CHAPTER 1

INTRODUCTION

1.1 Rationale

Most of the people regard good health as a "right". It is also reflected in the constitution of the People's Republic of Bangladesh. They believe that a sick person should have access to medical services regardless of income. This is why people are appalled when they hear on the radio, see television, or read newspaper that a person in a serious accident or with a serious illness was refused admittance to the hospital, because he or she did not have either money or health insurance to pay for the services needed . The basic idea is that health services are essential needs and people have a right to receive them.

It is the nature of the patient that, they try to suppress the disease in the preliminary stage and care little about it, subsequently they go to the traditional healer, spiritual doctors, indigenous practitioners, homeopath where treatment are apparently cheaper, because of socio- economic condition, social belief and low education level. When the disease aggravates then they come to the hospital. Thana health complexes established in the rural areas where majority of the people live, with huge investment in each Thana with the idea to bring the medical care to the door step of the rural people. These hospitals are located nearer to the people and have easy access.Even than the people do not use these health complexes. Rather they prefer to get the services to the district hospitals which are situated in urban areas and far from the rural people. People believe that, in bigger hospitals there are more doctors,nurses, adequate manpower, modern treatment facilities and prefer to seek the treatment at the district hospitals rather than local hospitals (Thana health complexes). As a result the district hospitals become over crowded and the services of the hospital is overutilized. Fixed allocation of budget is utilized for all the patients, resulting less allocation for drugs, manpower, equipments per patient. The doctors and the staff cannot pay due attention to the patients, do not get the quality care, creates dissatisfaction among the patients. As such,the study has been chosen, so that the government becomes alert about the issue and may take appropriate measure on this.

The reason of this study is mainly the hospital which have been established at Thana level, remains underutilized, and the District hospitals are overutilized. Drugs allocated for a hospital depends on the bed capacity, but as a matter of consequence due to underutilization of beds the proportion of drugs becomes higher than the average per bed, for example, if there is allocation of drugs US $ 1000 for 50 beds, in average each bed will get the drugs which costs

US$ 20, but in reality when the 25 beds are occupied instead of 50, the patient will consume the drugs amounting US$ 40, which is double the quantity of real allocation. With respect to services of doctors, nurses and other staff the manpower are placed to serve the patients having full capacity of 50 beds, but due to the underutilization of beds the manpower is also underutilized and the government is to pay full salary for staff, whatever might be the utilization of bed, which is a wastage of both money and manpower. The machinery like x-ray machine, ambulance are also utilized less than the capacity. Consequently the machines develop some defect and lasts less than the life time.

Due to overutilization the patients are to wait for a few days to get admission, once admitted they are to stay on the floors of the hospital. Drugs are supplied for a particular number of patients, but due to overutilization the patients outside the bed capacity get the equal share of the fixed quantity of drugs. As a result all the patients get less quantity of drugs than the average allocation according to bed capacity. Machines such as x-ray machines which are supplied for a fixed number of patients, due to overutilization, the machines expire before their life time. In the mean time the government cannot replace another machine and the people are to suffer and deprive from the service till a new machine is supplied. Similarly due to overutilization of laboratory facilities the reports may not be accurate, diagnosis and treatment may not be accurate. Doctors and nurses have limited time to work for a particular number of patients, when the doctors, nurses and other staff cannot attend or pay due attention to each patient, resulting to deterioration in quality of care and decreases the level of satisfaction in respect of treatment facilities as a whole.

Since the inception of Thana health complexes, no study has been made as yet to determine the impacts of underutilization and overutilization of hospital services, this study will the first attempt to find out the impacts and to formulate a methodology for assessment of impacts for both, and to suggest an economic solution of the problem.

This study is to find out, what factors affecting the utilization of Thana and District hospital services, what are the impacts of underutilization of hospital services at Thana level and what are the impacts of overutilization at the district level and what are the method(s) for assessment of impacts of the underutilization and overutilization.

1.2 Objectives

1.2.1 General Objective :

The objective of the study is to develop a methodology for assessment of the impacts of underutilization of Thana health complexes and overutilization of District hospitals in Bangladesh.

