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**HEALTH OF GA-EAST: UTILIZATION OF AND EXPENDITURE
ON HEALTH SERVICES IN MADINA TOWNSHIP**



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DECLARATION

I, Minerva Kyei-Nimakoh, declare that except for other people's investigations which have been duly acknowledged, this work is the result of my own original research and that this dissertation, either in whole or in part has not been presented elsewhere for another degree.



Dr. Moses Aikins

(Supervisor)

DEDICATION

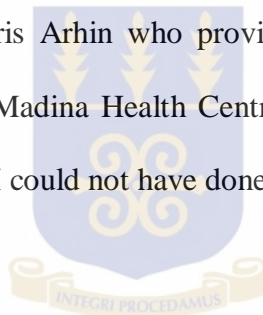
This work is dedicated to my family and Ndi. Thanks for being there.



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ABSTRACT

Background: Since independence, Ghana has made several efforts to ensure that its population has access to appropriate health care at an affordable cost. A vital measure to increase affordability is to reduce the out-of-pocket payments for health care which is recognised as one of the barriers to access, especially in poorer countries. The National Health Insurance Scheme was therefore introduced in 2003, to address issues of inequities in financial access to health care.

Objective: The general objective of this study is to determine the utilization of and expenditure on health care in Madina township in Ghana.

Methods: A community survey of 378 households was carried out in June 2010 using structured questionnaires. The zones/communities in Madina were allotted a proportion of the total sample based on its population. Systematic sampling was used to select houses and the head of the household or an adult above the age of 18 years was interviewed. Health care facilities in Madina were also identified and mapped out.

Findings: The major findings were that generally, the poor made more out-patient visits than the richer. Private facilities were the most used by all levels of socio-economic classes and self-medication was most common among poorer households. Households in the highest quintile incurred slightly more direct costs than their poorer counterparts. Poorer households tended to incur more indirect costs in terms of productivity losses and carers' time. Current NHIS registrants incurred less direct

costs than the non-insured. NHIS registration was higher among the rich than the poor.

Conclusion: Currently the NHIS system does not appear to offer financial protection for the poor and therefore households continue to incur relatively high costs on health care.

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LIST OF ACRONYMS

DHMT – District Health Management Team

DMHIS – District Mutual Health Insurance Scheme

GIS – Geographic Information System

GPS – Global Positioning System

LMICs – Low- and-middle-income countries

MDG – Millennium Development Goals

NHIA – National Health Insurance Authority

NHIS – National Health Insurance Scheme

PCA – Principal Component Analysis

SES – Socio-economic Status

TBA – Traditional Birth Attendant

WHO – World Health Organization

DEFINITION OF TERMS

Direct Cost: It consists of the costs attributable to the provision services related to the delivery of health care. It includes consultation fees, drugs, food, transportation fees and others (where applicable).

Expenditure: This is made up of all costs incurred by clients/households in seeking health care, both direct and indirect.

Indirect Cost: It is the value of productive time lost due to participation in seeking health care by the patient or family/friends. It comprises work days lost by patients as a result of being ill travel and waiting time, as well as accompanying time by a carer.

Mapping: A process used to illustrate the spatial distribution of health resources in a community.

Productivity losses: This is the value of work days lost derived from the number of days lost and the national minimum wage for 2010.

Private health facilities: They are health facilities funded and managed by private individual or groups. They may be hospitals/clinics, pharmacies/chemical shops, herbal centres, etc.

Public health facilities: These are health facilities that are mainly funded by and overseen by government. They include government hospitals/clinics, laboratories, etc.

Quasi-government health facilities: These are mostly private facilities that however receive government subventions on a regular basis.

Universal Coverage: It is a principle/term that refers to achieving improved/equitable access to health care for all residents in Ghana.

Utilization: Health services utilization was defined in this report, as the number of out-patient visits to a health facility within two weeks prior to the survey.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

The Millennium Declaration in 2000, set quantitative benchmarks to halve extreme poverty in all its forms by 2015 and also increase universal access to major health services (Millennium Development Goals Report, 2009). Hence, countries have made efforts to ensure that their populations have access to appropriate health care when needed and at an affordable cost. A vital measure to increase affordability is to reduce the out-of-pocket payments users make for health care. These are recognized as creating a barrier to access, especially in poorer countries, and as pushing households further into poverty (Witter and Garshong, 2009).

In Ghana, during the colonial era, health care was free for civil servants, expatriates and community leaders. In post-independence, it extended to the general population. Token fees were introduced in 1972 but had to be increased in 1985 under the Hospital Fee Regulation, - L.I.1313, (Osei et al, 2007). This was aimed at cost recovery by government (Asenso-Okyere, 1995). The “cash and carry” system led to dramatic declines in health care utilization, with out-patient visits to hospitals dropping from 4.6 million to 1.6 million in 1985, when charges were first increased substantially (Chankova et al, 2009). Arhin-Tenkorang (2001) argues that user fees are largely unsuccessful in raising significant resources and greatly contribute to increasing the exposure of poor households to the financial risks associated with illness.

Access problems cause a drop in utilization rates and eventually delays in seeking care (Asenso-Okyere et al, 1998). There may also be diminished health care utilization, especially, by vulnerable groups like children and the poor, and delays in seeking care result in adverse effects on public health (Sauerborn et al, 1994).

A study in Ghana showed that insured individuals were better protected from burdensome out-of-pocket expenditures (Hatt et al, 2009). Considering the fact that health care is expensive worldwide, increasing public discontent led to the introduction of the National Health Insurance Scheme in 2003, to address issues of inequities in financial access to health care (Osei et al, 2007). It is known that abolishing user fees do not reduce overall direct costs (Morestin and Ridde, 2009). Use of this entitlement has associated participation costs like transportation and loss of time (Meessen et al, 2006).

Health seeking behaviour of service users may also vary depending on contextual factors. The WHO (2001) documented that, in Ghana, about 70% of the population depend on traditional medicine for health care; they are not only more accessible to the public but also the backbone of the health care delivery system. Thus, the availability of health services, modes of health financing, socio-economic conditions, individual/household factors and health system related factors are among issues that account for trends in household utilization of health services. A study in this vein may therefore help reveal the needs of specific groups of people in the society so they can be addressed appropriately.

1.2 Statement of the Problem

The 2007-2009 Ga-East District OPD attendance showed a general trend of less OPD visits by insured clients as compared to the non-insured – 22%:78% for 2007, 36%:63% for 2008 and 49%:51% for 2009. Madina, the largest of the Ga-East sub-districts contributed about 80.8% to total OPD visits (Ga-East District Annual Report, 2009). On the other hand, Alpha Medical Centre a major quasi-government hospital in the district saw 62% insured clients whereas 38% were uninsured (Alpha Medical Centre Annual Statistical Review, 2009). This indicates that those not covered by health insurance use public health facilities more than the insured. However, OPD attendance for 2008 by government facilities, quasi government and private was 36%, 11.5% and 52.5% respectively as against 32.3%, 11.9% and 55.7% recorded in 2009 (Ga-East District Annual Report, 2009). This depicts a higher use of private facilities as compared to public ones. The District's Annual Health Report, (2009) also reported consistently low OPD per capita in the district - 0.67 for 2007; 0.672 for 2008 and 0.6 for 2009. What accounts for these utilization patterns are unknown.

Information on the expenditure patterns linked to utilization of health services is lacking. Utilization of and expenditure on health services data are however required for health services planning and prioritization. This study will provide these data. Both the insured and uninsured do incur out-of-pocket (OOP) expenditure when accessing health care. Data on OOP expenditure for both the insured and uninsured is also not known and needs to be studied to provide the total cost to accessing the different types of health care services in the district. Equally important is information

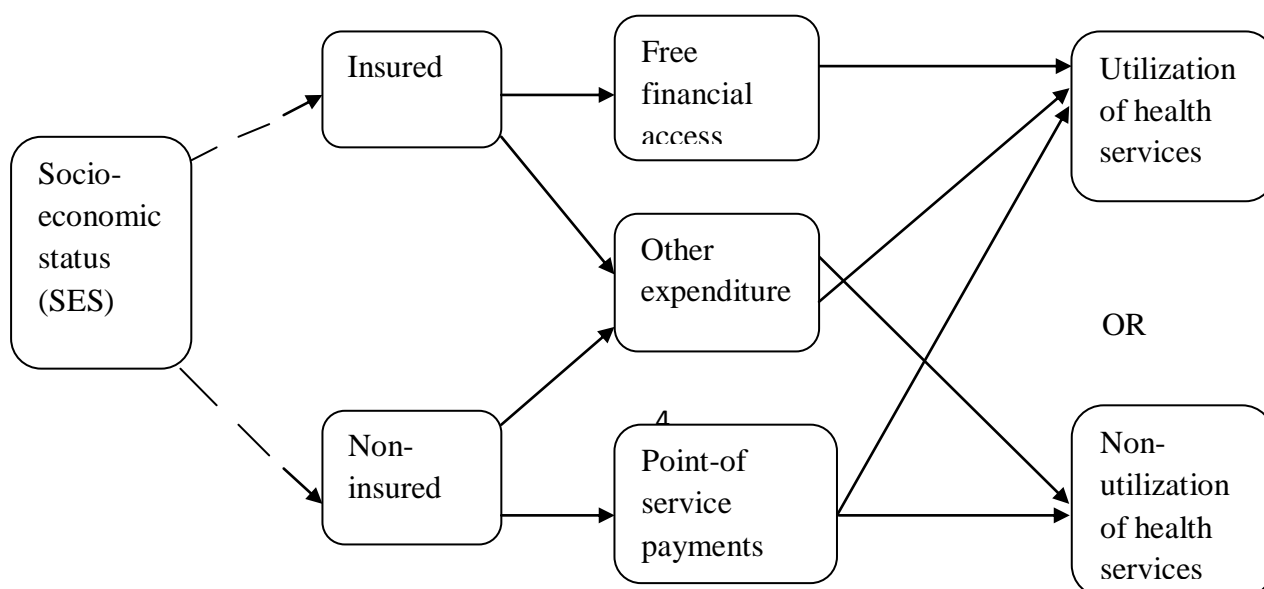
about health service seeking patterns and possible reasons for using various types of health services.

No research in the district has focused on the range of health services commonly used by households, their out-of-pocket expenditure and its relationship with health-seeking practices of households. This study therefore seeks to find out the utilization patterns and expenditure on health services by households in the Madina township.

1.3 Conceptual Framework

Figure 1 illustrates the association between the utilization of and expenditure on health services. Service users belong to diverse socio-economic groups and may be insured or uninsured. Their insurance statuses influence the amount of OOP expenditure incurred on health services. Though the insured may have free financial access to health at the point of service, like those uninsured, they also incur other expenditure such as transportation and food costs and loss of productive time while seeking health care. All of these may affect the decision to utilize different types of health services such as modern medical services, traditional medicine, self-medication etc. or the decision not to use any form of health services at all by both the insured and non-insured.

Figure 1: Conceptual Framework Showing Utilization of and Expenditure on Health Services



1.4 Justification

Though Ghana has made major strides by waiving certain user fees to promote access to health care, Gilson and McIntyre (2007) suggest that removing primary care fees is not enough by itself to tackle the range of existing health care challenges and that other actions such as increasing government health funding, local resource control and staff incentives are also required. The Ga-East District comprises mixed settlements of urban, peri-urban and rural areas. The district's Annual Health Report, 2008 mentioned that a sizeable proportion of its working force is unemployed which may culminate into inability to pay for health care services offered them.

