

**SOCIAL HEALTH INSURANCE AND QUALITY OF CARE IN GHANA'S HOSPITALS**

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**(10121443)**



**THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN  
PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF A  
DOCTOR OF PHILOSOPHY IN HEALTH SERVICES MANAGEMENT DEGREE**

**DECEMBER, 2014**

### DECLARATION

I, the undersigned, hereby declare that the work contained in this thesis is my own original work, and that I have not previously submitted it in its entirety or in part at any university for a degree.

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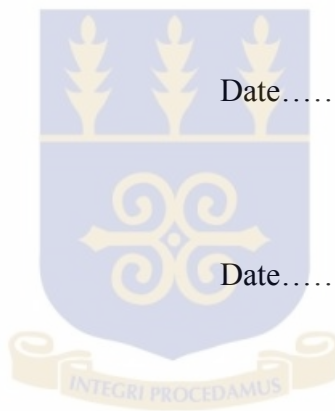
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## DEDICATION

This thesis is dedicated to the memory of my exemplary parents, Issifu and Sarah; to my lovely wife Felicia; and to my precious children Joel, Justice and Sarah.



## ACKNOWLEDGEMENT

I give glory to the Almighty God for how far he has brought me from a humble beginning. Indeed, I consider my life as a fulfillment of what God told the Old Testament Prophet Jeremiah: "Before I formed you in the womb I knew you..." (Jer. 1:5, NIV).

My supervisors, Prof. Kwame Ameyaw Domfeh, Prof. Joshua Yindenaba Abor and Dr Edward Nketiah-Amponsah deserve a special gratitude for the painstaking job of supervising me throughout this study.

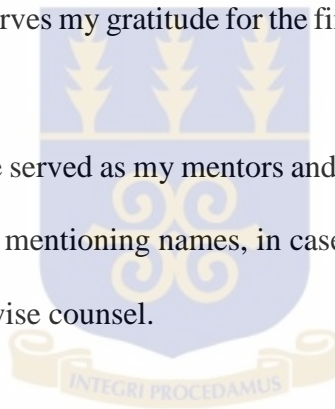
I am highly indebted to my family for their moral support and cooperation during my period of study.

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**LIST OF ACRONYMS**

|       |   |
|-------|---|
| AR    | Ashanti Region                          |
| BAR   | Brong-Ahafo Region                      |
| CBHI  | Community Based Health Insurance Scheme |
| CHAG  | Christian Health Association of Ghana   |
| CHF   | Community Health Fund                   |
| CR    | Central Region                          |
| DMHIS | District Mutual Health Insurance Scheme |
| DHS   | Ghana Demographic and Health Survey     |
| ER    | Eastern Region                          |
| GAR   | Greater Accra Region                    |
| G-DRG | Ghana Diagnostic Related Group          |
| GHS   | Ghana Health Service                    |
| GHSFF | Ghana Health Sector Facts and Figures   |
| GSS   | Ghana Statistical Service               |
| HMIS  | Health Management Information Systems   |
| HRH   | Human Resource for Health               |
| HRU   | Health Research Unit                    |
| IGF   | Internally Generated Fund               |
| IMR   | Infant Mortality Rate                   |
| IOM   | Institute of Medicine                   |
| IRB   | Institutional Review Board              |

|        |   |
|--------|---|
| JHS    | Junior High School                              |
| KMO    | Kaiser-Meyer-Olkin                              |
| MDGs   | Millenium Development Goals                     |
| MICS   | Multiple Indicator Cluster Survey               |
| MMR    | Maternal Mortality Ratio                        |
| MoH    | Ministry of Health                              |
| NDPC   | National Development Planning commission        |
| NHIA   | National Health Insurance Authority             |
| NHIF   | National Health Insurance Fund                  |
| NHIS   | National Health Insurance Scheme                |
| NHRC   | Navrongo Health Research Centre                 |
| NMIMR  | Noguchi Memorial Institute for Medical Research |
| NR     | Northern Region                                 |
| OPD    | Out-patient Department                          |
| RHA    | Regional Health Administration                  |
| SSNIT  | Social Security and National Insurance Trust    |
| U5MR   | Under-Five Mortality Rate                       |
| UNICEF | United Nations Children's Emergency Fund        |
| UER    | Upper East Region                               |
| UWR    | Upper West Region                               |
| VIF    | Variance Inflation Factor                       |
| VR     | Volta Region                                    |
| WHO    | World Health Organization                       |

WHO-JLI

World Health Organization -Joint Learning Initiative

WR

Western Region

## ABSTRACT

The introduction of the Ghana National Health Insurance Scheme has led to a tremendous increase in utilisation of health services. However, concerns are raised about the quality of care, especially in relation to insured patients. Previous studies related to patients' perceptions of quality of care in Ghana are limited in scope in terms of dimensions of quality assessment, and the effect of socio-economic and demographic characteristics of respondents. Also, no study has compared perceptions of quality of care between patients and healthcare providers. This thesis therefore aimed to provide a more comprehensive assessment of quality of care by examining a broader range of dimensions for the assessment of quality of care, within the context of major socio-economic and demographic characteristics of respondents and organizational factors. The study also compared perceptions of quality of care between patients and healthcare providers to examine whether the two stakeholders have similar or divergent perceptions of quality of care.

A cross-sectional survey of out-patients was conducted in 17 general hospitals from three regions in Ghana. Both insured and uninsured patients, as well as healthcare providers were selected for interview. Multi-stage sampling strategy was employed, culminating in the selection of patients and healthcare providers through convenience and purposive sampling respectively. IBM SPSS version 20 software was used to perform all statistical analysis, including factor analysis, chi-square test, t-tests, and multiple regression analysis. Qualitative data was analysed according to themes. The study found that generally, there is no significant difference in perceptions of quality between the insured and uninsured patients, except financial access to care. On the contrary, quality of care was a general concern expressed by both insured and uninsured patients. Long waiting times and inadequacy of resources and services, specifically inadequacy of doctors, drugs and equipment for work, were the major quality of care problems expressed by both categories of

patients. Regression analysis showed that being insured had a statistically significant positive effect on only financial access to care. However, some control variables such as age, marital status, income levels, health status and hospital size, rather had more influence on the various dimensions of quality of care. The study also found that generally, there were wide gaps in perceptions of quality of care between patients and healthcare providers, with the former tending to rate quality relatively lower than the latter. The reasons for these differences however, were beyond the scope of this study. The study concluded that there is no difference in perceptions of quality of care between insured and uninsured patients; and that prevailing anecdotal and empirical views that insured patients are discriminated against in terms of quality of care is largely not supported. On the contrary, concerns related to quality of care are raised by both the insured and uninsured. It was recommended, among others, that efforts must be taken to sustain the NHIS, eliminate or drastically reduce out-of-pocket payments by some insured patients and address quality concerns affecting both categories of patients or healthcare providers.

## CHAPTER ONE

### 1.0 INTRODUCTION

#### 1.1 Background to the Study

This chapter presents the background to this study, the problem statement, research questions, objectives, significance, scope, and organization of the study.

The need to improve health status and reduce poverty as spelt out in the Millennium Development Goals (MDGs) has led to a growing interest towards providing universal coverage of health services especially in developing countries (WHO, 2006a; Witter & Garshong, 2009). Social health insurance is an important catalyst by which all populations can attain universal health coverage. In a systematic review, Ekman (2004) concluded that the move towards social health insurance in low income countries is largely aimed at reducing out-of-pocket payment and ensure that individuals have access to quality healthcare when needed and at affordable cost. It is against this backdrop that in 2005, the WHO passed a resolution that social health insurance should be supported as one of the strategies used to mobilize more resources for health, for risk pooling, for increasing access to health care for the poor and for delivering quality health care in all its member states and especially in low income countries (WHO, 2005), a strategy also supported by the World Bank (Hsiao & Shaw, 2007).

Health insurance as a mechanism of financing healthcare is a system in which potential consumers of health services pool their resources together under a common insurance scheme for the purpose of financing future utilisation of health services through payment of some or all of the direct health

expenses incurred to the provider (Criel & Kegels, 1997; WHO, 1993). The primary objective of health insurance is to generate additional and stable revenue to fund the cost of healthcare provision and to establish the right financial incentives for providers so that the poor could have access to effective public and personal health services. A well-functioning health insurance scheme should not only generate sufficient and sustainable resources for health but that these resources must be efficiently used to ensure that everyone benefit from optimal quality of health service delivery and personal care (Crocco, 2005).

The growing importance of health insurance in developing countries explains why other alternative health financing mechanisms have been de-emphasized (Gilson, 1998; Bhat and Jain, 2006). Indeed, the risks of ill health resulting in financial losses can pose serious threat to the lives of many people, particularly the poor who often find it difficult subscribing to private health insurance. Therefore, social health insurance has emerged as a tool for improving access to healthcare among the poor, as well as protecting them from indebtedness and impoverishment resulting from medical expenditures (Devadasan *et al.*, 2004).

Like other developing countries, Ghana realized the need to implement a social health insurance system as an approach to provide quality and affordable healthcare, as well as improving access and health outcomes (Baltussen *et al.*, 2006b). Thus, in 2003, the government of Ghana, within the context of the Ghana Poverty Reduction Strategy III initiated by the World Bank, introduced a National Health Insurance Scheme (NHIS). Prior to the implementation of the NHIS, the health system in Ghana was financed through a cost-recovery system known as “cash-and-carry” where patients seeking medical care were required to pay upfront for health services provided in public

and private hospitals. This cost-recovery system created problems relating to inaccessibility and inequity in healthcare. The underlying mission of the NHIS, according to the policy of the Ministry of Health (MOH), is therefore to streamline the provision of health services by ensuring that every Ghanaian has universal access to an acceptable quality of essential health services without out-of-pocket payment being required at the point of service use (MOH, 2004). Premium holders of the scheme pay a minimum subscription fee which is renewable annually. Persons registered as premium holders are entitled to a variety of minimum health benefits packages through services provided in healthcare organisations in Ghana.

Since the introduction of the NHIS, there has been drastic increase in service utilisation at all levels of accredited healthcare institutions. For instance, hospital utilisation for the insured in 2006 was around 0.9 OPD per capita which was twice the uninsured (Leger, 2006). Further, between 2006 and 2007 service utilisation in public hospitals increased by 28.4% (Atinga *et al.*, 2010). Reports by the NHIS indicate that outpatient utilization of healthcare services increased over forty-fold from 0.6 million in 2005 to over 24 million in 2012 (NHIA, 2012). This rise in hospital attendance correlates with growth in membership of the NHIS (Witter & Garshong, 2009; NHIA, 2012).

Even though the increased utilization of health services is a desirable, considering the generally low utilization of health services in developing countries (Dor & van der Gaag, 1993; Müller *et al.*, 1996), there is a growing public concern of the quality of services that do not seem to meet the expectations of consumers of health services, especially those insured with the NHIS (Dalinjong & Laar, 2012; Nguyen *et al.*, 2011). The importance of managing quality in service organisations has emerged as a global issue, because, quality is seen as a driver of service excellence (Raja *et*

*al.*, 2007; Rose *et al.*, 2004). In the context of healthcare, the rising expectation by healthcare consumers for better service makes a case for providing quality care (Cronin & Taylor, 1992; Lam, 1997; Hart, 1996; Lewis & Mitchell, 1990). Literature is also conclusive that unless the healthcare consumer is satisfied that he/she has been conveniently provided with quality care at a reasonable cost and risk of adverse outcomes minimised, healthcare organisations stand the risk of going out of business sooner rather than later (Chattopadhyay & Szydlowski, 1999). Thus, there is mounting importance to take proactive measures to assess quality of health service provision so that resources can be directed effectively and efficiently towards improvement of the health services (Kearney, 1999).

In the context of developing countries, the WHO (2006b), has stressed the need to adopt sound local strategies for quality, so that the best possible results are achieved from any new investment in developing countries health systems. Also, considering the growing numbers of social health insurance schemes in developing countries, improving quality of health services becomes necessary to curtail adverse outcomes resulting in payment of damages, keep policy holders more satisfied with service delivery, improve utilisation of hospital services, and above all encourage enrolment especially among poor and low income earners. It is further argued that efforts to provide quality give health workers the opportunity to excel thereby increasing their job satisfaction and status in the hospital (Brown *et al.*, 1998). With the increasing emphasis on cost containment and competition in the established social health insurance environment, it becomes more important than ever for health insurance authorities and healthcare providers to have an accurate representation of patients' perceptions of the quality care. If these perceptions suggest deficiencies, policies and initiatives should be taken to improve care delivery.

## 1.2 Problem Statement

Many developing countries have embraced social health insurance as an appropriate health financing strategy. Currently, Rwanda and Ghana are among the few countries in Sub-Saharan Africa (SSA) that have taken health insurance to greater lengths in terms of scope and coverage. As at 2009, Rwanda achieved a coverage of 91% from 7% in 2003 (MOH, Rwanda 2010). The Ghana NHIS on the other hand, has reached coverage of 36.8% as at 2013 since its nationwide implementation in 2005 (MOH, 2013). In spite of this relatively low level of coverage in the case of Ghana, outpatient utilization of healthcare services increased over forty-fold from 0.6 million in 2005 to 25.5 million in 2011, and dropped marginally to about 24 million in 2012 (NHIA, 2012). Also, inpatient utilization increased to about fifty-fold from 28,906 in 2005 to 1,428,192 in 2012. This exponential increase in utilization of healthcare services has been attributed to the introduction of health insurance in Ghana, which has reduced significantly, the financial barrier to access health services (Blanchet *et al.*, 2012; NHIA, 2010, 2011; Witter & Garshong, 2009).