1.2.2 Specific Objectives :

a) To explore /examine factors affecting the utilization of hospital services.

b) To explore / examine various impacts of underutilization and overutilization.

c) To develop the methods /tools to be used for assessment of impacts of the underutilization and overutilization.

1.3 Theoretical Framework.

1.3.1 Conceptual Framework :

The conceptual framework of this research is to show the different factors which are responsible to the utilization of hospital services such as a) Patient factor: Demographic characteristics of population such as age, sex, race, and income has influence on utilization of health services, who are the main consumer and utilize health services. Hospital admission rate and average length of stay are lowest for children and than rise with age in general, the lowest income group had a slightly higher rate than the higher income group, income is also the predictor of utilization of short term in general hospitals, b) Provider factor: Supply of hospital bed is a major determinant of utilization in an area. If those areas where alternative health services are lacking or inadequate, an increase in the supply of beds significantly alters both the admission rate and average length of stay. In developing countries government is the main health care provider, having poor management, inadequate and fixed budget for drugs. Satisfaction with the physician is the most important determinant of overall satisfaction, which is also the determinant of quality of care, c) Organizational factor: Medical care and system of service depends on organization. Location and communication of the hospital is an important factor of utilization. Differences in admission rates are also apparent between rural and urban areas, percentage of urbanization is an important characteristics of the population that affects the use of hospital. The utilization also depends on the facility provides by the organization.

These factors have influence over the utilization of hospital services, in Thana health complexes the beds are underutilized and in the District hospitals beds are overutilized.

Quality of care : The quality of care depends on the patient factor, provider factor and the organizational factor. Patients are the consumer of services, if the quality of care increases, the patients have to stay for the short period which will save the cost of food, for the attendants and relatives of the patient.

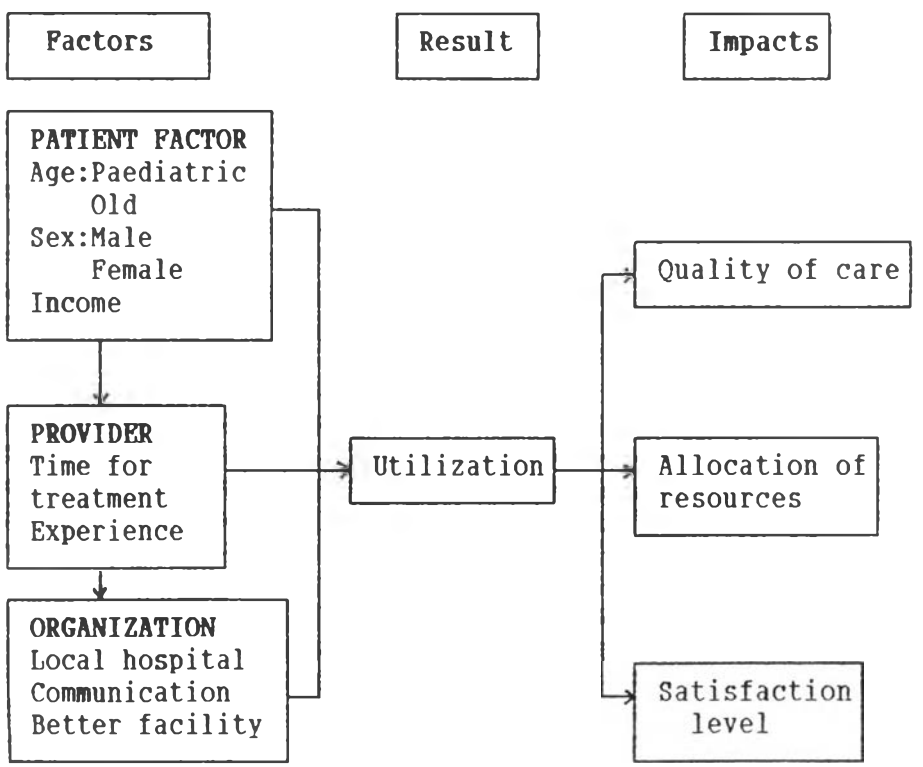
Allocation of resources : Patients do not utilize nearer health facilities, at the Thana health complex and the hospital remains underutilized. Whatever be the utilization rate the government is to pay the salary of doctors and other staff in full, supply of drugs,

cost for repair and maintenance of building and equipments, which is an wastage. On the other hand people prefer to go to the District hospitals which involves the transportation cost of patients and their relatives, cost of drugs, cost of food, cost of accommodation which is also a loss to the patients, and