This study will therefore provide data on the range of health services regularly utilized and their costs to households in Madina and thus provide evidence that can be used to promote appropriate use of health services in Ghana. An estimation of the direct and indirect costs of health care to households of different socio-economic status and its influence on health-seeking patterns will also provide direction for improvement in utilization of health services.

Finally, it is the social responsibility of the University of Ghana School of Public Health to provide services to its neighbourhood of surrounding communities. Conducting this study therefore offers an opportunity to study peculiar health issues relevant to the Madina community so as to guide necessary action.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This section examines various studies that have been done in the area of health care utilization and expenditure. It allows consideration of different perspectives by comparing knowledge from available literature/studies and defines the scope of the study.

2.2. Health Care Utilization

People use health care services for many reasons: to cure illnesses and health conditions, to mend breaks and tears, to prevent or delay future health care problems, to reduce pain and increase quality of life, and sometimes merely to obtain information about their health status and prognosis. Health care utilization can be appropriate or inappropriate, of high or low quality, expensive or inexpensive (Bernstein et al., 2003). Considerable efforts have been made to identify the barriers to accessing health care with the aim of increasing rapid access to health care in the public sector by those in need. Potential barriers include perceived quality of service, socio-cultural factors, availability of health services, perceived cause of the disease and the arrangements for payment (Asenso-Okyere et al, 1998; Ansah et al, 2009).

2.2.1 Determinants of Health Care Utilization

Multiple forces determine how much health care people use, the types of health care they use and the timing of that care. Some forces encourage more utilization; others deter it. Some

studies on health care utilization identify predisposing, enabling, and need determinants of care. Predisposing factors include the propensity to seek care, such as whether an individual's culture accepts the sick role or not, and what types of care are preferred for specific symptoms. Enabling factors include depth and breadth of health insurance coverage and its affordability, location of services and other factors that allow one to receive care. Need for care also affects utilization, but need is not always easily determined without expert input. Many people do not know when they need care and what the optimal time to seek care is. If all people could obtain unlimited health care, perceived need—by both patient and provider—might be the only determinant of health care utilization, but unfortunately barriers to needed care, such as availability or supply of services, ability to pay, or discrimination, have an impact on utilization overall (Bernstein et al, 2003).

2.2.2 Direct Costs

Improving access to basic health care can help accelerate progress towards the Millennium Development Goals. Cost is usually the major obstacle preventing the poor from accessing basic health care. Improving the affordability of essential health care services requires measures aimed at reducing all costs – be it official fees, informal out of pocket payments or indirect costs. User fees contribute to the financial burden although in many countries they are not the most significant financial barrier to access (Pearson, 2004).

The poor face financial barriers to seeking health care that go beyond the direct cost of treatment and drugs. People also incur high costs for transportation to health facilities, for food for themselves and family members accompanying them. Further, prices for care influence utilization behaviour and health outcomes. Thus, even access to free health care for most users is far from free (Bitran and Giedion, 2003; Meesen et al, 2009).

Cambodia's Health Equity Fund not only waives user fees for the poor but also reimburses their transportation and food costs associated with health care (Bitran and Giedion, 2003). This stands in contrast to Ghana's Health Insurance Scheme which does not cover other associated cost of health services.

2.2.3 Socio-demographic Factors: Indirect costs

Utilization of services is affected by availability and accessibility of services. Travel time and distance also significantly impact utilization and health status. The time spent seeking care might mean loss of wages or income, especially if the illness occurs during a period of peak agricultural labour (WHO, 2006). Availability coverage describes how the supply of care is spatially distributed without considering if this supply is physically accessible, while accessibility coverage looks at how physically accessible a service is to the population without considering if the supply of care is sufficient to cover the demand. Combining these two types of measure into a single index provides a measure of geographic (or spatial) coverage, which is an important measure for assessing the degree of accessibility of a health care network. Least cost path models are popularly used in geographic information systems (GIS). These measures assume that every member of the population is a potential user of the service; the pattern of spatial

accessibility will depend on the relative location of the population and services. Two types of measures are generally considered - distance and time. Depending on the transportation mode, the travelling time to the 'nearest' health facility may be significantly influenced by the type of land cover and the presence of barriers to movement such as rivers or wetlands that the patient will have to cross or circumvent (Ray and Ebener, 2008).

The use of GIS as a major technology for map storage, production and dissemination has been fully recognized. GIS technology gives data a spatial dimension. Mappable factors such as distances between settlements and health services, road infrastructure and types of transportation available greatly influence accessibility of health services (Al-Shorbaji, 2007).

Proximity to urban hospitals and capacity to afford other costs are probably the main reasons why the better off benefit more from the subsidized services in public hospitals than poor people do (Meesen et al, 2009). Ensuring the right to health means that governments must generate conditions in which everyone can be as healthy as possible. This includes functioning public health and health care facilities, goods and services, as well as programmes in sufficient quantity (WHO, 2007).

2.2.4 Socio-economic Status (SES)

Socio-economic status has long been associated with health status (Rutstein and Johnson, 2003). Several measures of SES are available. The development of measuring health outcomes

by SES can be credited to work started by Shea Rustein in the mid 1990s who later joined forces with Kiersten Johnson, Davidson Gwatkin of the World Bank and others to develop wealth indexes for several countries and produce a set of poverty health indicators (Rutstein and Johnson, 2003).

The principal indicators of economic status are household income, household consumption expenditures and household wealth. Household income is a theoretical indicator of economic status. It is however difficult to measure accurately for reasons such as lack of knowledge of actual incomes, variability of income and its sources, fear of possible taxation etc. Household consumption expenditures which uses consumption expenditures as a proxy also has difficulties regarding the basket of goods used which may exclude irregular/periodic purchases, periods of reference for different goods and obtaining accurate information since expenditures are made by different members of the household. Household wealth however, represents a more permanent status than income or consumption and is more easily measured using indicator variables (Rutstein and Johnson, 2003).

In this study, the wealth index was used as an indicator of socio-economic status. Since data on household income or expenditure are often unavailable or unreliable as a measure of economic status in developing countries, the use of an asset index is a good alternative to distinguish wealth layers within a population (Houweling et al, 2003). Two other variables associated with SES are occupation and level of education. These are deliberately left out of the wealth index

making it a purely an economic variable. Also, education and occupation have their own effects on health status and the use of health services (Rutstein and Johnson, 2004).

The wealth index uses the principal component analysis (PCA) which is a statistical technique used to reduce the number of variables and to detect structure in the relationships between variables that is to classify variables. The PCA is performed on durable asset ownership, access to utilities and infrastructure, and housing characteristic variables. The statistical software STATA is frequently used to perform the factor analysis. Weights are assigned to the assets and quintiles constructed by categorizing households into five classes (Vyas and Kumaranayake, 2006).

2.2.4.1 Health Care Expenditure and Poverty

At the household level, income (or wealth) and education are the main determinants of health. Within countries, poor people have worse health outcomes than better-off people. The causal relationship is in both directions: poverty breeds ill-health, and ill-health keeps people poor. In low- and-middle-income countries (LMICs), better-off people tend to use health services more frequently and to a greater degree than the poor. They often demand more private sector care, as well as more public sector care (WHO, 2006). This supports the inverse care law which was first described by Julian Tudor Hart in 1971. It describes a perverse relationship between the need for health care and its actual utilization. In other words, those who most need medical care are least likely to receive it. Conversely, those with least need of health care tend to use health services more and do so more effectively (Appleby and Deeming, 2001).

Poor households in most African countries still face difficult choices between seeking care when they are ill, knowing that the act of obtaining care can result in financial catastrophe, or foregoing care knowing that sustained ill health could reduce their ability to work and might lead to impoverishment (Xu et al, 2006). There is evidence that health care costs may plunge households into poverty and that the likelihood of a poor household ever being able to move out of poverty diminishes when confronted with illness- related costs (Whitehead et al, 2001).

Catastrophic health expenditure is defined in relation to a household's capacity to pay (Russell, 1996). Over the past decades, health sector reforms in many African and other LMICs have increased inequities in access to affordable healthcare. A growing reliance on out-of-pocket payments and privately organized care has resulted in health care provided on the basis of ability-to-pay, which has disadvantaged lower-income socioeconomic groups (McIntyre et al, 2008). People who do not use health services at all, or who suffer financial catastrophe are the extreme. Many others might forego only some services, or suffer less severe financial consequences imposed by user charges, but people everywhere, at all income levels, seek protection from the financial risks associated with ill health (Carrin, 2008).

Globally, 100 million people are impoverished as a result of health spending each year (WHO, 2007). Studies in several African countries showed a reduction in use of health services following introduction of user fees, as a result of which significant increases in available funds have only been achieved in a few isolated cases (Arhin-Tenkorang, 2000). According to a 2009 report, those enrolled in the National Health Insurance Scheme were twice as likely to have sought care at a modern provider, compared to the uninsured. Those who reported self-treatment

or sought care from an informal/traditional provider such as chemical seller, herbalist or traditional healer decreased significantly. This was accompanied by major reductions in out-of-pocket payments (for out-patient services) for those insured at time of seeking care which was ₵8,429, (that is, Gh₵0.84) compared to ₵56,760 (that is, Gh₵ 5.68) for the uninsured (Chankova et al, 2009).

A survey in Ghana revealed that the Greater Accra Region is better off than the other regions, with about 46% of its households falling within the highest quintile, and a smaller number of households of about 5% within the lowest quintile. The three Northern regions had low proportions of households in the highest quintile and relatively high proportions of households within the lowest quintile. Upper West had the lowest proportion of its households (3%) in the highest quintile and as much as about 77% in the lowest quintile. This indicates that poverty is very high in the northern regions. Among all the localities, fewer people tend to be sick in Accra than in other urban and rural localities. While in Accra about 14% of persons were sick during the reference period, the corresponding proportions for the other localities range from 19% in rural savannah to 24% in rural forest (Ghana Living Standard Survey, 2008). This suggests a higher prevalence of illness among poorer communities as compared to the less poor ones.

A study of health care seeking behaviour in rural and urban health centres in three districts in Ghana shows an increase in cost-saving measures like self-medication after the introduction of user fee policies (Asenso-Okyere et al, 1998). Self-treatment using allopathic or traditional medicines available at home, or purchased from a drug seller or traditional healer at a relatively

lower cost than at public facilities is another frequent practice for avoiding or at least minimizing costs (McIntyre et al, 2005).

2.2.5 Quality of Care and Choice

Perceived quality of health care does affect the client's decision to use health services and the type of health services to use. Improved quality of care can increase use of health services (Arhin-Tenkorang, 2000). However, quality of health care may take varied forms from the patient/client's viewpoint, therefore, what is important to one client may be less so or totally irrelevant to another. Several studies have tried to measure, understand or categorize the dimensions of quality of care from the patient's perspective. Though various facets have been identified, Sofaer and Firminger (2005) raise an important question as to whether the technical aspects of care can be evaluated reliably by patients. Their view is that more work is needed to assess whether patient reports of outcomes, particularly functional status outcomes, are indeed substantially less reliable than are those of clinicians and whether their assessment is consistent with evidence-based care. One method which is vital to the measurement of quality of health care is consumers' ratings of the services provided (Nketiah-Amponsah, 2009).

The World Development Report (2004) mentions that discourtesy, social distance, abruptness of care, discrimination against women and ethnic minorities, service characteristics mismatched to individual tastes - all are associated with provider behaviour. And all can improve with the purchasing power of clients. Indeed, that is why

the private sector is often seen as preferable to a public sector with staff paid by salaries. Private practitioners usually provide services more convenient to clients. Limited hours in public facilities contribute to reasons people go to a private practitioner. What accounts for the difference is often not the training but the motivation. If the staff is paid through salaries, there is no strong incentive to be accommodating (World Development Report, 2004).

