3.7 In-depth interviews with the health care provider

In-depth interviews of the health care providers were taken with a semistructured questionnaire. Five sets of questionnaires were used to do interviews of five different types of health and family planning care providers. One set was for Thana level graduate doctor, the second and third sets were for union level paramedics, the fourth set was for the field level health and family planning worker and the fifth set was for the district and national level managers. Questions were divided in to seven sections. Section one related to background characteristics such as age, sex, length of service, academic and technical qualification and professional training. The relationship of the provider with their supervisor, activities they performed directly and indirectly for maternal and childcare was included in the second and third sections. Section four related to their private practice pattern, income and their attitudes on that. Section five and six related to job satisfaction and attitudes towards the population they served and the final section included questions on suggestion for improvement of the existing maternal and child care services (appendix 2 questionnaire for MCH care provider).

3.7.1 Sample design: in-depth interview for the provider

Forty providers of three different levels were interviewed for this study. They were managers and supervisors from national district and Thana level. The second group were health care providers (institution based technical person) working at the Thana, union and ward level. The third category was the field level health and family planning workers.

Director primary health care of the directorate general of health services is responsible for all sorts of health care activities at thana level and director MCH of the directorate of family planning is responsible for MCH services all over the country. Interviews were taken with those two key managers to understand their views about the MCH services at the PHC level. The Civil Surgeon (CS) and Deputy Director of Family Planning (DDFP) are responsible for supervision, monitoring and evaluation of the MCH services at the district level and below. Their role is vital in implementing MCH programmes at the Thana level. Considering them as key persons for this study, interviews these two district level managers were taken to understand their views about the MCH services. At the thana level two key managers were interviewed.

Those were Thana Health and Family Welfare Officer (TH&FPO) and Thana Family Planning Officer (TFPO). The one Medical officer responsible for maternal and child health care usually called MO (MCH) was interviewed. He is actually responsible for supervision, monitoring and organising all sorts of MCH programmes at the thana level. He belongs to the personnel of the family planning directorate of the ministry of health and family welfare. Finally one Nursing supervisor was interviewed, as she is responsible for the supervision of all nursing staff of the thana health complex.

Out of eight medical doctors working at the thana health complex, seven were selected for interview. One dental surgeon was excluded, as he was not directly involved in providing MCH services.

There are seven sub-assistant community medical officers (SACMO) and one medical assistant (MA) working at the FWC level. Four were selected for this study.

Ten family welfare visitors (FWV) were working at the FWCs and Thana health complex, of whom six were selected for interview, two from the thana health complex and four from the FWC's.

Nine family welfare assistants (FWA) and nine-health assistants (HA) were selected from the nine unions of the thana in order to cover the whole thana. One FWA and one HA from each union. One Health Inspector (HI) and one Family Planning Inspector (FPI) were also interviewed, as they are the direct supervisors of the field level health and family planning workers.

This sample was chosen to cover all categories of providers and those involved in supervising, monitoring, evaluating and implementing MCH care programmes at the primary health care level.

Table 3.2 Shows the types and number of health care provider/supervisor interviewed.

Level	Types of provider	No of provider Interviewed
National	Director primary health care	1
	Director maternal and child health care	1
District	Civil surgeon	1
	Deputy director of Family planning	1
Thana	Graduate doctor	7
	Nurse	1
Union	MA (medical assistant)	1
	SACMO (sub-assistant community medical officer)	3
	FWV(family welfare visitor	6
Community	HA (health assistant)	9
	FWA (family welfare assistant)	9
TOTAL		40

3.7.2 Problem faced during interview with providers

The main problem was to make the provider understand that this was not an official enquiry against them. There was no major problem to find the THC doctors for interview, as all were available within the Thana Health Complex. They were open in explaining their personal dissatisfactions and problems relating to service delivery. The main problems were in interviewing the union and community level health care providers. We had to make several visits to union level facilities to find them. The community level providers were interviewed at their home at night. Though it was difficult to visit all the provider's houses in different locations, it was also advantageous to talk with them freely and frankly in an informal situation.

3.7.3 Informal discussion

Apart from in-depth interviews informal discussions were held with the providers to gain more insight in to information from the service providers. It gave us an opportunity to develop an informal relationship with the service providers. Various important items of service related information: for example job satisfaction, dissatisfaction, working environment, interpersonal relationships among the service providers, private practice, availability of supplies, its overall effects on the public services were collected through informal discussion, which was not possible to collect during in-depth interviews.

3.7.4 Quality control of the interviews

To ensure the quality of the interview three different techniques were used, all interviews were recorded on a quality tape recorder, two-research assistants were engaged to write all the main points during interview and video recording was done to observe the body language of the interviewees.

3.8 Facility based study

The main objectives of the facility-based study were to identify the provider related factors affecting utilisation of maternal and child health services at the primary health care level in general and to examine the quality of the service providers and the services provided by them and the attitude of the provider towards the users and job performance.

3.8.1 Study setting: Facility based-study

This study was conducted among the public health sector facilities of the study thana at Keshabpur. Health care facilities of the private and non-governmental organisation were not considered because the main concern of this study was to find out the deterrent factors of utilisation of the public sector facilities. Moreover at the primary health care level, private and NGOs health care providers have very limited institutional facilities.

3.8.2 Sample design for facility based observation

There are three categories of the 226 health and family-planning facilities included in the study as noted earlier. Out of these health care facilities, one thana health complex was selected for this study as it was the only hospital (31 bedded) at the thana level. Nine family welfare centres and twelve village health care posts from all over the thana were also observed.

The following three methods were used in collecting information during facility based study.

- Participant observation
- Document analysis
- Informal discussion

3.8.3 Participant observation

Participant observation is to some degree an essential element of all qualitative studies. Observation entails the systematic noting and recording of events, behaviours, and artefacts (objects) in the social setting chosen for study (Marshall 1995). For all qualitative studies it is the most basic method for collecting data. Social science research is rooted in observation. The main advantage of observation is its directness; which helps to study behaviour as it occurs (Nachmias 1994).

This method was followed to observe the overall environment of the setting, providers' behaviour towards the patients, their interaction with the users, examining procedures, prescribing, privacy maintained, dispensing of drugs etc. An observation checklist was prepared to record systematically each event. Observation was done in the MCH ward, maternal health clinic, child health clinic and administrative offices of the thana health complex, family welfare centres and village health care post where MCH services were being provided. That provided an opportunity to understand the programme setting, overall environment of the facilities and to observe the study variables as they occur in the natural setting.

3.8.4 Items of observation

The observation study was done at the service facility level to identify the service related factors that are responsible for low utilisation of maternal and child health care services. Observation concentrated on the quality aspects of health services, such as the physical quality aspects of the services, waiting place, toilet, water supply and separate patient examination room. The quality of the services was also assessed in terms of availability of drugs, equipment, professional skills, and privacy in treatment, behaviour of the personnel, consultation time and waiting time for consultation. Moreover the knowledge and attitude of the health care providers towards the services as well as users was examined. An attempt was made to identify the factors which have the most significant effect on utilisation of maternal and child health services

3.8.5 Document analysis

It is an indirect unobtrusive, non-reactive method (Robson 1993) providing triangulation of data obtained from the more subjective interviewing technique. This technique was used to collect information about the background performance of the

health care providers, provision of resources such as financial, manpower, drugs and equipment and others relevant information for this study, utilisation of those resources and the services provided in certain period. The documents included policy documents, circulars of the government, patient registers, stock and supply registers, equipment, published and unpublished papers, evaluation reports, policy directives of the Ministry of Health and Family Welfare, DGHS, DGFP, financial expenditure records, inspection books, attendants registers, delivery records and patients admission records.

3.9 Methods of data analysis

3.9.1 Quantitative data processing

The quantitative data collected through the household survey, were processed using SOSDATA program, a data entry and management system packages. There is a mechanism to guard against erroneous entry of data into the computer. It produces the ASCII data file, which was verified by double entry procedure in the application package. The program automatically stops during the second entry, if there were discrepancies in inputting data for the same case between the two entries, thus pointing out to the data entry person that he punched wrong keys during either the first entry or second entry.

After completion of the data entry, the ASCII file was checked for duplicate records in the file. This was necessary to ensure that the data file contained the exact number of records as in the sample methodology. Range checks and inconsistency checks were done to make the data file error free. SOSDATA and FORTRAN programs have used for this job. The data file was then organised into the following four files to analyse the data in SPSS and STATA computer statistical packages.

1. Individual level data file for household members
2. Household level data file for pre-coded questions of the main questionnaire
3. Child level data file for immunisation and diarrhoea
4. Household level data file for open-ended questions

A codebook was developed for using the data files indicating the variable name, label, description of code values and column locations. Using these code instructions SPSS programs were written to convert the ASCII data into SPSS system files. And finally

using the SPSS and STATA programs the necessary output tables were prepared for the report.

3.9.2 Categorisation of responses to open-ended questions

A large number of open-ended questions were asked in the household survey. Responses to an open-ended question were recorded 'verbatim'. Therefore, categorisations of these responses were necessary in order to analyse and present them meaningfully.

Studying all the responses in the survey allowed categorisation of responses to open-ended questions. First all responses for a question were transferred to the working sheets to identify and separate out all possible answers. Then all similar answers were combined together under a common category and frequencies of individual categories were studied to know the importance. After all these jobs final codes were assigned against the categories for computerisation of data. Responses to the open-ended questions in every questionnaire were categorised and coded by following the coding scheme.

3.9.3 Methods of statistical analysis

The quantitative data have been analysed by using various statistical methods, namely, descriptive, bivariate, simple and multiple logistic regression analysis. The objectives of these analyses were to understand the distribution pattern of the survey data in general; identify the relationship between the dependent and independent variables (see 4.1.5 and 4.1.7 respectively) and finally to estimate the overall effects of independent variables on the use of MCH services. The statistical techniques used assumed that all responses are independent, and do not allow for the fact that the responses from mothers in the same village may be positively correlated with each other. Chi squared tests were used to examine the statistical significance of association between dependent and independent variables.

(i) Descriptive analysis

As a first step a descriptive analysis of the quantitative data has been done. This analysis paints a picture of the quantitative data. It examines the variability of data, describes the sample and provides statistical assumptions for further complex

analysis. It also provides a description of the characteristics of the study population including their socio-economic condition, the morbidity and mortality pattern of the study area, health seeking behaviour and types of health service facility they use during sickness in general and specifically at the time of MCH care need. All this information was found to be important and provides a good basis for further statistical analysis.

(ii) Bivariate analysis

The descriptive analyses do not provide explanation of the cross variations of use of services among the study population. To gain an understanding of the cross variation and associations between dependent and independent variables, bivariate analysis has been performed. Five independent variables; socio-economic condition of the study population, family income, occupation of the respondent's husband and family education were selected for this analysis. Four maternal health services; TT vaccination during pregnancy, antenatal care, child delivery and postnatal care and three child health services, immunisation, diarrhoea, and acute respiratory infection were selected as dependent variables. Bivariate analyses were performed using dependent and independent variables. Chi squared tests were used to examine the statistical significance of association between dependent and independent variables.

3.9.4 Multivariate analysis: Logistic regression model

The bivariate analysis provided the individual association between the two variables. It is often found that the relationships between the two variables are not always one to one. There might be several confounding factors that have an effect on a dependent variable. In order to gain greater understanding of the data, and to explore that association further analysis adjusted for those confounding factors were needed and logistic regression analyses has been performed. Results are discussed by looking at the odds ratio which is the exponent of the coefficient of the regression estimates and takes a value between zero and infinity. Results are compared to the reference group, which always has an odds ratio of one. An odds ratio greater than the reference category implies a higher probability while an odds ratio less than the reference group implies a lower probability than that of the reference category. For the purpose of this analyses all the dependent variables (Y) are coded as binary variables in the following ways:

Y=1 If the respondent uses public health care facilities for MCH services

Y=0 If the respondent uses other than public health care facilities

Y=1 Yes if the respondent received any type of maternal and child health care

Y=0 No if the respondent did not receive any types of maternal child health care

Mentioned should be made that all three government's facilities (THC FWC and VHCP) have been merged into one category 'public health care facility' due to the fact that there were not enough data to estimate the required number of parameters needed for multiple regression.

Dependent variables (Y)

In this analysis use of MCH services such as TT vaccination during pregnancy, place of TT vaccine, received antenatal care, place of antenatal care, number of antenatal care visit, place of child delivery, types of person attending the delivery, received postnatal care, place of post natal care, place of treatment for most recent sickness, are considered as dependent variables.

Independent variables (X)

Socio-economic condition, family education, family income, occupation of the respondent's husband and age of the respondents are considered as independent variables

(X). All the independent variables are grouped into three categories as follows;

X1= Socio-economic condition of the people (1=low, 2=medium, 3=high)

X2=Family education (1=no education, 2=up to primary level education, 3=above primary education)

X3=Age of the respondent (1=up to 20 years, 2=21-30 years, 3=31-49 years)

X4= Family income of the respondent (1=low, 2=medium, 3=high)

X5=Occupation of the respondents husband. (1=Day-labour, 2=service/business, 3=agriculture)

Three logistic regression analyses were performed to examine the unadjusted and adjusted effects of the above selected independent variables on the utilisation of MCH services in rural Bangladesh. Regression models are as follows:

Three different logistic regression models were tested in this analyses

1. Model 1. Logistic regression performed with single independent variables to see the unadjusted odds ratio.

(Equation for Model 1) $Y = f$ (Socio-economic condition (x1), or family education (x2) or the age of the respondent x3 or family income (x4) or husbands occupation (x5).

2. Model 2, Socio-economic condition, family education, and age of the respondent are uses as independent variables.

(Equation for model 2) $Y = f$ (Socio-economic condition (x1), family education (x2), and the age of the respondent (x3))

3. Model 3, family income, occupation, education, and age of the respondent are used in the analysis

(Equation for model 3) $Y = f$ (Family education (x2), age of the respondent (x3) family income (x4), husbands occupation (x5))

The above three logistic regressions were performed using STATA and backward step technique was used to fit the model. Results are presented in terms of odds ratios with significance level and confidence interval. The Logistic: likelihood–ratio test performed to see the chi square and P values.

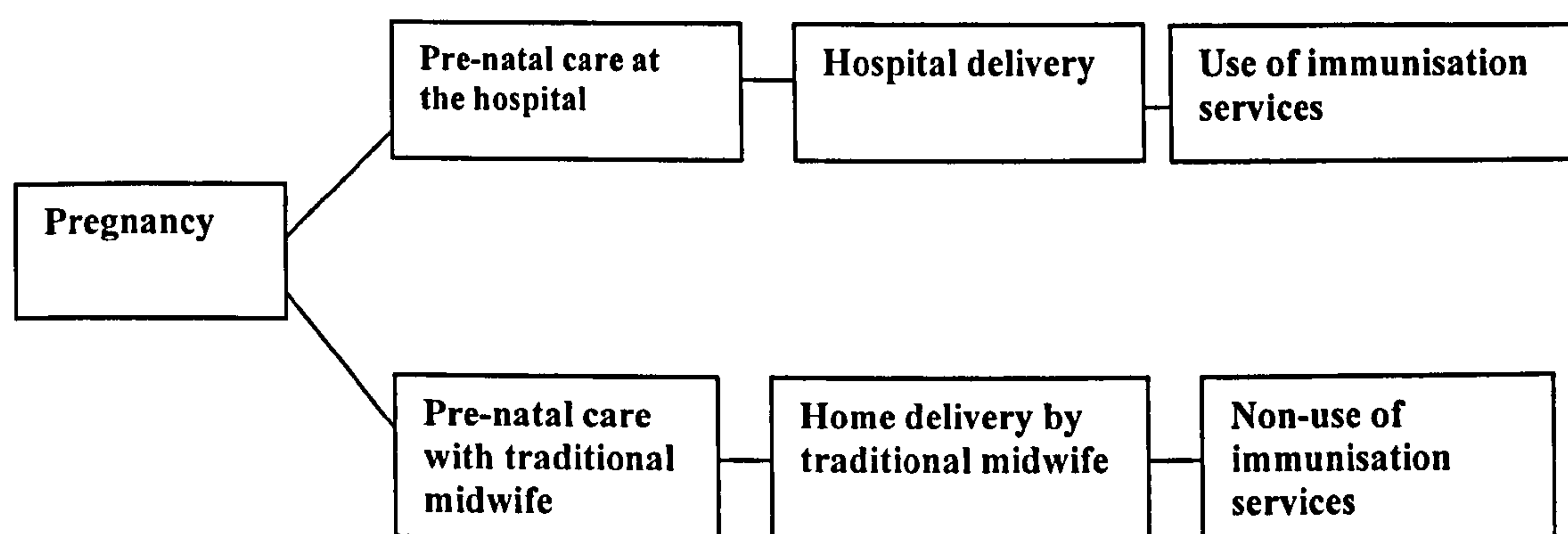
3.9.5 Qualitative data management

A step by step procedure was followed for qualitative data analysis. That included writing systematic field notes diary from the very beginning of the study. Every day field notes were written in a systematic way. That included where I met the people, the main issues I discussed, identification of issues for the next interview and finally types of specific data I collected. I recorded a whole picture of the setting and conversation with the interviewee and experience. Three files were maintained during field study. Those were fieldwork files, which contain the materials and the procedure I followed during interviews. Background files that I maintained to keep track of respondents, places and facilities I visited, and finally an analytical file where I put my very initial brief analysis, comments and interpretation. Moreover I recorded the main themes, impressions and summary statements of what actually occurred during

interview. Then sorting out all the data to organise and classify them to analyse them according to the objectives set for this study.

In addition to the field notes all the interviews were tape-recorded. The recorded interviews were transcribed in to Bengali and translated in to English language after analysing the relevant part. Causal Networks tools (Miles and Huberman, 1994) is used to investigate the association between the independent variables.

Example: Causal Networks Regarding Immunisation Services (Attig B Y 1989)



3.9.6 Summary

This chapter has described the methods and techniques used for data collection and processing for this study. To collect quantitative and qualitative data and information, an integrated methodological approach was used in this study. The household survey was conducted among 360 sample mothers to gather information on morbidity, mortality, socio-economic, cultural and demographic characteristics of the study population. It also provided information on the use and non-use of the government health facilities for the maternal and child health care. The qualitative methods helped in understanding a number of issues; health seeking decision mechanism, knowledge and attitudes of the rural population on the public sector facilities and the expectation gap between the provider and the population. Eighteen Mothers, 20 community leaders, and 40 health care providers were interviewed. One thana health complex, nine family welfare centre and twelve village health care posts were observed to understand the maternal and child health care delivery system and the actual health care environment at the rural level. The household survey, interviews, informal,

discussion observation and the document analyses were complementary to each other and provided in-depth information that helped in better understanding of the utilisation issue.

The bivariate analyses were performed to examine the association between the dependent and independent variables and multivariate analyses were performed using logistic regression to estimate the adjusted relationship between the variables.

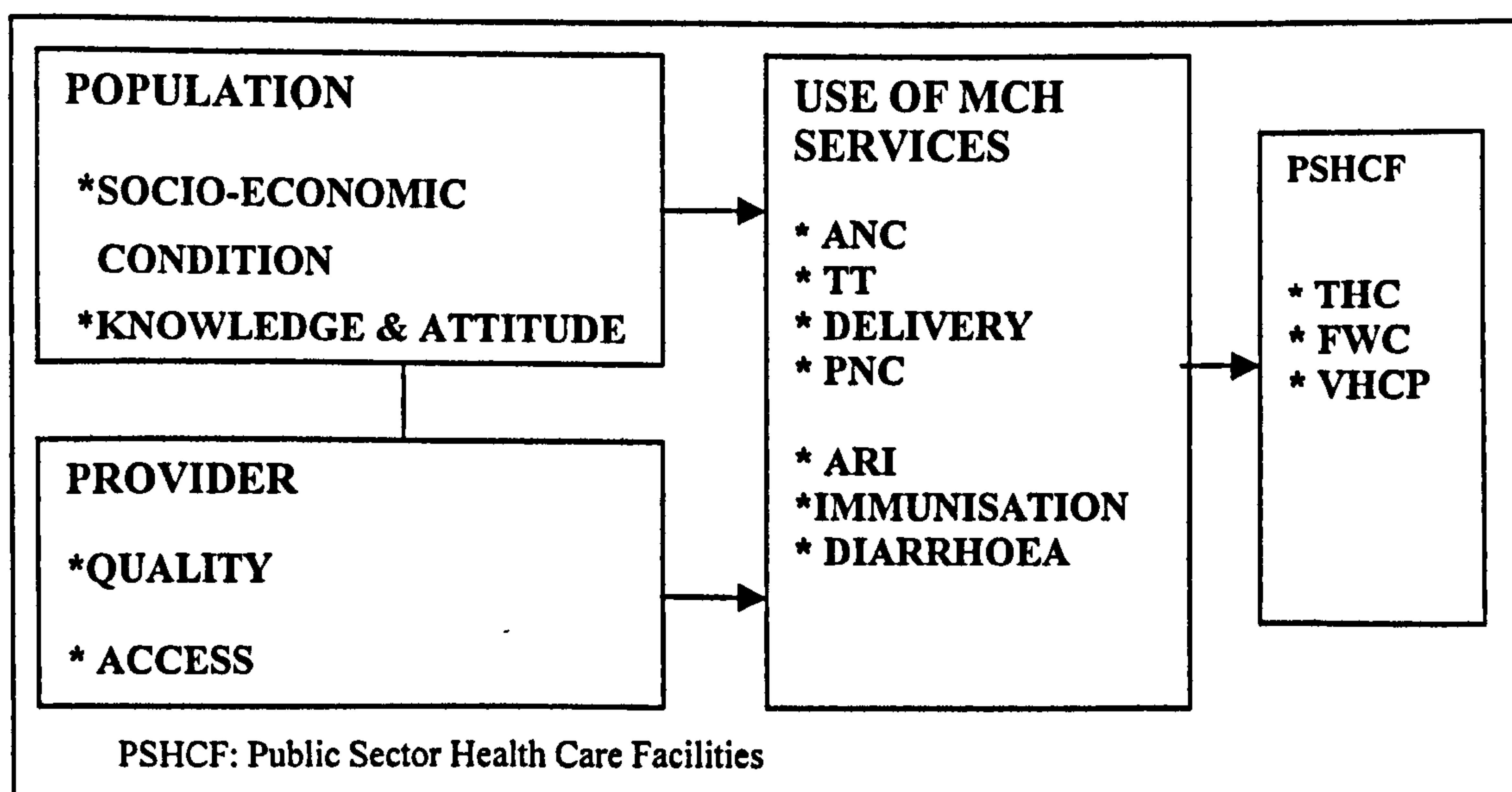
CHAPTER FOUR

POPULATION FACTORS AND UTILISATION OF MCH SERVICES

4.1 Introduction

Health care utilisation is related to the characteristics of the population and health care providers themselves. This study is designed to analyse effects of both population and provider factors on the use of MCH services. In this chapter, the population related factors are analysed within the conceptual framework shown in Figure 4.1.1 below. The population related factors are grouped into two major categories: (1) Socio-economic condition of the population (2) Knowledge and attitude of the population towards MCH services. The main objective of this chapter is to carry out a detailed analysis of the effect of socio-economic condition on the use of MCH services. Results of statistical analyses are presented in two sections in this chapter. Section one presents the univariate analysis and the main findings of bivariate and results of multivariate analyses are presented in section two.

FIG. 4.1.1 CONCEPTUAL FRAMEWORK OF ANALYSIS



The basic findings on morbidity, mortality, health services use pattern, and description of dependent and independent variables used for analyses have been provided in this chapter in section one. The effect of knowledge and attitude of the population on the use of MCH services are discussed in the following chapter (chapter-5). The provider related factors are discussed in chapters 6 and 7.

CHAPTER FOUR SECTION ONE

Description of data and dependent and independent variables

4.1.1 Introduction

Socio-economic condition of the population may be a fundamental determinant of health care utilisation. Various studies have discussed the importance of socio-economic variables on the use of health care services in general in different countries (Leslie and Gupta 1989, Uddin 1995, Chernichovsky 1986, and Cesar 1986). In their studies, socio-economic condition is defined in terms of income, occupation, levels of educational attainment, standard of housing, sanitary facilities, water supply, and type of fuel used for lighting the houses. In the rural areas of Bangladesh income, occupation, education, and house structure and land possession are the main determinants of social status of population.

The main objective of this analysis is to examine the effect of the socio-economic condition of the study population on the use of MCH services provided by the public sector at primary health care level in rural Bangladesh

The combined influence of these variables on the utilisation of MCH services will be analysed along with their individual effects. Socio-economic variables: family income; husband's occupation; and family education are used to analyse their individual effects. In addition a Socio-Economic Index (SEI) is created to estimate the combined effect of the constituent socio-economic variables on the use of MCH services. SEI has been created with six variables. The methodology of constructing the socio-economic index (SEI) is discussed at the end of this section.

A short description of the sample population, morbidity and mortality patterns of the household and their health-seeking practice is provided below. The selective socio-economic and demographic characteristics of the population such as age, sex, education, occupation, family income along with other relevant household characteristics are also described.

A description of dependent and independent variables used in statistical analyses is given in section one, the main results of bivariate and multivariate analyses are

presented in section 2 of this chapter. In addition to that detailed results of those analyses are provided in tables in appendix 10 and 11.

4.1.2. Sample population for the analyses

The sample population consists of mothers and children in households of the study area. One representative mother from each household was selected as a respondent for the household survey. Information on children less than five years of age in the same household was also collected from the mother. The basic characteristics of this population are as follows:

MOTHER

The household survey was conducted among 360 mothers. All respondents were aged between 15-49 years. The household was considered as the unit of analysis. All respondents were included in this sample for analysing the utilisation of four maternal health care services: (i) Tetanus Toxoid received during pregnancy; (ii) antenatal care; (iii) child delivery; and (iv) postnatal care.

CHILD

A total of 418 children under five years of age were found in the 360 households. It was found that seven children were not immunised at all out of 418. Immunisation varies among the children by doses and types of vaccine. Measles vaccination was found to be lower than BCG, DPT, POLIO Vaccine. All children were considered for this analysis.

Table 4.1.1. Immunisation status of children under 5 in the study population

Types of vaccination	Number of children	%
BCG	329	78.7
DPT1	328	78.5
POLIO1	328	78.5
DPT2	313	74.9
POLIO2	312	74.6
DPT3	303	72.5
POLIO3	303	72.5
Measles	241	57.7
Total	418	100%

4.1.3 Morbidity, mortality and health seeking practice

To understand the morbidity and mortality pattern and to know the health-seeking practice, several questions were asked to the sample mothers during the household survey. The questions related to sick persons in the family within the period of no earlier than two weeks and no later than six months before the survey, place of treatment, preference of treatment for family member, time of treatment, and person who chose the provider.

It was found that 93% of families under consideration had at least four sick members within the last six months before the study. However only 2.8% of them were hospitalised. Prevalence of chronic illness was 6.7%, and disability was negligible. It was also found that in the five years preceding the study, 14% of families experienced a death of a family member.

Sixty one per cent of families had at least two sick members within two weeks before the survey and 11% of families had three sick members in that period. Data show that 92% of the sick persons visited a health care provider for treatment. Only nine percent of the total sick persons visited a Government health care facilities (6.7 % visited THC and 2 % visited FWC), while seven percent visited private MBBS doctors (medical graduate). On the other hand 84% of the sick persons visited non-qualified health care provider (Health care provider having no formal training or medical degree, often referred to as palli chikissak, village quacks, homeopaths, kabiraj).

It was found that 63% of families had no preference for health care of any particular family member. However, 21% of families gave priority to the children and 15% to the earning members. Priority for housewives and the old members of family was found to be negligible. Seventy four percent of respondents considered diarrhoea to be the most serious illness, 42% considered fever, 17% cough, 13% vomiting, 8% pneumonia and 18% considered other diseases.

The period of health care seeking was assessed and it was found that sixty seven per cent of the sick persons went to the health care provider immediately, while 32% went after a few days of illness onset and very few (0.3%) respondents waited until it affected their daily work.

Husbands played an important role in choosing the health care provider. It was found that eighty five per cent of sick persons consulted their husbands before going to any health care provider and 82.5% of husbands selected the health care provider as the head of the household. Mothers-in-law also played an important role in seeking medical treatment. Twenty-two per cent of sick person consulted their mothers-in-law and 10% of mothers-in law were involved in selecting the provider.

In reply to the question of the place of treatment during the most recent illnesses, only 6.6% of the sick persons went to a government health facility. Of these 5% went to the THC and 1.6% to the FWC. Most (86.7%) of the sick persons visited the non-qualified health care providers in their locality, and 6.7% visited a medical graduate. The response was similar to the enquiry about the usual place of treatment for minor diseases. It was found that 94% of the respondents preferred to go to a non-qualified health care provider for the treatment of minor illness. Only 3.6% of respondents reported that they preferred to visit the THC (2.2%) and the FWC (1.4%), while 2.2% preferred to visit a qualified medical doctor.

About 36 % of the respondents said that they did not visit the public sector facilities because they are far away from home, 22% reported that the local hospital had no medicine, 23% felt that doctors are not helpful, and about 16% found medicine to be ineffective. Thirty three percent of respondents reported that the provider wanted money, while 3.2% reported that the provider was absent from duty.

Tables in pages 83 and 91 show the place from where people received different types of maternal and child health care.

Tables. Place of treatment and types of health care sought for children. Total N=418

Knowledge of mother about child immunisation

Knowledge	Frequency	Percent
Yes	297	82.5
No	63	17.5
Total N	360	100

Place of Immunisation

Place	Frequency	Percent
THC	14	4.3
FWC	10	3.0
VHCP	294	89.4
Other	11	3.3
Total N	329	100

Place of diarrhoea treatment

Place	Frequency	Percent
THC	2	9.5
MBBS	1	4.8
Non MBBS	17	80.9
Health worker	1	4.8
Total	21	100

Place of ARI treatment

Place	Frequency	Percent
THC	2	6.5
FWC	1	3.2
MBBS	2	6.5
Non MBBS	21	67.7
Others		16.1
Total	31	100

DEPENDENT AND INDEPENDENT VARIABLES USED FOR ANALYSES

4.1.4 Introduction

This section provides a description of the dependent and the independent variables that are used for the analyses in this study. The descriptive univariate analyses of these variables are also presented here based on the finding from the household survey. The results of detailed statistical analyses are presented in the following sections.

4.1.5 Dependent variables

Utilisation of four maternal health care services and three child health care services are selected as dependent variables. The maternal services include TT vaccination during pregnancy, antenatal care, child delivery and postnatal care. The child health care services are immunisation of the child, treatment of diarrhoea, and acute respiratory infection.

A. Maternal Health Care Services

TT vaccination

Tetanus Toxoid (TT) injections are essential for women during pregnancy for prevention of tetanus among new-borns. Two doses of TT are recommended to every pregnant woman if the woman had not received a vaccine during her last pregnancy. In the latter cases a woman may need one booster dose during a subsequent pregnancy and a five-dose schedule is considered to provide lifetime protection (Mitra et al 1997). Government health care facilities 'THC, FWC, VHCP' are the main sources of TT vaccine in the rural areas of Bangladesh.

An attempt was made to assess the respondent's knowledge of the precautionary measures needed for themselves and for their child during pregnancy. It was found that 87% of respondents had knowledge about some kind of preventive measures that are required during pregnancy. Among the precautionary measures, about 59% of respondent mentioned TT vaccination. The respondent mother was asked whether she had received TT vaccine during her last pregnancy, doses of TT she received and the place from where she received it. The findings suggest that 95% of respondents took

TT vaccine during their last pregnancy and the majority of them (93%) took vaccines from government facilities (81% from village health care post (VHCP), 9.7% and 2.6% from THC and FWC respectively). The majority of respondent (74%) received two doses of TT vaccine and 98.2% of respondents received the vaccine from health and family planning workers at the community level. (59.8% by HA and 38.4% by FWV).

Antenatal Care

Antenatal care (ANC) is important to both the mother and child. Historically antenatal care began as a social service in Paris in 1788 in two shelter homes for abandoned women (Rashid 1992). While the first programmes for antenatal care were designed in Europe in the first decade of the century, the main target group was women in socially difficult living condition and had a definite objective of improving maternal and perinatal outcome for the least privileged groups (Lindmark et. al. 1998). Gradually its importance was recognised all over the world. The number and timing of ANC visits are considered to be important in preventing adverse outcome of pregnancy. Inadequate antenatal care sometimes may create more problems, as noted by Fathalla (1998), “deficient antenatal care can sometimes do more harm than good if it gives the women a false sense of assurance”. Care is most effective if the visits are started early during pregnancy and continues at regular intervals throughout the pregnancy (BDHS 1997). The number of ANC visits varies in different countries and settings. According to western schedules for ANC, a pregnant woman needs to make 15 to 16 ANC visits. This is comprised of one visit per month until 28 weeks of gestational age, one visit every two weeks between 28 and 36 weeks, and one visit per week between 36 weeks and the delivery (Piaggio et. al 1998). The US Public Health Service Guidelines recommends that the minimum number of ANC visits should be six (Nylander 1990). The World Health Organization recommended that women should have at least four visits, more if so advised by the health care provider or if they have any problems or questions (WHO 1994). In Bangladesh, no such standard has yet been fixed. Rashid et al (1992) in a guideline for health worker recommended fourteen visits as an ideal, five visits as moderate and three ANC visits as a minimum for areas where travel between village homes and health facilities is difficult, provided the pregnancy continues normally. A minimum of three ANC visits is considered as a standard for this study.

To examine the antenatal care situation among the sample population, the mothers were asked whether they had received antenatal care during their last pregnancy, the place where antenatal care was sought, number of antenatal visits made and type of ANC services received. Ninety four percent of respondents were found to have consulted with some kind of health care provider. Eighty percent of them had consulted with a health worker such as a Health Assistant at the VHCP level, who are male. Three percent of respondent consulted a Family Welfare Visitor working at the union level and about 10% visited THC and 7% of mothers visited other health care providers.

Six percent of respondents consulted with a qualified MBBS doctor working at the Thana health complex. The village health care post (VHCP) is the main place from where most of the mothers had received their antenatal care, though the VHCP has limited antenatal care facilities. It mainly provides TT vaccines and counselling to pregnant women in some cases. It was found that the percentages of respondents who had received TT vaccine and antenatal care from the VHCP were almost the same (81% and 80% respectively). ANC was mainly confined to two visits to receive TT vaccination (74%). It was found that 58% of the mothers consulted with a health care provider twice and 23% of the mothers made three antenatal care visits. There were few women who did not consult with any health care provider. Some of them did not accept the vaccine due to fear of injection and a section of the respondents did not have any idea about the usefulness of TT vaccine. Cultural barriers also prevented some of them for going for antenatal care as they reported that “husband/mother in law objects to take injection”. They also disclosed that they do not like to meet non-family members during pregnancy, and some of them left it to God. The health workers’ role in sending them to the health care facilities was found to be important. The data show that the health worker advised 56% of respondents.

Child delivery

The place of child delivery and the person attending the delivery are important in reducing health risks for both mother and child. The institutional (Hospital) delivery under the supervision of qualified medical professionals may reduce the risk of infections and may help to manage complications that may otherwise lead to death or

serious illness of the mother and neonate. These two issues were investigated. The Thana health complex is the only government institution at the PHC level where complicated delivery can be managed. FWC has no facility to attend any high-risk delivery. It was found that the institutional child delivery rate was negligible. Only 2.8% of deliveries were conducted at the THC and that was mainly due to certain complications. Ninety five percent of deliveries were done at home and about 99% of those deliveries were normal. Only 3 out of 360 respondents had Caesarean delivery.

In the case of the person attending the delivery, data show that the Traditional Birth Attendants (TBA) conducted 86.4% of deliveries. It is important to note that the role of FWVs in child delivery was found to be insignificant (1.1%), though they were the main maternal health care providers at the primary health care level in the public sector.

It was revealed that about 68% of respondents did not go to the hospital, as the situation was normal. Financial problems prevented 15.4%. About three per cent (2.6%) of respondents reported that doctors/ nurses misbehave with patient in the hospital. Objection from a family member was reported by some of the respondent as a reason for not visiting the hospital.

Post natal care

Postnatal care does not seem to be important to the respondents unless they had faced any complications after delivery. Thirty one percent of respondents visited a health care provider for postnatal care. Of these 12.5% of mothers went to a private medical graduate doctor and another 8% visited the THC. They mainly seek health care for their new-born of which 18.8% had ARI, 6.3% had diarrhoea and 13.4 had fever. Seventy seven percent of respondents went to the local non qualified health care providers, 9 % of respondents visited public sector health care facilities (8% in the THC and 0.9% in the FWC for postnatal care).

4.1.5 Summary

The majority of mothers are aware of the need for TT vaccine and most of them took two doses of TT vaccines during pregnancy from government facilities, particularly

from VHCP, the main source of TT in rural areas. Most of the mothers made up to two antenatal care visits that are consistent with two doses of TT vaccines. Less than one third of mothers made three antenatal care visits to any health care provider during pregnancy. This finding is similar to the nation-wide demographic and health survey of Bangladesh (BDHS 1997). Non-qualified health care providers are the main types of providers of antenatal care.

Almost all the deliveries were performed at home and the Traditional Birth Attendants (TBAs) conducted deliveries. Most of the deliveries were found to be normal. Few institutional deliveries were performed in government hospitals (THC). None of the respondents used FWC for delivery. These findings are consistent with the nation-wide demographic and health survey (BDHS 1997).

Less than one third of the sample mothers was found to have visited a health care provider for postnatal care. Use of public sector health care facilities for maternal health care was found to be low except for TT vaccination.

B. Child Health Care

Immunisation

Child immunisation is one of the main programmes that the government of Bangladesh is implementing throughout the country to prevent children from contracting the six main childhood diseases. Government facilities, particularly VHCPs, are the main sources of immunisation. THC and FWC also provide this service in a limited scale.

In this research, one of the objectives was to assess knowledge about immunisation. In doing so, it was found that 82.5 % of respondents had knowledge about immunisation and its importance. Of these, 98.3 % had their children immunised before the age of five. Most of them were informed about immunisation by the health workers (HA and FWA). Seventy nine percent of the mothers were able to show the TT vaccination card during the household survey while the remaining mothers could not, though they confirmed about vaccination of their children. The data show that

89.4% of the children were immunised from the VHCP, 4.3% took vaccines from the THC and 3% from the FWCs, and 3.3% from other sources

Treatment of Diarrhoea

Diarrhoeal diseases are major causes of mortality and morbidity for the children under five years of age. Thirty percent of the total deaths among children under five are attributed to diarrhoeal diseases. In Bangladesh, each child on average suffers from at least four diarrhoeal episodes each year (DGHS 1990). In this research, the incidence of diarrhoea among children under five years of age, place and types of treatment received were investigated. Incidence of diarrhoea was found to be very low among the sample population in the two weeks prior to survey. Among 418 children only 21 cases (5%) were reported during that time (lower than the national statistics of 7.5% (BDHS 1997). Out of 21 cases 81% (17) sought treatment from a non-qualified health care providers, 9.5% and 4.8 % went to the THC and private MBBS doctor respectively. None of them visited FWC or VHCP for treatment of diarrhoea.

Treatment of ARI

Acute respiratory infection (ARI) is another major disease that contributed to high child morbidity and mortality in Bangladesh. Twenty three per cent of infant deaths and 25 per cent of deaths among children age 1-4 years were attributable to ARI (Baqui et al. 1997). The health facility survey of Bangladesh also reported that about 18-25% of total annual childhood mortality is due to ARI (Health Facility survey 1997).

The incidence of acute respiratory infection among children under five years of age was found to be 8.4% (35 out of total 418 children), which was lower than the national statistics of 13% (Mitra et al 1997). Eighty nine percent of the infected children visited a health care provider for treatment. Of these, 84% received treatment from non-qualified health care providers, 6.5% visited the THC, 6.5% visited a MBBS doctor and only one child went to the FWC for treatment. None of the infected children visited VHCP for this purpose. Twenty nine percent of children seek treatment on the same day, 45% after one day and 26% after two days or more.

4.1.6 Summary

The overall child immunisation coverage was found to be high except for measles vaccination. The majority of the children received vaccines from government health care facilities particularly from VHCP. The same trend was found in the case of TT vaccination of women. The majority of respondents had knowledge about benefit of immunisation.

The incidence of diarrhoea and acute respiratory infections among children under five years of age was low compared to the national statistics. The use of government health care facilities for child health care was found to be low except for immunisation.

Tables. Place of treatment and types of health care sought for children. Total N=418

Knowledge of mother about child immunisation

Knowledge	Frequency	Percent
Yes	297	82.5
No	63	17.5
Total N	360	100

Place of Immunisation

Place	Frequency	Percent
THC	14	4.3
FWC	10	3.0
VHCP	294	89.4
Other	11	3.3
Total N	329	100

Place of diarrhoea treatment

Place	Frequency	Percent
THC	2	9.5
MBBS	1	4.8
Non MBBS	17	80.9
Health worker	1	4.8
Total	21	100

Place of ARI treatment

Place	Frequency	Percent
THC	2	6.5
FWC	1	3.2
MBBS	2	6.5
Non MBBS	21	67.7
Others		16.1
Total	31	100

4.1.7 Independent variables

Introduction

This section provides a description of the independent variables that are considered to be the factors affecting the utilisation of MCH services in rural Bangladesh. Independent variables are grouped into two major categories. (i) Population related and (ii) Provider related as shown in the conceptual framework in Figure 4.1.1. The population related factors are again grouped into two major categories; socio-economic variables and knowledge and attitudes variables. Three socio-economic variables were selected for this analysis to look at their individual effects on the use of MCH services. They are **family income** of respondents, **occupation** of respondent's husband, **family education**. In addition to that, a socio-economic index (SEI) variable is created to analyse their collective effect on the use of MCH services. Six socio-economic variables have been used to create the index. Variables are (i) **family income** (ii) **occupation of the respondent's husband** (iii) **possession of agricultural land** (iv) **possession of homestead land** by the family (v) **household conditions** and (vi) **size of the family** based on the number of household member. The methodology of creating the socio-economic index is described later in this section. Short descriptions of the socio-economic variables are also presented in the following sections.

To examine the knowledge about the health care facilities, three aspects of knowledge were selected. They are (i) knowledge about the **physical location** of the public sector health care facilities; (ii) **availability** of MCH services in those health facilities; and (iii) **service provision time** of the facilities.

Five aspects were considered to measure people's attitudes towards MCH service. They were; (i) attitudes of people towards the overall quality of MCH services; (ii) availability and quality of drugs; (iii) quality of provider in terms of professional skill; (iv) behaviour of provider; (v) private practice of public sector health care provider. Knowledge and attitude of people are analysed in detail in chapter 5.

Provider related independent variables are grouped into two main categories. They are (i) quality of service (ii) access to the service facility. Detailed analyses of these two aspects are presented separately in chapters six and seven respectively.

4.1.8 Description of the socio-economic variables

Family income

Income is one of the most important economic indicators to classify people, but it is difficult to get actual and reliable information from a traditional society where agriculture and manual labour are the main sources of income. Due to lack of accurate information on production of agricultural goods, it is difficult to estimate the value of the agricultural product in monetary terms. On the other hand, correct information on the days worked by a manual worker is also not readily available. So, the income information that was disclosed by the respondents during the household survey was used in this study. It was found that 56.5% of the study population had income less than 2000 taka per month (1£=Taka 77). Thirty percent of the families had income in the range of Taka 2000-3999 per month. Fourteen percent of the families had a monthly income of Taka 4000 or more. It was observed that the income of day labourer was higher than that of people who possessed small amounts of land. A similar finding was also documented in a country wide household expenditure survey (BBS, 1998). The BBS household expenditure survey found that in the landless group the average income per household is Taka 2325, which is higher than that (Taka 2055) of the people having land 0.01-0.04 acre (1 acre=100 decimal of land). The reason might be the higher income opportunity of the landless people in non-farming activities. The average income of the study population was found to be Taka 2477.36 per month, which is less than the average income of rural population estimated in 1995-96 through the household expenditure survey (Taka 3658). This amount is around 46 percent of the urban household income (BBS 1998). The main sources of income of the study population are wages and day labouring (39.5%), agriculture (49%), and business (27%).

Occupation

Occupation is an important indicator to determine social status in Bangladesh. It is more clearly seen in rural areas. Occupation divides the rural population into two

main groups; cultivators and landless day labourers. In rural areas, agriculture and professional wages and salaries (63.1 percent) are the main sources of income (BBS, 1998). A similar picture was found in the study area, where 38.3% of the respondents' husbands were day labourers and this along with cultivation of land (30.6 percent) are the two main occupations that together represents about 69% of the peoples' occupations. Husband's occupation is considered in the analysis as all respondents are housewives and they are not involved in any paid job.

House conditions including sanitary facilities

Regarding household condition, it is observed that most of the families in the study area lived in the Kutcha¹ and semi-pucca² houses. About 85 percent of the roofs were made with tally and 71% walls are made with mud, and 93% floor constructed with mud. Demographic and health survey also showed that 93% of the roofs of were made with thatch and tin and 75 % of walls were made with jute/bamboo/mud (BDHS 1997). About 53% of families in the study area had no constructed latrine. Fifteen percent of the families had kutcha latrine. Fourteen percent of the households had electricity that was similar to the national figure of 15.1%.

Agricultural and Homestead land

Data on agricultural and homestead land possession show that around 36% of households are landless, 14% of households possess less than 33 decimal land (100 decimals =1 acre), 10 % of them have up to 65 decimals and 39% household have 66 decimals or above. The households are mainly divided into two major groups; the landless and those having 66 decimals of land or more.

In the case of homestead land 8% of the households have no homestead land, 58% of households possess 5-14 decimals and 33% of the households have 15 decimal of land or above.

-
1. Kutcha house: House roof made of tally/thatch, wall and floor made of mud or wood. No concrete materials used for any purpose.
 2. Semi-pucca house: House roof is made of tally /thatch, wall or floor is made of concrete materials.

Size of family and bedrooms

The average family size in rural areas is 5.25 persons (BBS 1998). The demographic and health survey (BDHS 1997) reported 5.3 persons. In the study area, it was found that 89% of the families are single in nature (family composed of husband, wife and their children) and the average family size was 5.14 persons. Fifty eight percent of the households have only one bedroom, 34% have two bedrooms and only 8% of the family have 3 or more bedrooms.

Age of the respondent

Age of the respondent is considered as an important determinant factor for use of health services. For instance, a study in the Philippines found that the older women use formal maternal health services less frequently than the younger women (Wong et. al 1987). The MCH evaluation study in Bangladesh noted that younger women have a higher propensity to use MCH services than older women (Ahmed et. al. 1994). The Bangladesh demographic and Health survey also reports that antenatal care is uncommon for birth to older women in rural areas (BDHS 1997). So it is likely that the age of the respondent will have an influence on the use of MCH services in the study area as well. It was found that 40% of respondent mothers were between 15 and 20 years of age. The majority of mothers were aged between 21 and 30 years.

Family education

Education is a key determinant of the livelihood and social status, an individual enjoys in a society. It affects all aspects of human life, including demographic and health behaviour (BDHS 1997). It was found that the education level of the respondents' husbands is lower than the average education level of men in rural Bangladesh. Fifty percent of respondents' husbands had no education while 45% of the rural male population have no education in the country. The education level of the respondents was a little higher than the overall education level of rural women aged 15-49 years. Fifty three percent of respondents had no education compared to 57% of rural women in Bangladesh (BDHS 1997). Family education is defined as the education level of the respondent and her husband for this analysis. As it was found that they are the main health care decision-maker in the family.

The above findings show that the socio-economic and other characteristics of the study population are similar to the characteristics of rural population of Bangladesh, as depicted in Table 4.1.2 below.

Table 4.1.2. A comparative socio-economic and household characteristics of rural population and the study population

Indicators /Characteristics	Rural population	Study population
Family income *	Average Taka 3658 per month	Average Taka 2477 per month
Occupation of men **	(%)	(%)
Agriculture	35.40	30.60
Day labour	27.70	38.30
others	36.90	31.10
Education of women (15-49 Y)		
No education	53.69	52.8
Up to primary education	25.95	27.00
Above primary education	19.30	20.20
Family education		
Both husband and wife not educated	32.40	37.50
Both husband and wife educated	36.02	35.00
Possession of agriculture land		
No agriculture land	41.00	36.00
Sanitary facilities		
No built-in latrine	34.34	52.80
Kutchha latrine	48.4	35.6
Pucca latrine	17.11	11.6
House condition		
Roof materials		
Thatch/tally/babboo/tin	91.00	97.50
Wall materials		
Thatch/mud/tin/wood/bamboo	93.30	76.00
Floor material		
Mud/ bamboo/wood	95.30	93.00
concrete	4.70	7.00
Mean size of family (Member)	5.3	5.14

Sources: *BBS 1998, **BDHS 1997

The households of the above socio-economic characteristics are categorised into three socio-economic groups: low; medium; and high for the analysis and grouped in SEI. The survey population was found to be representative of the rural population of Bangladesh in terms of their socio-economic characteristics. This grouping has been done to estimate the collective effects of socio-economic condition on the use of

MCH care services in rural areas of Bangladesh. The construction procedures of SEI are detailed below.

4.1.9 Construction of socio-economic index (SEI)

The socio-economic index (SEI) variable is constructed with six related variables: family income, occupation of the respondent's husband, agriculture and homestead land possession, house condition, and family size of the respondents. Six variables were used to create socio-economic condition index for two reasons. First, it is difficult to classify the population into groups according to their social status by looking at a single variable like income or occupation. As it was found both in this study and in national household expenditure survey (BBS, 1998) that in rural areas income of a day labour is more than a marginal farmer. Their income comes mostly from daily-wages or agriculture. So to understand the social status of the study population, it is essential to understand other conditions like house condition, sanitary arrangement, family size in terms of family members, quantity of agriculture land, and homestead land they possess. The second reason was to estimate the collective effects of the socio-economic variables on the use of public sector health care facilities.

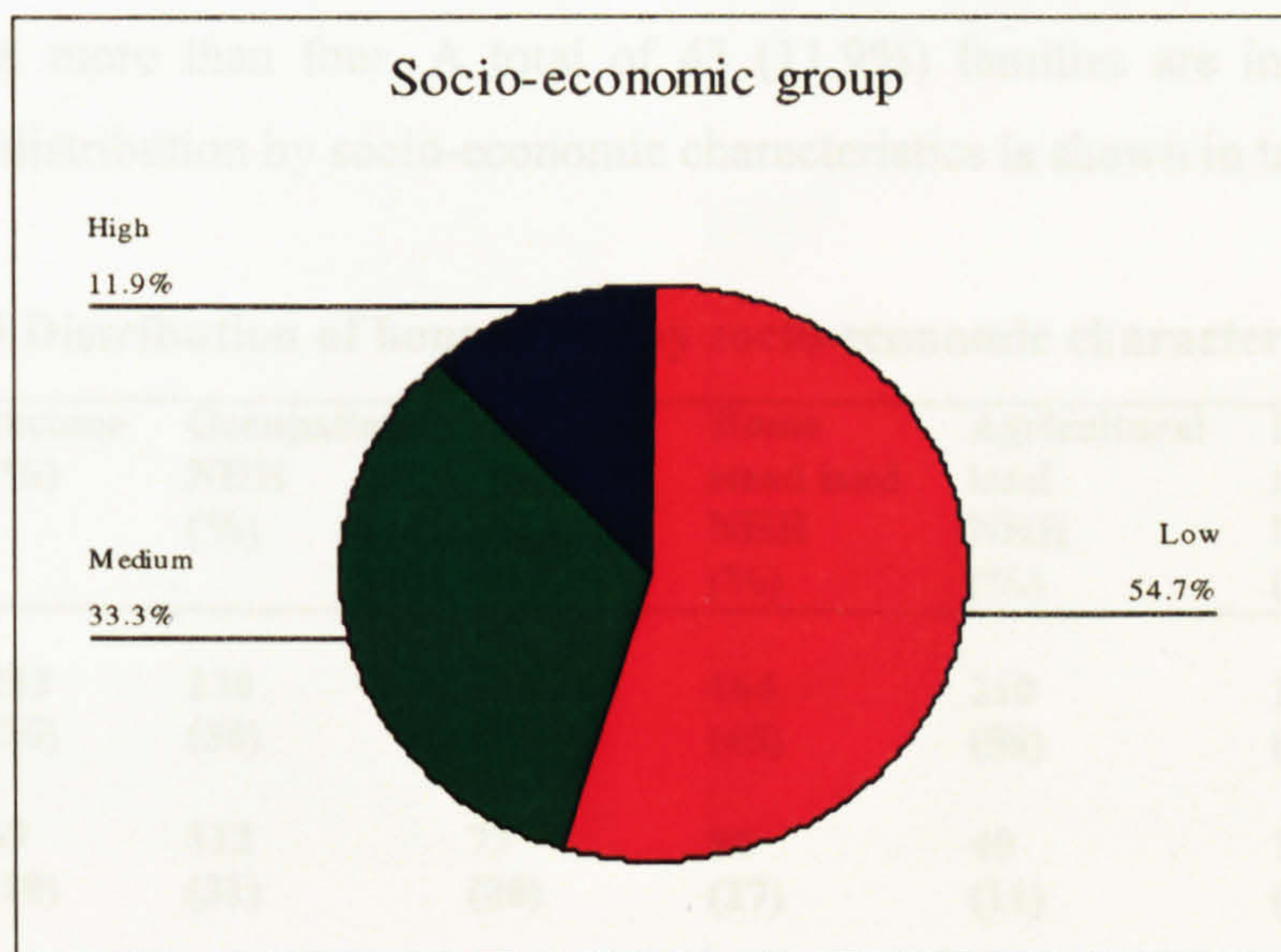
Table 4.1.3. Show the variables, categories and score allocated to each variable.