Notwithstanding the increased utilization of health services due to the NHIS, emerging evidence reveals a variety of implementation problems. On the health insurance scheme side, there are reports of delays in issuing insurance cards and lack of trust in scheme management, high enrolment dropout rates, among others. On health service users' side, there are reports of verbal abuse of patients, discrimination against the insured in terms of healthcare, long waiting times in health facilities for insured patients, unofficial payments to healthcare providers, among others (Bruce *et al.* 2008; Brugiavini & Pace, 2011; Dalinjong & Laar, 2012; NHIA, 2010). Healthcare providers also report of some challenges they face. SEND-Ghana (2010) reports that nearly 92% of accredited healthcare facilities surveyed indicated their inability to acquire medicines both in

terms of quality and quantity to cope with the increasing attendance due to the NHIS. In addition, 73% of accredited health facilities indicated that the NHIS affects the quality of medicine health providers prescribed for clients. Other challenges include delays in reimbursement of claims by the NHIA, lack of software and complex format for processing claims, as well as reduction in the number of claims submitted (NDPC, 2009).

Most studies including studies in Ghana have examined the perception of quality of care from the perspective of patients in general regardless of their insurance status (Abuosi & Atinga, 2013; Baltussen *et al.*, 2002, 2006a; Haddad *et al.*, 1998a, 1998b, 2000; Turkson, 2009). Another study assessed perceived quality of care from the perspectives of only insured patients (Atinga, 2012). Since these studies were concerned with quality of care in general regardless of insurance status, or of only insured patients, it is difficult to compare perceptions of quality between the insured and uninsured patients in order to conclude whether insured or uninsured patients receive better or worse care. Besides, certain quality dimensions and indicators such as financial access to health care and treating patients fairly regardless of their insurance status were not included in these studies. Even though there are few other studies related to perceptions of quality of care between insured and uninsured patients in Ghana, they are limited in scope in terms of the dimensions used in the quality assessment, as well as the socio-economic and demographic characteristics. For example, Dalinjong and Laar (2012) examined the influence of the NHIS on the behaviour of health care providers in their treatment of insured and uninsured clients. However, the study focused more on financial access to care, patient waiting time, physical examination of patients, and providers' interpersonal attitudes towards patients. Important dimensions of quality of care such as adequacy of resources and services, neatness of health facilities and staff, and effectiveness

of care for recovery and cure were not included. Besides, the study took place in only two districts in one region of Ghana. Jehu-Appiah *et al.* (2012) compared perceptions of insured and uninsured households in Ghana on health care providers (quality of care, service delivery adequacy, staff attitudes), health insurance schemes (price, benefits and convenience) and community attributes (health 'beliefs and attitudes' and peer pressure). However, the study was also limited in scope as the two regions selected were both located in the southern half of Ghana, leaving out the middle and northern portions which have marked socio-economic and demographic differences. Besides, important dimensions of quality of care such as fairness of care and neatness of health facilities and staff were not included.

The focus of this study therefore was to find out whether perceptions of quality of care differ among insured and uninsured patients, in respect of a comprehensive quality assessment tool, comprising of financial access to care, fairness of care, adequacy of resources and services, neatness of health facilities and staff, effectiveness of treatment, technical aspects of care, interpersonal aspects of care, as well as overall aspects of care. This would make it possible to conclude whether insured patients are being discriminated against compared with the uninsured, as some previous empirical and anecdotal evidence seem to suggest. Conclusions would be examined within the context of major socio-economic and demographic characteristics of respondents, as well as organizational characteristics of the study areas involved. Beyond that the study also sought to find out whether perceptions of quality differ between patients on one hand, and healthcare providers on the other, using the same quality of care indicators. Haddad *et al.* (2000) argue that assessment of quality of care may be enhanced by including patient and professional (health care provider) perceptions of quality. It is further argued that since providing

quality services is the responsibility of healthcare providers, any study on perceptions of quality focusing on only patients is lop-sided, and may fail to address quality concerns comprehensively, especially where patients and providers' perceptions of quality of care are at variance. However, no previous study has been sighted, especially within the context of Ghana, comparing perceptions of quality of care between patients and healthcare providers, using the same quality care indicators. Findings from this study would therefore establish whether there are any gaps in perceptions of quality of care between the two stakeholders in healthcare. Where quality gaps exist, it would provide a basis for comprehensive policies to address the quality concerns of both patients and healthcare providers.

In short, this study sought to identify whether there are any differences in perceived quality of care between insured and uninsured patients, as well as between patients on one hand, and health care providers on the other, in order to establish whether there are any bases for comprehensive measures or policies to address quality concerns of both patients and healthcare providers.

### **1.3 Objectives of the Study**

The main objective of this study was to examine whether there are any differences in perceptions of quality between the insured and uninsured patients within the context of the implementation of Ghana's National Health Insurance Scheme. The specific objectives are:

- i. to compare the perceptions of quality of care between the insured and uninsured patients
- ii. to investigate the effect of health insurance status of patients on perceptions of quality of care
- iii. to compare the perceptions of quality of care between patients and healthcare providers
- iv. to explore ways by which quality of care could be improved in Ghanaian hospitals

## 1.4 Research Questions

The following research questions are therefore raised:

- i. Are there any differences in perceptions of quality of care between insured and uninsured patients?
- ii. Does the health insurance status of patients have any effect on perceptions of quality of care if other variables are controlled for?
- iii. Are there any differences in perceptions of quality between patients and healthcare providers
- iv. What do patients and healthcare providers think could be done to improve quality of care in Ghanaian hospitals?

## 1.5 Research Hypotheses

Based on the research questions, the following research hypotheses were tested:

*H<sub>1</sub>: There is a significant difference in perceptions of quality of care between insured and uninsured patients.*

This hypothesis is based on the prevailing empirical and anecdotal evidence that insured patients are discriminated against compared with the uninsured in terms of quality of care (see section 1.2, page 5).

*H<sub>2</sub>: There is a significant relationship between a patient's insurance status and his/her perception of quality of care in hospitals.*

This hypothesis seeks to examine whether differences in perceptions of quality of care between insured and uninsured patients, if any, are significant enough to predict perceptions of quality of care in hospitals, controlling for patients' socio-demographic and hospital variables.

*H<sub>3</sub>: There is a significant difference in perceptions of quality of care between patients and healthcare providers.*

This hypothesis is based on empirical evidence that perceptions of quality of care between patients and healthcare providers' generally differ (see section 3.3.10, page 79).

## **1.6 Significance of the Study**

The overall goal of this thesis is to provide evidenced-based research to increase enrolment and utilization of quality care. Since the success of the NHIS partly depends on the quality of services beneficiaries of the scheme enjoy, assessing perceptions of quality of care by the insured and uninsured will establish whether indeed, the insured are discriminated against in terms of quality care. Policy implications would be discussed and measures could be adopted to address any quality concerns which would have a positive effect on enrolment into NHIS and utilization of health services.

Also, comparing perceptions of quality between patients and healthcare providers will provide a more comprehensive insight into the dynamics of quality of care in hospitals and the gaps that need to be addressed to improve quality care.

Thirdly, the study will contribute to the body of knowledge on health insurance and quality of care.

Fourthly, the MOH or GHS may adapt the tool developed to assess quality of care as a new tool for assessment of quality of care in the health sector.

Finally, the study will also be of interest to the NHIS in its quest to ensure quality service delivery to its members.

### **1.7 Scope of the study**

Even though Ghana has ten regions, it has not been possible to include all of them in this study, due to financial and time constraints. The Central, Upper East and Brong-Ahafo Regions have therefore been selected for the study. Generalization of findings may therefore be done with caution, since the three regions may not necessarily be representative of the entire country. However, having employed rigorous sampling strategies to ensure representativeness and random selection of the areas of study, it is expected that findings would be unbiased, and would thus provide useful insights and applicability to many hospitals in Ghana.

Also, the focus of this study is on out-patients. Perceptions of quality of care by out-patients may not therefore be generalized to in-patients, in view of differences in patient characteristics, as well as differences in characteristics of in-patient and out-patient services. However, given the fact that over 80% of patients are out-patients (WHO, 2000, cited in Juma & Manongi, 2009), a study of out-patients perceptions of quality of care is quite appropriate.

### **1.8 Organization of the Study**

The thesis is organized into eight chapters. Chapter one introduces the study by discussing the background to the study, the problem statement, the objectives, the significance, scope, and organization of the study. Chapter two presents an overview of the health system and health financing in Ghana. Chapter three presents the literature review. First a theoretical framework on

quality of care is discussed. This is followed by empirical literature on patients' perceptions of quality of care, as well as perceptions of quality between the insured and uninsured patients. A conceptual framework on the effect of health insurance on perceived quality of care is next presented. The empirical literature and a conceptual framework of patients' expectations versus healthcare providers' perceptions of quality is then presented. The fourth chapter discusses the methodology of the study. First, the research design and sampling methods are discussed. This is followed by a description of the study areas. The sample size determination, and the data collection and analysis methods are then discussed. Chapter five presents the results and discussion of perceptions of quality of care between insured and uninsured patients, as well as the effect of health insurance status on perceived quality of care. Chapter six presents the results and discussion of perceptions of quality of care between patients and healthcare providers. Chapter seven presents the results of patients and healthcare providers suggestions to improve quality of care in Ghana's hospitals. Finally, chapter eight presents the summary, conclusions, policy implications and recommendations of the study, the limitations of the study and suggestions for further study are also included in this last chapter.

The next chapter of the thesis presents an overview of the health system and health financing in Ghana.

## CHAPTER TWO

### 2.0 OVERVIEW OF THE HEALTH SYSTEM AND HEALTH FINANCING IN GHANA

#### 2.1. Introduction

This chapter presents an overview of the Ghana health system and health financing in Ghana. First of all, the country context is described, followed by a description of how the health system in Ghana is organized and managed. The history of healthcare financing in Ghana from pre-independence to the present era is next presented. The impact of NHIS on access to health services and the progress in health status of Ghanaians over the years are also respectively discussed. The chapter also describes the human resources situation of the Ghana health sector, and finally concludes by examining the strengths and weaknesses of the Ghana health system.

#### 2.2. Country Context

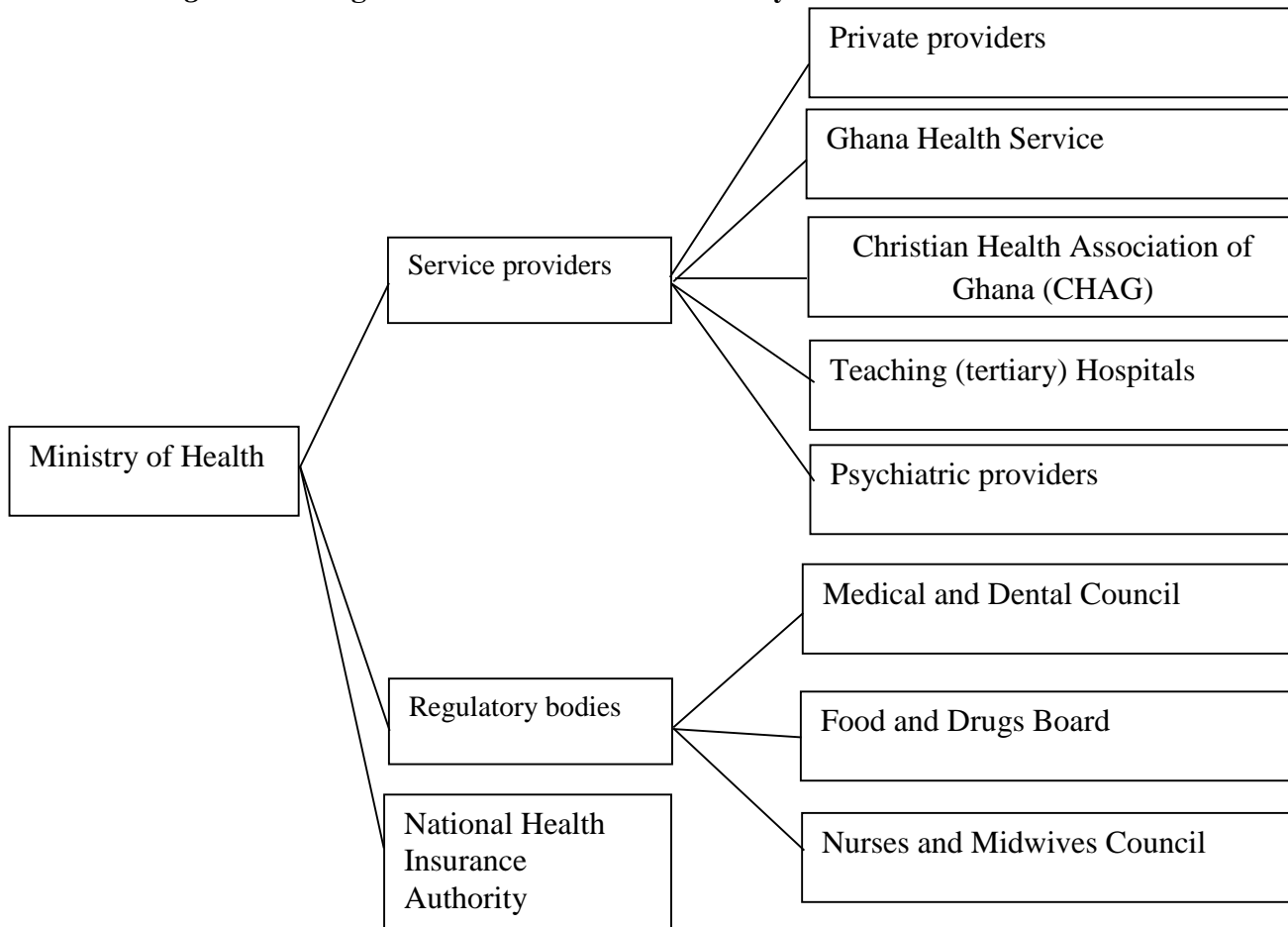
The Republic of Ghana was the first country south of the Sahara to gain its independence from Britain, in 1957. The country is located on the west coast of Africa and bounded by Burkina Faso on the north, Cote d'Ivoire on the west, Togo on the east and the Gulf of Guinea on the south. It has a total land area of 238,537 square kilometres with an estimated population of 24.3 million, according to the 2010 population census (GSS, 2012). It has three main ecological zones: a sandy coastline backed by a coastal plain vegetated by savannah grasslands, crossed by several rivers and streams; a middle belt and western parts of the country heavily forested with many streams and rivers; and a northern savannah drained by the Black and the White Volta rivers (Seddoh *et al.*, 2011). About 70% of the population lives in peri-urban areas and the rural areas are generally considered as deprived of most basic development infrastructure such as good roads, electricity

and water supply (Seddoh *et al.*, 2011). Adult literacy (15 years and above) is stated at 65% (Seddoh *et al.*, 2011).

