

**The Impact of Structural Adjustment
Programs on The Health Sector in The
Sudan: A Case of Khartoum State**

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1. Introduction

1.1 Background

Sudan is one of those countries which have experienced economic crisis during the period of the 1970s, and has, therefore, resorted to adopting and implementing Stabilisation and Structural Adjustment Programmes.

The significant adjustment endeavours with the IMF dates back to June 1978 and continued till 1986. In 1989, the Government of the Sudan organised the National Conference for Economic Salvation with the objective of restructuring and mobilising the economy, and by 1992 the government had started to restructure and liberalise the economy. The measures adopted in the context of that programme were identical to the standard features of IMF/WB strategies although the programme was self-induced and it was carried out without any foreign assistance. Those programmes have affected the health sector and the health policies in the Sudan.

During the last two decades Sudan's national health policies witnessed a considerable development. There have been commitments by the government to achieve health for all the population by the year 2000. It was committed to realising that goal through the implementation of the Primary Health Care Approach. In 1992 the government framed the Comprehensive National Strategy (CNS) for socio-economic affairs covering the period 1992-2002. Strategies were designed to secure good health services and ensure the well being of the whole population.

However, the implementation of the programme of the CNS has been constrained by many factors, namely; lack of financial resources, shortage of trained human resources for health, and administrative problems resulting from implementation of Federal government law which led to the establishment of 26 states, instead of 9. Many of the new states inherited poor infrastructure for services. So there is a need for establishing new systems of management, logistics, financing, etc.

1.2 Research Problem

As a result of adopting SAPs, government spending allocated for health sector has been significantly reduced, although prior to the implementation of SAPs, this sector was facing a lot of difficulties because of the deterioration in the economic conditions. These difficulties were reflected in insufficient resources allocated for the sector, inefficiency in the utilisation of the resources, unsatisfactory and unequal geographical distribution of health care facilities and personnel, deterioration in the work environment, and the continuous decline in manpower in this sector.

After the implementation of SAPs and the cutback in the government funds for the health sector, the situation started to become severe. The curative health resources witnessed a sharp decline. That deterioration was manifested in the continuous decline in the curative health personnel. The number of general physicians declined by 35% during the period 1990/93, that of medical

assistants by 10%, and that of nurses by 4% during the same period (Muneef, 1996). The serious decline in the number of professional personnel from the service was attributed basically to the deterioration in the living conditions of health workers who were suffering a continuous fall in their real income. The tendency of deterioration was also manifested in the lack of necessary expansion in the number of health care units and facilities needed to meet the increasing demand for health services by the growing population, and even the decline in the number of primary health care units which witnessed an average annual rate of decline of 4.2% during the period 1990/93 (Muneef, 1996).

On the other hand, the government started to change the existing method of funding through the public budget by introducing a system of cost-sharing whereby users are charged for the services. Although it was claimed that the imposition of user charges was to improve the quality of the services provided, it was primarily to offset the decline in the government's budget allocation to the health services and to ensure the sustainability of providing health services through channels other than the government budget. Despite the different titles under which that policy was implemented, its common feature is that the consumer must pay when seeking medical treatment in public health institutions. It is worth mentioning in this respect that no exemptions in payment are made for the poor and the other vulnerable groups, although some compensatory measures were implemented to help the poor who seek treatment in public health care units through provision of "Takaful" and "Zakat" funds support. But the fund was inadequate to meet the increasing demand for such subsidised services, as the number of applicants seeking support was growing as a result of the continuous increase in the cost of health services and the sharp decline in the real income of the people.

Furthermore, adoption of SAPs has led to a regressive effect on the standard of living of the population. According to Ali (1994), the number of poor families was 2.7 million in 1986. By 1994, that number was 3.4 million. Also it was revealed that the percentage of population below the poverty line was 77.8% and 91.41% in 1986 and 1994 respectively. Deterioration in real income, together with the imposition of charges and the cut-back in government spending on health services, added to the existing factors that negatively affected the accessibility of health services to the vulnerable groups and hence their health status.

1.3 Purpose of the Study

This study tries to examine the impact of the macro economic reforms implemented in the context of SAPs, especially the most important part of the sectoral reforms relating to the imposition of user charges, on the health sector and on the health seeking behaviour of individuals in the Sudan.

1.4 Objectives of the Study

The study aims at the following:

- 1- To examine the impact of SAPs on the health care physical facilities and personnel;

- 2- To evaluate the policy of imposing user charges, i.e., "economic treatment programme", and to show to what extent it has achieved its goals;
- 3- To identify people's health-seeking behaviour (utilisation of health services and other forms of care in case of illness), to examine the impact of the cost and quality on the demand for health services, and to assess whether any changes can be detected through time;
- 4- To examine the role and place of the compensatory measures initiated by the government to maintain the accessibility of health services for the vulnerable groups and the extent to which they have achieved their "desirable mitigating effect".

1.5 Significance of the Study

It is believed that changing the funding mechanisms of the health services (like general taxation, cost-sharing systems and insurance) would have serious implications for equity, utilisation, access, efficiency and quality in the health care system. Therefore, there is an urgent need to study the implications of these changes, which have been introduced in the health service system in the Sudan. Thus, the result of this study will be helpful to policy makers as well as to the general public.

1.6 Research Hypothesis

The study hypothesises that:

- 1- The implementation of SAPs in the Sudan has significantly contributed to the deterioration of the health services provided by the public health institutions in terms of quantity and quality.
- 2- Access to health services has been negatively affected by the implementation of the SAPs.
- 3- The compensatory measures adopted to overcome the negative impacts of SAPs on the vulnerable groups in their demand for health services are not adequate to ensure their access to health services at the required standards.

1.7 Research Methodology

1.7.1 Research Setting

The study was carried out in Greater Khartoum because of the concentration of health care facilities and personnel there. In this respect, Khartoum Teaching Hospital (KTH) and Omdurman Teaching Hospital (OTH) have been the major sources for our primary data since they represent two of the largest hospitals in the country. Another consideration

is that their location in an urban area implies favourable working conditions in their service delivery. Hence, the results obtained from them would be very indicative of the degree and magnitude of the overall impact on urban and rural health institutions.

1.7.2 Data Sources and Types

Both primary and secondary data are used in the study. Secondary-documented data has been collected from books, papers, reports and other official documents.

The secondary sources are expected to give statistical data on:

- The ratio of doctors and other assisting medical cadre to the total number of population;
- In-patient and out-patient attendance;
- Health services facilities including hospitals, beds, and health centres.

1.7.3 Study Population

The study population consists of the following groups:

- 1) Patients, both in-patients and out-patients;
- 2) Health professions like doctors and nurses;
- 3) Administrative staff and other key informants.

1.7.4 Data Collection Techniques

Primary data has been obtained using a core questionnaire with patients.

The major items in the questionnaire are: -

- Social and economic background of the patient;
- Fee for service and exemption policies;
- Costs incurred in seeking treatment; subsidies received if any.
- Ability and willingness to pay for health services;
- Household coping strategies in case of major expense;

- The alternatives of the patient in seeking treatment
- Services needed and level of satisfaction.

Also interviews have been carried out with doctors, nurses, administrative staff and other key informants to investigate their experiences with service delivery and constraints to utilisation of services, and to determine strategies needed to deal with these issues. In addition, observations have also been utilised as a tool for investigating the situation in the health institutions.

1.7.5 Sampling, Size and Methods

The stratified simple random sample has been employed with patients taking into consideration the difference in economic and social conditions of the patients and the variations in the type of treatment sought in the hospital. The sample size is 145 patients, 61 of whom are out-patients while the remaining 84 are in-patients. Because it is difficult to find a specific frame for population size in the hospital as a result of fluctuations in the inflow and outflow of the patients, the questionnaire was filled by the patients in the two hospitals within fifteen days, selecting an average of 10 patients every day. As for the staff working in the hospitals (including nurses, general doctors, consultants, specialists, and senior managers), the selection has been done according to the number of years of work in the health sector since we had to carry out our investigation with those who have been working during the period before and after the implementation of SAPs.

1.7.6 Methods of Data Analysis

In analysing the secondary data obtained on the impact of SAPs on the health sector, the study has adopted the "practical approach". This approach measures performance by comparing the results of the situation that prevailed in the health sector prior to the introduction of the policy measures with the results that have been obtained after introduction of the policy measures. This approach is known in the literature as "before and after approach", and it is the most widely used method of policy evaluation. We have taken the period from 1985-1989 as the "before" period and the period 1989-1995 as the "after" period. The period 1985-1995 was chosen because it had witnessed the bravest attempts at a full-fledged implementation of adjustment policies in the Sudan. However, because of unavailability of data sometimes which covers the last two years we had to be satisfied with the available data. Primary data obtained through the employment of the questionnaire was analysed using Statistical Package for Social Sciences (SPSS).

1.7.7 Report Contents

The report is divided into five chapters. Chapter One is an introductory one that offers the framework for the study. Chapter Two reviews the literature on structural adjustment programmes and health. The third chapter examines the

impact of SAPs on the health care facilities and personnel in the Sudan. In Chapter Four we discuss the impact of SAPs on the access to health services. Chapter Five provides the summary and concluding remarks.

2. Structural Adjustment and The Health Sector

2.1 Introduction

This chapter reviews the literature relevant to our study. It is worth mentioning in this respect that the available literature is rather small, particularly in the case of Sudan. This is so because the experience of the health sector in the Sudan with the liberalisation policies is very recent. Hence, the direct impact of implementing SAPs on the health sector became apparent after the implementation of the user fees system in 1992, the year that witnessed the full liberalisation of the economy.

2.2 Structural Adjustment and Stabilisation Programmes

The World Bank (1990) defines stabilisation and structural adjustment programmes as follows:

"Stabilisation: policies (generally relying on demand management) to achieve sustainable fiscal and balance of payments current account deficits and to reduce the rate of price inflation.

Structural Adjustment: reforms of policies and institutions covering micro-economic (such as taxes and tariffs), macro-economic (fiscal policy), and institutional interventions; these changes are designed to improve resource allocation, increase economic efficiency, expand growth potential, and increase resilience to shocks.

Adjustment: policies to achieve internal and external balance and changes in the structure of incentives and institutions, or both; where the emphasis is on the former, it can be identified as stabilisation, where on the latter, as structural adjustment".

The components of structural adjustment programmes are divided into three sets of policies.

- 1) *Expenditure-reducing:* policies (demand management policies) aimed at reducing aggregate demand components with the objective of reducing budgetary deficit and the deficit in the external balance.

- 2) *Expenditure-switching policies:* policies aimed at moving productive resources from non-tradable goods sector and from consumption to investment. Expenditure-switching policies consist of a set of policies in the areas of exchange rate (devaluation, import control, tariff, . . etc.), trade intervention, taxes, product pricing, and policies to enhance factor mobility)

3) *Institutional and policy reforms*: such as trade liberalisation, reduced role of state in the economy, fiscal reform, privatisation, reform of the financial market, reduced exchange control, price reform, etc. (UNICEF, 1987).