In a study in the Ashanti-Akim District of Ghana, three components of quality of care were identified - perceived quality of medical care; staff attitudes; and the availability of drugs. The perceived quality of an institution was an important determinant of choice of health service provider. The most important criterion was whether or not the patient had been cured after visiting a particular place. Although the accessibility of untrained providers such as quacks and druggists was appreciated, there were doubts about the quality of care they provided. The public also regarded the attitudes of staff as very important. At the larger facilities, there were objections to excessive waiting times, queue-jumping and discourtesy to patients. Availability, type and quantity of drugs were also important in convincing patients that they had received value for money (Waddington and Enyimayew, 1989).

A recent study found that users of private and public health facilities are more likely to be very satisfied with health services than those who seek health care from traditional healers, pharmacies etc. However, consumers of private health services are approximately 12 percentile points more likely to be satisfied than subscribers of public

healthcare. In general, as the quality of modern health care improves, the demand for unorthodox health care such as traditional medicine and self treatment will reduce in favour of modern health care (Nketiah-Amponsah and Hiemenz, 2009).

Since demand for health care by poor people is price sensitive, any reduction in the price charged to the user will induce an increase in demand (Meesen et al, 2009). While this is a positive development, it is also something to monitor carefully, in terms of implications for cash flows and sustainability. Increased utilization of curative care is not self-evidently positive and care patterns can be distorted by provider interests and unequal access by different groups. In addition, improving the quality of care is critical to realizing health gains from increased utilization (Witter and Garshong, 2009).

2.2.6 Traditional and Alternative Health Care

Traditional medicine practitioners use herbs, spiritual beliefs, and local wisdom in providing healthcare (WHO, 2001). Earlier studies in Ghana showed people relying more on traditional healers following introduction of user fees for public health services. Such treatments were more affordable because they allowed alternatives to cash payments (Arhin-Tenkorang, 2000).

Recent data shows that with the exception of Accra relatively high proportions of sick persons in the other localities purchase drugs for their ailments without consulting any health practitioner. The proportions for such persons range from 40% in rural forest to

about 28% in rural coastal. Among those who report ill or have injuries, less than 5% consult a traditional provider, spiritualist and a traditional birth attendant (TBA). A large proportion of 32% do not consult any health care provider, but purchase medicines for their ailments. People in urban localities, especially Accra, are more likely to seek consultation with a doctor than those in rural localities. While about 79% of the sick and injured in Accra consult doctors, only about 47% in other urban towns do so (Ghana Living Standards Survey Report, 2008).

In a study of Ghanaians in Canada, the reasons given by Ghanaians for changes in their attitude toward traditional medicine were negative. However, people who were skeptical whilst in Ghana, immigrated to Canada, and had some poor experiences with Western medicine subsequently became more positive about the usefulness of traditional medicine. In the study, a mix-and-match approach to health seeking behaviour was observed - Ghanaians choose between either traditional or modern medicine depending on the nature of illness or health problem, cost, and the perceived success rate of traditional medicine in treating that particular illness or health problem (Barimah and Van Teijlingen, 2008). This implies that, apart from costs, beliefs and one's knowledge (perceptions) of illnesses may also influence choice of service used.

2.2.7 Health System Challenges: Health Financing

The World Health Report (2000) defines a health system as all the activities whose primary purpose is to promote, restore or maintain health. Health financing is one of the

six pillars for strengthening health systems; the others are service delivery, health workforce, information, medical products, vaccines and technologies and leadership and governance (Musgrove et al, 2000). A good health financing system raises adequate funds for health, in ways that ensure that people can use needed services, and are protected from financial catastrophe/impoverishment associated with having to pay for them (WHO, 2007). Better health forms the core of existence of a health system, and is unquestionably its primary or defining goal (Musgrove et al, 2000).

In many LMICs, resources for health have increased from both domestic budgets and external development partners. There is growing interest in domestic financing mechanisms that can be drawn upon to move towards universal coverage, including tax-based funding, social health insurance, community or micro-insurance, micro-credit etc. All of these mechanisms make major demands on managerial capacity (WHO, 2007). Recent literature on the effects of abolishing user fees in Africa shows that lowering financial barriers could promote utilization of health services, as claimed by the WHO Commission on the Social Determinants of Health (Carrin et al, 2008).

The WHO suggests that the fundamental ingredients for a health system are to “improve health status, reduce health inequalities, enhance responsiveness to legitimate expectations, increase efficiency, protect individuals, families and communities from financial loss, and enhance fairness in the financing and delivery of health care” (WHO, 1999). Ghana is largely behind in meeting most of these ideals since financial access to health care which has implications for all the above remains a challenge.

2.2.8 Health Financing Reforms

Health financing reforms are a core part of health sector development in LMICs. The current focus of international debate is on the need to move away from excessive reliance on out-of pocket payment towards a system which incorporates a greater element of risk pooling and thus affords greater protection for the poor (Bennet and Gilson, 2001). In the late 1980s and early 1990s many developing countries, mainly in Africa, introduced charges for public health services in an attempt to use private funds, either to supplement or substitute the government budgetary resources for the health sector. Preceding and during this period, policies that sought to increase private contributions for financing of health services provided by the state were pursued by the international development community and some national governments (Arhin-Tenkorang 2001).

Reform in Ghana's health sector has taken place against a background of structural adjustment and public service reform programmes running since the 1980s through the 1990s. Key components of the reform agenda include introduction of user fees, full cost recovery for drugs, creating 'autonomous' hospitals, restructuring and strengthening health organisation and management at central and district levels etc. Reforms have mostly been introduced step-by-step rather than as a comprehensive package. The focus has been on improving organization and management of official health services rather than transforming the scope and nature of government involvement in the health sector (Smithson, 1998).

Arhin-Tenkorang (2001) argues that, in most instances user fees had the unintended effect of decreasing access to health care by the poor. She further argues that user fees, in addition to having been largely unsuccessful in raising significant resources, greatly contributed to increasing the exposure of poor households to the financial risks associated with illness. For these reasons, alternate financing mechanisms are required to provide financial risk protection to low-income households, particularly to those in the informal sector. The goal of fair financing is common to all societal systems (Musgrove et al, 2000).

2.2.9 National Health Insurance Scheme in Ghana

In 2001, Ghana, a low-income developing country, embarked on a process of developing and implementing policy and accompanying programmes for a National Health Insurance Scheme (NHIS) to replace out-of-pocket fees at point of service use as a more equitable and pro-poor health financing policy (Agyepong and Adjei, 2008). The health insurance premium ranges between a minimum of GH¢7.2 to a maximum of GH¢48 excluding registration fees. National health insurance levy (NHIL) and social security and national trust (SSNIT) deductions of 2.5% respectively also contribute to the fund. The case for removing official user fees for primary health services is strong because user fees raise little money and rarely meet their stated efficiency and equity goals. They are often associated with reduced utilization of services especially by the poor and vulnerable, a

failure to complete treatment and delays in seeking treatment, resulting in worse health outcomes (Pearson, 2004).

Based on the observation that removing financial barriers increases formal health care utilization, several countries are trying to implement free primary healthcare for all (Ansah et al, 2009). Fundamental functions of any health insurance system is to offer effective financial protection to its members, safeguard their assets, and help them escape the medical poverty trap, that is, the slide into poverty due to costs incurred and income lost because of illness (Whitehead et al, 2001). Health insurance also contributes to the social objective of reducing health care inequities, especially those related to access to services and the burden of illness (Wagstaff, 2002).

The NHIS benefits package covers over 95% of the most common disease conditions in Ghana, and includes outpatient and inpatient care; comprehensive delivery care; diagnostic tests; generic medicines and emergency care (Chankova et al, 2009). It however, does not include indirect costs incurred in accessing health care; this may continue to remain a challenge to many poor households.

Membership of the NHIS in Ghana is legally mandatory; however, in practice membership is optional for non-formal sector workers who form a large part of the population. There are many barriers to joining the NHIS – economic, geographic, organizational, and cultural – and so membership remains partial and in some ways skewed against marginalized groups (Witter and Garshong, 2009). By the end of

December, 2009, all across the country, there were over 14,282,620 registered card-bearing members of the scheme constituting some 69.7% of the population using 2004 base population estimates (NHIA, 2009).

In a 2009 household sample survey, wealth was strongly associated with enrollment in NHIS. About half of the individuals in the richest wealth quintile were insured under NHIS, compared to less than one-fifth of individuals in the poorest quintile. Furthermore, individuals who were covered by NHIS were almost three times as likely to report an illness in the past two weeks, and were more than twice as likely to report a chronic health condition as the uninsured. These results provide some indication of adverse selection into NHIS, whereby those with poorer health status were more likely to enroll than healthier individuals (Chankova et al, 2009). Reports of informal payments to health workers have also grown. Examples of reported informal payments by clients include charging for services out-of-hours, asking patients to pay for drugs which are said not to be in stock, asking patients to pay for 'better' drugs, said not to be provided under the NHIS. A chief underlying cause may be traced to cash flow problems. As of the end of 2008, around \$34 million was owed to health facilities, almost all of this due to unpaid NHIS claims (Witter and Garshong, 2009).

2.3 Conclusion

For the achievement of universal access of health services as envisaged by the WHO, Ghana like other developing nations will have to make targeted efforts to provide acceptable quality of health care that will, in reality reach the poor and vulnerable in societies. Health care reforms in Ghana has however been unsuccessful in yielding this

goal due to several inter-related issues linked to health care financing system, poverty, type of health services available, quality of health services etc. It is in this vein that this study seeks to examine and add knowledge to existing efforts at improving the utilization of and expenditure on health services.

2.4 Objectives

2.4.1 General Objective

The general objective is to determine the utilization of and expenditure on health care in the district.

2.4.2 Specific Objectives

The specific objectives are:

To identify and map out the range of health care facilities in Madina township;

To determine the pattern of health care utilization by households;

To estimate the out-of-pocket expenditure of health care to households; and

To estimate the indirect cost of health care to households.

CHAPTER THREE

3.0 METHODOLOGY

The study employed quantitative methods.

3.1 Type of Study

This study was a cross-sectional survey.

3.2 Study Area

The study area is the Ga-East District which lies in the northern part of the Greater Accra Region. It is bounded on the north by the North Akwapim District, on the west by Ga-West, east by Tema Municipal and south by the Accra Metropolis. The district has four sub-districts which are Madina, Danfa, Taifa and Dome. The study will be carried out in the Madina township. Madina was chosen because it is a mixed urban/peri-urban area and the largest community in the district. It therefore offers the advantage of yielding a sample that is more likely to be representative of the district in general. It also has the highest number of modern medical health facilities in the district, that is, of the 39 orthodox health facilities, 25 are in Madina. It is the most populous of the four sub-districts and had a population of 113,613 as at 2009. The majority of its inhabitants are Gas and Sessemi. Trading and craftsmanship are the major vocations, with a high unemployment rate (Ga-East District Annual Health Report, 2009).

3.3 Dependent Variable

The dependent variable is health care utilization.

3.4 Independent Variables

The independent variables are types of health facilities, wealth quintiles, health insurance status and expenditure on health.

3.5 Study Population

The study population was inhabitants of Madina township. The study unit was households.