### 2.3. Organization and Management of the Health System

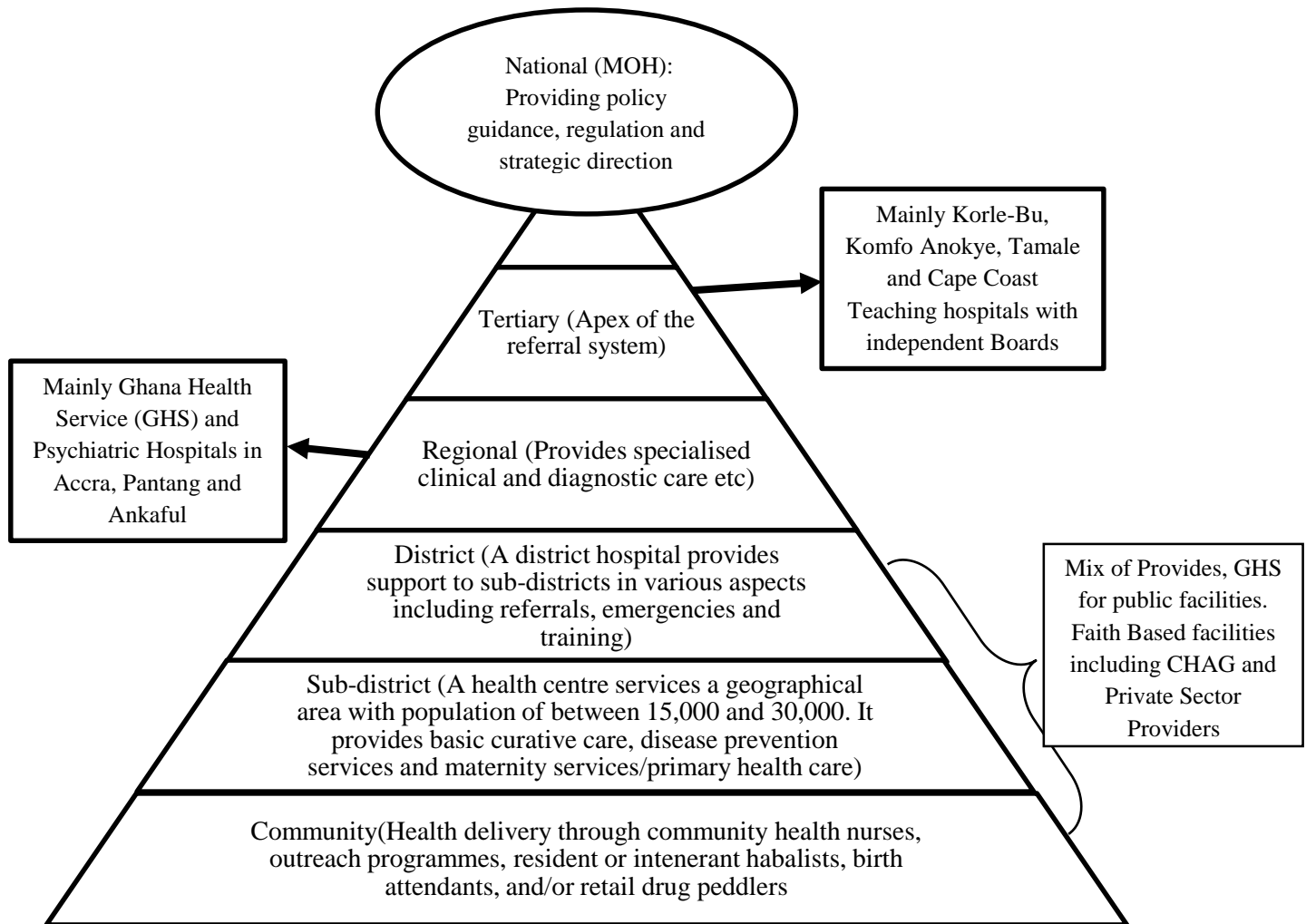
Ghana has a relatively well-developed, integrated, multilevel health system. The system comprises community-based health planning and services zones; health centers; district, regional, and teaching hospitals; private health providers; and non-governmental health-related organizations distributed throughout the country (see Figure 2.1).

**Figure 2.1: Organization of Ghana's Health System**



Source: MOH, modified by World Bank (Schieber *et al.*, 2012).

The MOH plays the role of a steward over the entire health sector. However, the GHS has been delegated statutory authority for managing the public health system, with the mandate to “ensure access to health services at the community, sub-district, district and regional levels” (Appiah-Denkyira *et al.*, 2013). The Christian Health Association of Ghana (CHAG), a private, not-for-profit, semi-autonomous agency partly funded by the MOH, has also been delegated authority for managing and operating health facilities. CHAG has an extensive network of mission health facilities across Ghana including remote and deprived rural areas. The private-for-profit sector, including private hospitals and clinics and private maternity homes and pharmacy shops, are mostly found in urban areas, even though there are much smaller chemical sellers and traditional herbal medicines in both rural and urban areas. There are also several quasi-governmental institutions, such as hospitals or clinics belonging to the prison service, the armed forces, and the police force, and a number of universities. Even though the quasi-government health facilities are established for the convenience of their respective organizations, they extend their services to the general Ghanaian public (Appiah-Denkyira *et al.*, 2013). For MOH and GHS structures, health services are managed on four main levels (see Figure 2.2, page 16): central, regional, district, and sub-district; the levels correspond to the political administrative units of the country. Centrally, the MOH is headquartered in Accra, the national capital of Ghana. The key functions of the MOH include formulating policy, monitoring and evaluating the health sector, mobilizing and allocating resources, and regulating services. It also oversees the three teaching hospitals. The GHS is also headquartered in Accra, and is tasked with managing service delivery in the public sector. At the regional level, the GHS Regional Health Administration (RHA) is responsible for managing secondary hospital-level care provision through regional hospitals and coordinates district health activities and planning (Appiah-Denkyira *et al.*, 2013).

**Figure 2.2: Levels of Health Services Management in Ghana**

Source: (Seddoh et al., 2011)

## 2.4. History of Health Financing in Ghana

### 2.4.1 Pre-independence (colonial) Era

Before independence, payment for health services was mostly by private out-of-pocket. Public financing was mainly for expatriate civil servants. Health service delivery was by both public and private health facilities. Developing a reasonably comprehensive, universally accessible and affordable national health system for the population does not appear to have been a priority (Agyepong, 2013).

### 2.4.2 Immediate Post-independence Era

Immediately after independence, the new government was committed to a welfare state system that included “free health care for all.” (Escobar *et al.*, 2011). Public sector health services were funded through tax and health services provided free of charge at point of use. However, private sector health care was financed through user fee. In an attempt to improve access, the government rapidly expanded public sector infrastructure and human resource (Agyepong, 2013). At independence, Ghana had a net budget surplus. However, adequately financing a universal health service free at point of service through taxes increasingly became difficult as the economy went into decline and began to record budget deficits (Agyepong, 2013). The economic deterioration in the mid-1960s led to a gradual phase-in of user charges (Rajkotia, 2007). Such fees quickly made the government unpopular, and this must have partly contributed to the factors that led to its removal from office. This experience also led subsequent governments to shy away from any meaningful health financing reforms, including alternative ways of financing health, such as insurance (Escobar *et al.*, 2011).

During the 1970s, health facilities and services entered a long period of decline. Even though existing facilities were falling into disrepair, inadequate resources were allocated to rehabilitate or to build new ones for rural populations that lacked reasonable access. The decline were characterized by severe shortages of essential medicines and other supplies, badly paid and demoralized staff, illegal under-the-table payments by patients, and other similar signs of service deterioration. Some efforts at reform during this period could not succeed, partly because a succession of military dictatorships lacked the legitimacy to push through painful changes (Escobar *et al.*, 2011).

### 2.4.3 The Era of Significant User-fees

During the era of President Jerry Rawlings, which spanned most of the 1980s and all of the 1990s, health financing reform returned to the political agenda in a serious way. In 1985 the “cash and carry” or user fee system was reinstated, with an aim to recover up to 20% of operational non-salary costs from patients. From the outset, the system was perceived as burdensome (Singleton, 2006). Several studies showed its deterrent effect, especially on use of health services by the poor (Nyonator & Kutzin, 1999; Waddington & Enyimayew, 1989, 1990). In 1997, the government introduced fee exemptions for children under age 5, pregnant women, the elderly (70 and above), extreme indigents, and those suffering from certain communicable diseases (Escobar *et al.*, 2011). Various difficulties were also encountered in the implementation of the fee exemption policies for children under age 5, pregnant women, and the elderly: guidelines were either nonexistent or unclear, uneven application, and inadequate budgetary allocations (Atim *et al.*, 2001). These persistent difficulties aggravated the problems of access to healthcare for vulnerable people, and there were many ‘horror’ stories. It was reported that “many patients were observed to have difficulty with paying for their health care, especially admission costs. Many ill people did not turn up at the hospital until it was too late or their illness had become complicated. Some patients who got admitted and were treated, subsequently absconded without paying for their treatment, whilst many simply could not afford to pay for their care” (Atim & Sock, 2000).

The economic situation of many Ghanaians, with 35 percent living in extreme poverty (IMF, 2005, cited in Singleton, 2006), severely limited access to the formal healthcare system, ultimately resulting in high mortality rates for infectious and parasitic diseases (Quaye 1991, cited in Singleton, 2006) and an infant mortality rate of 86 per 1,000 live births in 1989 (United Nations

Development Programme, 2005, cited in Singleton, 2006). The effects were especially critical during the 1980s when the Ghanaian economy experienced an acute downturn (Quaye 1991, cited in Singleton, 2006).

#### **2.4.4 Emergence of Risk Pooling**

Against the background of the user-fees and its negative consequences, everybody (government, civil society and even providers) wanted a viable alternative (Agyepong, 2013). Some stakeholders began to explore alternatives to user-fees, especially community-based health insurance schemes. The first was the Nkoranza District Health Insurance Scheme, started in 1992 by the Catholic Diocese of Sunyani, which managed the Nkoranza District Hospital. This was basically a facility cost-recovery scheme—a well-informed provider’s response to patients’ observed inability to pay for care (Escobar *et al.*, 2011). Other stakeholders, including the MOH, soon began to explore the possibilities of setting up similar schemes elsewhere in the country. Around 1999, a new model, the mutual health organization, was introduced. The model was based on social solidarity, community ownership, and democratic control, as opposed to the provider driven model typified by the Nkoranza scheme. This model spread rapidly in the country, expanding from 3 schemes in 1999, to 47 in 2001, 159 in 2002, and 258 in 2003 (Atim *et al.*, 2001; Atim *et al.*, 2002). Agyepong (2013) observes that without the experience of user-fees, it might have been harder to get people to embrace the concept of an alternative in the form of health insurance so enthusiastically. The factors that led to the rise and rapid growth of the mutual health organizations, especially the many problems with the user fee system, did not escape the notice of politicians. The then leading opposition political party soon took up the issue and promised to do away with user-fees if they came to power in the 2000 election (Rajkotia, 2007; Singleton, 2006), which perhaps played a

crucial role in its victory. However, it was not until the third year of the new government, with the approaching of the next election of 2004, was a law rushed through establishing the NHIS.