Structural adjustment programmes as prescribed for the LDCs are characterised by some basic features. Firstly, they are typical in their context. Secondly, they are comprehensive, covering all areas. Thirdly, they are basically demand management policies that are contractionary by nature.

It is worth mentioning in this respect that SAPs are usually monitored on the basis of limited sets of macro-economic variables (such as the rate of price inflation, the budgetary deficit, etc.), and no adequate consideration or even no attention is given to the performance of welfare variables like the income of the poor and the rates of malnutrition.

Structural adjustment programmes were started in 1980 by the World Bank, while stabilisation programmes have been implemented by the IMF for the LDCs since 1975. In Sudan, those programmes have been implemented since 1978. The objective of stabilisation programmes is to preserve internal and external balances of the economy. A country's balance of payments runs into a deficit when its out-flows are inconsistent with the production ability of the country and the normal flow of aid.

The IMF provides conditional loans, and divides the payment into tranche. The major conditions of the IMF are:

Devaluation: IMF requires the deficit country to devalue its currency with the objective of encouraging exports and reducing imports. This is because exports are thought to be positively correlated with the exchange rate, while imports have a negative correlation with the exchange rate.

$$X(e) > 0; M(e) < 0$$

(where X = exports M = imports e = exchange rate)

The IMF also calls for liberalisation of external trade. In addition, the Fund calls for reducing aggregate demand variables (consumption, investment, government, and expenditure). Consumption is reduced by increasing taxation, while investment demand is reduced by raising interest rates. In addition, government spending on goods and services should also be reduced, and usually health and education are the services most affected by the cutback in government spending.

SAPs are concerned with restoring growth and efficiency in the context of a stabilised economy. Prior to 1980 financing by the WB focused on projects, which was a very long duration loan concentrated on infrastructural projects. In 1980 the WB changed the emphasis from project finance to structural adjustment programmes whereby there is a quick dispersing lending to avoid balance of payment deficit and to enable the adjusting countries to meet their debt obligations.

Some of the general features of SAPs are that it has macro economic components identical with the IMF analysis and policies and it has institutional reforms taking care of the supply side of the economy such as liberalisation of internal trade, reducing the role of the state in the economy, reforming public enterprise sector.

2.3 Operational Definitions

The terms stated below are used in the research to denote the following:

Health: covers public expenditure on hospitals, maternity and dental centres, and clinics with major medical components, and national health schemes.

Cost- Effective Service Approach (in health service): the net gain in health care or reduction in disease burden from a health intervention in relation to cost.

Population-based Health Services: services such as immunisation, which are directed towards all members as well as to specific population sub-groups.

Tertiary Care Facility: a hospital or other facility that offers a specialised, high level health care for the population of a large region. Its characteristics include specialised intensive care units, advanced diagnostic support services, and highly specialised personnel (Fredric, 1980).

2.4 General Models of Health Service Utilisation

There are a lot of models concerned with the utilisation of health services. Therefore, it is difficult to discuss every model in a detailed manner. Consequently, the different models are discussed after classifying them into seven categories according to the type of variables used as determinants of health services utilisation (Wolinsky, 1980).

Here we provide a brief exposition of different variables used in each category of these models.

Demographic Models: In these models the variables used as determinants of health services utilisation are age, sex, marital status, and family size. But the nature of the relationship between these variables and the utilisation of health services needs to be studied and explained.

Social Structural Models: Here the variables used are education, occupation and ethnicity.

Social Psychological Models: In these models the variables typically used are divided into four categories. These are the perceived susceptibility to the illness, the perceived seriousness of the illness, the expected benefit from taking action in the face of illness and the cues that trigger the individual's action. The major shortcomings of these models are that they assume a direct relation between attitudes, belief, and behaviour, which has yet to be examined.

Family Resource Models: The variables typically used in this model are family income, health insurance coverage, and having a regular source of health care.

Community Resource Models: These models use the following variables: the supply of health services and resources in the community, accessibility of the available health services in the community, and the rural-versus-suburban-versus urban character of the community.

Organisational Models: In these models the variables used represent different forms of a health delivery system. The variables used are the style of medical practice, the nature of the delivery system, the site of the service utilisation, and the health workers.

2.5 Andersen's Generic Behavioural Model

It is obvious that the above-mentioned models are not mutually exclusive, as individual decision regarding utilisation of health care facilities may be affected by the different variables stated in the six models. Therefore, it was found necessary to establish a model that is able to incorporate the variables used in the preceding models. The most widely adopted and empirically used model of health utilisation is Andersen's generic behavioural model (1968). This model has been expanded by Aday and Andersen (1974/75) as a complete health system model. According to the original model of Andersen, an individual's decision was determined by three sets of health service utilisation determinant. They are predisposing characteristics, enabling characteristics, and need characteristics.

Enabling characteristics are classified into three groups: demographic (such as age and sex), social structural (such as education, occupation, and ethnicity), health belief (such as the belief in the benefit that an individual may gain from the treatment).

Enabling characteristics indicate the fact that the individual may be disposing of, but he may not be able to utilise, the health service. The individual's ability is determined by his or her income, place of residence and community (availability of health care facilities) resources.

Need characteristics may be divided into two categories: perceived (subjective assessment) and evaluated (clinical diagnosis). So the individual should perceive some need (such as the perceived threat of illness) for utilising health service.

2.6 Some Conceptual Considerations

When conducting a study that deals with the impact of SAPs on the health status and health services, we can assess the changes that may occur from adopting such policies through two different types of indicators: those relating to process and those relating to outcome. Although both types of indicators are important, they have distinctly different characteristics, particularly in respect of ease of interpretation. In general it is easier to attribute causality to process indicators, whilst outcome indicators are more likely to be influenced by a number of factors, along the impact of economic changes.

Another point that we have to consider is that changes experienced in the health services after implementing SAPs are likely to be followed immediately by changes in process indicators (like varying utilisation of services). Those changes are likely to be followed in the medium to long-term by changes in outcome indicators, relating to patterns of morbidity and mortality, and

changes in nutritional status. Also we may observe additional process indicators in the longer term, like change in the quality and quantity of health services provision, public expenditure cuts, reduction in manpower levels, frequent absenteeism, low level of productivity, and access to recurrent funds and thus overall service delivery capacity (Sander, et al. 1995).

Changes in certain indicators which may be used to monitor trends accompanying SAPs in relation to health and health services may thus take considerable time to become apparent. Moreover, some indicators, both of process and outcome, may well be subject to seasonal variations. For example, disease incidence, which affects health utilisation, is influenced in some cases by climatic factors, e.g. Malaria.

2.7 Structural Adjustment and Health

Much of the literature recording declines in both health and its outcomes in adjusting countries is published through the UNICEF (e.g. Cornia, Jolly, and Stewart, 1987 and 1988). An in-depth analysis for ten countries was carried out to investigate the complex relationship between economic adjustment, health status and welfare of the vulnerable groups. Some of those countries have not managed to protect the vulnerable during the period of adjustment. Examples of such countries were Sri Lanka and Jamaica.

Adjustment policies in Sri Lanka were introduced in 1977. As a result of the implementation of those policies, expenditure in the social sector fell from (33%) in 1977 to (22%) of the budget in 1983. Both health and education suffered from the shortage of funds. Declining real incomes led to staff shortages in the public sector. In the health sector, doctors were permitted to combine public and private practices and as a result the quality of service provided declined. Also, expenditure on drugs increased as a result of the end of the monopoly of the State Pharmaceutical Corporation.

In Jamaica, SAPs adopted in the 1980s caused declining incomes, rising food prices and a significant cut in government spending on social services. Health expenditure per-head of the population aged 0-14 declined by (33%) and on education by (40%). The expenditure cut led, in addition to the decline of the real income of staff, to shortage of recurrent inputs, and neglect of repair and maintenance. Some hospitals and clinics were downgraded and user charges were imposed on the consumption of health services.

It was found that the poorest segments of the society were the most exposed. This exposure was most observed in the family income, a large proportion of which is spent on food, medicine, etc. Thus, any decline in income is expected to threaten not material progress but the ability to maintain health and life. In such a situation, the high risk group is children. On welfare cut-backs, UNICEF (1987) noted that social welfare programmes and those particularly for children are usually not protected by powerful income groups. The children generally suffer quickly and disproportionately from any cut-back in government expenditure devoted to welfare programmes. Based on this type of analysis, i.e. multiplier effect type, the UNICEF stated that economic adjustment policies should be undertaken in ways which protect vulnerable groups like children and the poor. This implies that the maintenance of basic services, minimum levels of

nutrition, health, education, and household incomes are, therefore, the first and the most important line of defence of children (UNICEF, 1987).

Despite the significant role played by the UNICEF to draw attention to the social dimension of adjustment through its publications, its recommendations for 'protecting the vulnerable' were considered as being inadequate given the scale and duration of the economic crisis. As was argued by Kanji (1992):

"Within the adjustment, costs for social reproduction have been further shifted into women making their burden intolerable, with dire consequences for their own and their children's health. To then call for 'targeting' women and children implies addressing the needs of approximately 75% of the population - a patently absurd use of the word targeting. Small wonder that WB officials have shown irritation at the inability of experts to reduce the 'vulnerable population' to 'targetable' proportions."

One of the most important studies conducted in the field of the health services is the study by Muneef (1996), who traced the impact of economic liberalisation on health in the Sudan using secondary data from the records of the Ministry of Health and Ministry of Finance and by applying three categories of indicators: input, output, and outcome indicators. Input indicators constitute per capita GDP, government expenditure, employment, inflation and income distribution. Process indicators consist of private health services, curative health resource (health facilities and health personnel), environmental and public health resources, and availability of food and medicines. Outcome indicators consist of patterns of morbidity and mortality and malnutrition. According to the study the year that witnessed the highest GDP growth was the year that witnessed the lowest actual GDP per capita expenditure on health. However, the three categories of indicators show a negative trend during the period that witnessed the full liberalisation of the economy.

Our study is based only on secondary data obtained from the records of the Ministry of Health and hospitals. It is hoped that it would fill the gap that exists in the studies that are carried out in the field of health sector, particularly those studies concerned with the impact of SAPs on health, by shedding light on the impact of SAPs on the demand for health services.

The World Bank's Development Report (WDR) 1993, does not explicitly deny a relationship between the "economic environment" and health. Indeed, it is actually claimed that since adjustment is extensive with improvement in the "economic environment" (policies are not distinguished from outcome), it helps to promote good health (WB, 1993:8). However, the main factor affecting health is the nature of government health interventions. The bulk of the Report is devoted to arguing that in developing countries at least, these have been fundamentally misconceived. Funds have been "misallocated" to high cost treatment (like surgery for disease) and the limited facilities (like sophisticated public tertiary care hospitals). So health budgets and facilities have been inefficiently managed.

More efficient providers, notably in the private sector, have meanwhile had their participation restricted.

According to the Report, the answer to these difficulties is a ratification of health policies. Investment should be concentrated in the most cost-effective interventions, namely, immunisation, school-based health services, information and selected services for family planning and nutrition, control of addictive substance medicines and prevention of AIDS. However, improvement in income distribution should be considered because of the negative distributive impact of SAPs, which may not only worsen the living conditions of the population but may also threaten their survival. So there should be strong measures to curb the negative impacts of SAPs on the lower income groups who bear the burden of economic adjustment.