3.6 Sampling Procedure

A multi-stage sampling technique was used. The Madina community has already been divided into 6 zones by the Madina Health Centre (Kekele) for the purposes of proper coverage of the community for health service delivery. These zones were allotted a proportion of the total sample based on its population. To guide the selection of the houses, a bottle was spun in the community and the direction of the bottle's head, after it settled, was used to locate the first house. From there, every other house to the left of the first, was located and systematically covered until the required sample for each community was obtained. In each of the households selected, the head of the household was interviewed. In the absence of the head, the next in command or an adult of 18 years

and above was interviewed. In houses with more than one household present on a compound, one was chosen by balloting.

3.7 Sample Size

Study sample size estimation

The Ga DMHIS operational report (2009) indicates that the proportion of registered members with valid NHIS ID card is 39%. Therefore using 61% as the proportion of uninsured clients and the formula below, the minimum sample size was 366 as shown below:

$$n = \frac{Z^2 P(1-P)}{d^2} \text{ at a 95\% confidence interval and a margin of error of 5\%;}$$

where n = sample size, P = estimated proportion of non-insured households, d = margin of error (standard value of 0.05) and Z = confidence level (standard value of 1.96).

$$\text{Therefore, } n = \frac{(1.96)^2 \times 0.61 \times (1 - 0.61)}{(0.05)^2} = 365.56 = 366$$

This figure was rounded up to 400 to offset possible effects of non-response.

3.8 Data Collection Tools

The instruments used were structured questionnaires (appendix I) and a global positioning system (GPS) device.

a) Structured Questionnaire

This had closed-ended questions covering relevant information on household utilization and expenditure on health services, health insurance status, socio-economic status and type of healthcare services used.

- b) GPS: This was used to collect co-ordinates of the location of health facilities in Madina township.

3.9 Data Collection Methods

- a) Household Survey

This was carried out by the use of structured questionnaires that elicited information covering socio-demographic characteristics, NHIS membership status, types of health facilities used by households, household direct and indirect health care expenditure etc.

- b) Mapping: This was done to give a pictorial view of the location of health facilities in Madina.

3.10 Quality Control

This involved measures that were put in place to ensure that results obtained were accurate and valid.

3.10.1 Pre-data collection stage

The data collection technique and the questionnaire were pre-tested to ensure that it was appropriate in eliciting the required information. Pre-testing was conducted at Abokobi, a Ga-East sub-district since it is quite similar in characteristics to Madina. This was done to ensure validity of data. The data entry screen was also pre-tested to forestall possible drawbacks in its design so as to ensure accuracy of information.

3.10.2 Data collection stage

Research assistants/field personnel were trained to conform to ethical guidelines regarding protection of human subjects from harm in research. Frequent but unannounced

visits to the study site were undertaken by the field supervisor so as to ensure adherence to research guidelines.

3.10.3 Data Entry and Processing

Questionnaires that were incomplete/inconsistent and could not be clarified were excluded from processing and analysis. The questionnaires were checked within 24 hours of data collection, coded and serialized. Data was entered and cross-checked for errors. Data was entered using EpiData version 3.1 and processed using Stata 8.0 and Microsoft Excel.

3.11 Data Analysis

The following analysis was done:

- Mapping: The various health facilities in the community were located and their positions plotted on a map
- Utilization rates calculated as the number of out-patient visits to a health facility within two weeks prior to the survey.
- Expenditure: This is made up of direct costs, indirect costs including travel and waiting times, accompanying time, other workdays lost productivity losses and reported income losses.
 - o The direct cost was calculated in Ghana Cedis.
 - o The indirect cost was calculated in minutes.
 - o Other workdays lost (by patients and carers): It was calculated in days.

- Productivity losses: The value of work days lost was derived from the number of days lost multiplied by the national minimum wage for 2010.
- Reported income lost: This was computed as income losses reported by patients and carers in Ghana Cedis.

Valuation of indirect costs was done using the national minimum wage for Ghana for the year 2010 (Gh¢3.11). Expenditure on health services was analyzed by respondents' socio-economic status, type/category of health facility/services used and health insurance status.

- Socio-economic status: Respondents were grouped into various classes (quintiles) statistically using the principal component analysis as a tool. This was based on household ownership of assets such as fridges, televisions, vehicles, beds etc.

Tables, pie charts and bar charts were used to illustrate the results.

3.12 Ethical Considerations

The ethical issues of this study are as follows:

3.12.1 Overview of the study

This study was a cross-sectional study that sought to examine the utilization and expenditure patterns of health services. The purpose was to determine the health care utilization patterns of households and estimate the cost of health care to them.

3.12.2 Ethical approval

Ethical clearance was sought from the Ethical Review Committee of the Ghana Health Service. Permission to conduct the study was also obtained from the district health directorate of the Ga-East District

3.12.3 Subjects involved in the study

The study subjects were inhabitants of Madina township. In order to ensure a fair selection of subjects, households were chosen using simple random sampling method. The heads of the households were interviewed. In the absence of the household head, an adult above 18 years was interviewed.

3.12.4 Potential risks/anticipated benefit

There was only minimal risk associated with participation in this study. Sensitive information such as those given on assets or wealth was protected from public knowledge and was not traceable to the respondents. The community in general, however, stood to benefit from the results of this study through dissemination of the findings and its application to improve the healthcare utilization in the district.

3.12.5 Informed consent

Informed consent was sought from all the participants in writing. It included the purpose of the study, risks/benefits, privacy/confidentiality, conflict of interest etc. Participation was absolutely voluntary. Each subject was given the opportunity to refuse to participate or opt out of the study at any point in its course.

3.12.6 Privacy/confidentiality

Interviews were conducted in privacy. Names were not used in the write-up since they were coded. Data was also reported in aggregates to reduce possibility of tracing information gathered back to respondents. All information was treated as confidential.

3.12.7 Data storage & usage

Participants were briefed about the use of information given. Data collected was accessed by only those directly involved in the research. Data was stored on CD-ROMS and safely kept together with the questionnaires and any other hard copies made.

3.12.8 Compensation/payment

Participants were not compensated/paid for partaking in this research. Their inputs were however recognized and appreciated.

3.12.9 Funding information

This research was partly self-funded and also supported by the University of Ghana School of Public Health.

3.12.10 Conflict of interest

Apart from its academic and public health importance, I have no other personal interest in the study.

3.13 Limitations of the Study

Though the study used a two-week recall period, respondents could have had difficulty in remembering all the details asked, especially, those regarding expenditure on health services.

Despite the fact that respondents were informed of the purpose of this study and assured of confidentiality, they still might have been uncomfortable disclosing some information about their ownership of household assets. Consequently, responses provided for related questions may possibly be inaccurate.

Though, all the zones within Madina township were covered for the mapping of health facilities, directions provided on sign boards/posts to certain facilities were imprecise making them difficult to find. This was particularly so for some traditional (spiritual/herbal) health facilities where consultations are held at home.

CHAPTER FOUR

4.0 RESULTS

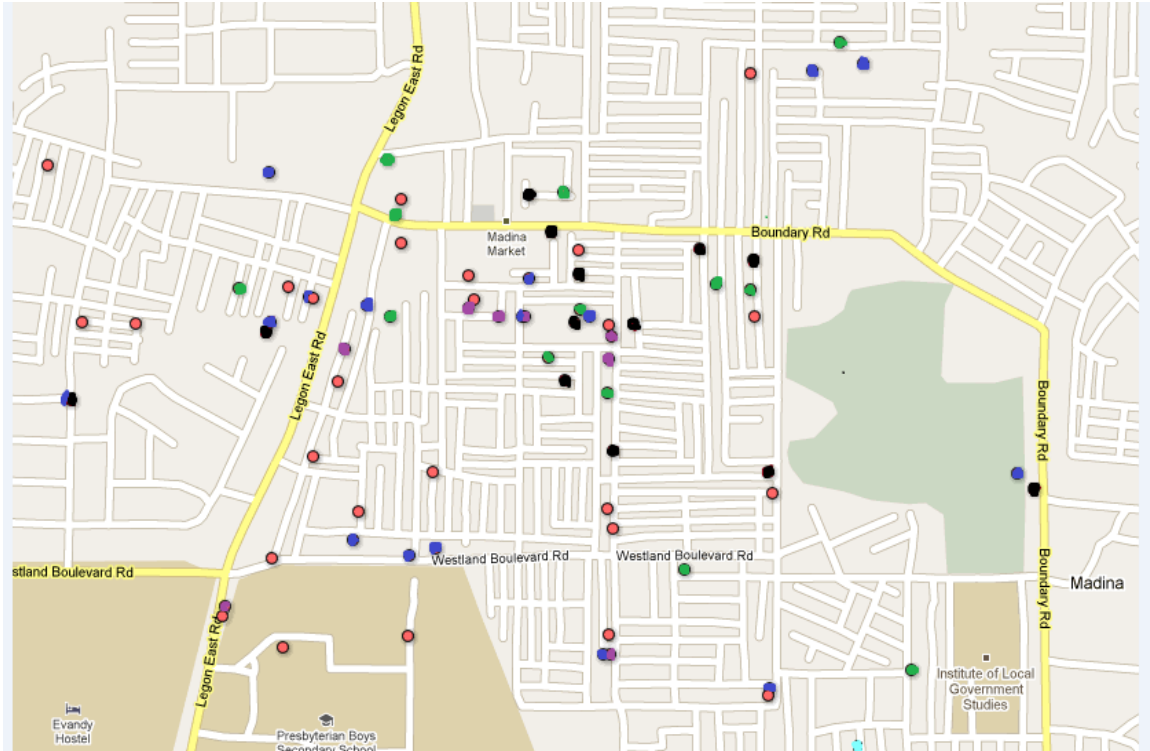
4.1 Introduction

This chapter presents the results of the study. A total of 400 households were interviewed, however, 22 (5.5%) were excluded from data analysis due to incompleteness/inconsistencies. This brought the number of questionnaires analyzed to a total of 378 (94.5%). The results are organized in five sections namely location of health facilities, background characteristics of respondents, health care utilization, health care costs and National Health Insurance Scheme.

4.2 Location of Health Facilities

4.2.1 Health Care Facilities/Services

Health facilities in Madina township where inhabitants may seek health care were identified and mapped out. These include hospitals/clinics, herbal/spiritual centres, pharmacies, chemical shops and medical laboratories. Seventy-eight health care facilities were mapped out. Out of this, 33.3% (26) were pharmacies, 17.9% (14) were chemical shops, 14 (17.9%) were herbal/spiritual facilities, 8 (10.3%) were medical laboratories and only 1.3% (1) was a hospital. Figure 2 shows their spatial distribution. Most of the health care facilities in Madina township are located around the Madina Market in the centre of the town. Details of these health facilities are provided in appendix III.

Figure 2: Map of Health Facilities in Madina**Legend**

- | | | | |
|--|---------------|--|-------------------------------------|
| | Hospital | | Clinic/Health Centre/Maternity Home |
| | Pharmacy | | Herbal/Spiritual Centres |
| | Chemical Shop | | Medical Laboratories |

4.3 Background Characteristics

The background characteristics of respondents are described below. It includes sex of respondents, household size, age groups, religion, level of education, main occupation and socio-economic status.

Table 1 shows that, 41% of respondents were males and 59% were females. The highest number of household size fell between one and four people contributing a total of 65%. This was followed by household sizes between five and nine members who made up 32%. Those with ten to fourteen members were about 3% and households with fifteen to twenty members were less than 1%.

The highest number of respondents belonged to the younger age groups of 18-29 which had 38% and 30-39 with 32%. The least represented age groups were those belonging to 60-69 and 70+ with 3.4% and 1.3% of respondents respectively. The majority of respondents interviewed were Christians (77%) and Islam and other religions constituted about 24 %.