#### **2.4.5 The New NHIS**

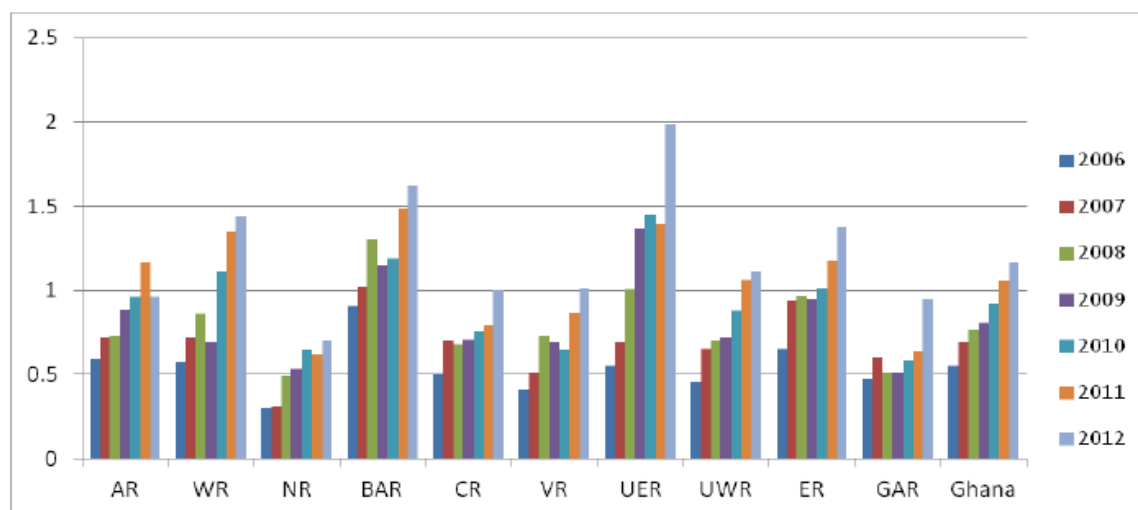
The NHIS was established under the National Health Insurance Act of 2003. The Act set out three distinct types of health insurance schemes to be established and operated in Ghana, namely, district mutual health insurance, private commercial health insurance, and private mutual health insurance. To operate a health insurance scheme, an application must be made to the National Health Insurance Authority (NHIA), which has the mandate to register, license, and supervise all schemes. All health facilities in the country have to meet a minimum standard to be accredited. By 2012 a total of 3,575 health facilities had been accredited to provide services to the insured (NHIA, 2012). The NHIA also manages the National Health Insurance Fund (NHIF), which is financed primarily by a sales tax levy (a 2.5% earmarked addition to the value added tax) and 2.5% of formal sector workers' contributions to the Social Security and National Insurance Trust Fund (SSNIT) (National Health Insurance Act, 2003, cited in Escobar *et al.*, 2011).

The NHIF provides a subsidy to the district mutual schemes to reinsure them against random fluctuations in claims expenditures, to support programs that improve access to health services, and to cover the cost of health care for indigents and other “exempt” groups deemed worthy of being subsidized (Escobar *et al.*, 2011). The benefits package provided by NHIS is extremely generous, covering more than 95% of the disease conditions that affect Ghanaians. It also covers both out-patient and inpatient care, deliveries (including complications), diagnostic tests, generic medicines, and emergency care (Escobar *et al.*, 2011). The district mutual schemes must adhere to

this standard benefit package. To become a member, an individual needs to pay an appropriate premium together with registration fees for those not exempt, in order to register with the nearest district mutual scheme or through an agent, then wait between three to six months to begin using services (In 2013, the NHIA commenced a pilot project to register new subscribers onto the NHIS biometrically and issue an instant identification card). Generally, premiums are meant to be based on income and capacity to pay, with a nationally determined floor of 7.2 Cedis a year (about US \$5). Districts are authorized to set premium levels, which range in practice from 7.2 Cedis to 48 Cedis across the country (Asenso-Boadi, 2009). Groups exempt from paying premiums include SSNIT contributors (by virtue of their 2.5% contribution to the National Health Insurance Fund) and also SSNIT contributors who are 60 years and above who are retired; people aged 70 and older; children under age 18; indigents; and pregnant women. Accredited healthcare providers periodically send claims for the use of services by the scheme members to the district mutual scheme managers, who in turn send the claims to the national authority for settlement. The national scheme reimburses providers through the same path, from the national fund to the district mutual scheme, which then pays the providers. In exceptional circumstances, the national fund may send repayment directly to a provider (Asenso-Boadi, 2009).

### **2.5. The impact of NHIS on Access to Health Services**

Since its introduction, the NHIS has led to a tremendous increase in utilization of OPD services across all the regions. A holistic assessment of the Ghana health sector programme of work (MOH, 2013) indicates that the number of out-patients per capita in Ghana saw a steady increase yearly, reaching 1.17 in 2012, that is, more than doubling 2006 figure of 0.55 (Figure 2.3, page 22).

**Figure 2.3: OPD per capita by region, 2006-2012.**

Source: MOH (2013). Holistic Assessment of the Health Sector Programme of Work 2012

In regions like Upper East and Brong-Ahafo, which share borders with neighbouring countries, the high figure may be partly explained by patients coming from the neighbouring countries. The report also revealed that over 60% of those attending OPDs were females. Also, about 80% of total out-patients are insured (Table 2.1) and 36% of the total population of Ghana are active NHIS members (MOH, 2013).

**Table 2.1: Insurance Status of Outpatient Attendants**

| Region          | 2011 percentage target for insured clients at OPD | of OPD attendants | 2011 Total no. Percentage of Insured OPD Clients |
|-----------------|---|-------------------|--|
| ASH             | 65  | 5,739,460         | 83   |
| BAR             | 65  | 3,504,469         | 88   |
| CR              | 65  | 1,802,886         | 72   |
| ER              | 65  | 3,166,197         | 85   |
| GAR             | 65  | 2,651,707         | 54   |
| NR              | 65  | 1,589,509         | 85   |
| UER             | 65  | 1,478,075         | 91   |
| UWR             | 65  | 758,084           | 94   |
| VR              | 65  | 1,883,185         | 80   |
| WR              | 65  | 3,271,384         | 75   |
| <b>National</b> | <b>65</b>   | <b>25,844,956</b> | <b>80</b>  |

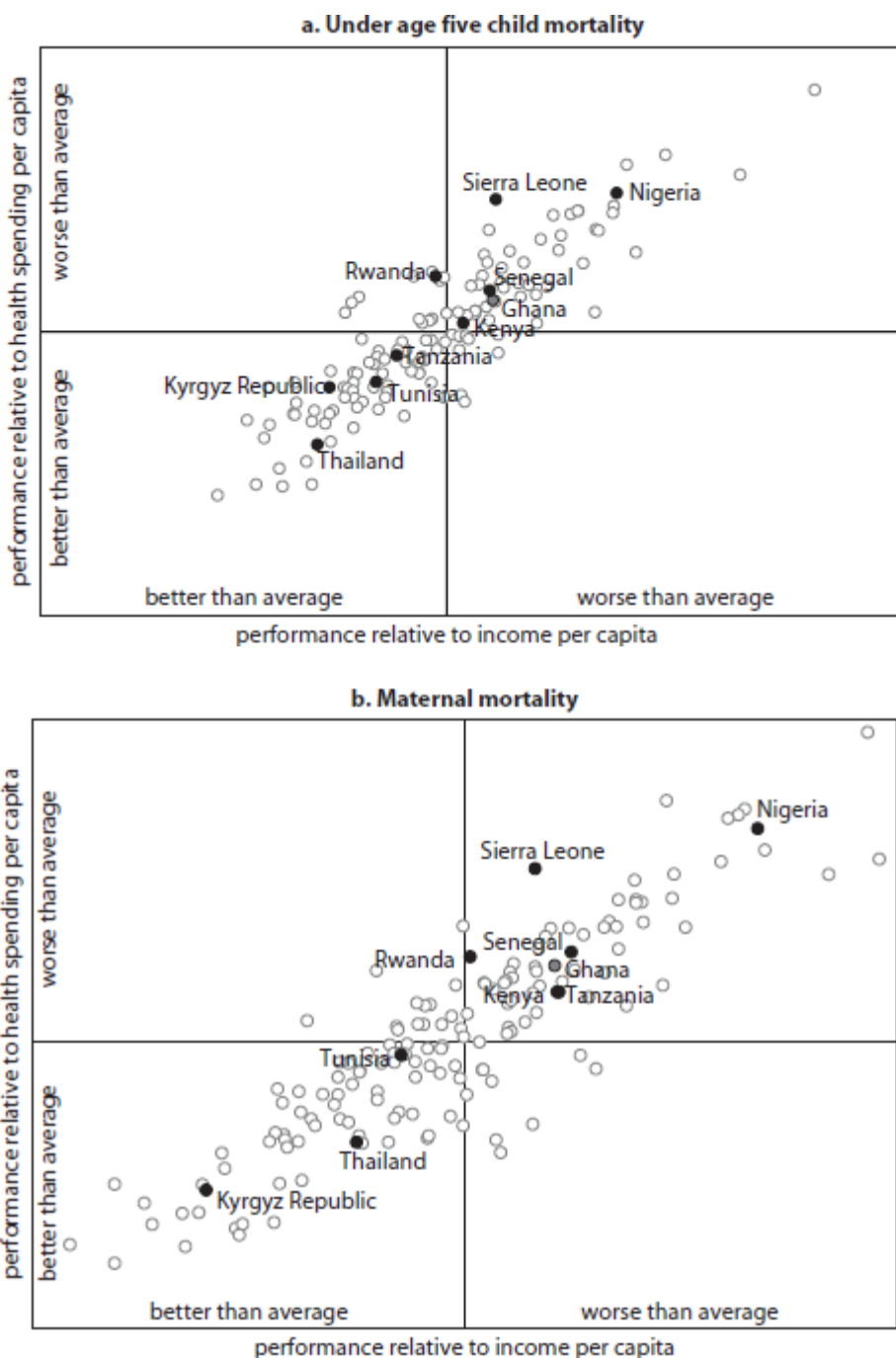
Source: GHS 2011 Annual Report

What is not clear, however, is whether the high proportion of OPD services is a problem of moral hazard, that is, frivolous use of services by NHIS members, or it is a reflection of adverse selection, that is, persons only register when they fall sick and refrain from renewing membership the following year. Also crucial is whether the NHIS led to increased equity in utilization of health services, that is, equal access for equal need.

## **2.6. Progress in the Health Status of Ghanaians**

Ghana has come a long way in improving health outcomes. Ghana performs reasonably well on health outcomes compared with other SSA countries. Even though Ghana started with better health outcomes than its neighbors in 1990 and is still leading many SSA countries over the past 20 years, the decline in mortality has not been as positive compared with some of its neighbours. On a global level however, when its health outcomes are compared with other countries with similar incomes and health spending levels, its performance is more mixed. For example, Ghana's health outcomes for maternal and child health are worse than those of other countries with comparable incomes and health care spending, but life expectancy is better in Ghana (see Figures 2.4 and 2.5, pages 24 and 25).

**Figure 2.4: Global Comparison of Health Outcomes Relative to Incomes and Health Spending, 2009**

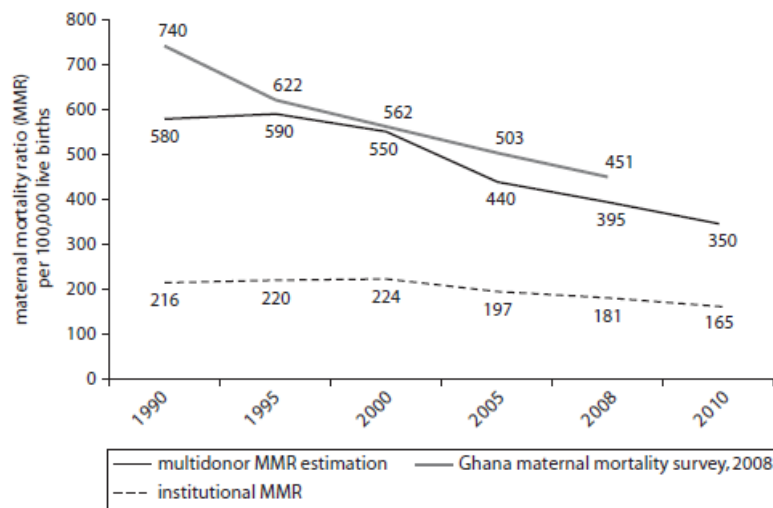


Sources: Schieber and others 2012; data from the World Bank's World Development Indicators and WHO National Health Accounts database, [http://apps.who.int/nha/database/StandardReport.aspx?ID=REP\\_WEB\\_MINI\\_TEMPLATE\\_WEB\\_VERSION&COUNTRYKEY=84639](http://apps.who.int/nha/database/StandardReport.aspx?ID=REP_WEB_MINI_TEMPLATE_WEB_VERSION&COUNTRYKEY=84639).

