CHAPTER I

INTRODUCTION

This chapter presents the background and rationale of this study. The research questions objectives and the scope of the study is also presented in this chapter. This chapter is concluded by narrating the expected benefits of the study.

1.1. Background and Rationale

Dental caries and gum disease are two of the most widespread disease. They affect between 50% and 99% of people in every community. Many communities in developing countries have no oral care because the equipment and instruments are very expensive and electricity is needed to run the equipment (WHO 2000).

In 1979 the World Health Assembly adopted a resolution calling for the attainment of 'Health for All' by the year 2000. With this in mind, the WHO Oral Health Unit, in conjunction with the Fédération Dentaire Internationale (FDI), recommended the establishment of specific oral health goals. On the way to the ultimate aim of complete oral health for all, with optimal function of teeth, jaws and associated structures, these goals propose attainable levels that represent appreciable strides towards the final target. The six goals are:

Table 1.1: Oral Health Goal Recommended by WHO & FDI

Age	Goal
5-6	50% caries free
12	DMFT less then 3
18	85% retain all their teeth
35-44	50% reduction in number of persons with no teeth (75% with 20 teeth)
65 +	25% reduction in number of persons with no teeth (50% with 20 teeth).

(Source: WHO Web Sight, 2000)

The World Health Assembly, May 1981, recognized as the first global indicator of oral health status, an average of not more than 3 Decayed, Missing, Filled permanent Teeth at the age of 12 by the year 2000. A new set of global goals for the year 2010 is being developed. They will be of two types: a) Further improved health status. b) Promotion of conditions which enable communities to apply, fully, preventive capabilities. WHO oral health policy has been supported by five WHA resolutions recommending prevention and recognizing oral health as an integral component of primary health care (WHO 1999).

Oral care is costly. Some rich countries spend 5% to 11% of their annual health budgets on oral health. It is a price that few Third World countries, if any, can afford to pay. There is a ratio of one dentist for every 1000 population in several rich countries; but only one for over a million in some poor nations (WHO 1994). The following table (Table 1.2) shows number of dentist per 100,000 population for 15 countries at varying stages of economic development with varying political system (WHO 1988 cited by Burt and Eklund 1992).

Table 1.2: Number of Dentist Per 100,000 Population of Selected 15 Countries

Country	Dentist per 100,000 Population
Sweden	110
Finland	93
Norway	89
United States	59
Canada	49
Switzerland	49
Ecuador	45
United Kingdom	31
Chile	26
Argentina	22
Turkey	16
Mexico	4
Thailand	3
India	1
Kenya	1

(Source: WHO 1988 cited by Burt and Eklund 1992).

Bangladesh is one of the highest densely populated countries of the world situated in the eastern part of south Asia with an area of 147,570 square kilometers. This country is located between $20^0 34'$ and $26^0 38'$ North latitude, $88^0 01'$ and $92^0 42$ ' East longitude and

bounded by India on the west, the north, and the north-east and Myanmer on the south-east and the Bay of Bengal on the south. Some other basic facts are shown in the following table:

Table 1.3 Some Basic Facts about Bangladesh

Total Population (Million)	122.8
Male Population (Million)	62.6
Female Population (Million)	60.2
Infant Population (%)	3.0
Under 5years Population (%)	12.6
Under 15years Population (%)	40.9
Female Population(15-49years in %)	27.44
Population Density (Per sq. km.)	819
Crude Birth Rate/1000	19.9
Crude Death Rate/1000	4.8
Gross Fertility Rate/1000 Women	129
Life Expectancy at Birth (Years)	60.8
Number of Eligible Couples (Million)	21.9
Working Aged (15-59 years) Population (Million)	61.87
Old Aged (60 years +) Population (Million)	5.9
Male/Female Ratio X 100	104
Mean Age of Male at Marriage (Years)	25.1
Mean Age of Female at Marriage (Years)	18.1
Infant Mortality Rate per 1000 Live Birth	77
Under 5 years Mortality Rate per 1000 Live Birth	116
Neonatal Mortality Rate per 1000 Live Birth	54.6
Maternal Mortality Rate per 1000 Live Birth	4.0
Percent of Population Using Safe Water Only for Drinking	96.5
Percent of Population Using Sealed Latrine	11.2
Population per Physician	4,572
Population per Dentist	1,27,122
Population per Nurse	9,530
Population Per Hospital Bed	3,151

(Sources: Bangladesh Health Bulletin, 1996 Published in November 1998, PIP of HPSP 1998, Statistical Pocket Book 1998 and Bangladesh Demographic and Health Survey 1996-97).