Middle School/Junior Secondary School constituted the highest level of education for 130 respondents. This was followed by respondents with Senior Secondary /Technical/Vocational School education who made up 106. Those with only primary education were 44 and respondents with no education and tertiary education were 49 each.

The most common occupation was sales/trading which constituted 45% of respondents. Manual workers constituted about 31%. Professionals made up 11%, and about 8.4% were engaged in agriculture and other occupations. Using their wealth quintiles to determine the socio-economic status of respondents, about 20% of respondents belonged

to the lowest quintile, the second had 21%, the middle had 19%, and the fourth and highest contributed 20% each.

Table 1: Background Characteristics of Respondents

Variables	Number of Males		Number of Females		Total	
	Number	Percent (%)	Number	Percent (%)	Number	Percent (%)
Sex	155	41.0	233	59.0	378	100
Household size						
1-4	100	64.5	145	65.0	245	64.8
5-9	49	31.6	73	32.7	122	32.3
10+	6	3.9	5	2.2	11	2.9
Age groups (years)						
18-29	58	37.4	86	38.6	144	38.1
30-39	52	33.6	67	30.0	119	31.5
40-49	29	18.7	36	16.1	65	17.2
50-59	10	6.5	22	9.9	32	8.5
60+	6	3.9	12	5.4	18	4.7
Religion						
Christian	128	82.6	161	72.2	289	76.5
Moslem and others	27	17.4	62	27.9	89	23.5
Level of Education						
No education	9	5.8	40	17.9	49	13.0
Primary	10	6.5	34	15.3	44	11.6
Middle school/JSS	55	35.5	75	33.6	130	34.4
Secondary/SHS/Tech	62	40.0	44	19.7	106	28.0
Tertiary	19	12.3	30	13.5	49	13.0
Main Occupation						
Unemployed	3	1.9	14	6.3	17	4.5
Professional	20	12.9	22	9.9	42	11.1
Sales/trading	36	23.3	134	60.1	170	45.0
Manual workers	80	51.6	37	16.6	117	31.0
Agriculture & others	16	10.3	16	7.2	32	8.4
Wealth Quintiles						
Lowest	26	16.8	50	21.1	76	20.1
Second	37	23.9	43	21.2	80	21.2
Middle	28	18.1	43	18.8	71	18.8
Fourth	28	18.1	48	20.1	76	20.1
Highest	36	23.2	39	19.8	75	19.8

4.4 Health Care Utilization

4.4.1 Out-Patient Visits in the Two Weeks Preceding Interview

Out of the total number of households (378) surveyed, 30% (114) reported using health services in the two weeks preceding the survey. Table 2 shows the number of out-patient visits made by socio-economic status. On the whole, the second quintile (25%) had the highest number of out-patient visits, followed by the lowest quintile (22%), with the middle quintile (14%) contributing the least.

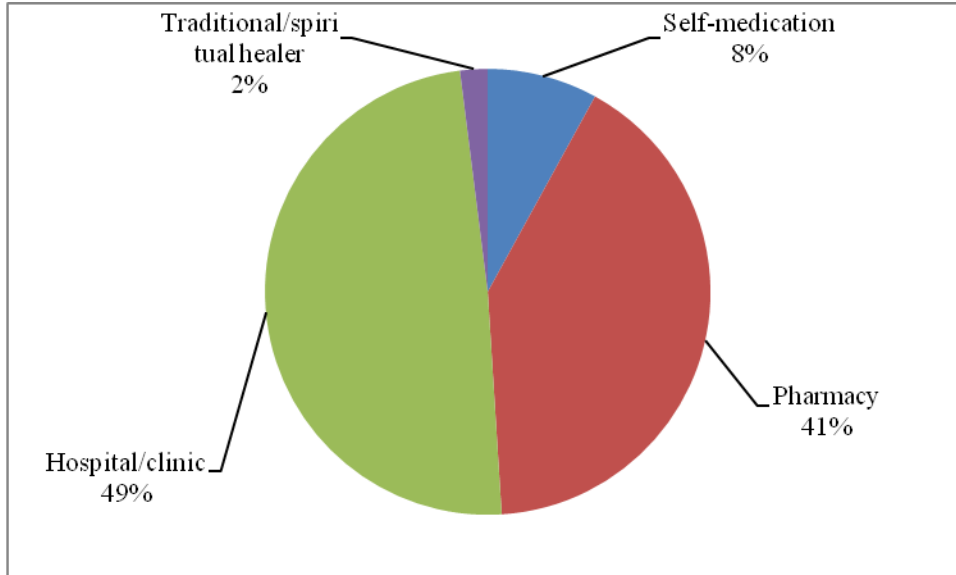
The pattern of the sources of treatment was similar among all the wealth quintiles. For all the classes of socio-economic status, private health facilities had the highest percentage of out-patient visits ranging from 50% among the middle class to 70% among the highest quintile. This was followed by quasi-government facilities for the second, middle and fourth quintiles. The use of self-medication was most prevalent in the second quintile but it was the least used form of health service in all the other wealth quintiles.

Table 2: Sources of Treatment by Socio-economic Status

Wealth Quintiles	Sources of Treatment	Out-patient Visits	
		Frequency	Percent
Lowest	Private	14	56.0
	Public/Government	6	24.0
	Quasi-government	3	12.0
	Self-medication	2	8.0
	Total	25	21.9
Second	Private	14	50.0
	Public/Government	4	14.3
	Quasi-government	6	21.4
	Self-medication	4	17.9
	Total	28	24.6
Middle	Private	8	50.0
	Public/Government	2	12.5
	Quasi-government	4	25.0
	Self-medication	2	12.5
	Total	16	14.0
Fourth	Private	12	54.5
	Public/Government	3	13.6
	Quasi-government	6	27.2
	Self-medication	1	4.5
	Total	22	19.3
Highest	Private	16	69.6
	Public/Government	3	13.0
	Quasi-government	3	13.0
	Self-medication	1	4.3
	Total	23	20.2

4.4.2 Type of Health Care Services Used

A total of 123 out-patient visits were made, 41% (50) purchased medicines from pharmacies/chemical shops and 49% (60) used hospitals/clinics as shown in Figure 3.

Figure 3: Number of Visits by Type of Health Care Services Used

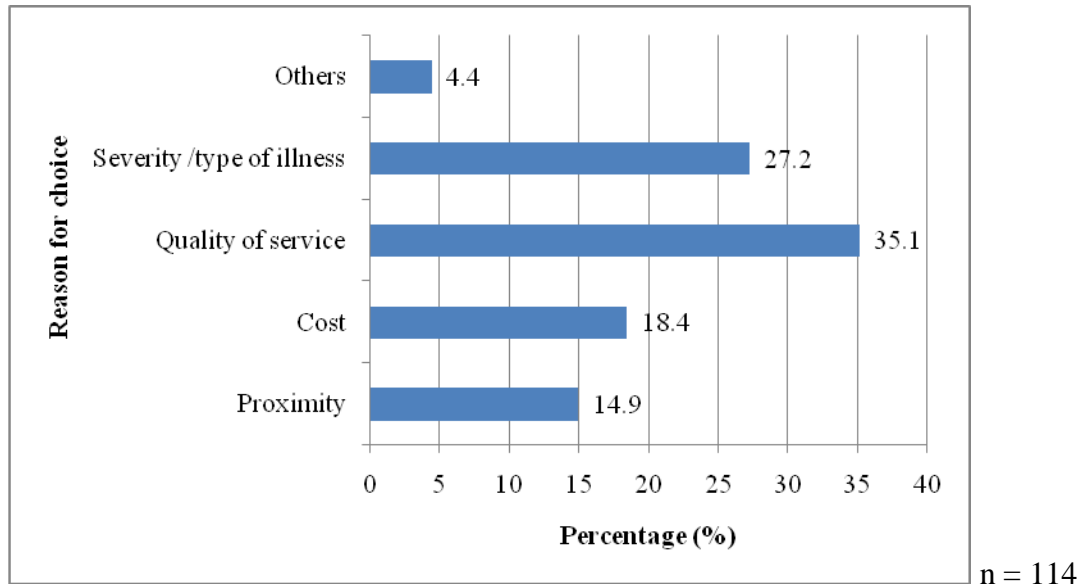
4.5 Choice of Health Facility

4.5.1 Type of Health Facility Used

Private health services were the most patronized by respondents 56% (64). Quasi-government facilities catered for 19% (22) and 16% (18) were seen by public/government facilities. Those who self-medicated were about 9% (10).

4.5.2 Choice of Health Facility

As shown in Figure 4, quality of service was ranked highest as the most important factor for a health care choice (35%). This was followed by the Severity/type of illness (27%). Cost of the health service was ranked third (18%) and proximity to the health facility was the least ranked as a reason of health care choice (15%).

Figure 4: Choice of Health Facility/Service

4.6 Health Care Costs

4.6.1 Direct Health Care Costs

4.6.1.1 Direct Costs by Socio-economic Status

Table 3: Direct Costs by Socio-economic Status

Socio-economic Status	Total Drug Costs		Other Direct Costs	
	Number	Median Cost (Gh¢)	Number	Median Cost (Gh¢)
Lowest Quintile	24	11.00	13	7.00
Second Quintile	27	7.00	15	8.40
Middle Quintile	13	6.00	6	9.75
Fourth Quintile	20	8.60	9	10.00
Highest Quintile	20	14.25	12	11.75

From Table 3, the highest quintile incurred the highest median direct cost on drugs (Gh¢14.25), followed by the lowest quintile (Gh¢11.00). The least median drug cost was Gh¢6.00 incurred by the middle quintile. The highest median expenditure of Gh¢11.25

spent on other direct costs (excluding drugs) was incurred by the highest quintile. The fourth quintile incurred Gh¢10.00 and the lowest quintile incurred the least of Gh¢7.00.

4.6.1.2 Direct Costs by Type of Facility

Users of traditional/spiritual healing services incurred the highest median direct cost of Gh¢50.00, followed by those who used hospitals/clinics with Gh¢34.50. Those who purchased drugs from pharmacies/chemical shops spent a median amount of Gh¢5.00 and those who self medicated with drugs from other sources incurred the least median cost of Gh¢3.50.

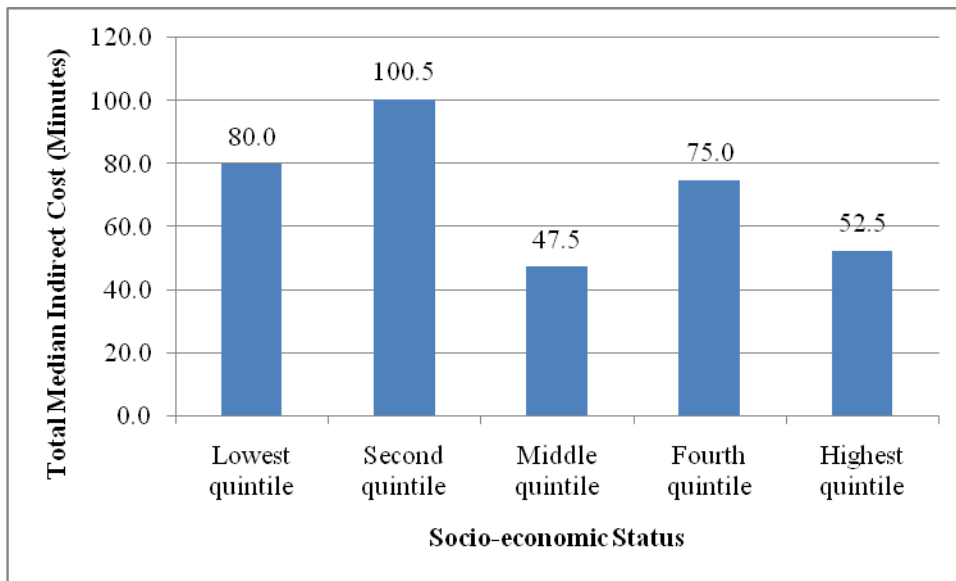
4.6.1.3 Direct Costs Incurred by the Insured

Of those who used health services, about 31% were enrolled in the NHIS and incurred a median direct cost of Gh¢6.00. The rest (69%) who were not enrolled incurred a median direct cost of Gh¢13.00.