Satisfaction of the patients : Overall satisfaction is one of the impacts of utilization, patient's satisfaction with particular resources of medical care depends on the quality of doctor-patient communication, waiting time for admission, doctor spending time for patient. Utilization mostly depends on the satisfaction of the patients.

Each impact can be measured by some indicators, the quality of care can be measured by the average length of stay of patient, bed occupancy rate, doctor spending time per patient, patient waiting time for admission, discharge rate, etc. The cause of wastage due to allocation of resources is very difficult to measure. Satisfaction level can be measured by using the indicators putting value for determination of satisfaction.

Figure: 1.1 Conceptual Framework on Impacts of Underutilization and Overutilization of Hospital Services.



1.3.2 Type of Study

This is a descriptive type of case study. A case study is a description of a person, place, or community because they exhibit a

particular condition. The descriptions may alert other researchers to the condition and provide an early warning of similar events which may follow.

1.3.3 Source of data:

-Ministry of Health and Family Welfare, Government of Bangladesh.
-Statistical Report, published by Bangladesh Bureau of Statistics.
-Report (published and unpublished) of Health Information Unit,
-Directorate General of Health Services, Government of Bangladesh.
-Budget allocation from the Ministry of Finance, Govt. of Bangladesh.

1.3.4 Selection of study area:

1) Thana health complex and District hospitals are to be selected purposively.

2) Thana health complex and District hospitals are to be selected which reflects the range of type of hospital in terms of size, service offered, staffing, age of building and geographical location.

The planners or hospital managers may conduct any assessment/study on overutilization of hospital services, in that case they can select the study area taking into considerations of the above points or conditions.

1.4 Literature Review

Countries development and progress depends on effective health care. The health of population is an important element in its ability to progress and develop. If health is to be improved in a population, particularly in developing countries---health service must be capable to delivering effective health care and members of the population must use these services (Subedi, 1989).

In the context of Bangladesh, the government is constitutionally committed to provide health service to all, accordingly the health service infrastructure has been established with different health facilities in different level of health institution and expanded down to the lower administrative (Union) level.

In low income countries government hospitals and clinics, which account for the greatest part of the modern medical care provider, are often inefficient, suffering from highly centralized decision making, wide fluctuation of in budgetary allocations, and poor motivation of facility managers and health care workers. The poor often lose out in health because public spending in the sector is heavily skewed toward high-cost hospital services that disproportionately benefit better-off urban groups, (World Development Report, 1993).

In Bangladesh, government is the main provider for medical care, having inadequate and fixed budget allocation for drugs, maintenance of equipments and buildings especially at the rural based hospitals, as a result the rural people has less confidence about the hospital services at the Thana health complex and thus prefers to utilize the District hospitals. Government is allocating more money to the hospitals situated in the urban areas. As a result the people of urban area get the benefit and the rural people are deprived of the services.

Factors of Utilization and Its Measurements :

The factors that influence persons to become patients and utilize a health care system can be classified into five broad categories. These are health status and need, demographic characteristics, physician availability, organizational characteristics of health care services and financing mechanisms (Anderson,1968).

In general one would like to concentrate on modifiable factors, the alteration of which would influence utilization patterns. The notion of modifiable is a bit more complex than a erst viewing might suggest. Are age and sex alterable ? Not literally , but their effect on utilization behavior may exhibit secular trends. For example, the elderly people have become more important in recent years merely their numbers have increased in relation to the total population. This is expected to be magnified in the future. A counter balancing affect may occur, if illness patterns and, therefore, health care needs are changing within this elderly population. There is some suggestion that the elderly, as a group,are becoming healthier.