According to Bangladesh Health Bulletin 1996 (Published in November 1998) hospital records of district level and bellow show that in Bangladesh in 1996 total 12,17,550 patients came to public hospitals (district level and bellow) for treatment of dental problems. In Bangladesh registered dentists as on 20/11/97 are 966 and 536 of them are working in the public sector. Which is seriously inadequate in comparison to country's 122 million populations. The country is serving large number of dental patients with very limited resources. Dental care is not a component of ESP (Essential Services Packages) though it is accepted as a component of primary health care by Alma-Ata declaration in

1978 (WHO 1978). In Bangladesh in public sector mainly curative care for dental diseases is provided through different hospitals.

The results of studies on periodontal diseases and dental caries in Bangladesh show that, almost all subjects aged 12 to 19 years (82-95 percent) and 35 to 44 years (98-100 percent) had calculus. The various studies showed a wide range of prevalence (14-65 percent) of subjects with deep periodontal pockets in the age group of 35 to 44. According to a median estimate of the prevalence of subjects with deep periodontal pockets (26 percent), it can tentatively be concluded that Bangladesh belongs to the 20 percent of countries in the world where the periodontal conditions of the population are among the worst. The median DMFT-values of age cohort from the various studies show that 12 year-olds had a DMFT of 1.7, 15 to 19 year-olds of 1.6, 20 to 34 year-olds of 1.0 and 35 to 44 year-olds had a DMFT of 1.4. The DMFT-values are considered to be upper limit values since they were almost exclusively obtain from urban and peri-urban populations (Helderman et al. 1996).

Over the past thirty years developing countries have achieved remarkable improvement in health especially in reduction of mortality and morbidity. But with the emergence of new diseases, rising income, aging population and rapid urbanization the demand for health care services also increased rapidly. The Bangladesh Health & Family Planing Program has made remarkable progress over the last two decades. Especially in immunization the achievement of Bangladesh is most impressive. The contraceptive prevalence rate had already reached about 50 percent and fertility rate has declined from to 6.3 in 1971-75 to 3.3 in 1994-96. The under-five mortality rate has decline from 133 per 1000 live birth for the period 1989-93 to 116 per 1000 live birth for the period 1992-1996 and over the same period infant mortality has also declined from 87 to 82 per 1000 live births, which is now 77 per 1000 live births. Despite these, however, Bangladesh remain as one of the few countries in which life expectancy at birth is lower for females than males. About 70% of the mother suffer from nutritional deficiency anemia. This country is categorized among most improvised countries in the world and has not been able to mobilize sufficient resources for expenditure in health care to address its pressing

needs. The health care service is presently being provided from both a large government health delivery system and substantial private sector. Other issues of concern are inefficiency of government services as well as the cost-effectiveness, sustainability and quality of services, which were also, raised at the Mid-term Review of Fourth Population & Health project (FPHP) (Ministry of Health and Family Welfare, Government of Peoples Republic of Bangladesh 1998). Realizing these facts the Government of Bangladesh (GOB) specially the Ministry of Health and Family Welfare (MOHFW) has responded to needs by taking a number of policy decisions and steps in the health sector particularly in the areas of management structure, the service delivery mechanism and utilization both public and private sectors resources. Among them formulation and approval of the National Health Policy, National Food & Nutrition Policy, formation of committee for National Population Policy and introduction of Health Population Sector Program (HPSP) are mentionable.