4.6.2 Indirect Health Care Costs

4.6.2.1 Travel and Waiting Time

Figure 5: Indirect Costs (travel and waiting time) by Socio-economic Status



As shown in figure 5, on the whole, the middle quintile recorded the least total median indirect cost¹ (47.5) and the second quintile recorded the highest (100.5). The lowest, fourth and highest quintiles recorded a total median indirect cost of 80, 75, and 52.5 minutes respectively.

For all the wealth quintiles, the general trend was that users of private facilities incurred the least median indirect costs. However, the highest median indirect cost for the lowest,

¹ Indirect cost is made up of travel and waiting time by patient

fourth and fifth quintiles were recorded in quasi-government facilities while public facilities recorded the highest for the second and third quintiles.

For the lowest quintile, the highest median indirect cost of 300 minutes was incurred by households who used quasi-government facilities. The least was about 31.5 minutes by users of private facilities. Public facilities in the second quintile reported the highest median indirect cost of 267.5 minutes and private facilities recorded the least of 35.5 minutes. Users of public facilities in the middle quintile spent the highest median number of minutes (221) in indirect cost and those who used private facilities spent the least time of about 32.5 minutes.

In the fourth quintile, 285 minutes was spent as the highest median indirect cost and was incurred by quasi-government facility users. The least was 25 minutes by private facility users. Quasi-government facility users in the highest quintile spent a median time of 235 minutes as indirect cost and private facilities recorded the least (23.5 minutes).

Users of pharmacies/chemical shops recorded the least median indirect cost of 20 minutes. Those who used hospital/clinics with and traditional/spiritual health services recorded a median time of 230 minutes each.

4.6.2.2 Accompanying Time²

Out of the total number of respondents who used health facilities/services (114), about 30% (34) were accompanied to the health facilities. Respondents in the fourth quintile spent the highest median accompanying time of 300 minutes, followed by the lowest quintile with a median time of 240 minutes. The second, middle and highest quintiles spent 120, 53 and 25 minutes respectively.

4.6.2.3 Other Work Days Lost

The total number of work days lost by patients who sought healthcare was 243 days. Out of this, the second quintile lost the most days of about 38%, followed by the lowest quintile with about 32%. The fourth, highest and middle quintiles lost about 13%, 11% and 16% respectively of the total number of work days lost as shown in Table 4. For respondents who practiced self-medication, only those in the second quintile lost any work days.

² Accompanying time consist of travel and waiting time by a carer

Table 4: Number of Work Days Lost by Source of Treatment

Wealth Quintiles	Source of Treatment	Total (Days)	Mean (Days)	Median (Days)
Lowest	Private	51 (66.2%)	5.1	3
	Public/Government	17 (22.1%)	3.4	1
	Quasi-government	9 (11.7%)	4.5	5
	Self-medication	0 (0.0%)	0	0
	Total	77 (100%)	4.52	3
Second	Private	32 (34.8%)	4.57	3
	Public/Government	11 (12.0%)	2.75	2
	Quasi-government	23 (25.0%)	5.75	4
	Self-medication	26 (28.3%)	8.66	7
	Total	92 (100%)	5.1	4
Middle	Private	12 (80%)	2.4	1
	Public/Government	2 (13.3%)	1.0	1
	Quasi-government	2 (13.3%)	1.0	1
	Self-medication	0 (0.0%)	0.0	0
	Total	16 (100%)	1.8	1
Fourth	Private	17 (47.2%)	4.25	1
	Public/Government	3 (8.3%)	1.5	2
	Quasi-government	11 (30.6%)	3.66	3
	Self-medication	0 (0.0%)	0	0
	Total	31 (100%)	3.66	2
Highest	Private	22 (81.5%)	3.1	3
	Public/Government	3 (11.1%)	1.5	2
	Quasi-government	2 (7.4)	1	1
	Self-medication	0 (0.0%)	0	0
	Total	27 (100%)	2.45	2

Fifty-eight recent (18) carers spent 1-4 days caring for the sick, 25.81% (8) and 16.13% (5) also spent 5-9 days and 10-14 days doing so respectively.

Table 5: Work Days Lost by a Main Carer

Wealth Quintile	Total	Mean	Median
Lowest	32 (21.2%)	5.3	4
Second	59 (39.1%)	6.6	7
Middle	13 (8.6%)	2.6	2
Fourth	31 (20.5%)	4.4	3
Highest	16 (10.6%)	4.0	3
Total	151	4.9	3

Of a total of 151 days lost by carers, the highest number (39%) was lost by those in the second quintile with a median of 7 days. This was followed by respondents in the lowest quintile contributing 21% of days lost. Respondents in the middle quintile lost the least in carers' time of 8.6% valued at Gh¢40.43.

4.6.2.4 Productivity Losses

Among patients, a total of about 31 days was lost in travel and waiting time. The highest of about 24% (8 days) was lost by households in the fourth quintile valued at Gh¢23.64. This was followed by the lowest quintile with 23% (7 days) valued at Gh¢22.70. The least amount of travel and waiting time lost by patients was about 10% (3 days) valued at Gh¢9.95. With respect to other days lost as a result of being ill, a total of 243 days was

lost. The second quintile lost the highest number of 92 days valued at Gh¢286.12. The middle quintile lost the least with 16 days valued at Gh¢49.76 as shown in Table 6.

Table 6: Valued³ Work Days Lost by Patients

Socio-economic Status	Patients			
	Travel and Waiting Time		Other Work Days Lost ⁴	
	Days	Value (Gh¢)	Days	Value (Gh¢)
Lowest Quintile	7.3 (23.3%)	22.70	77 (31.7%)	239.47
Second Quintile	6.9 (22.0%)	21.46	92 (37.9%)	286.12
Middle Quintile	3.2 (10.2%)	9.95	16 (6.6%)	49.76
Fourth Quintile	7.6 (24.3%)	23.64	31 (12.8%)	96.41
Highest Quintile	6.3 (20.1%)	19.59	27 (11.1%)	83.97
Total	31.3 (100%)	97.34	243 (100%)	755.73

From Table 7, among carers, about 13 days was lost in accompanying time, with the highest number of days (3) each valued at Gh¢9.33 lost by the second and fourth quintiles. The middle quintile lost the least accompanying time of about 1 day valued at Gh¢4.04. With regards to other days lost by carers, the highest productivity loss was 59 days valued at Gh¢183.49 by the second quintile and the least was 13 days valued at Gh¢40.43 by the middle quintile.

³ Valuation of work days lost was done using the national minimum wage for 2010 (Gh¢3.11)

⁴ Days lost as a result of being ill

Table 7: Valued Work Days Lost by Carers

Socio-economic Status	Carers			
	Accompanying Time		Other Work Days Lost ⁵	
	Days	Value (Gh¢)	Days	Value (Gh¢)
Lowest Quintile	3.5 (28.2%)	10.89	32 (21.2%)	99.52
Second Quintile	3.0 (24.2%)	9.33	59 (39.1%)	183.49
Middle Quintile	1.3 (10.5%)	4.04	13 (8.6%)	40.43
Fourth Quintile	3.0 (24.2%)	9.33	31 (20.5%)	96.41
Highest Quintile	1.8 (14.5%)	5.60	16 (10.6%)	49.76
Total	12.6 (100%)	39.19	151 (100%)	469.61

4.6.2.5 Reported Income Lost by Patients and Main Carers

Of the 114 health service users, only 21 (18%) reported having left some paid work undone. Among the sick, the lowest quintile with about 33% had the highest number of people who left paid work undone with a reported total income loss of Gh¢165.50 and a median of Gh¢10.00 . The least number of respondents (9.5%) with a loss of income was from the highest quintile with a reported total income loss of Gh¢76.00 and a median of Gh¢38.00. The least income loss (Gh¢51.00) was reported by those in the middle quintile with a median of Gh¢4.50.

The number of main carers who reported a loss of income was 23. The highest number of carers who lost an income was from the second quintile (35%) with the least median income loss of Gh¢2.10, then came the lowest quintile with about 22% of respondents

⁵ Time spent caring for the sick

and a median income loss of Gh¢10.00. The highest reported median income lost (Gh¢15.50) by main carers was by those in the fourth quintile.

4.7 National Health Insurance Scheme

4.7.1 Respondents' NHIS Status

Table 8 shows that about 50% (190) of respondents reported that they had never registered in the NHIS whilst 50% (188) mentioned that they had ever enrolled. Of the respondents who had ever enrolled in the NHIS, 55% (104) had valid cards for the year 2010. For both NHIS ever registrants and 2010 NHIS registrants, the highest quintile had the highest proportions of registered members of about 26% (48) and 26% (27) respectively whilst the lowest quintile had the least number of registered respondents of 16% (30) and 17% (18) respectively.

Table 8: Respondents' NHIS Status by their Socio-economic Status

Socio-Economic Status	NHIS Registration History		2010 NHIS Registration Status
	Ever Registered	Never Registered	
Lowest	30 (16.0%)	46 (24.2%)	18 (17.3%)
Second	36 (19.1%)	44 (23.2%)	19 (18.3%)
Middle	35 (18.6%)	36 (18.9%)	20 (19.2%)
Fourth	39 (20.7%)	37 (19.5%)	20 (19.2%)
Highest	48 (25.5%)	27 (14.2%)	27 (26.0%)
Total	188 (49.7%)	190 (50.2%)	104 (27.5%)

4.7.2 NHIS Status by Respondents' Occupation

The most common occupation among respondents was sales/trading 45% (170) out of which only 43% were registered with the NHIS. The next was skilled manual workers 24% (91) out of which 29% were registered NHIS members. Professionals were 11%

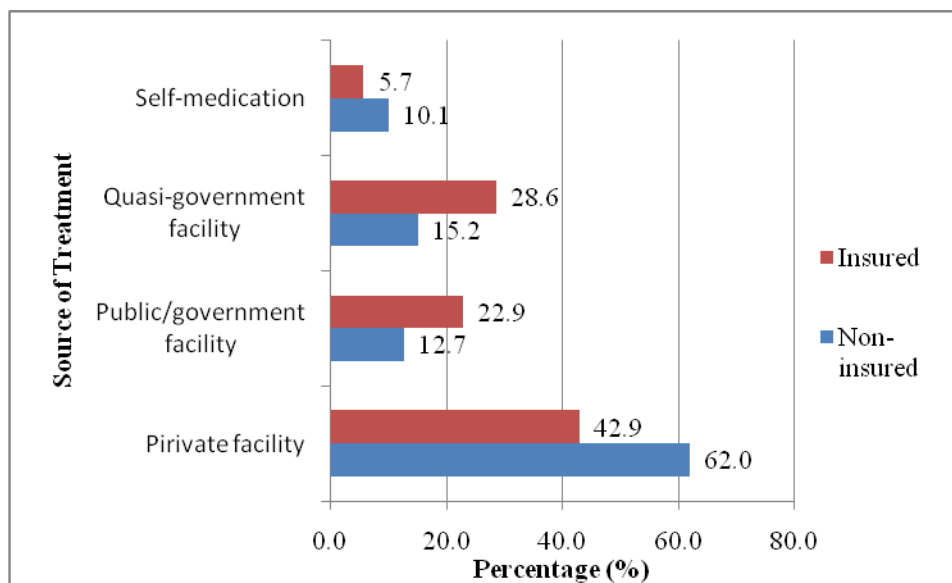
(42) out of which 14% were registered. Unskilled manual workers with 6% (23) had the least percentage of about 3% NHIS insured respondents.