Availability, organization and financing issues are top priority targets for change in the political and social environment of the United States. The objectives then were to improve access to health care availability of services in order to increase utilization. The goal to increase utilization, both quantitatively and in relation to need, was successfully met by several means. The first was a financing mechanism, e.g., Medicaid. The second involved organizational changes such as neighborhood health centers with an expanded spectrum of services including outreach programs. The third was an increase in resources, by the effective stimulation of the supply of physicians and introduction to new types of health care providers (e.g., nurse practitioners and physician assistants). These activities were successful in increasing utilization among previously underserved groups. Utilization increased quantitatively i.e., number of physician visits per person per year or number of hospital admissions per 1000 population per year (Hulka and Wheat, 1985).

Thus it is clear that patient, provider and the organizational factors are responsible for utilization of hospital services, this study is important in the context of Bangladesh, because the utilization are different in the Thana health complexes and District hospitals.

Health Status and Need for Medical Care :

Anderson (1968), found that health care need is dependent on some factors which are related to illness, family resources, medical facilities and manpower, demographic characteristics such as age, social class and race. Theoretical models of utilization of medical care services was reviewed and behavioral, economic, and social-psychological aspects was considered. Then outlined a behavioral model that guided his research and has subsequently been used by many others. It presents use of health care as a function of:

1) Need- illness related factors;
2) Enabling factors- family resources, such as income or insurance, and community resources, such as medical facilities and manpower;
3) Predisposing factors- demographic characteristics, such as age, social class, and race. The study has been made by Anderson (1968).

Here, it is distinguished that the utilization depends on patient, provider and the medical facilities in the sense of organizational factors, these utilization has some impacts on quality of care, utilization of resources and satisfaction of patients.

Representing Utilization :

There are many standard measures of utilization. Hulka and Wheat (1985) referred to Mauran and Eichhorn (1981) who listed more than 100 different indices or independent variables that have been used to measure. At least some aspect of utilization are determined by two sources of care: physician and hospital.

Table 1.1 Types of Physician and Hospital Utilization Indices.

Physician Utilization	Hospital utilization
Volume of visits- rates of visit, % of population visiting, expenditure on health care.	Volume of use- admissions / discharges, length of stay, expenditure, occupancy rates.
Types of visit- medical, surgical, obstetric.	Type of service- inpatient, outpatient, emergency room.
Type of provider Reasons for visit Location of visit Appointment characteristics	Type of admission- medical, surgical.

Here the Table 1.1 shows that there are some indices in respect of physician utilization and hospital utilization. The indices for physician utilization are rate of visit by physician, percentage of population visiting and expenditure on health care. The indices of hospital utilization are the volume of admission and discharge of patients, length of stay, bed occupancy rate. Type of service that use by the patients either inpatient, outpatient or emergency room, the type of admission is medical or surgical.

Matching Dependent and Independent Variables:

The relationship between use and need changes according to the dependent variables used. To maximize the chances of relationship between use and need, appropriate variables should be matched in a model. Hulka and Wheat (1985) referred to Hershey et al (1975) who demonstrated this by running regression models with five different dependent variables representing utilization: 1) number of doctor visit in a year, 2) sum of doctor visits plus number of nights as a hospital inpatient, 3) number of visits initiated by the patient, 4) whether or not one had seen a doctor in the last year, and 5) whether or not one had a physical examination in the last year.

The relationship between use and need changes according to the dependent variable used, illustrating that measures of health status should be matched to measure of utilization in a conceptually coherent way.

Measuring Hospital Utilization:

There is strong evidence that Health Maintenance Organizations (HMO) are associated with lower rates of hospital utilization. Among 51 paired comparisons of HMO and non-HMO enrollees, 41 HMOs had fewer hospital days per 1000 enrollees than their comparison non-HMOs; 10 HMOs had equal or more hospital days than non-HMOs. In most of the studies HMOs had lower hospital admission rates,but there was not a clear difference on average length of stay. Finding from the publication by Hulka and Wheat (1985) referred to Rand (1984) study reaffirmed the lower hospital admission rates and hospital days per 100 persons among HMO enrollees compared with person receiving fee-for-service care. Hulka and Wheat (1985) referred to Luft's (1978) who reviewed hospital utilization and reported between 1951 to 1975 about measuring.