Socio-economic variables	Categories	Scores
1. Income (Taka)	0 - 2000	1
	2000.5 - 4000	2
	4000.5 -- Maximum	3
2. Agricultural land (acres)	0 - 0.49	1
	0.50 - 0.99	2
	1.00 - Max	3
3. Home stead land (acres)	0 - 0.09	1
	0.10 - 0.19	2
	0.20 - Max	3
4. Occupation	Day labour	1
	Service/business	2
	Agriculture/farmer	3
5. Household conditions (based on roof, wall, latrine)	Poor	1
	Moderate	2
	Good	3
6. Family size (By number of family member)	Large (10 and more person)	1
	Medium (5-9 person)	2
	Small (2-4 person)	3

All six variables were categorised into three categories from worse to best condition and scored progressively, such as 1, 2 and 3. Then the scores were summed up to form three socio-economic groups: low, medium and high. Variables and scores assigned to them are depicted in Table 4.1.3.

This classification has been done only for analytical purpose of this research. This approach of classification can be tested in a similar nation-wide study to generalise the techniques of grouping the socio-economic variables.

Graph 4.1.3. Show the percentage of household in each of three group.



4.3.3 Main characteristics of three socio-economic groups under SEI

Low socio-economic group:

People those who have income up to 2000 taka per month, have agriculture land not more than 0.49 acres and 0.09 acres of homestead land, day labour by profession, have no built-in latrine at home, the house condition is poor that means house roof is made of thatch, wall is made of mud. A total of 197 (54.72%) families fall in to this category.

Medium socio-economic group:

People those who have income up to 4000 taka per month, have up to 0.99 acres of agriculture land and up to 0.19 acres of homestead land, they are either business man or doing some sort of paid job, have build-in kutchra or slab latrine at home, house condition is moderate that means house roof is made of tin/tally, walls are made of tin or wood, thatch/bamboo and those who have family member between 5 and 9. A total of 120 (33.3%) families fall into this category.

High socio-economic group:

People those who have income more than 4000 taka per month, have agriculture land more than 1 acres and 0.20 acres or more of homestead land, agriculture as their main profession, have built-in pucca latrine at home, have good house condition that means house roof is made of concrete, walls are made of concrete and they have family member not more than four. A total of 43 (11.9%) families are in this category. Household distribution by socio-economic characteristics is shown in table 4.1.4.

Table 4.1.4 Distribution of households by socio-economic characteristics

Rank	Income (%)	Occupation NHH (%)	House condition NHH (%)	Home stead land NHH (%)	Agricultural land NHH (%)	Family member NHH (%)	SEI NHH (%)
Low	253 (70)	138 (38)	252 (70)	164 (45)	210 (58)	13 (4)	197 (55)
Medium	69 (19)	112 (31)	73 (20)	96 (27)	40 (11)	175 (48)	120 (33)
High	38 (11)	110 (31)	35 (10)	100 (28)	110 (31)	172 (48)	43 (12)

NOTE: NHH= NUMBER OF HOUSEHOLD.

TOTAL N=360

It was hypothesised that people in higher socio-economic conditions were likely to use public sector MCH services more than those who are in low socio-economic conditions in rural Bangladesh. However, the richer people may also go for private services due to its better (perceived) quality.

The results of the statistical analysis following the hypotheses are presented in the next section.



Photo 4.1 Front view of Keshabpur THC



Photo4.2. A view of patient registration area in THC

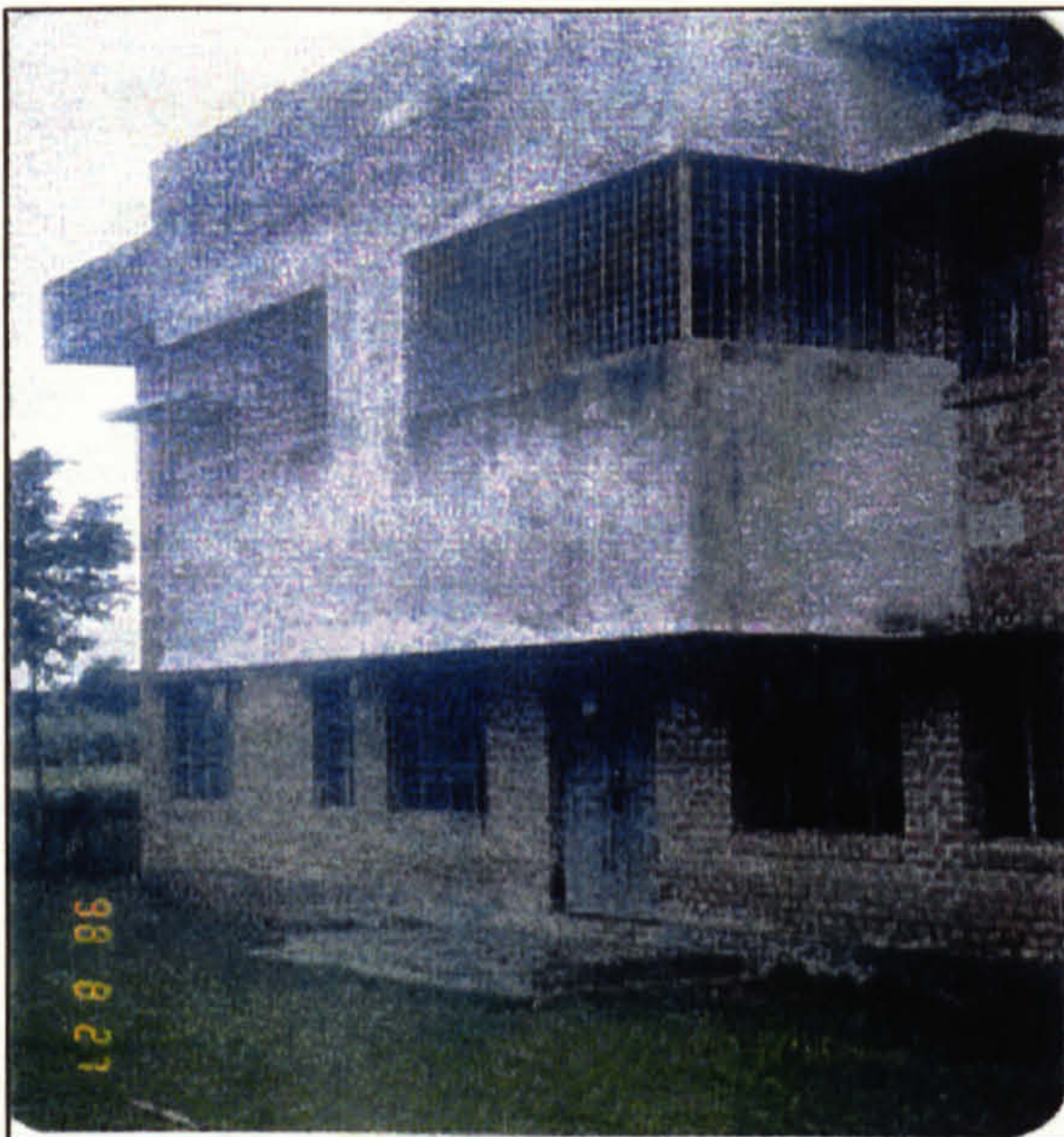


Photo 4.3. A two-storey FWC Building at PHC level. Most of the days are found to be closed.



Photo 4.4 A van carrying a sick child with mother to THC

Photo 4.5 A private signboard of a public doctor stating service availability and service providing time in his private chamber from 3-00 PM, though public office close at 5-00 PM.



CHAPTER FOUR: SECTION TWO

RESULTS OF BIVARIATE ANALYSES

4.2.1 Introduction

The descriptive analyses in section 4.1 show that the majority of the sample populations are not using the THC and FWC for MCH care. However, the use of VHCP for child immunisation and TT vaccination was found to be popular. FWC was found to be the most unused facility among the three public sector health care facilities. The descriptive statistics do not provide the answer to what are the factors associated with utilisation of these service facilities.

To identify reasons for under utilisation, as a first step we explored various bivariate analyses of dependent and independent variables. Five independent variables: socio-economic condition; family education; husband's occupation; family income; and age of respondents have been selected for this analysis. These variables have been chosen based on the finding from studies in other countries that reported their effect on the utilisation of health services and preliminary understanding of their influence during piloting the study. (see literature review chapter 2).

The bivariate analysis helped understanding and in identifying factors those have statistical significant effect on the utilisation of services. The bivariate analyses provided **individual effects** of those five selected independent variables on the use of different maternal and child health services provided through the public sector health care facilities. Chi squared (X^2) tests were used to examine the statistical significance of association between the dependent and the independent variables.

This section presents the main results of the bivariate analyses in two parts. The use of maternal health care is in the first part and the use of child health care is presented in the second part. Main results of tables and significance level are provided in tables below. Other detailed results of tables are also presented in the appendix-10 tables 4.2.8-12. The main findings of multivariate analysis are presented in section 3 and appendix 11 tables 4.3.7-13.

4.2.2. RESULT: BIVARIATE ANALYSIS: PART-1 MATERNAL HEALTH CARE

TT vaccination during pregnancy

TT vaccination was found to be high among the sample mothers. The Majority (94%) of the sample mothers irrespective of socio-economic condition, income, education level, occupation and age groups received TT vaccine during pregnancy (Appendix 10 Table 4.2.8). This result is consistent with finding of the nation-wide health and demographic survey of Bangladesh (BDHS 1997). This high percentage of receiving TT vaccine may be due to its availability in the village health care post (VHCP), which however is the main source of TT vaccine, near to the population and free of charges. It may be the effect of regular counselling of the field level health and family welfare worker such as Health Assistant (HA) and Family Welfare Assistant (FWA).

Place of TT during pregnancy

The majority of the respondent mothers received their TT vaccine from the VHCP (Table 4.2.1). However a significant association was found between the place of TT vaccination and the socio-economic condition of the population as a whole ($P= 0.047$) and individually with the family income ($P= 0.001$). It was found that the respondents in relatively high socio-economic groups received TT from the THC and from the private health care facilities more and less from the FWC and the VHCP, compared to the respondents from the low and the medium socio-economic background.

The high-income group visited the THC for TT vaccine two times more than the medium income group and six times more to the private facilities than the low-income group

The common scenario was that, irrespective of the socio-economic conditions, family income, age of mother, and the level of family education, use of the FWC for TT vaccination was low compared to the use of THC and VHCP. Perceived quality of the THC and private facilities along with better economic condition may have influenced the people of relatively high socio-economic status, and educated people to visit THC and private facilities more than their counterpart.

Table 4.2.1. Distribution of respondent who visited different places of health care for TT vaccine during pregnancy by the categories of socio-economic groups, family income, occupation of the respondent's husband, age, and family education variables.

Variables	Total N=341	Place of receiving TT vaccine during last pregnancy				
		THC (%)	FWC (%)	VHCP (%)	PRIVATE (%) *	P
Socio-economic condition						0.047
Low	186	10.7	3.7	86.2	3.2	
Medium	113	6.2	0.9	81.4	11.5	
High	42	14.3	2.4	73.8	9.5	
Family income						0.001
Low	239	9.6	2.9	84.1	3.3	
Medium	66	7.6	1.5	80.3	10.6	
High	36	13.9	2.8	66.1	22.2	
Husbands occupation						0.178
Day labour	128	12.5	3.9	78.9	4.7	
Service/business	106	9.4	3.8	77.3	9.4	
Agriculture	107	6.5	0.0	86.9	6.5	
Family education						0.391
No education	129	7.0	3.1	86.0	3.9	
Primary education	95	11.6	2.1	80.0	6.3	
Above primary education	117	11.1	2.6	76.0	10.2	
Age of mother						0.904
15-20 Years	140	10.0	2.1	81.4	6.4	
21-30 year	169	9.4	2.9	81.6	5.9	
31+ years	32	9.4	3.1	75.0	12.5	

Note: Out of 360 respondent 341 (94%) reported that they received TT vaccine during last pregnancy
Private: Private source includes both MBBS and non-qualified health care providers

About ninety four percent of the sample mothers consulted some kind of health care provider for ANC at least once during their pregnancy (Table 4.2.2). The place of ANC consultation varied among the different socio-economic groups, though the majority (80%) of the sample population used the VHCP for this purpose. People in the high socio-economic group use the THC and private facilities more than the low socio-economic group. The association between the place of ANC and the socio-economic condition was found to be statistically significant ($P=0.038$). A similar significant association was also found between the family income and the place of ANC ($P=0.001$). Perceived high quality of services in the THC and private services along with financial ability may be the reasons for visiting those places by the high-income group more than the low-income group.

Table 4.2.2. Distribution of respondent who visited different places of health care for antenatal care during pregnancy by the categories of socio-economic groups, family income, occupation of the respondent's husband, age and family education variables.

Variables	Total N=338	Place of antenatal care during pregnancy				P
		THC (%)	FWC (%)	VHCP (%)	PRIVATE (%)	
Socio-economic group						0.038
Low	185	10.8	3.8	82.1	3.2	
Medium	112	7.1	0.9	79.4	12.5	
High	41	12.2	2.4	73.2	12.2	
Family income						0.001
Low	237	9.7	2.9	83.5	3.8	
Medium	66	9.1	1.5	80.3	9.1	
High	35	11.4	2.9	57.1	28.6	
Husbands occupation						0.133
Day labour	128	10.1	3.1	81.2	5.4	
Service/business	106	11.3	4.7	72.6	11.3	
Agriculture	104	7.7	0.0	86.5	5.8	
Family education						0.111
No education	126	5.5	2.4	88.1	3.9	
Primary education	96	11.4	2.0	79.1	7.3	
Above primary education	116	12.9	3.4	72.4	11.2	
Age of mother						0.642
15-20 Years	139	10.8	2.1	80.6	6.5	
21-30 year	169	9.4	2.4	80.0	7.1	
31+ years	30	6.7	6.7	73.3	13.3	

Note: Private includes both MBBS doctor and non-qualified health care providers

Note: Out of 360 respondent 338 (93.8%) reported that they received ANC from different places

Number of antenatal care visit

Three antenatal care visits is considered as standard in this study. In that respect 23% of the respondents made three visits to a health care provider for antenatal care. The number of antenatal care visit was found to be significantly associated with the socio-economic condition of the respondent as a whole ($P=0.055$), family income ($P=0.032$) and the level of family education ($P=0.028$) individually. A significant difference was found between the high socio-economic group and other two groups ($P=0.055$) (Appendix Table 4.2.9). The results show that 34% of the high socio-economic group made three ANC visits, compared to 24% of the low socio-economic group and 19%

in the medium socio-economic group. The higher the socio-economic status, and the education level, the greater the number of ANC visit.

Place of child delivery

Home delivery was found to be high among the study population, which is consistent with the finding of the national level study of Bangladesh (BDHS 1997). Irrespective of the socio-economic condition of population, income, occupation, age and the level of family education, the majority (95%) of respondent mothers delivered their baby at home (Table 4.2.3). However, significant association was found with the place of child delivery and family income ($P=0.001$), husband's occupation ($P=0.04$), and the level of family education ($P=0.30$).

Only 3.5% of the respondents from the low socio-economic group, 2% of the medium and 2% of the high socio-economic group had their delivery at the THC. None of the respondents above 31 years of age used the THC, the FWC or private facilities for child delivery. It indicates that older women are less likely to use health facilities for delivery.

Interestingly, none of the respondents used FWC for child delivery, though these facilities are comparatively nearer to the population and normal child delivery is one of the activities are meant to be performed in this facility. The very low percentage of institutional delivery indicates the low achievement of the government initiative of providing delivery facilities through the FWC. It also reflects the long traditional birth practice of the rural society. This finding suggest the need of reorganising services at the PHC level (specifically FWC) to in order to increase the institutional delivery.

Table 4.2.3. Distribution of respondent who visited different places of health care for child delivery by the categories of socio-economic groups, family income, occupation of the respondents' husband, age and family education variables.

Variables	Total N=360	Place of child delivery				P
		AT HOME (%)	THC (%)	PRIVATE MBBS (%)	PRIVATE NON MBBS (%)	
Socio-economic condition						0.078
Low	197	96.4	3.5	0.0	0.0	
Medium	120	93.3	1.7	1.7	3.3	
High	43	95.3	2.3	0.0	2.3	
Family income						0.001
Low	253	96.8	3.1	0.0	0.0	
Medium	69	94.2	1.4	1.4	2.9	
High	38	86.8	2.6	2.6	7.9	
Husbands occupation						0.040
Day labour	138	96.4	3.6	0.0	0.0	
Service/business	112	92.7	1.8	0.9	4.4	
Agriculture	110	96.3	2.7	0.9	0.0	
Family education						0.030
No education	135	97.0	2.9	0.0	0.0	
Primary education	103	97.1	2.9	0.0	0.0	
Above primary education	122	91.8	2.4	1.6	4.1	
Age of mother						0.747
15-20 Years	146	95.9	2.7	0.7	0.7	
21-30 year	179	93.8	3.3	0.5	2.2	
31+ years	35	100	0.0	0.0	0.0	

Note: out of 360 sample mother 343 (95%) delivered baby at home

Person attending child delivery

Traditional Birth Attendants (TBAs) are the main persons who attended the majority (86%) of deliveries in the study area. Irrespective of socio-economic condition and education level of the family, 72-84% of deliveries were attended by the untrained TBAs, with 5% being assisted by trained TBAs, which was followed by the relatives of the respondents (6-9%) (Table 4.2.4). Qualified medical doctors (medical graduate) attended only 3-6% deliveries of all three socio-economic groups. This finding is also in consistent with the national level health and demographic survey in Bangladesh (BDHS 1997).

Table 4.2.4. Distribution of respondent whose delivery was attended by different persons by the categories of socio-economic groups, family income, occupation of the respondent's husband, age of mother and family education variables

Variables	Total N=360	Person attended the child delivery					
		Doctor (%)	Nurse /FWV (%)	TBA (Trained) (%)	TBA (Untrained) (%)	Relatives (%)	P=
Socio-economic condition							0.070
Low	197	3.0	1.5	5.0	84.2	6.1	
Medium	120	5.8	1.6	5.0	80.0	7.5	
High	43	4.5	9.3	4.6	72.1	9.3	
Family Income							0.310
Low	253	2.8	1.6	4.7	83.8	7.1	
Medium	69	5.8	4.3	4.3	76.8	8.7	
High	38	10.5	5.2	7.9	73.7	2.6	
Husbands occupation							0.047
Day labour	138	3.6	2.1	1.4	84.0	8.7	
Service/business	112	6.2	1.8	10.7	77.7	3.6	
Agriculture	110	2.7	3.6	3.6	81.8	8.1	
Family Education							0.005
No education	135	2.9	1.5	2.9	81.5	11.1	
Primary edu.	103	1.0	2.9	2.9	86.4	6.8	
Above Primary education	122	8.2	3.3	9.0	77.0	2.4	
Age of mother							0.721
15-20 Years	146	4.1	2.7	6.1	82.2	4.5	
21-30 year	179	5.0	2.8	3.9	80.4	7.8	
31+ years	35	0.0	0.0	5.7	82.9	11.4	

The high-socio-economic group used the service of FWV/Nurse six times more than the middle and the low socio-economic groups, though the association was found to be marginally significant (P= 0.07). Among the family income groups, the families with high income use qualified health care health care provider (Medical doctor, Nurse/FWV, trained TBA) more than their counterparts, though no significant association was found (Table 4.2.4). Opportunity of receiving financial benefits from relatively high socio-economic status family may be a reason for this scenario.

On the other hand service/business persons used a qualified doctor and trained TBA more for this service compared to the agriculture and daily labour groups, and the association was found to be statistically significant ($P=0.047$). The possible explanation of this finding might be the people who are involved in service/ business have cash money, which is an advantage for them to call on a qualified person on payment. Similarly, families with above primary education used the service of qualified doctors eight times more than the families with primary education and three times more than the non-educated families and the association was found to be statistically significant ($P=0.005$). Respondents from higher education group also received services from Nurse/ FWV and Trained TBAs more than their counterparts.

Postnatal care

The postnatal care was found to be low among all categories of respondent mothers. Only 31% of the sample mothers consulted some kind of health professional for postnatal care (Appendix Table 4.2.10). The majority of them consulted private non-qualified (homeopaths, kabiraj, village quacks) health care providers. However family income was found to be significantly associated with the place of postnatal care ($P=0.013$). The high socio-economic group, the high-income group, the families with above primary education and the agriculture group use the THC more than the low and the medium groups of all those categories. Irrespective of the socio-economic condition and level of family education use of FWC was found to be very low for postnatal care. No one from the age group of 31 and above used the THC and FWC for postnatal care. Association between the age of respondent and place of postnatal care was found to be statistically significant ($P=0.014$).

4.2.3 Summary

TT vaccination rate was found to be high among all categories of respondents in the study area and the majority of them received TT from VHCP. The high rate of TT vaccination and use of the VHCP is encouraging for the government as it reflects the success of TT vaccination programme of the government. On the other hand irrespective of socio-economic conditions, income level, occupation, age and family education, use of FWC was found to be low for all maternal health care services compared to the use of the THC and the VHCP. A few respondents from all groups

used FWC for maternal health care, though FWC is the first static health and family welfare facilities at the primary health care level. This finding suggest the need for an investigation in to the performance of FWC in order to redesign their role and function.

The majority of the respondent mothers delivered their babies at home and deliveries were attended be an untrained TBAs. This finding reflects the failure to attract people to deliver their baby in the FWC and suggest the need for thinking about an effective way to increase institutional delivery at the PHC level. Respondents from the high socio-economic group, with comparatively higher educational background used the services of the qualified persons more compared to other groups. Only 23% of the respondent mothers received ANC three times and the majority of them consulted an unqualified health care provider in the locality. The postnatal consultation was found low among all categories of respondent mothers. A possible explanation might be low importance of postnatal care to the rural people. The qualitative analyses might be provided more insight to this problem.

4.2.4 PART-2 CHILD HEALTH CARE

Child vaccination and place of vaccination

The results show that irrespective of socio-economic condition and family education 79% of children received vaccine at some time. The vaccine coverage for any vaccine ranges from 75% to 85% among the study population. The children from the high socio-economic background received more vaccine than the low and the medium socio-economic groups. Moreover children from primary and above primary educated families received more vaccine than non-educated families. A similar trend was also found among the three income groups. The children from the agriculture families received more vaccine than the day labour and service / business group. The result show that 21% of all study children did not received vaccine ever; they are mainly from the low socio-economic and non-educated families (Appendix Table 4.2.11).

The socio-economic conditions as a whole and the family education, the family income and the occupation of the respondent's husband have consistent effects on the vaccination of children though the relationship was not found statistically significant.

In the case of measles vaccination, it was found that 58% of children of all socio-economic condition, education, income, and occupation groups received measles vaccine. The coverage of measles vaccination was found to be 21% lower in comparison to the percentage having any vaccination. Children from the low socio-economic condition, non-educated, low-income and day-labour families consistently received less measles vaccine compared to their counterparts.

This finding indicate that the socio-economic condition as a whole and the family income, husbands' occupation (both are the components of socio-economic condition group) and the level of education has some individual effects on the measles vaccination in rural areas of Bangladesh, though none of those factors were found to be significant associated with the measles vaccination of children. It needs a further investigation to unveil the reason.

Place of child vaccination

The village health care post (VHCP) was found to be the main place where most of the children received their vaccine. Irrespective of income, education, occupation and socio-economic condition, the majority of all respondents vaccinated their child from the VHCP (Table 4.2.5).

Table 4.2.5. The place of child vaccination by the categories of socio-economic and education variables.

Variables	Place of child vaccination					P Value
	N	THC (%)	FWC (%)	VHCP(%)	Private (%)	
Socio-economic condition						P=0.917
Low	236	3.4	2.5	68.6	2.1	
Medium	129	3.9	2.3	71.3	3.9	
High	53	1.9	1.9	75.5	3.7	
Family education						P=0.476
No education	164	3.0	2.4	69.5	1.2	
Primary education	115	2.6	0.9	73.0	5.2	
Above primary Education	139	4.3	3.6	69.0	2.9	
Family income						P=0.750
Low	294	3.4	2.0	70.0	2.4	
Medium	78	1.3	2.5	71.8	3.8	
High	46	6.5	4.3	69.5	4.3	
Husbands occupation						P=0.350
Day labour	156	3.2	2.5	66.0	3.2	
Service/ business	136	3.7	3.7	66.9	3.7	
Agriculture	126	3.1	0.8	79.3	1.6	
Total N (%)	418	14 (3.3)	10 (2.4)	294(70.3)	12 (2.8)	

Variations in the use of the VHCP for child vaccination among those categories of population were not found to be statistically significant. Although association was found between the socio-economic conditions of people and level of family education and the place of child vaccination, the relationship was not found to be statistically significant. The possible explanation might be the VHCP is the only source of vaccination free of charges and near to the rural population.

Incidence of diarrhoea

The overall incidence of diarrhoea among the children of the study area, within the two weeks before the study was only 5% (21 cases among 418 children). The incidence of diarrhoea was more among the children of the low socio-economic condition group, which was three times more than the medium group and one and half times more than the high socio-economic group (Appendix Table 4.2.12). No significant association was found between the socio-economic condition, family education, family income, husband occupation and incidence of diarrhoea. The small number of cases may be a reason for non-significant result. A study with bigger sample of cases is needed to detect any association.

Incidence of acute respiratory infection (ARI)

The Incidence of ARI among the children of the study was found to be 8% of sample children within two weeks before the study while it was 5% in the case of diarrhoea as reported earlier (Appendix Table 4.2.12). The Incidence of ARI was found more among the children of the medium socio-economic condition group (12%) compared to the low socio-economic and (7%) and the high socio-economic group (6%). Similarly, children from the above primary educated families and the medium income families had higher incidence of ARI compared to the non-educated and the low-income families. On the other hand incidence of ARI among the children of the high-income group have five and four time less compared to the medium and the low-income families respectively. There was no statistically significant difference found between different categories of population and the prevalence of child ARI. A study with bigger sample of cases is needed to assess any association.

The place of diarrhoea treatment

Out of 21 children with diarrhoea, only 2 (0.48%) were treated in the THC. No one from the medium and the high socio-economic group visited THC for diarrhoea treatment. The non-qualified village health care providers are the main people where most of the children from all socio-economic groups received treatment of diarrhoea (Table 4.2.6). A similar result was also found while checking association individually with family education, family income, and occupation. Irrespective of socio-economic conditions as a whole, level of family education, family income and occupation, less than 1% of children received treatment for diarrhoea from a qualified (MBBS) medical doctor.

Table 4.2.6. The place of diarrhoea treatment by the categories of socio-economic and education variables.

Variables	Place of diarrhoea treatment					P value
	N	THC (%)	Health Worker (%)	Vill.Doc (%)	MBBS	
Socio-economic condition						P=0.437
Low	236	0.8	0.0	5.5	0.4	
Medium	129	0.0	0.8	1.5	0.0	
High	53	0.0	0.0	3.7	0.0	
Family education						P=0.385
No education	164	0.0	0.6	4.2	0.6	
Primary education	115	1.7	0.0	3.4	0.0	
Above primary Education	139	0.0	0.0	4.3	0.0	
Family income						P=0.627
Low	294	0.7	0.0	4.4	0.3	
Medium	78	0.0	1.2	2.5	0.0	
High	46	0.0	0.0	4.3	0.0	
Husbands occupation						P=0.132
Day labour	156	1.2	0.0	5.1	0.6	
Service/ business	136	0.0	0.0	5.9	0.0	
Agriculture	126	0.0	0.8	0.8	0.0	
Total N (%)	418	2 (0.5)	1(0.2)	17 (4.1)	1 (0.2)	397 (95.0)

The place of ARI treatment

The results show that irrespective of the socio-economic condition, level of family education, the majority of the children received ARI treatment from the non-qualified village health care provider. No one from the high socio-economic group, medium and high-income group and families with above primary education visited THC for the ARI treatment (Table 4.2.6). The high socio-economic group and families with above primary education visited MBBS doctor comparatively more than their

counterparts. Less than 1% of children from all groups received ARI treatment from the THC the FWC. The medium socio-economic group, families with above primary education did self-treatment more than any others groups. It may be mentioned that the sample size is very small. There is not enough data in some categories of services. So a study with bigger sample may be needed to come to a definitive conclusion.

Table 4.2.7. The place of acute respiratory infection treatment by the categories of socio-economic and education variables.

Variables	Place of acute respiratory infection treatment (ARI)						
	N	THC (%)	FWC (%)	MBBS Doctor	Village Doctor (%)	Self treatment	P value
Socio-economic condition							P=0.717
Low	236	0.4	0.4	0.4	4.6	1.2	
Medium	129	0.8	0.0	0.0	7.0	1.5	
High	53	0.0	0.0	1.9	1.9	0.0	
Family education							P=0.344
No education	164	0.6	0.6	0.0	3.6	0.0	
Primary education	115	0.9	0.0	0.0	6.1	1.7	
Above primary Education	139	0.0	0.0	1.4	5.8	2.1	
Family income							P=0.793
Low	294	0.7	0.3	0.6	4.8	1.7	
Medium	78	0.0	0.0	0.0	7.7	0.0	
High	46	0.0	0.0	0.0	2.1	0.0	
Husbands occupation							P=0.910
Day labour	156	0.6	0.0	0.0	5.1	1.3	
Service/ business	136	0.0	0.7	0.7	5.1	0.7	
Agriculture	126	0.8	0.0	0.8	4.8	0.7	
Total N (%)	418	2 (0.5)	1 (0.2)	2 (0.5)	21 (5.0)	5 (1.2)	31 (7.4)

4.2.5 SUMMARY

Irrespective of the socio-economic condition and education level, the percentage of child vaccination among the study population was found to be high. Variation was found between any types of vaccination and measles vaccination (79% vs 58%). This finding was similar with the national statistics of measles vaccination. For example 88% of child received BCG vaccine and 69% received measles vaccine (BDHS

1997). Reasons of discrepancies were not clear and are not explored in this study. It needs a further investigation.

The use of THC and FWC for child vaccination was found to be very low. The majority of children received vaccine from the VHCP, which was the main source of free vaccine in the rural areas of Bangladesh. This finding is encouraging for the government's immunisation programme, as it reflects the policy of the government, to provide vaccine to children from the VHCP.

The prevalence of diarrhoea and acute respiratory infection among the study children was found to be low compared to national survey statistics (5% Vs 8% diarrhoea; 8% Vs 13 % acute respiratory infection) respectively (BDHS 1997).

The non-qualified¹ village health care providers are the main care providers in the study area. The majority of children from all categories of population received treatment for diarrhoea and ARI from them. The use of THC and FWC and government health worker for this purpose was found to be very few. This finding again confirmed the low use of two specific public sector facilities for childcare, as it was also found in the case of maternal care.

CHAPTER FOUR. SECTION THREE

RESULTS OF MULTIVARIATE ANALYSIS

4.3.1 Introduction

The bivariate analysis in the previous section examined the individual influence of five selected independent variables: socio-economic index; family income; family education; husbands' occupation; and age of respondents on use of MCH services. It was found that socio-economic conditions, the family income, and education individually have significant effects on the use of different MCH services among the study population. To identify the overall effects of independent variables on the use of MCH services after adjusting for other confounding factors, multivariate analyses were performed using logistic regression analysis.

Since there were not enough data to estimate required number of parameter (see bivariate tables) needed for multiple logistic regression, the outcome variables (dependent variables) were re-categorised. Details of statistical procedure are given in method chapter 3 para 3.9.4. The description of dependent and independent variables are presented in section 1 of this chapter.

Various logistic regression models were fitted for each of the dependent variables. Simple logistic regression analyses were performed with single independent variables to see the unadjusted effects in each of these cases. The socio-economic index variable, family education and age of the respondent are used in the final model to identify the adjusted effects of those independent variables. The family income and husband's occupation was dropped in the final model, as those are the components of the socio-economic index variable and this causes multicollinearity among the variables. Regression analysis for child health care use could not be performed as there were too few observations (and therefore limited degrees of freedom). Results of logistic regressions are presented in terms of odds ratios along with 95% confidence intervals and the level of significance (P values), in tables below and in Appendix 11.

4.3.2 RESULTS OF MULTIVARIATE ANALYSIS

TT Vaccination of mother during pregnancy

The TT vaccination of the mothers during pregnancy was not found to be significantly associated with the socio-economic conditions of people, though the results show that the medium socio-economic group received TT vaccine 25% less than the low socio-economic group. No major difference in receiving TT vaccine was found between the low and the high socio-economic group. Family education was found to be associated with the TT vaccination. The adjusted odds ratios of TT vaccination show that families with above and primary education received TT vaccine 30% and 22% more than the non-educated families. The difference was larger when assessing the effects of education individually (appendix 11 Table 4.3.7). The respondents over 31 years of age received TT vaccine 47% less compared to the respondents of young age. It indicates that older women are relatively less likely to receive TT during pregnancy compared to the younger women.

Husbands' occupation seems to be a factor for vaccination. The respondents from the agriculture and the service/business families received TT vaccine 57% and 29% more than the respondents of the day labour families. However, differences in vaccination between the occupation groups were not found to be statistically significant. In the case of income group respondents from the higher and medium income group received less TT vaccine than their counterparts (appendix 11 Table 4.3.8).

Irrespective of the socio-economic condition, family education, age of the respondents, the majority of women received TT vaccine. This was partly due to the availability of TT vaccine free of charge within the reach of rural population at the village health care post and partly due to the frequent home visits of community level health and family planning workers for this purpose.

Place of TT vaccination

The unadjusted odds ratios of place of TT vaccination show that the middle and the high-income groups visited public sector health care facilities 71% and 88% respectively less than the low-income group. Individually the family income was found to have significant relationship with the place of TT vaccination ($P=0.0004$). The choice of the place of TT vaccination was found to be associated with the husbands' occupation. It was found that the respondents from the agriculture and the service /business families made 30% and 53% less visit to the public sector health care facilities for vaccination respectively (appendix 11 table 4.3.9) although this association was not found to be statistically significant.

The choice of the TT vaccination place was found to be influenced by the socio-economic conditions of people in an adjusted analysis. The respondents from the middle and the high socio-economic families received TT vaccination from the public sector health care facilities 70% and 58% respectively less than the respondents of the low the socio-economic families (Table 4.3.1). The association between the medium socio-economic group and the place of TT vaccine was found to be statistically significant even after adjusting for family education and age of respondent ($P=0.027$). In the case of family education, the adjusted odds ratios of place of TT vaccination show that families with above primary education received TT vaccine from the public sector facilities 42% less compared to the non-educated families. The unadjusted odds ratios show significant association with above primary education. Though it was not

found to be statistically significant after adjusting for the socio-economic condition and age of respondents.

The respondents aged 31 years or more visited public sector facilities 38% less than that of the respondents of 15-20 years of age. The difference was not found to be statistically significant and no major difference was observed between the young and the middle age group respondents.

Table 4.3.1 Multivariate logistic regression analysis: Estimates of the influence of independent variables on the place of TT vaccination.

INDEPENDENT VARIABLES	Dependent Variable: Y= 0 if use private and 1 if public source			
	Odds Ratios UNADJUSTED (95% CI)	P> | Z |	Odds Ratios ADJUSTED * (95% CI)	P> | Z |
SOCIO-ECONOMIC CONDITION				
LOW	1.00		1.00	
MEDIUM	0.25 (0.09-0.69)	0.008	0.30 (0.10-0.87)	0.027
HIGH	0.31 (0.08-1.17)	0.086	0.42 (0.10-1.77)	0.239
FAMILY EDUCATION				
NO EDUCATION	1.00		1.00	
PRIMARY EDUCATION	0.59 (0.17-2.02)	0.408	0.83 (0.23-2.96)	0.780
ABOVE PRIMARY EDUCATION	0.39 (0.12-1.03)	0.058	0.58 (0.17-1.93)	0.380
AGE OF MOTHER				
15-20 YEARS	1.00		1.00	
21-30 YEARS	1.09 (0.43-2.76)	0.852	1.08 (0.42-2.82)	0.861
31-+	0.48 (0.13-1.67)	0.250	0.62 (0.17-2.23)	0.468

Adjusted for family education and age of respondent.

Consultation for antenatal care

Consultation for antenatal care was not found to be related to the socio-economic condition of the population. The possible explanation of this finding is that, the majority of respondents from all the socio-economic conditions, received TT vaccine during their pregnancy. That was considered as an antenatal care consultation. (Table 4.3.2).

The family education was found to have influence on antenatal consultation. The adjusted odds ratios show that families with above primary education consulted health care provider 66% more than the non-educated families. However, the findings were not statistically significant.

Table 4.3.2 Multivariate logistic regression analysis: Estimates of the influence of independent variables on consultation for antenatal care during pregnancy.

VARIABLES	Dependent Variable: Y= 0 if no consultation and 1 if consulted			
	Odds Ratios UNADJUSTED (95% CI)	P> | Z |	Odds Ratios ADJUSTED * (95% CI)	P> | Z |
SOCIO-ECONOMIC CONDITION				
LOW	1.00		1.00	
MEDIUM	0.90 (0.36-2.28)	0.838	0.88 (0.32-2.39)	0.806
HIGH	1.32 (0.28-6.16)	0.718	1.09 (0.21-5.66)	0.917
FAMILY EDUCATION				
NO EDUCATION	1.00		1.00	
PRIMARY EDUCATION	0.97 (0.35-2.72)	0.968	1.11 (0.50-5.51)	0.844
ABOVE PRIMARY EDUCATION	1.38 (0.47-3.99)	0.552	1.66 (0.31-2.30)	0.405
AGE OF MOTHER				
15-20 YEARS	1.00		1.00	
21-30 YEARS	0.85 (0.31-2.29)	0.750	0.84 (0.31-2.30)	0.742
31-+	0.30 (0.08-1.01)	0.053	0.27 (0.08-0.96)	0.044

* Adjusted for family education and age of respondent

Age of women was found to be a significant factor for antenatal consultation (P=0.044). The adjusted results show that the respondents of 31 years and over age consulted health care providers for antenatal care 73% less than those of 15-20 years of age (Table 4.3.2). This finding indicates that the younger women are more likely to consult a health care provider for antenatal care than the older women

Place of antenatal care during pregnancy

The use of public sector health care facilities for ANC was found to be associated with the socio-economic conditions of people. The adjusted results show that the respondents from the middle and the high socio-economic families visited public sector health care facilities 73% and 69% less than the respondents of the low socio-economic families respectively (Table 4.3.3). The association was found to be statistically significant in the case of middle socio-economic group (P=0.016). The unadjusted results show that individually the high socio-economic status also has significant effects on ANC consultation.

Among the family education groups, families with above primary education used public sector health care facilities 41% less compared to the non-educated families. The difference was found to be more (68%) and statistically significant when checking its association individually with the place of antenatal care consultation (P=0.04). However, the association became non-significant when socio-economic conditions and age of respondents were controlled for.

The unadjusted and adjusted results show that the women aged 31 years and over age used public sector facilities 55% and 44% less than the respondents of 15-20 years. These findings indicate that comparatively older women are less likely to visit public facilities compared to the younger women.

Table 4.3.3 Multivariate logistic regression analysis: Estimates of the influence of independent variables on the place of antenatal care consultation.

INDEPENDENT VARIABLES	Dependent Variable: Y=0 if use private and 1 if use public source			
	Odds Ratios UNADJUSTED (95% CI)	P> | Z |	Odds Ratios ADJUSTED * (95% CI)	P> | Z |
SOCIO-ECONOMIC CONDITION				
LOW	1.00		1.00	
MEDIUM	0.23 (0.08-0.62)	0.004	0.27 (0.09-0.78)	0.016
HIGH	0.24 (0.06-0.83)	0.025	0.31 (0.08-1.21)	0.093
FAMILY EDUCATION				
NO EDUCATION	1.00		1.00	
PRIMARY EDUCATION	0.52 (0.16-1.70)	0.285	0.73 (0.21-2.51)	0.629
ABOVE PRIMARY EDUCATION	0.32 (0.11-0.94)	0.040	0.59 (0.18-1.91)	0.379
AGE OF MOTHER				
15-20 YEARS	1.00		1.00	
21-30 YEARS	0.90 (0.37-2.21)	0.828	0.90 (0.36-2.25)	0.826
31+	0.45 (0.12-1.57)	0.211	0.56 (0.15-2.01)	0.377

*Adjusted for family education and age of respondents.

Number of antenatal care visit

The numbers of antenatal care visits among the low, the middle and the high socio-economic groups were found to be similar, though the unadjusted odds ratios show that the respondent from the high socio-economic families made three or more antenatal care visits-76% more than the low socio-economic group (Table 4.3.4).

The level of the family education was found to be significantly related to the number of antenatal care visits (P=0.013). Both the adjusted and unadjusted odds ratios show that families having above primary education made three or more antenatal care visits and that was more than twice as many as non-educated families. However, no significant difference was found between the primary level educated families and non-educated families.

Table 4.3.4 Multivariate logistic regression analysis: Estimates of the influence of independent variables on the number of antenatal care visit during pregnancy.

INDEPENDENT VARIABLES	Dependent Variable: Y=0 if up to two visits and 1 if three + visits			
	Odds Ratios UNADJUSTED (95% CI)	P> | Z |	Odds Ratios ADJUSTED * (95% CI)	P> | Z |
SOCIO-ECONOMIC CONDITION				
LOW	1.00		1.00	
MEDIUM	1.22 (0.74-2.03)	0.426	1.02 (0.58-1.78)	0.935
HIGH	1.76 (0.87-3.54)	0.111	1.19 (0.54-2.62)	0.657
FAMILY EDUCATION				
NO EDUCATION	1.00		1.00	
PRIMARY EDUCATION	1.09 (0.59-1.90)	0.777	1.08 (0.58-2.04)	0.791
ABOVE PRIMARY EDUCATION	2.14 (1.24-3.70)	0.006	2.20 (1.18-4.11)	0.013
AGE OF MOTHER				
15-20 YEARS	1.00		1.00	
21-30 YEARS	0.74 (0.46-1.20)	0.227	0.71 (0.43-1.17)	0.183
31-+	0.34 (0.12-0.95)	0.041	0.29 (0.10-0.82)	0.020

• Adjusted for family education and age of respondent.

The number of antenatal care visit was found to be associate with the age of women. The results show that the number of antenatal visit decreased while the age of the respondent increased. The respondent of higher age (31+years) made three or more antenatal visits 71% less compared to respondents of young age. A similar trend was found in the case of middle aged (21-30 years of age) respondents. However, the association was found to be statistically significant only in the case of higher age group (P=0.020). This finding indicates that the women of comparatively older age are less likely to made more antenatal care visit then the younger women.

Husband's occupation was a factor in use of antenatal care. It was found that the respondents from the service/business families made three or more antenatal visits 48% higher than that of the day labour families. It is likely that those who are involved in service or business have more interaction opportunity with different people and latest information that may help them to have better understanding of antenatal care that leads them to go for more antenatal visit.

Place of child delivery

The high and the medium socio-economic groups used public sector health care facilities for delivery 34% and 42% respectively less than the low socio-economic groups. On the other hand the families with primary and above primary level education used public sector health care facilities 29% and 27% respectively more than the non-educated families.

The results for age group show that none of the respondents of 31 years of age and over used public sector facilities for delivery. The older age people are more likely to deliver their baby at home than their counterparts. The birth experience of the older women may be a factor that deters them to deliver their child at the health care facilities. However, the place of delivery was not found to be significantly associated with the socio-economic condition or level of family education (appendix 11 Table 4.3.10).

This result was found to be consistent with the national statistics that in rural areas of Bangladesh, the majority of child deliveries are performed at home. This was partly due to the traditional culture of rural population and partly due to non-existence of

appropriate institutional child delivery facilities within reach of the population. This issue has been discussed in details in chapter six in the qualitative analysis.

Person attended the child delivery.

The use of a trained person in child delivery was found to be low among the study population. Irrespective of socio-economic conditions, an untrained person attended the majority of all deliveries (Table 4.3.5). No major difference was found between the socio-economic groups. The choice of the delivery person was found to be significantly associated only with the education level of the family (P=0.009).

Table 4.3.5 Multivariate logistic regression analysis: Estimates of the influence of independent variables on the person attended the child delivery.

INDEPENDENT VARIABLES	Dependent Variable: Y=0 if non-qualified and 1, if qualified person			
	Odds Ratios UNADJUSTED (95% CI)	P> | Z |	Odds Ratios ADJUSTED * (95% CI)	P> | Z |
SOCIO-ECONOMIC CONDITION				
LOW	1.00		1.00	
MEDIUM	1.33 (0.65-2.74)	0.427	0.93 (0.42-2.03)	0.856
HIGH	2.14 (0.86-5.27)	0.098	1.10 (0.40-3.01)	0.839
FAMILY EDUCATION				
NO EDUCATION	1.00		1.00	
PRIMARY EDUCATION	0.91 (0.33-2.48)	0.856	0.92 (0.33-2.55)	0.876
ABOVE PRIMARY EDUCATION	3.22 (1.47-7.02)	0.003	3.20 (1.34-7.64)	0.009
AGE OF MOTHER				
15-20 YEARS	1.00		1.00	
21-30 YEARS	0.88 (0.73-3.22)	0.727	0.84 (0.42-1.67)	0.628
31-+	0.40 (0.08-1.82)	0.240	0.31 (0.06-1.146)	0.140

- Adjusted for family education and age of respondent
- (Qualified: MBBS doctor, Nurse/FWV, trained TBA)

The results show that the families having above primary education use the services of trained person three times compared to non-educated families (OR 3.22). No difference was found between the non-educated and primary educated families.

Age of the respondent was found to be associated with choice of health person in child delivery. The result show that the respondents of 31 years or more age used the service of a trained person 69% less compared to the respondents of 15-20 years of age. However this association was not found to be statistically significant.

The unadjusted results show individually high family income has significant effects on the use of a trained person in delivery. The high-income families used the services of a trained person three times more than the low-income families (OR 3.10). But the difference between the low and the middle income group were not found to be significant. A significant individual association was found between the service/business occupation group and the types of person was attended the delivery (P=0.008). The service/business group used the services of trained person during delivery almost three times (OR 2.95) more than the day-labour group (appendix 11 Table 4.3.11).

Postnatal consultation

The postnatal care consultation was found to be low among the study population, as it was found earlier in the univariate analysis that only 31% of respondents had a postnatal consultation. In Table 4.3.6 the adjusted odds ratios of postnatal consultation show that the respondents from the middle and the high socio-economic families consulted a health care provider 30% and 44% less compared to the low socio-economic families. However, the difference was not found to be statistically significant.

The role of family education was found to be important in the case of postnatal consultation. The families with above primary education made postnatal consultation about three times more (OR 2.68) and the primary level educated families consulted 80% more than the non-educated families. The effect of education level on the postnatal care consultation was found to be statistically significant even after controlling for socio-economic condition and age of respondents (P=0.052, P=0.002). The higher the education levels the higher the evidence of postnatal care consultation.

Table 4.3.6 Multivariate logistic regression analysis: Estimates of the influence of independent variables on the postnatal consultation.

INDEPENDENT VARIABLES	Dependent Variable: Y=0 if no consultation and 1 if consulted			
	Odds Ratios UNADJUSTED (95% CI)	P> | Z |	Odds Ratios ADJUSTED * (95% CI)	P> | Z |
SOCIO-ECONOMIC CONDITION				
LOW	1.00		1.00	
MEDIUM	0.93 (0.57-1.52)	0.783	0.70 (0.40-1.20)	0.199
HIGH	1.05 (0.51-2.12)	0.890	0.66 (0.30-1.46)	0.313
FAMILY EDUCATION				
NO EDUCATION	1.00		1.00	
PRIMARY EDUCATION	1.65 (0.93-2.93)	0.086	1.80 (0.99-3.29)	0.052
ABOVE PRIMARY EDUCATION	2.10 (1.22-3.61)	0.007	2.68 (1.44-4.98)	0.002
AGE OF MOTHER				
15-20 YEARS	1.00		1.00	
21-30 YEARS	0.69 (0.43-1.11)	0.134	0.71 (0.44-1.15)	0.175
31-+	0.51 (0.22-1.22)	0.135	0.45 (0.18-1.09)	0.078

• Adjusted for family education and age of respondent.

The postnatal consultation was also found to be associated with the age of respondents. The results show that the respondents of 31 years and above consulted health care provider for postnatal care 55% less than the respondent of 15-20 years of age. A similar trend was found between the respondent of 21-30 years and 15-20 years of age. The effect of age was found to be marginally significant (P=0.078).

The finding indicates that education was the main determinant factor for postnatal care, though other factors; socio-economic conditions, family income, husband's occupation, and age of the respondent have some influence on it.

Place of postnatal care.

The high and the medium socio-economic group used public sector health care facilities for postnatal care 50% and 20% more respectively than the low socio-economic condition group (appendix 11 Table 4.3.12). Among the family education groups, families with primary education used public sector facilities, 48% less

compared to the non-educated families. However no major difference was found between the above primary educated families and the non-educated families for this purpose.

The respondent's age was not found to be significantly associated with the use of public sector facilities for postnatal care though the respondents of 21-30 years used public sector facilities 61% less than the respondents of young age (15-20 years).

Among the income groups, the high-income group visited public sector facilities 47% more than the low-income groups. In the case of occupation group, the agriculture group visited public sector health care facilities two times (OR 2.20) than the day-labour groups, though the relationship was not found to be statistically significant (appendix 11 Table 4.3.13).

4.3.3 Summary

The result show that in general use of MCH services is affected by the socio-economic conditions, family education, family income, occupation and age of the respondent individually. The level of family education was found to be the main factor associated with use of the MCH services. Specifically the place of TT vaccine, place of antenatal care, number of antenatal visit, choice of child delivery person, postnatal consultation was found to be significantly associated with the level of family education.

Similarly, the place of TT vaccine, and the place of antenatal care were found to be significantly associated with the socio-economic condition of population. The family income (which is a component of socio-economic condition group) individually has significant effect on the choice of the place of TT vaccine, place of antenatal care, and in choosing delivery person. The respondent age has also significant effect on the consultation for antenatal care, number of antenatal visit.

The above findings indicate that most of the selected independent variables have some individual effects on the use of MCH services, but the level of family education and comparatively high socio-economic status of population are the main factors that are affecting the use of MCH services among the study population.