Peng and Hill (1993) wrote an essay on the role of government policies outside health sector, particularly those affecting economic growth, income distribution, and education on the health status of the people. The authors provided an evidence on the relation between the health status of the people, their per-capita income and education. Throughout the century life expectancy and per-capita income have been strongly correlated. The higher the per-capita income is, the longer the life expectancy. However, the level of income has more effect on the poor, as additional resources are used by the poor to obtain basic necessities, particularly food and shelter, that produce significant health benefits.

The important point raised by the authors is that not only high per-capita income but also rather fair distribution of income is necessary for improving health. The negative effect of poverty (unequal distribution of wealth) on health can be observed in the differences of health status between rich and poor families even within the same city. For example, in Maduri in India, children aged 2-9 years in the poorest households were more than twice as likely to suffer from serious physical or mental disabilities as do children from only marginally better-off families.

Educated people were found to be enjoying better health whether they are adult or children. This is because the educated are usually able to have better choices to improve their health.

The authors said that central government spending on health in adjusting countries had not been negatively affected as in elsewhere. Despite that, evidence from sub-Saharan Africa and Latin America shows that in the short-run economic depression associated with adjustment programmes hinders the progress of health services.

Chinewana and Sanders (1993) contributed to the debate concerned with the decline in health status by arguing that:

"Historical and contemporary experience have shown that there is a definite but complex relationship between economic growth and.. health status.. In general, sustained economic growth over the long-run does lead to improvement in health and health status. In the new industrialised countries the large and sustained decline in mortality was accompanied by reduction in morbidity (disease) and malnutrition and largely preceded any effective medical intervention... There is no however direct correlation between health and nutrition indicators and GDP per capita level, because improved income distribution even at low level can accelerate improvement in health as shown, e.g., in Sri Lanka and China" (1993:307).

2.8 User Fees in Health Services

One of the most important sectoral policies implemented in the field of the health sector in the context of the SAPs is the policy of financing health services through the imposition of user charges. Here we are going to review some of the studies that were conducted in some of the Sub-Saharan African countries to show their experience with this policy.

One of the important objectives of charging user fees is the mobilisation of revenues. Out of 27 countries in Sub-Saharan Africa adopting some kind of national system of cost-sharing, it was found that about one-third of those countries look to the user fees revenue as a primary goal. The two-thirds put the emphasis on the goals of improving primary health services such as staff incentive or drug availability as their primary objective.

Another objective of imposing the cost-sharing system is the promotion of efficiency. Charging user fees is believed to improve the performance of the referral system by sending the appropriate (price signals) and, therefore, restoring efficiency in health care delivery. As a first point of contact the consumer would seek the treatment at a lower level facility such as a health centre where the cost of service is relatively low. If the consumer is in need of a standard of treatment beyond the capacity of the health centre, trained health staff are responsible for referring him to a "first referral hospital" where treatment and personnel are more specialised and costly.

Also charging user fees is intended to realise equity. This is based on the assumption that demand for health services is a demand for goods, i.e., it increases with increase in income and decreases with decrease in income. Therefore, people with higher incomes are more able and willing to pay for costly services, and by charging those people we can subsidise those who are not able to pay. This will happen under the assumption that rich people use private fee-charging facilities, and the poor depend basically on free or heavily subsidised government providers.

Decentralisation and sustainability are added to the objectives of charging user fees. This means that there could be a control over money, health system inputs, local monitoring and evaluation, and responsiveness of local needs.

Decentralisation can be achieved through rationalising the referral system with price signals. Charging user fees will make people patronise district-based facilities. Also, such cost-sharing can help free up government revenues to be reallocated to district and community-level primary health care. In addition, decentralisation can also be achieved by allowing retention of fees at the point of collection. Control over budget and expenditure can be partially shifted from central government level to district-level.

Sustainability of drug supplies could be achieved through local level resource mobilisation. "Drug revolving fund" is a famous form of community financing, where the government or donors donate the initial stock of drugs and revenues from sales of drugs are then used to replenish the diminishing stock. This system involves:

- i) An initial stock of drugs donated by the community, government, or other donor;
- ii) Sales of drugs to the community members;
- iii) Pricing for the full recovery of drug supply cost, and
- iv) Use of sales revenue to replace stocks and finance other operating and distribution cost.

This system of Revolving Fund operates in SSA countries, and Sudan is one of those countries.

The last objective of the fee-charging system is to encourage private sector development. Private health care facility can hardly compete when the price of medical care at public health facilities is zero or extremely low. Therefore, free service at government health facilities undermines the efficiency in the health sector as a whole.

There is a need to distinguish between sources of financing (e.g. government, private, or external sources) and payment mechanisms (e.g. fee for service, case payment, salary, etc.). Any change in the sources of financing or payment mechanism can affect incentives and disincentives within the health care system and may lead to distorting impact on equity, access, use, efficiency, and equality. In the poor countries where economic conditions do not allow their governments to finance health services, user charges, even those partially adopted, were found to be necessary. Also, the importance of reallocation of user-fee revenues at the district level is recognised. In order to reduce the adverse effect of levying charges on the poor there is a need for implementing workable exemption policies (WHO, 1994).

Although the objectives of imposing user fees seem to be glorious, in practice they may not be so. The true motives behind imposing user fees on health services is to secure finance for those services as a result of the withdrawal of the government from providing the financial support for the social services in order to minimise the deficit in the internal balance. This is done as part of the prescription of the IMF/WB to achieve financial stability in the economy, the first step towards implementing SAPs.

An important concern of the author regarding the implementation of user charges in SSA is that rising prices of health services will lead to a reduction in demand for such services thereby causing the decline in total revenue earned unless demand falls at a lower rate than that of the price rise. Also, a related concern is that the fall in demand can be higher among poor people as the incidence of price change tends to be significant where household incomes are low. However, there is a possibility that prices are less important to clients than cost of travel, including opportunity costs forgone such as lost earning. Also there is a possibility that the negative impact of charging user fees on utilisation can be offset by improving the quality of health services.

An assessment the impact of increased user fees on utilisation of health services was made in Lesotho. The main objectives of imposing fees on health services in Lesotho were to recover a larger share of the costs of health care without greatly reducing access to out-patient care, and to induce a shift in the demand from hospitals to health centres and eliminate excessive demand on high levels of the referral system.

The study analysed trends in out-patient consultations in two districts. Statistics are obtained from reported symptoms collected by the health facilities with the objective of analysing trends beginning at least 12 months before implementation of fee charges and at least 12 months afterward. However, the author noted that there were two shortcomings regarding the database. The first limitation was the inadequacy of the information obtained about the users of health care facilities. The second limitation was that the study did not control other factors influencing utilisation of health services such as socio-economic characteristics of the client, income, quality of service, etc. Despite these limitations the study was able to provide documented evidence that out-patient attendance at the two districts where the study was conducted had been declining as a result of rising charges of increasing fees. Furthermore, there was no evidence that the referral system had witnessed any improvement.

It was observed that there were some other factors, including the price of service, which affected the demand for health services in Lesotho. These factors were:

a) *Socio-economic characteristics*: Characteristics of household can be very influential factors affecting household demand for service, specifically patient gender, education, and income.

b) *Prevailing health problems*: Demand for health care may also be influenced by changes in morbidity and mortality patterns caused by epidemic or seasonal variations.

c) *Price of medical care*: Changes in the price of the service offered by one of several providers cause changes in the demand for other providers' service (substitution effect).

d) *Travel and time cost*: The greatest cost incurred by the patient when seeking treatment might not necessarily be the fee paid for the service; sometimes travel cost and time spent by the patient waiting for the treatment may cost the patient more than any other service.

e) *Quality of service*: Utilisation of health service is also influenced by the perception of the consumer about the quality of service provided. Indicators of quality of care include supply of drug and equipment, the number and type of health care providers, the attitude and friendliness of medical staff, the type of treatment provided, and the amount of medicine prescribed. Besides that, closing of particular services that were in demand, and change in services personnel were found to have some influence upon the demand for the service.

The shortcoming of this study is that it did not control the variables other than fees imposed on medical services when examining the utilisation of health services. Utilisation of health services is influenced by a set of factors that work together to shape the individual's health seeking behaviour. Therefore, we cannot provide a rigorous evidence on the relation between the imposition of user charges and the weak utilisation of health services without considering the whole set of variables that influenced the individual's decision.

Mwabu *et. al* (1995) conducted a study to examine the impact of pricing health service on the quality, availability and utilisation of health services in rural Kenya. The study used multivariate statistical analysis with controlled variables. Data for the study was obtained from a rural district. Two types of data were used: data from population-based survey on the use of health service, and data from a survey of health facilities, service fees, condition of work and equipment, personnel, and drug availability.

Four dependent variables were used to measure the utilisation of health services, where the individual is expected to seek treatment in a government health facility, mission health facility, private clinic, or self-treatment.

Explanatory variables are divided into three categories:

a) Access variables; these include user charges and distance to facility;

b) Facility-specific quality variables which include number of different types of drugs available and number of health workers in the facilities;

c) Individual and household variables: these comprise education of household, household income, and gender composition of household.

It is found that household income has a strong positive correlation with the utilisation of a health facility. Also educated people, as expected, tend to seek treatment at government health facilities rather than self-treatment, while user fees and distance are found to be negatively correlated with the usage of health facilities. Despite the very small elasticity of demand, minor fees of K.sh 10 led to a relatively large (18%) decline in demand for public health facilities. As for the quality of service, the relation between drug availability and the utilisation of the service is positive, but it is not statistically significant.

Unlike the study conducted in Lesotho, this study considered a set of variables that influence the individual's utilisation of health services together with the user fees. The merit of this study is that it gives us a wider vision of the situation as to the importance of different factors. This may be more beneficial for policy formulation.

2.9 User Fees Projection Scheme in Southern Sudan

Shwabe (1987) made a projection for the potentiality of user fees to finance primary health services in Southern Sudan. The researcher made use of the Juba Household Expenditure Survey of 1986. The revenue potential from alternative user fees scheme within the Primary Health Care Programme suggested simulation for 6 cost recovery plans. The first plan suggests using a full-cost recovery model, which seeks generation of revenues sufficient for funding total recurrent cost for dispensaries and primary health care units. The second plan was designed to generate revenues sufficient to cover the cost of drugs and salaries alone. The third plan was expected to generate revenues that cover just the cost of drugs. The fourth, fifth, and sixth plans were generating revenues that cover 80% and 30% of drug cost respectively.

Some basic principles have been followed in the design of different user fees plans. The first principle is that user fees should only be applied to those medical services that give benefits exclusively to the individual recipient of the service. In addition, user fees should not be applied on those who are not able to pay. Securing administrative simplicity in the implementation of user fees schemes is one of the principles considered in the design of user fees scheme. The last principle is that charges should be set according to the willingness of individuals to pay.