Irrespective of utilization rate the salary of doctors and staff, cost of drugs, administrative cost and cost for maintenance of buildings and equipments are the same. Due to the lower rate of hospital utilization the cost per patient becomes high. This is an economic loss to the provider.

Financing Medical Care:

Another factor that enables a person to use needed cares is ability to pay. As an example, the major way Americans pay for medical care is insurance. Data from the last 1970's indicate that only 6-13% of the population carried no health insurance coverage, and the other approximately 90% were covered by private and or government plans (Medicaid or Medicare. (Source book of Health insurance, 1981).

On reviewing the relationship between insurance and utilization, first considered are studies that look for the effect of having or not having insurance on use of services. The second group considers how utilization varies with the amount of out-of-pocket expenses via deductibles or coinsurance.

The need of hospital care is an unpredictable issue, if there is health insurance the people can consume the health service at the time of need, otherwise they are to sell their properties to meet the expenses for treatment.

In the context of Bangladesh, the hospital services are free, in the sense that the patients do not pay for the treatment, but the government provides treatment facilities in the public hospitals, and there is no health insurance as yet.

In the hospital there is paucity of drug, laboratory facilities, machineries and the government cannot invest more on it. On the other hand, the people also do not get minimum health care. Since the people are not paying for the service directly or through insurance they do not claim the services as a matter of right.

The government alone cannot run the hospital and the people are not getting minimum treatment facilities due to the lack of resources. So, it is immense need to introduce health insurance at least at the Thana level.

Table 1.2: Selected Studies Showing a Positive Association between Insurance Coverage and Utilization.

Author	Type of insurance	Type of utilization
National data	Medicaid > private insurance or Medicare or self pay	No. of physician visit by persons having a major illness
Adey and Anderson	Medicaid >private insurance >self pay	No.of physician visits % of persons with at least one: a) physician visit b) prevention visit c) hospitalization
Rafferty	Medicare	Average length of stay Hospital admission
Local data Galvin and Fann	Medicare or Medicaid > other type	No.of physician visits
Kronenfeld	Medicaid	No.of ambulatory care visits
Ferguson et al	Medicare	Hospital admissions Average length of stay
Rabin et al	Medicaid > other type	% of persons: a) seeing a doctor within 2 weeks b) who had seen a doctor at least once in a year c)hospitalized one or more in a year No. of hospital days per 100 persons per year

Source : Medical Care, Vol.23, No.5, May 1985.

Table 1.2 shows the hospital utilization measurement, which has mainly two parts of utilization. i) utilization of outpatient and ii) utilization of inpatient. The study is concerned with the utilization of inpatients the following variables we can accept to predict utilization.

i) Admission rate,
ii) Discharge rate
iii) Length of stay
iv) Average length of stay
v) Hospital admission
vi) Number of physician visits or physician spending time per patient

QUALITY OF CARE :

Mokhtar , al- Torkey , and Khalaf (1992), describe factors determining the quality of care. Satisfaction with the physicians was the most important determinant of overall satisfaction, followed by satisfaction with the house keeping and with nurses. Satisfaction with hospital environment, hospital facilities and with admission process were also significant, while satisfaction with food and radiology services do not affect overall satisfaction as well as satisfaction with specific dimensions of hospital services were quite high. Physicians care was the most favorably rated dimension, followed by admission process and housekeeping, while nursing care was the least favorably rated dimension. Among the attributes of physicians and nurses care, technical care, and courtesy were the most favorably related items; while communication, particularly imparting of information was the least favorably rated aspect. Several attributes of the hospital environment and facilities and of food services were found to be dissatisfying to patients.

SATISFACTION :

Satisfaction as an Outcome :

Patients' satisfaction with particular resources of medical care depends on the quality of doctor-patient communication and not solely on fixed individual characteristics, such as social class or education of the patient.