CHAPTER FIVE

EFFECTS OF KNOWLEDGE AND ATTITUDES OF PEOPLE ON UTILISATION OF MCH SERVICES

5.1 Introduction

Knowledge about the health care facilities and the attitudes of the population towards the MCH care services may influence the use of health care services. Studies in different countries show the effect of knowledge and attitudes of the people on the use of health services (LaFond 1995, Rahman 1981, GOB 1989, Hassinger 1976, Okfar 1983, Bhanderi 1989, Karel 1994). Knowledge means the facts, information, understanding and skills that a person has acquired through experience or education (Crowther 1995). Knowledge is the familiarity gained by experience (Dev 1993), or the person's range of information (Brown 1993). In short, knowledge is the sum of what is known by an individual and collectively by a group of people. People the rural areas may gain information about the health care facilities either by direct experience or they may learn them from other indirect sources. This study has examined what levels of information people have about the government health care facilities at the rural level in Bangladesh.

On the other hand, the term 'attitude' is somewhat elusive. It falls in the same kind of sphere as opinion, beliefs or values (Robson 1993). There are three aspects to a person's attitude to an issue: cognitive; which concerns a person's knowledge and information, affective; which concerns the feeling, emotions, likes and dislikes, and finally behavioural; which concerns a person's skills. Beliefs, motivation, instincts and also social norms influence the individual's attitude to a specific action and their intention to adopt it (Naidoo and Wills 1994). It implies different psychosocial aspects are involved in shaping attitudes of people on a particular issue. While this concept is applicable to rural people and their attitude to public sector health facilities, it is difficult to assess attitudes by means of a single question or statement for it involves so many psychosocial aspects. Keeping these in mind, several questions were asked of mothers and community leaders to gather insight into what they feel or believe about the MCH services provided through public sector health care facilities.

It was assumed that both knowledge and attitudes have influence the utilisation of public sector health care services in rural Bangladesh, and it was hypothesised that the poor knowledge and negative attitudes of the people towards public sector health care services decreases the use of MCH services in rural Bangladesh. The main objectives of this analysis are to estimate the level of knowledge of the people about the existing public sector MCH care facilities, their attitudes towards those services and finally to find out any association between the knowledge, attitudes and the low use of MCH services.

Types of MCH services provided by the public sector health care facilities are described briefly in this section to compare the knowledge of mothers and community leaders. Factors that influence rural people in taking decisions to use the services and the health-seeking pattern are discussed. The issues of “expectation gap” between the provider and the user will also be discussed at the end of this section to conclude what its effects have been on the use of services. Knowledge and attitudes of the formal and the informal community leaders and the mothers, to the three public sector health care facilities: Thana Health Complex, Family Welfare Centre and Village Health Care Post were considered in this analysis.

5.1.1 Knowledge

Knowledge of the community leaders and mothers was examined by asking three main questions: whether they knew the physical location of the three public sector health care facilities; THC, FWC and VHCP; what types of maternal and child health care service were being provided by those facilities; and what were the service providing times i.e. the opening and closing times of those facilities.

The above questions were asked to twenty-eight community leaders and to eighteen mothers during an in-depth interview with each of them. Their level of knowledge about the physical location was grouped into two main categories being ‘knows’, and ‘does not know; and this was coded as ‘yes’ and ‘no’. The knowledge about the service provision times and provision of MCH service in those health centres were assessed individually and summarised in Tables later in this section. The same

procedures were followed for the assessment of the knowledge of the community leaders and the mothers.

5.1.2 Attitudes

Five basic questions were asked of the community leaders and the mothers to assess their attitudes. Those questions were related to the (i) overall service quality of the three health care facilities (THC, FWC, VHCP); (ii) availability and quality of drugs in those facilities; (iii) quality of health care providers; (iv) behaviour of the provider (personal and professional) and finally (v) private practice of the public sector health care providers. Findings relating to all those issues are discussed and analysed in detail in this section. Before going to those details, the characteristics of the community leaders and mothers are described, including their background and how they were selected for this study.

5.2 Community leader: who are they?

Two types of community leaders were considered: formal and informal community leaders. Formal community leaders were those who were elected by the people or selected by the government as the representatives of the local government administration, such as the chairman of the union council or the member of the council (ward commissioner). They had the legal authority to operate the local government activities and they were influential members of the rural community. Informal community leaders are those who have influence on the community members due to their social position in the community; school teachers, business men/women, religious leaders, all of whom have better socio-economic conditions than other community members. They are normally the respected persons in the community and people seek advice from them for any purpose of their life. People feel confidence in them in most cases. These community leaders have some influence in regulating social life, local politics and providing advice and support to the people on different socio-cultural aspects of the community life.

The informal community leaders were identified by the mothers during the household survey. Mothers were asked with whom they discussed social and personal problems in their area. They were also asked to say particularly from whom they sought advice

before going to health care providers for any kind of health problems of their family members. Twenty informal community leaders were selected from the study area based on the information of the mothers.

Two categories (union council chairman and ward commissioner) of eight formal community leaders were selected randomly for this study from the list given by the Thana Nirbahi Officer (TNO)¹. Three of them were elected chairmen of the local government bodies- union council,² and five were ward commissioners of the same council.

The community leaders, especially informal leaders, have strong influence in taking decisions for health care. For example, they provide judgement in respect of minor misdeeds of the local population through an informal village court³. People reported that in most of the cases they consult their community leader for various aspects of life. Thus they are the first reference point at the community level. Rural people normally seek their opinion before going to health facilities as a part of the tradition of the society. As such, what community leaders do in their own lives and the advice they give to people are important

1. TNO: The administrative head the Thana, who is responsible for overall administration of area and the formal leaders are accountable to him and worked under his administrative control

2. Union Council: The lowest administrative unit of the local government, it comprises one chairman with 9 ward commissioners, members of the council. People elect them through direct vote.

3. Village Court: It is an informal social institution, with no legal authority but high social value and importance in rural society to control the behaviour of the community members It has different name in different places. For example village court in some places it called Ponchayt, Samaj. It is recognised by the local government.

5.2.1 Background characteristics of the community leaders (Table 5.1)

To understand the socio-economic condition of the community leaders, five items of background information were collected: age, sex, education level, occupation, and income level of the community leaders. Another objective was to see the variations of knowledge and attitudes according to their background characteristics.

A summary of this information is shown in Table 5.1. It was found that 89% were 35 years or and above, and of that group 46% were more than 45 years. Ninety three percent of them were male. The high percentage of male leadership reflects the family headship pattern of the country. In Bangladesh, the male heads 94% of families (BBS 1996).

In terms of the level of education, only 2 (7 %) of the leaders had no formal schooling and 93% had secondary level and 34% had more than secondary education. The education level of the community leaders was high compared to the general members of the community. For example 26 of 28 of the community leaders were educated while the household survey in this study showed 50% of the men to be illiterate. Thirteen community leaders were by profession agriculturists, 11(39%) involved in business and 4(14%) involved in teaching in the local school.

Regarding income levels, it was found that 14 (50%) earned Taka 3000-5999 per month, 11 (39%) have income taka 6000 and more. Only 3 (10%) of the community leaders earned less than taka 3000/ per month. This implies that most of the community leader's income was more than the mean income (Taka 2477.36) of the study population and they were socio-economically better off compared to general population of the study area.

Table 5.1. Background characteristics of the community leaders

Background characteristics	N	Percent
Age(in years)		
25-34	3	10.7
35-44	12	42.9
45-+	13	46.4
Sex		
Male	26	92.9
Female	2	7.1
Education		
No education	2	7.1
Secondary	11	39.3
Above secondary	15	33.6
Occupation		
Agriculture	13	46.4
Business	11	39.3
Teacher (Services)	4	14.3
Income (in taka)		
<3000	3	10.7
3000-5999	14	50.0
6000 +	11	39.3
Total	28	100%

5.2.2 Background characteristics of the mothers

To understand the characteristics of the mother four items of background information were collected: age of mothers; education level; size of their family; and their occupation. In total, eighteen mothers were identified for in-depth interviews. They were selected from the 360 sample mothers on the basis of their use patterns of the public sector health care facilities. To understand the difference in knowledge and attitudes between users and non-users, nine mothers were chosen from those who used at least two of the three health care facilities and non-users from those who never used any of the three health care facilities. The background characteristics of the mothers are summarised in Table 5.2 below.

Table 5.2 Distribution of mothers (user and non-user) by their background characteristics: age, education, occupation, and family size

Characteristics of the mothers	Users	%	Non users	%
Age				
15-24	2	11	1	11
25-34	5	56	6	67
35-+	2	22	2	22
Education				
No education	4	44	4	44
Up to primary level	5	56	2	22
Above primary	0	0	3	33
Family size				
1-4 Members	3	33	2	22
5+Members	6	67	7	78
Occupation				
House wife	9	100	8	89
Service (job)	0	0	1	11
Total N=18	9	100	9	100

The background characteristics of the user and non-user mothers are similar with a little variation in educational level. The result shows that 3 out of 9 of the non-user mother have above primary education whereas none of the users had that level of

education. In the case of occupation, one mother was found to be involved in a paid job.

These rural women are dependent on their husbands both culturally and economically. This is partly due to the traditional belief that man is superior to woman and may be also to their non-involvement in the cash earning for the family. In Bangladesh the male member of the family is the main income earner (91%) and they have the major role in taking any decision relating to the well being of the family including health-seeking behaviour (BBS 1996).

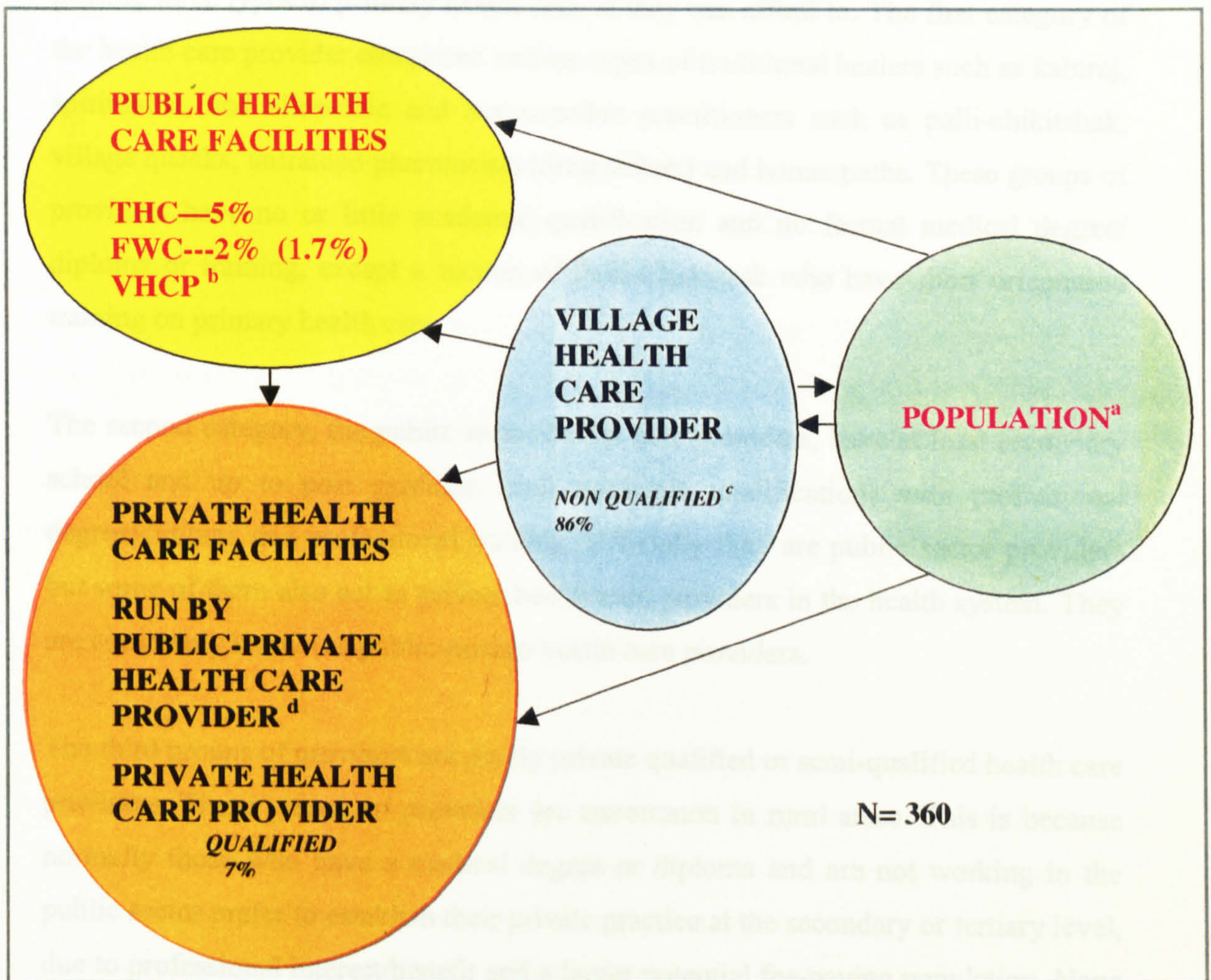
5.3 Health seeking pattern of the rural population

The health-seeking pattern of rural people could be understood by knowing the existing health seeking practice of the rural population. How they respond to their illness, where they visit for even minor ailments and the person who chooses the treatment venue for the family members are important signs in assessing overall health-seeking behaviour of rural people. Understanding of those issues may help in assessing their beliefs, practice and their attitudes towards the public sector health care facilities.

Various studies report that the majority of the rural population of Bangladesh seeks treatment from the non-qualified¹ and qualified private health care providers² rather than public sector health care providers. (Mitra et al 1997, Ali 1991, Sabur 1990). A country wide demographic and health survey showed that 80% of the rural people seek health care from sources such as traditional doctors, pharmacies, shops, private clinics /doctors (BDHS 1997). Another study reported that nearly three quarters of all rural families do not use government health facilities, mainly because the service is poor, or because the facility is often some distance away and when reached may not have the required medicine and supplies (Ross et al, 1998, Sabur 1990). The findings of this study were similar, as depicted in fig 5.1, page 134.

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- 1. Qualified health care provider: Medical graduate doctor.**
 - 2. Non-qualified health care provider: Health care provider having no or little formal academic and no professional degree/diploma or training.**

Fig.5.1 HEALTH SEEKING PATTERNS OF THE RURAL POPULATION IN BANGLADESH.



5.3.1 Where people go for treatment?

Fig.5.1 shows the health-seeking route of the rural population in the rural Bangladesh. There are 3 major sources from where people seek health care services. First, various non-qualified health care providers¹ at the village level. Second public sectors health care providers² working at the THC, FWC and VHCP. Third private qualified³ and semi-qualified health care providers

Notes:

- a. 92% of the sample population visited health care facilities for their most recent sickness
- b. No one of sample population visited VHCP for recent sickness, but 89% and 81% of the people visited VHCP for child immunisation and TT vaccination for women respectively.
- c. Village health care provider includes village doctor (locally called palli chikitshak), kabiraj, homeopath, spiritualist, and home self-care.
- d. Public sector employees, who also involved in private practice
- 1. Health care provider having no or little formal academic and no professional degree/ diploma or training.
- 2. Graduate medical doctor or medical diploma holder and trained health & family planning workers.
- 3. Private practitioner with medical degree and diploma in medical faculty but not involved in the government job.

People have their own choice in using any of these three health care sources or none, as they have no restriction on going to any secondary and tertiary care facilities, bypassing three types of primary health care, if they can afford to. The first category of the health care provider comprises various types of traditional healers such as kabiraj, spiritualist, and allopathic and homeopathic practitioners such as palli-chikitshak, village quacks, untrained pharmacists (drug sellers) and homeopaths. These groups of providers have no or little academic qualification and no formal medical degree/diploma or training, except a section of Palli-Chekissak who have short orientation training on primary health care.

The second category, the public sector health care providers, have at least secondary school and up to post graduate level academic qualifications with professional degree/diploma and professional training. Officially they are public sector providers but some of them also act as private health care providers in the health system. They are commonly known as public-private health care providers.

The third groups of providers are purely private qualified or semi-qualified health care providers. These groups of providers are uncommon in rural areas. This is because normally those who have a medical degree or diploma and are not working in the public sector prefer to establish their private practice at the secondary or tertiary level, due to professional interest/benefit and a larger potential fee-paying population. None of the respondents reported the existence of this category of provider in the study area. No medical graduate was found in the area among the non-public private practitioners.

This gap has actually filled by the public-private provider and they dominate the health care market in rural areas. These public-private providers maintained two or three offices.

One in the public hospital or clinic, the second in their residence and the third either in a privately owned consulting rooms or rooms in a pharmacy/ drugs selling shop.

People use these health care sources according to their financial capability, choice and confidence. It was found that 86% of the people used the first category of providers, the non-qualified village health care providers during their illness. Only 5% of rural

people sought health care from the THC and about 2% from the FWC. None sought treatment from the VHCP for general ailments. On the other hand 89% and 81% of the people use the VHCP for two specific preventive health care services: child immunisation and TT vaccination of women. This public sector facility, the VHCP, is being used by the majority of the population for these two specific health care services, while the other two facilities, THC and FWC are not being used by majority of them. It may be partly due to the absence of alternative sources for TT and immunisation facilities at the rural area, or that easily accessible, available, free of charge and people are motivated by health workers that immunisation and TT vaccination are good both for the children and for the mothers. On the other hand THC and FWC may not providing the intended services and not fulfilling the conditions that people expect from those health care facilities that leads them not to use them. There might be an “expectation gap” between the people and the services delivered from those two facilities. The issue of expectation gap discussed details in the last section of this chapter (see page 172).

Village health care providers (non-qualified health care providers) who practice allopathic medicine play two vital roles in rural areas. First, they provide treatment to the majority of the population for all sorts of illness. Second, they influence the people in taking decisions to seek health care from higher levels such as qualified private practitioners at the thana, district and above, when they can not treat the patient. These village health care providers have connection with qualified medical private practitioners at higher levels. About forty seven per cent of the community leaders reported that most of the pallichikissak (people used to call them village dactar not doctor) have professional connections with the public and private sector qualified health care providers. They used to bring patients to those private practitioners and get financially rewarded. The most cases they bring the patients personally either to the hospital/clinic or ‘private chambers’ of the providers. Few people reported that they visit the private chamber of the qualified health care provider directly for treatment alone.

It was also common to find that public sectors provider influence the people to visit their private establishment. All these issues will be discussed later in this section.

5.3.2 Who decides where to go?

The choice of health care venue and the decision for health care is mainly in the hand of the head of the family, in most cases the husband. This is mainly because of the traditional culture of the society and their economic contribution to the family. Bangladesh is traditionally, a male dominated country (Rahman 1981). A male (BBS 1996) heads 94% of families. They are the main earning person of the family and held responsibility for the well being of other members of the family. Any family decisions mainly depend upon the head of the family. In this study it was found that 83% of the household heads took health care decision for the respondents. It was also found that children and the earning members have top priority for health care, while women are the last in the priority list. As the reasons for giving priority to those two groups, 46% of the respondent reported that children can not tolerate the burden of illness like adults and the 40% reported that whole family would starve due to sickness of the earning member. These reasons are found to be consistent with the socio-economic condition of the people. For instance 38% of the respondents' husbands are daily labourers and 36% of the families are landless, 75% of the family income is less than 3000/ taka (38 UK pounds per month) where the average number family size is 5 per household. Fifty six percent of them earn less than 2000 taka per month. That means three quarters of the study population have the ability to spend taka 400-600/ (5-7 pounds) per person per month for everything such as food, clothing, transport, education, health care and other things.

According to the socio-economic index created for this study, (discussed in chapter 4 section 1 page 97), fifty five per cent of the sample population belongs to the low socio-economic condition group. Fifty three per cent of the respondents and fifty per cent of the husbands of the respondents have no education and 97% of the respondent make no financial contribution to the family. In this socio-economic condition it is likely that the family will face a serious financial crisis if the earning member remains ill for a long period.

In this socio-economic situation and cultural background, the head of the family (in most cases the husband) was found to be the main decision maker for all family matters including health care of the family members. The low priority given to

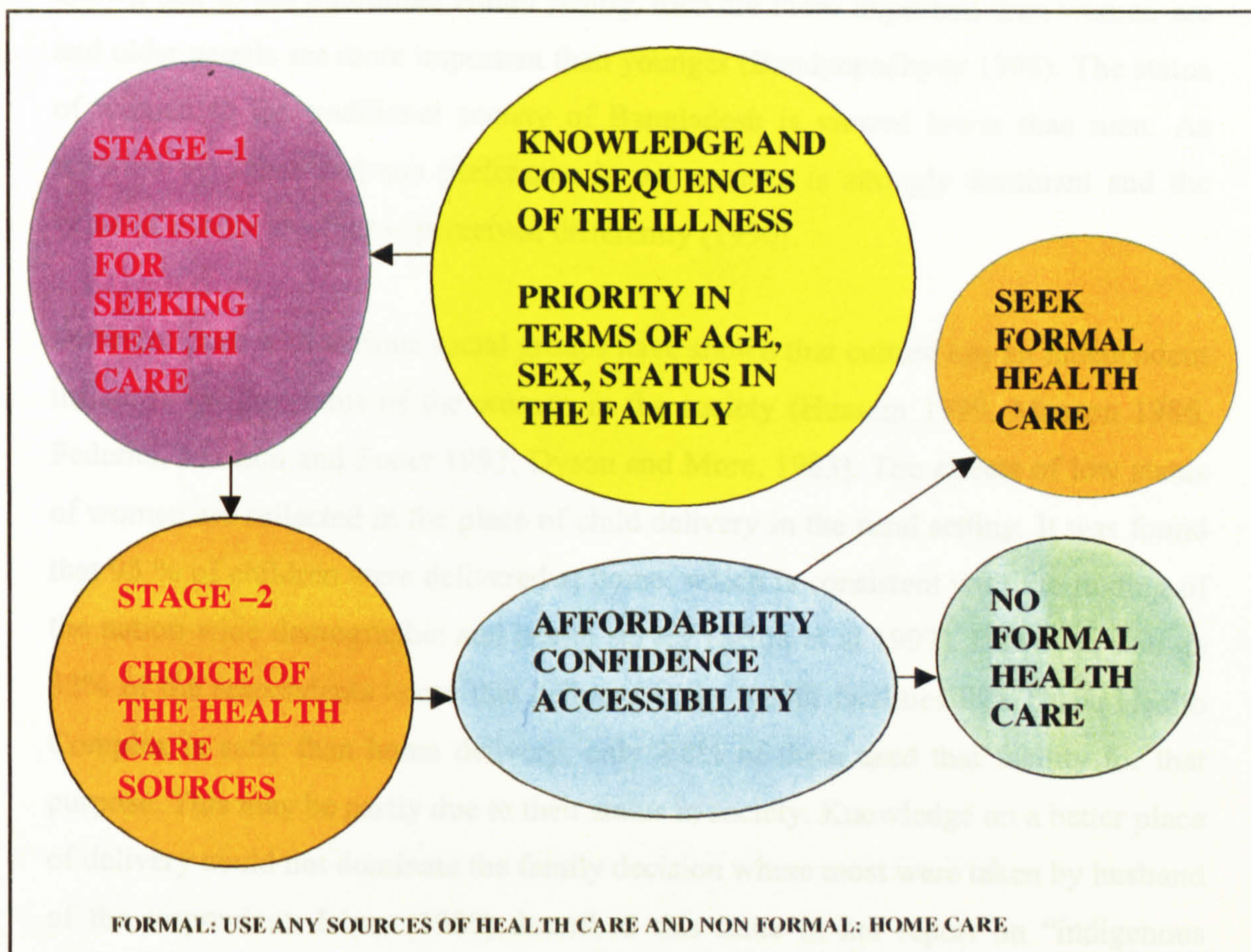
maternal care may be the outcome of these socio-economic and cultural conditions of the rural population.

5.3.3 The health care decision making factors for the rural people

The decision to seek health care follows a number of stages. In a given period of illness e.g. 10–day episode of headaches, patients make health care decision in three stages. In the first stage the ill person or his/her relative decides whether or not to seek treatment for illness; the second stage of the decision process involves the choice of source of treatment; the final stage in the patient's decision process is at the point where, in light of previous treatment, the patients decides whether or not to continue to seek further treatment (Christianson 1976 in Mwabu 1996). The decision to seek professional help in the face of illness is the result of a complex series of psychological and social processes, depending on the personal values, models of health behaviour and culture (Bowling 1997). According to Mechanic (1978), ten heterogeneous variables affect the response to illness, based on the theory that illness behaviour is a culturally learned response variables such as visibility of symptoms; seriousness of symptoms; the extent to which symptoms disrupt family work and social activities; physical proximity to treatment, and psychological and financial cost of taking action. Response to an illness may also depend on the perceptions about the illness and on the ability of the family to afford a visit.

In this study five major factors were identified, as having influenced health care decisions and the choice of health care sources in rural areas of Bangladesh. The factors are, **knowledge** about the illness and its consequences, **priority** (age, sex, status in the family), **affordability** in terms of cost (including opportunity cost, time needed for the treatment on care), **accessibility** to the service or facilities and **confidence** in the service or providers (fig.5.2 page 139).

FIG.5. 2 DECISION MAKING FACTORS OF RURAL PEOPLE FOR SEEKING HEALTH CARE



Knowledge of the disease / illness and its consequences have strong effects on the health care decisions in the rural situation of Bangladesh. For example eighty three per cent of the respondents know about the importance of the child immunisation and 87% know that precautionary measures such as TT vaccination are needed for women during pregnancy. The respondents know that vaccination of the mother ultimately brings benefit to their children and that, as mother's health is important during pregnancy for having a healthy child. They do not need to spend any money for these vaccines and they can get them easily from the nearest village health care post. So the knowledge of the benefits of the vaccines and the priority given to children in the family leads mothers to use immunisation services. Easy and free access are also likely to be the factors that explain the higher responses of the people for these two services (98% for child immunisation and 90% of TT vaccination) compared to other maternal services such as post natal care (31%), and antenatal care (23% three visits).

Age and sex are also an important indicator of the social status of people because each individual is ascribed certain status in society on the basis of their sex and age. These are culturally determined and vary from one culture to another. For example it is well known that in the traditional Hindu family, men are more important than women are and older people are more important than younger (Bandyopadhyay 1998). The status of women in the traditional society of Bangladesh is viewed lower than men. As reported by Sabur that son preference in our country is strongly dominant and the value of a male member is perceived differently (1990).

Different studies of various social groups have shown that culture has an independent influence on the status of the women in the society (Hussain 1999, Manson 1986, Federici, Manson and Soner 1993; Dyson and More, 1983). The effects of low status of women are reflected in the place of child delivery in the rural setting. It was found that 95 % of children were delivered at home, which is consistent with the finding of the nation-wide demographic and health survey (Mitra et al 1997). However, though 32% of the respondents know that delivery at the health facilities like Thana Health Complex is safer than home delivery, only 2.8% of them used that facility for that purpose. This may be partly due to their status in society. Knowledge on a better place of delivery could not dominate the family decision where most were taken by husband of the respondent. Islam (1980) described this issue in her report on “indigenous abortion practitioners” that “in terms of health care access women’s needs become subordinate to women’s status, which is dictated by important family members and more often by husbands”. Another study on women’s health priorities in Bangladesh reported that “from birth females are less valued than males” (Ross et al 1998). In my study it was found that in 83% of the cases, husband took decisions of the health care for the respondents. Moreover the knowledge of the respondent about the consequences of the pregnancy was low. For example, the majority (68%) of respondents viewed problems associated with pregnancy as normal, and thought they would be cured naturally. So their low status in the family and lack of knowledge about the consequences of the delivery along with cultural barriers may have prevented them from using health facilities for child delivery.

In spite of the barriers above, if they decide to go for institutional delivery, husband have to consider many other issues such as cost of going to the health centre, availability of the providers at the time of their need and difficulties in access to the

facilities. For example it was found to be difficult for the people to carry pregnant women from the village to the THC, located 5-7+ miles away from the study population, where bull cart or van are the main transport for carrying patient (Photograph 5.1).

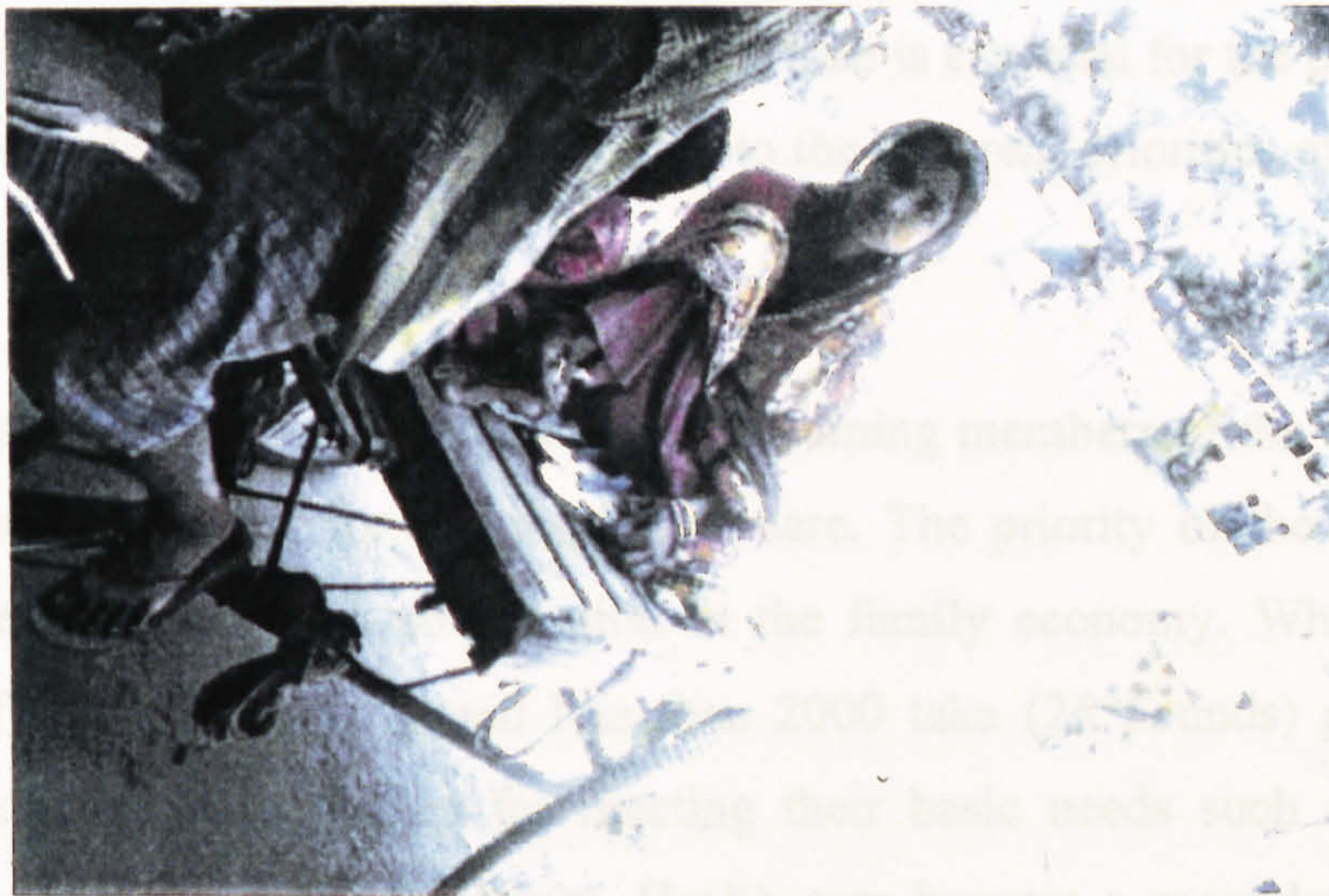


Photo. 5.1 Van carrying a sick woman to THC

Secondly, though officially health care in the THC is free of charge, patients need to pay for everything such as drugs, surgical requisites (if surgical operation needed), even needles, tips to the nurses, auxiliaries etc. An urban based study on maternity care in Bangladesh also found that “free maternity care involves considerable hidden cost, which may be a major contributor to low utilisation of maternity services, especially among low-income groups” (Nahar and Costello 1998). Moreover people have little confidence to the public sector providers and they are not welcomed properly by the professionals. All these factors may influence people in taking the decision not to use health facilities as the delivery place.

Traditional culture also contributes to some extent in taking the decision about going to health facilities such as THC for child delivery. For example rural women do not like to expose themselves to a male health care provider during their delivery. Privacy is not maintained during child delivery and the doctors concerned are male in most cases. This has been described clearly by Dr. Therese Blanchet as noted in chapter 2.

The priority factor in taking the decision to seek health care was also found when we compared the treatment of child diarrhoea, ARI and antenatal care for pregnant women. Seventy six per cent of the respondents reported that child diarrhoea is the most serious illness and all of them took the initiative to treat that immediately. In the case of child ARI, 89% of the children got immediate treatment for their illness. On the other hand 23% of mothers visited a health care provider three times for antenatal care where 97% of them know that antenatal care is essential for the pregnant women. These two different scenarios may be due to the different priorities of the two groups and their status in the family.

It was reported earlier that children and the earning members of the family are at the top of the priority list for seeking health care. The priority of the woman may be determined by their cash contribution in the family economy. While the majority (56%) of the population earned less than 2000 taka (25 pounds) per month, they needed to spend that money for meeting their basic needs such as buying food, clothing and maintaining the house. Health care became a secondary issue and the decisions on health care go mainly on a priority basis, with woman taking the lower priority.

Confidence of the people to the health care provider is one of the important determinants of use of health services. The majority of the respondent in their interview expressed lack of confidence. For example some of the leaders reported that “we do not believe that doctors at the THC and FWC can provide good services, they are not capable of giving any better treatment than a village doctor”. This may not be true as the doctors working in the thana health complex have medical degrees and are more learned than unqualified village health care providers (village doctor, healers, Kabiraj, spiritualists). But people feel more confident in other village doctors and have easy access to them. Their personal behaviour and homely contact may also create confidence.

The above findings suggest that the five major factors as depicted in the fig. 5.2 page 139 have some influence in the taking of health care decisions in the rural areas of Bangladesh.

5.4 What maternal and child services are planned to be provided through public sector facilities?

To assess the knowledge of the people of the availability of maternal service and to learn their attitudes to the public sector health facilities, it is useful to look at what services are planned to be provided by the health care facilities. This creates a way of understanding the gap between the services planned and those actually available for the people in rural areas. Then we will look the responses of the people towards those maternal and child health care services. (For details about MCH service delivery system see chapter 1 section 1.8.2.).

MCH services are being provided at different levels of the health system. At the Primary Health Care level, maternal and child health care services are provided through three static facilities, THC, FWC and VHCP. Community based services are also provided through home visits by the Health & Family Planning workers. At the community level, Health Assistant (HA) and the Family Welfare Assistants (FWA) work together to deliver maternal and child health services.

At the union level, maternal and child health services are provided through the Family Welfare Centre (FWC). Medical Assistants, Sub Assistants Community Medical Officers (SACMO) and FWV are the main providers in those health care facilities.

At the Thana level, the MCH unit of the Thana health complex is responsible for providing health care to pregnant women, children under-five and family planning services. The types of maternal and child care services (MCH) planned to be provided through the above three public sector health care facilities at the primary health care level are summarised in the Table-5.3.

Table 5.3 Types of MCH services planned to be provided at the primary health care level

Types of health care facilities	Types of MCH services are planned be provided	Types of provider
Thana Health Complex (THC) Maternal and child unit Under five clinic	ANC check up, counselling, risk pregnancy identification, lab test, drug supply TT vaccine for the mother Child delivery—normal and caesarean Post natal care for mother and children, treatment and counselling Immunisation Treatment of Diarrhoea Treatment of ARI Treatment of other diseases	MBBS medical doctors Medical Assistant Family Welfare Visitor(FWV) Sr. Staff Nurse Nurse Sanitary Inspector (SI) Health Inspector (HI) Health Assistant
Family welfare centre FWC	ANC check-up, counselling, and risk pregnancy identification , referral Post natal care Child delivery(normal) Family planning methods supply , follow up Under five ARI identification General treatment of other diseases	MBBS medical doctor Medical Assistant (MA)/ Sub Assistant Community Medical Officer (SACMO) Family Welfare Visitor (FWV)
Village Health Care Post (VHCP)	Immunisation TT vaccine to the mother Minor ANC check up ORS distribution Health education to the pregnant mother and others Under five ARI identification	Family Welfare Visitor (FWV) Family Welfare Assistant (FWA) Health Assistant (HA)

The public sector health care provider with full financial and administrative support of the government managed the above three static health care facilities. The main purpose of establishing those health centres is to create health service facilities nearer to the rural population and to provide maternal and child health care to the majority of the population. These objectives are not met fully. The vast majority of the people are not using THC and FWC facilities at the time of need, although as shown the majority

of the population use VHCP for immunisation for the children and TT vaccination for the mother.

5.5 Knowledge and attitudes of the community leaders and the mothers about the public sector facilities

Knowledge of the community leaders and the mothers was assessed on three specific issues: location, service provision times and MCH service availability in the government health care facilities. The service availability questions were asked to assess whether they know about what services are meant to be available. The findings of the assessment are presented in the following sections.

5.5.1 Knowledge of the community leaders

(i) Location of the public sector health care facilities

Knowledge of the location of three health care facilities was assessed individually. The responses were categorised in to two groups; 'yes' and 'no' on the basis of their information during interview. The results are summarised in the table 5.4 below.

Table 5.4. Knowledge of the community leaders on the location of the public sector health care facilities

Knowledge	THC		FWC		VHCP	
	N=	%	N=	%	N=	%
Yes	28	100	23	82.1	26	92.9
No	0	0	5	17.9	2	7.1
Total N=	28	100	28	100	28	100

It was found that all (100%) the community leaders know where the thana health complex is located while 82% knew the location of the family welfare centre, and 93% knew where the village health care posts are located. This finding raised a question, why all of them knew the location of the thana health complex, located in the headquarter of the thana, and yet 18% and 7% did not know the location of the FWC and VHCP, situated nearer to the community. More opportunities for the community leader to visit Thana headquarter might be an explanation for this difference. However, it was found that the community leaders are well informed about

the location of the public sector health care facilities though the use of the facilities by them are very low. This issue will be discussed later in this section

(ii) Knowledge of the service provision times of the facilities

The official opening and closing time of the thana health complex and family welfare centre is 9-00 AM to 5-00 PM, and 8-00 AM to 4-00 PM for village health care posts. An assessment was made of community leaders' awareness of the official service providing times of those three health care facilities. Their level of knowledge was categorised in to two groups; 'good' and 'poor' based on the timetables they reported. Those who reported the exact official time or one hour plus or minus from the official time was considered as good and if the deviation was found more than one hour that was considered as poor. One-hour deviation was accepted for this analysis for two reasons; first majorities of the rural population have no watch: a nation-wide health and demographic survey in Bangladesh found 59 % of rural households have no watch (BDHS 1997). In this study, 64% of the households had no watch. Second, rural people do not follow exact times in their daily work. For an example, people used to come back from their agricultural fields for lunch after hearing afternoon prayer Azan from the Mosque. They also follow the movement of the sun for estimating time. The level of knowledge is summarised in table 5.5 below.

Table 5.5 Level of knowledge of community leaders on service providing time of public sector health care facilities.

Level of knowledge on service providing time	THC		FWC		VHCP	
	N	%	N	%	N	%
Opening time						
Good	22	78.6	21	75	25	89
Poor	6	21.4	7	25	3	11
Closing time						
Good	20	71.4	7	25	6	21.4
Poor	8	28.6	21	75	22	78.6
Total	28	100	28	100	28	100

It was found that the majority of the community leaders have good knowledge of the opening times of the three health care facilities. The exception was found in the case

of closing time of FWC and VHCP. The most likely explanation is that two facilities closed before official closing times. Second, the majority viewed FWC as the place for female disease treatment. Third, lack of information about FWC may be due to low use (11%) of this facility by the community leaders. Finally, it was observed that most people visit VHCP for immunisation and TT vaccination in the morning. As such, the closing time of the VHCP is not viewed as important.

(iii) Knowledge of the availability of services in the facilities

The knowledge of the maternal and child health care service availability was assessed based on the provision in the THC, FWC and VHCP as described in page 144 table 5.3. Table 5.6 show the level of knowledge of the community leaders on the availability of services in the different categories of health care facilities

Table 5.6 Knowledge of the community leaders about the services provided by the Categories of public sector health care facilities

Health care facilities	Reported services	N	%
THC	Diarrhoea treatment	11	39.3
	Child delivery	4	14.3
	Childhood diseases	3	10.7
	Cold	3	10.7
	fever	7	25.0
	Others	25	89.3
FWC	Distribution of family planning methods	12	42.9
	Treatment of female disease	4	14.3
	Cold	4	14.3
	Fever	5	17.9
	Others	13	46.4
	Don't know	5	17.6
VHCP	TT vaccine for children	25	89.3
	TT vaccine for mother	12	42.9
	Others	4	14.9
	Don't know	2	7.1
Total		28	100%

It was found that only 39% of community leaders knew that treatment of diarrhoea is available at THC, 14% of leaders said child delivery, 25% reported fever, whereas 89% of leader said other diseases such as, appendices, hernia, TB, heart diseases. Eleven percent and 25% of leaders also reported the treatment of cold and fever

respectively. None of them reported that ANC, PNC or treatment ARI could be done in THC. In the case of FWC, 43% of community leaders reported to the distribution of family planning methods. Treatment of female diseases and colds was reported by 14%, whereas 46% reported different diseases such as eye diseases, fever, cold, vitamin A capsule distribution, and cough. None mentioned about ANC, PNC, diarrhoea, or ARI treatment. Wide variation in knowledge was found among the community leaders in the case of the service availability in the VHCP. For example, 89% of the community leaders reported that child vaccination services are provided at the VHCP, while less than half (43%) mentioned TT vaccination of mothers during pregnancy. This finding is a clear indication of poor knowledge of the maternal and child health care service availability in the public sector health care facilities, though the majority had good knowledge of the location and service provision times. The low use of facilities may be the contribution of this poor level of knowledge about the service availability.

5.5.2 Attitudes of the community leaders

Attitudes of the community leaders to the public sector facilities were assessed on the five specific issues as mentioned. The findings are presented in the following sections, with responses on the service quality categorised in four groups; good, moderate, bad and don't know.

(i) The attitudes on the overall quality of the public sector facilities

Three public sector health care facilities: Thana health complex (THC); Family welfare centre (FWC); and Village health care post (VHCP) were considered in this study. The responses of the community leaders (both formal and informal) on the overall service quality of those three public sector health care facilities are summarised in the Table 5.7. Their beliefs about the quality of different health care facilities are varied widely. Only eighteen percent reported that the quality of the THC was good, while 82% reported that the service quality of the VHCP was good.

In the case of FWC none thought that the service was good, with 61% reporting bad quality and 21% having no idea about the quality of FWC. The majority of the community leaders reported that the quality of the VHCP was good (82%),

Table 5.7. Attitudes of the community leaders on quality of public health care facilities.

Attitudes	THC		FWC		VHCP	
	N=	%	N=	%	N=	%
Good	5	17.9%	0	0	23	82.1%
Bad	19	67.8%	17	60.7%	0	0
Moderate	4	14.3%	5	17.9%	3	10.8%
Don't know	-	0	6	21.4%	2	7.1%
Total	28	100%	28	100%	28	100%

In support of their judgement on the overall service quality of the health care facilities, community leaders made various comments on each of the facilities. For example, 28 community leaders made 57 comments on the quality of THC, of which only 7 were considered to be positive with reservations. For example, one said that *“THC service is good but everybody does not go there as the doctors do not provide good treatment over there”*. Others reported that *“THC service was good, but I do not go there”*. *“good but doctors spent very little time with the patients”* One community leader reported that *“I went to the hospital with two patients, and found the service good”*.

Generally, the above comments seem to be positive towards the THC but in most cases negative attitudes were also expressed while explaining their experiences in THC visits. Out of 28 community leaders 75% (n=21) made 51 different types of negative comments: *“We can't rely on the THC services”*. This statement suggests that they have little confidence in the treatment provided in the THC. Some of the leaders thought that going to the THC were waste of time. For example, *“I went to the THC for the treatment of my wife, but it was a waste of time as she did not get cured”*. Another leader said, *“we do not see any people to get cured from the THC services”*., *“We have no confidence to the THC”*. *“The THC doctors are not giving better treatment even than what the village doctors can give in our rural area”*. The community leaders also expressed their doubts about the quality of free services. Several leaders said, *“it was not possible to get good services in the hospital without paying a fee to the doctor”*. *“We need to spend money for everything like need to pay*

to the doctor for good prescription, charge for diagnosis, buying medicine, tips to the nurse, aya etc.” “There is no free treatment in the hospital”. Others reported that “Doctors behave like a business person”. “Rich people visit THC as they can buy medicine and the doctor”. The environment of the hospital was also a crucial issue as mentioned by some of the leaders. They reported that “hospital is dirty, full of bad smell and there was no discipline”. Some of them reported that “people get frustrated after long journey when they found that doctor is not available in the hospital”. “They don’t treat any serious patients, frequently they referred patients to somewhere else, mainly in the private clinic owned by them”. It was also reported that “Thana health complex failed to address the expectation of the people”. “ There were no services as we expect”.

These findings suggest an expectation gap. People come to the hospital with an expectation and were get frustrated to meet almost totally opposite picture. These issues have been discussed at the end of this section.

(ii) The attitudes of community leaders to the quality and availability of drugs

Quality and the availability of the drugs were assessed by taking the opinions on the following four issues; the overall quality of the drugs provided through the health care facilities, adequacy of drugs, drugs pilfering and finally nepotism in the drug distribution. Attitudes of the community leaders on the each of the issue are discussed here.

The 28 community leaders made 17 comments on this issue. The majority of the comments relate to the unreliability of the drugs. They reported that the health facilities provided the same drugs for different illnesses. Their comments were: -
“Drugs supplied from the two boxes, white and red, they gave us same medicine for itching and coughing”. “Moreover they donot provide adequate drug use instruction to us” (see photo page 201). Another leader mentioned that “there were no drugs in the THC except paracetamol and histacine”. “The same tablet was given for fever and dysentery”. This matter was checked during the facility observation survey. It was found that, in most of the cases, colours of the tablets were white though the contents, but as reported by the doctors were not the same. With further investigation it was

revealed that the essential drug companies (100% government owned privately managed limited pharmaceutical company) supplied most of the essential drugs to the public sector health care facilities including THC. Those companies normally do not use different colours or packing for different tablets. It needs further investigation. Some of the leaders mentioned that “ *the drug was not effective*”. “*it does not cure diseases*”.

There might be two main reasons for this negative attitude. Firstly, the health centre could not provide the right drugs for the right diseases due to non-availability of the appropriate drugs. Secondly, it could not provide a full course of medicine to the patients at one time due to shortage of drugs (according to the provider). Those people who could afford the cost and time to make frequent visits to the health centre may have the chance to have full doses of medicine that are required for curing the illness. As they do not get full course of drugs or right drugs, it actually does not relieve their pain. Ultimately blame goes to the medicine, undermining the quality of the health care provider. This is actually a problem of the drug supply system.

All the community leaders reported issues of **inadequacy of drugs**. They made forty-five different comments on this issue. Some of those were “ *There was no medicine in the THC*”. “*Doctor used to say we have no stock, from where we will give you medicine? We don't have enough medicine while we visit the hospital*”. “*We need to buy medicine if we go there for treatment*”.

The community leaders also said, “ *We expect a full course of medicine, drugs from the government health facilities free of charges, but in practice we do not get the minimum, so why should we go to the public sector facilities so wasting time, it is better to visit village doctor nearby*”.

The community leaders expressed the above views on the basis of their own experiences and by learning from other community members who have similar experiences with the health care facilities. The issue of inadequacy of drug will be discussed in details in chapter 6 as a provider factor.

Thirdly, the eighteen leaders reported the issue of **drug pilfering**. In their view *“the hospital authority used to say that the drugs supply is inadequate, but we do not understand how they sell the drugs and medicine in the market?”*. Evidence of drug pilfering was given by some of the community leaders. A community leader who is involved in the pharmaceutical business reported that *“honestly speaking several times I brought hospital drugs from the head of the health centre, afterwards I feel it is a crime, so I stopped it”*.

Some of them said *“The person in-charge of store and the person responsible for the drugs (doctor) are involved in the drugs pilfering process”*. *“Store in-charge issued drugs in the name of the false patients in the register in order to sell those out in the market”*.

It was cited by several community leaders that

“We know that all the doctors are involved in drug selling we have evidence on that”. *“How it is possible to get government medicine in the local market if it is not sold by them”*. *“It is unfortunate that some time they sell drugs after its expiry date”*.

Both the people and the providers reported that the supply of government drugs is inadequate, and that doctors are selling drugs, even after their expiry date. It is a complex area and needs detailed investigation, which is not the purpose of this research. However, from the comments of the community leaders and talking with the people who are involved in the medicine business, it was found that a group of people is involved in the drug selling process. Some of them are hospital staff; others are middlemen and pharmacy owners. They have a strong network all around the country. It is very difficult to find them out as these actors are influential and maintain a close relationship with regulatory bodies such as supervisor, police, and share profits with local elites.

Finally, eleven out of twenty eight community leaders raised the issue of **nepotism** in drug distribution. Some of them reported that *“ Rich people get good medicine and the full course of drugs”*. Another leader mentioned that *“Those who can pay fees to the doctor they gets full course of medicine”*. Some other said, *“They do not distribute medicine properly, that means they do not give medicine to the poor people”*. *“Two tablets are allotted for poor people for any types of illness”*.

This issue was taken up with the providers of the health centre. According to them they could not provide full course of drugs for several administrative and technical reasons. Inadequacy of drugs is the main reason they reported. Secondly, people would not come back to the health centre for follow up treatment if they get full course of medicine and thirdly, people may not take all the medicine if they have full course in one visit.

(iii) The attitudes of the community leaders to the quality of professionals including behaviour

To assess the attitudes of the community leaders towards the health care providers, several questions were asked to them about **private practice, behaviour, professional skills** and other related issues. Responses to those issues are enormous. The twenty-eight community leaders made eighty-one different comments on the private practice of the public sector health care providers. Those comments were related to the technique and style of private practice and its negative consequences of the public sector health care services. The majority of the leaders mentioned that “*they (health care provider) do private practice both at their home and in the health centre, they demand fees for prescription in the hospital, they use hospital as a patient hunting trap, they do not provide good service in the hospital in order to compel the people to visit their private chamber, they became business men and most of the time they keep themselves busy with their private business*”.

The manager of the THC was also found to be busy with private practice. The following table depicted the timetable of private practice of a hospital doctor (Taken from a prescription).

<u>Place of private practice</u>	<u>Time of private practice</u>
<u>In working days</u>	
Residence	6 AM to 9 AM
Hospital quarter	1-00 P M to 1-30PM
Personal chamber:	5 PM-8-00 PM
<u>In holidays (Friday/ Saturday)</u>	
Residence	(No specific time)

The above schedule of private practice revealed that the head of the THC kept him busy with private practice 7 days a week from 6-00 am to 8 PM even during the lunch and prayer time of a office day (1-00 PM to 1-30 PM). The hospital officially started at 9-00 AM and closed at 5 PM. Questions raised by different leaders about how it is possible for a doctor to maintain office time with this busy private practice schedule and cope with the work. They also raised the question of concentration on the job and sincerity in providing the hospital service.

All of them reported that *“private practice is degrading the public sector health care facilities and people have lost their confidence in the public sector health care facilities because of the private practice, and it needs to be stopped ”*.

There is no clear government policy on private practice by the public sector providers in the country. This may be due to the lack of a formal health policy in Bangladesh. Though several governments took initiatives to formulate health policy since 1971, no government has yet pronounced till now. A draft health policy was formulated in the 1989; it could not be implemented mainly due to the professional groups and health care providers (Shahid 1997). As a result public sector providers are doing private practice without any effective regulation. There are two rules and ordinances in the country. These issues are included as general rule for all government servants and also in specific one for health care providers. Those are “Government servant (conduct) rules, 1979”, and the “Medical practices and private clinics laboratories (regulation) ordinance 1982”. The government servant conduct rules imposes restrictions on the civil servant in engaging in trade or undertaking any employment other than his official duty. These rules are for all the government servants whether on duty or on leave within or without Bangladesh serving in the civil capacity. It is also applicable to the health care providers at the primary health care level, as they are the part of the government. The other ordinance prohibits private medical practice during office hours by the registered medical practitioners in the service of the republic (Shahid 1997). In practice it was found that health care providers are doing private practice within and after office time even in their office premises. Looking at the scale of private practice it can be said that they are less concerned about their main job.