The researcher argued that the policy of free health care had negatively affected the ability of the government to provide even a minimally acceptable quantity of

services and stimulated the existence of unofficial price and non-price rationing mechanisms. Higher income groups gained preferential access to limited public health services, and private health care expenditure by the poor increased causing reduction in disposable income necessary for buying other essential goods and services. Finally, the author asserted that user fees schemes would fail unless the political authority channel a substantial proportion of the revenues collected towards expenditure on recurrent inputs for the health care system.

However, as the plan for imposing user fees in the Southern State was not put into action, one cannot pass judgement on its failure or success, but we see it as the basis on which revenues should be collected. The plan also involved some exemptions for those who were not able to pay (the issue was ignored by the current user fees system). It would have been very useful for the designers of the current user fees system if they were able to benefit from that plan for those reasons.

3. Impact of SAPs on Health Care Facilities and Personnel

3.1 Introduction

Health services in the Sudan are provided by both private and public sectors. The Federal Ministry of Health (FMOH) is the main provider of health services beside Army Medical Services and Police Medical Services. As for the private sector, health services are provided through the considerably increasing number of private hospitals and clinics concentrated mainly in Khartoum.

Prior to the 1990s, health services were provided mostly free of charge, though some minor fees were collected. Drugs financing was the responsibility of the government, and the source of finance for drugs was the tax system. Therefore, the government provided the bulk of the financial resources to the health services. In addition to that, external aid also represented a vital element of finance for the health sector through provision of different types of drugs, equipment, and infrastructure facilities. Unfortunately, accurate data on the size of foreign aid is not available, but recently this type of aid became very limited in line with the declining trend of the overall volume of foreign aid.

3.2 Government Expenditure on Health Services under SAPs

After adopting the major structural economic reforms in 1992 under the name of "liberalisation policies", government spending on health services was significantly reduced and new financing mechanisms based on user fees were introduced. It was difficult to assess those changes that occurred in government allocations to health services because of the implementation of the Federal

Government Act of 1993, under which some of the financial and executive authorities were transferred to the newly established 26 states. In addition, there were difficulties in obtaining the actual figures on health expenditure as it usually differed from what had been approved. Despite these difficulties (Muneef, 1996) showed that actual per capita government spending on health had been significantly reduced from L.s 1.4 in 1986/87 to L.s 0.24 in 1993/94 although per capita GDP level attained in 1993/94 was greater than that of 1986/87 by 21.6%. Therefore, the curtailment of government allocation to health on the basis of resource limitation was unjustifiable; rather it was a consequence of the liberalisation.

In fact curtailment of government spending on health was one of the measures implemented in the context of the standard IMF/WB prescription with the objective of reducing the budgetary deficit through removal of subsidies and the cuts in expenditure on social services. Despite this objective, political priorities and considerations have played an important role in squeezing the budget allocation to public health services. The war in Southern Sudan, militarisation of the society, and termination of foreign aid due to prevalent political and trends are among the main factors that widened the budgetary deficit and led to the deprivation of resources needed by the health sector.

3.3 User Fees in Sudanese Health Service System

In November 1990, the Seminar for Salvation of Health Institutions was held. The most important outcome of that seminar was the change from the system of free health services to a new system of cost-sharing that makes the citizens share the cost of providing health services. The seminar called for the adoption of the following measures:

- 1- Development of different channels of revenues using the "self-help system", by increasing its fees, legalising it and extending it to surgical operations and visitors;
- 2- Economising expenditure from revenues of the "self-help system" and the determination of specific items for expenditure;
- 3- Establishment of a printing unit to produce tickets needed for the collection of revenues from the "self-help system".

In 1992, the programme of "Economical Treatment" was applied in some health centres in Khartoum. The main feature of that programme was that citizens seeking treatment at the health units should pay some fees for all the services provided (admission fees, diagnosis fees, etc.). The fees paid were higher than those charged at the public hospitals, but they were less than the prevailing charge rates in the private clinics. The programme was followed by that of "promotion of health services". According to the designers of that programme, the main causes

of deterioration of health services provided by public hospitals were low budgets allocated for hospitals and administrative ineptitude. As a result it was decided that all citizens should pay for all types of health services provided in all public health institutions. The objectives of charging those fees were as follows:

- 1- To close the deficit in the budgets of the public hospitals;
- 2- To harmonise the cost of hospital administration with actual budget allocations in order to ensure the sustainability of providing adequate services;
- 3- To introduce the system of properly remunerating workers as a part of the reform of administrative deficiencies.

The programme put into consideration those who could not afford the fees charged and therefore it was recommended that part of the revenues collected should be allocated to support the endeavours of "Zakat Fund" to subsidise the poor segment of medical care seekers.

In 1996 the federal government declared that medical services provided to emergency cases should be delivered freely for the first 24 hours spent in the public hospital emergency units. Drugs and other medical supplies for this purpose should be financed directly by the Federal Ministry of Finance. However, the implementation of the programme was hindered by the unavailability of adequate funds as the programme was found to be extremely costly.

The changes introduced in the financing and payment mechanisms would have serious implications for equity, utilisation, access, efficiency and quality in the health care system. We will discuss these implications by examining the impact of those policies on health care facilities, personnel and individuals.

3.4 Impact on Health Care Facilities

One of the structural problems inherited in the health care services system in the Sudan is the uneven distribution of health care facilities between different regions in the country. A clear illustration of this situation is given in Table 3.1. Khartoum's Central and Northern region are the most privileged regarding the number of health care facilities while other regions are far behind them. This situation has negative implications on equity and efficiency, particularly when considering additional access factors in a country like the Sudan, which has an area of 1 million square miles and where the means of communication are not adequate and increasingly costly.

To deploy health care facilities in an equitable manner, the government needs to allocate a considerable amount of financial resources towards establishing new health facilities in the neglected areas. Unfortunately, this cannot be done under the prevailing patterns of government expenditure. Besides that, allocations for

such purposes are usually financed from the development budget, which has been severely affected by the continuous decline in foreign aid, and the other competing priorities mentioned before.

Table 3.1: Distribution of Health Facilities, 1993 (No. of Facilities per 100, 000 Population)

Region	1993 Population	Hosp. 37	Spec. 25	Hosp. 4,339	Health Centres 70	Dispens. 141	Dressing Stations 84	PHC Units 57
		(1.1)	(127.1)	(2.1)	(4.1)	(2.5)	(1.7)	
Central	5,416,323	59	15	4,948	172	374	778	445
		(1.1)	(19.4)	(3.2)	(6.9)	(14.4)	(8.2)	
Northern	1,291,520	36	8	2,396	122	211	162	153
		(2.8)	(185.5)	(9.4)	(16.3)	(12.5)	(11.8)	
Eastern	3,051,958	22	6	2,685	43	162	160	418
		(0.7)	(88.0)	(1.4)	(5.3)	(5.2)	(13.7)	
Kordofan	3,165,802	26	5	2,227	34	172	130	924
		(0.8)	(70.3)	(1.1)	(5.4)	(4.1)	(29.2)	
Darfur	4,746,456	16	5	1,380	25	123	35	654
		(0.3)	(29.1)	(0.5)	(2.6)	(0.7)	(13.8)	
Equator.	1,150,222	16	2	-	7	68	39	238
		(0.3)			(0.6)	(5.9)	(3.4)	(20.7)
Bahr El	1,913,264	9	1	-	2	55	-	41
		(0.8)			(0.2)	(4.6)		(3.4)
Ghazal Upper	1,258,320	7	1	-	2	40	-	83
		(0.6)			(0.2)	(3.2)		(6.6)
Nile Sudan	25,406,981	228	68	21,024	477	1,346	1,388	3,013
		(0.9)	(82.7)	(1.9)	(5.3)	(5.5)	(11.9)	

Source: FMOH, Health Information Centre, 1995.

Table 3.2 shows that there was no significant increase made in the number of hospital and in-patient beds during the period 1985-1993. The only significant expansion was in the number of specialist hospitals (by 43.8%). However, the incidence of those types of hospitals was limited as they were concentrated in Khartoum and provided a limited range of medical services. Despite the important role of the primary health care facilities in extending health services to remote rural areas and in rationalising the use of hospitals, and despite the rise in demand for their services due to the rapid population growth, there was no significant increase in the number of PHC facilities. The negative trend in the number of dressing stations and PHCUs may be due to upgrading of the facilities, reporting errors, termination of facility's service due to population movement (UNICEF, 1996).

Shortage of finance also had adverse impacts on the existing health care facilities, which suffer from lack of essential maintenance, poor infrastructure, and shortage of drugs and other medical supplies. This fact has been confirmed by some leading staff at Omdurman and Khartoum teaching hospitals. According to these officials, financial difficulties were caused by insufficiency of the revenue collected from drug sales and other medication fees due to the inability of the low income people to pay for these. Furthermore, hospital administrators face a lot of difficulties in getting their budget approved by the Ministry of Finance, and what they actually get in most cases is far below what had actually been approved.

Table 3.2:Some Health Care Facilities (1985 - 1993)

Yr.	Special. Hospitals		In-patient Beds				Health Centre		Dispen.		Dressing Station		PHCUs	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
85	13	-	133	-	18594	-	288	-	977	-	1291	-	2725	-
86	13	0.0	136	2.3	18571	-0.1	307	6.6	989	1.2	1226	-5.0	2709	-0.6
87	16	23.1	140	3.0	18716	0.8	330	7.5	1145	18.8	1205	-1.6	3080	13.7
88	19	18.8	139	-0.7	19094	2.0	392	18.8	1202	4.9	1265	5.0	3099	0.6
89	19	0.0	151	8.6	19252	0.8	339	1.8	1224	1.8	1259	-0.5	3211	3.6
90	19	0.0	194	28.5	19449	1.0	417	4.5	1266	3.4	1299	3.2	3174	-1.6
91	21	10.5	197	1.5	20135	3.5	388	-7.0	1277	0.87	1347	3.7	3115	-1.9
92	23	8.7	218	10.7	17386	-13.7	470	21.1	1344	5.2	1317	-2.2	3012	-3.3
93	23	0.0	218	0.0	21024	20.9	477	1.5	1346	0.15	1388	5.4	2713	-9.9

Source: FMOH, Annual Health Statistics Survey, and Several Issues.

Our investigation in the two hospitals in which we have carried out our study (Khartoum and Omdurman Teaching Hospitals) has shown that despite their significant role in the provision of health services in the Sudan, they are experiencing a lot of financial difficulties which have negatively affected the quality and quantity of services they provide. This fact was underlined by the Director General of Omdurman Teaching Hospital (OTH) in an interview the researcher conducted with him. He said that the hospital was established 100 years ago (1898) and since that time, buildings and beds had not been changed. He also mentioned that the hospital had no water tank and as a result water was not available in the wards. In addition, the hospital roads were not paved thereby causing heartache for both patient and staff. The hospital was also experiencing severe shortage of drugs and other medical supplies, particularly those needed for surgical operations. That shortage had sometimes resulted in the termination of cold case operations for several weeks. The researcher was able to observe during his visit: most of the hospital's wards lacked the necessary lights and water supply, the plumbing was not maintained and the water was not fit for use; the beds were very dirty and not fit for use; the ward buildings lacked maintenance. In addition, the quality the food provided for patients in the wards was very poor and could even aggravate their illness. Besides, the quantity of the food provided to patients was not adequate as patients in OTH were given only two meals a day.