The satisfaction level work were generally low, compared later findings. The dissatisfaction often takes on special significance as a barrier to failure utilization. Reasons frequently given for dissatisfaction were cost, ineffectiveness of treatment . Lack of physician interest and concern and unnecessary x-ray or treatment procedures. Thus satisfaction is seen as a perceived utility of medical services that, in combination with actual cost would determine utilization. Ware et al, had examined behavioral consequences of patients dissatisfaction. This is described by Zastowany, Roghmann and Cafferata,(1989) referred to Ware et al (1984).

Satisfaction as an Input:

Zastowny, Roghmann and Cafferata (1989) referred to Andersons(1985) who studied on utilization of health services of all kinds - hospitals, physicians and dentists including health beliefs as a potential cause of use.

Reciprocal Relationship between Satisfaction and utilization :

The general satisfaction such as utilization of health services of all kind - hospital, physicians, and dentists including health beliefs; the specific satisfaction such as expert knowledge and a general faith in physician, the research describes are not as clearly distinct from each other as they appear here, and they are not at all incompatible with one another. It is quite reasonable to expect that satisfaction begins people to health services, and if the situation is satisfactory, compliance results and satisfaction increases.

Dimensions of Satisfaction :

There are two dimensions of satisfaction i) General satisfaction, which is an overall assessment of physicians and medical care delivered and ii) Specific satisfaction which assesses past experience with a specific source of care.

Regarding satisfaction of hospital care the people have great expectation while the provider has limited resources and facilities to satisfy the patients. Naturally the patients do not get the service up to their expectation. As a result, he / she becomes less satisfied with the service. The greater the expectation the less will be satisfaction level, in other words greater expectation leads satisfaction inversely.

Consumers Satisfaction in Health Maintenance Organization:

The overall satisfaction can be measured by summing the mean rating for those items among the 15 that related to each of the following dimensions. Pope (1978) has computed the dimensions by combining and making average.

1) Technical quality and competence ,
2) Access to the system for routine care,
3) Access to the system of acute need ,
4) Cost in relation to benefit
5) The physician - patient relationship,
6) Patients convenience and comfort.

For example, the three items comprising the physician- patient relationship rating were "personal interest of the doctors", "amount of time doctors give" and "amount of explanation or information provided by the doctors". The separate rating of each of these items were combined and their mean rating used in the overall satisfaction index. Similarly, rating for "appointment lag", "message center" and "time on telephone" were arranged for access to the system for routine care. The

mean of the rating for "getting care in an emergency" and being seen "without having an appointment" provided the rating for access to the system in acute need.

Measurement :

a) Waiting time in hospital
   No waiting
   < 15 minutes
   15 - 30 minutes
   30 minutes - 1 hour
   > 1 hour
   Don't know

b) Time spent with doctor
   < 10 minutes
   10 - 15 minutes
   15 - 30 minutes
   > 30 minutes
   Don't know

Satisfaction, of course, must be considered relative to expectations. The potential for dissatisfaction is less if the consumer's expectations are low. Hence, the probabilities of dissatisfaction are likely to be greater when higher expectations have been created been created. In the context of medical care service, this many mean that any system organized for providing comprehensive services may increase expectations which, in turn, could result in more expressed dissatisfaction.

Further, when the people do say the service is satisfactory, are they saying they are satisfied ? If these people say they are satisfied, are they saying that the care is good, that they really do not expect anything better, or that they have received worse elsewhere.

1.5 Benefits of the Study

This study will:

1) Indicate the need for optimum utilization of services at Thana and District hospitals.

2) Improve quality of care and utilization of resources.

3) Find out the point of intervention to increase utilization of hospital services at Thana hospital and reduce the load of patient at the District hospital.

4) Saving time and transaction cost of the consumer/ patient.

5) Shifting of the patient from District hospital to the Thana health complex, minimize the gap between underutilization at

Thana health complexes and overutilization at the District hospitals.

The thesis is organized in following manner. The background of hospital services in Bangladesh along with description, economic status and structure of hospital services are described in chapter-2. The concept of utilization, demand and supply, overutilization and underutilization are described in chapter-3.The impacts of underutilization and overutilization and the methodology for assessment are described in chapter-4, finally the conclusion and recommendation are presented in chapter-5.