A frequent comment made by the community leaders related to the behaviour of the health care providers. Most of them (93% n=26) reported that *“the behaviour of the providers is not good, they do not treat patients carefully, they do not give time to listen to the problems of the patients, they are not sincere in providing services, which they should be. They ignore the patients, use bad words with the patients, they are not sympathetic to the patients, pursue people to go to their private clinic....”*.

The evidence of the above comments was verified during observation of the different health care facilities and by asking the patients attending health facilities. The community leaders found several reasons for that attitude. Doctor/paramedics do not allow patients to speak more about their problem. They do not get any time to build up rapport with the patients as they spend 2-3 minutes with each of them and in most of the cases they provide prescription without physical examination. After a long time waiting for the treatment, when an ill person could not explain his/her pain to the doctor he become a more ill and frustrated.

(iv) Quality of the professional

Professionals, means the doctors and paramedics (SACMO/MA) working in the THC and in the FWC. It does not include the health and family planning staff (health assistant and family welfare assistant) working at the community and in the village health care post. The community leaders perceived that the quality of the health care provider is not good. For example forty three per cent of the community leaders made negative comments about the quality of providers. They made several comments to support their judgement.

Some of the comments are *“They (doctor) can’t provide good treatment, they have little experience, they don’t have good knowledge, we don’t believe that they can provide good treatment”*. *“There is no difference between them and the village doctor, even they can not do what village doctor can be done”*.

The above comments provide two distinct characteristics of the provider. One is related to the professional skills and knowledge and second one is about their

experience in medical practice. Their statement is based on two things, personal experience with the provider and their common beliefs about the provider.

It is interesting that majority (86% in this study) of the population seek treatment from the non-qualified village health care provider although their professional quality is not better compared to those who have professional medical degree and training working in the THC and FWC. The community leaders on one hand reported that *“we don't rely on the treatment of the doctors in the public sector facilities”*. On the other hand they are visiting those doctors privately in their chamber and viewed private treatment as good compared to the public health care. Though a section of community leaders (39%) are also going to the higher level, secondary and tertiary health care facilities directly, by-passing primary health care facilities. So the reasons behind those negative views towards the quality of the public sector health care provider may not be their professional qualification; it is something else.

(v) Other views

Apart from the views expressed by the community leaders on the specific issue of the provider, thirty-one other comments were also made on the existing health care system and the general behaviour of the provider. Some of the system related comments were *“hospital has shortages of equipment, doctor are unable to provide good services due to the shortage of medicine, there is no supervision from the higher authority, there is no system to make the doctors accountable to the people. There is no mechanism to involve community leaders in the management of the health care centre.”*

The issue of equipment and shortage of drugs were also reported by the providers. It was found to be more visible in the family welfare centre. For example some of the SACMOs reported that they don't have even basic equipment like stethoscope, thermometer etc.

Regarding supervision, none of the supervisors such as THFPO or MO (MCH) visited FWC within six month or before they reported. A study on how government health system functions in a thana revealed that the field workers “had not seen their

supervisors in the field since they had been in government service. Thus it was not a question of the “last visit” rather it was a question of “had they ever been supervised” and the answer was an emphatic “NO”(Shahid 1997). The formal community leaders such as the chairman of the union council and commissioners are accountable to the people as an elected member of the local government.

People used to complain about the irregularity of the health care provider to them, but as they do not have any legal authority to supervise the activities of the health care provider at the thana level, they could not take any action against the provider. Moreover they are not a part of the management body of the health care facilities. All the community leaders expressed the necessity of their involvement in the management of the public sector health facilities. They believed that their participation in the management of the public sector facilities will definitely improve the overall service quality of the public sector facilities and it may help regain the confidence of the people to the public sector health care facilities.

Comments relating to the behaviour of the providers were found to be important. Some of the comments are *“doctors are always too busy to meet their needs, they spent more time a day with other own work than official duties. It is quite impossible for an honest doctor to provide good health care to the people in the public facilities as almost all are corrupted and busy with private business. They could provide good services with the limited facilities they have, but don't provide because of their personal business”*.

“What's the point of giving good services free of charges, while they have an opportunity to earn money through their private practice?”

The above comments indicate two important issues, one is related to the intention of the provider to render good services free of charges and another is income opportunity within the system. It may be true that they are deliberately providing low quality of services in the public sector facilities to divert people in their own health care establishment.

Some of the leaders expressed their views that; *“Drugs should be given to the health worker so that they will be able to distribute to the people during their field visit”*. Those community leaders think it is not necessary to get the prescription from a qualified health personnel. This is partly due to ignorance about the possible effects the medicine and partly because of the fact that people can buy any drugs including antibiotic from any pharmacy without prescription.

5.5.3 Use pattern of the public sector health care facilities by the community leaders.

The reflection of the knowledge and attitudes was found while looking at the use pattern of the public sector facilities by the community leaders, that was summarised in the table 5.8.

Table 5.8 Distribution of the community leaders by their use of three health care facilities

Visit	THC		FWC		VHCP	
	N	%	N	%	N	%
Yes	9	32.1	3	10.7	26	92.9
No	19	67.9	25	89.3	2	7.1
Total	28	100%	28	100%	28	100%

It was found that about 68% of the community leaders do not visit THC, 89% the FWC and 7% of VHCP. On the other hand 93% of community leaders used VHCP, which they viewed as good health care facilities. FWC is the most unused health care facilities.

5.5.4 Summary

The majority of the community leaders know the location of the public sector facilities. Most of them also have knowledge on the official service providing time of those facilities. Though a significant number of the community leader do not know the actual official opening and closing time. All of them have little knowledge about the MCH service availability in the THC and FWC, but they have better knowledge about the service provision of VHCP. The possible reason might be that VHCP

provide specific and limited preventive maternal and child health care. Facilities are located near to them, and the result of regular visit of the health and family planning workers. They have poor knowledge about the service availability in the FWC. Most of the leader believed that FWC is for distribution of family planning methods and a place for female disease treatment.

Attitudes towards the THC and the FWC were not found to be positive. Most of them viewed the service quality as bad. Public health care providers are not capable of providing good services compared to the village quack. Health care providers are always busy with their private practice and not sincere to their main job. In addition to that they are not kind to the people and the behaviour is not acceptable. The public sector provider has created such an environment that pulls the people in their private establishment.

The supervision mechanism was found to be poor. In fact there is no effective supervision system in operation. As a result health care providers at the thana level became reluctant to do their job properly. All these factors contribute to the low quality of health care services that lead to the low utilisation of facilities. The use of FWC is low compared to the THC and VHCP. This finding suggest that a review of the service provision and role and responsibilities of the health care provider of the FWC is necessary in order to redesign the delivery system at that level. Steps also needed to be taken to review the activities of the health care provider at the THC level, as it was found that they do not spend half of their office time in providing health care to the people. Initiative needs to be taken to change their behaviour through proper training and making them more accountable to the people.

Needs assessment of drugs and other supplies at all the three public facilities are found to be essential. To improve the quality at the VHCP, cleaning and sitting materials such as bench, mats or rugs could be supplied to the house owner as an incentive.

5.6 Knowledge of the mothers about the public sector facilities

Knowledge of mothers was assessed in respect of the three aspects of the public sector facilities: location; service providing times; and MCH services provision in the facilities. Assessment was done based on the responses of mothers on the particular issue during in-depth interviews. Differences of knowledge between user and non-user mothers about those three aspects and variations of knowledge between mothers and community leaders about the location of facilities were analysed. Findings are presented in Tables below.

(i) Knowledge about the location of public health facilities

Wide variations of knowledge about the location of health care facilities between the user and non-user mothers were found. Eighty nine percent of the user mothers knew the location of THC, while 33% of the non-user mothers knew that. Similarly 78 % and 100 of the user mothers have knowledge about the location of the FWC and VHCP respectively whereas 56% and 33% of the non-user mothers have no knowledge about the location of those two public sector health care facilities respectively. These findings indicate that the user mothers are better informed about the location of the facilities than to the non-users mothers as expected.

Table: 5.9 Knowledge of mothers about the locations of public health facilities

Knowledge of mother	THC		FWC		VHCP	
	N	%	N	%	N	%
User						
Yes	8	89	7	78	9	100
No	1	11	2	22	0	0
Non user						
Yes	3	33	4	44	6	67
No	6	67	5	56	3	33
Total N=	9	100	9	100	9	100

When comparing the level of knowledge of user and the non-user mothers as a group with the community leaders, knowledge of the community leaders was found to be high for all the three health care facilities, whereas non-user mothers was relatively

low. Women's lack of mobility may be a factor for this difference of knowledge between the mothers and the community leaders. In Bangladesh, particularly in rural areas, women have limited opportunity to go outside their house/community alone. Further the nearer the facilities, the greater the knowledge of the mother about the location of the facilities. For instance, knowledge of mothers about the location of the VHCP was found to be 17% more than knowledge about the FWC, and 22% more than the location of the THC, (Table 5.10), which was located at the Thana headquarter, and it was found 3-8+miles away for 77% of the study population.

Table 5.10. Shows the comparison of knowledge about the location of public sector health care facilities between the community leaders and the mothers.

Knowledge of community leaders	THC		FWC		VHCP	
	N=	%	N=	%	N=	%
Yes	28	100	23	82.1	26	92.9
No	0	0	5	17.9	2	7.1
Total N=	28	100	28	100	28	100
Knowledge of Mothers						
Yes	11	61.1	12	66.6	15	83.3
No	7	38.9	6	33.4	3	17.7
Total N=	18	100	18	100	18	100

(ii) Knowledge about the service providing time

Mothers were asked whether they knew the official service providing time of those facilities. Their level of knowledge was compared with the official timetable of those facilities, which are 9 am to 5pm for THC and FWC and 8 am to 4 pm for VHCP. It may be noted that among the mothers, who reported that they had knowledge about service providing time, none of them were able to mention the exact official service providing times of all the three facilities. The reported opening and closing of the three health care facilities are presented in table 5.11 page 162.

Table 5.11. Reported opening and closing time of the public sector health care facilities by the mothers

Reported opening and closing time	Users	%	Non user	%
THC				
Open				
7-00—9-00 AM	3	33	1	11
10-00+	2	22	1	11
Don't know	4	44	7	78
Close				
2-00- 3-30 PM	4	44	0	0
4-00- 5-00	1	11	1	11
Don't know	4	44	8	89
FWC				
Open				
7-00—9-00 AM	2	22	4	44
10-00	4	44	0	0
Don't know	3	33	5	56
Close				
12-00- 3-00 PM	3	33	2	22
3-30- 5-00	3	33	1	11
Don't know	3	33	6	67
VHCP				
Open				
7-00—8-00 AM	7	78	5	56
9-00 10-00	1	11	3	33
Don't know	1	11	1	11
Close				
12-00- 2-00 PM	3	33	6	67
3-00- 4-00	3	33	2	22
Don't know	3	33	1	11
Total N=18	9	100	9	100

It was found that 78 % of the non-users mothers have no knowledge about the timetable of the THC while it was only 44% in the case of user mothers. A similar situation was also found in the case of FWC opening and closing time. The majorities of the non-user mothers did not know the opening (56%) and closing times (67%) of the FWC. The only exception was found in the case of VHCP closing time where 11% of non-user mothers reported that they did not know the closing time while 33% of user mothers reported the same. Mothers from both the groups, most of the cases made their comments on the opening and closing time based on their assumption or knowing from others. For instance one user mothers said that “we don't know when it (THC) closes, may be at 4-00 PM or 12-00 at night”. A non-user mother reported that

VHCP closes at 11 am and another mother said it might be closed at 5 PM. One user mother mentioned that THC open at 10 am and closes at 2-300 p.m. again she said, “I actually do not know the actual time when it open and closes”. However it was found that user mothers had better knowledge about the official opening time of VHCP, than the non-user mothers did. For instance 78% of user mothers reported that VHCP opens within 8-00 am whereas 56% of non-user mothers reported the same.

While looking at the knowledge of mothers as a whole, it was found that 61% of mothers did not know the opening time of the THC at all. This percentage reduced to 44% and 11% of in the case of FWC and VHCP respectively. These findings indicate that mothers had more knowledge about the facilities those that are comparatively near to them.

In sum, a wide variation in knowledge of the service provision times of the three health care facilities among the rural mothers was found. User mothers have comparatively better knowledge than non-user mothers did.

(iii) Knowledge about the services provision

Knowledge on MCH service availability may be an important factor for the use of the services. Keeping that in mind, knowledge of the mother of the MCH service availability in the three different public sector health care facilities were assessed. The majority of the mothers (83%) reported that treatment of other diseases: fever, jaundice, heart diseases, tuberculosis, appendices (those diseases were not considered in this study) are available in the THC. On the other hand 44% of mothers thought that diarrhoea treatment and 33% of mothers reported that child delivery services are available in the THC. None of the mothers mentioned that ANC and PNC services were available in there. 17% of mothers did not have any idea about service availability in the THC. In the case of FWC, the majority of the mothers (56%) believed that distribution of family planning methods was the main function of FWC. 28% of mothers did not have any idea about the service availability in the FWC and 39% of mothers reported other diseases: fever, eye problems, itching could be treated there. The knowledge of mothers of the service availability in the VHCP was found to be high, as ninety-four per cent of mothers knew vaccines for the children and 67% of them reported that TT vaccination for the mother were available in the VHCP.

Table 5.12 Shows the knowledge of mothers about the services provided by the categories of public sector health care facilities at rural areas

Health care facilities	Reported services	N	%
THC	Diarrhoea	8	44.4
	Child delivery	6	33.3
	TT vaccine for child	1	5.5
	Other diseases	15	83.3
	Don't know	3	16.7
FWC	Distribution of family planning methods	10	55.6
	TT vaccine for children	1	5.6
	TT vaccine for mother	2	11.1
	Other diseases	7	38.9
	Don't know	5	27.8
VHCP	TT vaccine for children	17	94.4
	TT vaccine for mother	12	66.7
	Distribution of FP methods	3	16.7
	Other diseases	2	11.1
	Don't know	1	5.56
Total N=		18	100%

While comparing the level of knowledge between user and non-user mothers, wide variations of knowledge were found. Table 5.13 shows 56% of user mothers reported that diarrhoea treatment is available in the THC while 33% of non-users mothers have that information. Similarly 22% of non-user mothers knew that children could be delivered at the THC, while 44% of user mothers knew that. All user mothers had information that VHCP provided child vaccination and 89% of them knew that it was a place for TT vaccination of mothers, while 28% and 33 % of non-user mother did not have that information. This evidence indicates that user mothers have more knowledge about the service availability in comparison to the non-user mothers. None of the user or non-user mothers reported about the availability of ANC, PNC or ARI treatment in any of the three facilities, which are considered in this study.

The above findings indicate in general knowledge of sample mothers about the location, service providing time and availability of maternal and child health care services in the THC and FWC are poor and comparatively high in the case of the VHCP. User mothers are comparatively well informed about the location of the facilities, service provision times and availability of MCH services in the public

sector facilities than the non-user mothers. On the other hand community leaders are better informed about the location of those facilities than sample mothers are. This low level of knowledge of mothers may be a contributing factor for low use of THC and FWC by them.

Table 5.13 Shows comparison of knowledge of user and non-user mothers about service provision in the public sector health care facilities at rural areas

Health care facilities	Reported services provision	User	%	Non user	%
THC	Diarrhoea	5	56	3	33
	Child delivery	4	44	2	22
	TT vaccine for child	1	11	0	0
	Other diseases ¹	6	67	8	89
	Don't know	3	33	1	11
FWC	Distribution of family planning methods	6	67	5	56
	TT vaccine for children	1	11	2	22
	TT vaccine for mother	3	33	2	22
	Other diseases	7	78	5	56
	Don't know	2	22	4	44
VHCP	TT vaccine for children	9	100	7	78
	TT vaccine for mother	8	89	6	67
	Distribution of FP Methods	6	67	4	44
	Other diseases	7	78	5	56
	Don't know	0	0	2	22
Total N=18		9	100	9	100

Other diseases: fever, eye problem, itching, heart disease, and tuberculosis, jaundice

5.6.1 Attitudes of mothers on public sector health care facilities

Attitudes of mothers were assessed in respect of five aspects of public sector health care facilities: (i) overall service quality of the three health care facilities (THC, FWC, VHCP); (ii) availability and quality of drugs in those facilities; (iii) quality of health care provider; (iv) behaviour of the provider (personal and professional) and finally; (v) private practice of the public sector health care providers. The main purpose of this assessment is to understand their feelings about the MCH services providing through three public sector facilities; THC, FWC, VHCP and to know whether mothers' attitudes had any effects on use of those facilities.

(i) Attitudes about the quality of service

The user and non-user mothers were asked to comment on the service quality of three public health facilities individually. Responses were summarised in table 6.

Table 5,14 Attitudes of the mothers to service quality of the public sector facilities.

Attitudes of mother on the quality of services	THC		FWC		VHCP	
	N	%	N	%	N	%
User						
Good	3	33	1	11	9	100
Moderate	0	0	0	0	0	0
Bad	4	44	4	56	0	0
Don't know	2	22	3	33	0	0
Non user						
Good	1	11	0	0	6	67
Moderate	0	0	0	0	3	33
Bad	1	11	6	67	0	0
Don't know	7	78	3	33	0	0
Total N=	9	100	9	100	9	100

Different attitudes were found between the user and non-user mothers. 22% of user mothers said that they did not have any idea about the quality of service provided through the THC, while 78 % of non-user mothers expressed the same view. This may be due their non-experience with the THC services. Similarly all the user mothers said that service in the VHCP was good while 67% of non-user mothers believed that and 33% thought the service was moderate. No one from the user or non-user mothers though that the VHCP service is bad. The majority of mothers from both the groups believed that service of FWC was bad. Only 11% of user mothers reported that the service of FWC was good. These finding indicate that most of the sample mothers have positive attitudes towards the VHCP and negative attitudes towards the THC and FWC on the overall service quality of those facilities.

(ii) Attitudes about the availability of drugs and their quality

The mothers were asked to comment on the availability of drugs and their quality to assess the attitude to drug provided through the public facilities. 14 out of 18 mothers (8 user and 6 non-user mothers) made twenty comments on that issue. The comments were mainly relating to the unavailability of drugs, quality of drugs and discrimination in distribution of drugs by the health care providers. Some of the comments are *“There is no good medicine in the health centre.” Last time I went to the FWC for my son, doctor (SACMO) gave me four tablets for his Amasha (dysentery), it does not cure him, then I went to another doctor in our village.”*

Another user mother said “I went to the THC for eye infection of my father. Doctor gave me some medicine that was not effective.”

“We need to give money to the doctor for medicine. No money no medicine.” A user mother expressed this comment while we ask her about the drug availability in the THC.

Some of mothers raised the issue of discrimination in dispensing of drug by stating that

“They provide drugs selectively, those who are rich and have good connection with the doctor, they got files (liquid /suspension in a bottles), for us only two tablets.”

Another mother said “SACMO provides bhalo bhalo (good) drug to the members of the local club as they are powerful”

It was a common belief among the rural mothers that vitamins were good for health and they expected them from the health centre free of charge for weakness (Durbolata in local term). Secondly, they also viewed injections; intravenous saline (IV Saline) is more effective for any illness. If any doctor prescribed an injection or IV saline, they thought doctor was giving good treatment. One mother stated that *“They don’t give us vitamins or shuei (injection).*

The non-user mothers made their comments based on the information they gained from others. For instance, a non-user mother said, *“We heard that hospital (THC)*

charge 10 taka (1£=77 taka) for slip (prescription). So we call doctor at home.”
Another mother reported that *“One of my relative went to hospital last week but no drug was provided for his disease.”*

Mothers were also made some comments that doctors are involve in drug pilfering
Seven mothers made comments in this aspect and said, *“we heard that doctors are involved in selling drugs, but we don't know where and how they sell it.”*

The above comments indicate that mothers are not satisfied with the existing drug availability or distribution system of the THC and FWC. Attitudes of user and non-user mothers about drug availability in two public sector facilities were found to be negative and almost similar in the case of THC and FWC. The majority of mothers from both the groups had the same feelings that required drug are not available in those health centres. They expressed dissatisfaction about the effectiveness of drugs they had received. In contrast none of the mothers raised this problem about the VHCP. The main reason may be mothers' belief that VHCP was a place for immunisation of children and TT vaccination for women and that was available there.

It is evident that the current supply of drugs is not sufficient to achieve the government policy of providing 'free' drugs to people. The majority of the study population is dissatisfied with the present drug availability and distribution system. Comparatively rich and influential people have better access to the available drugs than the poor people. In addition to that some providers are involved in the illegal practice of selling the scarce limited drug.

These findings suggest the need to change the existing drug supply, distribution and management system in order to improve the current situation and to change the negative attitude of people towards the government facilities. Some steps could be taken to address those issues: (i) funds for procurement of drugs could be given to thana level health authority based on population they served and disease pattern, so that they can purchase essential drugs in time through a 'local purchase committee' according to the need. (ii) An independent auditing system with disincentive /punishment provision need to be developed in order to monitor fair purchase, proper

distribution and misuse of drugs. (iii) People need to be informed about the availability and limitations of the public sector clearly through public statement and notice by the authority concerned to reduce misconception about the drug availability.

5.6.2 Attitudes about the public sector health care providers

Responses of the mothers towards the health providers were not found to be as direct as those of the community leaders. This was more applicable in the case of non-user mothers. For example most of the non-user mothers said, *"What we will say about the doctor, ask him (husband), I can not say anything."* The main reasons may be that women in rural areas normally do not visit the thana health complex and family welfare centre alone for their own or children's health. It is the responsibility of husband or male member of the family to choose and take them to the health care provider except VHCP, which is within the community. Findings from the household survey show 85% of the respondents consulted their husband before going to any health care provider and about the same per cent 83% (n=297) of them choose the health care provider for the respondents. Only 5% (n=17) of mothers chose the provider on their own.

Attitude of user and non-user mothers on the health care providers of VHCP was found to be positive. Seventy eight per cent (n=14) of mothers made comments on the behaviour of the VHCP providers. Some of the comments of mothers were like *"Shasto kormira bhalo (Health worker, (health assistant and family welfare assistant) are good, they are kind, gave vaccine to their children nicely, they don't charge any money, behave well, we are happy with their service."*

None of the user mothers made positive comments on the behaviour of the health care provider of the FWC. They expressed dissatisfaction by stating that *"Lady doctor of FWC does not behave well."* (Rural people call FWV as lady doctor). *"She does not come to the office on time"* another user mother said, *"FWV behave badly with every mother, we don't want to visit FWC due to her bad behaviour."*

Getting the service provider on time in the health care facilities was found very vital especially for the rural mothers where 99% of them are housewives. Women's role in the family is multidimensional. Apart from the routine household activities, like

preparing food in time, washing, cleaning, taking care of the livestock, they used to rear their children, care for their husband and elderly people in the family. After performing all those activities properly, they can think about themselves and their health. In this context it was found difficult for the rural women to go for health care to any health care facilities even if it was located within the walking distance. In such condition they became annoyed if they did not find the health care provider present. Five out of nine user mothers reported this issue and expressed their dissatisfaction in the following way.

“I went to the FWC three days, but I could not find FWV over there so I failed to take injection in time (for contraception prevention).”

Another mother said, *“I went to the hospital (FWC) at 10 am and waited there about two hours but doctor (SACMO) could not find him. Then I came back without treatment and since then I don't visit it again.”*

Another mother said, *“We need to go to the health centre leaving all work at home, but we have to come back without treatment, some time we could not see them, so why should we visit there?”* Some of the non-user mothers believed that they would be humiliated in the health centre and that they would not get any service without fees. As such they preferred to visit village health care provider, who was easily accessible and less costly. *“ We don't visit THC or FWC for the fear that doctors will not give any good prescription without money, moreover we feel it is troublesome to go there”.*

Mother's attitudes to the health care providers of the THC were found to be both positive and negative. Three mothers out of nine expressed their satisfaction on the doctors of thana health complex. When we asked about the reasons for satisfaction, it was found that two of them paid fees to the doctor and got good treatment and behaviour. (E.g. mother could explain the problem; doctor gave patient a hearing and spent more time to investigate her problems).

One user mother said, *“ I went to the hospital for the treatment of my son who was seriously ill due to drowning in the water, the doctor quickly treated him and he got well, I paid only ten taka for his service. I am satisfied with his service”.* She spent

ten taka, which was not valuable compared to her son's life. But it is hard for most of the sample population to spend that amount for medical purposes at one time.

Some mothers said, *“Doctors of Thana health complex are busy with babosha (business).”*

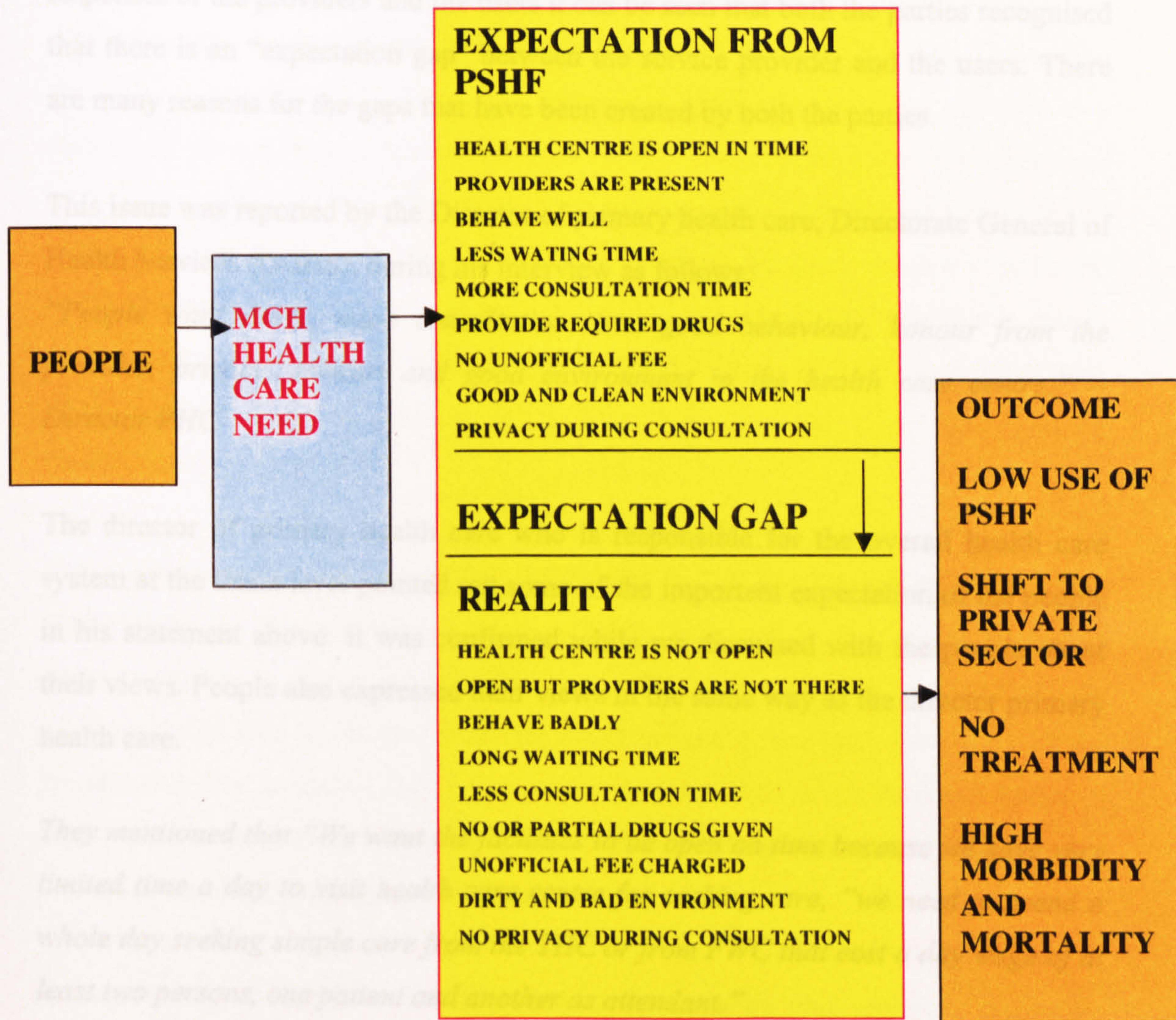
Business means private practice. One user mother expressed her anger when we asked about the question of behaviour. She said, *“ We need to go to the hospital after doing all household work, but we do not get a doctor there, they don't give us medicine, moreover they behave badly, so what's the point to go there?”*

The above findings are clear indication of negative attitude of mothers (user or nonuser) towards the health care providers of the THC and FWC. Mothers had positive attitudes towards the providers of the village health care post. Mothers were not well informed about the public sector providers unlike the as community leaders.

5.7 What people expect and what is the reality? (EXPECTATION GAP)

From the household survey, in-depth interviews with the rural women, formal and informal community leaders and with the different health care providers at the rural level in Bangladesh, a wide gap was found between the people's expectations and the reality in service delivery. The most common feelings of the people are summarised in the figure 5.3 below.

FIGURE 5.3 SHOWS THE EXPECTATION GAP OF THE PEOPLE WHO SEEK MCH SERVICES FROM PUBLIC SECTOR HEALTH CARE FACILITIES: THC, FWC, AND VHCP



Note: PSHF: Public Sector Health Care

Nine major expectations of people were identified from forty-eight similar responses. Those were related to health facilities, behaviour of the providers, availability of drugs, both physical environment and the manner in which services were provided. 99 % of the respondents reported that the two public sector health care facilities; FWC and THC could not fulfil the expectation of the population. In contrast a majority of the people interviewed used VHCP for two basic services; immunisation of the children and TT vaccination of the pregnant mothers. Almost all of the respondents reported that VHCP was providing good services according to the peoples expectation. Why did these contradictory scenario exists within the same health care delivery system that was managed by the same health care managers? From the responses of the providers and the users it can be seen that both the parties recognised that there is an “expectation gap” between the service provider and the users. There are many reasons for the gaps that have been created by both the parties.

This issue was reported by the Director of primary health care, Directorate General of Health Services (DGHS), during his interview as follows:

“People want drugs, more consultation time, good behaviour, honour from the provider, privacy, comfort and good environment in the health care centre.” -- Director PHC

The director of primary health care who is responsible for the overall health care system at the thana level pointed out some of the important expectation of the people in his statement above. It was confirmed while we discussed with the people about their views. People also expressed their views in the same way as the director primary health care.

They mentioned that “We want the facilities to be open on time because we have very limited time a day to visit health care centre for seeking care, “we need to spend a whole day seeking simple care from the THC or from FWC that cost a day wage of at least two persons, one patient and another as attendant.”

In the rural areas most of the people are involved in the cultivation in their own field or work as a daily labourer (69%). It is difficult for them to make time to visit health centre repeatedly for the same purpose without any serious situation. One of the main

reasons is to avoid financial losses. It was found common that FWC is closed for some days and VHCP is not open on time. Four major reasons were responsible for this. Those are the FWC and VHCP operation policy of the government and the job description of the FWV and SACMO/ MA, thirdly, lack of supervision and finally the level of people's knowledge about the service provision time of those two health care centres. These provider-related issues will be discussed in details in chapters six and seven.

The issue of providers' absence was reported frequently by the people. It was common that providers are absent from the duty with or without any reasons. This was noticed during facility observation. We could not meet a SACMO in three family welfare centres in spite of our four consecutive visits to those facilities. Those who are lucky to see that the health centre, especially FWC was open, but unfortunately they could not see the provider on time. As a result people need to wait for long time to consult health care provider. After long waiting time normally they can consult with a provider for 2-3 minutes. One UNICEF study in Bangladesh shows the doctor spent 3 minutes on average per patient in the THC (Guyon 1994), other study shows doctor spent 1.3 minutes per patients (Sabur 1990). A study of WHO found that 28% of the people do not visit public sector facilities due to inadequate attention given by the physician (WHO 1996).

The most important issue was that mentioned by all the respondents was **drug availability**. As the majority of the respondent belonged to the low and medium socio-economic condition group (55% and 33%), they normally expected all the required drugs free of charges from the health centre. It was also the policy of the government. But in reality they rarely received appropriate drugs from the centre. It made them disheartened. Sometimes they threw out those prescribed drugs, being viewed as either not appropriate or insufficient.

An old woman during an informal discussion in the study area reported *"Yesterday morning I went to the health centre (FWC) for the treatment of diarrhoea of my daughter-in law, the doctor (medical assistant) gave me four paraceatamol tablets, what I will do with that? Do you think that it was appropriate?"* With a little pause, she stated that

“In the afternoon I sent my son to the nearest bazaar to buy ORS (oral rehydration salt) packet from the drug shop. After having ORS she is now better than before, I need to sell some rice for buying ORS.”

The above statement provides two key sets of information, one about the quality of the provider and the availability of ORS in the FWC and also about the level of knowledge of the old woman about the diarrhoea. After investigation of this particular case with the health care provider concerned, it was found that ORS packet (Oral Rehydration Salt) was not available in the FWC as it was not provided to the FWC by the directorate of the family planning of the ministry of health and family welfare. Doctor (Paramedics) prescribed paracetamol, as it was available in the centre. Without explaining to the patients or providing any knowledge to prepare saline at home, he prescribed paracetamol to satisfy the patient. This vital item (ORS) is not included in the list of drugs supplied to the FWC, which seems to be essential for the rural people for diarrhoea treatment and this finding suggests that the drug list for the FWC needs to be reviewed.

Privacy during consultation with the health care provider, especially for the women's visits for ANC PNC and Child delivery is an issue in any health care system. People with any illness desired privacy during consultation with the health care provider. In a traditional society like Bangladesh where women are shy and do not like to expose themselves to the male health care provider, privacy is very important. It is hardly maintained in the public sector facilities. Most of the women are examined in front of a crowd of patients of all ages. (Photograph page 184). It was found impossible for the women to explain her problem freely to the health care provider especially maternal related diseases. Moreover all the health doctors and SACMOs at THC and the FWC involved in the maternal care were found to be male except one medical officer working both in the thana health complex and family welfare centre on a part time basis. Women faced difficulties in expressing their problem openly with those male professionals. To avoid this embarrassing situation, women also do not visit public sector facilities.

Some mothers also reported incidents of abuse of patients by the doctor. One mother reported-

“Please don’t talk about the doctor..., he is a bad character person, women do not like to go to the health centre because of his personal character, once my husband was about to beat him.”

Another mother stated that “Doctor was behaving such a way during investigation that I was feeling ashamed.”

Almost all the respondents reported the issues of unofficial fees. Some of them cited that

“Nothing is free in the health care centre, we need to pay for everything such as having a good prescription, drugs, laboratory investigation etc.”

“The doctor demands money for prescription or any other services in the health care centre.”, “It is impossible to get services from the health centre without giving fee to the doctor.”

The above comments provide evidence of humiliation and exploitation of the patient attending public sector health care facilities in different ways. Officially these are not acceptable and desirable. But it was found to be usual practice of the public sector providers. People do not welcome this system but they have no choice, as the authority concerned did not prevent it. Some of the respondents reported that as they have to pay for services both in the health care facilities and in the private “chamber”, they prefer to go to private “chamber” with a view to getting more attention and good prescriptions there. Some others preferred to give money to the provider in the health care centre in order to save time and money as well. Because in the hospital, the doctor may charge 10/20 taka and it is possible to consult the doctor privately without waiting by visiting his private chamber. On the other hand in the private chamber the normal fee is 40/50 taka and most of the cases need to wait in a long queue to see the doctor.

The above findings showed the gaps between the peoples expectation and the reality in service delivery. That leads them to form negative attitudes towards the public sector health care facilities in rural Bangladesh and low use of those facilities may be the outcome of those negative attitudes of the population. This finding generates a call to policy makers, health planners and health care providers: “mind the gap” before taking future steps of expansion or reorganisation of the MCH services for rural population and to evolve an effective mechanism for ‘bridging the gap’.

CHAPTER SIX

EFFECTS OF QUALITY ON UTILIZATION OF MCH SERVICES

6.1 Introduction

In the previous two chapters the effects of the socio-economic condition, knowledge and attitudes of the population to the use of maternal and child health care were analysed as population factors. Analyses of two provider factors; quality of the services, and access to the services will be presented in the following two chapters.

6.1.1 Quality and use of maternal and child health care

Quality is one of the major determinants of utilisation of health services. Studies in different countries have shown that poor quality of care affects the use of health services (LaFond 1995, Annis, 1981, Hadded 1995, Kloos et al. 1987). After reviewing a wide range of research reports on utilisation of formal services for maternal nutrition and health care in developing countries, Leslie and Gupta (1989) reported that the decision to choose health care is determined not only by its availability, accessibility and affordability but also by the quality of services offered. Under-utilisation of public health facilities in developing countries is directly attributable to the poor quality of the services (Kanji et al, 1992 in Acharay 1997). In developing countries there is mounting evidence that even when PHC services are physically accessible they are frequently not used due to poor service quality (Costello 1993).

In this study an attempt was made to estimate the effects of the quality of maternal and child health care services on the use of the public sector health care facilities in rural areas in Bangladesh. It was hypothesised that poor quality of MCH services decreases the use of services provided through public sector facilities. Seven criteria of quality were assessed: availability of drugs and their quality; availability of equipment; professional quality in terms of education, training and performance of the providers; privacy of treatment; management and supervision; and private practice. Physical quality of facilities was also assessed. Data on the quality of MCH care was collected using two main approaches; facility based observation and interviews with the providers. All these issues are analysed in this chapter.

6. 2. Concepts of quality health care

The main objective of any health care system is to provide good quality of services to the population. Quality has been described in various ways. From a simple and broad perspective, quality is 'doing the right things right, and right way' (Deming 1996 in Perry et al 1999). Quality can also be considered as meeting or exceeding customer expectations (Evans and Lindsay 1994). Quality is the merit or excellence of the system in all its aspects (Donabedian 1966). From the primary care perspective, quality of care has been defined as the proper performance, according to standards of interventions that are known to be safe and affordable, and that have the ability to produce an impact (Perry et al 1999). The components of quality of a service are the efficacy of the treatment it offers, the availability of supplies and equipment, the characteristics of its personnel, and the nature of its management and organisational structure (Leslie 1989). Haddad (1995) reported that patients are attracted by the presence of qualified personnel. According to the definition of World Health Organisation, quality consists of "three components: adequacy; efficiency; and technical and scientific level of care" (WHO, 1967). In the industrialised countries' context, quality is mainly focused on the accuracy of diagnoses and effectiveness of therapies (Roemer and Aguilar 1988). It is difficult to assess the quality of maternal and child health care by following this approach in developing countries for two main reasons. First the vast scope of maternal and child healthcare as it involves both preventive and clinical services, and second, there is a problem of getting reliable data /information relating to effectiveness of the treatment. It is also time consuming, as measurement of outcomes needs detailed information on treatment and clinical assessments, which is extremely difficult for developing countries, where record keeping and patient follow up system is almost non existent and information systems are typically weak (Roemer and Aguilar 1988).

Donabedian (1966) suggested three dimensions for the measurement of quality of care: structure; process; and outcome of services.

Structure: The structure dimension of quality includes physical resources, human resources and organisational structure, while the process dimension is concerned with therapeutic and diagnostic procedures involved in providing services including interpersonal relations with users and finally the outcome dimension deals with

change in health status due to intervention, along with the patient's satisfaction. Outcome of care depends upon the availability of resources (structure) and the type of medical intervention (process), but the relationship is not always a linear one (Donabedian 1980). More resources do not always improve outcomes if the resources are not being used in an appropriate manner, but it is one of the pre-conditions for making the services available to the people.

Different quality assessment studies use one or two approaches either structure or structure and process or outcome of the health care intervention based on the objectives and time frame of the study. In this study I have undertaken the assessment of the structural quality of the maternal and child health care services in order to understand its effect on use of services in rural areas. The process and outcome dimensions are deliberately not included in this research.

Under structural quality, four specific physical facilities of the health care centres: waiting place; toilet facilities; water supply; and patients' examination room were considered. In addition to that, skills and performance of the manpower involved in providing MCH care, and availability of drugs and equipment have been analysed as indicators of quality. The issue of organisation and management and private practice of the public sector providers are included in this analysis as an affecting factor in delivering high quality services through the public sector health care facilities. All the above issues are discussed in the following sections starting with a short description of the public sector facilities.

6.3. Description of the public sector health care facilities

As described in chapter 1 there are three health care facilities at the primary health care level: Thana Health Complex (THC); Family Welfare Centre (FWC); and Village Health Care Post (VHCP). These health care centres are staffed by different categories of health personnel with specific responsibilities. All three facilities have maternal and child health care components and services are organised according to the physical structure and provision of health personnel in each centre. For example, THC is a two storied building with 31 patient beds and 47 different types of human

resources (appendix 5) including nine doctors and two medical assistants with diplomas from a medical faculty. FWC is a one or two storied building without bed facilities and staffed by six full time personnel along with a Medical Assistant /SACMO having a three years diploma degree from a medical faculty. Out of nine Unions one FWC is located within the THC and functions as a family planning and MCH unit. This is due to the policy of the government that there will be no separate FWC in the Thana headquarter where a THC exists. In another union the FWC is yet to be constructed, though it was found that it is functioning in a room of a house belonging to a member as staff of the Thana family planning office.

Finally, the VHCP has no permanent physical facilities and no exclusive health personnel. There are twenty-four VHCPs functioning in each of the nine unions. They are organised once a month in a pre-selected village household for providing immunisation to children, vaccination to pregnant women and distribution of family planing devices. The community level health worker such as Health Assistant, Family Planing Assistant and Family Welfare Visitor, is responsible for providing maternal and child health services through this post.

Altogether twenty-two health care facilities were visited across the study area and forty-three different types of health care personnel were interviewed for this study (Table 6.1). The purpose of the visit and the interview were to observe availability of the physical facilities and resources for providing planned maternal and child health care services as well as to understand the views of the health care providers towards the different aspects of health care facilities. The ultimate objective was to identify to what extent factors relating to those facilities and providers are actually deterring the people from using those facilities.

Table 6.1. Types of facilities visited and personnel interviewed under this study

Location of Facilities	Types of health care facilities	Total number of facilities exist	Visited for this study	Types of personnel interviewed	Number of health personnel interviewed
Thana	THC	1	1	Doctor TFPO S.S.NURSE	7 1 1
Union	FWC	9	9	MA SACMO FWV	1 5 6
Village	VHCP	216 (24 VHCP/ Union x 9)	12	FPI HI HA FWA	3 1 9 9
Total		226	22		43

6.4. Indicators of quality

6.4.1 Physical quality

Quality of the services may be dependent upon the physical quality of the facilities. Looking at the availability of four physical facilities assessed the physical quality of the three types of health care facilities: waiting place; toilet facilities; water supply; and patients' examination room. These physical conditions were selected as basic requirements of the health care facility involved in providing maternal and child health care. To attract the mother to maternal and child health care a good waiting place is important. This is more crucial for pregnant women in rural areas. There are two main reasons for this requirement. Firstly, as we know, rural pregnant women do not like, or are not permitted by the family, to visit health care facilities for antenatal or other care due to tradition and cultural beliefs. In that case, they need a good private and comfortable waiting place for taking rest at the service point. Secondly, after travelling a considerable distance to reach the health care centre, a place to wait is an obvious need for pregnant women.

Toilet and water supply facilities are also important. Finally a separate examination room is a part of service quality, as maintaining privacy during diagnosis, especially for antenatal and postnatal care is assumed to be important. A well equipped examination room, with a patient examination table, seat for the patient, and necessary equipment is essential for proper investigation of any patient. Both the users and the provider in their interviews reported these issues frequently.

On the basis of the above four physical conditions, health facilities were categorised into three groups, good, moderate and poor. Standard criteria were set for each grouping. A score of one to three was allocated for each of the four variables. One point was given if it was found poor¹; two for moderate² and three for good³. Judgement was made through direct observation of the above facilities by the researcher. In the scoring process the minimum four and maximum twelve points were assigned to determine the quality of the facilities. Facilities within the range of four to six were considered as poor, seven to nine were put in the moderate category and ten to twelve were considered as good.

Fig. Scale to determine the physical quality of THC and FWC.

|Poor	|	Moderate	|	Good|
4		6		9
				12

*Criteria for grouping of THC and FWC.

Waiting place:

3. **Good:** If built-in waiting place for women, adequate sitting arrangement with drinking Water source and the place are clean.
2. **Moderate:** If built-in waiting place but common (for male and female), sitting arrangement is not adequate and drinking water source outside the centre.
1. **Poor:** if open space with no sitting arrangement and no drinking water source.

Toilet facilities:

3. **Good:** If built-in separate toilet for women inside the centre with internal water supply and clean.
2. **Moderate:** if separate toilet for women outside the health centre with internal water supply and Clean.
1. **Poor:** If common toilet outside the health centre with no internal water supply and dirty / no toilet Facilities.

Water supply:

3. **Good:** If piped water inside the health centre with regular supply.
2. **Moderate:** If the water source (tube-well) is outside the health centre and functioning.
1. **Poor:** If water source is outside the health centre and not functioning /no water supply.

Examination room:

3. **Good:** If separate examination room for MCH care having patient examination table, seat for patient and privacy maintain facility exists (e.g. curtain around the examination table).
2. **Moderate:** If common examination room for all type of patient with seat for the patient having examination table without curtain.
1. **Poor:** If open examination place and no seat for patient.

A different set of criteria was established for the VHCP, as it has no separate physical infrastructure. Three aspects were observed to assess the physical quality of the VHCP: sitting arrangement for providers (health care worker); waiting arrangement for people; and availability of drinking water. These three facilities were considered for grouping the VHCP, as these facilities are found to be important and basic requirement of any health care facility even if it has no physical infrastructure. If the VHCP is provided with chair and table for providers, a bench or mat/rugs for people to sit on and a drinking water source (tube-well) on the spot then it was considered as good. If the VHCP provided a mat for the health care providers and also for visitors/parents, and a drinking water source was found nearby, the VHCP was considered as moderate. Finally, if it was provided with only a mat for the health care providers, no sitting arrangement for people and no drinking water source at the site, then it was considered as poor. The physical quality assessment was made based on direct observation by the researcher. None of the VHCP fulfilled the criteria of good facilities. Only 25 % of VHCP fell in the moderate category and 75 % (n-9) of the VHCP were found to be poor according to the set criteria. The main reason was that there was no physical structure for the VHCP. It was organised on a veranda or a room of a pre-selected Bari (in rural area a house is called bari) in the village.

Table 6.2. Shows physical quality of the health cares facilities* based on waiting, toilet facilities, water supply and examination room facilities

Types of facilities	Number	Per cent
Thana Health complex		
Good	0	0
Moderate	1	100
Poor	0	0
Family welfare centre		
Good	1	11
Moderate	5	56
Poor	3	33
Village health care post		
Good	0	0
Moderate	3	25
Poor	9	75

*TOTAL-22: THC-1 FWC-9, VHCP-12

According to the physical quality scale, the Thana Health Complex fell in the moderate group. As regard FWC, out of nine, one was found good and a medical assistant under directorate general of health services headed that facility. Fifty six per cent (n=5) of FWC were found moderate and thirty three per cent (n=3) fell in to the poor category.

Waiting place, toilets, water supply and examination room

In the THC there was found to be a common waiting place for men and women inside the hospital. But in fact that place was not being used only for that purpose. Other hospital activities also took place there. For example, the registration clerk and immunisation team (see photo: 4.2 page 93 and 6.3 page 190) used that venue as their work place. Activities like immunisation of children and vaccination to pregnant women along with registration of all patients took place there. The patients needed to register with the registration clerk there before going to see any of the doctors. After registration, patients waited either outside the doctor's room, where there was no sitting arrangement, or inside the doctors' room along with other patients, and some cases two benches were found for patients. Enough room was not found to accommodate all the patients. In most cases patients of different ages were found standing around the doctor (photograph below).



Photo 6.1: A view of a doctor's room in the THC.

Doctor could not see people in order of the registration, as everybody wanted to consult first, though he asked the patients "who is next"? So there was found to be no

The Doctor could not see people in order of the registration, as everybody wanted to consult him first, though he asked the patients “who is next”? So there was no organised system for consultation and no ideal waiting place for women either inside or outside the doctor’s room, which is exclusively needed for the women where they can wait for their turn. The existing waiting areas of the THC were found to be insufficient with respect to the daily patient flow, space and sitting arrangement unsuitable for women in the cultural context of rural Bangladesh. No drinking water source was found available in the waiting area. Patients needed to drink water either from the bathroom tap or from the tube-well outside the hospital building. Separate toilet facilities were found for the women located in a corner of the THC building, but they were not clean.

In the case of FWC, a common waiting place with a wooden bench was found inside the centres. Out of 7 family welfare centres three were provided with two benches and other four were provided with one bench for patients. Apart from that, one bench was found inside the Medical Assistant/ SACMOs’ room for the patients in all the family welfare centres. Regarding toilet facilities, three FWCs had that facility inside the health centre, one had no facilities as it was functioning in a room of a family planning staff member’s house. In the other five, toilet facilities were outside the FWC. Those toilets were found to be very dirty and smelly and there was no internal water supply. All the FWCs had a tube-well outside the health centre as a water source. Although three FWC had internal water supply systems, the FWC staff reported that the systems did not work most of the time. Often tube-wells were broken and could not be repaired immediately. This was due to the long repair procedure. The Medical Assistant had to report to the Thana health and family planning officer (THFPO) officially. Then the THFPO needed to write officially to the public health department. The public health department, after assessing the requirement, would pass a repair order with the necessary funds, then it might be repaired. Most of the FWCs had to face water supply problems throughout the year because of these cumbersome repair and maintenance procedures.

Both the SACMO/ MA and FWV had their own separate consultation rooms in the FWC s. But they did not maintain any patient queuing system, so a number of patients were found around the FWV or SACMO/Ma s during consultation with one patient.

In the VHCP, no waiting place for the patients was found and no sitting arrangement for mothers and children. Most of the patients had to wait outside in the open. Normally FWV was found surrounded by a number of patients (see photo page 190). Toilet facilities are not available there either. This was quite normal because 34% of the rural households have no latrine (BBS 1998) and in the study area 53% of household did not have those facilities. The only thing that was found in all the village health care posts was the supply of water. This was mainly because of wide availability of tube-wells in the study area (98% of households compared to 94% of national level). No separate patient's examination room was found in any of the VHCP. Seventy-five percent (n=9) of the VHCP did not have any chair or table arrangement. FWVs' need to sit on the floor mat. Twenty five percent (n=3) were provided with a cot and a mat. Two VHCPs were found to be provided with one table and two to three chairs for the providers. So the sitting arrangement in the VHCP was found not only inadequate and unsuitable for people but also limited for the providers.

6.4.2 Effects of physical quality on use of services

The findings related to the physical facilities clearly indicate the poor physical condition of the facilities in all three public sector health care facilities. Interestingly none of the respondents complained about the inadequacy of waiting places and water supply problem in the health centres. It was not reported as the reasons for not using the health facilities. Only one issue that was reported by the majority (65%) of the respondents was the poor condition of the toilet. Poor toilet facilities may have some effect on the use of health care facilities but it was not found to be the main reason for that.

It was found that VHCP had no toilet facilities and sitting arrangement but most of the people used the VHCP for vaccination of the children and women. This may be mainly due to the availability of the services that people expect from the centre. On the other hand the FWC and the THC have quite good physical facilities compared to the VHCP. But the majority of people were not using those facilities. So the problem of poor physical quality, deterring use of services could be minimised by ensuring availability of the planned services.

6.5 Providers' quality (characteristics, education and training, performance)

6.5.1 Background characteristics

Three types of health care professionals were considered in this analysis. Those were graduate medical doctors working in the THC, Medical Assistant /SACMO and Family Welfare Visitor working in the Family Welfare Centre. Seven items of basic information were collected relating to age, sex, marital status, religion, length of service, educational qualification and types of maternal and child health care training they had.