In Khartoum Teaching Hospital (KTH), financial constraints have made the hospital unable to provide adequate medical services. The main cause of those difficulties as stated by the Assistant Director General was that many people were not afford the high fees for treatment and drugs, and, therefore, revenues generated in this way were insufficient to ensure the sustainability of providing health services.

Furthermore, the hospital suffered from difficulties in obtaining government support for maintenance of buildings. This led to the closure of the main theatre in the hospital since March 1996 for the necessary maintenance. As a result the number of in-patients in 1996 decreased by more than 20%. Financial constraints have also caused a severe shortage of drugs and other medical supplies necessary for rendering adequate health services. This situation is illustrated in Tables 3.3 and Table 3.4. It is obvious that the majority of the patients did not either find any of the prescribed medicines or they found ver few of them. According to the senior pharmacist in the hospital, the government became responsible, after the introduction of the user fee system, only for providing the initial stock of drugs supplies while the hospital was responsible for renewing the stock by recovering money that came from the sale of drugs to patients after adding a small margin to cover delivery cost. Previously, the Medical Supplies Corporation was responsible for importation and distribution of drugs for all health institutions. At that time drugs supplies were financed directly from the public budget, but now the Medical Supplies Corporation began to deal with hospitals on a commercial basis and, therefore, any hospital has to pay like any customer to be eligible to get its drugs and other medical supplies. The problem here is that many people are

unable to afford the drugs as a result of the continuous increase in their prices. Such people are given some sort of exemption, partial or in full, after applying to the Office of Social Researchers in the hospital (previously known as Takaful Fund Office) and fulfilling the required formalities for acquiring the subsidy. The hospital found itself unable to close the gap that resulted from providing the subsidies. In addition to that, the hospital faced a number of difficulties in obtaining the funds for its budget approved by the Ministry of Finance.

Table 3.3: Availability of Drugs inside

Hospitals (Out-patients)

No. or Types	Percentage
One	6.0
Two	14.0
All	20.0
None	60.0

Table 3.4: Availability of Drugs inside

Hospitals (In-patients)

Quantity	Percentage
All	16.7
Most	33.3
A few	26.9
Little few	5.1
Non	17.9

3.5 Impact on Utilisation of Public Hospital Services

The demand for public hospital services is expected to increase to the extent of making the hospitals unable to meet that demand because of the insignificant expansion in the health care facilities and the significant increase in the number of Khartoum's population. This problem would be exacerbated by the negative impact of liberalisation policies on living conditions and environmental deterioration which lead to the spread of diseases.

"The disease load in the general population is very high. The prevailing diseases are mostly infectious in nature and are associated with an unhealthy environment, inappropriate health and nutrition practices due to lack of knowledge, low standard of living, malnutrition and poverty" (UNICEF, 1996).

Statistics obtained from OTH and KTH show that utilisation of health services in those hospitals is in decline. This trend is depicted by Table 3.7 and Table 3.8. The low demand for public hospital services can also be attributed, among other factors, to the growing desire of people to get medical services in private hospitals and clinics. That is because of the increase in the ratio of price/quality of service provided by the public hospital since the quality of services provided by the public hospital is deteriorating while the cost is increasing. Therefore, people prefer private hospitals and clinics where the services are of better quality despite their high prices. Furthermore, most of the specialist doctors, particularly surgeons, tend to refer the patients that need surgical operations to private hospitals where they can find better equipment and better results. People who are not able to pay the high fees in the private hospitals are usually informed by those doctors that they had to wait for a long time in the waiting list in order to receive such type of medical treatment in public hospitals. Another factor that affects utilisation of public hospital services is the sharp increase in the cost of medication due to the implementation of the liberalisation policies, which have influenced the health seeking behaviour of individuals.

This evident in the replies of out-patient respondents with regard to the duration of symptom of illness before visiting the doctor. It is clear from Table 3.5 that about 41% of those patients responded to illness by visiting health institutions after more than a week. With respect to the in-patient respondents, it was difficult to measure their degree of response as several patients were staying in the hospital for many months.

Low utilisation of health services was also exhibited in the different options used by the respondents when they became ill. As Table 3.6 shows, about 50% of the in-patient and out-patient respondents resorted to a variety of options in response to an illness before visiting health facilities. It is clear that using any of those options would have a negative impact on the health status of the individual. Self-medication through purchase of medicines is the most harmful alternative that became increasingly adopted by many people as a result of the absence of a strong regulation that prohibited such a practice. The other type of self-treatment is the use of local medicines for different types of diseases like malaria, gastro-intestinal diseases, and diseases of the respiratory system. A lot of these medicines are used without diagnosis and ineffective. In many cases, they even worsen the illness. Visiting the traditional medicine-man (Faki) is one of the common practices within the Sudan, especially for bone fractures.

Table 3.5: Period between Appearance of Illness and

Visiting Health Facility (Out-patients)

Period	Percentage
Less than a week	59.0
1 - 2 weeks	18.0

3 - 4 weeks	4.0
More than 6 weeks	18.0

Table 3.6: Type of Response to Illness by the Respondents in KTH and OTH (1996)

Type of Response	No.	Percentage
Taking rest	20	13.8
Local medicines	21	14.7
Going to Faki	6	4.2
Med. From pharmacy	10	7.0
Visit. health facil.	73	51.0
Others	14	9.8

Table 3.7: Some Indicators of In-patients' Service Utilisation in Khartoum Teaching Hospital (1990-1996)

	No. Admitted	No. Discharged	No. of Beds	Bed occup. rate
1990	12363	11795	758	80.9%
1991	12467	12104	687	81.3%
1992	13309	12954	762	79.2%
1993	13202	12904	768	81.4%
1994	14190	14057	767	85.8%
1995	12200	11894	758	77.9%
1996	9723	8504	734	71.4%

Source: Statistical Department, KTH, 1996.

Table 3.8: Some Indicators of Inpatients Services Utilisation in Omdurman Teaching Hospital (1992-1995)

	No. Admitted	No. Discharged	No. of Beds	Bed occup. rate
1992	12222	12232	482	70%
1993	13211	13284	513	74.2%
1994	13051	13003	570	68.9%

1995 11989 11039 570 62.5%

Source: Department of Statistics, Omdurman Teaching Hospital

3.6 Impact on Curative Health Care Personnel

Disparities in health services distribution lead to uneven distribution of health workers. Table 3.9 shows the distribution of health workers by category and region. More than half of the doctors, medical specialists, and technicians are working in Khartoum. This situation may be due to the better chances for private practice and training, the favourable work conditions, and the concentration of tertiary and other health care facilities in Khartoum.

Table 3.9: Regional Distribution for Some Categories of Health Workers

Region	No. of Health Workers (Ratio per 100,000 population)			
	Specialists	All Doctors	Med. Assistants	Nurses
Khartoum	286 (8.2)	1,149 (33.7)	1,258 (36.9)	3,308 (96.9)
Central	106 (2.0)	391 (7.2)	1,005 (18.6)	4,173 (77.0)
Northern	30 (2.3)	129 (10.0)	423 (32.8)	1,629 (126.1)
Eastern	64 (2.1)	224 (7.3)	572 (18.7)	1,274 (41.7)
Kordofan	24 (0.8)	93 (2.9)	524 (16.6)	1,642 (51.9)
Darfur	18 (0.4)	65 (1.4)	463 (9.8)	1,009 (21.3)
Equatoria	1 (0.1)	18 (0.9)	65 (5.7)	1,274 (108.4)
Bahr El	1	18	249	1,013

Ghazal	(0.1)	(0.9)	(13.0)	(52.9)
Upper	1	10	21	711
Nile	(0.1)	(0.8)	(1.70)	(56.5)
Sudan	531	2,097	4,580	16,006
	(2.1)	(8.3)	(18.0)	(63.0)

Source: FMOH, Health Information Centre, Annual Health Statistics Survey, 1993.

Deterioration in health services in Sudan is manifested in the high rate of withdrawal from service for the various categories of health workers, particularly doctors. Doctors exit from public service either by migrating outside the country or enlisting in private practice. Table 3.10 depicts the serious trend in the decline of the number of some categories of curative health care personnel. The number of specialists, general physicians, and medical assistants in 1993 declined by 11.8%, 24.8%, and 30%, respectively as compared with the number of those medical workers in 1985. During the period 1990-1993, the number of general practitioners declined by 35%. The ratios of population to all doctors, specialists, medical assistants and nurses are given in Table 3.9.

This serious withdrawal from services is attributed to different factors among which is the deterioration in work environment due to the curtailment of government spending on public health institutions. The cuts in spending result in the inadequacy of basic facilities and drugs. For example, medical laboratories and other diagnostic units suffer from shortages because of the high demand and the unavailability of the necessary supplies like chemicals and x-ray films. Many doctors interviewed by the researcher have reported these problems. This situation tends to affect the diagnostic tests done in the hospitals. Also in many cases a doctor writes a prescription and asks the patient to see him after taking the prescribed medicines, but usually people do not afford to pay for the costly medicines. This situation minimises the job satisfaction of doctors.

Table 3.10: Some Curative Health Care Personnel (1985-1993)

Year	Specialists		G. Practitioners		Med. Assistants		Nurses	
	No.	%	No.	%	No.	%	No.	%
1985	602	-	2082	-	3523	-	15810	-
1986	499	-17.1	1908	-8.4	3759	6.7	16479	4.2
1987	528	5.8	2571	34.7	4303	14.5	17312	5.1
1988	554	4.9	2581	0.4	4705	9.3	17264	-0.28

1989	575	3.8	2499	-3.2	4947	5.1	16954	-1.8
1990	574	-0.17	2392	-4.3	5102	3.1	15736	-7.2
1991	578	0.7	1384	-42.1	4580	-10.2	16310	3.6
1992	532	-8	1565	13.1	3028	-33.9	16310	0.0
1993	531	-0.19	1565	0.0	4580	-51.3	15106	-7.4

Source: Federal Ministry of Health: Annual Health Statistics Survey, Several Issues.

One of the main causes of health workers attrition is the deterioration in their living conditions, as in the case of any other government employees, due to the hardship associated with the implementation of liberalisation policies and their negative distributive impact upon the low income groups.

"The liberalisation and structural reforms policies adopted in 1990's, have signalled the state withholding of its socio-economic redistribution function. This is reflected in the poor services delivered and weak real incomes (salaries). The "middle class" has, as a result considerably lost status, suffer severe deterioration in living conditions because of weak income levels relative to other classes in the society" (Sahl, 1996).

Specialists show a lesser tendency to migrate as compared with general practitioners. This is because most of the general practitioners are seeking training particularly in the Western industrialised countries where they can specialise and work. In addition, specialists have better chances to generate adequate income from private practice. Besides, general practitioners are usually less expensive to employ in the country to which they migrate (Muneef, 1996).

The serious implications of withdrawal from service in public health institutions are quite obvious. Quality of services provided will deteriorate and may become inadequate in some areas, particularly in remotely located rural areas. So, strategies designed to provide health services for all will no longer be valid.