The development activities in Health and Family Welfare sector are now being implemented under Health and Population Sector Program (HPSP) 1998 – 2003. This program is a new approach of development activities it is known as Sector Program Approach or Sector Wide Management (SWM) Approach. It is a shifting away from projectised approach to SWM approach i.e. move to more integrated services from separate project. Estimated total expenditure of the program is US$ 3373.202 million. The main purpose of HPSP is to achieve ''Client-centered provision and client utilization of an Essential Services Package (ESP) plus selected services.'' Among the selected services hospital level services is one of them and in this program hospital level services will be focused and improved. Cost recovery in hospital services will be introduced; while protecting poor for out patient registration, drug, inpatient care, surgical operation and diagnostic services and cost recovery mechanism will also be decided (MOHFW 1998).

It may be mentioned here that the government health care service is almost free of charge except very minimal fee for registration and some other purposes. It is because more common approach to health in many developing countries that has been treated it is as a

right of the citizens and attempted to provide free services to every one. But providing free health service has more disadvantages compared to its merits. It prevents the government health system from collecting revenue that's many patients are able to pay. It encourages clients to use high cost hospital services when their need could be addressed at lower level of system. It makes impossible to reduce subsidy for the rich by changing for certain services, or increase subsidy for the poor by expanding other services at low cost. So considering these facts the Government of Bangladesh has decided to introduce cost recovery mechanism in hospital service and already taken the policy decision, which is specifically stated in the HPSP document. There is also pressure from donors group. In 1987, the World Bank recommended increased cost recovery as part of an agenda for financing publicly provided health services in developing countries. In most developing countries , government health services were often free of charge or offered with high subsidies. Chronic shortage of finance for recurrent inputs, such as drugs, was severely reducing the effectiveness of existing health services. Furthermore, health system has not achieved complete coverage of the population, particularly in rural areas. Revenues from increased cost recovery from clients' will be, therefore, proposed as a means of improving the quality, effectiveness and coverage of health services (World Bank. 1995).

The introduction of user fee is now a matter of time only. This introduction of user fee needs focus on different issues like:

- Determination of cost for providing different health care services;
- Accessibility to services with reasonable quality;
- Protecting the poor in obtaining services;
- Charges for drug and other supplies;
- Charges for private rooms in government hospital;
- Fee for different services;
- Locally use of revenue etc

So, determination or calculation of cost for providing different health care services is the first and foremost need for introduction of cost recovery mechanism. According to a major World Bank study of public hospitals. According to a major World Bank study of

public hospitals (Barnum and Kutzin, 1993) the share of public sector health resources in developing countries consumed by hospital ranges from 50 to 80 percent. By better understanding the costs of various activities, managers can improve the efficiency of various hospital departments, as well as hospital systems as a whole and data can help national policy makers to decide which curative is best delivered in hospital, and to examine tradeoffs among various preventative, primary curative and secondary curative services (Shepard, Hodgkin and Anthony 1998).

It can be mentioned here that, the 1993 United Kingdom Child Dental Health Survey showed that children who only attended dentists when having problems had more decayed and filled teeth than children who attended when a symptomatic. The so-called "regular" attendees tended to have fewer teeth extracted. A similar survey of adults also showed that those who had check ups had almost half as many teeth missing as those who visited the dentist only when they had a problem. At first glance therefore the evidence suggests that individuals who go the dentist to seek treatment before symptoms arise actually do suffer fewer sequelae from the progression of dental disease (Kay 1999). It is mentioned earlier that oral care is costly and few Third World countries can afford to pay. But it is more surprising that the cost and cost structure of dental care at public hospitals especially at district and thana level in Bangladesh is not yet analyzed and calculated. So, considering these facts this study was proposed. It was believed that it would facilitate the government steps towards introduction of cost recovery mechanism for different health care services and other matters mentioned in above by providing base line data. It would determine or calculate of cost dental care services at district hospital and thana health complex i.e. the two important administrative unit or level of the country and would also provide information about unit cost of out patient service for dental care at district hospital and thana health complex. It can be helpful to improve efficiency in service delivery and utilization of scarce resources in the public sector. Dental care was chosen because it considered as one of the costly services in health care sector and when GOB will introduce cost recovery mechanism in hospital services, cost recovery for dental services is most likely to be introduced in the first phase. It is further mentionable that there was no study conducted before to determine cost of dental care in district

hospital and thana health complex in Bangladesh. This study will mainly analyze the total cost of dental care at thana and district hospitals. It will calculate total cost of provider and also cost per out patient visit. This is first time such study was conducted. It is hoped that this study can put forward some base line data and recommendations that might be helpful for the planners and policy makers for necessary and appropriate steps.