Seven graduate medical doctors, three Sub Assistant Community Medical Officers (SACMO), one medical assistant (MA) and six family welfare visitors (FWV) were interviewed to collect the above information. The graduate medical doctors were working at the Thana Health Complex in different positions. They were aged between 28 and 41 years. Out of seven doctors one was female. In principle she was posted to a FWC, but actually she worked three days a week in the THC and the other two in the FWC. There was no other female doctor in the hospital. All doctors were married except one medical officer (MCH). As regard religion, five were Muslim and two Hindu. Their length of service varied from one month to 17 years. Four of them have 10-14 year's service experiences. One had 4 years and the medical officer (MCH) had only one month of service experience.

SACMOs were working at the family welfare centres. They were aged between 32 and 42. All were male and by religion Muslim. Two of them had 13 years of working experience, one had 11 years and the other had 15 years of working experience.

FWVs also worked at the family welfare centres. Three of them were aged between 38 and 40 years, one was 26 years and another was 56 years old. All were female, married and by religion Muslim. All of them had more than ten years of working experience.

6.5.2 Education and training

Training is a mechanism for updating professional knowledge and the process of skill development. It was found that at the thana level most of the providers had no or limited maternal and child health related training though they had long working

experience either in the THC or in the FWCs. For example, out of seven doctors (Medical graduates) of the THC, only two of them had exclusive training about diarrhoea, TB & Leprosy control, school health, mental health, health education and other diseases. None of them received in-service training on antenatal care, postnatal care, and child delivery. The Medical officer (working in the post of obstetrics and gynaecology) and in charge of the gynaecology and obstetrics unit has no special training on that subject. The medical officer (MCH) who is responsible for family planning and maternal child health care had no training on maternal and childcare. All the doctors had a medical degree. One doctor had post graduate degree in Public Health (Table 6.3). He was the manager of the THC and designated as Thana Health and Family Planning officer (TH&FPO).

Table 6.3. Educational qualification and training of the provider

Types of professional	Basic Education	Post Graduation	Training In country	Training Abroad
TH&FPO	MBBS	MPH	EPI, Diarrhoea, ARI, Mental health School health	No
MO (FP)	MBBS	No	MCH	No
RMO	MBBS	No	Surgery	No
MO (Surgical)	MBBS	No	Surgery	No
MO (Medicine)	MBBS	No	No training	No
MO (Gynaecology)-	MBBS	No	Diarrhoea, TB, school health	No
MO(MCH)	MBBS	No	No training	No
SACMO	DMF	No	No	No
MA	DMF	No	Diarrhoea, EPI, ARI,	No
FWV- 4	SSC	No	ANC, child delivery, FP method,	No
FWV-1	HSC	No	ANC, child delivery, FP method, MCH	No
FWV-1	BA	No	ANC, child delivery, FP method, MCH	No

SACMOs, had a 3-year diploma degree from the medical faculty. None of them received any in-service training on the maternal and child health care during their working life. Only one medical assistant had training in acute respiratory infection

(ARI), immunisation, diarrhoea, and the treatment of tuberculosis. In the case of the family welfare visitors (FWV), four of them had secondary school level education, one had higher secondary level and another has bachelor's degree. All of them had eighteen months FWV basic training along with short training on the antenatal care, postnatal care, child delivery, diarrhoea treatment, immunisation and training on menstruation regulation (MR). The family welfare visitors had more in-service training compared to medical doctors and the SACMO /MA.

6.5.3 Performance of the professionals

Performance of the providers was assessed by analysing five aspects: patients seen per day; time spent per patient; time spent per day in providing services; behaviour with the people; and counselling practice. In-depth interviews using semi-structured questionnaires, direct observation and record analysis were undertaken to collect key information for this study. The average number of patient treated per day in the out patient department, average time spent per patient and the service time per day of the doctors in the THC were collected and are summarised below.

Table 6.4. Distribution of the THC doctors by the working time, patient treat per day, time spends per patient as reported by them.

Type of provider	Reported average Patient treat per day	Reported average time spent per patient (in minutes)	Reported working hours per day for providing services	Total time spent for providing services per day
1	2	3	4	5
Doctor	In the outdoor	In the outdoor	Office time 9-5 PM, 8 H.	(2x3)
TH&FPO 1	40	1-3	9	40 M to 2 H
MO(MCH) 2	20	2-3	8	40 M to 1 H
RMO-3	50	1-2	8	50M to 1.66H
MO (FP) 4	10	3-5	5	30 M to 50 M
MO(DC) 5	30	2-3	8	1H to 1.5 H
MO (SURGICAL) 6	25	2-5	8	50 M to 2 H
MO(OBGN) 7	20	1-3	8	20 M to 1 H

M =Minute H = Hour,

The Table 6.4 shows that doctors at the THC provided treatment to between 10 and 50 patients per day. Three out of seven doctors provided treatment to 10-25 patient, two

doctors reported 30-40 patients and one reported 50 patients treated per day in the out patient department. Five doctors reported that they spent 1-3 minutes per patient and two others reported 5 minutes. Five out of seven doctors reported that they spent 8 hours providing services, one female doctor (MO FP) reported five hours and the TH&FPO, the manager of the Thana hospital spent 9 hours delivering health care, although the official service time is 8 hours. The TH&FPO worked one extra hour more possibly due to his administrative responsibilities in addition to normal duties. The MO (FP) worked fewer hours compared to other doctors in the hospital as she also worked for the family welfare centre at the union level. However, if this is the usual pattern of health care delivery practice of the doctors of the THC, then 30 (10x3) minutes to maximum two and half hours (50x3=2.5 hours) is required to provide health care services to the patients who visit the out patients department. On the other hand if we consider a situation where all the doctors are providing six hours service and spending 3 minutes per patient as they reported then they could easily treat 120 patient and if we doubled i.e. 6 minutes then they would be able to treat up to 60 patients and so on. This ideal situation could be as summarised in the table 6.5.

Table 6.5. Shows how many patients a THC doctor could be seen by spending different amount of time per patient and what they were actually doing

If they spent time per patient (In minutes)	If the actual working hour considered 6 hours.	Total patient could be seen by a THC doctor	Reported patient seen by a THC doctor	Deviation
1-3 Minutes	360 M	120	10-50	110-70 patient
6 Minutes	360	60	No report	
9 Minutes	360	40	”	
12 Minutes	360	30	”	
15 Minutes	360	24	”	
19 Minutes	360	19	”	

Note: two hours excluded from the normal 8 hours office time for lunch and other official duties, meeting etc if any.

Table 6.5 shows how many patients a THC doctor can see if he/she works at least six hours a day for providing out patient care in the THC. It can be seen that if they followed their reported time per patient they could treat 120 patients per day. This

number could be 60 if they spend six minutes per patient and 40 in the case of 9 minutes. But in fact most of the doctors were providing services to between 10 and 30 patients and spending 1-3 minutes per patient. This clearly indicates that providers are not using their full working time for the patient care. But they are claiming that they could not give more time due to heavy pressure of the patients. For instance, in a question of time spent per patient, a THC doctor replied that *“2/3 minutes if the case is not complicated, actually I need five minutes, but in average I can spend 2 minutes, in this situation people put pressure to see me privately.”*

This finding generates some basic questions; where and how do provider spend rest of their working time? Why are they complaining about the scarcity of time for patient care? Moreover is it possible for a doctor to provide quality health care (e. g. antenatal care or postnatal care) to the people within 1-3 minutes? This finding suggests further investigation of this issue is needed. To verify the statement of the doctors relating to the number of outdoor patients treated per day, two months of daily patient treatment record of MO (ob-gyn), MO (RMO) and MO (MCH) were examined. It was found that the highest number of patients treated by them was twenty-two and the lowest was one. MO (ob-gyn) provided 14 days services out of 31 days and two other doctors were engaged 10-14 days in providing health care services in the hospital. The resident medical officer (RMO) provided 20 days services in one month and 13 days in another month. Their performance has been summarised in table 6.6 below.

Table 6.6. Shows the two months patient treatment record of the three THC doctors.

Provider	Patient treated in month -1		Patient treated in month-2	
	Total working days	Total patient treated in a month (Average patient per day)	Total working days	Total patient treated in a month (Average patient per day)
MO (Ob-gyn)	14 days	99 (7)	13 days	90 (7)
RMO	20 days	181(9)	13 days	111(8)
MO (MCH)	10 days	40 (4)	10 days	73(7)

The Table 6.6 shows that out of 30 days a month, the three doctors were engaged less than half a month in providing health care in the outpatient department of the hospital. It was found that on average they treated four to nine patients a day. The maximum

number of patients treated per day was twenty-two and most of the days less than ten patients were recorded. This finding supports the daily patient treatment statement that was given by the doctors during unstructured interviews.

It was also found that basically patient registration stopped at 1-00 p.m though officially it should have continued up to 5-00 p.m. Moreover people also believed that good medicine (antibiotics, injections, liquids etc.) were distributed before 1-00 PM. As a result most people visited the THC before that time. Few people were found to come to the hospital after 1-00 PM for out patient care. Doctors took advantage of this situation and found a venue for carrying out their personal business. One medical officer reported that “Morning is a rush hour for us. Most of the people visit hospital before lunch and want to go back soon, everybody wants service at a time and stands around me during examination, as such it becomes difficult to give patients a hearing about their problem.” (Picture on page 184).

In the case of FWC a similar scenario was found. Delay in coming to the office by the SACMO and FWV were common in all the nine of the family welfare centres. For example none of the SACMOs and FWVs of the nine FWCs were found to come in the office at 9-00 am and stay up to 5-00 PM. According to government policy they should live in the FWC quarters. As such two residential quarters one for SACMOs and another for the FWV are available in all FWCs. Out of six SACMOs and FWVs only two of them lived in their quarters. Two SACMOs could not be met despite three consecutive visits to their FWC. From the three months patient treatment register of the FWC, it was found that none of the SACMOs or FWVs provided health care for more than 15 patients per day. Most of the days they treated 3-9 patients. Variation in patient treatment was found in one FWC that was headed by a Medical Assistant. It was found that he provided health care on average forty-five patients per day. But the consultation time of Medical Assistant was 2 to 3 minutes that was similar to the time spent by the doctors of the THC and SACMOs in the FWCs. No plausible reasons for delay in coming to the FWC and remaining absent from the duty was given by SACMOs. The behaviour of the doctors, SACMOs and FWVs to the patients were found to be cordial both in the THC and in the FWCs, though significant number of people reported that behaviour of the provider was bad during the household survey and in-depth interview. This friendly behaviour might be due to the presence of the

observer for this study. Two doctors gave an explanation of the peoples' view of bad behaviour. They reported that *"People come to the hospital mainly for free medicine. Sometimes they demand specific drugs. Those are normally unavailable in the health centre. We can not fulfil their requirement. As such they became annoyed to us and sometimes we become impatient with them. It is reported as bad behaviour of the provider."* Formal reception of the patient by the THC doctor or SACMOs was not found either in the THC nor in the FWCs. Counselling practice was found poor in all health care services. None of the doctors, SACMOs and FWVs was found to explain to the patient their problem and tell them how to cope with the problem. In most cases a prescription was give just by asking a simple question to the patient *"Ki hoyeche? or apnar samasya ki? (What is your problem? or what happens with you?"* Physical examination before prescription was found to be rare.

6.6 Private practice

At present there is no formal government policy document on the private practice of the public sector health care providers. It is documented briefly in the Medical Practice and Private Clinics Laboratories (Regulation) Ordinance, 1982 that *"The ordinance prohibits private medical practice during office hours by registered medical practitioners in the service of the republic"*. This ordinance in fact has given approval to the public sector provider to do private practice after official hours. All public sector health care providers at the primary health care level are involved in private practice. The question is to what extent are the restrictions on doing private practice during office hour being followed and is it affecting the quality of public sector health services. These issues are analysed here.

The community leaders and mothers expressed their deep concern about the private practice of the public sector health care providers during the household survey and in-depth interviews with them. They believed that private practice was worsening the quality of the public sector health facilities and the quality of the services could be improved if the public sector providers stopped doing that (this was discussed in chapter 5 in detail). This issue was raised with the providers to cross check the perception /views of people. The purpose of the analysis is to describe the current pattern of the private practice and to estimate to what extent the private practice is the

cause of the deterioration of the quality of public sector health services. Six aspects were examined to address these objectives: time of private practice; place of practice; average numbers of patient treated per day; consultation time per patient; income from their practice; and finally the providers' views on its effects on the quality of services that ultimately contributes to low use of public facilities. Information relating to these issues was collected from seven doctors, four SACMOs/MA and six FWVs individually through structured questionnaires and in-depth interviews. Views of the four senior health and family planning managers/ supervisor, two from district level (Civil surgeon, Deputy director of family planning) and two from directorate level Director primary health care and director MCH) were also collected to understand their perception on private practice. The extent of private practice of the THC doctors is summarised in table 6.7.

Table 6.7. Distribution of the THC doctors by their private practice time, patient treat per day, time spends per patient and per month income.

Providers	Reported average patient treat per day. (in number)	Reported average time spend for private practice (in hour)		Average time spend per patient (in minutes)	Reported earning from private practice (in taka)/ month
		In the Working days	In the Holidays		
Doctors of THC	In the Private chamber/residence			Patient per day/ practice time	1₳=77 taka
TH& FPO	15	6	6	24	8,000
MO(MCH)	10	5	8	30	3000
RMO	10	6	11	36	6000
MO (FP)	4	2	3	30	4000
MO(DC)	15	5	8	20	20,000
MO (Surg)	20	5	9	15	45,000
MO(OBGN)	10	4	4	24	5000

All of the seven doctors of THC were involved in private practice. They were doing their private practice both in working time, in the morning and in the evening. Average time spent in private practice varied from 2 to 6 hours per day in the working day and 3 to 11 hours in the holidays. The female doctor, Medical officer (FP), reported the only variation. She did not practise in the morning. Some of them started private practice from six am in the morning and continued up to nine am, the starting

time for public services. Four doctors had their own personal /private chamber, one was practising in a medicine shop, others were doing practice in their residence and private clinics. All of them had a private chamber at their residence. It was reported that normally they treated 10-15 patients per day, the number could be as high as 20. Earnings from private practice varied between Tk.3000 to 45,000 per month. Two of them earned more than 10,000 taka and others reported Tk.3000-6000 per month. The surgical specialist earned taka 45,000 per month. Two doctors had their own pathological/diagnostic laboratory. Sophisticated equipment like Eco Cardio-Graph (ECG) and an X-ray machine had been installed in two private chambers. These types of diagnostic equipment are considered as high technology in the rural context. Several doctors expressed their concern about the use of those x-ray machines. Because both are low power 10 MA machines, it needs more exposure time to do x-ray, which might in turn lead to radiation hazards. Moreover those machines are operated by non qualified X-ray technicians who do not ensure proper protection during exposure.

SACMO/ MAs at the union level were also found to be involved in private practice. Their time for private practice was found similar to the hospital doctors. They were involved in private practice both in working time and holidays. In most cases they attended the patient's house on call. Their residence and their office chamber at the FWC were also used as venues for private practice. In addition to that a private clinic and nursing home was found operated by the SACMOs near the THC. A sub assistant community medical officer, the managing director of the nursing home informed us that it is a joint venture of the SACMOs and they were providing quality health care to the people at minimum cost. Two SACMOs were found in the nursing home during FWC office hour. The THC doctors were involved in that nursing home indirectly. They provided treatment to the nursing home patients on a call basis i.e. they visit the patient according to the requirement of the clinic authority.

Private practice of the FWVs was less visible as that of THC and hospital doctors, as they had no organised private chamber. They did not have medical and dental council registration for prescribing medicine. Their private practice was mainly limited to child delivery, antenatal care, and insertion of family planning methods and MR. They provided those services mainly through home visits. Financial return was

reported to be a maximum of taka 500-600 per month (7 pounds). For the child delivery they received gifts like new clothes (sari) and sweets as fees for services. They had no formal time for private practice unlike THC doctors and SACMOs.

6.6.1 Views on private practice

Seven specific questions were asked of the providers to understand their views on private practice. Those questions were related to their knowledge about the government's policy and regulation, reasons for their involvement in private practice, its effects on their official work and on the quality of public health services and whether private practice was undermining the public sector health care facilities and finally, whether the quality of public sector health services would be improved if they stopped private practice.

It was found that the doctors, SACMOs, and FWVs had little knowledge about the government's policy and restrictions on private practice except knowing that private practice was not illegal after office hours. Most of the THC doctors cited an example of running large scale business oriented polyclinics, nursing homes and private hospitals by the public doctors working at the district, division and national health facilities like the medical college and hospitals at the secondary and the tertiary health care level. The THC doctors reported that they were not involved in those types of activities.

As regards reasons for the involvement in the private practice, all of them reported that they needed additional income to maintain their family, as it was not possible to maintain the family on the government salary. Different opinions were also expressed by some of the providers. For instance, one stated that *"Some doctors are doing private practice not only to earn money for maintaining their family, they are doing business and at the cost of their morality."*

A senior supervisor (Director MCH) reported that *"Private practice is the right of the doctor."* Another health care manager thought, *"Private practice is essential not only for the benefit of the provider but also for the sake of the people, as public sector could not provide all the health care."*

The district civil surgeon said, *“Private practice is officially acceptable. I have no objection to it, if any doctor can manage it before and after office hours.”*

According to Medical officer (FW) “Normally people need to go to the private establishment/ laboratories for investigation as the public sector health care facilities are not equipped with all the necessary diagnostic facilities, this is not due to private practice.”

Some other providers said, *“We are doing private practice due to the peoples’ pressure.”* For example they stated that *“a section of the population always insist us to give a private prescription as they do not believe a good prescription could be given by the doctor free of charge.”*

This statement generates the question, why did people believe so? This issue needs to be investigated separately.

As regards the effects of private practice on official work, different opinions were found. Seven out of eleven (64%) doctors and one SACMO reported that it did not hamper their official work at all, as they did their practice after and before office hours. Others agreed that it hampered their official duty quite often. For example, they could not come to the office in time due to private practice in the morning and frequently came late in the afternoon, as they practised in the lunch hour.

The effects on the quality of services is “quite natural” reported some providers as they could not concentrate fully to the problem of the patient and could not give more time to them compared to the private chamber.

All of them perceived that quality of the private service was better than government facilities as they could spend more time with the patient and could give more attention to examining the health problem. Moreover privacy and confidentiality could be maintained, which are vital for any patient, especially for the women.

In response to the question, whether the private practice undermined or degraded the public sector health care facilities, differences of opinion were found. Wide variations in opinion were noticed between the providers of the THC and the FWC level

providers. Most of the THC doctors did not agree that private practice was responsible for undermining the public sector health care. On the other hand majority of the SACMOs (3 out of 4) and FWVs (6 out of 6) thought that private practice was responsible for the low quality of the public sector health care services. Some of their views are as follows;

“I am 100% sure that people are not getting good services due to private practice and I believe that 90% of the people will get good quality services if private service can be stopped.” reported by a SACMO. Another SACMO thought, *“Quality of the hospital service will be improved if they stop private practice.”*

A FWV who is working in the THC said, *“There are some doctors who always try to divert hospital patients to their own private chamber, this is unfortunate and people are helpless, as they need health care.”*

A district level health care manager thought, *“Private practice is not responsible for lowering the peoples confidence on the public health care services.”*

The director of primary health care cited that. *“Private practice is a factor for degrading the public sector health care, but is not the only reason for people’s low confidence on the public health care services.”*

Seventy three per cent of the doctors and SACMOs perceived that the quality of the private practice was good compared to the public health care. 27 per cent of them felt that the quality is almost the same but people believed that private treatment is better than public health care. One doctor of THC reported that *“People use private establishments because of their mental satisfaction and they think private care is better than public health care.”*

6.6.2 Effects of private practice on use of services

The above findings suggest that private practice of the public sector health care provider was decreasing the quality of the public sector health care services in different ways. Firstly, they could not give full attention to their job, proper care to the patients and that led to peoples’ dissatisfaction and degrading of the service quality.

Secondly they could not spend a minimum of five minutes for each consultation. They were not providing good prescriptions to the patients in order to attract the patient to their private chamber. The dual role of the public sector provider created confusion among the patients in the choice of health care. For example people were not getting a good prescriptions unless they visited the providers' private chambers. Moreover privacy, increased consultation time, good reception at the private service degrades the public sector health care facilities where those aspects were found not to exist.

6.7 Privacy in consultation,

Privacy is considered to be an important component of quality. It was not found to be maintained in the THC, FWC and VHCP. In all the facilities it was seen that providers are surrounded by at least 5-10 patients along with their attendant of different ages during consultation (Photographs: 6.3-6.5 page 190). The health care providers reported two main reasons for this scenario. Firstly, in the case of THC and FWC there is no manpower to check the patient at the door of the doctor/ FWV/ SACMO and no waiting arrangement outside the doctor's room. Secondly, they could not maintain patient serial system during consultation as everybody wanted to consult first and some influential patients did not want to follow a queue system. In most cases, a group of patients and their attendants entered the consultation room all together. The doctor talked with the patient in front of different types of people. As a result they could not concentrate on the problem of the patient, examine properly, and the patient could not explain their problem freely to the provider. This became more acute during normal antenatal check-ups and women with high-risk pregnancy, as the pregnant women were reluctant to expose their problem in front of anybody.

A similar picture was found in the case of VHCP. In fact, the scope for maintaining privacy during a consultation in the VHCP was found to be difficult as it operated in a single room or open veranda of a village house. There were no physical facilities such as separate consultation room for the FWV/SACMO at the VHCP. Full antenatal check up was found to be difficult in these facilities. Pregnant women were not found to speak freely to the FWVs about their problems. Proper counselling was not found to be possible in that environment. ANC was seen to be limited to checking blood pressure, body temperature and asking women about their problems.

6.8 Availability of drugs,

The lack of availability of drugs at the Thana level health care facilities was reported by the people and was discussed earlier in chapter 5. The same issue was raised with the health care providers at the Thana level to understand their views about it. Information was collected on the two main issues. First, whether the supply of drugs to the facilities was regular. Second, whether the supplied drugs were sufficient for the needs of the people, and finally to estimate to what extent drugs affected the use of health care facilities. Interviewing the health care provider, document analyses and observation techniques were used to collect the information.

According to the current policy of the government each Thana health complex has an allocation of taka 300,000 (3896 pounds when 1£=77 taka) per year for medical and surgical requisites (MSR) that includes drugs. There is no separate budget for drugs. At the Union family welfare centre, the drug budget is taka 50,000 (750 pounds) per year. This money is not provided to the THC and FWC managers in cash for purchasing MSR. The central medical store of the Health and Family Planning department of the MOHFW purchase the MSR in bulk and distribute them to the district level medical reserve stores. These are under the control of the civil surgeon and the Deputy director of family planning of the district concern. The medical and surgical requisites (MSR) supplied to the THC from the district store as per requisition of the Thana health and family welfare officer. There are 58 items (appendix 6) of drugs that should be available in the THC and 15 items at the village level health care centre as recommended by the Ministry of Health and Family welfare (DGHS 1990). The situation was found to be different from the plan of the government at all the thana level public sector facilities.

The health care providers at the Thana and Union level reported the scarcity of drugs. Some of the statements are as follows:

“Every day we allocate limited number of drugs including antibiotics for outdoor patient. We could not provide drugs to all the patients. People know that they will get medicine only if they visit in the morning, (RMO THC, 1997)

“Last four-month there was no supply of drugs in the FWC, so how can we provide services to the people?”(SACMO, 1997),“We could not provide full course of medicine at a time even antibiotics.” (TH&FPO, 1997)

The above statements are the clear indication of the shortages of drugs at the THC and the FWCs. Two main reasons were found for the shortages of drugs. First, inadequate budget allocation for MSR. For example according to the 12th month hospital record in the year 1997, the total inpatients were 10749 and the total patients attended in the outpatient department were 32,334. The total patient flow was 43,083. Now if we equally distribute the MRS budget to the patients, it comes taka 6.96 per patient. Out of that amount maximum 2.50 taka was spent for drugs per patient. Most of those drugs were used for the inpatients. Second, the supply was found irregular and insufficient.

The manager (TH&FPO) of the THC and the FWCs were reported that they never got full quantity of MSR they needed nor a timely supply of them. An example of short supply of MSR in the THC is presented in the table 6.8, page 152.

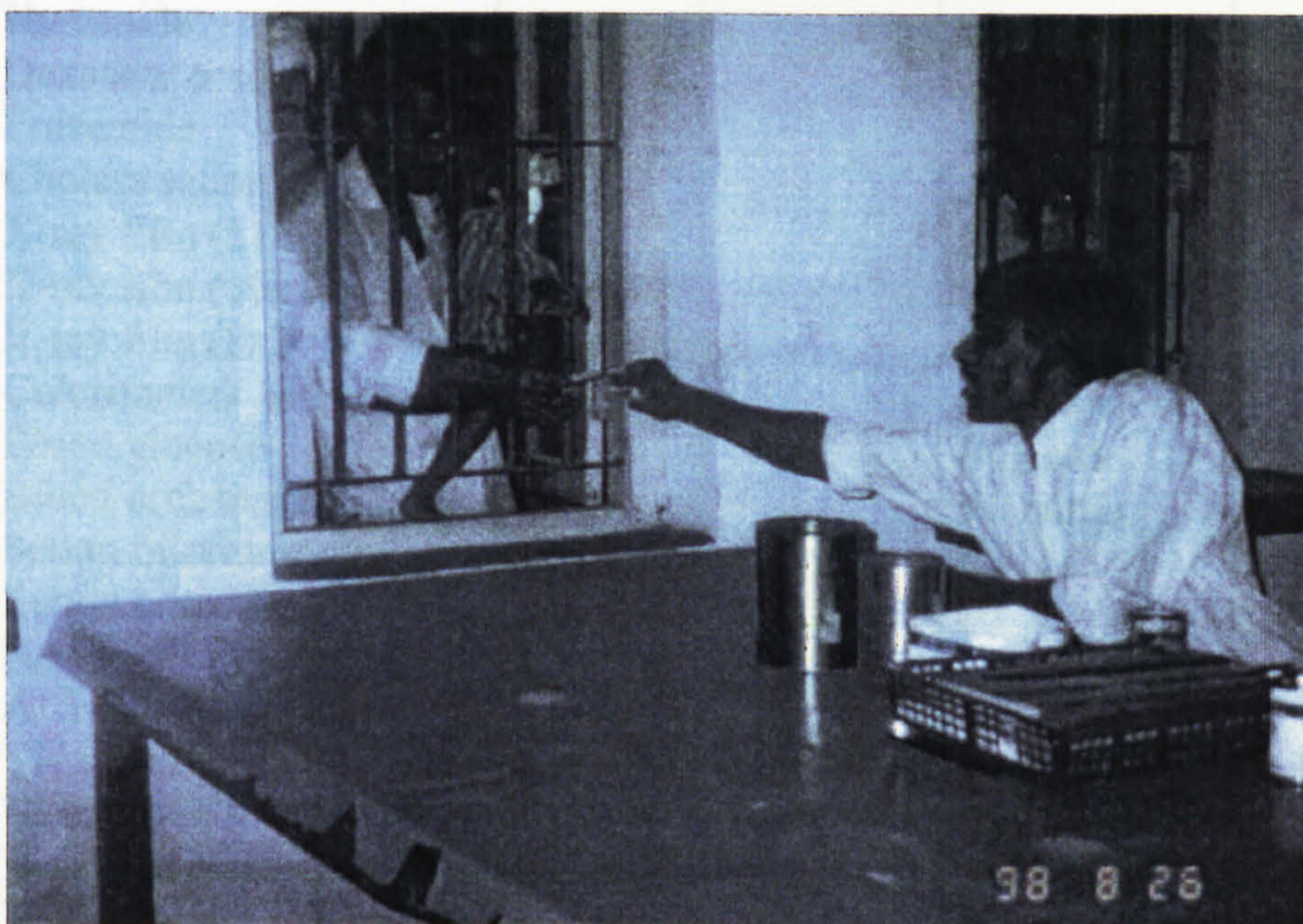


Photo 6.2 A drug dispensing view in the THC.
Photo shows ‘two boxes’ as people reported (page 150) and little scope of providing drug use instruction to patient

Table 6.8. Shows the MSR including drugs supplied for 60 days against the requisition for the THC from 1/4/98 to 31/5 98.

Sl	Name of the MSR	Current stock	Date of last supply	Requested amount	Supply made
1	Tab paracetamol	Null	25/2/98	20,000	12,000
2.	Antacid	„		25,000	6,000
3	Histacine	„		20,000	12,000
4	B complex	„		20,000	12,000
5	Co-trimoxasol	„		15,000	nil
6	Penicillin	„		20,000	3,000
7	Mebendasol	„		5,000	3,000
8	Hymoside	„		5,000	1,000
9	Diazepam	„		2,000	2,000
10	Cap. Tetracycline	„		20,000	3,000
11	Ca. Amoxicycline	„		10,000	nil
12	Syrup Co-trimoxasole	„		200 bottle	nil
13	BB oil	„		10 bottle	nil
14	Whitfield	„		10 bottle	nil
15	Gauge	„		50 than	10 than
16	Bandage	„		50 than	10 than
17	Cotton	„		50 than	10 than
18	Cat guard	„		100 Dz	nil
19	Surgical globs	„		100 pair	nil
20	Inj. 5% saline DA 500 cc	„		100 bag	20 bag
21	Inj 5% D in aqua 500 cc	„		100 bag	20 bag
22	Atropine sulp	„		500	nil
23	Hysomide	„		200	nil
24	Dexason/ oradexson	„		200	nil
25	Frusemide	„		200	nil
26	Cholera saline, 500 cc	„		200 bag	50 bag
27	X-ray film (51x12)	„		3 pack x 100	1 pack x1 00
28	X-ray film (10x12)	„		3 pack x100	2 pack x 100
29	X-ray film (8x10)	„		3 pack x 100	3 pack x 100
30	Colorimeters 1ml ERIYA	„		01 piece	nil
31	Blood glucose	„		01 bottle	01 bottle
32	Blood urea reagent	„		01 bottle	01 bottle
33	Serum bilorium	„		01	nil
34	Serum critinine	„		01	„
35	RA/RF reagent	„		01	„
36	A, S O reagent	„		01	„
37	Vidal test TO	„		01	„
38	Vidal test TH	„		01	„
39	Vidal test AH	„		01	„
40	Vidal test BH	„		01	„
41	Vidal test AO	„		01	„
42	Vidal test BO	„		01	„

The above table shows two clear pictures. First, the district store supplied less than half of the requested MSR items and the supplied items were not according to the requisite quantity. In some cases they supplied 1/5th and in some items 1/8th of the requested amount. Second, items number 30-42 were laboratory reagents and chemicals and those were essential to keep the laboratory in operation. Out of 13 such items only two were supplied. As a result the diagnostic laboratory of the THC could not provide diagnostic services to the people. It created an environment, which encouraged the development of private pathological laboratory around the THC and the THC doctors owned most of those laboratories. These findings show clear evidence of short supply of MSR including drugs and other necessary supplies to the THC.

The drug situation in the FWC was found to be more acute than the THC. According to the current policy of the government each family welfare centre should be provided with 12 Drugs and Dietary Supplement (DDS kits) kits per year valued taka 10,000 per kit. Each kit should be contained 20 items of drugs and other supplies as listed below.

Contents of the DDS Kit

1. Capsule Amoxicillin 250 mg
2. Susp. Amoxicillin (Dry syrup) 125 mg/ 5ml, 100 ml bottle
3. Tab. Salbutamol, 4mg
4. Tab. Hyoscine Butyl Bromide, 10 mg
5. Tab Methyl Ergometrine 0.125 mg
6. Tab Ferrous salt (50 mg + Folic Acid 0.25 mg)
7. Tab Metronidazole 400 mg
8. Tab Paracetamol 500 mg
9. Syp Paracetamol 120 mg / 5 ml bottle of 60 ml
10. Tab Sulphamethoxazole + Trimethoprim, 400 mg + 80 mg
11. Tab Sulphamethoxazole + Trimethoprim 100 mg+ 20 mg
12. Benzyl Benzoate Saponated Conc. Soln 25% 1000 ml in one container
13. Gentian Violet Powder 25 G/bottle
14. Tab Chlorpheniramine Maleate 4 mg/ tab
15. Benzoic Acid + Salicylic Acid Oint. 6% + 3% Pks of 500 G in plastic container

16. Tab Albendazole 400mg/tab
17. Tab Vitamin B complex (Thiamine Hcl = 5 mg, Pyridixine Hcl = 2 mg, Rifoflavin = 2mg and Nicotinamide = 20 mg) 1000 in 1 container
18. Tab Antacid Al hydroxide 250 mg + Mag Hydroxide 400 mg/ tab
19. Ointment - Neomycin Eye/Ear
20. Envelop dispensing (10 cm/7cm with flap made of 36 lbs KPM)

The supply of the DDS kits was found to be irregular and inadequate in all the FWCs. During the survey it was noticed that for four months there was no supply of DDS kits in the FWC. Most of the SACMOs (95%) and FWVs (90%) expressed their deep concern about this situation. Thirty per cent of SACMO reported that (unofficially) they remain absent from the office to avoid clash with the people. Eighty per cent of the SACMOs reported that people used to curse them and behave badly when they could not provide any medicine to them, as reported by two SACMOs people believed that the government supply is sufficient, but they (provider) are not given to them. The comments of people quoted by the several SACMOs these are like;

“ Why are you sitting here if you cannot provide medicine?” (SACMO, 1997).

“Government provides medicine for us but you people (SACMO/MA) sell it in the market.” (SACMO, 1997)

The person responsible for ensuring the supply of DDS kits confirmed this issue of irregular supply of drugs. He said that it has happened due to the delay in the procurement of drugs. That means it was a management failure. As regard availability of the items of drugs, three to four items were found available in limited quantity in most of the FWCs. One SACMO reported that he provided drugs to the people from his own private stock. Whatever the reasons behind the delay in drug supply, it goes against the credibility of the FWC and that has definite effects on the quality of the services.

The drug availability in VHCPs observed and found to be better compared to the THC and FWC. The main reason is that the VHCP provided limited services: immunisation to the children; vaccination to the mother; basic antenatal care; family planning method distribution; and counselling. The supply of necessary vaccines and family

planning methods were made from the two-development projects; Expanded Programme of Immunisation (EPI) and Family Planning Service Programme. There was found to be no shortage of vaccines and family planning methods at the VHCP during the facility survey. But one issue raised by almost all the FWVs was insufficient supply of Oral Rehydration Salt (ORS) that has huge demand from the people for controlling diarrhoea. They could not provide ORS to the people as per requirement. It was noticed that this essential element (ORS) was not included in the DDS kits. The senior managers from the health and family planning sector could not provide clear reason behind non-inclusion of this item in the DDS kits. Drugs that were found available in limited quantities in most of the VHCPs are Paracetamol, Iron tablet and folic acid, though according to the policy of the government 15 types of drugs should be available at the VHCP level.

6.8.1 Views of the providers on drug availability

All the providers at the THC and the FWC reported that the drug shortage was the main problem in attracting people to the public sector health care facilities. People had the idea that they would get free medicine /drugs along with free consultation from the health care provider. Actually they received the minimum requirement or in some case nothing. People had lost confidence in the government health care facilities. One medical officer listed three main problems that lead to deterioration in the quality of health services. Those were (i) inadequacy of drugs; (ii) lack of equipment; and (iii) lack of trained manpower. The manager of the THC thought that “People do not want to come to the hospital as they have a bad impression of the providers, they think that they will not have a doctor in time and will not get sufficient and appropriate medicine.” Some of the THC doctors said, “we prescribed drugs on the basis of their availability not according to the need of the patient, as such it does not cure their disease in most cases, and people thought, hospital medicine was not good and lose confidence in the government health care facilities”.

Different views were also given by some of the providers. In their view people did not get free medicine or drugs from the private practitioners, but most of them were visiting private establishment, paying for prescriptions, investigation charges and buying drugs from the open market. So the non-availability of drugs could be a factor

in the low use of public health services, but its contribution to that needs to be assessed with other factors, such as performance of the provider at different level of health care facilities.

6.8.2 Effects of drugs availability on use of services

All the evidence shows that the drugs supplied to the THC, FWC are insufficient, irregular and some drugs are not essential. People lost confidence in the public sector health care facilities due to lack of drugs. This situation might have a negative effect on the overall quality of the public sector health care services in rural area. These findings suggest it is important to ensure sufficient quantity and regular supply of drugs. It also suggests identifying the non-essential drugs in order to drop them from the DDS kit and increasing the quantity of essential drugs.

6.9 Availability of equipment

Availability of the equipment for maternal and child care in the THC, FWC and VHCP were assessed on the basis of the available standard list of equipment developed by the national quality assurance team constituted under the “Development of health care quality assurance project” of the MOH&FW (DGHS 1997). The list of equipment prescribed by the Ministry of Health and Family Welfare for THC and FWC was also considered for this analysis.

In the case of THC, most of the equipment was found to be old or obsolete and became unusable due to lack of regular maintenance and replacement. The THC is the referral hospital at the PHC level in which facilities for surgical operation have been created. It was found that there was no proper equipment for caring out Caesarean section. The THC manager said that they could not deal with any complicated caesarean child delivery due to non-availability of the proper equipment. In most cases they referred the critical patient to the secondary and tertiary level hospital. Knowing this situation people did not want to come to the hospital for complicated delivery. On the other hand some costly equipment has not being used although it was supplied. For example a sophisticated anaesthesia machine could not be used, as there was no trained manpower to operate it.

The equipment situation at the FWC was found to be more acute. Basic equipment like stethoscope, blood pressure machine, and thermometer was not available in most of the FWCs. The SACMOs reported that they are using their own equipment for the long time. Equipment was supplied once during construction of the FWC, there was no replacement or repair maintenance since then. None of the FWC had all the basic equipment prescribed by the Ministry of Health and Family Welfare during the establishment of the FWC.

The situation of the VHCP was found to be similar to the FWC. None of the VHCP session was found to be fully equipped with basic equipment. A weighing machine, thermometer, stethoscope and blood pressure machine all are essential for antenatal check-ups were not found to be available. However equipment for child vaccination such as syringe and vaccine carrier was found to be there.

This finding clearly indicates the unavailability of essential equipment in all the health care facilities at the PHC level. That has direct effects on the quality of the health care services.

6.10 Management structure and supervision

“the current structure of the population and health directorate (with separate cadres at all levels) does not adequately respond to the needs of child and mother health and clinical contraception and limits the potential for increasing the range, quality and effectiveness of services functionally, the separate structures impede referrals, generate internal conflicts and contribute to the low utilisation of the public facilities” (MOHFW 1998).

The above statement provides an indication that the current management structure has negative effects on the public sectors health service delivery. This issue was observed closely at the Thana level to identify its specific effects in delivering maternal and child health care services by the health and family planning sector. Two key management issues were assessed; personnel management along with supervision; and logistic management for MCH care. There are two different sets of providers

involved in delivering MCH care at the Thana level. One set belongs to the health sector and other to the family planning sector (see appendix 5). They are supervised and managed by two different line managers, one located at the Thana level (TH&FPO) and other one located at the district level (DDFP). This has been illustrated in appendix 8 in the organisational structure of MCH services at the primary health care level in Bangladesh.

This dual administration and power conflict between the Health and Family Planning managers, at the PHC level create confusion and rivalry among the providers of the two sectors. As a result smooth functioning of the maternal and child health services are being hampered in many ways. For example it generates complexity in the management of the services. The THC manager has little administrative control over the manpower of the MCH unit, but he has control over the physical facilities such as MCH beds, the operating theatre of THC, where MCH unit provides services. The Deputy Director of Family Planning whose office is located far away at district level controls the personnel of the MCH unit. He could not provide proper guidelines and regular supervision to the Thana and below level providers. The Thana level manager responsible for MCH services (MO MCH) was not found able to supervise the union and below level staff responsible for MCH care regularly. So the accountability of the provider at different level was found not clear or almost nil.

One striking issue reported by the union and field level family planning staffs was that they need to pay 10-20% per cent of income from their travel allowances to the Thana level managers to get their bill. It provides them two advantages, first they can keep them away from their duty without any reasons and second, they could escape from the regular supervision from the top and became reluctant to provide services to people. Some of the SACMO and the FWVs also reported frustration at this sort of behaviour of the managers. The net effect of this practice is degrading the MCH service quality.

Clear evidence of mismanagement of logistics was found, as there was no supply of DDS kits in the FWC for four months. Moreover all the FWVs and the SACMOS reported that they used to buy necessary materials includes reporting forms from their own pockets.

6.11 Conclusions

Evidence shows that the seven aspects discussed above are affecting the quality of the public sector health care facilities in rural Bangladesh. Each of the factors affects the quality of the services individually and collectively. It is hard to rank them to identify the most important factor as all the factors are inter-linked and all of them have individual effects on the quality. However, the most crucial factors that affect quality of care seem to be the lack of availability of drugs and the private practice of the public doctors. Both the provider and the population have similar feelings about those two aspects. Both the parties thought that quality of the public sector health care facilities is deteriorating due to lack of drugs and the private practice of the public providers. People are less concerned about the physical structure of the facilities. They want good services and kind behaviour from any setting. People do not care much about the physical condition of the health care facilities as long as the services are there. For example the VHCP use rate is almost 90% where there is no physical structure but intended services are there. On the other hand only 1.5% of the population visit FWC where two or one storey good physical facilities exists.

So the option of the policy makers and the implementers should be to ensure the planned services in each level of facilities rather than expansion and improvement the physical quality of the health care facilities.

PHOTOGRAPHS: PRIVACY IN TREATMENT: THC, FWC, VHCP



Photograph 6.3: THC



Photograph 6.4: FWC



Photograph 6.5: VHCP



Photograph 6.6: Private Clinic of Private Sector Health Care Providers.

CHAPTER SEVEN

EFFECT OF ACCESS ON UTILISATION OF MCH CARE SERVICES

7.1 Introduction

The analyses presented in the previous chapter clearly showed that quality of service is an important factor for the utilisation of the government sector health care facilities in rural Bangladesh. Accessibility to the health facility may have also influenced utilisation of those facilities along with the quality.

This section examines the effects of accessibility variables: distance; means of transport; and travel cost on the use of public sector health care facilities located at the PHC level. The main purpose of this analysis is to estimate to what extent access to the health service facility that is physical accessibility affects the use of maternal and child health care services. Data were collected from the sampled mother and the community leaders through the household survey and in-depth interviews. It was hypothesised that difficulties in access to the public sector health care facilities due to distance, means of transport and cost to travel were deterring people from using MCH care in rural Bangladesh.

7.2 Access to health care facilities

Accessibility of health care facilities is shown to be critically important for the use of health services in many studies (Ayeni 1987, Stock 1983). Utilisation indicates that a service is accessible (Ying, 1993). Availability and accessibility are the first step in utilisation (Leslie 1989). Accessibility reflects the extent to which health care can actually be obtained when required. In other words the sources of services should be available at the time of requirement. For example if the child delivery facilities at the FWC is available round the clock with all the necessary arrangement and people can use it at the time of their need then it can be said that the service is accessible. Access to health care services depends upon different factors. As Lee and Mills noted, accessibility to primary health care implies that it should be geographically, financially, culturally and functionally within easy reach of the whole community in rural as much as in urban settings (1983).

The issue of accessibility needs to be looked at in two ways, accessibility to the service and accessibility to the health service facility, as access to the service facilities does not ensure the access to the required service. A good example might be the uses of the Family Welfare Centre in rural Bangladesh. While 52% of the population can reach that facility within less than half an hour (mean walking time was 22.5 minutes) walk, only 1.4% of them were found to use that centre as usual place of treatment for illness. Accessibility to the services is affected both by the service characteristics and community characteristics. The service characteristics: overall quality of services; presence of provider on time and in the place; behaviour of the provider; lack of the proper equipment; drugs; and inappropriate service providing time. The community characteristics refers to the social accessibility: socio-economic condition; knowledge and attitudes about the available services; perceived quality of services; and culture of the community are important determinants of access to the services. An example of cultural factor is that the rural women in Bangladesh normally are not allowed to go out of house alone for any purpose including seeking health care from health care facilities. A similar situation was found in other countries. For example a study in Yemen on women's attitudes to maternal and neonatal health services revealed that social, cultural and emotional factors have a strong influence on whether women seek professional assistance with pregnancy and delivery (Annica et.al. 1996). In Nigeria, among the Hausa society, a significant proportion of men are reluctant to allow their wives to make long unescorted journeys for treatment, particularly if the illness is perceived to be non-threatening and amenable to traditional treatment (Stock 1983). This study also reported that women must obtain permission of her husband before leaving the home compound. So the accessibility of the health services is a complex issue as it is influenced by the socio-economic condition of the country, services characteristics, geographical situation, cultural and tradition of the society.

The direct and indirect effects of some of those factors have been described in the previous chapters (Chapter 5 and chapter 6) under knowledge, attitude and quality of the services. As such in this chapter, access to the service facilities, which refers to the geographical accessibility, has been analysed to find out its effects on the use of MCH services.

Geographical accessibility depends upon the convenience of reaching the facilities at the time of the health care need. Specifically the location of the facilities; distance; transport communication system; travel cost; and travels time are important factors in geographical accessibility. Out of those, three geographical access factors are selected for this analysis. Those are distance; mode of transport; and mean cost per visit to two static government health care facilities; THC and FWC. These variables are considered as independent variables in analysis. All these three variables are interrelated and relevant to looking at the effects of each variable in the context of the low socio-economic conditions of the people and poor transport communication system in rural areas of Bangladesh. The following sections described the independent and dependent variables used for the statistical analyses.

7.3 Independent variables

(i) Distance

Distance has been considered as the key determinant for utilisation of services particularly Maternal and Child Health care services. Various studies reported that the distance is a primary deterrent in the utilisation of health services in general and maternal services in particular (Rahman 1981, Attah 1986, Stock 1983, Schmidt 1983). In Bangladesh distance might be an important factor in access to the Thana health complex (THC), as most (88%) of the sample mothers reported that they live 3 to 13 miles away from that facilities. It was found that 12% of the respondents live within 2 miles, 49% live within 3-6 miles and rest of the respondents live more than 8 miles up to 13 miles from the THC. None of them live less than 1 mile from the THC. The distance of the FWC from the THC was also assessed to understand the geographical difference between the two static facilities. It was found that the distance of FWC varies from 3 miles to maximum of 11 miles. Thirty eight per cent of the FWC are located 6-9 miles away, twenty five percent of FWC located 5 miles, and other twenty five per cent of FWC located 11 miles away from the THC (see map of Keshabpur page 55). The distance of the THC is important especially for using two maternal services, antenatal care and the child delivery, and two child health care services, ARI and diarrhoea treatment. THC is the only facility at the primary health care level where hospital and surgical facilities that are essential to handle risk

pregnancy, complicated delivery and critically ill children with ARI and diarrhoea are meant to be available.

(ii) Mode of transport

Mode of transport is considered to be an important access factor in the rural areas of Bangladesh, as the road communication systems in the rural areas are poor. There is no metallic (pucca) road inside the village. All the roads are kancha (non-metallic) and in most cases are uneven.

People usually travel by walking or use traditional bull carts, bicycles, rickshaw or vans and helicopter¹ (see photograph below). Those transports are unsuitable particularly for caring the pregnant women and the children under five years of age. 91% of the respondent reported that Rickshaw/van is the main mode of transport to reach THC, 7 % of the respondent reported bus, and 2% said they walk.

In the case of FWC it was found that 52% of the respondents could reach the facilities by walking and 48 % of the respondents reported that they need rickshaw or van to reach there. All the respondents reported that the VHCPs are within the walking distance.



Photograph 7.1. A model of a 'Helicopter': Basically it is a bicycle, which has arrangement of carrying two extra passenger, one in front of the driver and other behind him. This form of transport is popularly called helicopter in the study area.

(iii) Cost per visit

Cost to reach the health care facilities is considered to be an important access factor. As Akin (1995) noted a large proportion of the total cost of modern medical treatment in the third world is transport costs. According to King, the total amount inpatients spent for transportation exceeded half the hospital annual operating budget (1966). In Uganda it was found that 75% of the total outpatient cash outlays were for transportation. This became more acute when transport cost added with other cost such as user charges. Studies in different countries show that utilisation of health services decreased due to introduction of user fees (Creese 1991; Huber 1993: Kenya, Thomason 1994: Papua New Guinea). Cost might be an access factor in rural areas of Bangladesh as well. It was found in the study area that most of the households (55%) belonged to the low socio-economic condition group. (Details of socio-economic group is discussed in chapter 4 section 1). The majority of the heads of family were daily labourers (38%) and others are involved in agriculture (30%), normally they do not have cash money in their hand. Eighty nine percent of the respondents reported that they needed an average of 12 taka per visit to THC for the van and 8 taka if they went by bus. Forty six per cent (Total N=218) of respondents reported that the average cost per visit to the FWC was taka 6.

The majority (75%) of the respondent reported that, they compared the cost of visiting different health care services and the service they expect from their visit. This issue will be discussed in the qualitative analysis in the later part of this section. In such circumstances, travel costs might have an influence on the people's decision to use public sector health care facilities particularly in visiting the THC and the FWC that are located far from most of the respondent's residence.

7.4 Dependent variables

Out of the three government health care facilities, use of THC, FWC are considered in the analyses as dependent variables. Use of VHCP has been excluded from this analysis as all the VHCPs are located within the walking distance and there is no cost involved in receiving services from VHCP. Moreover these facilities are not static and its locations are changeable. The MCH activities of the THC and the FWC have been described in chapter 1 and page 124 in chapter 5. The mothers were asked whether

they had visited those two facilities for MCH care six months before the survey, if the answer was yes, then it was considered as use and non-use in the case of no. It was found that 15% (Total N=360) of the sample mothers had use both the THC and the FWC. The six months time period was chosen to cover the incidence of all the seven MCH services that are considered in this study. Mothers were asked to describe the purpose of the visit and the time of incidence (month) to minimise recall bias.

7.5 Data analysis

Both qualitative and quantitative analyses have been done using the household survey data and information collected from the in-depth interviews of the sample mothers. Bivariate and multivariate analyses are carried out for quantitative data and qualitative descriptive analyses have been done for qualitative information. Results are presented in two sections. Bivariate analyses were done following cross tabulation between three independent variables: distance, mode of transport and mean cost per visit to health facilities and two dependent variables: use of THC; and FWC. Summaries of the finding are presented in tables. A chi-squared test was used to examine the association between the dependent and independent variables.

Multivariate analyses were performed using logistic regression. For the purpose of this analysis all the dependent variables are coded as binary variables in the following ways:

1= Yes, when the respondent use the health facilities with in the six month before the study

0=No, when the respondent did not use the facilities within the six month before the survey.

Logistic regression was performed to evaluate the adjusted effects of the above selected independent variables on the use of public sector health care facilities. Two different logistic regression models were tested in the analyses.

Model 1, logistic regression with one independent variable in each time to see the unadjusted odds ratio

Model 2, logistic regression using three independent variables; distance, mode of transport and mean cost per visit to two static public sector health care facilities.

Logistic regression was performed using STATA statistical computer package. Results of the two models are presented in terms of odds ratio with significance level and confidence interval. The logistic: likelihood–ratio test were performed to obtain the chi squared and P values. Categories of independent variables were reduced to get better result from the multivariate analyses.

7.5.1 Section 1. Results of quantitative analyses:

Result: Bivariate analysis

Access and use THC

The results of bivariate analyses shows that distance was marginally significantly ($P=0.074$) associated with the use of THC. Though it was found that those who live within three miles from the THC used 22 % that was almost twice higher than those who live six miles or more from the THC. No major variation in use was found between those who live 2/3 miles and 4/5 miles away from the THC (Table7.1). Interestingly none of respondents who live within a mile of THC used that facility. The qualitative information might provide explanation of this scenario.

In the case of mode of transport, sixty per cent of the mothers those who could reach the THC by walking used the facility, which is more than three times as many as those who needed to travel by rickshaw/van and almost five times as many as those who needed to travel by bus. The association between the mode of transport and the use of THC was found to be statistically significant ($P=0.032$).