4. Access to Health Services Under SAPs

4.1 Introduction

In studying the impact of liberalisation policies, we have tried to establish a link between utilisation of health services and the different elements that influence the individual's decision towards utilisation of health services. Those elements were found to be:

1- Individuals' socio-economic characteristics: age, sex, education and income;

- 2- Access factors: distance to facility and cost of drugs and fees;
- 3- Perception of service quality: drug availability, medical supervision, and other services provided inside hospitals;
- 4- The role of the compensatory measures introduced and individual's coping strategies.

4.2 Socio-economic Characteristics of Public Hospital Users

a) Age and Sex

Age distribution of the public hospital users as shown by Fig. 2 reveals that the majority of the study population is young persons with ages ranging between 16-45. Elderly people with ages greater than 55 years were found to represent a small segment, despite the fact that elderly people are likely to be more exposed to illness and therefore expected to visit health institutions more than young persons.

This situation may be due to the fact that usually elderly people prefer to go to traditional healers and to use local medicines in case of illness.

The proportion of females within the study population is greater than the proportion of males as depicted by Fig. 1. Although the difference is not significant, this can be justified on the basis of physiological factors that make women's needs to visit health facilities frequently.

b) Education

Educational attainment for individuals of the study group as demonstrated by Figures 3 and 4 is found to be higher among the out-patient respondents. Illiterates represent the largest segment among the in-patients (35%), while individuals with high educational attainment (secondary and university levels) represent a relatively small proportion. This may be due the fact that highly educated people are much more sensitive to the quality of service provided in the public hospitals, particularly in-patients services which have been proved to be deteriorating during the recent years. Educational attainment among the out-patient respondents is found to be relatively high. This is because emergency units in the public hospitals provide some types of health services that cannot be found in other private hospitals and usually offer a reasonable quality of service.

c) Residence

Residence of hospital users has been categorised into zones according to nearness specified hospital. Zone 1, 2 and 3 are used as proxies for the residential areas inside Khartoum, while zone 5, 6 and 7 are used as proxies for residential areas located outside Khartoum in accordance with their proximity to Khartoum. For

example, Zone One constitutes residential areas in states like Blue Nile and White Nile. Gezira Residential areas in Zone Two are located in States like N. Kordofan, Sennar, and Gadarif. Finally, residential areas of Zone Three are located in States like Southern and Northern Darfur, Port Sudan, and Wadi Halfa. It was learnt that about 46% of the in-patient respondents were coming from States other than Khartoum (Fig. 6) and even the majority of those who come from Khartoum come from relatively remote areas inside Khartoum (Zone Two and Three). This fact implies the unfair distribution of health facilities between, on the one hand, urban Khartoum and, on the other hand, rural areas and even inside Khartoum where health facilities are concentrated in the centre of Khartoum. As we mentioned earlier this situation has serious implications for equity, accessibility, and efficiency. The low proportion of public hospital utilizers from Zone One (3.6%) can be attributed to the high degree of awareness acquired by them for the quality of services provided in that hospital as they are living near those facilities. In addition, most of the residents in Zone One are enjoying better living conditions and hence tend to utilise private health institutions. As for out-patient respondents the situation is quite different. As Fig. 5 shows, about 90% of the patients are from Khartoum, with the largest proportion coming from Zone Two. In Omdurman Hospital, the majority of the hospital visitors are from Zone Two, specifically from the area of 'Umm Badda' though a large public hospital providing services at relatively high fees has been established recently in that area. This fact indicates that usually access to health services cannot be realised only by deployment of facilities to neglected areas but also taking into consideration the economic conditions of people.

d) Occupation

In the classification of our study groups according to their occupation, it was obvious that the majority of them are workers and officials as shown by Fig. 7. The majority of those who fall into the category of 'others' are farmers and small dealers. This indicates that most of the public health users have limited income capabilities.

e) Income

Implementation of SAPs has led to widespread of poverty among the population. Recent studies on poverty, however, reveal that the size and depth of poverty in Sudan is increasing as the bulk of the Sudanese are below the absolute nutrition-based poverty line ranging between about 80% to 94% (Cf. Ali 1994, Sahl 1996).

Income distribution of the study population as depicted by Fig. 8 reveals that most of them fall below the poverty line. The severity of poverty is apparent among the in-patient respondents much more than among the out-patients. This shows that rich people are no longer the users of public health institutions. Rather they tend to utilise private health institutions, and consequently public health institutions are

deprived from the revenues that would have been generated if this category of people were users of public services.

4.3 Factors Influencing Individuals' Health Seeking Behaviour

Relationship between socio-economic characteristics of the individuals and their decision to utilise health services has been examined within the study population in OTH and KTH. Respondents were asked whether they respond to illness by visiting health care institutions immediately or not. The correlation between their response and the following elements was examined.

a) Age and Sex

Despite the high tendency of males to utilise out-patient health facilities, it has been found that (see Table 4.1 and table 4.2) sex and age have no direct relationship with utilisation of health services. The high tendency to utilise health services observed within elderly people may be due to the fact that they are more exposed to illness than young people.

Table 4.1: Relationship between Individuals' Age and Their Decision to Utilise Health Services in KTH and OTH (1996)

Age Group	In-patients (%)		Out-patients (%)	
	Delayed	Immediate	Delayed	Immediate
	Response	Response	Response	Response
16 -35	39.6	60.4	57.1	42.9
36 - 56	50.0	50.0	50.0	50.0
56 -	60.0	40.0	-	100

Table 4.2: Relationship between Individuals' Sex and Their Decision to Utilise of Health Services in KTH and OTH (1996)

Sex	In-patients (%)		Out-patients (%)	
	Delayed	Immediate	Delayed	Immediate
	Response	Response	Response	Response
Males	46.3	53.0	37.0	63.0
Females	44.2	55.8	67.6	34.4

b) Education

Educational attainment has been found to be clearly correlated with individuals' decision to utilise the health service facilities. People with higher levels of educational attainment tend to utilise public health services more than those with lower levels of educational attainment. This situation was evident among both in-patients and out-patients as shown in Table 4.3.

Table 4.3: Relationship between Individuals' Education and Their Decision to Utilise Health Services in OTH and KTH (1996)

Level of Educational Attainment	In-patients (%)		Out-patients (%)	
	Delayed Response	Immediate Response	Delayed Response	Immediate Response
Low	54.6	45.5	60.6	39.4
High	11.1	88.9	46.4	53.6

c) Distance

Distance to facility is one of the most important access factors that have been found to be strongly influencing an individual's decision to utilise health services. This is so because distance of facility involves other access and cost elements such as cost of transportation and cost of time spent on the way to the facility. For the purpose of analysis, we have divided residence of respondents into 6 zones according to their proximity to facility. Zone 1, 2 and 3 have been used to represent the residential areas located inside Khartoum while the remaining three zones (Zone 4, 5, and 6) have been used for residential areas located outside Khartoum. Table 4.4 depicts the relationship between residence (distance) and utilisation of health services. It is clear that residents inside Khartoum tend to utilise health services more than other residents of other regions of the Sudan because people these regions lack access to health care facilities. As shown in Fig. 6, of the in-patients in the study population, 46.4% are from other regions.

Table 4.4: Relationship between Individuals' Distance from Facility and Their Decision to Utilise Health Services in OTH and KTH (1996)

Residence	In-patients (%)		Out-patients (%)	
	Delayed	Immediate	Delayed	Immediate Response

	Response	Response	Response	
Inside	28.9	71.9	56.4	43.6
Khartoum				
Outside	64.1	35.9	33.3	67.7
Khartoum				

d) Income

The relationship between a patient's income level and his decision to utilise health services has not been evident within the study group (Table 4.5). This may be due to the fact that almost all the respondents are of low income earners and there is no significant difference between their income levels.

Table 4.5: Relationship between Individuals' Income Level and Their Decision to Utilise Health Services in OTH and KTH (1996)

Income group (L.s.1000)	In-patients		Out-patients	
	% of delayed response	% of immediate response	% of delayed Response	% of immediate response
< 45	45.3	54.7	57.9	42.1
46 - 85	30.0	70.0	55.6	44.4
> 85	60.0	40.0	42.9	57.1

e) Individuals' Perception of Service Quality

Patients' perception of the quality of service that they may find in the health facility has an effect on his decision whether or not to utilise the service provided in that facility. The individual's perception of the quality of service is either tested by the individual himself during his past visits to the health facility or shaped on the basis of others' opinion. It has been observed that hearing others' opinion about the quality of service provided in the health facility very much influences his perception of the quality of service. When asked why they have chosen to come to the specified facility, 7% of the in-patients who were in the position to select the medical facility have answered that they chose the facility on the basis of others' opinion about quality of its service. On the other hand, only 30% of the respondents chose the facility on the basis of their past experience in the facility. Measured perception is shaped on the basis of elements like drug availability, degree of carefulness shown by doctors and other medical staff towards the

patient, and some other factors regarding facility's equipment and sanitation. Drug availability has been found to be the most influential factor that governs out-patients' perception of the quality of services provided in the health facility as they normally stay only for a short time in the hospital. When asked about the weaknesses in quality of service provided in the hospital, 40% of them mentioned only lack of drugs, 33.3% said insufficient medical supervision and lack of drugs while the remaining cited other factors like cleanliness of hospital.

The patients' perception of the quality of service provided in the hospitals is also influenced by the residential area from which he comes. Of course, the perception of individuals who live in Khartoum differs from that of others who come from remote villages or small rural towns. Usually people in such areas are not familiar even with electricity and the piped water supply used in big cities like Khartoum. Sometimes some of them are not familiar with the type of food commonly used in urban areas, although some residents from big cities like Medani and Port Sudan might be sensitive to the quality of food provided and the situation in the wards. Their opinion is shown in Table (4.6). It is worth mentioning here that some patients were hesitant to express their true feelings when asked about the quality of food provided to them and hence responded by saying 'reasonable'.

Table 4.6: Patients' Perception of the Situation of Water Cycles in OTH and KTH according to Their Residence (1996)

Residence	(%)	(%)	(%)
	Perceive It as Good	Perceive It as Bad	Do not Know
Khartoum	8.9	44.4	46.6
Outside Khartoum	23.1	43.6	33.3

4.4 Access to Medical Services and Individuals' Coping Strategies

The cost of medical treatment has continuously increased to the extent making it inaccessible to a large segment of the population following the adoption of the liberalisation policies. This is because the price medicine is subject to the exchange rate of the Sudanese pound against other currencies. The bulk of the medicines are imported from outside and even those manufactured locally contain mostly imported raw materials.