**Figure 2.5: Life Expectancy at Birth, International Comparison, 2009**

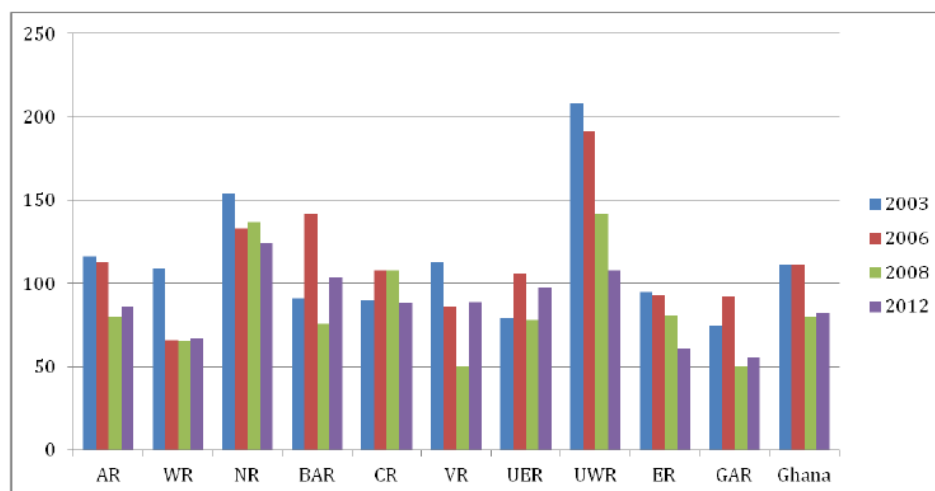
Sources: Schieber and others 2012; data from the World Bank's World Development Indicators and WHO National Health Accounts database, [http://apps.who.int/nha/database/StandardReport.aspx?ID=REP\\_WEB\\_MINI\\_TEMPLATE\\_WEB\\_VERSION&COUNTRYKEY=84639](http://apps.who.int/nha/database/StandardReport.aspx?ID=REP_WEB_MINI_TEMPLATE_WEB_VERSION&COUNTRYKEY=84639).

Ghana's life expectancy at birth is 62 years (Schieber *et al.*, 2012), which on average is better than countries with similar incomes and health spending. Total Fertility Rate showed a marginal reduction from 4.4 in 2006 to 4.0 in 2008 (GSS, 2009a). Use of modern contraceptives was about 17% in 2009 and the crude death rate is estimated at 8.93 deaths/1,000 population as of July 2010 (Seddo *et al.*, 2011). As a signatory to the Millennium Development Declaration in 2000, Ghana is committed to attaining the eight Millennium Development Goals and other related international declarations. Between 1990 and 2010, maternal mortality ratio (MMR) had reduced from 740 per 100,000 live births to 350 per 100,000 live births (GSS, 2009b; World Health Statistics, 2010). It is observed that at this rate, Ghana may not attain its MDG 5 target of 185 per 100,000 live births.

**Figure 2.6: Trends in Maternal Mortality and Achieving MDG, 1990–2010**

Sources: WHO 2012b; MOH 2011c; *Ghana's Health Sector Review Report* (2009) and *Centre for Health Information Management* (MOH 2008, cited in Saleh, 2012).

The major causes of maternal deaths remain excessive bleeding, hypertension-related disorders, infection and anaemia. Contributing factors are high unmet need for family planning, malaria, complications of unsafe abortion and poor skilled attendance at birth, long distance to health facility or bad road network. The under-five mortality rate remained stagnant since 2008. Despite stagnation of national average of under-five mortality rate, significant regional variations occurred. Northern Region and Upper West Region have since 2003 had relatively high U5MR. While Upper West Region was able to bring down under-five mortality rate by 50%, Northern Region achieved only limited improvement (MOH, 2013) (see Figure 2.7, page 27). Studies are required to identify the reasons for the significant improvement in the case of the Upper West Region, and the limited improvement in the Northern Region.

**Figure 2.7: Under 5 mortality by region 2003-2012**

Sources: DHS (2003 and 2008) and MICS (2006 and 2012), cited in MOH (2013)

The most significant contribution to under-five mortality is deaths occurring within the first 28 days (Seddoh *et al.*, 2011). The national Infant Mortality Rate (IMR) increased by 6% over the DHS 2008 figure from 50 to 53 deaths per 1,000 live births over the period 2003 to 2012. This national average does show some large regional variations. IMR is highest in Volta, Upper West, Northern and Brong-Ahafo Regions. The reported trend in Volta and Brong-Ahafo Regions is worrying with significant worsening of IMR. Since 2003, Upper West Region has made an impressive effort to bring IMR down from 105 to 67 deaths per 1,000 live births (Table 2.2).

**Table 2.2: Infant mortality rate 2003 – 2012**

|           | AR | WR | NR | BAR | CR | VR | UER | UWR | ER | GAR | Ghana |
|-----------|----|----|----|-----|----|----|-----|-----|----|-----|-------|
| DHS 2003  | 80 | 66 | 69 | 58  | 50 | 75 | 33  | 105 | 64 | 45  | 64    |
| MICS 2006 | 72 | 45 | 83 | 88  | 69 | 57 | 68  | 114 | 61 | 60  | 71    |
| DHS 2008  | 54 | 51 | 70 | 37  | 73 | 37 | 46  | 97  | 53 | 36  | 50    |
| MICS 2012 | 43 | 50 | 66 | 66  | 55 | 68 | 58  | 67  | 38 | 37  | 53    |

Source: DHS (2003 and 2008) and MICS (2006 and 2012)

Generally Ghana is considered on course to attaining the child malnutrition target under MDG 1 ahead of 2015. However, according to the 2008 DHS report, 28% of Ghanaian children were

stunted, with 10% being severely stunted. The extent of wasting has worsened within the last five years. Seven percent of children under five were found to be wasted and 1% severely wasted in 2003. In 2008, the number increased to 9% wasted, with 2% severely wasted (Seddoh *et al.*, 2011).

## 2.7. Human Resources for Health

Ghana's physician ratio of 0.1 per 1,000 population (2009) has improved over time, but remains low relative to the country's comparators. Ghana is one of the highest producers of physicians in SSA. But after having lost its physicians to international demands, the country changed its policy to retain physicians. It now lies within the Human Resource for Health (HRH) international benchmark, ranging between 0.1 and 0.6 (WHO-JLI), but it remains at the lower end of that benchmark. Ghana's nurse ratio (0.39 nurses per 1,000 population, 2009) has also improved. The nurse ratio is within the HRH international benchmark (which ranges between 0.2 and 1.9 (WHO-JLI), but again Ghana is on the lower end of that range. Table 2.3 shows a three-year trend in doctor-population ratio in Ghana from 2009 to 2011.

**Table 2.3: Three-Year Trend in Doctor/Population Ratio 2009 - 2011**

| Region          | 2009          | 2010          | 2011          |
|-----------------|---------------|---------------|---------------|
| Ashanti         | 8,288         | 7,184         | 7,704         |
| Brong-Ahafo     | 16,919        | 22,967        | 16,103        |
| Central         | 22,877        | 18,218        | 20,442        |
| Eastern         | 16,132        | 15,801        | 16,065        |
| Greater Accra   | 5,103         | 4,099         | 3,712         |
| Northern        | 50,751        | 18,257        | 21,751        |
| Upper East      | 35,010        | 31,214        | 38,642        |
| Upper West      | 47,932        | 27,050        | 38,267        |
| Volta           | 26,538        | 32,605        | 23,660        |
| Western         | 33,187        | 31,190        | 26,044        |
| <b>National</b> | <b>11,929</b> | <b>10,423</b> | <b>10,034</b> |

Source: GHS Annual Report 2011

Table 2.3 shows that the three northern regions, Upper East, Upper West and Northern Region continue to have a poor doctor/population ratio. This is because persistently doctors have refused

posting to these regions. The Volta Region is recovering from the poor ratio. Although the doctor/population ratio for both Ashanti and Greater Accra appear to be good, about 50% of these doctors are in the two Teaching Hospitals. There is therefore a need for the government of Ghana to seriously explore more sustainable strategies to push up the number of doctors nationwide.

A closer look at the human resource situation in the health sector in Ghana reveals that many facilities lack critical staff. A survey in 2010 found that among district hospitals in Ghana, 54 percent had two or more general practitioners, 33 percent had one general practitioner, and 13 percent had no general practitioner. Greater Accra had the greatest per capita midwives attending to deliveries; and the Central region had the least (MOH, 2010, cited in Saleh, 2012). The distribution of health workers is highly concentrated in Ghana's wealthier, urban areas. The greatest density of health workers per 1,000 populations is in the Greater Accra and Ashanti regions. Medical officers tend to locate in the Ashanti and Greater Accra regions; professional nurses, midwives, and community health nurses tend to be spread out (Makinen *et al.*, 2011).

Generally, public and for-profit private health workers cater for an urban clientele. In contrast, missions (such as CHAG) and private pharmacies and chemical sellers cater for a rural clientele. Whereas government facilities have the greatest number of health workers in urban areas, followed by for-profit facilities, in rural areas CHAG facilities have the greatest number of health workers, followed by public facilities. Private pharmacies and chemical sellers offer the greatest and most accessible source of services in rural and urban-poor areas (Makinen *et al.*, 2011). CHAG has an equal presence in urban and rural areas. CHAG's staffing per bed (0.5 health workers per bed in both rural and urban areas) is higher compared to public

facilities (0.41 health workers per bed). CHAG hospitals offer a broader range of services than government hospitals in rural areas (Makinen *et al.*, 2011).

## **2.8. Strengths of Ghana's Health System**

In terms of governance, Ghana has a well-developed and integrated three-level highly decentralized, and evolving health system. The government has also put in place the administrative and legal requirements for its decentralized governance structure. The public financial management system is adequate, clear, and meets most international requirements. Successive common management arrangements provide an effective framework for relating to partners. The NHIS Act is backed by an elaborate legislative instrument for health insurance (Saleh, 2012).

In terms of developing a modern health care delivery system, Ghana has made significant progress in terms of improving service delivery, availability of effective drugs, and operating effective public health programs. There have been large increases in human resources for health and production of nurses. Ghana produces more doctors than many countries in SSA (Schieber, 2012). Since the 2006 increases in salaries of the health work force, exits from the labour market have been largely a result of retirement and not outmigration. OPD utilization has increased significantly. Overall hospital use trends for most categories are positive, with occupancy rates increasing from 55.2 percent to 59.8 percent and average lengths of stay decreasing from 4.5 to 3.8 days between 2005 and 2009 (GHS Facts and Figures 2010). There is a vibrant private sector which is a major care supplier of all forms of non-hospital care and a significant supplier of hospital care (Schieber, 2012). Regarding pharmaceutical services, Ghana has a reasonable essential drugs list and good availability of drugs. Concerning public health services, full immunization coverage

has increased, HIV/AIDS prevalence is low, and Ghana is likely to meet the Millennium Development Goal (MDG) target for child nutrition.

Informal payments by patients to healthcare providers are reportedly uncommon. Also, studies reveal that there is a relatively high level of consumer satisfaction, especially among NHIS beneficiaries (Nketiah-Amponsah, 2009).

With respect to health financing, Ghana is one of very few emerging market countries to take serious steps toward demand-side financing of health, pass legislation for universal health insurance coverage, begin implementing it by covering vulnerable groups while significantly expanding enrollment, and earmarking substantial resources to support the system. The revenue base for Ghana's overall health financing system is largely progressive, and the NHIS relies on a diversified set of largely progressive funding sources, resulting in significant and stable sources of revenues.

## **2.9. Weakness of Ghana's Health System**

In spite of the strengths, Ghana still faces some major challenges which hinder effective management and operation of the health system. In terms of governance, decentralization in the health sector has not been fully realized. Governance and accountability of local health institutions are weak, lines of authority and accountability are blurred, and overlaps and duplications exist. Also, responsibilities for resource allocation and management are fragmented, and local health authorities have little control over budgets and expenditures, because most of their resources are

executed centrally or earmarked from the center to specific programs or initiatives (Schieber *et al.*, 2012; Saleh, 2012).

With respect to service delivery, health workforce ratios are weak. Health infrastructure, equipment, and transport deficits are large. The Health Management Information System (HMIS) also has major deficiencies. Regarding pharmaceutical services, drug procurement and the performance of the central medical stores in terms of financing, quality assurance, and logistics management are weak. There is poor coordination among the various regulatory agencies such as the Ghana Standards Authority and the Food and Drugs Authority, which results in high drug prices and substandard drugs (Schieber *et al.*, 2012; Saleh, 2012).

The NHIS is confronted with serious challenges. Schieber *et al.* (2012) observed that with current expenditure and expansion plans of the NHIS, it is not financially viable. Premiums, taxes, and reinsurance payments for the NHIS and to DMHISs are not actuarially determined, and premiums for informal sector workers are low relative to their costs. The original health insurance law does not require a necessary reserve fund. The basic benefits package is heavily biased toward curative care, coordination with MOH vertical programs is poor, and coverage of 95 percent of the burden of disease with no cost sharing may not be affordable. Lack of effective gatekeeper and referral systems and misaligned provider payment incentives preclude the NHIS from being an effective “active” purchaser. Large numbers of the 65 percent of NHIS members, who are exempt from paying premiums, could afford to contribute. Meanwhile, the stringent definition of indigent excludes some poor and near poor. Lack of a modern HMIS, results in poor claims management and quality assurance, high administrative costs, and incomplete information on enrollees and

providers. These problems represent serious challenges to the equitable and efficient functioning of the health financing system overall as well as the coverage, payment, quality assurance, and provider certification operations of the NHIS (Schieber *et al.*, 2012; Saleh, 2012).