The cost to visiting THC was found be a significant factor for the use of the facility. It was found that about 67% of the mothers used THC, those who would have to spend 0/3 taka this was more than four times higher than those who needed to spend taka 4/6 and taka 7 or more. 19% and 15% of the mothers used THC when the cost went up to taka 4/6 and taka 7 or more respectively. The association between cost per visit and the use of THC was found statistically significant ($P=0.003$).

Table 7.1. Shows the association between the THC visits with three selected access variables.

Variables	Total Number	Visited THC (YES)	%	P Values
Distance				0.074
0/1 miles	12	0		
2/3 miles	101	22	21.8	
4/5 miles	88	18	20.4	
6/max	117	14	11.9	
Total	318	54	16.9	
Mode of transport				0.032
Walk	5	3	60.0	
Rickshaw/van	290	48	16.5	
Bus	23	3	13.0	
Total	318	54	16.9	
Cost per visit				0.003
0/3 taka	6	4	66.7	
4/6 taka	89	17	19.1	
7/max	190	33	14.8	
Total	318	54	16.9	

Access and use of FWC

The table 7.2 below clearly shows the statistically significant association between the use of the FWC and the distance of the facilities (P=0.001). Those who live less than a mile from the FWC used it five and half times more than those who live three or more miles away. Similarly those who live within two miles used more than two times compared to those who live 3 miles or more and 31 % less than those who live less than 1 mile did. The association between the mode of transport and the use of FWC was also found significant (P=0.001). Mothers those who can reach the FWC by walking used it about three times more than those did who need to go by rickshaw/van.

Cost per visit was found to be a significant factor for utilisation of FWC (P=0.001). It was found that the lower the cost per visit, the higher is the use of FWC. Mothers who needed to spend taka 5 or more use the facilities about one third of those who needs to spend taka1 for this purpose.

The results of the bivariate analyses show clear association of all the three access variables with the use of FWCs and the associations were found to be statistically significant (P=0.001).

Table 7.2. Shows the association between the FWC visits with three selected access variables.

Variables	Total number	Visited FWC	%	P Values
Distance				0.001
0 miles	45	24	53.3	
1/2 miles	111	24	21.6	
3/max miles	62	6	9.7	
Total	218	54	24.8	
Mode of Transport				0.001
Walk	113	40	35.4	
Rickshaw /van	105	14	13.3	
Total	218	54	24.8	
Cost per visit				0.001
0/1 taka	113	40	35.4	
2/4 taka	11	2	18.2	
5/max taka	94	12	12.8	
Total	218	54	24.8	

7.5.2 Summary /conclusion

The results show that the distance is not a major factor for the use of THC, while mode of transport and the cost per visit have a significant association with use. Of mothers who live 2/5 miles distance from the THC, 52 % used the facility. Interestingly those who live within one mile of the THC they do not use the facility. These finding raised one important question why do people who live closer not use the THC? There might be two explanations. First, this group of people might have easy access to the private establishments of the THC doctors, as the majority of the THC doctors live in and around the THC campus. All of them are involved in private practice both in the morning and in the evening, and even during office hours. Their private establishment is located within a mile distance. In addition to that, other qualified private health care practitioners and clinics are available within the reach of the population those who live less than a mile from the THC. So they have different

choices and opportunities to use all those facilities. That might be the reasons for low utilisation of the THC by these groups of population. Second, they may have more and adverse information about the quality of the THC that deters them from using the facility.

Distance mode of transport and cost per visit all had significant effects on the use of the FWC. Mothers who lived within 2 miles of the FWC and had to spend only 0/1 taka for travel used the FWC more compared to their counterparts (who live further away).

7.5.3 Multivariate Analyses

The bivariate analysis shows individual association between the dependent and independent variables. It was found that all three independent variables: distance; mode of transport; and cost per visit are significantly associated with the use of FWC and use of THC significantly associated with two variables; mode of transport and cost per visit individually. In order to see the adjusted effect of those variables, multivariate analyses were performed using two different logistic regression models. Use of THC and FWC are considered as dependent variables. Results of logistic regressions are presented in terms of odds ratio along with 95% confidence interval and level of significance (P values) in tables 7.3 and 7.4.

Results of logistic regressions: Model 1&2

Access and use of THC

Table 7.3. Shows adjusted and unadjusted odds ratios of the use of Thana health complex by the categories of independent variables

Independent Variables	Dependent variable; Visit THC. Yes=1, No=0		
	Odds ratio (adjusted odds ratio)	95% CI	P > | z |
Distance			
0/3 Miles	1.00		
4/5 Miles	1.06 (1.34)	0.53-2.13 (0.59-3.02)	0.862 (0.480)
6/max Miles	0.56 (0.77)	0.27-1.16 (0.30-1.95)	0.121 (0.590)
Mode of transport			
Van/walk	1.00		
Bus	0.71 (0.75)	0.20-2.50 (0.20-2.80)	0.603 (0.673)
Mean cost per visit			
0/6 Taka	1.00		
7/ max Taka	0.61 (0.64)	0.33-1.12 (0.29-1.41)	0.114 (0.271)

*Results shows in the parenthesis are adjusted with the mode of transport and the cost per visit.

The unadjusted result shows no significant association between the distance and use of the THC. No major difference of use was found between those who live within 3 miles and 4/5 miles. Those who live 6 miles or more away from the THC use 34 %

(Odds ratio 0.56) less compared to those who live within 3 miles. The association was not found statistically significant even when the result was adjusted with mode of transport and mean cost per visit (Table 7.3). In the case of mode of transport the unadjusted result shows that respondent visited THC by bus 29% less than those visited by walk. It was found to be significantly associated after adjusting for distance and cost per visit to THC. The odds of cost per visit indicates that those who needs taka 7 or more use the facilities 39% (Odds ratio 0.61) less compared to those who needs taka 6 per visit. The adjusted analysis shows no significant association between the use of THC and mode of transport and cost per visit, though in the bivariate analysis both those variables were found to be significantly associated with the use of THC (Table 7.1) respectively ($P=0.03$, $P=0.003$). This result indicates that physical access to the THC is not the main barrier of using the THC, though we assumed that access difficulties is a factor for the THC. The analysis of qualitative information might provide explanation of this finding.

Access and use of FWC

In the case of FWC, the unadjusted result shows that all the three access variables individually significantly affect the use of FWC (Table 7.4). Mothers who live less than a mile from the FWC used that facility four times more than those who live within 1/2 miles (Odds ratio 4.14) and those who live 3 miles or over away from the FWC used 62 % less than their counterpart. Distance was not found to be statistically significant for 3 miles and over after adjusting for the mode of transport and cost per visit (Odds Ratio 0.47) though significant association was found in the case of less than a mile (Odds ratios 3.41).

In the case of mode of transport, the unadjusted result shows that respondent visited the FWC by van 72% less compared to those who visited by walk (Odds ratio 0.28). The association was found to be statistically highly significant ($P=0.001$). However after adjusting for distance and cost per visit no significant association was found ($P=0.25$).

Table 7.4. Shows unadjusted and adjusted odds ratios of use of Family welfare centre by the categories of independent variables

Independent Variables	Dependent Variable: Visit FWC. Yes=1, No=0		
	Odds ratio (adjusted odds ratio)	95% CI	P > |z|
Distance			
0 Miles	4.14 (3.41)	1.97-8.88 (1.52-7.61)	0.001 (0.003)
1/2 Miles	1.00	-	
3/max Miles	0.38 (0.47)	0.14-1.00 (0.17- 1.30)	0.052 (0.148)
Mode of transport			
Walk	1.00		
Van	0.28 (0.62)	0.14-0.55 (0.26-1.42)	0.001 (0.257)
Cost per visit			
0/1 Taka	1.00	0	0
2/5 Taka	0.28	0.14-0.55	0.001

*Results shows in the parenthesis are adjusted with the mode of transport and the cost per visit.

Cost per visit was found to be significantly associated with the use of FWC, even after adjusting for distance and mode of transport (P=0.001). Respondents who has to pay 2/5 taka to visit the FWC use that facility 72% less compared to those who pay 0/1 taka per visit. So the cost per visit and the distance are significantly associated with the use of the FWC even after adjusting for mode of transport.

The finding generates the question why cost and distance are not significantly associated with the use of THC, which is located far away from the respondents' residence compared to the FWC. One possible explanation might be the perceived quality of services of the FWC. People might have understanding that spending money for travelling to the THC would be more worthwhile than visiting the FWC, as there is graduate medical doctor and better health care facilities in the THC compared to the FWC. This result support the findings that 5% of respondent visited THC for their last illness, while 1.7% of them visited the FWC. Moreover people are also

visiting private chamber of graduate doctors located at the Thana headquarter more (6.7% compared to 1.7%), which is far away from the FWC. The qualitative information may provide deeper understanding of these issues.

The findings of the quantitative analyses suggest that the establishment of a health facility close to the community would not ensure use of services, if its quality is not acceptable to the users. The policy option could be to develop the mechanism to improve the quality of the services before expansion and construction of new health care facilities near to the communities.

Section 2.

7.6 Finding of the qualitative analysis

The results based on the quantitative data presented in this section so far generate two important questions. First, why the people who live near the THC used that facility less compared to those who live further away? Second, why distance and cost to visit THC are not the found to be deterrent factors, while those two factors (distance and cost to visit FWC) have significant effects on the use of the FWC, when those are located nearer the people compared to THC?

Possible explanations of those two questions were given briefly before in section 1. More in-depth explanations were found by examining the views of the mothers and the community leaders expressed during the household survey and in-depth interview. Analyses of those issues are presented in the following section.

In order to know the views of the mothers and the community leaders, two basic questions were asked. Why people did you not like to visit government health care facilities, THC, FWC for maternal and child health care services and did they think that distance, travel cost and mode of transport were a problem for going to THC and FWC?

The reasons reported that for not visiting the THC and the FWC are different for each service. In the case of general treatment, 35% (Total N=360) of the mothers reported that government facilities were too far away and 15 % of the mothers reported that it

required money to go there. For antenatal care only 2 (9%) out of 22 mothers who did not visit any facility for ANC reported that government facilities were far away from their house. In the case of child delivery very few mothers (3 out of 360) reported that hospital was far away but interestingly only 2.8% of them delivered their child at the THC. This finding supports the result of the multivariate analysis where no significant association was found between the use of THC and distance. Fifteen per cent of the mothers said that money required for going to the hospital, which includes buying food, drugs, tips, any other charges in the hospital and not only the transport cost. The transport problem was not reported by any of the mothers.

In reply to the second question, that is, whether distance, travel cost and transport were the problem for visiting the government facilities, the majority of the mothers did not provide their view straight way. For example some of the mothers said that

“We can not stop going to a bhalo dactar (good doctor) for want of money while we are sick” (Mother 10, 1997).

This quotation shows the determination of the mother to visit any good health care provider no matter how far it is and whatever the cost to get that services.

“Transport and money are the problem but what can we do when we are ill?” (Mother 18, 1997).

This statement revealed that they have financial problem but still feel that they have no choice but to visit any health care provider for sickness.

“I never visit the health centre alone, my husband always takes me there, so I don’t bother about transport or money, my husband paid whatever is needed for van (transport) and dactar (Doctor).”

The above quotation gave us a picture of female dependency on the male. It is quite uncommon to find that women visited the health centre without any company. This is mainly for two reasons, traditionally women are not allowed to move alone outside

the house, and women feel secure when some one; husband, relatives accompanied them.

“Evil (zom in local language) will not leave us if we think about money” (people used the term zom as synonymous of evil).“Poor people have money problems but is there any way to escape from the disease”? Said some of the mothers. These two quotations indicate the consciousness of the rural mother about the harmful effects of diseases.

The above views of the mothers indicate that they are not very concerned about the distance, cost and mode of transport to visit government facilities as most of them are dependent on their husband or head of the family. Visiting health facilities depends primarily on the choice and the capability (financial) of the head of the family, most of cases husband and not significantly on distance, cost or mode of transport. As we have found in this study that 95% of the family heads are male and 82% of them choose the health care provider for the women and their children.

Analysing the views of the community leaders on the same questions could shed light on these issues too.

It was found that some of the community leaders were concerned about the distance and transport cost for emergency cases. As an example they reported that

“When a delivery patient became serious, especially at night, it became a great problem to bringing her in the hospital due to road communication and proper transport, this happened quite often.” (CL .20,1997)

A community leader narrated a painful experience in the following way:

“I was working in a field near my house, suddenly one of my neighbours came to me with tears in his eyes and told me that “his 3 years son is seriously ill, as he got diarrhoea, and was possible for me to bring his son to THC on my motorcycle. I did that as quickly as possible, but unfortunately the boy died on my motorcycle half way to the hospital (THC). I was shocked” (CL 10, 1997).

The above story is painful and it explains only one incident of its kind. It happens repeatedly in rural areas of Bangladesh. This finding indicates clearly that transportation of the risk patient is a factor that has effects on the use of THC.

As the FWCs are not well equipped to tackle any serious illnesses including diarrhoea, people need to go to the THC or private clinics for the treatment of such emergency patients. In this context transport seems to be a problem to visit THC.

The different views were expressed by some of the community leaders. For example they said "Distance does matter but is not the main problem as people are taking their patient to the district hospital at Jessore and Khulna that are 34 KM and 55 K M from the Thana Health Complex, respectively. Sometimes they are going to specialised hospital to Dhaka (Capital City 350 KM) and even Calcutta, India. CL 5, 3, 4, 7, 12, 9, 28, 1997). Another community leader said "Doctors at the THC could not treat serious patients- they always send the patient to district hospital or their private clinic and people are going to that higher level for treatment, no matter how far it is and how much it cost" (CL 24, 1997).

The above findings indicate that the contribution of physical accessibility on the low use of government services is less than the accessibility to the service particularly the quality of services. A study of the physical access and utilisation in Guatemala supports this finding. As the study concludes, "It does seem plausible that the current low utilisation of Ministry facilities reflects poor quality of services and certainly not physical access nor mysterious cultural barriers" (Annis 1981).

CHAPTER EIGHT

DISCUSSION

8.1 Introduction

The under utilisation of the public sector health care facilities in the rural areas of Bangladesh is beyond the question. This situation has prevailed for the last two decades. The variation in use of different types of health care facilities is also very large. The reason for this situation was found not to be simple or straightforward. Many factors relating to the socio-economic condition of the people, demographic characteristics, knowledge, attitudes and cultural beliefs, quality of service, accessibility to the service facilities are all directly or indirectly relevant. This study examined those factors closely in a rural setting in order to estimate the contribution of each of the factors to the low utilisation of government health care services. An integrated methodological approach was used to get the insight into the problem and to estimate the relationships between the factors.

This chapter contains a discussion of the substantive results of the study and consistencies in the findings with other studies are explored. To begin with, methodological issues including problems and limitations are discussed in the following sections. The discussions on main results have been done in the subsequent sections.

8.1.1 Methodological issues

Both qualitative and quantitative approaches were used to study the pattern of utilisation and the factors affecting utilisation of the services both from users' and providers' point of view. Different scholars (Pope and Mays 2000, Leslie and Gupta 1989, WHO 1984, Bryman A 1988, Dickersin K 1993, Dingwall R 1992, Murphy and Dingwall 1998) noted the importance of using combined methods in data collection. According to Black (1994) qualitative approaches can enhance quantitative studies in four ways: by providing insights into the process of data construction; by helping to identify the relevant variables for study; by furnishing explanations for unexpected or apparently anomalous findings; and by generating hypotheses or research questions for

further investigations. Barbour (1999) reported three most commonly advanced reasons for combining qualitative and quantitative approaches are (i) to develop quantitative research tools of considerable sophistication for a project, (ii) to compensate for each other's shortcomings and (iii) for the purpose of triangulation. Combining methods can throw some of our assumption in-to sharp focus and lead to re-examination that can both enhance and challenge our accepted models of research (Barbour 1999).

Considering the merit of using different methods of data collection, in this research various qualitative methods (in-depth interview, observation and informal discussions) and quantitative methods (household survey) were applied to understand the relationships in a more in-depth way. This was important for studying maternal and child health care utilisation patterns in a traditional rural community where quantitative information alone may not be sufficient for explaining the issue fully.

The qualitative methods helped in understanding a number of issues: the decision taking mechanism of population in health seeking; knowledge and attitudes of people on the public sector health care facilities; their feelings about the existing services; the health care environment in the rural situation. The household survey provides information on the morbidity, mortality pattern, socio-cultural, economic, and demographic characteristics of the study population, along with the information on the use of maternal and child health services provided by the government. The advantage of the household survey was that all the respondents were mothers and all were available during the survey. Refusal to be interviewed was negligible. The survey population was found to be representative of the rural population of Bangladesh in terms of their socio-economic characteristics (See chapter 4 Table 4.1.2 page 96).

Careful consideration was given while interviewing the mothers during the household survey in order to respect the traditional beliefs and culture of the rural community. To ensure the women have free and frank answers, female interviewers were engaged to interview mothers, as rural women are mostly not allowed to talk with men who are not family members and open to discuss their problem with male even sometimes to

their husband. A study on women's health priorities: cultural perspectives on illness in rural Bangladesh described this issue clearly elsewhere (Ross et. al 1998). Appropriate training was given to the interviewers on how to approach respondents and made them familiar with the local culture and language. It helped them to build rapport with the mothers easily and to get information that was sought for this study.

The household survey, observation and the in-depth interviews were complementary to each other and generated insights that helped better to understand issues.

8.1.2 Limitations of the study

Limitations of data

1. The household survey data, which have been collected from the 360 households, demonstrate clearly the patterns of health services use and the reasons for use and non-use by the sample population. But it was not found to be large enough in the adjusted analysis of the relationships between choices of individual facilities (THC, FWC, VHCP) and range of socio-economic factors of the population. The main reason, there was not enough data (eg. use of FWC for child delivery is 0) to estimate the required number of parameter (see tables 4.1.1) needed for multiple logistic regression. However, to overcome this problem, the dependent variables were re-categorised in to two major categories (use of public or private facility) as described in chapter 3 paragraph 3.9.4 and that allowed us to perform adjusted analysis of survey data.

2. Secondly, the household survey data have been collected from the female members of the households, those have less decision making power in family matters including seeking health care from different sources. Moreover, they have less knowledge about the income and expenditure of the family, as the majority (96%) of them is housewives. This was not anticipated during the design of the study. So future studies should include a considerable number of male members in order to get more precise information on those aspects, which are not in fact under the control of the female members of a family.

3. Third, although all possible steps were taken from the outset from designing the research to reporting, to collect data from a typical rural thana, the issue of generalisation of the findings may be a question. This is because this study has been conducted in one thana out of 397 of its kind. People in other parts of the country may have different view and health seeking behaviour from the study thana. Secondly, this study dose not covers all the components of primary health care, as this was not possible due to limitation of resources and time. However this study provided a lot of interesting findings about the reasons for use and not use of facilities by different categories of population. These approaches can be replicated in other parts of the country, as similarities were found between the study population the country's rural population both in their characteristics (table 4.1.2) and the pattern of health service use.

Other limitations

Two main problems were faced by the interviewers; first travelling to the villages, as there was no alternative to a long walk to find the sample households as these were scattered all over the thana. Second preventing others from responding during interview of the mother. This problem was eventually overcome by the intervention of the household head, as there was no way to interview the mother confidentially. Another problem was to get information about the quality of services from the non-user mothers, as they have no experience of visiting the public facilities. This problem was minimised by asking what they have heard from other family members or neighbours who have experiences in using public facilities.

In-depth interviews of the community leaders and providers were conducted by myself. The main constraint was to get the community leaders for interview because they were busy people. In most cases we had to interview them at night at their home. It also took a long time to make them understand that this study is not an official enquiry against the government health care providers. Some of them were too keen to discuss the problem and some of them were trying to avoid the issues initially, but ultimately they provided their opinion on the issues discussed.

The problem with interviewing the health care providers was that they were more interested in speaking about their problems than in answering our questions. On many occasion we had to spend a long time with the health care provider to listen their

problems and to get information for our purpose. The community health workers were mostly interviewed at their home. That was an advantage to talk with them freely and frankly.

Direct observation of the facilities was done in this study. It is a technique that involves systematically selecting, watching, and recording behaviour and characteristics of living beings, objects or phenomena (Pope and Mays 2000, Green 1999, Atting 1989, Singha 1989). Observation seems to be the appropriate technique for getting at 'real life' in the 'real world'. It permits a lack of artificiality, which is too rare with other techniques (Robson 1993). This approach was used for this study to check the collected information and to observe the situation more closely. To observe the overall health care environment in the THC, as well as staying there full working time, I had to spend several nights in the guestroom of the THC and my research assistant was there for a long period. That was an opportunity to look at the activities of health care provider more informally and closely at all times. It also helped to reduce the problem of changes in performance in the presence of the observer. Several visits were needed to the union and the ward level facilities to find the health care providers and full working days had to be spent to observe their performance closely. This took a long time, but my frequent visits made them confident to work normally during observation, which in turn reduced changes in performance.

The criteria that were set for determining physical quality of the public health facilities are purely for this study. Some biases might have been introduced. However, judgement has been made completely based on the visible physical aspects; patient waiting place, toilet facilities, water supply, and patients' examination room, which are important for any health care facilities.

Despite all these difficulties, the whole data collection work was an interesting experience as it was an opportunity to live with people of rural areas, to share their experience closely, and to observe the situation directly on the ground.

As far as data analysis was concerned, both simple correlation to most sophisticated statistical analyses of the quantitative data have been carried out. Leslie and Gupta (1989) have discussed the importance of this approach. After reviewing extensive literature on maternal health services utilisation, they conclude that the majority of the

reviewed studies used simple correlation and bivariate approaches to analyse their data. This provides little insight into the dynamics of utilisation of formal maternal care. They suggest using more open-ended data collection and more sophisticated multivariate data analysis techniques, which can better explore the influence and relative significance of a wide range of factors affecting utilisation. They also emphasise the need to look at the effects of socio-cultural and attitudinal factors on utilisation of maternal health care services. This study has given full attention to the above methodological issues to assess the relative strength of the association of different variables with utilisation.

The socio-economic index, which has been constructed with six socio-economic variables for stratification of the sample population and for analysis was found to be appropriate to estimate its effects on the use of public health services. However a bigger sample population might be needed to generalise the classification procedure.

In spite of the limitations and problems mentioned above, the findings of this study provided important in-depth information about the existing health care delivery system particularly the quality of the service, and the performance of the public sector health care provider. It also provides the socio-economic characteristics of the population, health seeking behaviour and their feelings about the existing rural health care delivery system, more specifically the maternal and child the health care services. It may be worthwhile to point out that the conclusions, which have been drawn from this study, are not based only on a single source of information. The multiple sources of information provided an opportunity to draw more objectively conclusion.

8.2 Use of public sector facilities for MCH services

This research revealed that out of the three public sector health care facilities (i) THC, (ii) FWC and (iii) VHCP, the first two static facilities are unacceptably under utilised, though those facilities are meant to provide free high quality health services, established at the primary health care level. The majority of population for two specific aspects of MCH care uses the third one (VHCP). This finding has consistency with the nation-wide health and demographic survey of Bangladesh (BHDS 1997). But that survey does not provide reasons of non-utilisation of two important facilities. This study identified various reasons for this situation, which were related to the characteristics of the population and of the services as well. The key factors that kept

people away from using of the public health services are discussed in the following sections.

8.3 Socio-economic condition and use of MCH services.

The third and fourth five years plan (1980-90) of the government of Bangladesh took an integrating view of national development in a long-term perspective to address the acute problem of poverty, unemployment, rapid population growth, malnutrition and illiteracy. The process is continuing to improve the socio-economic conditions of the people, but it is far away from achieving the targets, as Bangladesh is still one of the least developed countries in the world, per capita income being US \$273 (BBS 1998). The majority (84.36%) of the country's population lives in the rural areas (BBS 1997). Socio-economically it is less advanced and is a traditional rural society. Use of modern health services of this major section of the population depends partly on their socio-economic condition. Studies in different country have also found association between the socio-economic conditions such as education, and family income on the use of health services (Caldwell 1979, 1988; Cleland and Van Ginneken 1988; Abbas 1986; Boerma 1992; Elo 1992). A study in Nepal noted that in a traditional society where both traditional and modern methods of treatment are used, the choice between them is determined by socio-economic status and belief system which are themselves in the process of change (Niraula B. B 1994).

This study also found the influences of the socio-economic variables; education, income and occupation on the use of two public sector facilities; THC, FWC, but not on the use of VHCP. Use of VHCP is universal for people of all socio-economic condition in receiving TT vaccine of mothers during pregnancy and immunisation to the children. The possible explanation for this might be the availability of the TT vaccine at the VHCP level free of charge and the effort of regular persuasion by the field level health and family planning workers. The people of the high socio-economic condition, the higher income families and educated families used THC as a place of TT vaccine, antenatal care and postnatal care more compared to the people of middle and low socio-economic status. These findings indicate that people with higher socio-economic condition have more access to the services of the THC due to their social prestige and ability to afford the direct and indirect costs of using the THC. In addition to financial capability, perceived quality of the THC compared to

FWC and VHCP, might be another reason. Use of the FWC for these services (TT vaccination, antenatal care, and postnatal care) is lower among all the groups.

The number of antenatal care visit was found positively associated with the level of family education, family income and socio-economic status. All those socio-economic variables are significantly associated with the number of ANC visit. An adjusted analysis also confirmed the significant associations of family education with the numbers of antenatal care visits, choice of delivery person, and postnatal consultation. This finding is similar to a study in Vietnam, which found that women's educational level persists as a significant predictor of her use of prenatal care services (Swenson 1993). Financial ability, understanding of the importance of antenatal care due to higher education led them to make more antenatal care visit.

In the case of child delivery, no substantial effects of socio-economic condition, education level, occupation and income level were found. Almost all the children in the study households are delivered at home and the trained and untrained TBA conducted the majority of the deliveries, which is consistent with the national level statistics (BBS 1997; BDHS 1997). This finding provides an indication that the long traditional birth practice, availability and good faith on the TBAs may have more influence on home delivery than the socio-economic conditions or education level of rural people.

The findings about the use of public sector facilities for child immunisation, irrespective of socio-economic condition, education and income level the place of immunisation was found to be same for all section of population. The possible reasons might be there is no free alternative to this service at the thana level. Though the source of immunisation is not significantly associated with the socio-economic variables, it has a significant relationship with the percent of children who received immunisation among the people with different socio-economic condition, income and education. Children from the high socio-economic group, educated family, and higher income families received more vaccine compared to their counterparts. A similar result was found in the case of measles vaccination. This result suggests that socio-

economic variables may have an effect on the vaccination of children, though the relationship is not found to be statistically significant.

The incidence of child diarrhoea and ARI was found to be less in the study area compared to the national statistics. However the non-qualified village health care providers were found to be the main sources for treatment of child diarrhoea and acute respiratory infection of the children belonging to any socio-economic condition group. Though the thana health complex based nation-wide diarrhoea prevention and ARI control programme have been in operation for more than a decade, the use THC for those services was found negligible (0.48% for both the cases). This finding indicates that the existing THC based prevention and treatment programmes could not reach to the majority of population. Another explanation might be, for the diarrhoea prevention, that most of the rural people are by now informed by different government and non-government organisation about how to prevent diarrhoea through a simple technology such as using 'Laban gur sarbat'¹. As the GOB/UNICEF report (1999) showed that 57% of the rural diarrhoea was treated by ORS/LGS/HF². The overall findings indicated that the THC is mainly serving the interest of the people of the high socio-economic condition and those are only 11% of the sample population. This section of population has also access to the qualified private health care providers

The larger section of population belonging to the low socio-economic condition is not getting services of the qualified health care providers of the THC. They (Low SEG) are also unable to afford services from the qualified private health care providers. In that case they have two options; either to visit the FWC and VHCP or a non-qualified village quack.

1. Laban gur sarbat: Solutionn of Mollases and salt commonly used for diarrhoea treatment in Bangladesh.

2. ORS/LGS/HF: Oral Rehydration Salt, Laban Gur Sarbat/ Home Fluid.

The majority of rural people relied on the second option for maternal and child health care. This is because the service provision of the FWC is mainly limited to the distribution of family planning methods, the few maternal, and child health care services. Moreover the available services are not considered to be as good by the people. This situation has driven them to the non-qualified village quack.

This finding indicates that improvement of the socio-economic condition along with the education level of people may help increase the utilisation of THC, but not the use of FWC, as people perceived the quality of the services of the THC is better compared than that of the FWC. The use of FWC would not be increased, if the MCH service provision and its quality remain unchanged

This findings suggest the need for redesigning of service provision and management of FWC to turn it to a centre for basic health care (essentially for MCH care) at the PHC level from a family planning clinic of the family planning directorate as currently viewed by people and some providers as well. The physical facility is not a major factor since it is a two storey building (see photo 4.3, page 210) and has enough space. Introduction of an unified health care administration along with the involvement of people in the management and operation of FWC could be a strategy to improve management, supervision and accountability of providers. Adequate supply of logistics including drugs also needs to be ensured.

In summary it can be said that socio-economic conditions as a whole and individually income, and education have positive effects on the use of THC but negative effects on the use of FWC. This finding is partially consistent with the hypothesis that populations in higher socio-economic conditions are likely to use public sector MCH services more than are those in low socio-economic conditions in rural Bangladesh.

8.4 Knowledge, attitude and utilisation of MCH services

The socio-economic conditions are not the only population factors that have effects on the use of maternal and childcare. Studies in different countries show that knowledge and attitudes of the people have also effects on the use of health services (Rahman 1981, Karel 1994, and Okfar 1983). In this study it was hypothesised that the poor

knowledge and negative attitudes of the population towards the existing public sector facilities are the determinant factors for the utilisation of MCH services in rural Bangladesh. How do people feel about the public service and what knowledge do they have about them? Do their knowledge and attitudes have any effect on the use of the government health care facilities.?

Knowledge and attitudes of informal and formal leaders were found to be important to understand their influence on use of MCH services, as both categories of community leaders have potential influence on their community members. Because the informal leaders are respectable persons in the community, people seek advice from them for any purpose of their life including health care and they have some regulating role in the community. The formal leaders possessed some legal authority on the community as an elected member of the local government. Their role in the community is also important in all respects. Mothers' views (user and non-user mother) were also considered important, as improvement of their health is one of the main targets of the government health system.

8.4.1 Knowledge of community leaders

Finding shows that the 100% of the community leaders have knowledge about the location of the THC but 82% of them knows the location of the FWC and 93% knows where the VHCP is located. This finding indicates that the community leaders are comparatively less aware about the FWC and VHCP than the THC though those two facilities are nearer to them compared to THC. The frequent opportunities of the community leader to visit Thana head quarter and the less concern about the union level facilities might be the explanation of this variation of knowledge. For instance about 11% of the community leaders used the FWC while 32% of the community leaders used the THC.

Most of the community leaders do not know exactly when it opens or closes. The fact is rural people do not strictly follow the time for their work. Moreover the service providing time is so long, so they do not bother about the exact time frame. The disadvantages of this was that some time people visit the facility either on the wrong

day or the wrong time, which ultimately creates confusion among the people and adverse effect on the government services.

The knowledge of the MCH service availability in the THC and FWC was found to be poor among the community leaders as none of them reported that antenatal care, post natal care or ARI treatment could be done in the THC. The most commonly reported disease was diarrhoea. This may be the result of mass campaign on the diarrhoea prevention programme of the government and non-governmental organisations. The immunisation programme of the government and the counselling activities of field level health and family planning worker may have enhanced people's knowledge about the immunisation service availability at the VHCP. The majority of leaders viewed the FWC as being for the distribution of family planning methods and a place for the treatment of female diseases. This poor knowledge may be a reason for limiting the use of FWC by the community leaders.

8.4.2 Knowledge of mothers

Knowledge of the mother on the location of three public sector facilities is less compared to the knowledge of the community leaders (61% vs 100% respectively). A similar picture was found in the case of the FWC and the VHCP. Variation of knowledge between them may be due to the restricted movement of the rural women. The movement opportunity of the rural women is restricted by the traditional culture. A woman, especially from a Muslim family normally is not allowed to go outside their house without being accompanied. This restriction might be part of the explanation of their low level of knowledge. However it was found that the nearer the facility, the greater the knowledge about its location as 83% of the mothers know about the location of the VHCP, which is located at less than 10 minutes walking distance.

Similarly, their knowledge about the service providing time and MCH service availability of those facilities were poor compared to the community leaders. But the similarity was found in the case of knowledge of service availability. For instance, the majority of the community leaders and the mothers reported that diarrhoea treatment is available in the THC, FWC distribute family planning methods and VHCP provides immunisation and TT vaccine for the pregnant woman.

8.4.3 Attitudes of community leaders

Attitudes of the community leaders were assessed on the five issues; overall quality of the public sector facilities, availability of drugs and their quality, quality of professionals, behaviour of the professionals and private practice. Attitudes were found to be important determinants of the use of public sector facilities as the majority of the community leader showed negative attitudes towards all the above aspects. For example 68% of the community leader reported that the quality of the THC services was bad and none of them ranked the services of the FWC as good. The VHCP was the only exception. The majority (82%) of them reported that services in VHCP are good. This variation of opinion may be due to the fact that VHCP provides very limited services as mentioned before.

8.4.4 Attitudes of mothers

A significant difference was found between the attitudes of the mothers and the community leader about the government health care providers' quality, service quality, behaviour, drug availability and private practice. Mothers' attitudes to the public sector health care provider of Thana health complex and FWC are mixed. They are not well informed about the different aspects of public sector health care facilities, in contrast to the community leaders. For example 50% and 33% respectively of the mothers have no idea about the quality of Thana Health Complex and Family Welfare Centre. The possible explanation of this might be they have no practical experience of visiting those two health care facilities. Low communication opportunity with the outside world, illiteracy and dependency on men may also be contributing factors. One similarity was found that the majority of the community leaders and the mothers have positive attitudes on the quality of the Village Health Care post. None of the two groups reported the quality of VHP is bad.

Attitudes of the mothers to the quality of professionals were not as clear as it was in the case of the community leaders. Most of the mothers said "*what I will say? ask him (Husband)*" This again indicates the dependency of the rural women on the men, mainly on their husband. So the knowledge and attitudes of the male member of a household is vital in using health services. As the finding showed that any family decision including seeking health care for the family member mainly depends upon the decision/attitudes of the male member (Head of family / husband) of the

household. However, utilisation of services could be increased, if both women and men have adequate knowledge and positive attitudes towards the health facility. The use of VHCP at a higher rate is an example.

8.5 Quality and utilisation of MCH services.

One of the major objectives of the health sector third and fourth five years plans (1980-90) was to improve the quality and to increase the coverage of the health care delivery system (GOB 1990). Improvement in the quality of primary health care at the Thana, union and below level is also a main policy target of the recently formulated health policy of the country (GOB 1998). A health care quality assurance project is also being implemented for the last few years. The health and population sector programme (HPSP) 1998-2003 recommended the constitution of national and regional level quality assurance teams for developing norms, standard and monitor the quality of services at all level of health care (MOH&FW 1998). In this study, efforts have been taken to assess the quality of the thana level public sector health care facilities to examine its effects on the use of MCH care services, as intended by the government.

The quality of public sector health care facilities were measured by analysing seven issues relating to the physical quality of the facilities, provision and quality of the providers. Specifically the issues are the availability and quality of the **drugs**, availability of the **equipment**, quality of **professionals**, **privacy** in treatment, **management and supervision**, **private practice** of the public sector health care provider and the **physical quality** of the health care facilities. Information was collected from 22 health care facilities of three different categories and classified them as good, moderate and poor (for details see chapter six pages 181-82). The issues of private practice and drugs have been discussed earlier. Other aspects of quality are discussed in the following section.

8.5.1 Quality of physical facilities

The finding show clearly the poor physical conditions of all three types of government health care facilities. But people (Mothers and community leaders) are not found to be much concerned about the physical quality of facilities as none of them during the household survey and in-depth interview mentioned that. The only

concern expressed by most (65%) of the respondent was the poor toilet facilities (dirty, bad smell, not clean) at the THC and FWC. No complaint was raised about the unavailability of the same facility at the VHCP.

On the other hand, the THC and the FWC have physical facilities better than the VHCP, but use of those facilities are very low. So the physical quality of health facilities may not be the main barriers to use of facilities. Service availability may be a more important determinant than the physical quality of the facilities.

8.5.2 Providers quality

The quality of the providers was assessed by analysing their background characteristics, education, training and performance. It was found that most of the doctors working in the THC have 10-14 years of working experiences. Interestingly none of them have in-service training on ANC, PNC, and childcare. The medical officer (gynae and obstetrics) has no training on that subject, similarly the medical officer for maternal and child health care has no training on that discipline. These two doctors have major roles in the THC to handle the health problems of pregnant women and children. As they do not have special training or updated knowledge on the MCH care, in most of the cases they could not deal the problem in an appropriate manner, which ultimately affects the quality of the services.

People perceived that qualities in terms of their skills and professional knowledge are not better than a village quack. Though these providers have either medical graduation/ diploma or professional training, which are lacking among the traditional village health care provider. The people's personal experience with public sector provider and beliefs are the basis of this view. It is interesting to note that 86% of the study population seeks treatment from the non qualified village health care providers, who have no or minimum medical qualification and training. Their professional quality is not as good as those who have formal medical qualification. But why do people view the quality of the public sector professionals is not good? The possible explanation of these negative views might be that people rated them upon their behaviour not on the basis of the professional qualification. As most of the community leader reported that "*the behaviour of the provider is not good, they do not treat patients carefully, do not listen the problems of the patient, are not sincere*

in their job, ignore the peoples feeling, use bad word and are not sympathetic to the patient, always encourage people to visit their private chamber”.

It indicates that people do not get congenial behaviour from the public sector health professional, which probably they get from a village non-qualified health care provider.

The low use of the two health care facilities; THC (32%) and FWC (11%) might be the reflection of the negative attitudes of the community leader to those public sector health care facilities. While high use of VHCP (93%) confirmed their positive view (82% good) on that facility.

Gender of health care provider at THC and FWC might be another issues as both of them are male. Traditionally rural women are reluctant to expose to a male doctor. The opposite scenario is that most of the village non-qualified health care providers (Village quack) are also male and most women made visit them for any illness. This finding raised an important question that why most of them visit village quacks and not to the medically qualified male doctor at the THC. The explanations might be the relationship between the people and the village health care provider. People considered the village health care provider as their own person, an insider and he may be available not only at the time of illness but also at social events. They trust them and see them as well wishers. On the other hand public sector providers, though they are medically qualified, are treated as outsiders and relationship with the people is not congenial.

The information about numbers of patients seen per day, time spent per patient and time spent per day for providing services showed that most of the THC doctors spend a maximum of 90 minutes for providing health services to the people in the hospital outpatient department out of 8 hours of his/her office time. This finding clearly indicates that doctors are not utilising their office time adequately for providing health care to the people. Though they reported that due to heavy pressure doctor could not spend more than 2/3 minutes with each patient. But in an ideal situation a doctor could spend 10-12 minutes per patient to treat 30-40 patient, if he/she spend at least six hours for providing health care (see chapter six Table 6.5 page 190).

Behaviour and counselling of the patient are two important aspects of health care quality. Good behaviour of doctor is essential to establish a congenial relationship with the patient. At the same time counselling is necessary to develop the confidence, morale of the patient and to make the people aware about the episodes. These two important aspects were rare among the THC doctors, which have definite negative effects on the use of public sector facilities. In almost all cases, a prescription was found to be given without physical examination, which reduces the quality of treatment.

People also do not value the union and ward level health care provider (SACMO/FWV) more than the non-qualified village health care provider (village quack). As such when the question of provider choice arises among graduate medical doctor, SACMO/FWV and village quack, the most cases people choose the village quack, then by the graduate doctor, but it depends upon the severity of the illness, financial ability and confidence in the provider. People have limited knowledge that the FWV and SACMO are meant to provide antenatal care and postnatal care and child delivery service at the FWC.

Delays in coming to the office and absence in the duty with or without notice are common among the union and ward level health care providers. As it was found that none of the SACMO or FWV in this study come to the office on time and stayed full time (9-5 PM) though residential quarter has been provided to ensure their presence in time. Almost all the community leaders and also the mothers raised this issue. So the availability of the provider in the FWC is also a determinant factor for the people to visit FWC.

8.5.3 Drugs

The government policy is to provide drugs to the people free of charge at the public sector health care facilities. People expect to get full medicine free of cost. But the reality is totally different. Peoples' attitude towards the availability and quality of drugs was also not found to be positive. Most of them believe that the drug supply is not sufficient, its quality is not good and effective. There are many reasons to support this view. The public facilities could not provide a full course of drugs even for minor diseases. People do not get very simple drugs like paracetamol tablets in one visit.

Getting a full course of antibiotic is quite impossible. In most cases, the doctor prescribed drugs based on the availability of drug not according to what was required. So the drugs did not cure diseases. As a result this 'free' drug distribution system could not create positive impact to people.

Evidence shows that the district store supplied half of the requested items of MSR for the THC. Items were not supplied according to the requisite quantity. (see chapter 6 table 6.8 page-202). In some cases 1/5 and 1/8 of the drug were supplied against the requirement and no reagents and chemicals were supplied for laboratory operation. Second, supply of drugs is irregular and supplied drugs are not matched with the requirement. For instance during this study it was found that for four month there was no supply of drugs at the FWC. These issues are not only reported by the community leaders, but also the health care providers at the thana level. The district and national level managers also support the findings One important item, Oral Rehydration Salt (ORS), which is essential for controlling of diarrhoea, was not found in the list of essential drug supplied to the FWC as D&D kits.

Apart from the shortage of drugs, the issue of drug pilfering comes up during the health facility survey. Some community leaders as well as buyers of those drugs provided the evidence of drug pilfering. It is interesting to note that both the community leaders and the providers reported about the shortage of drugs and there is evidence that doctors are selling on drugs in the black market even after their expiry date. This is a complex are to deal with. It need separate detailed investigation, which is not within the scope of this research.

In summary it can be said that unavailability of drug is a single most important issue in lowering the quality of the public sector health care facilities. It was agreed both by the providers and the people as a main determining factor for the use of health care facilities. People have little confidence in the drugs provided from the government health care facilities. Reasons may not be the quality of drugs, but the quantity and appropriateness of the drugs. For instance as the government provider could not provide full doses of free drugs, they could not cure the diseases. Ultimately blame goes to the medicine, undermining the perceived quality of health care facilities.

So the shortage of drugs has clear negative effects on the quality of public sector health care facility and that leads to low utilisation of the facilities. The concept of free drug distribution does not produce a positive impact on the system rather alienating people from the public sector health care facilities.

These findings suggest the need for action to ensure availability of drugs in health centres. It also suggests the need to provide full doses of appropriate drugs to patient with proper use instructions to gain people's confidence in the quality of public sector drugs. People are already paying in cash for many of the drugs they need. It would be possible to make better use of those funds if a formal system of charges were introduced and the revenue gained were placed in a revolving drug fund to contribute to the future supply of rugs.

8.5.4 Equipment

The shortages of essential equipment were in all the three health care facilities: THC, FWC, and VHCP. None of the three health care facilities have standard list of equipment as recommended by the national quality assurance team of the Ministry of Health and Family Welfare. The THC is not properly equipped to handle complicated caesarean delivery. Most of the equipment is either obsolesces or became unusable due to lack of regular maintenance. There is no regular equipment maintenance plan. It takes a long time to replace and repair equipment, as several official procedures have to be observed. It was found that there are some important items of equipment that could not be operated due to lack of trained manpower. For instance in the THC a sophisticated anaesthesia machine, which is essential for operating theatre, could not be used since there was no trained manpower in the THC. Some other sophisticated equipment was found intact and had not been used since it was supplied. One reason for this inconsistency is that, most of the costly and sophisticated equipment comes to the country under commodity grant aid programme and is supplied by the international development partners. In most cases the development partners supplied the equipment according to list they prepared for the specific health facilities without considering the existence of capable manpower, such as trained technicians or operators.

Unavailability of essential equipment and equipment without manpower has definite effect on the quality of services. People became reluctant to visit the public sector facilities, knowing the equipment deficiency of the health care facilities. The public sector private practitioners took the advantages of this situation and attract the people in their own private chambers and diagnostic facilities.

8.5.5 Privacy in treatment

Privacy is a great concern in the public sector health care services. None of the three health facilities maintain privacy during the patient examination or treatment. Privacy is essential during antenatal care, child delivery, and postnatal care for mothers. Most patients come with children and attendants of different ages surround the providers. In this situation it is difficult for a patient especially for a pregnant women to explain her problem freely and frankly. On the other hand the health care provider could not concentrate on her problem and examine her properly. This situation could be changed at the THC and FWC level, as both of the health facilities have separate examination room for the health care provider. It is quite difficult to maintain privacy at the VHCP as it operates in a room open veranda of a village house, but not impossible. Some practical steps need to be taken to organise the system. For example an effective queue system could be introduced at the THC and FWC level and movable curtain system could be provided to the VHCP. In addition to that, sitting facilities could be arranged outside doctors' room and by creating awareness among the people about the importance of privacy during treatment.

8.5.6 Private practice

The issue of private practice of the public sector provider was found to be important and great concern expressed by all the of the community leaders, majority of mothers and agreed by some providers at all levels. In their view private practice is a major factor in the deteriorating quality of the public service and under utilisation of services. There is no clear government policy on the private practice of the public sector health care providers. This may be due to non-existence of the formal health policy in Bangladesh. Recently (GOB 1998) the government has approved a health policy at the cabinet level where regulation and arrangement has been noted, but will take a long time to get the policy into action, as clear rules and regulations have yet to be developed. However, there are two regulations that prohibit private practice during

office hours by registered medical practitioners in the service of the republic (Shahid 1997). These restrictions are not in fact being fully following. For example evidence shows that all the THC and FWC level health care providers are involved in the private practice during the day. They are involved in private practice both on working days and holidays, morning, evening time, even during office hours in their working place. The average private practice hours reported by the THC doctors was 4-6 hours in the working day and 4-11 hours in the holidays. THC doctors and SACMOs are doing private practice not only at home or in the medicine shop and personal chambers, but also by establishing fixed nursing homes, and clinics. This is a clear violation of the government's instruction and it actually creates a confusing situation for the people. People believe that a public health care provider could not provide quality treatment free of charge while they have an opportunity to earn money through private practice.

The private practice of the FWVs is not visible like THC doctors and SACMOs, as they have no established private chamber or clinics. The main reason may be they do not have Medical and Dental Council registration for prescribing medicine. Even then they are involved in private practice and mainly doing it by home visit, confined with child delivery, abortion, menstrual regulation (MR), postnatal care and family planning services. Almost all doctors, community leaders and mothers admitted the effect of private practice on the quality of the public sector health care. However some of the health care managers believe that private practice is not only the right of a doctor but also a requirement, as public sector facilities could not provide enough services to the people.

Some of the health care providers would be willing to give up the private practice if the government enhance their salary. But the question remains, to what extent would government increase the salary, where their private income ranges from 5000 to 45000 taka per months. Health care providers, who have good private practice, might not be satisfied with the increased salary. In that case it would be difficult to prevent them from carrying out the private practice. One possible suggestion might be to allow them to do private practice after office hour in the government facilities by developing a cost sharing system with the government. In that case a strong monitoring system needs to be developed. Other solution might be to introduce non-

practising allowances according to the qualification and experiences of the provider. The health care providers at the thana level are inspired by the private practice of their senior colleagues working at district and above. In that case it would be a hard task for the government to convince the strong doctors association, Bangladesh Medical Association (BMA) to stop their members from carrying out private practice.

In summary, the private practice of the public sector provider is decreasing the quality in different ways. For instance they could not provide full attention to the patient in the public facilities, do not provide good prescription free of charge in order to attract people in their private chambers. They created such an environment in the public facilities that people automatically need to go to their private establishment. Finally the dual role of doctors has created confusion among the people and they believe that they do not get quality services free of charges.

These findings suggest the need to formulate clear guidelines on this issue to protect the quality of the public sector health care facilities and to ensure good services for the people and also to regain the confidence of the people towards the public sector facilities.

8.5.7 Behaviour of health care providers

The behaviour of the public sector doctors is also a major concern of the people. As most (93%) of the community leaders reported that the behaviour of the public sector health care provider is not good or acceptable. Evidence of this view was found while observing the service delivery procedure in the different health care facilities. The health care providers do not get time to build up rapport with the patient, as they spend 2/3 minutes with each patient. Secondly patients do not get any chance to explain his/her problem mainly for three reasons; constraint of time, some times doctors do not allow the patient to explain his/her problem and finally the environment of the treatment room such as no privacy. In this situation most of the health care provider could not behave well. Sometimes people demand specific medicine, which may not be available at the centre. It also creates unpleasant situations between them.

8.5.8 Management and supervision

Two separate management bodies are managing the maternal and child health care services though all are belong to the same ministry. This dual management system was found to be responsible for lowering the quality of services, which leads to the low utilisation of facilities. It was clearly indicated in a recent document on the health and population sector programme of the Ministry of Health & Family Welfare that “the current structure of the population and health directorate does not adequately respond to the need of the child and mother health....limits the potential for increasing the range, quality, effectiveness of services functionally, impedes referrals, generates internal conflicts and contributes to the low utilisation of public facilities”(MOHFW 1998).

At the thana health complex smooth functioning of the maternal and child health care is being hampered in many ways. Problem of co-ordination, duplication of services, rivalry between the two groups are among them, as described in chapter five. The illegal activity of the thana level managers, such as taking certain amount of money (usually 10/20%) from the travel allowance of union and ward level family planning staff created an opportunity for the field staff to became reluctant to do their duty and the supervisor loose their control over them.

Lack of co-ordination between the health and family planning sector was found to be another important issue. In fact no effective co-ordination between the activities of two key personnel THFPO and MO (MCH) at the thana level. Some of the maternal services such as antenatal care, post natal care TT vaccination are the responsibility of the MO (MCH) while child delivery, immunisation, acute respiratory infection and diarrhoea treatment are the responsibility of the THFPO. Two sets of similar personnel are engaged in managing two individual stores within the same health complex. Due to these separate management they could not share the available logistics (medical and surgical requisites) at time of the need of the other sector.

Supervision of the field level staff was found to be almost nil. Evidence showed that none of the supervisors; THFPO and MO (MCH) had visited the FWC within the six months before this study. This finding is supported by another study on how government health system functions in a thana which revealed that the field workers

“had not seen their supervisor in the field since they had been in government service. Thus it was not a question of the “last visit” rather it was a question of “had they ever been supervised” (Shahid 1997). All these issues have direct and indirect effects on the quality of public services that leads people not to use it.

8.6 Access and utilisation of MCH services

One of the main policy objectives of the government of Bangladesh was to create health care delivery facilities; THC FWC at the primary health care level to increase coverage of health care delivery system. The main purpose was to enhance utilisation of the health care facilities by reducing the accessibility problem of rural people particularly of the women and children. This study examined the attainment of that policy objective by estimating association between physical access (geographical accessibility) and use of maternal and child health care services.

Three geographical accessibility factors; distance, mode of transport, and mean cost per visit to two static government health facilities (THC and FWC) are considered in this analysis. VHCP has been excluded for this analysis as 96% of the people live less than a mile from that facility and people can go there by less than 10 minutes walk and have no need to spend money on transport.

Interestingly, it was found that people those who live within one mile from the THC did not use THC. Possible explanation might be that this section of population have easy access to the private establishment of the THC doctor as all the doctor have there private chamber in and around the THC. Moreover they might have more adverse information about the quality of the hospital services. On the other hand the mode of transport and cost per visit was found important determinants for the use of THC (see chapter 7 table 7.1 page 218).

These may be for two reasons; first unsuitable transport system (photo page 141). Second the low economic condition of the people. The majority of the population belongs to the low socio-economic condition group. The majority (67%) of mothers use THC when the mean cost is taka 3, but it goes to down to 19 % when the cost is 4/6 taka and 15% when the cost is taka 7 or more. The bivariate analysis indicates the use of THC is inversely related to travel cost and depends upon the mode of transport,

but no significant association was found in the multivariate analysis. (Table 7.3 page 221). Similarly distance and mode of transport are also found not to be significantly associated with the use of THC. A study in Vietnam on the factors related to the utilisation of prenatal care supports the findings (Swenson 1993). That study found that distance from the village to the nearest hospital or clinic was not significant factor of use of MCH services. This finding suggests that people may be ready to travel long distance if the intended services are available and culturally acceptable.