Following the floating of the exchange rate in 1992, the value of the Sudanese pound against the US Dollar was \$1 = L.s. 90. Since then, the value of the Sudanese Pound has successive fallen until it reached the rate \$1 = L.s. 1800. This situation has been reflected in the price of medicines. Beside medicines, the cost

of different types of diagnosis has also risen since most of the equipment, chemicals and other inputs like x-ray films used by medical laboratories are also imported from outside and hence subject to the exchange rate of the Sudanese Pound. The high cost of medicines and diagnostic tests as well as medical consultation and other forms of health services provided in the medical institutions have ultimately affected the ability of low income groups to obtain those services. As shown in Table 3.7, about 50% of the price of medicines prescribed for in-patients ranged from L.s. 25,000 to over L.s. 300,000. As is obvious from Fig. 7 and Table 4.8, most of these patients are unable to pay for these expensive medicines and other costs of medical treatment like admission fees, consultation fee, diagnosis fee, etc. In many cases the individual finds himself that he is always short of money to fill the deficit even if he allocates all his disposable income for health services.

Table 4.7: Prices of Prescribed Medicines

for In-patients in KTH and OTH

Price (L.s)	Percent
Less than 10,000	24.6
10,000 - 25,000	24.6
26,000 - 50,000	17.8
51,000 - 100,000	16.4
101,000 - 200,000	8.2
201,000 - 300,000	5.5
More than 300,000	2.7

**Table 4.8: Medical Service Fees Paid by In-patients in
KTH and OTH**

Fees (L. s.)	Percent
Admission & Statistical File	20.2
Less than 5,000	35.7
5,000 - 10,000	25.0
11,000 - 25,000	13.1
26,000 - 50,000	3.6
51,000 - 100,000	1.2
More than 100,000	1.2

As the majority of the users of public health institutions are from low-income groups and because of the high cost of medical services, patients resort to a

variety of coping strategies to acquire those services (Table 4.9). These strategies are:

- a) Obtaining loans from relatives and friends;
- b) Selling some of their private property;
- c) Applying for support from the Reciprocal Maintenance Office ("Takaful") Fund in the Hospital;
- d) Obtaining support from relatives;
- e) Other measures like delaying treatment or seeking support from the employers.

Table 4.9: Methods Adopted by Individuals to Cover Deficit in Cost of Medicines and Other Medical Services

Method Adopted	Percentage
Acquiring Loans	52.0
Applying for Takaful Fund	12.6
Support from Relatives	20.0
Selling of Ownership	8.4
Others	6.3

It is clear from Table 4.9 that acquiring loans from relatives and friends is the most widely adopted method by individuals seeking medical treatment at public hospitals, as 52% of them resorted to this solution when faced with difficulties in covering the cost of medicines and other medical services. Assistance from relatives also represents one of the significant sources that enable individuals to acquire health services. This practice stems from the prevailing social values of the Sudanese society where people are used to providing support for the needy in case of crisis. Some people resorted to selling some of their private properties to cover expenses of medical services. This practice became obvious during the recent years as a result of the inflationary pressures generated by the SAPs. Although the number of the individuals that resorted to this solution is relatively small (8%), this phenomenon has a variety of negative social and economic implications. As for those who adopt other methods to meet medical treatment expenses, some of them have access to some sort of support provided by their employers.

The proportion of patients applying for support from the Social Integration Office ('Takaful Office') in the hospitals is relatively significant (about 12%). This reflects the fact that the performance of this supportive mechanism is powerful.

This Fund was established as a safety net for the poor under the Project of Medical Treatment Maintenance.

4.5 The Medical Treatment Reciprocal Maintenance Project

This project began in mid April 1992 for citizens below the poverty line. The objectives of the project are as follows:

- a) To implant firmly the meaning of reciprocal responsibility in Sudanese community in order to apply it in an ideal way to help poor people and other groups such as students with no income sources
- b) Supervision and monitoring of anonymous patients treatment;
- c) To provide other services like food, clothing and transportation to poor patients;
- d) To assist in certain diseases of social forms like fistula.

The project stemmed from Khartoum Teaching Hospital through a monthly subsidence of L.s. 150,000 from Zakat Chamber. Five social workers were appointed in the hospital for this project. Then the project was extended to other hospitals such as Omdurman, Khartoum North and Ibrahim Malik Hospital. Khartoum Hospital furnished these hospitals with social workers.

At the beginning, the Social Integration Fund (Takaful Fund) extended support in different ways like issuance of statistical files, medical check up, treatment and even attendance cards.

The Social Integration Fund Office in the Hospital has 12 qualified social workers to perform the following:

- 1- To prepare studies on patients' conditions so as to determine poverty levels and how to help the needy patients;
- 2- To supervise anonymous patients;
- 3- To find easy and quick ways implementing the funding system;
- 4- Monitoring help for expensive cases with Zakat Chamber like C. T. Scanning cases;
- 5- To liaise with charity organisations to provide food for the poor.

4.6 Support Criteria

Provision of help is subject to the study by the social worker that submits a report on each case. The support can be through Zakat Chamber or social care institutions rather than in the form of treatment in the hospital.

Our investigation of the patients in KTH and OTH revealed that the role played by the Fund was very limited. This is reflected in the following points.

1) Inadequacy of the Support

This fact is shown in Table 4.10. About 50% of the applicants did not get any response from the Fund while the remainder received only a limited amount of support. This is clear when we compare the amount of support provided by the Fund with the cost of medicines and other medication fees.

Table 4.10: Amount of Support Provided by the Social Integration Fund in KTH and OTH

Amount of Support (L.s.)	Percentage
Less than 5,000	11.2
5,000 - 10,000	11.2
11,000 - 25,000	14.6
More than 25,000	11.2
No response	51.8

2) Inaccessibility to the Support

Applicants to the Fund face many difficulties in getting the support. The majority of the applicants reported that it was not easy to obtain the support from the Fund (71% of the out-patients and 68% of the in-patients). These difficulties were manifested in the lack of fund, difficulties in presenting the required documents, closure of the fund office, and bureaucratic procedures before obtaining the support.

According to the Fund officials, the main problem facing this Office's services in Khartoum Hospital is the low budget allocated by Zakat Chamber (L. s. 150,000 since 1992 and L. s. 200,000 in 1996). This is budget is not enough even for small cases since even an emergency caesarean operation costs L. s. 80,000 and ordinary/ elective caesarean costs L. s. 100,000 while a normal delivery costs L. s. 30,000 excluding other medicines costs.

The Ministry of Finance provides some medicines for saving lives. These are to be distributed according to the Office's recommendation. Some cases are exempted from the whole expenses but others have to pay part of it.

The deficit in the Fund's budget is narrowed down by this partial collection of medical fees. One of the social workers said that the scanty resources did not hinder this Office from playing its role as social workers are used to solving financial problems using their personal relations with the concerned authorities. He also reported that the daily average of support applicants is 80 in-patients and 120 out-patients, which reflects the difference between the demand for the Office's services, its approved budget and the number of workers in the Office.

5. SUMMARY AND CONCLUDING REMARKS

This study is an attempt to assess the impact of changes introduced in the context of the liberalisation policies on the curative health services sector. More specifically, the objectives of the study are: to show the impact of liberalisation policies on health care facilities and personnel as well as the extent to which the new system of financing health services has succeeded in achieving its goals. Also, the study tried to examine the impact of those policies on the health seeking behaviour (utilisation of services) and access to health services. Effectiveness of the newly introduced compensatory measures in the context of the new economic reforms and the extent to which they have managed to achieve its mitigating goals are also explored.

The study hypothesises that adoption of those policies led to an adverse impact on the health care facilities and personnel, affected the accessibility of health services to an increasing number of poor people, and that the compensatory measures introduced are impotent.

The study has been carried out in Khartoum State (the national capital) because of the concentration of health care facilities and personnel there. Therefore, the results obtained are assumed to be very indicative of the magnitude of the overall incidence of the changes introduced. Both primary and secondary data are used in the study. Secondary data has been obtained from statistical reports issued by the Federal Ministry of Health and Departments of Statistics at Omdurman and Khartoum Teaching Hospitals. As far as primary data is concerned, it was generated using questionnaires with in-patients and out-patients in Khartoum and Omdurman Teaching Hospitals. Because it is difficult to find a specific sample frame due to the fluctuations in the number of patients inside and outside the hospitals, the sample was taken randomly during a period of 15 days when 10 patients were selected daily to fill the questionnaires. The total sample size is 145 patients, 61 of them are out-patients and 84 are in-patients. In addition, interviews were carried out with key informants and medical staff in the hospitals. Besides

the researcher's observations, such information was used to make quantitative and qualitative analyses.

The findings of the study are consistent with the hypothesis stated in Chapter One. The study concludes that economic reforms implemented under the title of economic liberalisation policies in 1992 have led to fundamental changes in the health sector which was running into many difficulties prior to the introduction of those policies. Health care facilities have been negatively affected by the shortage of finance resulting from the curtailment of government spending allocated to health services and the failure of the new financing mechanism to generate sufficient financial resources.

At the same time, there has been a growing evidence that the new economic reforms adopted have led to a decline of real income for the majority of the population. Consequently, their ability to pay for the costly bill of health services, which were previously free, when people had a better living condition, have also been weakened. Deterioration in living and working conditions has led to serious attrition from service in public health institutions. A significant proportion of health workers, particularly doctors, has either migrated outside the country or moved to private practice causing unfavourable competition with the public health institutions that represent the only option for the poor.

The compensatory measures introduced in parallel with the new sectoral reforms to act as a safety net for the poor have failed to achieve their intended mitigating goals. Its contribution has been recognised to be very limited as a result of the insufficiency of resources allocated for this mechanism.

The new cost-sharing system is based on the assumption of cross subsidisation in which the better-off people pay the specified fees so that the subsidised services can be provided to the worse-off people. The majority of the users of public hospitals are low income groups from remote areas. Unfortunately, the users who are able to pay have opted to go to private health institutions, thus further depriving the public health institutions of the money that could have been used to run the latter. The result is a complete collapse of the newly introduced cost-sharing system.

Based on the finding of this study, it has been realised that the provision of adequate and accessible curative health services for the population is a very complex and difficult process, particularly under such deteriorating economic conditions. The government should take its responsibility towards ensuring health services for all segments of the population. It has also been realised that this objective could not be achieved under the present economic conditions as well as the prevailing health policies. Therefore, there should be a suggestion for effective and powerful measures based on sound studies of all possible means of financing health services that guarantee the sustainability of providing adequate health services for all.

Measures suggested should ensure efficiency, equity and accessibility. In this respect, we recommend an in-depth study of the different factors that shape the individuals' health seeking behaviour since no health policy could be viable without considering this important matter. This important issue has been ignored in the design of the former health policies. In this way, decision-takers should look to the health insurance system as one of the workable remedies for most of the problems affecting the health sector.

APPENDIX NO. 1: IN-PATIENT QUESTIONNAIRE

q1- Health facility

1) Public hospital 2) Health centre

q2- Sex

1) Male 2) Female

q3- Age

1) 16-25 2) 26-35 3) 36-45 4) 46-55

5) 56-65 6) More than 65 years

q4- Education

1) Illiterate 2) Khalwa 3) Primary 4) Intermediate

5) Higher secondary 6) University 7) Illiteracy classes

q5- Residence

.....

q6- Are you resident in Khartoum?

1) Yes 2) I came only for medication

3) I'm staying with my relatives 4) Others

q7- If you come for medication in Khartoum, why?