On the way forward, the NHIS is a critical focal point, because as coverage expands, it will become the largest payer for health care services. Ghanaian policy makers may need to focus holistically on the financing of the entire health system, including the MOH, the GHS, and private financing. Schieber *et al.* (2012) raise some important questions regarding the future of the NHIS for policy considerations: will the public delivery system evolve into autonomous entities? Will public sector health workers continue to be salaried government employees? What will the government's future role be in the direct provision of care? What will be the roles and responsibilities of the national versus local governments as regulators as opposed to providers—will the national government steer the ship or be the ship? Ghana is still grappling with this interrelated management, delivery system, and financing issues.

## **2.10. Chapter Summary**

Ghana has a well-developed multilevel health system including community-based health planning and services zones; health centers; district, regional, and teaching hospitals; private health providers; and non-governmental health-related organizations distributed throughout the country. The MOH plays a stewardship role over the entire health sector by delegating authority for managing the health system to various agencies such the GHS, the teaching hospitals, the Christian Health Association of Ghana (CHAG), the private-for-profit sector, and quasi-governmental institutions.

Financing the Ghana health sector has a long and chequered history. Before independence, payment for health services was mostly by private out-of-pocket, with public financing reserved solely for expatriate civil servants. Immediately after independence, however, the new government introduced “free health care for all.” Public sector health services were funded through tax. With time, however, financing a universal health service free at point of service became difficult due to economic decline. This led to the introduction of user charges by mid 1960s. During the 1970s health facilities and services entered a long period of decline, characterized by severe shortages of essential medicines and other supplies, badly paid and demoralized staff, and other similar signs of service deterioration. Some efforts at reform during this period could not succeed because of a succession of military dictatorships. In 1985 the “cash and carry” or user fee system was established, with an aim to recover up to 20% of operational non-salary costs from patients. However, the “cash and carry” system was besieged with persistent difficulties and ‘horror’ stories of patients having difficulty with paying for their health care with many ill people not attending hospital, while some admitted patients absconded without paying for their treatment. Against this background, stakeholders in health began to explore alternatives to user-fees, especially community-based health insurance schemes. The first was the Nkoranza District Health Insurance Scheme, which was started by the Catholic Church. Around 1999, the mutual health organization was introduced by the Ghana MOH. The model spread rapidly in the country, expanding from three schemes in 1999 to 258 in 2003. In 2000 the New Patriotic Party, established the National Health Insurance Act of 2003. The National Health Insurance Authority (NHIA) has the mandate to implement Act 2003 by registering, licensing, and supervising all schemes. The NHIA also manages the National Health Insurance Fund (NHIF), which provides a subsidy to the district

mutual schemes to reinsure them against random fluctuations in claims expenditures, among other functions.

The introduction of the NHIS has led to increase in utilization of OPD services across all the regions, for example out-patients per capita more than doubled to 1.17 from the 2006 figure of 0.55. Regarding health status of the population, Ghana is leading many SSA countries over the past 20 years in indicators such as under-five and infant mortality, and life expectancy. On a global level however, its performance is more mixed. For example, Ghana's health outcomes for maternal and child health are worse than those of other countries with comparable incomes and health care spending. On human resources for health (HRH), Ghana does not fare too badly in its overall health worker ratios. However, compared with other countries, Ghana's HRH levels do not meet international benchmarks. The distribution of health workers in Ghana is highly concentrated in the wealthier, urban areas, with greatest densities being in the Greater Accra and Ashanti regions. The next chapter presents the literature review of this study.

## CHAPTER THREE

### 3.0 LITERATURE REVIEW

#### 3.1 Introduction

This chapter is discussed in two main parts, that is, the theoretical framework and empirical literature. The theoretical framework reviews the concept of quality of healthcare and how it is assessed. The empirical literature reviews similar studies done in the area. Firstly, the general perceptions of quality of care regardless of patients' insurance status are discussed. This is followed by a review of perceptions of quality of care by insured and uninsured patients. The influence of socio-demographic and hospital characteristics on perceptions of quality of care are also discussed. A conceptual definition of quality of care based on the preceding literature review is provided, followed by a conceptual framework on the effect of health insurance on perceived quality of care. Also, a review of literature on providers versus patients' perceptions of quality of care is presented, followed by a conceptual framework to guide the discussion of providers versus patients' perceptions of quality of care.

#### 3.2 Theoretical Framework

##### 3.2.1 Conceptualizing Quality of Care

Quality has become an increasingly predominant part of our lives (Andaleeb, 1998; Conley *et al.*, 2003; Donabedian, 1988; Eiriz & Figueiredo, 2005). People are constantly looking for quality products and services. From health services perspective, quality healthcare is a human right (Mosadeghrad, 2012). Higher quality of healthcare results in satisfaction for both clients and employees, as well as better performance for the organization (Hart, 1999; Hasin *et al.*, 2001;

Hassan, 2005; Hudelson *et al.*, 2008; Kerssens *et al.*, 2004). If there is improvement in product or service quality, costs decrease, productivity increases and better products or services are available for clients, which in turn enhance organizational performance and provide long-term working relationships for employees and suppliers (Lim & Tang, 2000; Mosadeghrad, 2012; Muntlin *et al.*, 2006; Naveh & Stern, 2005).

Because of its subjective nature and intangible characteristics, quality is difficult to define. Like beauty, quality exists in the eye of the beholder (Spath, 2009). Healthcare quality is even more difficult to define and measure than in other disciplines (Tafreshi *et al.*, 2007; Tucker & Adams, 2001; Walters & Jones, 2001). It is also important to recognize that definitions of health care quality are constantly evolving. Initially, the definition and assessment of quality was within the purview of health professionals and health service researchers. However, there is a growing recognition that the preferences and views of patients, the public and other key players are also relevant (Brook, McGlynn & Cleary, 1996; Shaw & Kalo, 2002).

Definitions of quality are either generic or disaggregated (Campbell *et al.*, 2000). Generic definitions of quality include excellence (RCGP, 1994, cited in Campbell *et al.*, 2000), fitness for use (Juran, 1988), expectations or goals which have been met (Ellis & Whittingham, 1993; Steffen, 1988) or 'zero defects' (Crosby, 1979). Some generic definitions are more complex. For example, Donabedian (1980) defined healthcare quality as 'the application of medical science and technology in a manner that maximises its benefit to health without correspondingly increasing the risk'. Ovretveit (1992) defined quality care as the 'provision of care that exceeds patient expectations and achieves the highest possible clinical outcomes with the resources available'. The

Institute of Medicine (IOM) has defined quality care as the 'degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge' (Lohr, 1992). By their nature, generic definitions are not easy to operationalize. Thus, they trade both sensitivity and specificity for generalizability (Campbell *et al.*, 2000). Disaggregated definitions, on the other hand, recognize that quality is complex and multidimensional (Donabedian, 1980; Maxwell, 1984; Winfield, Murrell & Clifford, 1995). Quality is thus conceptualized as consisting of individual dimensions or components. An individual component of quality provides a partial picture of quality when viewed on its own, but offer more specificity in defining quality when viewed in combination.

### **3.2.2 Dimensions of Quality**

Donabedian (1980) distinguished between three dimensions of quality healthcare, namely, technical quality, interpersonal quality, and amenities. Technical quality relates to the effectiveness of care in producing achievable health gain. Interpersonal quality refers to the extent of accommodation of the patient needs and preferences. The amenities include features such as comfort of physical surroundings and attributes of the organisation of service provision. He later proposed the triad structures, processes and outcomes as a framework for assessing quality of care (see detail discussion of Donabedian's model in section 3.2.4, page 42). Grönroos (1984) distinguished between two types of service quality, technical and functional quality. Technical quality refers to the delivery of the core service or outcome of the service (that is, what is offered and received), while functional quality refers to the service delivery process, or the way in which the customer receives the service (that is, how the service is offered and received). Ovretveit (1992) identified three "stakeholder" components of quality, client, professional, and managerial. From

the client's viewpoint, it is the meeting of the patient's unique need and want (Atkins, Marshall & Javalgi, 1995) at the lowest cost (Ovretveit, 1992), provided with courtesy and on time (Brown *et al.*, 1998). Professional quality involves carrying out of techniques and procedures essential to meet the client's requirement; and managerial quality entails optimum and efficient utilization of resources to achieve the objectives defined by higher authorities. According to Schuster *et al.* (2005), good healthcare quality means "providing patients with appropriate services in a technically competent manner, with good communication, shared decision making and cultural sensitivity".

The most frequently used dimensions of healthcare quality in descending order of frequency include effectiveness, efficiency, access, safety, equity, appropriateness, timeliness, acceptability, patient responsiveness or patient-centredness, satisfaction, health improvement and continuity of care (Legido-Quigley *et al.*, 2008). These dimensions are, however, neither comprehensive nor mutually exclusive (Legido-Quigley *et al.*, 2008). Effectiveness refers to the extent to which the intervention in question produces the intended effects (Maxwell 1992; Witter & Ensor, 1997). In contrast, efficiency refers to the extent to which objectives are achieved by minimizing the use of resources (WHO, 2000). The goal is to maximize the output for a given input, or conversely to minimize the input for a given level of output, for example by comparing the unit cost associated with the intervention with the unit cost elsewhere for the same intervention or service (Maxwell, 1992). Access to care is also an important dimension in most definitions of quality of care considered in the literature. Access has been attributed different meanings by different authors (Saturno *et al.*, 1997). But the common concern is to quantify whether a health service or treatment is available to the person needing it, at the time it is needed (Legido-Quigley *et al.*, 2008). Safety

refers to the reduction of risk and it is often an important component of several definitions. The IOM defines patient safety as “freedom from accidental injury due to medical care, or medical errors” (Kohn, Corrigan & Donaldson, 2000). Equity implies considerations of fairness so that, in some circumstances, individuals will receive more care than others to reflect differences in their ability to benefit or in their particular needs (Legido-Quigley *et al.*, 2008). Other dimensions most often mentioned are appropriateness - how the treatment corresponds to the needs of the patient; timeliness - receiving treatment within a reasonable time frame; acceptability - how humanely and considerately the treatment is delivered; responsiveness to patients or patient-centredness - consideration of individual patients’ and society’s preferences and values; satisfaction - how the treatment and the improvement in the patient’s health meets her/his expectations; and continuity of care - the connectedness between stages along the patient pathway.

### **3.2.3 Dimensions of Quality in Developing Countries Context**

There have been few attempts at developing a multidimensional scale to measure perceived quality of care in developing countries (Duong *et al.*, 2004). In a study of Bangladesh hospitals, Andaleeb (2001) investigated five dimensions of perceived quality of care: responsiveness, assurance, communication, discipline and ‘bribe money’ paid to health staff. Haddad *et al.* (1998b) developed and validated a 20-item instrument for use in Guinea. The key dimensions were ‘healthcare delivery’, with the sub-items being good diagnosis, prescription of drugs by doctors, availability of drugs, quality of drugs, recovery and cure; ‘Personnel’ with the sub-items being good clinical exam, follow-up, monitoring of patients, overall reception of patients, compassion, support to patients, respect for patients, allowing sufficient time for patients, amount of information given (about the health problem), and honesty; and ‘Facility’ with the sub-items being adequacy of costs,

payment arrangements, physical accessibility (distance), number of 'doctors', adequacy of 'doctors' for women, adequacy of medical equipment, and adequacy of rooms. An item analysis preceded the test of psychometric properties of the three dimensions and of the total score. Reliability was estimated by analyses of internal consistency and the Cronbach's alpha coefficient. A variety of statistical procedures were used to test factorial validity and trait validity (convergent and discriminant). The reliability of the subscales ranged from 0.71 to 0.88. The validity analyses supported the initial dimensionality and suggested good construct validity. Results confirmed the value of the use of the scale developed and highlighted the need to take into account the diversity of how quality is perceived by lay people in developing countries.

Haddad *et al.* (2000) again used a 22-item variant of their earlier scale to measure patient perception of quality following a visit to a doctor in a primary care unit in Montreal region, with the dimensions of interpersonal aspects of care, technical aspects of care and outcomes of care. An analysis of the psychometric properties of the global scale and the three dimensions provided favourable evidence concerning their reliability and validity. The Cronbach's alpha coefficients ranged from 0.83 to 0.94, demonstrating a high level of internal consistencies of the scale and dimensions in a developed country context. Later, the scale by Haddad *et al.* (1998a, 1998b, 2000) was adapted to the context of rural Burkina Faso (Baltussen *et al.*, 2002; Baltussen & Ye, 2006b). The authors structured the original scale with 20 items according to four dimensions of quality of care namely, health personnel and conduct, adequacy of resources and services, health care delivery, and financial and physical accessibility of care. Factor analysis was conducted to break down the items into homogenous dimensions. Reliability analysis was also done, and the scores,

as indicated by Cronbach's alpha values, ranged from 0.55 for the dimension health care delivery, to 0.86 for the total score (Baltussen *et al.*, 2002).

Even though the quality of care instrument developed by Haddad was reliable and valid for the Guinea and Burkina Faso study, it is still necessary to justify its application in the Ghanaian context because as Haddad *et al.* (1998a) opined, 'presentations of quality are based, in part, on constructs that belong to a specific context or culture'. In Ghana, for example, the implementation of the nation-wide health insurance scheme has led to tremendous increase in utilization of health services with quality implications. This study therefore adapts the scale developed by Haddad *et al.* (1998a, 1998b, 2000), to assess the quality of healthcare in Ghana, within the context of the implementation the Ghana social health insurance programme. A detail description of the scale and its justification is done in section 3.3.8 (page 69).