In the case of FWC, all the three access variables have significant association with the use of FWC (Table 7.2 page 219). People live less than a mile from the FWC use that facility more than five times compared to those who live 3 or more miles far. The lower the cost per visits, the higher the chances of use of FWC. Similarly people who can reach the FWC by walking visited about three times more compared to those who need to use a rickshaw or a van. The multivariate analysis also shows that distance and cost are significantly associated with the use of the FWC.

These findings raised a question why cost and distance are significantly associated with the use of FWC, which is nearer to the people compared to the THC? The possible explanation might be the people's negative attitudes on the quality and availability of services in the FWC, as was found in the study. People have understanding that spending money for going to THC is more worthwhile than to visit the FWC, as there is very limited health care facilities and no graduate medical doctor in the latter. Moreover absence of provider and drugs are more prominent compared to the THC. This finding suggest that establishment of health facility near the people would not increase the access to the facility if the quality of the services is not ensured and if the people have negative attitudes towards the services.

8.7 Expectation gap

This study revealed a wide gap between the people's expectation and the existing maternal and child health care delivery as depicted in the fig.5.3 page 172. Reasons behind the gaps are many and the providers are mainly responsible for creating this gap because it is the provider's responsibility is to ensure the availability and the quality of care for the people. The use of health facilities does not arise if services are

not available. Informing people about the services is one of the responsibilities of the provider, which they are not doing properly. As it was reported in the MCH service situation analysis, "the field workers or the service providers had not taken any action to inform community members in their area about the availability of MCH-FW services centre. It seems that they never did take any action to popularise these services"(Rahman et. al. 1996:p87). Maintaining privacy in treatment and good behaviour is the prime responsibility of the health care provider, which is almost non-existent.

People's involvement in the health care management also helps in reducing the gap as it was evident in the VHCP management, where local people are directly involved in organising the services. This issue was raised by almost all the community leader and according to their view improvement of the service quality in the THC and FWC would be possible through their direct involvement. This finding suggest that it would be worth exploring the possibility of involvement of local people with specific responsibility in the management process of the THC and the FWC. This may contribute to improving the quality of public sector service facilities, knowledge of people and to change the attitudes of people in the positive direction that will help to increase utilisation of services.

CHAPTER NINE

CONCLUSIONS AND RECOMMENDATIONS

This study investigated the under utilisation of public sector health care facilities in rural areas of Bangladesh from population and provider perspectives. The overall aim of the study was to identify factors, which affect utilisation of MCH services, and to provide policy recommendations for improving the utilisation level of public health facilities. The study was conducted in a rural Thana of Bangladesh. Information was collected from population and providers using different methods and techniques.

This chapter provides conclusions that have been drawn from the finding of this study, which emerged from quantitative and qualitative analyses of collected data and information. Several recommendations are also given in the hope that implementation of those would lead to improved utilisation of public sector health care services at the primary health care level in Bangladesh.

Conclusions

9.1 Methodological

A combination of qualitative and quantitative methods, as were used in the study, were necessary to collect the required information and to understand the pattern and use of health services in rural areas of Bangladesh and some of the underlying causes of those patterns. This provides new insight into the factors affecting utilisation and justifies the cost of collecting such detailed information, and provides a better basis for developing strategies for greater utilisation.

The multiple sources of data gave a wide range of information that was appropriate for analysing the issue of public sector health service utilisation in rural Bangladesh. Data were validated by triangulation of information from different sources: household survey; participant observation, in-depth interviews; informal discussions, and document analysis. This approach could be used in any part of the country and elsewhere to investigate similar research problems.

Conclusions

9.2. Use of public sector health care facilities

It was found that two public sector health care facilities; THC and FWC are under utilised. The majority (86%) of the study population was found to rely on non-qualified village health care providers for health care. These findings suggests that government needs to concentrate its efforts on increasing use of public facilities, if it wants to ensure that primary health care services have the impact on health of the population. It also suggest that the government has some choices: it can either accept that unqualified private practitioners should continue to play a role and put its efforts into improving this sector, or it needs to discourage use of unqualified private providers.

The THC was established to provide health services to the entire rural population, but it was evident that the THC is serving the interest of a small section of the population (11%), most of whom are of comparatively higher socio-economic status and can afford to be qualified private health care providers. This finding indicate that the objectives of THC are not being met and they are not catering to the needs of the population. Considerable attention is therefore required to reorganise the service delivery system at the THC to make the service available to all.

The FWC was found to be the most unused facility in rural areas. People recognised FWC as a place for family planning activities, a centre that deals with female diseases and as a lower grade health facility for poor people and therefore is not considered a viable option when seeking health care. This finding suggests that there are in effect, two types of problem that are leading to their low level of utilisation; limited understanding of the role of the facilities and poor quality and limited availability of services.

Use of VHCP was found to be universal for two specific maternal and child health services; TT vaccination of mother during pregnancy, and child immunisation, which seems to be a big achievement of the government. This service needs to be continued. Involvement of people in the management and operation of VHCP was shown to be

an important factor in this achievement. However, there are still some operational and management problems that need to be addressed to make it a more effective health care post.

Although the data were collected from one rural thana, these findings are probably applicable to all parts of rural Bangladesh, due to the fact that the socio-economic conditions of people of other parts of rural areas are similar to the study population (see table 4.1.2 page 96). Secondly results of other studies and the nation-wide Demographic and Health Survey (BDHS 1997) support the finding of this study in many cases. Moreover there are some findings relating to quality of care, (provider behaviour, drug availability) may be pertinent to other regional countries where there are similar socio-economic conditions and health system background.

9.3. Understanding the causes of low utilisation

9.3.1. Socio-economic factors

Family education (education of husband and wife) has been shown to be associated with the use of public service facilities. The higher the education levels the higher the use of THC. The perceived quality of THC (as qualified medical graduates work there) was found to be the main reason for use of the THC by comparatively higher educated people. There are many reasons why it may be desirable to improve levels and standards of women's education, but it is likely that it will additionally have the effect of increasing use of THC services.

Socio-economic condition of people was also found to be a factor in the use of the THC: people of relatively higher socio-economic condition use the THC comparatively more than people of low and medium status. Two main reasons were noted; perceived quality of service, and access to the service. It seems that people from higher socio-economic condition groups are able to use either social influence or money to gain access to the services at the THC.

The poor use (about 2% of sample population) of FWC was not found to be associated with the socio-economic condition of people as no significant variations (ranges from 1.5% to 2.3%) of use was found among the three socio-economic

groups. The possible reasons are the perceived poor quality and limited availability of services.

On the contrary the high use of VHCP was also not found to be associated with the socio-economic condition of people as the majority of people use that facility for child immunisation (70%) and TT vaccination (81%) of women. Access to and availability of service were found to be the main reasons for the use of that service.

9.3.2. Knowledge and Attitude of people

People are not well informed about the services that are meant to be available in the THC and the FWC. Moreover people believed that the THC doctors did not provide good services and behave properly without money. FWC is considered to be a centre for female disease treatment and though is not open everyday. These types of information helped in shaping negative attitudes towards those facilities, and these are major barriers to use. The community leaders are better informed about the location of public facilities than women, but they also have little knowledge about which services are meant to be available.

Moreover a wide gap was found between peoples' expectations and the public sector health care delivery, as described in chapter five (Figure 5.7). The main causes of the problem seem be the behaviour of public providers and managers. Considerable attention is needed to reduce this gap. Most of the identified issues (fig. 5.3. page 172) could be resolved without additional financial resources, except for supplying adequate drugs and proper equipment. It is evident that availability of services was more important than the existence of physical facilities (FWC and THC building), or location of those facilities.

9.3.3. Quality of service

The quality of public sector health services, as measured by direct observation of seven indicators of quality was shown to be low. Each of the factors affected the quality individually and collectively. Poor quality of services was found to be the main reason for under utilisation of the THC and the FWC, even though they are located at the primary health care level.

(i). Unavailability of drugs was the most important factor in deterring substantial portions of the population from using them. Both the population and the providers acknowledged this. However, this finding raised the question: Why do people use private sector providers even though they do not provide free drugs either? The things that people get from a private provider are a good prescription and polite behaviour in most of the cases. This finding indicates that the shortage of drugs is not the only factor deterring people from visiting public facilities. This problem could be minimised, if the public sector provider provides expected behaviour (personal and professional) to people, provides good prescriptions as they normally do in their private establishment.

(ii). Privacy in health care, which was found to be non - existent, is essential and particularly so in the rural traditional society in Bangladesh as discussed in 6.7 and 8.5.5. This situation has had a negative impact on public sector services, deterring people from using the facilities.

iii). One to three minutes consultation time proved to be insufficient to build a rapport with the patient, understanding his/her problem, physical examination and giving a good prescription. These short consultations lowered the quality of services. This was also found to be a reason for peoples' frustration with the public sector facilities.

(iv). Accountability of the public sector health care facilities at all level of PHC was found to be lacking, staff could remain absent from duty or have irregular attendance. This is a major factor in reducing the confidence of people in them.

(v). The current regulation of private practice was not found to be a barrier to involving public sector doctors in private practice. The existing rules are not adequately enforced to regulate that effectively. That gave an opportunity to public sector health care providers to create an environment in which people automatically went to private establishments for health care.

(vi). Behaviour of providers was found to be an important determinant of use of facilities. The majority of the population was found to be dissatisfied with the behaviour of public sector health care providers. This too has an indirect effect on the quality of services, which deters people from using them.

(vii). The lack of an effective referral system was found to be another factor that reduced the confidence of people in the public facilities. As a result people go to private or secondary and tertiary care facilities directly even if these are located far from their home in order to save time and adverse consequence of illness.

(viii). Supervision and monitoring of health care staff at different levels of PHC was found to be either completely absent or ineffective (see 6.10 and 8.5.8). This lowers accountability and the sense of responsibility of health care providers. Moreover, taking of undue advantages (cash and kind) from field staff by supervisors has created an opportunity for the key health care providers to remain absent from the duty without notice, for irregular attendance and for leaving the health centre as and when they choose.

(ix). The current public sector health care facilities are operating in such a way that they are mainly serving the interests of providers, though the policy objective is to serve the interest of people. On the other hand the private sector services are operating to serve the interest of people (e.g. privacy, cordial behaviour, good prescription). As a result the majority of people use them even though they have to spend from their limited money.

9.3.4. Access

The majority of the population do not have difficulties in getting to the public sector facilities; THC, FWC, and VHCP either on foot or by using manually operated transport (bicycle, helicopter, van). However, access to services within the facilities is limited to a section of the population with the exception of VHCP. This finding indicates that physical access was not a main barrier to using health facilities. The contribution of physical accessibility to the low use of government services was less than the accessibility to the service, particularly to good quality services. The

construction of health infrastructure near to the population would not ensure the use of service, if the required quality service could not be made available there.

9.5. Recommendations

9.5.1. Recommendation for Policy

1. The benefit of involving people in health care management was found to be positive at the ward level health services; immunisation of children and TT vaccination of mother through VHCP. Achievements in the coverage of TT vaccination and immunisation are remarkable. The lesson learned from this approach could be used by other regional countries who want to provide similar services to rural women and children at a low cost and in an effective way. For Bangladesh, a policy decision could be taken by the government to involve people in the management and operation of other public sector health care facilities at thana and union level. Formation of a 'local health authority'¹ comprising representatives from different government and non-profit organisations along with people's representatives could be considered as a strategy for peoples' involvement.

2. Findings proved that quality of public sector health care facilities is unacceptable to people, as such; priority of the government needs to be shifted from expansion of facilities to improvement in the quality of services. The following recommendations could be considered:

It may be mentioned that recommendations are made mainly to draw the attention to the policy makers and planners of the government of Bangladesh. However, some of the recommendations relating to the quality of care (e.g. drug unavailability, behaviour of public providers, private practice, existence and performance of non-qualified health care providers, lack of supervision and monitoring) are also relevant to other regional countries, as the poor utilisation of public health facilities and quality of services of regional countries are also in question.

1. Local health authority: At present there is no such body in Bangladesh. However there is a health development committee at the district and thana level comprising representatives from different government department including administration, which is now in fact ineffective. That committee can be turned into a local health authority with necessary modification and specified job responsibility

There may be several common issues involved in degrading the quality of service of other countries as found in this study. The regional countries may use these findings as a basis for further investigation of on these issues.

a. The majority of the population expressed dissatisfaction about the behaviour of public sector providers, which was found to be a major factor in deterring people from using the public services.

A comprehensive training programme on behavioural change could be initiated. This component could be included in the medical curriculum as well. Moreover personnel have very limited training on their current job and most of them have no in-service training, which is essential to up date knowledge from time to time. So an in-service and refreshers training plan need to be developed for all categories of personnel at the PHC level.

b. At present doctors who fail to fulfil their duties have little fear of any penalties, and enjoying higher income from private practice. There are no direct financial incentives to provide higher quality services. As such provision of incentives for better performance and disincentives for irresponsibility need to be introduced effectively.

c. There are several problems that provided opportunity to public sector provider in doing private practice with out any restrictions; no clear policy guideline on private practice; there is no effective supervision; and no (or a weak) penalty system for undue practice.

As such, a clear policy guideline on private practice of public sector health care providers needs to be documented. It can be fully stopped by providing fixed amount of non-practising allowances according to the qualifications and experience of providers or by increasing salaries as the majority of the PHC level health care providers are willing to give up private practice if government would pay higher salaries.

d. Public sector doctors provide only a fraction of the services they are supposed to. It would therefore be feasible in principle to employ fewer, better paid doctors and provide a better service at a lower cost. Some other studies (Gruen et al 1998 p.53) have shown that private earnings are typically around the same level as those from government services, thus it would be necessary to double doctors' salaries in exchange of an agreement not to carry on private practice. A pilot scheme could be initiated to observe its impact on quality of services and performance of providers.

e. Shortages of drugs were found to be a common concern for both the provider and the population, but no study has yet been done to assess the drug requirement at the PHC level considering population and disease pattern. Moreover, the budget for drugs is mixed up with the budget of other medical and surgical requisites (MSR). Allocation of funds for MSR was given a flat rate of taka 30,000 per thana health complex per year. In most cases MSR budget was exhausted by procurement of other MSR items.

Two options could be considered to address these issues; funds could be given to the Thana Health Complex authority with purchasing power under a strong auditing system, so that they can buy MSR and drugs as needed through a 'local purchase committee'. That committee could be constituted with the representatives of PHC level, other public sector health care facilities (e.g. FWC) and people's representatives. Alternatively, the requirement of drugs budget needs to be determined based on the disease pattern, and the population covered by the facilities. Moreover, supply of drugs should be made on a regular basis in time.

f. The dual administration and power conflict between the health and family planning managers and staff at the PHC level has created confusion and rivalry among them. As a result MCH services are being hampered in many ways and that generates complexity in the management of services. This needs to be resolved for smooth functioning of maternal and child health programmes at the primary health care level. Unified health care management arrangements are recommended. These should be under one leadership at thana level with specific job responsibilities of the staffs of two

sectors (Health and Family Welfare sector). Discrepancies relating to service benefits of the staffs of two sectors also need to be resolved.

g. The government policy is to construct FWC in each union of the country and 3275 FWCs have been constructed up to the year 1997 at a huge cost. But it was shown that these are the most unused facilities in the PHC. Failure in management of manpower and resources from the district level family-planning department seems to be a main factor. So an initiative could be taken to change the existing management system of those facilities. The possible option might be to hand over management responsibility to a 'local health authority' as proposed earlier or to contract it to an independent body through open advertisement on a pilot basis. Roles, responsibilities and performance of health care providers involved in operating FWC also needs to be investigated by an independent investigation team.

h. The majority of rural people used non-qualified rural health care practitioners and there is no imminent possibility of elimination of those health care providers from the rural area. It is also not possible as this indigenous system is deeply rooted and accepted by the rural population. Nor it is feasible, as government has not that much financial and other resource capability to replace them by modern qualified health care services in a short time. As such, it is recommended that government needs to accept their existence as an important private sector health provider and needs to take an initiative to improve their service quality.

The quality improvement can be done in different ways. (i) They can be provided intensive and follow up training according to their level of educational and professional experience; (ii) the government, private or non-governmental financial organisation (e.g. Grameen Bank) can be given interest free or low interest small scale financial support for buying equipment, medicine and for setting up structural facilities for providing quality services; (iii) they can be incorporated into the public health system for providing, mainly preventive health care (eg. EPI campaign, diarrhoea control programme, health education etc) according to their level of capacity (iv) finally, regular monitoring of their activities and performance by

qualified health care professionals in order to evaluate quality, limit their services within their capacity and make them accountable for any malpractice.

9.5.2. Management improvement

a. Continuous monitoring and supervision mechanisms need to be put in place in order to ensure accountability of supervisor and staff at different levels of PHC. There are eight medical doctors and five non-medical supervisory personnel working in each thana. Officially they have supervisory duties. But it was reported that most of the supervisors took full financial benefit despite doing few or no supervisory visits. There is no effective mechanism to protect this illegal activity. In this context those health personnel could be assigned specific targets (e.g. need to visit x number of facilities in a month, and x number of MCH activities of field level worker) or responsibilities; to supervise MCH activities at union and ward level and to report to the higher authority. An independent inspection team could be formed to monitor the supervision activity periodically.

b. It was found that some health care providers have been working in the same thana for over 10 years, where the government 'officials transfer policy' was to keep a person three years in one place. This long-term stay in one place has created an opportunity for them to build up their own private business institutions such as nursing homes, clinics close to the public facility. It gradually makes them irresponsible in their main job. That ultimately undermines the public sector facilities, as staff becomes busier with their private business. The professional non-mobility also creates frustration among them and this has negative effects on their career development. So the existing three year transfer policy of the government could be implemented strictly to reduce these problems. At the same time restrictions on establishing private clinics/ nursing homes within their working area could be documented in the private practice policy guideline as proposed earlier, and monitored effectively.

c. It is the duty of health care providers to remain present in the health facility during working time. At the same time it also one of the main responsibilities of the concerned supervisor to ensure availability of health care providers in health service

point. However, poor supervision was found to be a factor for unauthorised absenteeism and negligence in the work of health care providers. So a mechanism could be developed to make the supervisor accountable for such conduct of staff under their supervision.

d. It was evident that among the different health care providers some are performing their duties sincerely and others are busy with private business without any penalties. This was found to be a reason for degrading the morale of sincere workers. As such, a rewards and punishment system should be introduced at each level of PHC, so that dedicated people feel encouraged to do their jobs more efficiently.

9.5.3. General recommendations

a. People need to be informed about the service availability including who the providers are, and opening and closing times of the government facilities. The community level health care workers who are already informing people about selective services (e.g. immunisation, family planning) could be oriented to provide more information to people. A mass campaign could be arranged as was done for expanded programme on immunisation (EPI). Health awareness meetings could be organised at the community level by thana and union level Health and Family Welfare Managers. The district level supervisor can also meet people during their supervisory visit.

b. As family education was found to be the most important determinant influencing the use of health services, it is suggested that the level of general education be improved among the rural population. This would include health education. The educated people of rural areas can be used as resource persons for this purpose.

c. Relatively richer people were found to use more public and private facilities than people in low and middle socio-economic groups. Improvement of socio-economic conditions could increase the use of public sector facilities.

d. Finally the most important issue is the political will of the government and professional organisations such as the Medical Association, to motivate their members to work for the interest of people and not only for themselves.

9.6. Recommendations for future research

Based on the findings this study recommends the following areas where further research is required:

1. Quality of public sector health care provider

The presence of non-qualified health care providers in rural areas cannot be ignored and the majority of rural population received health care from them. But there is little information available about the quality of those services and their effects on mother and child health. In-depth information on these services is required for three main reasons. First, as the substantial portion of rural women and children's health are greatly dependent on those services, for the interest of mother and child health it is essential to investigate the quality of those services. Secondly, the government of Bangladesh has taken an initiative to develop a private - public partnership in health sector to provide better health care to its entire population. (40% of population have access to the public sector at present). Information on the quality of private services may help in making policy decision to build up this partnership. Finally, the health indicators; MMR, IMR, U5MR nutritional status of mother and children clearly show considerable differences between the urban and rural population. The non-qualified providers mostly serve the latter. So it is important to know to what extent the non-qualified private providers contributing to reduce the difference and what types of professional improvement they need for providing quality health care.

2. Performance evaluation of public sector health care provider.

The findings of this study indicated that the health care providers at the THC and FWC levels are not using their full official time for providing services to people. On the other hand providers reported that due to heavy workload, they could not provide full attention to patients. This situation suggests an investigation on the performance of doctors and paramedics working at different public facilities along with their

workload. This information, which is lacking at this moment, would help government to estimate, plan or to organise human resources at the primary health care level.

3. Evaluation of the performance of FWC and MCH unit in the THC

The government of Bangladesh is spending a huge amount of money on the construction of FWC at the union level to provide health and family planning services to the rural population. Unfortunately only 2% of the sample population was found to be using that facilities for maternal and child health care. The national statistics are similar to this finding. So performance evaluation of FWCs is essential in understanding its operational problem, limitations and requirements for improvement to maximise the benefits of investment on them.

It was found that the MCH unit, which is located within the THC, could not create any positive impact on maternal and child health care. It was reported that it has limited physical space and located in an inconvenient area of THC for MCH service. Detailed information on those aspects including performance of the unit would be useful in taking policy decision regarding changes in its location or redefining its role and functions.

4. Need assessment of drug at thana and below level health facilities.

This study unveiled three important issues relating to drugs; shortage of drugs, inappropriateness of drugs, and pilfering of drugs. On the other hand there is lack of information in the requirement of drugs at thana and lower level. So it would be worthwhile to investigate the actual requirement of drugs based on disease pattern and population coverage.

5. Economic evaluation of different public sector MCH services

The government of Bangladesh is providing MCH services through the THC, MCWC, and FWC at the PHC level. Now, in the fifth five year plan government has taken the decision to construct another infrastructure (e.g. community clinic) for providing 'essential health care', especially maternal and child health care. Economic evaluation of the existing MCH services would be appropriate before establishment of another health facility at the primary health care level, as the under utilisation of exiting facilities is a major concern for the government.

Finally, this research is a first step in the investigation of the under utilisation issues of the public sector health facilities, in a comprehensive way. It is expected that the study approach and the recommendations would provide directions for future research in this aspect.

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APPENDIX 1

Appendix 1
SAMPLE IDENTIFICATION
HOUSEHOLD SURVEY QUESTIONNAIRE

Converted Household Serial Number

--	--	--

Thana _____

Union _____

--	--

Village _____

--	--

Ward _____

Household number

--	--

Name of Household Head _____

Name of Bari _____

Name of the respondent _____

Time: Starting _____

Ending _____

INTERVIEW INFORMATION			
Interview call	1	2	3
Date			
Result code			
Interviewer code			

Result code: 1 Completed 2 Deferred
 3 Refused 4 Respondent not available
 5 Dwelling vacant 6 Others _____ (specify)

Scrutinized by _____ Date _____

Re interviewed/spot checked by _____ Date _____

Edited by _____ Date _____

Coded by _____ Date _____

Appendix 1 cont.
INFORMATION ON HOUSEHOLD MEMBERS INCLUDING THE RESPONDENT.

Sample household number:

Sr. no.	Name	Relation to the respondent 1 = respondent 2 = husband 3 = son or daughter 4 = parents 5 = brother or sister 6 = others(specify)	Sex 1 = male 2 = female	Age (in complete years)	Education (highest class passed)	Occupation 1 = none/hh work 2 = service 3 = labour 4 = agri work 5 = business 6 = student 7 = others (specify)	Marital Status 1 = ever married 2 = never married	Interview eligibility (Please tick)
Female members								
1								
2								
3								
4								
5								
6								
Male members								
7								
8								
9								
10								
11								
12								

Serial Number of eligible women: _____

Appendix 1 cont.
BACKGROUND INFORMATION
Section - 1

- | | | | |
|-------|--|---|--------|
| 101. | How old are you? (PROBE) | Age in complete years _____ | |
| 102. | Are you now married, widowed, divorced or separated? | Married1
Widowed2
Divorced3
Separated4
Others (specify).....5 | |
| 103. | How many living children do you have now?
How many boys? How many girls? | Boys _____
Girls _____
Total _____ | |
| 104. | What is your religion? | Islam1
Hinduism2
Christianity3
Buddhism.....4 | |
| 105. | Did you ever attend school? | Yes.....1
No2 | >> 107 |
| 106. | What was the highest class you passed? | Class _____ | |
| 107. | Aside from doing normal household work, do you do any other work (for cash or kind such as rearing poultry, making handicrafts etc.) on a regular basis? | Yes.....1
No2 | >> 109 |
| 108. | What are those activities? | | |
| 109. | Did your husband ever attend school? | Yes.....1
No2 | >> 111 |
| 110. | What was the highest class he passed? | Class _____ | |
| 111. | What is (was) the main occupation of your husband? | Cultivation1
Service2
Labourer3
Business.....4
Others(specify)5 | |
| 112a. | Do you have any own homestead land? If yes, how much? | _____decimal | |
| 112b. | Do you have any agricultural land which is owned by you or your family members? If yes, how much? | _____decimal | |
| 113. | Is your family a single or combined one? | Single.....1
Combined2 | |

114. How much do you spend a month to maintain your family? Taka _____
- 115a. How much does your family earn a month? Taka _____
- 115b. What are the major sources of income in your family?
 1.....
 2.....
 3.....
 4.....
116. (Interviewer: Record the construction materials of the main dwelling house).
 Roof
 Concrete.....1
 Tin2
 Thatch.....3
 Taly.....4
- Wall
 Concrete.....1
 Tin/wood.....2
 Thatch/bamboo.....3
 Mud4
- Floor
 Concrete.....1
 Earth2
117. Number of bedrooms in the house. _____
118. What is the source of drinking water in your family?
 Tap.....1
 Tubewell.....2
 Well3
 Pond/River.....4
- 119a. What is the source of water for dish washing in your family?
 Tap.....1
 Tubewell.....2
 Well3
 Pond/River.....4
- 119b. Where do you usually bath?
 Pond.....1
 Tubewell.....2
 River3
 Well4
 Others5
- 120a. What is the type of latrine used by your family members?
 No latrine.....1
 Kancha latrine.....2
 Pacca latrine3
 Slab latrine.....4
- 120b. How do you wash your hand after defecation?
 Water only1
 Mud/ash.....2
 Soap.....3
121. Is there any electricity in the area?
 Yes.....1
 No2 >> 123

122. Do you have electricity in your house? Yes.....1
No2
123. Do you have the following items? If yes, How many?
- Radio/Tape recorder number.....
- Bicycle..... number.....
- Motor cycle..... number.....
- Television..... number.....
- Watch/clock..... number.....
- Boat/Van..... number.....

PERCEPTION OF HEALTH & DISEASES AND THEIR HEALTH SEEKING BEHAVIOUR
Section - 2

201. Number of sick people within last two weeks? No0 >> 205
Yes, number.....
202. Did you visit a doctor for his/her (their) treatment? Yes.....1
No2 >> 204
203. Where? THC.....1
FWC2
MBBS doctor.....3
Non-MBBS doctor.....4
Homeopath5 >> 205
Kabiraj6
religious treatment.....7
Others8
204. Why not?(PROBE)
205. Who gets preference for immediate care in case of sickness? Child1
Earning member2
House wife.....3
Pregnant woman.....4
Old member5
No preference6 >> 207
Others (specify)7
206. Why they get preference for immediate care?(PROBE)

207.	Which illness do you think is the most serious one to seek help immediately?	Diarrhoea .....1 Chest pain .....2 Cough .....3 Fever .....4 Headache .....5 Pneumonia .....6 Eye disease .....7 Vomiting .....8 Others (specify) .....9
208.	Usually at what stage of illness do you go for treatment?	Immediately .....1 After few days .....2 Until it effects daily work .....3
209.	Whom did you consult before seeking medical treatment in case of illness/delivery/immunisation?	No body .....1 Relatives .....2 Neighbors .....3 Friends .....4 Mother-in-law .....5 Husband .....6 Other family members .....7 Others (specify) .....8
210.	Who chose the doctor/health worker?	Husband .....1 Mother-in-law .....2 Yourself .....3 Suggest on by others .....4
211.	Where did you go for treatment of the disease you suffered last time?	THC .....1 FWC .....2 VHCP .....3 Non-MBBS doctor .....4 MBBS doctor .....5 Kabiraj .....6 Homeopath .....7 Others(specify) .....8
212.	Where did you usually go for the treatment of minor ailments such as fever, stomach ache, toothache, eye disease etc.?	THC .....1 FWC .....2 VHCP .....3 Non-MBBS doctor .....4 MBBS doctor .....5 Kabiraj .....6 Homeopath .....7 Others(specify) .....8

213. Do you know where is the following public health facility in your area?

Health facility	Known	Distance from the house	Mode of transport	Time required to go	Transport cost
1 THC	Yes.....1 No>>.....2	_____km	1 = Walk 2 = Rickshaw/van 3 = Taxi/Tempo 4 = Bus 5 = Bicycle/motorcycle 6 = Others	____hrs ____min	Taka
2 FWC	Yes.....1 No>>.....2	_____km	1 = Walk 2 = Rickshaw/van 3 = Taxi/Tempo 4 = Bus 5 = Bicycle/motorcycle 6 = Others	____hrs ____min	Taka
3 VHCP	Yes.....1 No>>.....2	_____km	1 = Walk 2 = Rickshaw/van 3 = Taxi/Tempo 4 = Bus 5 = Bicycle/motorcycle 6 = Others	____hrs ____min	Taka

214. Do you know what health facilities/services are available in those health centres?

THC:
FWC:
VHCP:

215a. In the last six months have you visited the following health facilities for treatment?

215b. What was the purpose of visit?

215c. What do you think about the services of those hospitals and health centres?

Health facility	215a. Visited	215b. Purpose	215c. Service quality*
1 THC	Yes.....1 No>> .....2		
2 FWC	Yes.....1 No>> .....2		
3 VHCP	Yes.....1 No>> .....2		

**Service quality code:* 1 = Very good 3 = Bad 5 = Moderate
 2 = Good 4 = Very bad 6 = No idea

216a. Interviewer: Check 215a and circle the appropriate code.

THC/FWC/VHCP.....1 >> 217
 Others2

- 216b. Why have you not gone to the Government facilities for treatment? Too far1
No time2
No medicine there.....3
No doctor4
Doctors are not helpful5
Medicine is not effective6
No money to go there7
They want money8
Others(specify)9
217. Do you know any government health worker in your area? Yes.....1
No2
- 218a. Did any health worker visit your home in last six months Yes.....1
No2 >> 301
- 218b. Is he/she a health worker or a family planning worker? Health worker1
Family planning worker2
219. What did he/she discussed with you or your family member in the last visit?
220. Do you think that the visit was useful to you? Useful1
Not useful2

Appendix 1 cont.
MORBIDITY AND MORTALITY PATTERN
Section - 3

301. How many members of your family became ill during last six months? number _____
302. How many members of your family hospitalised during last six months? 0 >> 304
number _____
303. Why?

Member 1

Member 2

Member 3

304. Does any body in your family suffer from chronic illness? Yes.....1
No2 >> 305

Name	Relation*	Disease	Symptoms	How long
1.				__year __month
2.				__year __month
3.				__year __month
4.				__year __month

*Relation code: 1 = Respondent 3 = Son/Daughter 5 = Brother/Sister
2 = Husband 4 = Father/Mother 6 = Others

305. Does any member of your family suffer from physical disability (such as deaf, blind, paralysed etc)? Yes.....1
No2 >> 307

306.

Name	Relation*	Symptoms	How long
1.			___year ___month
2.			___year ___month

*Relation code: 1 = Respondent 3 = Son/Daughter 5 = Brother/Sister
2 = Husband 4 = Father/Mother 6 = Others

307. Did any body die during last five years in your family? Yes.....1
No2 >> 401

Name	Relation*	Year	Age at death	Cause of death
1.				
2.				

*Relation code: 1 = Respondent 3 = Son/Daughter 5 = Brother/Sister
2 = Husband 4 = Father/Mother 6 = Others

HEALTH CARE PRACTICES Section - 4

Maternal Health Care

- 401a. Do you know that a women should take some preventive measures to protect her and her baby from geting illness during her pregnancy? Yes.....1
No2 >> 402
- 401b. What measures should take during pregnancy?
TT vaccine.....1
Iron tablet2
Green leafy vegetables3
Nutritious food.....4
More food5
Routine checkup.....6
Others7
402. Do you have TT vaccine card? If yes, may I see it, please? Yes, card seen.....1 >> 404
Yes, card not seen.....2 >> 404
No3
403. Did you receive TT vaccine during your last pregnancy? Yes.....1
No2 >> 410
404. Where did you receive TT during last pregnancy? THC1
FWC2
VHCP3
Others(specify).....4

405.	How many doses of TT did you receive during the last pregnancy?	One .....1 Two.....2 Three.....3 Can not remember .....4	
406	Who gave you the TT vaccine?	Doctor.....1 Nurse .....2 FWV .....3 HA .....4 Others(specify).....5	
407a.	Interviewer: Check 404 and circle the appropriate code.	THC/FWC/VHCP.....1 Others .....2	>> 410
407b.	Have you taken TT vaccine from Government facilities?	Yes.....1 No .....2	>> 410
408.	What is that source?		
409.	Why did you go there?(PROBE)		
Ante Natal Care			
410.	Do you think it necessary to go to doctor during pregnancy?	Yes.....1 No .....2	
411a.	Did you consult any health professional during last pregnancy?	Yes.....1 No .....2	>> 411c
411b.	Why not? (PROBE)		
411c.	Whom did you consult?	MBBS doctor.....1 Non MBBS doctor.....2 Homeopath .....3 Kabiraj.....4 Spiritualist.....5 Nurse .....6 Health assistant.....7 TBA .....8 FWA .....9 FWV .....10 Others(specify) .....11	
412.	Where did you go during last pregnancy?	THC .....1 FWC .....2 VHCP .....3 Others(specify) .....4	
413.	How many times did you visit there during last pregnancy?		_____ times

414.	What type of services did you receive during consultation?	Check up.....1 Test.....2 Medicine.....3 Advice.....4 TT vaccine.....5 Others(specify).....6	
415.	Who advised you to go there?	No advice.....0 Self.....1 Husband.....2 Mother-in-law.....3 Neighbourhood.....4 Relatives.....5 Govt. health worker.....6 Friends.....7 Others(specify).....8	
416.	Are you satisfied with the services?	Yes.....1 No.....2	>> 417b
417a.	Why were you not satisfied?(PROBE)		
417b.	How were you satisfied?(PROBE)		

Child Delivery Care

418.	Where was your last child delivered?	At home.....1 THC.....2 FWC.....3 Private clinic.....4 Others(specify).....5	
419	Types of delivery.	Normal.....1 Forceps.....2 Cesarean.....3 Others(specify).....4	
420.	Delivery outcome.	Normal child.....1 Dead child.....2 Others(specify).....3	
421.	Who attended the delivery?	Doctor.....1 Nurse.....2 FWV.....3 Trained TBA.....4 Untrained TBA.....5 Relatives.....6 Others(specify).....7	
	Name of TBA _____		
	C/O: _____		
	Village _____		
422a.	Interviewer: Check 418 and circle the appropriate code.	THC/FWC.....1 Others.....2	>> 426

- 422b. Why did you go to the Government health centre for delivery? (PROBE)
423. Are you satisfied with the services received in the Government hospital? Highly satisfied.....1
Satisfied.....2
Dissatisfied.....3 >> 425
Highly dissatisfied.....4 >> 425

424. How?
425. Why not?
426. Why don't you go to the Government health centre for delivery? (PROBE)

427a. What was the cost of last delivery? Taka _____

427b. What are the major components?

Components	Cost in taka

Post Natal Health Care

428. Did you consult any health professional within one month after the birth of your last child? Yes.....1
No.....2 >> 433

429. What was the problem?
430. Whom do you consult and who did the treatment?

Person consulted:

Treatment:

431. Where did you go for consultation? No treatment.....1
THC.....2
FWC.....3
VHCP.....4
MBBS doctor.....5
Non-MBBS doctor.....6
Homeopath.....7
Kabiraj.....8
Others.....9

432. How many times did you consult during last month? _____ times

Child Health Care

- 433a. To protect a child from six diseases some precautionary measures should be taken. Do you know it? Yes.....1
No.....2 >> 435a

- 433b. What are those measures? Immunization.....1
Vitamin A.....2
Diarrhea precaution.....3
ARI precaution.....4
Nutritious food.....5
Others(specify).....6

434. How do you know about it?

- Health worker1
- Radio2
- Television3
- Relatives4
- Others(specify)5

435a. Ask the mother about the underfives and write their name starting from the youngest.	Youngest Name _____	Next to youngest Name _____	Second next to youngest Name _____
435b. How old is (name)?	Age: __year__ month	Age: __year__ month	Age: __year__ month
435c. Was (name) a boy or girl?	Boy 1 Girl 2	Boy 1 Girl 2	Boy 1 Girl 2
436. Do you have a vaccination card for (name)? If yes, May I see it, please?	Seen 1 Not seen (>> 440) . 2 No(>>440) 3	Seen 1 Not seen (>> 440) . 2 No(>>440) 3	Seen 1 Not seen (>> 440).. 2 No(>>440) 3
BCG	Yes 1 No 2	Yes 1 No 2	Yes 1 No 2
DPT 1	Yes 1 No 2	Yes 1 No 2	Yes 1 No 2
POLIO 1	Yes 1 No 2	Yes 1 No 2	Yes 1 No 2
DPT 2	Yes 1 No 2	Yes 1 No 2	Yes 1 No 2
POLIO 2	Yes 1 No 2	Yes 1 No 2	Yes 1 No 2
DPT 3	Yes 1 No 2	Yes 1 No 2	Yes 1 No 2
POLIO 3	Yes 1 No 2	Yes 1 No 2	Yes 1 No 2
MEASLES	Yes 1 No 2	Yes 1 No 2	Yes 1 No 2
437. Where did you go to immunise (name)?	THC(>> 439) 1 FWC(>> 439) 2 VHCP(>> 439) 3 Others 4	THC(>> 439) 1 FWC(>> 439) 2 VHCP(>> 439) 3 Others 4	THC(>> 439) 1 FWC(>> 439) 2 VHCP(>> 439) 3 Others 4
438. Why don't you go to Govt. facilities?	..... .....	..... .....	..... .....
439. How much money did you spent to immunise (name)?	_____ Taka>> 441	_____ Taka>> 441	_____ Taka>> 441
440. Has (name) ever had a vaccination to prevent him/her from getting diseases?	Yes 1 No 2 Don't know 3	Yes 1 No 2 Don't know 3	Yes 1 No 2 Don't know 3

441. Has (name) taken a vitamin A capsule since last 6 months?	Yes 1 No 2 Don't know 3	Yes 1 No 2 Don't know 3	Yes 1 No 2 Don't know 3
--	---	---	---

442. Has (name) ever had diarrhoea in the last two weeks?	Yes 1 No(>> 446a)..... 2 DK(>> 446a)..... 3	Yes 1 No(>> 446a)..... 2 DK(>> 446a)..... 3	Yes..... 1 No(>> 446a)..... 2 DK(>> 446a)..... 3
443. What treatment have you done for it?	No(>> 445) 0 ORS..... 1 Antibiotic 2 Others..... 3	No(>> 445)..... 0 ORS..... 1 Antibiotic..... 2 Others..... 3	No(>> 445)..... 0 ORS..... 1 Antibiotic..... 2 Others 3
444a. Where did you go for the treatment?	Village doctor..... 1 Doctor 2 THC >>446a 3 FWC >>446a..... 4 VHCP >>446a..... 5 Health worker..... 6 Nobody..... 7	Village doctor..... 1 Doctor..... 2 THC >>446a 3 FWC >>446a..... 4 VHCP >>446a..... 5 Health worker..... 6 Nobody..... 7	Village doctor..... 1 Doctor..... 2 THC >>446a..... 3 FWC >>446a..... 4 VHCP >>446a..... 5 Health worker..... 6 Nobody..... 7
444b. Why don't you Government facilities?	..... ..... >> 446a	..... ..... >> 446a	..... ..... >> 446a
445. Why don't you consult anybody?	..... .....	..... .....	..... .....
446a. Has (name) ever had any respiratory problem during last two weeks?	Yes 1 No..... 2	Yes 1 No..... 2	Yes..... 1 No..... 2
446b. How long it last?	..... ____ days	..... ____ days	..... ____ days
447. Did you consult anybody for (name's) treatment?	Yes 1 No(>> 450) 2	Yes 1 No(>> 450)..... 2	Yes..... 1 No(>> 450)..... 2
448. Where did you go for the treatment?	Village doctor..... 1 Doctor 2 THC..... 3 FWC..... 4 VHCP..... 5 Health worker..... 6 Nobody..... 7	Village doctor..... 1 Doctor..... 2 THC..... 3 FWC..... 4 VHCP 5 Health worker..... 6 Nobody..... 7	Village doctor..... 1 Doctor..... 2 THC..... 3 FWC 4 VHCP 5 Health worker..... 6 Nobody..... 7
449a. When did you go there?	Same day..... 1 After one day..... 2 After two days..... 3 More than two days4	Same day 1 After one day..... 2 After two days..... 3 More than two days4	Same day 1 After one day..... 2 After two days..... 3 More than two days4
449b. How long did you breastfed (name)?	____ year ____ month Still breastfeeding997	____ year ____ month Still breastfeeding997	____ year ____ month Still breastfeeding997

450. Interviewer: Circle the appropriate code by checking 436 and 440.

Immunised all children.....1 >> 452
Not immunised all children...2

451. Why did you not immunise all children?
(PROBE)

Family Planning

452.	Interviewer: Check 102 and circle the appropriate code.	Currently married .....1 Not currently married.....2	>> 459
453.	Are you currently pregnant?	Yes.....1 No .....2	>> 459
454.	Do you want to have a child in next two years?	Yes.....1 No .....2	
455.	Are you using any contraceptive method now?	Yes.....1 No .....2	>> 458
456.	What is that method?	Oral pill.....01 Condom .....02 Vaginal method .....03 Injection.....04 IUD .....05 Tubectomy.....06 Vasectomy.....07 Safe period.....08 Withdrawal .....09 Others .....10	
457.	Who took the decision of using family contraceptive method?	Husband.....1 Wife .....2 Both .....3	>> 459 >> 459 >> 459
458.	Why are you not using any family planning method?		
459.	Thank you very much for your time and cooperation.		

APPENDIX 2

Appendix 2
QUESTIONNAIRE FOR MCH CARE PROVIDERS.
(THFPO, RMO, MO-MCH, MO-DC, MOs, Sr. Staff Nurse, MIWIVES)
Section A. Background Information

1	Identification number	.....
2	Workplace	THC..... 1
	Union.....	FWC..... 2
	Thana.....	Ward level..... 3
3	Designation	.....
4	Age in complete years	age in years
5	Sex	Male 1
		Female..... 2
6	Religion	Islam..... 1
		Hinduism..... 2
		Christianity..... 3
7a	Date of first posting (DD-MM-YY)	.....
7b	Place of first posting	.....
7c	Position of first posting	.....
8a	Date of current posting	
8b	Total length of service	..... years months
9	Educational qualification	highest class passed.....
10	Technical qualification	.....
11	Local training	Yes 1
		No..... 2
12a	Place of local training	Thana level..... 1
		District level..... 2
		Division level..... 3
		National level..... 4
12b	Subjects of local training	.....
12c	Foreign training	Yes 1
		No..... 2
12d	Subjects of foreign training	.....

Appendix-2 cont.

Section B. Relationship of provider with the supervisor

13	Who is your direct supervisor?	CS..... 1 DD..... 2 THFPO..... 3 MO(MCH) 4 MO(DC)..... 5 TFPO 6 FPI 7 Others(Specify)..... 8
14.	How often he/she visits your working place?	Daily..... 1 Weekly 2 Monthly..... 3 Quarterly 4 Yearly..... 5
14a	How many times he/she visited your working place last one month?	..... times
15	What was her his/her attitudes during his /her last visit?	Very good 1 Good 2 Bad 3 Very bad 4
16	How is your relationship with your supervisor?	Excellent 1 Good..... 2 Normal 3 Bad 4 Very bad 5
17	Do you comply the order of your supervisor?	Always 1 Sometimes..... 2 Never..... 3 No scope to incomply 4
18	If not, why ?	_____
19	Do you disagree with the decision of your supervisor?	Always 1 Sometimes..... 2 Never..... 3 No scope to disagree 4
20	What types of reward you have got from your supervisor during last one year?	Nothing 1 If yes, mention 2

21	Was there any adverse action from your supervisor during last one year?	Nothing 1 If yes, mention 2
22	Did your supervisor make social visit to your house during last one year?	No.....0 Yes, times.....
23	Did you pay any amount of cash money to your supervisor for any purpose?	No.....0 Yes, Taka / month
24	Does your supervisor extend any help (both financial and mental) during any personal or official problem?	Official Never .....1 Sometimes.....2 Always .....3 Personal Never .....1 Sometimes.....2 Always .....3
25	How do you feel to work with your current supervisor?	Comfortable 1 Uncomfortable .....2 Do not bother .....3

30	Do you agree that you are providing appropriate services to the patients according to your Job description?	Agree..... 1 Partially agree 2 Do not agree..... 3
31	On an average how many patient do you treat per day?	Persons /day
32	Do you agree that you have sufficient support personnel to carry out your task properly?	Sufficient..... 1 Insufficient 2 Very insufficient 3 Not required..... 4
33	Do you agree that the equipment are sufficient for providing your services?	Sufficient..... 1 Insufficient 2 Very insufficient 3 Not required 4
34	What other additional equipment are needed to perform your assigned duties?	..... ..... .....
35	Do you think that the space allocated for providing your services are adequate?	Adequate 1 Inadequate 2 Very inadequate 3 Not required 4
36	Do you think that the financial resources are adequate to run your assigned programme?	Adequate 1 Inadequate 2 Very inadequate 3
37	Do you think that the Logistic supply is sufficient for your task?	Sufficient..... 1 Insufficient 2 Very insufficient 3
38	Do you think that the overall facilities are adequate for providing quality MCH care?	Adequate 1 Inadequate 2 Very inadequate 3
39	Do you feel comfortable to work in the present situation?	Yes 1 No, please explain..... 2
40	In which unit do you want to work next?	.....

Appendix 2 cont.

Section D: Private Practice

41	How do you spend your leisure time?	Stay home with family 1 Private practice..... 2 Go for outing..... 3 Visit relatives/friends 4
42	<u>How do you spend your weekend?</u>	Stay home with family 1 Private practice..... 2 Go for outing..... 3 Visit relatives/friends 4
43	Are you involved in private practice or any other services related to your Job?	No..... 1 Yes, part time 2 Yes, occasionally 3
44	Where do you do your private practice?	Medicine shop 1 Private clinic 2 Personal chamber 3 Residence 4 Diagnostic centre 5
	What types of services do you provide in the private establishment? (please circle)	Consultation 1 Treatment 1 Diagnostic report..... 1 Vaccination 1 Minor surgical service..... 1 MR/Abortion..... 1
45	Is there any diagnostic facilities in the private establishment?	Yes 1 No..... 2
46	What types of diagnostic facilities are available there?	X-ray 1 Pathological test 2 Both..... 3
47	Did you have any investment in this establishment?	No..... 0 Yes, Taka
48	What is your usual time for this private practice? Working days Holidays	.....AM to .....AM.....PM to .....PM.....AM to .....AM.....PM to .....PM
49	On an average how many hours a day you usually spend on private practice?	Hours/day.....

- 50 On an average how many patients /clients do you treat per day in the private establishment? Patients, Clients /day.....
- 51 In your opinion, why people come to the private establishment? Better service 1
Mental satisfaction.....2
Confidentiality3
Others.....4
- 52 Do you think that services provided at the private establishment is better than the government institution? Better 1
Same.....2
Worse3
Better in some cases4
- 53 Do you suggest the people to go to government institutions for MCH care? Often 1
Sometimes.....2
Never.....3
Always4
Not necessary5
- 54 Do you agree that you give more time and better care to the patients who come to your private chamber ? Agree1
Partially agree.....2
Do not agree.....3
- 55 Do you think that people feels more comfortable to come to come to the private chamber than to go to the government health facilities. Yes1
No.....2

Appendix 2 cont.

Section E. Job Satisfaction

56	Do you think that opening time and closing time are appropriate? <u>Opening time</u>	Appropriate 1 Not appropriate 2 Very bad..... 3
	Closing time	Appropriate 1 Not appropriate 2 Very bad..... 3
57	Do you agree that you have been posted in a right place?	Agree..... 1 Partially agree 2 Do not agree..... 3
58	Are you satisfied with your job?	Satisfied..... 1 Partially satisfied..... 2 Dissatisfied..... 3
59	Do you think that you need more training to do your job properly?	Yes 1 No..... 2
60	What type of training do you need?	

Area of training	Local/Foreign
-------------------------	----------------------

61	Do you want to be transferred from your present institution?	Yes 1 No..... 2
62	Why?	
63	Where do you prefer to be transferred next time?	Place.....
64	Do you agree that the benefit (both financial and others) you are getting from the services are adequate?	Adequate 1 Merely adequate..... 2 Not adequate 3
65	What additional benefit should government provide you for your service?	Extra money 1 Foreign training..... 2 Housing 3 Insurance 4 Quick promotion 5 Medical grant 6
66	Do you agree that it is impossible to provide quality services with free of charges?	Agree..... 1 Partially agree 2 Disagree 3
67	Why?	

68 Do you agree that it is possible to provide quality MCH care with the existing government health care facilities at the PHC level? Agree..... 1
Partially agree 2
Disagree 3

69 Why?

70 Do you agree that child delivery at hospital will increase if delivery facilities at the FWC level is ensured? Agree..... 1
Partially agree 2
Disagree 3

Section F. Attitude towards Users

71 What types of people come to the government institution (THC-H&FWC-VHCP) for treatment? Extremely poor 1
Poor..... 2
Solvent..... 3
Educated 4
Uneducated 5
Local elite 6
Who know provider in PHC 7

72 Do you think that people come to the government institutions (THC/FWC/VHCP) only because of free service? Yes..... 1
No 2

73 If no, what are other reasons?

74 In your opinion why majority of people do not come to the government institutions for the following health care services?

Units	Reasons
a ANC	
b TT	
c PNC	
d Child Delivery	
e ARI	
f Diarrhoea	
g Immunization	

75 Do you think that people are satisfied with the MCH services provided at the government institutions (THC/FWC/VHCP)?

Institutions	Satisfaction	Reasons
THC	Yes 1	
	No 2	
FWC	Yes 1	
	No 2	
VHCP	Yes 1	
	No 2	

76 Do you think that people's expectation is more than the service capacity of the institutions? Yes
No.....

77 Do you agree that people do not come to government facilities due to unavailability of drugs? Agree 1
Partially agree 2
Do not agree..... 3

78 Do you think that people do not come to the government institutions for child delivery due to:- Privacy 1
Money 2
Social stigma 3
Behavior of staff 4
Distance5
Others.....6

79 In your opinion what are the problem in child delivery at the following Institutions

Institution	Problems
THC	
FWC	

80 Do you think all the people should come to the hospital for even normal delivery? Yes1
No2.

81 If it is happened, will it be possible to manage all the delivery cases? Yes1
No2

Section G. Suggestion for improvement

82 What's your suggestion to improve the existing MCH services providing in your institution?

83 What is your suggestion to attract people to come to the hospital for child delivery?

Do you feel any administrative problem in rendering your assigned job? Yes,..... 1
No.....2

84 What is your suggestion to overcome the administrative problem ?

**QUESTIONNAIRE FOR THE MCH CARE PROVIDER AT THE COMMUNITY LEVEL
(FOR FWV/ SACMO/ MA)**

Appendix 2 cont.