1.2. Research Questions

This study had tried to address the following research questions:

1.2.1. What are the costs to provider for providing dental care in District Hospital and Thana Health Complex?

1.2.2 What is the cost structure of dental care at District Hospital and Thana Health Complex?

1.3. Research Objectives

1.3.1. General

To analyze the total cost of dental care at District Hospital and Thana Health Complex in Bangladesh from the provider's perspective.

1.3.2. Specific

a) To study cost structure of dental care in outpatient departments at District Hospital and Thana Health Complex.

b) To calculate the cost per visit for dental care service in outpatient departments at District Hospital and Thana Health Complex.

1.4. Scope of the study

It is a case study of a District Hospital and Thana Health Complex for cost analysis for providing dental care. Total number of visit in OPD dental department at study hospital from January 1998 to December 1998 is obtained. Cost data for treatment was collected from hospital's records and cost structure is also is analyzed. In this study for OPD dental the number of visit is used as out put and cost per visit is calculated. It may be mentioned here that at present District Hospital and Thana Health Complex provide only out-patient service to the dental patients. So only outpatient service costs is calculated. This study is a partial economic evaluation.

In addition to that, this study has also discussed and reviewed about economic costs of dental care. It also tried to review quality issue and dental manpower problem in Bangladesh Besides that, it tried to explore information about the types of dental services provided from those hospitals and also tried to look into utilization aspects i.e. who (sex, age group) are using services with what problem. Further this study also reviewed Bangladesh's position in the context of the dental care policy, target, legislation.

1.5. Possible Benefits

This study will provide base line data and information about cost and utilization of dental care at District Hospital and Thana Health Complex. It may be helpful for introduction of user fee or cost recovery mechanism, resource allocation, planning efficient management of patient service. It reviewed the economic costs of dental care at district and thana level and also provided conceptual framework of both patients and providers' cost for dental care, which can be helpful for detail prospective study on the cost of dental care in future. It can draw attention of policy makers about human resource supply and need for formulating policy for development dental care services.

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non-monetary value. The accounting cost of goods or services may be defined as the monetary value of actual expenditure for the acquisition of those goods or services.

In 'Cost analysis in primary health care'' Creese and Parker(1994) mentioned that economist define cost as the value of resources used to produce something, including a specific health service or a set of services (as in a health program). Conceptually, several definitions of the notion of cost are possible.

They further mentioned that costs are often thought in terms of money paid for resources used; there is a broader way of looking at costs. The basic idea is that things have a value might not be fully captured in their price e.g. volunteers working without payments; health messages broad cast without charge; vaccines other supplies donated or provided at a large discount by organizations or individuals. So, the question arises that, is the cost of these inputs nothing? The answer depends on the purpose of interest. For some purposes, there is no need to take into account resources that are not paid for e.g. ones concern is solely to determine how much of a financial budget allocation was actually spent. In such case resources for nothing was paid do not appear as expenditure and can be ignored (i.e. their financial cost is zero). How ever if anyone is concerned with the long-term sustainability of a program, in such case the total cost of all inputs - even those temporarily provided by donors or paid for at bellow market rates - must be estimated. In addition, public officials should be concerned with the full resource consequences of implementing a health program. In marshalling resources for benefit of one program, society is forfeiting the opportunity to use them for some alternative activity. This lost opportunity is a cost that society bears e.g. the time volunteers devote to a health program might be time that they would get otherwise use to work on their land or in a paid job and the return they would get from these alternative activities is a measure of the cost of the time they devote to that health program. Economists use the terms "opportunity cost" or "economic cost" to describe this approach to costing. It recognizes the cost of using resources that could have been productively used elsewhere.