4.7.3 NHIS Status of Other Household Members

The highest percentage of households 49% (185) had no other insured member apart from the respondent; followed by households with only one (1) insured member contributing 12% (47). The least was households with seven (7) insured members providing less than 1% of the total number of households.

4.7.4 Source of Treatment by Respondent's NHIS Status

Of the 114 households that used a health service, households with NHIS non-insured respondents (69%) who sought any type of treatment numbered more than those with insured respondents (31%). As shown in Figure 6, the highest number of both insured (43%) and non-insured (62%) households used private facilities and the least number for both groups – 6% for insured, 10% for non-insured - practiced self-medication respectively. The proportion of insured households that used quasi-government and public facilities were more than that for non-insured households.

Figure 6: Source of Treatment by Respondent's NHIS Status

CHAPTER FIVE

DISCUSSION

5.0 Introduction

This chapter focuses on shedding more light on the findings of this study in view of relevant literature.

5.1 Location and Availability of Health Facilities/Services

Considering the fact that an overwhelming 51% of health facilities in the highly populated Madina township were pharmacies/chemical shops and with only one major hospital, it was not surprising that about 51% of households who used health services/facilities did so without consulting a modern clinic/hospital. As clearly suggested by the WHO (2007), in order to assure people's right to health, governments must ensure the availability of functioning public health and health care facilities, goods and services, as well as programmes in sufficient quantity.

5.2 Health Care Utilization

Out of a total of 378 respondents surveyed, 114 respondents reported using health services within the two weeks preceding the survey. The highest number of household out-patient visits was made by those in the second quintile followed by those in the lowest quintile together making 47% of total health care utilization. This finding is supported by the Ghana Living Standard Survey which compared the Greater Accra Region (GAR) to Northern Ghana. It revealed that GAR had about 46% of its households

falling within the highest quintile, and a smaller number of households of about 5% within the lowest quintile. The three Northern regions had low proportions of households in the highest quintile and relatively high proportions of households within the lowest quintile. While in Accra about 14% of persons were sick during the reference period, the corresponding proportions for the other localities range from 19% in rural savannah to 24% in rural forest (Ghana Living Standard Survey, 2008). This suggests a higher prevalence of illness among poorer people as compared to the less poor ones. In this study however the fourth and highest quintiles also made relatively high use of health services, that is, 19% and 20% respectively.

Private facilities were the most used (56%) by all levels of socio-economic classes and the least was 8% by users of public facilities and those who self-medicated respectively. This may be due to the observation made by Nketiah-Amponsah and Hiemenz (2009) which revealed that consumers of private health services are approximately 12 percentile points more likely to be satisfied than subscribers to public health care. As confirmed by this study, quality of service was ranked highest as the most important reason for a health care choice, followed by the Severity/type of illness then cost of the health service. This implies that the public health system may need some quality adjustments to bring it at par with private health care in order to attract more clients. However, also important is the observation by Arhin-Tenkorang, (2000) that, “improved quality of care can increase use of health services, but even where such quality improvements are made, user fees can severely limit poor people’s access to health care”

Self-medication which was most common among poorer households, that is, the second, lowest and middle wealth quintiles together contributed a total of 80% of those who self-medicated. A possible explanation to this observation may be that poorer households are more likely to look for less costly alternatives in terms of both money and time if financial barriers to healthcare remain a challenge. This may be attributable to the explanation given by Asenso-Okyere et al, (1998) that “access problems cause a drop in utilization rates and eventually delays in seeking care”. There may also be diminished healthcare utilization, especially, by vulnerable groups like children and the poor, and delays in seeking care result in adverse effects on public health (Sauerborn et al, 1994). This finding may also be in support of the inverse care law which suggests that those who most need medical care are least likely to receive it. Conversely, those with least need of health care tend to use health services more and do so more effectively (Appleby and Deeming, 2001).

A total of 51% of those who used health services/facilities did so without consulting a modern clinic/hospital, that is, 41% purchased medicines from pharmacies/chemical shops, 8% self-medicated with drugs from other sources and 2% used a traditional/spiritual healer. This stands in contrast to the Ghana Living Standards Survey Report, (2008) which stated that people in urban localities especially Accra, are more likely to seek consultation with a doctor than those in rural localities and that while about 79% of the sick and injured in Accra consult doctors, only about 47% in other urban areas do so. However, a plausible reason for this finding may be due to the high

prevalence of pharmacies and chemical shops in Madina township as compared to the number of hospitals/clinics in the area. Additionally, it may be explained by the study of McIntyre et al (2005) that self-treatment using allopathic or traditional medicines available at home, or purchased from a drug seller or traditional healer at a relatively lower cost than at public facilities is a frequent practice for avoiding or at least minimizing costs.

5.3 Health Care Costs

5.3.1 Direct Costs

The highest quintile incurred the highest median direct cost on drugs both on drugs and other direct expenditure. For drugs, the lowest quintile incurred the second highest cost but spent the least on other direct expenditure like travel cost, food and laboratory investigations. Though relatively, the households in the highest quintile spent slightly more than their poorer counterparts, these differences fade in the light of evidence that “... the likelihood of a poor household ever being able to move out of poverty diminishes when confronted with illness- related costs” (Whitehead et al, 2001). Consequently, if poorer households are not financially protected from high health care costs they may delay seeking appropriate health care or rely on more “affordable” alternatives as evidenced by the high proportion of health service users who sought care in pharmacies/chemical shops in this study.

Non-insured households incurred a higher median direct cost (Gh¢13.00) than insured households (Gh¢6.00) who used health services. This confirms the study by Hatt et al, in

2009 that insured individuals were better protected from burdensome out-of-pocket expenditures than those not insured. This indicates that reducing financial barriers for households can actually increase access to health care services and encourage appropriate use of services, especially for the poor who tend to need/use health services more.

5.3.2 Indirect Costs

Generally, quasi-government facilities and public facility users tended to incur higher indirect costs while private facility users recorded lesser indirect costs. Additionally, in terms of specific types of facilities used, hospitals/clinics and traditional/spiritual healing centres recorded higher total median indirect costs (230 minutes) each while pharmacies/chemical shops recorded a median indirect cost of 20 minutes. This may have contributed to the surprisingly high utilization of services of pharmacies/chemical shops by households. In support, Meesen et al (2009) argue that proximity to urban hospitals and capacity to afford these other costs are probably the main reasons why the better off benefit more from the subsidized services in public facilities than poor people do.

Collectively, respondents who used health services in the lowest and second quintiles contributed over half the total work days lost of about 70% by patients. Additionally, those in the second quintile had the most number of days (39%) being taken care of by a main carer while the middle quintile had the least of all with about 9% and the highest quintile had about 11%. It is such loss of income that raises challenges for poor households. Even for those insured, use of this entitlement has associated participation costs like transportation and loss of time (Meessen et al, 2006). Xu et al, (2006) assert

that the poor are often faced with a dilemma as to whether they should seek care when ill, knowing that the act of obtaining care can result in financial catastrophe, or do they forego care knowing that sustained ill health could reduce their ability to work and might lead to impoverishment? From this study, the poorer lost more income than the less poor in terms of both recovery and carers' time since more people in the lower quintiles spent more time recovering or being cared for implying that financial protection in terms of health insurance which covers direct cost alone may not be enough to reduce financial barriers to health care for the poor.

5.4 National Health Insurance Scheme

Respondents in the lowest quintile who had never registered since the inception of the NHIS were more than their counterparts who had never registered in the highest quintile and vice-versa. Current NHIS registrants had similar trend. A significant observation is that, the number of registered members increases as one moves from the lowest to highest wealth quintiles. Though the coverage realized in this study is slightly lower than that reported in the GDHS 2008 for both men and women, the trend is similar in both studies. It also confirms the 2009 household survey report by Chankova et al that, wealth was strongly associated with enrollment in NHIS and that about half of the individuals in the richest wealth quintile were insured under NHIS, compared to less than one-fifth of individuals in the poorest quintile. This finding possibly suggests that the potential financial access to healthcare offered by the NHIS is not reaching the poor.

The bulk of respondents were engaged in non-formal jobs – especially, trading, skilled and unskilled manual work. A high proportion of them were also not registered with the NHIS. The non-formal nature of the larger population creates a challenge for ensuring membership in the scheme which might have contributed to the low coverage rates found among respondents. Witter and Garshong (2009) reinforces this view by asserting that there are many barriers to joining the NHIS - economic, geographic, organizational, and cultural– and so membership remains partial and in some ways skewed against marginalized groups.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

This study concludes that poorer households generally made more use of health services than the richer. The poorest also tended to lose more productivity time and therefore lost more income. A relatively high percentage of those who used health services/facilities did so without consulting a clinic/hospital indicating a preference for other services. The most predominant reason cited for utilization patterns observed was quality of services received. A high proportion of respondents were in the non-formal sector and recorded low NHIS enrolment levels. Insured households tended to incur less direct costs than those uninsured. More households in higher quintiles were insured as compared to the poor.

6.2 RECOMMENDATIONS

The study makes the following recommendations:

- 1) NHIS policies must be targeted at poor households especially, those in the non-formal sectors. However, to make those efforts successful, it must be combined with actions that incorporate client expectations on quality of health service delivery, particularly, reduction of waiting times at public health facilities.

- 2) Community-based education should be embarked on by the District Health Management team (DHMT) and the District Mutual Health Insurance Scheme (DMHIS) on the need to enroll in the NHIS. This will encourage appropriate use of health services which will ultimately reduce both direct and indirect costs of health care, especially for the poor.

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APPENDICES

Appendix I: Questionnaire

Unique Identifier for respondent

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Date of interview

--	--	--	--	--	--	--	--

District

.....

Locality or community name

.....

Name of respondent

.....

Name of interviewer

.....

Instructions: Please Complete/Tick the Appropriate Response

A) Personal and Demographic Characteristics	Codes
1) Age	1
2) Sex	[M] 1
	[F] 2
3) What is your marital status?	
Never married	[] 1
Married	[] 2
Living together	[] 3
Divorced/separated	[] 4
Widowed	[] 5
4) What is your religion?	
Christian	[] 1
Moslem	[] 2
Traditionalist/spiritualist	[] 3
No religion	[] 4
Other, specify	5
5) What is your highest level of education?	
No education	[] 1

Primary	[]	2
Middle/JSS	[]	3
Secondary/SSS/SHS/TECH/VOC	[]	4
Tertiary	[]	5

- 6) What is your main occupation?
- 7) How many are you in your household?
(Note: A household is usually a family unit living together/a house and its occupants regarded as a unit)
- 8) How many of your household members work for pay?
- 9) How much on the average does each working household member earn per month?