1) We have no hospital near our home

- 2) Services provided in the facilities near us are not adequate
- 3) Services provided in Khartoum are better
- 4) Khartoum is the nearest place where we can find a health facility
- 5) Others

q8- Occupation

- 1) Worker 2) Official 3) Merchant
- 4) Organised forces 5) Others

q9- Have you any source of income other than household income?

- 1) Yes 2) No

q10- If yes, what are these sources?

- 1) Work of some members of the family 2) Remittance from outside the country
- 3) Assistance from relatives 4) Rent of real estate property
- 5) More than one answer 6) Others 7) N.A.

q11- Monthly income of the family (from all sources - L. s.)

- 1) Less than 25,00 2) 26,000-45,000 3) 46,000-65,000
- 4) 66,000-85,000 5) 86,000-105,000 6) More than 105,000

q12- What are the symptoms of your illness?

.....

q13- When did the symptoms appear?

- 1) Less than a week 2) 1-2 weeks ago 3) 3-4 weeks ago
- 4) 5-6 weeks ago 5) More than 6 weeks ago

q14- Before visiting the doctor, what did you do?

- 1) I took a rest 2) I used local medicines 3) I went to a traditional healer

4) I bought some medicines from the pharmacy 5) I went immediately to the hospital

q15- Which type of health facilities did you go to first?

- 1) Health centre 2) Public hospital 3) Private clinic
- 4) Called doctor from home 5) Others

q16- What was the doctor's prescription?

- 1) Admission 2) Transfer from health centre
- 3) Transfer from public hospital 4) Transfer from private clinic
- 5) Others

q17- After transfer, was it your wish to be admitted here?

- 1) Yes 2) No

q18- If yes, why?

- 1) Proximity to residence 2) Heard about the good services provided here
- 3) Reasonable medication charges 4) Others 5) N. A.

q19- Was there any difficulty in getting admitted the ward?

- 1) Yes 2) No

q20- If yes, what were those difficulties?

- 1) Bureaucratic admission procedures 2) Person in charge not available
- 3) No vacant beds 4) Others 5) N.A.

q21- Duration of stay in the hospital (weeks)

- 1) 1-2 2) 3-4 3) 5-6 4) 7-8 5) 9-10
- 6) More than 10 weeks

q22- Specialist visits per week

- 1) Once 2) Twice 3) 3 times 4) 4 times

5) None 6) Others

q23- Visits to General Practitioner per day

1) Once 2) Twice 3) 3 times 4) 4 times

5) None 6) Others

q24- Do you get nurses when needed?

1) Yes 2) No

q25- Do they give you medicines on their own initiative or you ask them?

1) On their own initiative 2) When asked 3) Others

q26- What is your opinion regarding ward cleanliness?

1) Good 2) Reasonable 3) Bad

q27- Is the ward noisy?

1) No 2) Always noisy 3) Noisy during visit time 4) Others

q28- What is the situation of the ward's W. C.?

1) Clean 2) Dirty 3) Dirty and unsuitable for use

q29- Quality of food provided in the ward

1) Good 2) Reasonable 3) Not good 4) Don't know

q30- Is food provided according to type of patient's illness?

1) Yes 2) No 3) Don't know

q31- Is the food adequate?

1) Yes 2) No 3) Don't know

q32- Did you get all the prescribed medicines?

1) Yes 2) No 3) Not applicable

q33- If no, specify reasons

- 1) Highly expensive 2) Some are not available
- 3) Others 4) Not applicable

q34- How much of the prescribed medicine was available in the hospital's pharmacy?

- 1) All 2) Most
- 3) A few 4) Little few
- 5) Non is available 6) Not applicable

q35- Cost of the whole prescribed medicines (L. s.)

- 1) Less than 10,000 2) 10,000-25,000 3) 26,000-50,000
- 4) 51,000-10,000 5) 101,000-200,000 6) 201,000-300,000

q36- Are you able to pay for the medicines?

- 1) Yes 2) No 3) Not applicable

q37- If no, how do you solve the problem?

- 1) I approach the Takaful 2) Loans 3) Selling property
- 4) Delay medication 5) Others 6) Not applicable

q38- What is your opinion regarding treatment cost?

- 1) Cheap 2) Reasonable 3) High
- 4) Highly expensive 5) Not applicable

q39- Do you pay fees for the services you get in the hospital?

- 1) Yes 2) No

q40- Specify the fees you have paid (L.s.)

- 1) Less than 5,000 2) 5,000-10,000 3) 11,000-25,000
- 4) 26,000-50,000 5) 51,000-100,000 6) More than 1000,000
- 7) Free 8) Not applicable

q41- Are you able to pay these fees?

1) Yes 2) No 3) Not applicable

q42- If no, how do you expect to make payment?

1) Loans 2) Selling property 3) Assistance from relatives

4) Support from Takaful 5) Others 6) N. A.

q43- Have you ever asked for support from Zakat and Takaful?

1) Yes 2) No 3) Not applicable

q44- If yes, for how much (L. s.)?

1) Less than 5,000 2) 5,000-10,000 3) 11,000-25,000

4) More than 25,000 5) N. A. 6) No response 7) In kind

q45- Was it easy to get the support?

1) Yes 2) No 3) Not applicable

q46- If no, explain why?

1) The Fund was not operating 2) It was difficult to get the required document

3) Unavailability of fund 4) Others 5) Not applicable

q47- What is your opinion about medical supervision inside the hospital?

1) Excellent 2) Good 3) Reasonable 4) Not sufficient

q48- What are the negative aspects inside the hospital?

1) High cost of medicines 2) High cost of medical charges

3) Doctors are not working efficiently

4) Insufficient medical care inside the hospital 5) Others

q49- What is your opinion about medical charges?

1) Reasonable 2) Not reasonable 3) There shouldn't be any charges

4) Others

q50- Have you ever been treated in a government hospital before applying for support?

1) Yes 2) No

APPENDIX NO. 2: OUT-PATIENT QUESTIONNAIRE

q1- Health facility

1) Public hospital 2) Health centre

q2- Sex

1) Male 2) Female

q3- Age

1) 16-25 2) 26-35 3) 36-45 4) 46-55

5) 56-65 6) More than 65 years

q4- Education

1) Illiterate 2) Khalwa 3) Primary 4) Intermediate

5) Higher secondary 6) University 7) Illiteracy classes

q5- Residence

.....

q6- Are you resident in Khartoum?

1) Yes 2) I came only for treatment 3) I'm staying with my relatives 4) Others

q7- If you came for medical treatment in Khartoum, why?

1) We have no hospital near our home

2) Services provided in the facilities near us are not adequate

3) Services provided in Khartoum are better

4) Khartoum is the nearest place where we can find a health facility 5) Others

q8- Occupation

1) Worker 2) Official 3) Merchant

4) Organised forces 5) Others

q9- Have you any source of income other than household income?

1) Yes 2) No

q10- If yes, what are those sources?

1) Work of some members of the family 2) Remittance from outside the country

3) assistance from relatives 4) Rent of real estate property

5) More than one answer 6) Others 7) N. A.

q11- Monthly income of the family (from all sources - L. s.)

1) Less than 25,000 2) 26,000-45,000 3) 46,000-65,000

4) 66,000-85,000 5) 86,000-105,000 6) More than 105,000

q12- What are the symptoms of your illness?

.....

q13- When did the symptoms appear?

1) Less than a week ago 2) 1-2 weeks ago 3) 3-4 weeks ago

4) 5-6 weeks ago 5) More than 6 weeks ago

q14- Before visiting the doctor, what did you do?

1) I took a rest 2) I used local medicines 3) I went to a traditional healer

4) I bought some medicines from the pharmacy 5) I went immediately to the hospital

6) Others

q15- Which type of health facilities did you go to first?

- 1) Health centre 2) Public hospital 3) Private clinic
- 4) Called doctor from home 5) Others

q16- If you did not go to the hospital immediately, state why?

- 1) I thought that the illness was not serious 2) I didn't have enough money
- 3) Service provided in hospitals were not effective 4) Others 5) Not applicable

q17- Why did you come to this hospital in particular?

- 1) Proximity to home 2) Cheap medicatal charges
- 3) Good services provided here 4) Transferred 5) Others

q18- Was it difficult to see the doctor?

- 1) Yes 2) No

q19- If yes, what was the reason?

- 1) Inability to pay admission fees 2) Large number of waiting patients
- 3) Doctor was not available 4) Others 5) Not applicable

q20- How many types of medicine were prescribed for you?

- 1) One 2) Two 3) Three 4) Four or more 5) Others

q21- How many types of medicine did you find in the hospital?

- 1) One 2) Two 3) Three 4) All 5) None 6) N. A.

q22- Cost of prescribed medicines (L. s.)

- 1) Less than 5,000 2) 5,000-10,000 3) 11,000-20,000
- 4) 21,000-40,000 5) More than 40,000 6) Not applicable

q23- Are you able to pay for the prescribed medicines?

- 1) Yes 2) No 3) Not applicable

q24- If no, how do you expect to solve the problem?

- 1) approach the Takaful 2) Loans 3) Sell property
- 4) Delay medical treatment 5) Others 6) N. A.

q25- What is your opinion regarding cost of medicines?

- 1) Cheap 2) Reasonable 3) Expensive
- 4) Highly expensive 5) Not applicable

q26- Did you pay any medical fees in the hospital?

- 1) Yes 2) No

q27- If yes, state the amount of payments (L. s.)

- 1) Less than 5,000 2) 5,00 - 10,000 3) 11,000-25,000
- 4) 26,000-50,000 5) 51,000-100,000 6) More than 100,000
- 7) Admission fees only 8) Not applicable

q28- Are you able to pay these fees?

- 1) Yes 2) No 3) Not applicable

q29- If no, how do you expect to make payment?

- 1) Approach the Takaful 2) Loans 3) Sell property
- 4) Delay medical treatment 5) Others 6) N. A.

q30- Have you ever asked for support from Takaful Fund?

- 1) Yes 2) No

q31- If yes, was it easy to get the support?

- 1) Yes 2) No 3) Not applicable

q32- If no, specify reasons

- 1) The fund was not operating 2) Difficulties in getting the required documents
- 3) Unavailability of fund 4) Others 5) Not applicable

q33- How much was the support (L. s.)?

1) Less than 5,000 2) 5,000-25,000 3) More than 25,000

4) Not applicable 5) No response 6) Not applicable

q34- Do you think that the support was adequate?

1) Yes 2) No 3) Not applicable

q35- What is your opinion about the doctor's examination?

1) Careful 2) There was no examination 3) Not careful

q36- What is your opinion about the medical services provided in the hospital?

1) Good 2) Reasonable 3) Deteriorating 4) Very bad

q37- If you think services are good, say why?

1) The hospital is clean 2) The hospital is well-equipped 3) Medicines are available

4) Doctors are always available 5) Others 6) Not applicable

q38- If you think the services are bad, show why?

1) Medicines are not available 2) Medical care is not sufficient 3) Charges are high

4) Others 5) N. A.

q39- What is your opinion regarding medical charges?

1) Reasonable 2) Not reasonable 3) There shouldn't be any charge

4) Others

q40- Have you ever been treated in any public hospital before paying charges?

1) Yes 2) No

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