### **3.2.4 Assessing Quality of Care**

The preceding sections have presented a range of systematic approaches to defining and classifying quality of care. Yet, these concepts and models say little about how to actually assess quality. Donabedian pioneered this work by proposing that we can measure the quality of health care by evaluating its *structure*, *processes* and *outcomes* as adapted from the concept of input–process–output in industrial manufacturing (Shaw & Kalo, 2002). He argued that “good structure increases the likelihood of good process, and good process increases the likelihood of good outcome” (Donabedian, 1988). Donabedian defined *structure* (or *input*) as the *attributes of the settings* in which care occurs and the *resources* needed for health care. This would include material resources (facilities, capital, equipment, drugs, etc.), intellectual resources (medical knowledge, information

systems) and human resources (health care professionals). Structure is often easy to observe and measure and it may be the upstream cause of problems identified in process (Donabedian, 2002). *Process* measures explore the manner in which the health care provider interacts with the patient. Processes can be further classified as technical processes, what care is delivered, or interpersonal processes, which is the manner in which care is delivered (Donabedian, 1980). According to Donabedian, the measurement of process is nearly equivalent to the measurement of quality of care because process contains all acts of healthcare delivery (Donabedian, 2002). Information about process can be obtained from medical records, interviews with patients and practitioners, or direct observations of healthcare visits (Brook, McGlynn & Shekelle, 2000).

*Outcomes* describe the *effects of health care* on the health status of patients and populations and comprise final outcomes such as mortality, morbidity, disability or quality of life, as well as intermediate outcomes, for instance, blood pressure, body weight, personal well-being, functional ability, coping ability, improved knowledge, satisfaction with care and others (Batalden, 1994; McGlynn, 1995; Legido-Quigley *et al.*, 2008).

### **3.2.5 Critique of Donabedian Model**

The Donabedian model has been criticized on a number of grounds. The sequential progression from structure to process to outcome has been described by some as too linear of a framework (Mitchell *et al.*, 1998), and consequently has a limited utility for recognizing how the three domains influence and interact with each other (Carayon *et al.*, 2006). According to Lau *et al.* (1982), the relationship between structural and process variables are weak, inconsistent and paradoxical. Thus it is unwise to develop public information on quality of care that is based solely

on structural measures (Brook *et al.*, 2000). For example, the USA spends more money than probably any country in the world on hospital accreditation, yet several studies have demonstrated huge variations in quality of hospital care. There is no evidence to suggest that in the absence of accreditation, the variation in hospital quality in the USA would be any greater (Brook *et al.*, 2000).

There is also a long-standing debate in the literature about the relative merits of process and outcome measures. Brook *et al.* (2000) argue that process data often provide a more sensitive measure of quality than outcome data, since a poor outcome does not necessarily result from a failure in the provision of care (Brook *et al.*, 2000). In addition, physicians usually define quality of care in terms of process (Brook, McGlynn and Cleary 1996).

Outcomes are more generally perceived as poor measures of quality of care as they are only partially attributable to health services and may be more strongly influenced by other factors such as nutrition, environment, lifestyle or socioeconomic circumstances. Brook *et al.* (2000) posit that if nothing is done to a patient reporting to an emergency department other than relieve his pain, in 60-70% the patient would leave the hospital alive and be able to resume his normal daily activities. Thus, care that was absolutely atrocious from a medical standpoint would result in good outcomes for most patients. Conversely, poor outcomes do not always imply poor quality of care (Wareham, Pencheon & Melzer, 2001). To use outcomes as a marker of quality therefore, there is need to adjust for differences in case mix and other external factors to ensure fair comparisons among institutions or physicians (Brook *et al.*, 2000; Legido-Quigley *et al.*, 2008).

Another critique of outcome is that the interval between an intervention and its ultimate outcome may be lengthy and it may be difficult to attribute many outcomes of interest to the provision of particular services. Similarly, Wareham *et al.*, (2001) noted that outcomes do not capture all elements of performance but only permit an inference about the quality of the processes and structures of care, and therefore are not necessarily the best measures of quality. Furthermore, outcomes can be difficult and costly to measure and their measurement is subject to statistical uncertainty.

In spite of the criticisms however, Mant (2001) noted that outcome measures are attractive as they are important in their own right and of great interest to those receiving the intervention, whereas a process measure by itself is usually of little intrinsic interest to those receiving the intervention. Also, it can be argued that outcome measures capture the sum of “all aspects of the processes of care and not simply those that are measurable or measured (Mant, 2001). Generally, however, Donabedian’s approach to describing and evaluating the quality of care has been accepted widely, easily understood, and is possibly one of the very few points of consensus in the field of quality of care (Donabedian, 1980; Brook *et al.*, 2000).

### **3.2.6 Observed Versus Perceived Quality of Care**

Generally, a distinction is made between observed quality of care and perceived quality of care in the literature (Palmer *et al.*, 1991). The former, focusing merely on structural and process measures, relates to professionally defined standards of care, and refers to whether health care services adhere to these standards. The latter relates to the views of patients, which are attracting more and more importance (Donabedian, 1980, 1992; Palmer *et al.*, 1991; Fitzpatrick, 1991;

Reerink and Sauerborn, 1996; Andaleeb, 2000). Patients' perception of quality of care is critical to understanding the relationship between quality of care and utilization of health services, and it is increasingly treated as an outcome of health care delivery (Ross *et al.*, 1993; Susman, 1994; Reerink and Saueborn, 1996).

Measurement of patients' perceptions also presents concrete advantages for evaluation. It provides an opportunity for patients to be involved in decisions that concern them (Calnan, 1988). Patients constitute an essential and even exclusive source of information about accessibility or effectiveness of care (Donabedian, 1992). A patient's opinion directly influences his or her compliance with treatment and the continuity of the patient–physician relationship, and hence healthcare outcomes (Ware & Hayes, 1988; Rubin, 1990 & Haddad, 1992, cited in Haddad *et al.*, 2000). Ignoring the patients' perspective may result in reducing the reliability and significance of quality assessment (Narang, 2010). It has been argued that compared with other methods of evaluating service quality, assessment of patient perceptions offers several other practical advantages: it can be measured rapidly following the delivery of care; it is inexpensive; it does not depend on the quality of data found in medical records; and it is more sensitive to differences in the quality of care than indicators such as adjusted mortality rates or complications rates (Rosenthal & Shannon, 1997 (cited in Haddad *et al.*, 2000). Furthermore, researchers suggest that user perception is the most important determinant of consumer's value perception (Babakus & Mangold, 1992). These value perceptions thus formulated tend to impact the future purchase intentions of consumers (Bolton & Drew, 1988; Zeithaml, 1988) and health care utilization (Haddad *et al.*, 1998a; Akin & Hutchison, 1999). It is due to these reasons that in addition to maintenance of professional standards of performance and accreditation of health care centres,

patient perception is now being considered an important aspect of quality assessment of health care centres.

On the whole, various conceptualizations of healthcare quality was discussed under the theoretical framework. Definitions of quality of care are conveniently categorized into generic and disaggregated definitions. The latter deal with the various dimensions of quality of care, not least, the dimensions developed by Haddad *et al.* (1998a, 1998b, 2000), within a developing and a developed country context, which has been adapted for this study. How quality of care is assessed, especially within the context of Donabedian's triad of structure-process-outcome was discussed. Finally, a distinction was made between observed and perceived quality of care. The next section reviews empirical literature on perceptions of quality of care by patients and healthcare providers.

### **3.3 Empirical Literature**

The empirical literature reviewed previous studies on perceptions of quality of care. For convenience, the review was categorized under general perceptions of quality regardless of health insurance status; the influence of health insurance on perceptions of quality of care; socio-demographic characteristics and hospital characteristics influencing quality of care; and perceptions of quality by healthcare providers.

#### **3.3.1 Perceptions of Quality of Care among Clients**

Mashego and Peltzer (2005) studied community perception of quality of primary health care services in a rural area of Limpopo Province, South Africa, using focus group discussions. Perceived quality was discussed within the categories of conduct of staff (reception, communication, discrimination, care and compassion, respect for privacy); technical care

(examination, explanation of treatment, responsiveness, treatment outcomes); health care facility; health care organization; drugs (availability, explanation, effectiveness, payment); and waiting time. The study identified drug availability, interpersonal skills (including attitudes towards patients) and technical care as the three main areas with poor perceived quality, and therefore recommended that priorities for enhancing perceived quality of primary health care should particularly focus on these three areas.

A study by Baltussen *et al.* (2002) on users' opinion on the quality of care of primary health care services in rural Burkina Faso, found that respondents were relatively positive on items related to health personnel practices and conduct (interpersonal aspects of care) and to health care delivery (technical aspects of care), but less so on items related to adequacy of resources and services and to financial and physical accessibility. In particular, the availability of drugs for all diseases on the spot, the adequacy of rooms and equipment in the facilities, the costs of care and the access to credit were valued poorly. The study concluded that improving drug availability and financial accessibility to health services were the two main priorities for health policy action. The conclusion may be premised on the fact that health insurance has been shown to increase financial access to health care (Skinner & Mayer, 2007; Witter & Garshong, 2009; Jehu-Appiah *et al.*, 2012; NHIA, 2011). It is therefore not surprising that financial accessibility was one of the main problems identified, since at the time of the study by Baltussen *et al.* (2002), there was no health insurance scheme in the study area. It was in 2004 that a community-based health insurance (CBHI) was introduced. However, in a later study in the same area the findings were similar, even though overall, users of modern health care services were somewhat more positive about financial accessibility compared with non-users (Baltussen & Ye, 2006b). The authors attributed this partly

to the possibility that users had a higher ability to pay, but partly also to the limited scale of health care financing schemes like prepayment or health care insurance as practiced on an increasing scale in countries such as Ghana. Indeed, since the introduction of health insurance in Ghana, financial access to healthcare is reported to have been improved tremendously (Skinner & Mayer, 2007; Witter & Garshong, 2009; Jehu-Appiah *et al.*, 2012; NHIA, 2011).

Juma and Manongi (2009) studied users' perceptions of outpatient quality of care in Kilosa District Hospital in Central Tanzania. The study was hospital based exit interviews with adult patients or caregivers of children and focus group discussions with community members. Even though, overall respondents perceived quality of care at the hospital OPD as favourable, they pointed out several shortcomings including verbal abuse of patients by care providers, lack of responsiveness to patients' needs, delays, inadequate examination, unreliable supply of medicines, lack of confidentiality and favouritism in health care provision. Cost of service was perceived to be reasonable provided medicines were available. The study concluded that, provider-patient interactions, timely services, supply of medicines and favouritism were the major factors affecting quality of service at the hospital.

In their study on client perceptions of the quality of primary care services in Afghanistan, Hansen *et al.* (2008), found that client perceived quality was higher when health workers were more thorough in taking patient histories and conducting physical examinations, and communicating with patients. Client perceived quality was also higher when the health worker providing care was a doctor. However, perceived quality was lower when the wait before being seen by a provider was longer.

Sharma and Narang (2011) investigated user perception regarding service quality and how they varied between different healthcare centres and according to the demographic status of patients in India. They found that ‘healthcare delivery’ and ‘financial and physical access to care’ significantly impacted the perception among men while among women it was ‘healthcare delivery’ and ‘health personnel conduct and drug availability’. The study observed that with improved income and education, the expectations of the respondents also increased. It was not merely the financial and physical access that was important but the manner of delivery, the availability of various facilities and the interpersonal and diagnostic aspect of care as well mattered to the people with enhanced economic earnings. The study also found that the overall quality of healthcare services is perceived to be higher in Primary Healthcare Centres than in Community Healthcare Centres (CHCs). Inadequate availability of doctors and medical equipments, poor clinical examination and poor quality of drugs were the important drawbacks reported at CHCs.

In their study of the community-based health insurance (CBHI) scheme in Nouna Health District, Burkina Faso, Robyn *et al.* (2013) found that indicators for physical structure of the facility received relatively high remarks. The findings were similar to results identified by quality of care studies in Latin America (Williams *et al.*, 2000) and Nepal (Agha *et al.*, 2007). Structural elements of health service delivery, such as the cleanliness and physical appearance of health facilities, have been identified as driving factors in patients’ perceptions on service quality and overall satisfaction (Zarei *et al.*, 2012). Duong *et al.* (2004) measured client-perceived quality of maternity services in rural Vietnam. They found that respondents were positive on items related to the dimensions ‘interpersonal aspects of care’ and ‘access to services’, but negative on the dimensions ‘health care delivery’ and ‘health facility’. Kiguli *et al.* (2009), in their study on community perceptions on

quality care in Uganda, found that service delivery to the poor in the general population was perceived to be of low quality. The factors that were mentioned as affecting the quality of services delivered were inadequate trained health workers, shortage of essential drugs, poor attitude of the health workers, and long distances to health facilities. The authors argued that there should be an improvement in the quality of health services with particular attention being paid to the poor.