Household member	1	2	3	4	5	6	7	8	9
Income									
Wages /salaries									
Remittances									
Gifts/donations									
Other, specify									

10) Household Assets



a)	Does your household have the following functional items?	Yes	No
	A wall clock?	A wall clock. 1	2
	A radio?	A radio. 1	2
	A black/white television?	A black/white television. . . 1	2
	A colour television?	A color television 1	2
	A mobile telephone?	A mobile telephone 1	2
	A land-line telephone?	A land-line telephone 1	2
	A refrigerator?	A refrigerator 1	2
	A freezer?	A freezer 1	2
	Electric generator/invertor(s)?	Electric generator/invertor(s)... 1	2
	Washing machine?	Washing machine 1	2
	Computer?	Computer 1	2
	Digital photo-camera?	Digital photo-camera 1	2
	Non-digital photo-camera?	Non-digital photo-camera. . . . 1	2
	Video deck?	Video deck 1	2
	DVD/VCD?	DVD/VCD 1	2
	Sewing machine?	Sewing machine 1	2
	Bed?	Bed 1	2
	Table?	Table 1	2
	Cabinet/cupboard?	Cabinet/cupboard 1	2
b)	Does any member of this household own a functioning	Yes	No
	Bicycle?	Bicycle 1	2
	Motorcycle or motor scooter?	Motorcycle or motor scooter .. 1	2
	Car or truck?	Car or truck 1	2

B) Healthcare Utilization and Expenditure

10) Have you ever registered as a member of the National Health Insurance Scheme (NHIS)?

Yes [] 1
No [] 2

- (If no skip to question 14)

11) Do you have a valid NHIS card for 2010?

Yes [] 1
No [] 2

- (If no, skip to question 14)

12) Can I have a look at the card please?

Valid 1
Not valid 2

13) How many other household members have registered with NHIS for 2010?

(Note: Check with question 7 for number of members in household)

14) Have you or any member of your household been sick in the last two weeks?

Yes 1
No 2

15) Did you or any member of your household use any form of health service (including self-medication – both herbal and modern drugs) in the last two weeks?

Yes 1
No 2

- (If no, skip to question 20 and end interview)

16) How many household members used any form of health facility in the last two weeks?

17) What category of health facility did you use?

Private facility 1
Public/government facility 2
Quasi-government facility 3

(Note: Explain categories to respondent)

18) What type of health facility did you use and where are they located?

Location(Description)	Tick [<input type="checkbox"/>], if applicable	Facility name	Location/community (Include a popular landmark where available)
Facility type			
Orthodox (hospital/clinic)	<input type="checkbox"/>		
Traditional/spiritual healer	<input type="checkbox"/>		
Pharmacy/chemical shop	<input type="checkbox"/>		
Self-medication	<input type="checkbox"/>	N/A	N/A
Other, specify	<input type="checkbox"/>		

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19) Are there any other health facilities in Madina township that you know of?

Yes 1

No 2

- If no, skip to question 21

Location(Description)	Tick [<input type="checkbox"/>], if applicable	Facility name	Location/community (Include a popular landmark where available)
Facility type			
Orthodox (hospital/clinic)	<input type="checkbox"/>		
Traditional/spiritual healer	<input type="checkbox"/>		
Pharmacy/chemical shop	<input type="checkbox"/>		
Other, specify	<input type="checkbox"/>		

20) How many visits did you make within the last two weeks?

21) Was the sick accompanied by another person to and/or from the health facility?

Yes 1

No 2

If no, skip to Q25

22) Who accompanied the sick person for treatment?

Mother 1

Father 2

Sibling 3

Grandmother 4

Grand father 5

Other, specify 6

23) How long (in minutes or hours) did it take to accompany the patient for treatment?

.....

24) If more than one type of health service was used, what was the order of use of those health facilities? (Use categorization in question 19 for type of facility visited)

1st facility visited

2nd facility visited

3rd facility visited
 4th facility visited
 5th facility visited

25) Healthcare expenditure (Health facility visits)

Please choose from options 26 a, b, c or d as applicable (more than one option may be filled if different types of health facility (services) were used)

a) Hospital/clinic

Expenditure		Visit 1 []	Visit 2 []	Visit 3 []	Visit 4 []	
Direct costs:		(Gh¢)	(Gh¢)	(Gh¢)	(Gh¢)	
Consultation fees						
Drugs						
Laboratory investigations						
Other:	Food					
	Transportation					
	Specify _____					
Indirect costs (Patient):						
Travel time						
Waiting time						
Other, _____ specify						

b) Traditional/spiritual healer

Expenditure		Visit 1	Visit 2	Visit 3	Visit 4	
Direct costs:		(Gh¢)	(Gh¢)	(Gh¢)	(Gh¢)	
Consultation fees						

Drugs, if applicable						
Other: (patient)	Food					
	Transportation					
	Specify _____					
Indirect costs (patient):						
Travel time						
Waiting time						
Other, specify _____						

c) Pharmacy/chemical shop

Expenditure		Visit 1	Visit 2	Visit 3	Visit 4	
Direct costs:		(Gh¢)	(Gh¢)	(Gh¢)	(Gh¢)	
Drugs						
Other: (carer and patient)	Food					
	Transportation					
	Specify _____					
Indirect costs (patient):						
Travel time						
Waiting time						
Other, specify _____						

d) Self-medication (using both herbal and modern drugs)

Expenditure	1 []	2 []	3 []	4 []	
Direct costs:	(Gh¢)	(Gh¢)	(Gh¢)	(Gh¢)	
Drugs					
Other, specify _____					

26) Was there any paid work by the sick left undone as a result of seeking healthcare?

Yes [] 1
No [] 2

(If no, skip to question 30)

27) What was the number of days of work left undone?

(Please list separately if more than one household member was sick within last 2 weeks)

28) How much money did you lose as a result of leaving this work undone?

(Please list separately if more than one household member was sick within last 2 weeks)

29) How many days did you spend without work?

(List separately where necessary)

C) Main Carer

30) How many days has a main carer spent taking care of the sick?

31) What is the average income (wages, remittances, donations etc.) per day of the carer?

D) Choice of Health Facility

32) Why did you choose that particular healthcare facility/service?

Proximity [] 1
Cost [] 2
Quality of service [] 3
Severity/type of illness [] 4

Other, specify 5

33) What was the most important determinant in making your choice of healthcare facility/service?

Proximity	[]	1
Cost	[]	2
Quality of service	[]	3
Severity/type of illness	[]	4
Other, specify	5

Appendix II: Informed Consent Form for Household Survey

I am a student of the School of Public Health of the University of Ghana, Legon. I am undertaking a study on the utilization of and expenditure on health services in the Madina township for my master of public health dissertation. I would like to collect data from

you concerning household healthcare utilization and expenditure patterns. The information received will be useful for improving healthcare utilization in Madina and the Greater Accra in general. If you agree to take part, I will be asking you questions about your household characteristics, types of health services usually used, healthcare expenditure, socio-economic indicators, etc. You may be uncomfortable with some of the questions asked. You are however assured that information provided will be kept confidential and not traceable to the respondents. Interviews will be carried out in private. Data collected will be accessed only by those directly involved in the research and information received will be used only for academic purposes.

Participation is voluntary and you are free to redraw at any point during our interaction. There is only minimal risk associated with participation in this study. The administration of the questionnaire will take about thirty minutes to complete. You will not receive compensation for taking part in this study. Your input is however very much appreciated and the results will be disseminated to the community after results have been obtained.

If you need any clarification or further information, please do not hesitate to contact Minerva Kyei-Nimakoh on 024-5253068 or mnimakoh@yahoo.com. Thank you.

Respondent's Statement of Informed Consent

I do hereby state that I have read/ have had read to me, the purpose of this study, its methods, expected outcome, benefits/risks

etc. in a language I understand. I have been given the opportunity to ask question which have been satisfactorily answered. I therefore choose to participate voluntarily and understand that I am free to redraw at any point in the course of the study.

Name of respondent.....

Signature/thumbprint of respondent

Date.....

Appendix III: Health Facilities in Madina Township

a) Hospital (1)

- 1) Alpha Medical Centre

b) Health Centres/Clinics/Maternity Homes (15)

- 1) Madina Central Clinic
- 2) Bennett Memorial Clinic & Maternity Home
- 3) Care Medical Clinic & Maternity
- 4) Dela Clinic
- 5) Fransco Maternity Home
- 6) Global Clinic
- 7) Jacob Dental Service
- 8) Leonardo Medical Centre
- 9) Liberty Avenue Clinic
- 10) Madina Health Centre
- 11) Madina Polyclinic
- 12) Passion Clinic
- 13) Prilway Specialist Clinic & Laboratory
- 14) Universal Clinic & Laboratory Services
- 15) Vicktoria Clinic

c) Pharmacies (26)

- 1) Dependable Pharmacy
- 2) Madina Estate Pharmacy
- 3) Abbypharm Ltd
- 4) Agvic Pharmacy
- 5) Betvin Pharmacy (1)
- 6) Betvin Pharmacy (2)
- 7) Caads Pharmacy
- 8) Family Care Pharmacy
- 9) Fredaku Pharmacy

- 10) Ginad Pharmacy
- 11) Healex Pharmacy
- 12) Healthbag Pharmacy
- 13) Just Like a Tree Pharmacy
- 14) Lordy Pharmacy
- 15) Madna Pharmacy
- 16) Maliko Pharmacy
- 17) Mccoy Pharmacy
- 18) Nascata Pharmacy
- 19) New Road Pharmacy
- 20) Olives Pharmacy
- 21) OPAT Pharmacy
- 22) Prash Pharmacy
- 23) Randy Pharmacy
- 24) Raphaiah Pharmacy
- 25) Stillwell Pharmacy
- 26) The Pill Box Pharmacy

d) Chemical Shops (14)

- 1) F. K. Asare Licenced Chemical Shop
- 2) Leo Gbededu Licenced Chemical Shop
- 3) Richard K. Appiah Licenced Chemical Shop
- 4) Christie's Chemical Licenced Shop
- 5) Dorsot Chemical Shop (Licenced Chemical Seller)
- 6) Godsway Chemical Shop
- 7) Jonas Donkor Licenced Chemical Seller
- 8) K Osei Licenced Chemical Shop
- 9) Mrs Anita Armah Licenced Chemical Seller (Nita Chemicals)
- 10) Old Road Chemist
- 11) S. K. Asante Chemical Seller
- 12) Saabway Pharmacy (Licenced Chemical Seller)

13) Santiago Chemicals

14) Sylvester B. Aninkorah Licensed Chemical Shop

e) Laboratories (8)

- 1) Medi-Trust Diagnostic Services
- 2) Star of the East Medical Laboratory
- 3) Assurance Medical Laboratory
- 4) Bennett Memorial Laboratory Service
- 5) Camo Medical Laboratory
- 6) El- Shaddai Medical Laboratory
- 7) Lancet Medical Laboratory
- 8) Premier Medical Solutions

f) Traditional (Herbal/Spiritual Centres) (14)

- 1) El-Enyon Herbal Shop
- 2) Herbal Shop
- 3) Kingdom Herbal Centre
- 4) A. O. Owusu Ent. (Herbal Centre)
- 5) Adom Herbal Clinic
- 6) Capital 02 Natural Health Shop
- 7) Edinam Health Centre (herbal centre)
- 8) Ekubanco Herbal Clinic
- 9) Geowin Natural Health & Computer Clinic (Homeopathy)
- 10) I am Saved Herbal Clinic
- 11) Mighty Clinic
- 12) Sheikh Ibrahim Herbal-Spiritual Centre
- 13) Sheikh Nacambo Osmanu Sani One Stop Healing Spiritual Centre
- 14) Shekina Herbal Centre & Medical Laboratory