A. BACKGROUND INFORMATION

- | | | |
|-----|---|---|
| 1. | Identification number ..... | \|_\|_\| |
| | Name | |
| | Union | |
| 2. | Category of the service provider | FWV..... 1
SACMO..... 2
MA..... 3 |
| 3. | How old are you? | Age in years |
| 4. | Sex | Male..... 1
Female..... 2 |
| 5. | Education | Highest class passed |
| 6. | Marital status | Unmarried..... 1
Married..... 2
Widow..... 3
Separated..... 4 |
| 7. | Religion | Islam..... 1
Hinduism..... 2
Christianity..... 3 |
| 8. | Permanent residence of this area | Yes..... 1
No..... 2 |
| 9. | Do you reside on the govt. staff quarter? | Yes..... 1
No..... 2 |
| 10. | How do you travel to the working place? | Foot..... 1
Bicycle..... 2
Rickshaw..... 3
Bus/Tempo..... 4
Others..... 5 |
| 11. | Date of appointment (DD-MM-YY) | ..... |

12. Types of training received during the service period

Category	Subject	Place
Basic training		
Refresher training		

13. Do you think that the training that you have are adequate to perform your job properly? Yes 1
No..... 2

14. Why do you think so?
.....

B. JOB RELATED QUESTIONS

15. Do you have any job description in a printed form? Yes 1 >>
No..... 2

16. Why not?
.....

17. Would you please tell me what services you provide?
ANC 1
Delivery..... 2
PNC..... 3
ARI..... 4
Immunization 5
Diarrhoeal treatment 6
Others..... 7

18. Do you provide any service to the people outside FWC/THC as part of your official duty? Yes, often 1
Yes, rare 2
No..... 3

19. Do you receive any money for the services? Yes 1
No..... 2

20. Do you know what services you need to provide for the following MCH care?

MCH care	Type	Services need to provide
ANC	Normal	
	Complicated	
TT vaccination		
Child delivery	Normal	
PNC	Normal	
	Complicated	
Immunization		
ARI	Normal	
	Complicated	
Diarrhoea treatment	Normal	
	Complicated	

C SUPERVISION

21. Who is your direct supervisor? Designation
22. How often s/he visits your work? Times/year.....
23. When did s/he visit last time? Days ago.....
24. What s/he checked during her last visit?

25. Do you supervise the activities of your subordinates? Yes 1
 No..... 2
26. Who are they?

27. What aspects do you usually look during the supervision?

28.	How often do you supervise their work?	Daily..... 1 Weekly 2 Fortnightly..... 3 Monthly..... 4 Others..... 5
29.	What do you do if any of your subordinate is not abide by the rules?	Verbal warnings 1 Written warnings..... 2 Report to higher authority . 3 Take action..... 4 Ignore 5 Can not take action..... 6
30.	Do you participate/conduct any regular staff meeting in your institution?	Yes 1 No..... 2
D	JOB SATISFACTION	
31.	Are you satisfied with your present work?	Satisfied..... 1 Not satisfied 2
32.	Logistic inputs are sufficient for providing the assigned services?	Sufficient..... 1 Not sufficient 2
33.	Are you satisfied with the benefits you got for the services?	Satisfied..... 1 Not satisfied 2
34.	Do you work after office time to earn money?	Yes 1 No..... 2
35.	If yes, place of work	Residence 1 Pharmacy..... 2 Clinic..... 3 Diagnostic centre 4
36.	How much do you earn per month from these services?	Taka/month
37.	Do you want to be transferred from the present working place	Yes 1 No..... 2

Appendix 2 cont.

E ATTITUDE TOWARDS SERVICES

38. What types of people seek care from you: Poor..... 1
 Rich..... 2
 Illiterate..... 3
 Literate 4
 Others..... 5
39. Do you think that people are satisfied with your services? Yes 1
 No..... 2
40. Do you think that MCH services provided by the FWC & THC are being properly utilised? Yes 1
 No..... 2
41. Why do you think so?

42. How MCH services can be improved in your area?

43. Do you agree that due to private practice people does not want`s to come to the government health care facilities for MCH care? Agree..... 1
 Partially agree 2
 Do not agree..... 3
44. Do you agree that if, all the government health care provider stop private practice, then people will come to the government health facilities for MCH care? Agree..... 1
 Partially agree 2
 Do not agree..... 3
45. If you donot agree could you please explain?
46. Do you think think that goverenment health care provider should stop private practice? Yes 1
 No..... 2

APPENDIX 3

Appendix 3.

IN-DEPTH INTERVIEW GUIDE FOR COMMUNITY LEADER

1. Identification number
2. Category of opinion leader
 - UP Chairman1
 - UP Member2
 - School Teacher.....3
 - Religious Leader.....4
 - Community Head.....5
3. Village
 Union name
4. What is your name? _____
5. How old are you? Age in complete years
6. What is your occupation? Occupation.....
7. What is your family size? Persons
8. What class did you passed? Highest class passed
9. How much do you earn a month?Taka
10. How much do you spend a month?Taka
11. Did you or any member of your family suffer from illness within last six months?
 - Yes.....1
 - No2
 - Don't know3
12. Would you please tell me their name, relation, age, sex, disease, treatment, place and the present conditions?

Name	Relation	Age	Sex	Disease	Treatment	Place	Present condition
1.							
2.							
3.							
4.							
5.							

Code	Relation:	Sex:	Treatment:	Place:	Present Condition:
:	1 = self 2 = wife 3 = son or daughter 4 = parents 5 = grand child 6 = others(specify)	1 = male 2 = female	1 = yes 2 = no	1 = THC 2 = FWC 3 = VHCP 4 = others(specify)	1 = cured 2 = not cured 3 = don't know

Appendix 3 cont.

13. Do you know any government health service centre in your area? I mean the institution/place from where health and family planning services are being provided?

Facilities	Known	Available services	Quality of services	Are people utilizing these services in case of their illness?	Are people utilising the services properly or underutilised?
THC					
FWC					
VHCP					

14. Where do you usually go for treatment in case of your illness or any member of your family?

THC.....	1
FWC.....	2
VHCP.....	3
MBBS.....	4
Non-MBBS.....	5
Homeopath.....	6
Kabiraj.....	7
Others.....	8

15. Did you or any member of your family ever visit the (name) health facility in last six months?

Facilities	Visited	Purpose of the visit	Services received	Quality of services	Are you satisfied with the services?
THC					
FWC					
VHCP					

Appendix 3 cont.

16. Do you usually advice people to go to the government facilities (such as THC and FWC) for health services? Yes.....1
No2

17. Do you know about peoples perception regarding the quality of services provided by the government facilities? Good.....1
Bad.....2
Very bad3

18. Why do you think so about the quality?

19. What measures should be taken to improve the utilisation of services at (name) ?

THC:

FWC:

VHCP:

20. Check question 10 and circle the appropriate code. Visited the FWC/THC.....1 >
Others2 >

1
6

21. Why don't you go to the government health facilities for treatment of diseases in last six months?

APPENDIX 4

Appendix -4
IN-DEPTH INTERVIEW GUIDE FOR MOTHER

- | | | |
|-----------------------------|--|---|
| 1 | Identification number | <input type="text"/> <input type="text"/> <input type="text"/> |
| 2 | Name | ..... |
| 3 | Age | ..... |
| 4 | Household members | ..... |
| 5 | Education | Highest class passed |
| 6 | Category | User1
Non-user2 |
| Thana Health Complex | | |
| 7 | Do you know where are the thana health complex located in your thana.? | Yes.....1
No2 |
| 8 | Do you know the service providing time of the thana health complex? | Opening time -----
Closing time ----- |
| 9 | Are the doctor's available during the office time? | Yes.....1
No2 |
| 10 | Did you or any of your family members ever visit the hospital for treatment of diseases? | Yes.....1
No2 |
| 11 | When did you visit there last time? | Months ago |
| 12 | Altogether how many times did you visit the hospital within last year? | Times |
| 13 | What was the problem for which you visited the hospital last time? | ..... ..... |
..... |
| 14 | What services did you receive from the hospital last time? | Verbal advice only.....1
Prescription2
Medicine.....3
Checkup.....4
FP services.....5
FP supply.....6
No service at all.....7 |

Appendix 4 cont.

15	Were you satisfied with the services provided from the THC?	Yes.....1 No.....2
16	Did you pay for the services provided by the THC?	No.....0 Yes, amount in taka.....
17	Did you receive any cash memo or voucher for the payment?	Yes.....1 No.....2
18	How the service providers behaved with you at the THC?	Good.....1 Normal.....2 Bad.....3
19	Did you get cured with the treatment given at the thana health complex?	Yes.....1 No.....2
20	If no what did you do next?	
Family Welfare Centre		
21	Do you know where are the health and family welfare center FWC located in your union?	Yes.....1 No.....2
22	Do you know the service providing time of the thana health complex?	Opening time ----- Closing time -----
23	Are the doctor's available during the office time?	Yes.....1 No.....2
24	Did you or any of your family members ever visit the centre for treatment of diseases?	Yes.....1 No.....2
25	When did you visit there last time?	Months ago.....
26	Altogether how many times did you visit the centre within last year?	Times
27	What was the problem for which you visited the centre last time?	..... .....

Appendix 4 cont.

28	What services did you receive from the centre last time?	Verbal advice only.....1 Prescription .....2 Medicine.....3 Checkup.....4 FP services.....5 FP supply.....6 No service at all.....7
29	Were you satisfied with the services provided from the FWC?	Yes.....1 No .....2
30	Did you pay for the services provided by the FWC?	No .....0 Yes, amount in taka
31	Did you receive any cash memo or voucher for the payment?	Yes.....1 No .....2
32	How the service providers behaved with you at the FWC?	Good .....1 Normal.....2 Bad.....3
33	Did you get cured with the treatment given at the FWC?	Yes.....1 No .....2
34	If not what did you next?	
Village Health Care Post		
35	Do you know where are the satelite clinics/ EPI center located in your ward?	Yes.....1 No .....2
	Who informed you about this center?	HA .....1 FWA .....2 Radio .....3 Television .....4 Others .....5
36	Do you know how many dayes a month health and family planning servi provide there?	Day/Month-----

Appendix 4 cont.

37	Do you know the usual time of that centre?	Opening time ----- Closing time-----	
38	Did any health worker visit your home in last six months	Yes.....1 No .....2	>> 301
39	Is he/she a health worker or a family planning worker?	Health worker .....1 Family planning worker .....2	
40	What did he/she discuss with you or your family member in the last visit?	Motivation for FP use.....1 FP supply .....2 FP services.....3 ORS supply.....4 Vitamin A supply .....5 Diarrhea management.....6 ARI treatment.....7 Nutrition .....8	
41	Did you immunise your last child to protect him/her from getting illness?	Yes.....1 No .....2	
42	Where did you immunise him/her?	At home .....1 VHCP .....2 FWC .....3 THC .....4 Others .....5	
43	How the service providers behaved with you?	Good .....1 Normal.....2 Bad.....3	
44	Did you receive TT vaccine during your last pregnancy?	Yes.....1 No .....2	
45	Where did you get the TT vaccine?	At home .....1 VHCP .....2 FWC .....3 THC .....4 Others .....5	
46	Did they advice you for anything else? (Such as, food, sleep, walk etc.	Vitamin A .....1 Iron tablet .....2 To eat more food .....3 No .....4	
47	In your opinion why people does not want's to go to the government health care facilities for MCH care?	Explain-----	

APPENDIX 5

Appendix-5

List of Health and Family Planning manpower at the Primary Health Care level

Thana level manpower

Thana Health Complex

(Health sector)

Thana Health and Family Planning Officer (THFPO)	1
Medical Specialist	1
Gynae Specialist	1
Surgical Specialist	1
Residential Medical Officer (RMO)	1
Medical Officer	2
Dental Surgeon	1
Medical Officer (MCH)	1
Medical Assistant	2
Senior Staff Nurse	5
Laboratory Technician	2
EPI Technician	1
Radiographer	1
Dental Technician	1
Pharmacist	2
Ward Boy	3

Other staffs

Head Assistant/ Accountant	
Statistician	
Cashier	
Storekeeper	
Lower Division Assistant (LDA-Typist)	3
Aya	2
Mali	1
Security Guard	2
Cook/Mosalchi	2
Sweeper	5

Family Planning Sector

Thana Family Planning Officer (TFPO)	1
Asistant Thana Family Planning Officer (ATFPO)	1
Thana Family Planning Assistant (TFPA)	3
Senior Family Welfare Visitor (Sr. FWV)	1

Appendix 5 cont.

Union and village level manpower

Family Welfare Centre (FWC)

Medical officer *

Medical Assistant (MA)*

Sub Assistant Community Medical Officer (SACMO)

Family Welfare Visitor (FWV)

Pharmacist

Aya (Assistant)

MLSS (Member of the Lower Subordinate Staff)

Community level health and family planning workers

Health Inspector (One HI for three AHI)

Assistant Health Inspector (One AHI for 5 HA)

Health Assistant (One HA for 4000 Population)

Family Planning Assistant

Family Welfare Assistant (FWA)

Note:* Medical officer is not posted in all FWC.

**** Medical Assistant and SACMOs are same types of health personnel with same professional qualification. But FWC managed by the health sector then**

APPENDIX 6

Appendix-6

List of essential drugs recommended for the primary health care level

For village level health care*

Serial number	Name of Chemical Substance *	Dosage form
1	Aluminium Hydroxide + Magnesium Trisilicate/ magnesium Hydroxide	Tablet/ oral suspension
2.	Ampicillin Powder for injection	Capsule/ powder for oral suspension
3.	Benzyle Benzoate	Capsule/powder for Injection
4.	Chloramphenicol drops/eye ointment/ear drops/topical cream	Tablet/ injection
5.	Ergometrine/ mythyl ergometrine	Capsule/ tablet/ Syrup (with folic acid)
6.	Ferrous Salt + Folic acid	Tablet/ injection
7.	Hyoscline Butyl Bromide	Tablet
8.	Lyncestrenol+Bthynyl oestardiol	Tablet/ oral suspension
9.	Mebendazole	Sachet for solution
10.	Oral rehydration salt	Cap./powder for injection/ Oint.
11.	Tetracycline	Tablet /elixir
12.	Paracetamol	Tablet / powder for oral solution
13.	Phenoxymethyl Penicillin	Tablet/ syrup/ Oral inhalation aerosol/ Injection
14.	Salbutamol	
15.	Vitamin A	Tablet/ capsule/ Injection
16.	Acetylsalicylic acid	Tablet
17.	Atropine	Injection/ Eye drops/ Ointment
18.	Adrenaline	Injection / Solution/ Eye drops
19.	Benzyl Penicillin	Injection

20.	Benzathine Penicillin	Injection
21.	Benzathine Penicillin + Procaine penicillin fortified	Injection
22.	BCG Vaccine	Injection
23.	Clopheniramine Tablet/ Syrup	Tablet/ Injection/ Syrup
24.	Chlopromazine	Tablet/ Syrup/ Injection.
25.	Cotrimoxazole	Tablet/ Suspension/ Injection
26.	Clafazomine	Tablet/ or Capsule
27.	Chlorhexidine +Cetrimide	Solution /Cream
28.	Chloroquine	Tablet / Syrup
29.	Cholera Solution	Injectable Solution
30.	Diazepam	Tablet/ Injection
31.	Diphtheria Pertusis-Tetanus Vaccine	Injection
32.	Diphtheria+ Tetanus Vaccine	Injection
33.	Dapsone	Tablet
34.	Dextrose	Injectable Solution
35.	Dextrose + Sodium Chloride	Tablet
36.	Ethambutol	Tablet /Injection
37.	Frusemide	Injection /injection
38.	Fortified Procaine Penicillin	Injection
39.	Folic Acid	Tablet
40.	Gentamycin +(Hydrocortisone for Ointment /Cream/ Eye. Ear drop)	Oint./Cream/ Eye. Ear drop/Inj.
41.	Glibenclamide	Tablet
42.	Homatropine	Eye drops
43.	Water purifying tablet	Tablet

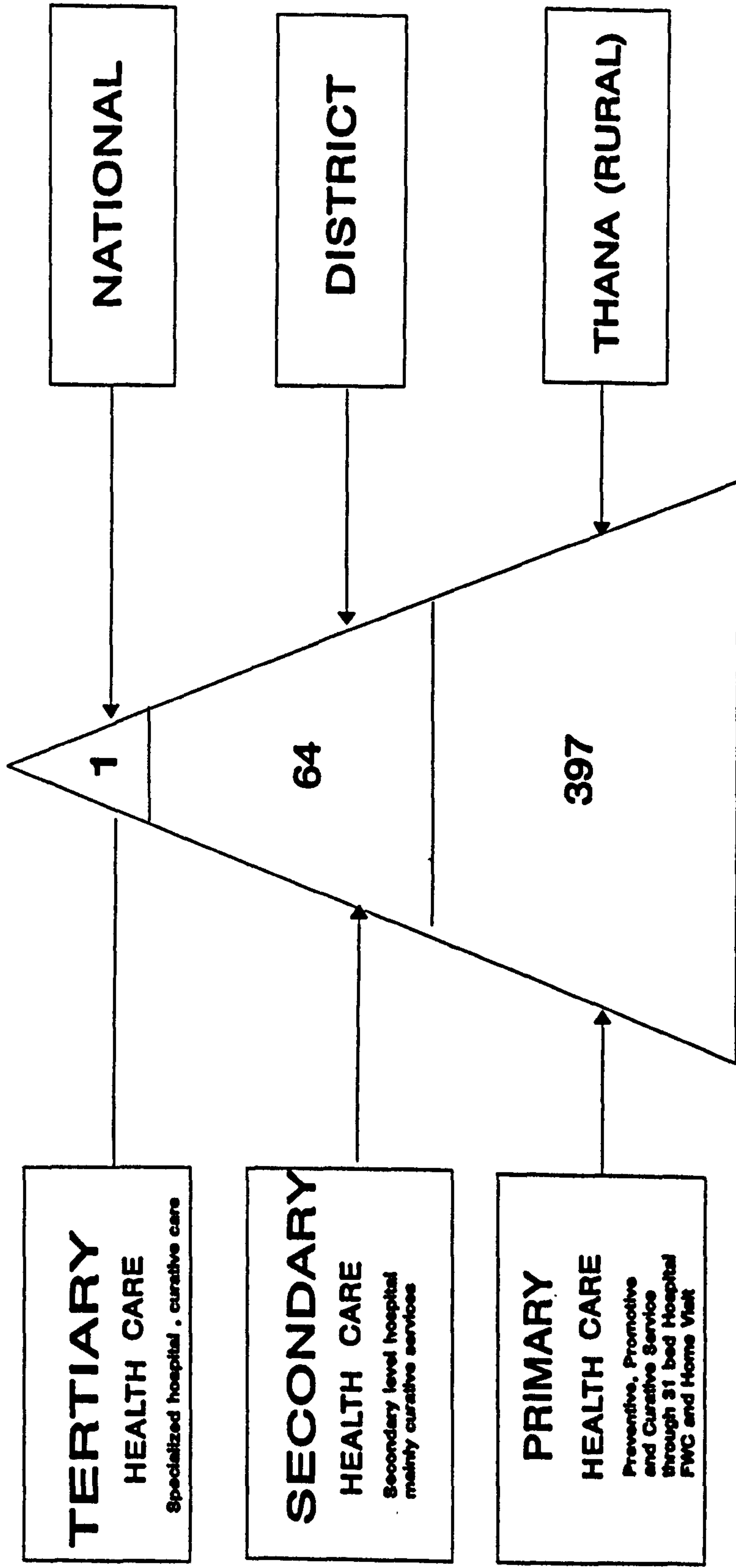
44.	Indomethacin	Capsule/ suppository
45.	Isoniazid + Thiocetazone	Tablet
46.	Isoniazid	Tablet
47.	Insulin Preparations	Injections-short, medium and long action
48.	Lignocaine	Injection/ Tropical (Gel)
49.	Measles Vaccine	Injection
50.	Metronidazole	Tablet/ Oral suspension/ Injection
51.	Nitrous Oxide + Oxygen	Inhalation
52.	Neomycin + Bacitracin + Polymaxin-B	Eye ointment
53.	Neomycin + Bacitracin	Skin ointment / Powder/ Eye preparation
54.	Oxygen	Inhalation
55.	Oxytocin	Injection
56.	Poliomyelitis Vaccine	Injection /Oral
57.	Pethidine	Tablet / Injection
58.	Prednisolone (Methyl+Prednisolone)	Tablet / Injection
59.	Propranolol	Tablet / Injection / Oral
60.	Phenobarbitone	Tablet / Injection
61.	Promethazine	Tablet / Elixir or Syrup
62.	Quinine	Tablet / Injection
63.	Rabies Vaccine	Injection
64.	Rifampicin + Isoniazid	Capsule / Tablet
65.	Rifampicin	Capsule
66.	Ringer Lactate Solution	Injectable solution
67.	Sodium Chloride Solution	Injectable solution

68.	Salicylic acid + Benzoic acid	Ointment
69.	Tetanus toxoid	Injection
70.	Tuberculin PPD	Injection
71.	Vitamin B Complex	Capsule / Tablet / Injection
72.	Vitamin C	Tablet / Injection
73.	Water for injection (Pyrogen free)	Injection

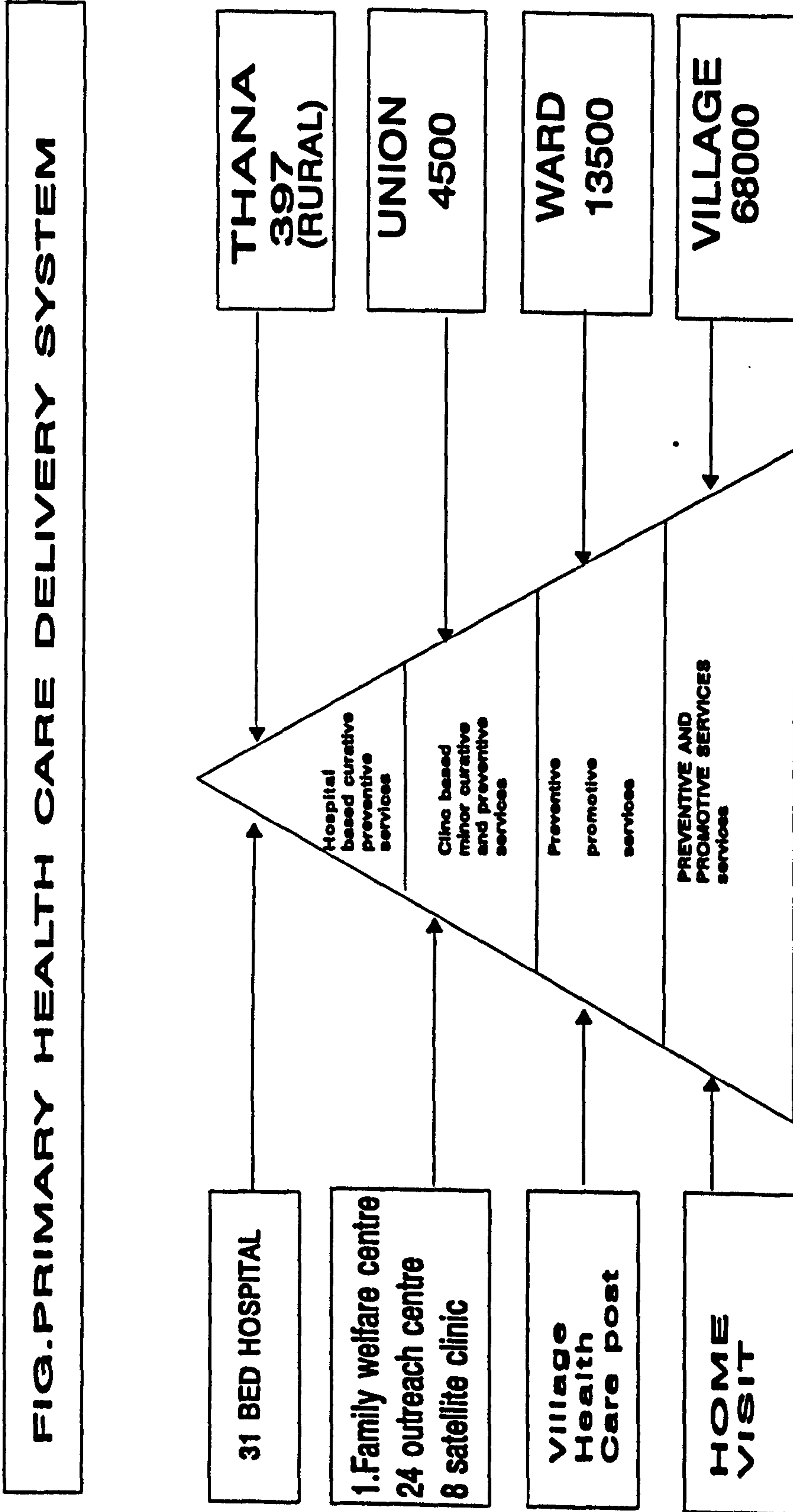
- ***Note:** Chemical Substances listed in serial number 1-15 are recommended for village level health care.
- **Source:** Bangladesh health services report (1990). DGHS, Ministry of Health and Family Welfare, Government of the people's republic of Bangladesh.

APPENDIX 7

FIG. THREE TIER HEALTH CARE DELIVERY SYSTEM IN BANGLADESH

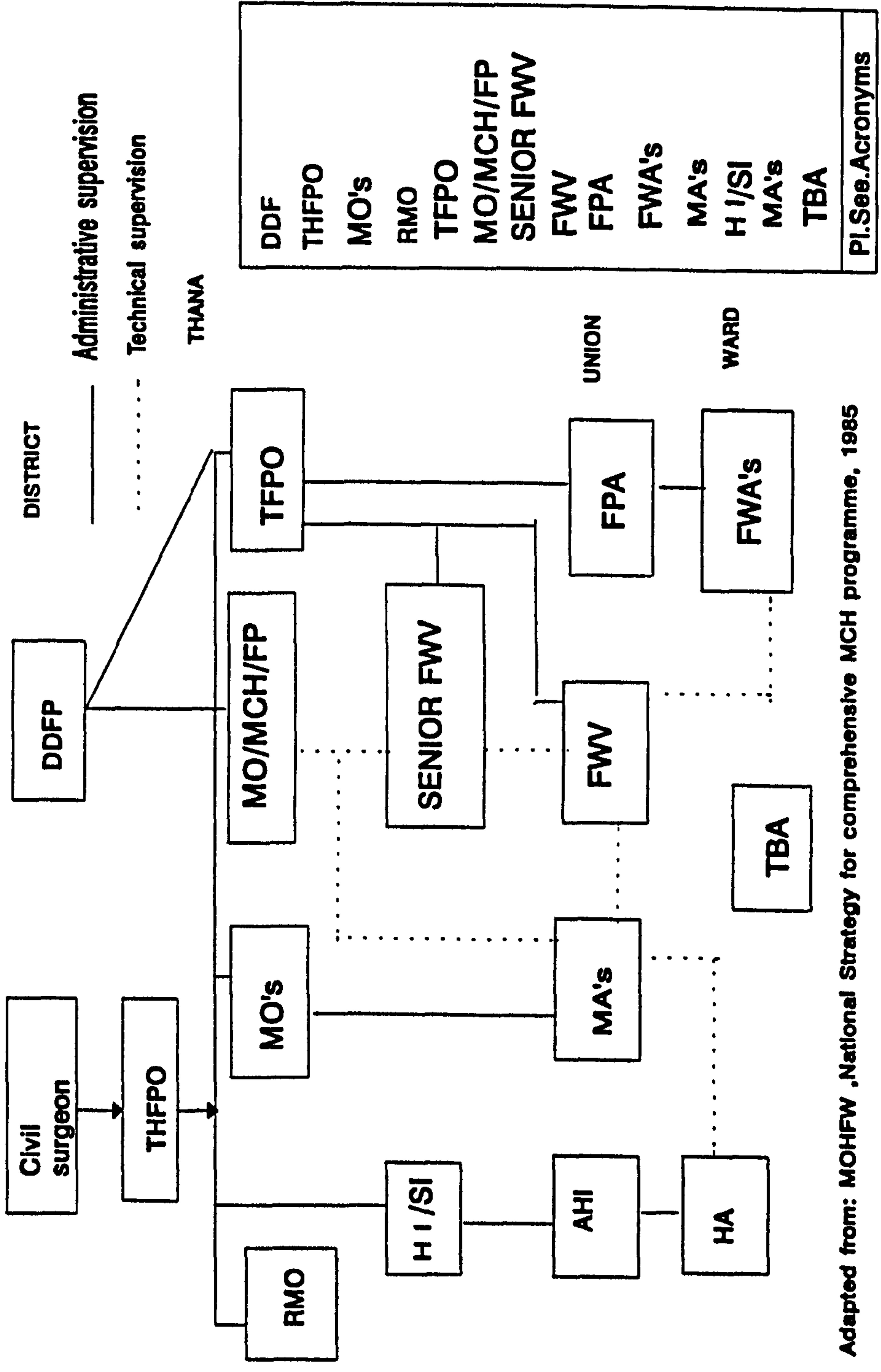


APPENDIX 7.1



APPENDIX 8

FIG. ORGANISATIONAL STRUCTURE OF MCH SERVICES AT PHC LEVEL IN BANGLADESH



Adapted from: MOHFW, National Strategy for comprehensive MCH programme, 1985

DDF
THFPO
MO's
RMO
TFPO
MO/MCH/FP
SENIOR FWV
FWV
FPA
FWA'S
MA'S
H I/SI
MA'S
TBA
Pl. See Acronyms

APPENDIX 9

Appendix 9

Observation Check list for Input Elements for MCH services at THC

Code.. Good. 1

Moderate.2.

Bad.3

Sl	Items	Provision As/ Policy	Actual	Reasons for Deviation (if any)	Quality / Condition		
					6	7	8
1	2	3	4	5	6	7	8
		Sft Number Type Quantity	Sft /Number Type Quantity		Observed	Perceived by the provider	Perception of the Users
A	PHYSICAL FACILITIES						
	a. Total Service providing area						
	b. Consultation Room for ----- Services						
	c. Waiting place -- Male -- Female						
	d. Toilet for patients -- male female						
	e. Water Supply -- Drinking ---Washing						

SI	Items	Provision As per policy	Actual	Reasons for Deviation (if any)	Quality /Condition		
1	2	3	4	5	6	7	8
		Sft /Number Type Quantity	Sft /Number Type Quantity		Observed	Perceived by the provider	Perceived by the Users
B	BED						
C	MANPOWER						

SI	Items	Provision As / Policy	Actual	Reasons for Deviation (if any)	Quality /Condition		
1	2	3	4	5	6	7	8
		Sft /Number Type Quantity	Sft /Number Type Quantity		Observed	Perceived by the provider	Perceived by the Users
E	EQUIPMENT						
F	LOGISTICS						

	DIAGNOSTIC FACILITIES									
Sl.	Items	Provision	Actual	Reasons for Deviation (if any)	Quality Condition					
1	2	3	4	5	6	7	85			
		As per Policy	Sft /Number Type Quantity		Observed	Perceived by the provider	Perceived by the Users			
H	LABOUR ROOM									
I	OPD									
J	FUND									

Code. Good. 1. Moderate. 2. Bad. 3

Appendix 9 cont.

Observation Check list for Input Elements for MCH services at H&FWC

Code.. Good. 1

Moderate.2.

Bad.3

Sl	Items	Provision As/ Policy	Actual	Reasons for Deviation (if any)	Quality / Condition		
					6	7	8
1	2	3	4	5	6	7	8
		Sft Number Type Quantity	Sft /Number Type Quantity		Observed	Perceived by the provider	Perception of the Users
A	PHYSICAL FACILITIES						
	a. Total Service providing area						
	b. Consultation Room for MO/FWV MA /SAMCO						
	c. Waiting place -- Male -- Female						
	d. Toilet for patients -- male -- female						
	e. Water Supply -- Drinking --- Washing						
Sl	Items	Provision As per policy	Actual	Reasons for Deviation	Quality /Condition		

1	2	3	4	5	6	7	8
		Sft /Number Type Quantity	Sft /Number Type Quantity		Observed	Perceived by the provider	Perceived by the Users
B	MANPOWER						
C	DRUGS						
SI	Items	Provision As / Policy	Actual	Reasons for Deviation (if any)	Quality /Condition		
1	2	3	4	5	6	7	8
		Sft /Number Type Quantity	Sft /Number Type Quantity		Observed	Perceived by the provider	Perceived by the Users
D	EQUIPMENT						
E	LOGISTICS						
FUND							

Code. Good. 1. Moderate. 2. Bad. 3

Appendix 9 cont.

Observation Check list for Input Elements for MCH services at VHCP

Code: Good. 1

Moderate. 2.

Bad. 3

Sl	Items	Provision As/ Policy	Actual	Reasons for Deviation (if any)	Quality / Condition		
					6 Observed	7 Perceived by the provider	8 Perception of the Users
1	2	3	4	5	6	7	8
		Sft Number Type Quantity	Sft /Number Type Quantity		Observed	Perceived by the provider	Perception of the Users
A	PHYSICAL FACILITIES						
	a. Total Service providing area						
	Consultation Room for-----	A /NA					
	c. Waiting place	A/ NA					
	-- Male						
	-- Female						
	d. Toilet for patients	A /NA					
	-- male						
	-- female						
	e. Water Supply	A/ NA					
	-- Drinking						
	---Washing						
SI	Items	Provision As per policy	Actual	Reasons for Deviation (if any)	Quality /Condition		

1	2	3	4	5	6	7	8
		Sft /Number Type Quantity	Sft /Number Type Quantity		Observed	Perceived by the provider	Perceived by the Users
B	MANPOWER						
C	DRUGS						
SI	Items	Provision As / Policy	Actual	Reasons for Deviation (if any)	Quality /Condition		
I	2	3	4	5	6	7	8
		Sft /Number Type Quantity	Sft /Number Type Quantity		Observed	Perceived by the provider	Perceived by the Users
D	EQUIPMENT						
E	LOGISTICS						
F.	FUND						

Code. Good. 1. Moderate. 2. Bad. 3

Checklist for Observation at THC, FWC and VHCP

Appendix 9 cont.

1. **Identification number** |_|_|
2. Name of the health facility THC 1
 Village..... FWC..... 2
 Ward..... VHCP..... 3
 Union.....

User's Information

3. Age age in years
4. Sex Male 1
 Female..... 2
5. Education Highest class passed.....
6. Distance from home to the facility Distance in miles.....
7. Mode of transport On foot..... 1
 Rickshaw/Van 2
 Bus/Tempo..... 3
 Cycle/Motorcycle..... 4
8. Travel cost of one way journey Taka
9. Number of persons accompanied persons
10. Official opening timeAM
11. Actual opening timeAM
12. Reasons for visit ANC..... 1
 TT 2
 Delivery 3
 PNC..... 4
 ARI 5
 Diarrhea 6
 Immunization 7

Registration Process

- 13a. Waiting time for registration minutes
- 13b. Waiting space Open..... 1
 Semi-open 2
 Built-in 3
14. Seating arrangement No 1
 Yes, sufficiently 2
 Yes, not sufficiently 3
15. Toilet facilities Not available 1
 Not clean 2
 Clean 3

16.	Drinking water	Not available 1 Available inside 2 Available outside 3
17.	Cleanliness	Clean 1 Dirty 2
Treatment and Consultation		
18.	Cost of registration	Actual cost in taka.....
19.	Waiting time for doctor/health worker	..... minutes
20.	Type of health personnel provided health care	MBBS doctor 1 MA 2 SACMO 3 FWV 4 FWA 5 HA 6 Nurse 7 Midwives 8
21.	Gender of the service provider	Male 1 Female 2
22.	Reception by the service provider	Well 1 Not well 2
23.	Way of talking to patients	Cordially 1 Normally 2 Badly 3
24a.	Consultation time	..... minutes
24b.	Factors examined	...............
24c.	Ways of examination	...............
25.	Privacy maintained (For ANC/PNC/TT/Delivery)	Yes 1 No 2
26.	Explain the problem to the patients and provide health education	Yes, details 1 Yes, little 2 No 3
27.	Services given to the patients	Prescription 1 Drugs from the PHC 2 Advice for investigation 3 Referred for admission 4 Referred to another facilities 5
28.	Fees paid for the services	..... actual in taka
29.	Basis of prescription of drugs(Ask doctor)	Need basis 1 Availability basis 2

30. Advice given for further visit
 Yes, public 1
 Yes, private 2
 No 3

Drug dispensing

31. Waiting time for medicine minutes
32. Environment of the working area
 Good 1
 Bad 2
33. Reception by the pharmacist
 Cordially 1
 Normally 2
 Badly 3
34. All drugs provided according to the prescription
 Yes 1
 No 2
35. Pharmacist provide information about the drug use
 Yes, clearly 1
 Yes, hurriedly 2
 No 3
36. Money charged for drugs received taka
37. Satisfaction for drugs received
 Satisfied 1
 Not satisfied 2

Referred to Indoor for Admission

38. Referred to admission for
 Child unit 1
 Labour/Delivery 2
 Diarrhoea 3
 ARI 4
 Others (specify) 5
39. Waiting time for getting bed minutes
40. Taka required to get admission taka
41. Provide regular bed or floor
 Regular bed 1
 Floor 2
42. Cleanliness of the bed
 Clean 1
 Dirty 2
43. Provided bed side table
 Yes 1
 No 2
44. Provided utensil
 Yes 1
 No 2
45. Drugs/medicine provided from the hospital
 Yes, partially 1
 Yes, totally 2
 No 3
46. Investigation services provided from the hospital
 Yes, partially 1
 Yes, totally 2
 No 3

47.	Food provided from the hospital for the patient	Yes, good 1
		Yes, bad 2
		No 3

Investigation and Referral

48.	Referred to other facilities	FWC..... 1
		THC 2
		District level hospital 3
		Private clinic 4
		Diagnostic centre 5

49.	Causes of referral	X-Ray..... 1
		Pathological test..... 2
		Better service 3
		Unable to provide service 4
		Doctor work there partime 5
		Don't want to take risk 6
		Patient wanted it..... 7
		Others..... 8

50.	Advice for any investigation	Yes 1
		No 2

51.	Type of investigation	X-ray 1
		Pathological test..... 2
		Others..... 3

52.	Referred to any particular investigation centre for diagnosis	Yes 1
		No 2

53.	Name of the diagnostic centre	.....
	

54.	Overall satisfaction for service received	Satisfied 1
		Not satisfied 2

APPENDIX 10

Table 4.2.8 Distribution of respondent who received TT vaccine during pregnancy by the categories of socio-economic group, income, education, and occupation variables.

Variables	Total N=360	Received TT during pregnancy		
		YES (N=323)	NO (N=37)	P
Socio-economic group				0.827
Low	197	90.4	9.6	
Medium	120	88.3	11.7	
High	43	90.7	9.3	
Family income				0.725
Low	253	90.5	9.5	
Medium	69	88.4	11.6	
High	38	86.8	13.2	
Husbands occupation				0.556
Day labour	138	87.7	12.3	
Service/business	112	90.2	9.8	
Agriculture	110	91.9	8.2	
Family education				0.921
No education	135	88.9	11.1	
Primary education	103	90.3	9.7	
Above primary ..education	122	90.2	9.8	
Age of respondents				0.488
15-20	146	91.8	8.2	
21-30	179	88.8	11.2	
31+	35	85.7	14.3	

Table 4.2.9. Distribution of respondent who visited different places of health care facilities for antenatal care and number of visits by the categories of socio-economic groups, Family income, Occupation of the respondent's husband and family education variables.

Variables	Total N=338	Number of visits for antenatal care during Pregnancy					P
		One visit	Two visit	Three visit	Four visit	Five and more visits	
Socio-economic group							0.055
Low	185	8.6	62.7	23.8	2.2	2.7	
Medium	112	12.5	54.4	18.7	8.9	5.4	
High	41	12.2	46.3	34.1	2.4	4.9	
Family income							0.032
Low	237	9.3	60.7	23.6	2.9	3.4	
Medium	66	16.7	50.0	19.7	10.6	3.0	
High	35	5.7	54.39	28.6	2.9	8.6	
Husbands occupation							0.400
Day labour	128	10.1	61.7	23.2	2.3	2.3	
Service/business	106	7.5	55.6	24.5	6.6	5.6	
Agriculture	104	13.4	55.7	22.1	4.8	3.8	
Family education							0.028
No education	126	8.7	65.8	23.0	0.0	2.4	
Primary education	96	12.5	60.4	20.8	4.2	2.1	
Above primary education	116	10.3	47.4	25.9	9.5	6.9	
Age of mother							0.604
15-20 Years	139	9.3	53.9	27.3	4.3	5.0	
21-30 year	169	10.0	59.7	21.9	4.7	3.5	
31+ years	30	16.7	66.7	13.3	3.3	0.0	

Note: Three antenatal care visit considered as moderate for this study.

Table. 4.2.10. Distribution of respondent who visited different places of health care for postnatal care by the categories of socio-economic groups, Family income, occupation of the respondents husband and family education variables.

Variables	Total N=112	Place of visit for postnatal care					P
		THC (%)	FWC (%)	Private MBBS (%)	Private Non MBBS *(%)	No treatme nt	
Socio-economic group							0.304
Low	62	4.8	1.6	8.0	83.9	1.0	
Medium	36	11.1	0.0	13.9	75.0	0.0	
High	14	14.3	0.0	28.6	57.1	0.0	
Family income							0.013
Low	74	8.1	0.0	6.7	83.8	1.3	
Medium	23	4.3	4.3	26.1	65.2	0.0	
High	15	13.3	0.0	20.0	66.6	0.0	
Husbands occupation							0.408
Day labour	41	4.9	2.4	4.9	87.8	0.0	
Service/business	44	6.8	0.0	15.9	75.0	2.3	
Agriculture	27	14.8	0.0	18.5	66.7	0.0	
Family education							0.282
No education	31	6.4	3.2	6.4	83.9	0.0	
Primary education	34	5.9	0.0	8.8	85.3	0.0	
Above primary education	47	10.6	0.0	19.1	68.1	2.1	
Age of mother							0.014
15-20 Years	53	11.3	1.9	5.6	81.1	0.0	
21-30 year	51	5.9	0.0	19.6	74.5	0.0	
31+ years	8	0.0	0.0	12.5	75.0	12.5	

Note: Non MBBS including homeopath, kabiraj and other traditional healers.

Table 4.2.11. The place of child vaccination by the categories of socio-economic and education variables.

Variables	Place of child vaccination					
	N	THC (%)	FWC (%)	VHCP (%)	PRIVATE	P Value
Socio-economic condition						P=0.917
Low	236	3.4	2.5	68.6	2.1	
Medium	129	3.9	2.3	71.3	3.9	
High	53	1.9	1.9	75.5	3.8	
Family education						P=0.476
No education	164	3.0	2.4	69.5	1.2	
Primary education	115	2.6	0.9	73.0	5.2	
Above primary Education	139	4.3	3.6	69.0	2.9	
Family income						P=0.750
Low	294	3.4	2.0	70.1	2.38	
Medium	78	1.3	2.5	71.8	3.85	
High	46	6.5	4.3	69.6	4.35	
Husbands occupation						P=0.350
Day labour	156	3.21	2.56	66.0	3.2	
Service/business	136	3.68	3.68	66.9	3.7	
Agriculture	126	3.17	0.79	79.4	1.6	
Total N (%)	418	14 (3.35)	10 (2.39)	294 (70.34)	12 (2.87)	

Table 4.2.12. The prevalence of diarrhoea and acute respiratory infection within two weeks before the survey by the categories of socio-economic and education variables

Variables	Prevalence of diarrhoea			Prevalence of acute respiratory infection (ARI)		
	N	Yes %	P Value	N=	Yes %	P value
Socio-economic condition			P=0.160			P=0.258
Low	236	6.8		236	7.2	
Medium	129	2.3		129	11.6	
High	53	3.8		53	5.6	
Family education			P=0.892			P=0.217
No education	164	5.5		164	5.5	
Primary education	115	5.2		115	9.6	
Above primary education	139	4.3		139	10.8	
Family income			P=0.828			P=0.253
Low	294	5.4		294	8.8	
Medium	78	3.8		78	10.2	
High	46	2.3		46	2.2	
Husbands occupation			P=0.097			P=0.609
Day labour	156	7.0		156	7.0	
Service/business	136	5.9		136	8.1	
Agriculture	126	1.6		126	1.3	
Total N	418	21 (5.02%)		418	35 (8.37%)	

APPENDIX 11

Appendix 11 cont.

Table 4.3.7. Multivariate logistic regression analysis: Estimates of the influence of independent variables on TT vaccination of mother during pregnancy.

VARIABLES	Odds Ratios			
	UNADJUSTED (95% CI)	P>| Z |	ADJUSTED * (95% CI)	P>| Z |
SOCIO-ECONOMIC CONDITION				
LOW	1.00		1.00	
MEDIUM	0.80 (0.38-1.67)	0.568	0.75 (0.34-1.67)	0.496
HIGH	1.04 (0.35-3.22)	0.945	0.94 (0.27-3.22)	0.927
FAMILY EDUCATION				
NO EDUCATION	1.00		1.00	
PRIMARY EDUCATION	1.66 (0.49-2.70)	0.727	1.22 (0.50-2.97)	0.647
ABOVE PRIMARY EDUCATION	1.57 (0.51-2.55)	0.739	1.30 (0.52-3.22)	0.569
AGE OF MOTHER				
15-20 YEARS	1.00		1.00	
21-30 YEARS	0.71 (0.33-1.50)	0.376	0.71 (0.33-1.53)	0.392
31-+	0.53 (0.17-1.63)	0.275	0.53 (0.17-1.65)	0.277

* Adjusted for family education and age of respondent

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Table 4.3.8 Odds ratios of TT vaccination of mother during pregnancy by the categories of independent variables.

Variables	Odds ratios			
	Odds ratios *	95% CI	P>| z |	Model P value
SOCIO-ECONOMIC CONDITION				
Low	1.00			0.829
Medium	0.80	0.38- 1.67	0.568	
High	1.04	0.35- 3.22	0.945	
FAMILY INCOME				
Low	1.00	0.34- 1.86	0.604	0.734
Medium	0.79	0.24- 1.93	0.438	
High	0.69			
HUSBANDS OCCUPATION				
Day labour	1.00			0.555
Service/business	1.29	0.57- 2.87	0.534	
Agriculture	1.57	0.67- 3.68	0.294	
FAMILY EDUCATION				
No education	1.00	0.49- 2.70	0.727	0.492
Primary education	1.66	0.51- 2.55	0.739	
Above primary education	1.57			
AGE OF RESPONDENT				
15--20 years	1.00			0.492
20-30 years	0.71	0.33- 1.50	0.376	
31+	0.53	0.17- 1.63	0.275	

* Unadjusted

Appendix 11 cont.

Table 4.3.9 Odds ratios of place of receiving TT vaccine during pregnancy by the Categories of independent variables.

Variables	Odds ratios			
	Odds ratios *	95 % CI	P>| z |	Model p value
SOCIO-ECONOMIC CONDITION				
Low	1.00			0.015
Medium	0.25	0.09-0.69	0.008	
High	0.31	0.08- 1.17	0.086	
FAMILY INCOME				
Low	1.00			0.0004
Medium	0.29	0.10- .83	0.022	
High	0.12	0.04- .34	0.000	
HUSBANDS OCCUPATION				
Day labour	1.00			0.357
Service/business	0.47	0.16- 1.34	0.160	
Agriculture	0.70	0.22- 2.15	0.537	
FAMILY EDUCATION				
No education	1.00			0.135
Primary education	0.59	0.17- 2.02	0.408	
Above Primary	0.39	0.12- 1.03	0.058	
AGE OF RESPONDENT				
15--20 years	1.00			0.453
20-30 years	1.09	0.43- 2.76	0.852	
31+	0.48	0.13- 1.67	0.250	

*Unadjusted

Table 4.3.10. Multivariate logistic regression analysis: Estimates of the influence of independent variables on the place of child delivery.

VARIABLES	Odds Ratios			
	UNADJUSTED	P> | Z |	ADJUSTED *	P> | Z |
SOCIO-ECONOMIC CONDITION				
LOW	1.00		1.00	
MEDIUM	0.46 (0.09-2.25)	0.338	0.46 (0.08-2.44)	0.363
HIGH	0.64 (0.07-5.39)	0.687	0.58 (0.05-5.94)	0.652
FAMILY EDUCATION				
NO EDUCATION	1.00		1.00	
PRIMARY EDUCATION	0.98 (0.21-4.48)	0.982	1.29 (0.27-6.14)	0.748
ABOVE PRIMARY EDUCATION	0.82 (0.18-3.76)	0.805	1.27 (0.23-6.92)	0.779
AGE OF MOTHER				
15-20 YEARS	1.00		1.00	
21-30 YEARS	1.23 (0.34-4.40)	0.751	1.25 (0.34-4.57)	0.735
31-+	00	00	00	00

* Adjusted for family education and age of respondent

Table 4.3.11 Odds ratios of the person attended during the child delivery by the categories of independent variables

Variables	Odds ratios			
	Odds ratio*	95% CI	P | z |	Model p-value
SOCIO-ECONOMIC CONDITION				0.266
Low	1.00			
Medium	1.33	0.65- 2.74	0.427	
High	2.14	0.86- 5.27	0.098	
FAMILY INCOME				0.038
Low	1.00			
Medium	1.69	0.76- 3.75	0.194	
High	3.10	1.31- 7.34	0.010	
HUSBANDS OCCUPATION				0.018
Day labour	1.00			
Service/business	2.95	1.32- 6.57	0.008	
Agriculture	1.42	0.58-3.48	0.441	
FAMILY EDUCATION				0.001
No education	1.00			
Primary education	0.91	0.33-2.48	0.856	
Above Primary	3.22	1.47- 7.02	0.003	
AGE OF RESPONDENT				0.427
15--20 years	1.00			
20-30 years	0.88	0.73- 3.22	0.727	
31+	0.40	0.08-1.82	0.240	

• Unadjusted

Table 4.3.12. Multivariate logistic regression analysis: Estimates of the influence of independent variables on the place postnatal consultation.

VARIABLES	Odds Ratios			
	UNADJUSTED (95% CI)	P> | Z |	ADJUSTED * (95% CI)	P> | Z |
SOCIO-ECONOMIC CONDITION				
LOW	1.00		1.00	
MEDIUM	1.42 (0.35-5.68)	0.616	1.20 (0.23-6.14)	0.821
HIGH	1.90 (0.32-10.97)	0.473	1.50 (0.19-11.71)	0.694
FAMILY EDUCATION				
NO EDUCATION	1.00		1.00	
PRIMARY EDUCATION	0.58 (0.09-3.74)	0.570	0.48 (0.07-3.34)	0.466
ABOVE PRIMARY EDUCATION	1.36 (0.31-5.92)	0.677	1.07 (0.17-6.44)	0.941
AGE OF MOTHER				
15-20 YEARS	1.00		1.00	
21-30 YEARS	0.41 (0.10-1.68)	0.217	0.39 (0.09-1.62)	0.195
31-+	0.93 (0.09-8.82)	0.956	0.94 (0.08-9.92)	0.961

* Adjusted for family education and age of respondent

Table 4.3.13 Odds ratios of the place of post natal consultation visit by the categories of independent variables

Variables	Odds ratios			
	Odds ratio*	95% CI	P| z |	Model p-value
SOCIO-ECONOMIC CONDITION				0.750
Low	1.00			
Medium	1.42	0.35- 5.68	0.616	
High	1.90	0.32- 10.97	0.473	
FAMILY INCOME				0.889
Low	1.00			
Medium	0.91	0.17- 4.72	0.912	
High	1.47	0.27- 7.90	0.652	
HUSBANDS OCCUPATION				0.603
Day labour	1.00			
Service/business	1.26	0.26- 6.03	0.767	
Agriculture	2.20	0.45- 10.73	0.328	
FAMILY EDUCATION				0.573
No education	1.00			
Primary education	0.58	0.09- 3.74	0.570	
Above Primary	1.36	0.31- 5.92	0.677	
AGE OF RESPONDENT				0.424
15--20 years	1.00			
20-30 years	0.41	0.10- 1.68	0.217	
31+	0.93	0.09-8.82	0.956	

* Unadjusted