In Ghana, a review of previous research reports on quality of care commissioned by the Health Research Unit (HRU) of the GHS in 2006 found that clients were dissatisfied with long waiting time, poor staff attitudes, illegal charges, high cost of care, dirty environment and limited avenues to seek redress (GHS, 2007). The review also found a number of shortcomings common to the institutions studied. These include inadequate numbers of skilled staff, unreliable and inadequate supply of water and electricity, inadequate equipment, shortage of logistics, low drug availability, and gaps in provider knowledge. In many health facilities, standard managerial practices that ensure effective use of (limited) resources were not universally practiced. There was also poor coordination between different parts of the health care delivery system (even in the same health facility) which posed a major hindrance to efficient service delivery, and posed inconvenience to clients as they shuttle between different departments. The GHS (2007) review is generally consistent with much of the findings of Turkson (2009), who assessed clients' perceptions of the quality of healthcare delivery in a rural district in Ghana. The participants, who were out-patients in health centres and hospitals, perceived poor attitude of some health workers, long waiting times, high cost of services, inadequate staff, policy of payment for health services, frequent referrals to hospitals, and lack of ambulances at facilities as being detrimental to effective delivery of quality healthcare. The study also revealed that lower proportions of clients were told what was wrong

(43%), or given advice about their illness (46%). About 90% of the respondents were however, satisfied or very satisfied with the care given during their visit to the health facility.

In summary, literature of perceptions of quality of care, especially within developing country context, reveals mixed findings on the various dimensions and indicators of health care quality. In some studies there are positive reports of health personnel practices and conduct (Duong *et al.*, 2004; Baltussen *et al.*, 2002; Baltussen & Ye, 2006b; Hansen *et al.*, 2008). However, other reports are negative (Mashegu & Peltzer, 2005; Juma & Manongi, 2009; Kiguli *et al.*, 2009). Similarly, on health care delivery (technical aspects of care), some findings were also favourable (Hansen *et al.*, 2008), however some findings were less favourable (Duong *et al.*, 2004; Sharma & Narang, 2011; Turkson, 2009). Also, with respect to financial and physical accessibility, some (Juma & Manongi, 2009) were favourable, whereas others (Baltussen & Ye, 2006b; Baltussen *et al.*, 2002) were less favourable. The area with many problems relates to adequacy of resources and services such as availability of drugs and equipment and adequacy of health personnel. Generally, the findings in the literature is less favorable (Duong *et al.*, 2004; Baltussen *et al.*, 2002; Baltussen & Ye, 2006b; Hansen *et al.*, 2008; GHS, 2007; Mashegu & Peltzer, 2005; Juma & Manongi, 2009; Kiguli *et al.*, 2009; Sharma & Narang, 2011). Also, long waiting time is an intractable problem in the literature (Juma & Manongi, 2009; Hansen *et al.*, 2008; GHS, 2007; Turkson, 2009).

### **3.3.2 Health Insurance Status and Perceptions of Quality of Care**

Generally, there is paucity of literature linking quality of care and health insurance status.

Ekman (2004) provided a systematic review of the literature based on 36 studies conducted between 1980 and 2002. The author found that while community-based health insurance (CBHI) provided financial protection for low income groups and increased cost recovery for healthcare

providers the magnitude of the effect was low and the lowest income groups were excluded from enrollment. Moreover, there was no evidence that the schemes were associated with an increase in the quality of care. Similarly, Bauchet *et al.* (2010) conducted a study on a community micro-insurance scheme in India to assess whether insurers improve healthcare quality. It was found that being insured is not significantly associated with receiving better-quality care, even when controlling for several patient and facility characteristics.

Perez *et al.* (2009) assessed the distribution of perceived quality of care among a national Latino population sample in the United States of America, and the role of insurance in different patient subgroups. Respondents who received health care in the past 12 months were asked to rate the quality of care they received (1 = poor, 2 = fair, 3 = good, 4 = excellent). Overall, those who were insured gave significantly higher ratings of excellent/good (81% vs. 71%) compared to those who were uninsured. The largest gap in rates of excellent/good ratings occurred among the insured with eight or more doctor visits compared to the uninsured (76.2% vs. 54.6%,  $P < .05$ ). Logistic regression analysis showed that insurance availability had an odds ratio of 1.47 (95% CI, 1.22–1.76) net of confounders in predicting perceived quality of care among Latinos. The caveat with this study, however, is that even though assessing the overall perception of quality care is useful, it is not clear which dimensions of quality are included in the study. This makes it impossible to know the aspects of quality that needs to be maintained or improved, whether interpersonal, or technical quality for example.

Kamuzora and Gilson (2007) identified four main problems with the quality of services following the implementation of Community Health Fund (CHF) in Tanzania: shortage of drugs and essential

medical supplies; inappropriate diagnosis due to lack of diagnostic equipment, particularly laboratory equipment; staff-related problems; limited range of services provided and lack of possibility to use health facilities of members' choice, coupled with referral problems. However, the authors indicated that these were not necessarily caused by the implementation of the scheme, but that managerial failure was one of the main factors contributing to low quality of care. First, district managers did not ensure supervision of health staff to support delivery of quality services. Respondents raised concerns about the improper provision of services by health workers, including corruption, pilferage of drugs, absenteeism during working hours, and discrimination against CHF members.

An assessment of the community based health insurance since its introduction in Nouna District of Burkina Faso revealed that as high as 32.7% of the insured dropped out due to quality of care concerns. These reasons include staff behaviour (19%), satisfaction with services (7.4%) and quality of drugs (6.3%), long waiting time and insufficient numbers of providers (Robyn *et al.*, 2012). An earlier study of the same area, also identified poor perceived health care quality as one of the reasons why enrolled people decide not to renew their membership in following years, (Dong *et al.*, 2009). A similar study was conducted in Ghana by Boateng and Awunyor-Vitor (2013) and the reasons for non-renewal of insurance included poor service quality, lack of money and taste of other sources of care.

A study conducted in Guinea-Conakry pointed to the poor quality of care in the health services as one of the major causes of the low and even declining enrolment in community health insurance despite initial enthusiasm at the set-up of the scheme. Participants referred to rapid recovery, good

health personnel, good drugs and a nice welcome at the health facility as the most important features of quality (Criel *et al.*, 2003). A study to identify reasons for joining and not joining and in the possibilities they see to increase enrolment in Uganda found, among others, that lack of good information, problems in ability to pay the premium, the rigid design in terms of enrolment requirements, problems of trust and poor quality of health care in relation to cleanliness, long queues, and absence of some prescribed medicines were important reasons for people not to join, despite interest by the Ugandan health sector to have community health insurance as an elaborate health sector financing mechanism (Basaza *et al.*, 2008). In India, focus group discussion with staff at ASHWINI hospital found that while some patients complain that sometimes the nurses in the hospital would reproach them for 'being uninsured', thus making them feel uncomfortable coming to the hospital, some of the staff rather considered the insured patients as a nuisance (Devadasan *et al.*, 2011).

Robyn *et al.* (2013) investigated the differences in objective (technical) and perceived quality of care and patient satisfaction between enrolled and non-enrolled populations who visit primary-care facilities in Nouna district, Burkina Faso. Objective quality of care evaluations showed that community-based insurance (CBI) enrollees received substantially less comprehensive care for consultation and diagnostic services: providers were less likely to weigh, take the temperature, perform a physical examination, use a stethoscope, and inform patients about the diagnosis of their illness, when the patients were enrolled in the CBI. In contrast, CBI enrollment was positively associated with overall patient satisfaction (OR = 1.51,  $p = 0.014$ ), controlling for potential confounders such as patient socio-demographic status, illness symptoms, history of illness and characteristics of care received. The authors also found that there was no difference between the

enrolled and non-enrolled respondents in the quality perceptions about the availability of medicines.

In order to understand how the introduction of NHIS has affected the quality of health care delivery, the National Development Planning Commission (NDPC) of Ghana conducted a national survey to assess how various components of health care provision have changed, from the perspective of respondents, following the introduction of the NHIS. Areas covered included cost of treatment, availability of nurses, availability and quality of drugs, cleanliness of health facility, how staffs treat patients and emergency cases, the quality of in-patient care, waiting time before and after consultations, referrals for specialist treatment, availability of hospital beds, availability of laboratory services, privacy from others during examination, and availability of other diagnostic services. Overall, the respondents ranked 'low cost of treatment' as the most important benefit they have derived from the NHIS. More than 70% of the respondents from the household survey and the exit poll indicated that the NHIS has afforded them the opportunity to receive medical care at a relatively low cost. Nearly 98% of insured households interviewed from Upper West Region, a deprived region in Ghana, confirmed that the cost of treating an ailment is no more a problem. This observation is very important considering the fact that the NHIS is primarily aimed at making health care more affordable, particularly for the poor. On the issues of availability of nurses and drugs, cleanliness of facility, and how patients are treated by staff, about 40%-45% of the respondents indicated that quality has improved, while less than 40% of the respondents in both the household survey and the exit polls indicated that quality of the remaining components of health care provision has improved. This suggests that over 50% of respondents had reservations about the quality of care in respect of the various components.

In Ghana empirical and anecdotal evidence indicates that poor quality of care is among the key implementation problems of the Ghana health insurance scheme. The 2008 DHS found perceived poor quality of care as one the key implementation problems of the NHIS. Other problems include long waiting times for insured clients and high enrolment dropout rates, among others (Bruce *et al.*, 2008; NHIA, 2010). Jehu-Appiah *et al.* (2012) studied household perceptions and their implications for enrolment in the NHIS in Ghana. It was found that both insured and uninsured households had positive perceptions with regards to technical quality of care, but they were negative about provider attitudes (interpersonal quality of care). Nguyen *et al.* (2011) reported that insured people in Ghana incurred out-of-pocket payment for care from informal sources and for uncovered drugs and tests at health facilities. Nevertheless, they paid significantly less than the uninsured. This finding is consistent with a more recent study to assess the effects of the NHIS in reducing cost of treating malaria to households in the Kassena-Nankana districts of northern Ghana. The study found that average direct medical cost of treating malaria was GH¢3.2 (US\$2.1) per case with the insured spending less (GH¢2.6/US\$1.7) per case than the uninsured (GH¢3.2/US\$2.1). The overall average cost (direct and indirect) incurred by households per malaria treatment was GH¢20.9 (US\$13.9). Though the insured accounted for a larger proportion of admissions at health facilities than the uninsured, the average amount households spent on the insured was less (GH¢4/US\$2.7) than their uninsured counterparts (GH¢6.4/US\$4.3), even though the difference was not statistically significant (Dalaba *et al.*, 2014).

Atinga (2011) observed in a study on healthcare quality under the NHIS in Ghana, that the human dimensions of quality of care (interaction with service provider and attitude of healthcare providers) were perceived by the insured patients to be good, and they constitute significant

determinants of perceived quality of care. Although waiting time was generally perceived to be long, it was not in any way associated with patient perception of quality of care. Dalinjong & Laar (2012) studied the perceptions and experiences of healthcare providers and clients in two districts in the upper East Region of Ghana. The study found that increased utilization of health care services by the insured leading to increased workloads for providers influenced their behaviour towards the insured. Most of the insured perceived and experienced long waiting times, verbal abuse, not being physically examined and discrimination against the insured, but in favor of the affluent and uninsured. The insured attributed their experience to the fact that they were not making immediate payments for services. Providers preferred clients who would make instant payments for health care services. The study also found that few of the uninsured were utilizing health facilities and visit only in critical conditions. This is due to the increased cost of health care services under the NHIS. Witter & Garshong (2009), recommended in their study of the social health insurance system in Ghana that improving the quality of care is critical to realising health gains from increased utilisation. This resonates with conclusions by Brugiavini and Pace (2011) that an improved access to health care through the NHIS will not necessarily increase the demand for health care if the services are not easily available and if the quality is questionable.

In summary the literature on perceptions of quality of care between the insured and uninsured users of health services are mixed. In some instances (Robyn *et al.*, 2013), general satisfaction with quality of care is higher among the insured users than the uninsured. On the other hand, observed quality which deals with technical aspect of care, is perceived to be higher among the uninsured, compared with the insured. The authors opined that the difference was probably due to differences in quality of care expectations between the insured and uninsured. In other instances (Nguyen *et*

*al.*, 2011; Dalinjong & Laar, 2012), most of the insured perceived and experienced long waiting times, verbal abuse, not being physically examined and discrimination in favor of the affluent and uninsured, and out-of-pocket payment for services supposed to be covered by health insurance scheme. The various studies however, deal with fewer dimensions or indicators of quality of care, based on the context and the focus of their study, thus making conclusions based on other important dimensions of quality of care difficult. Within the context of Ghana, a comprehensive study of perceptions of quality examining interpersonal aspects of care, technical aspects, adequacy of resources and services, financial access and fairness aspects of care is sorely needed to address quality of care concerns, in order to ensure a successful sustainability of the NHIS.

### **3.3.3 Socio-demographic Characteristics and Perceived Quality of Care**

Tucker & Adams (2001) found that patient's health quality assessment appeared to change with the introduction of patient's socio-demographic characteristics. However, the effect produced only a one percent variation. Butler *et al.* (1996) found that sex and age significantly predicted patients' quality perceptions, but on only one dimension – facilities. Females valued this dimension more than males. Perceived facility-related quality was found to be better for older than younger respondents (Butler *et al.*, 1996). Hall & Dornan (1990) conducted a meta-analysis to examine the relationship of patients' socio-demographic characteristics to their satisfaction with medical care. The socio-demographic characteristics were age, ethnicity, sex, socioeconomic status (three indices), marital status, and family size. Higher satisfaction was significantly associated with greater age and less education, and marginally significantly associated with being married and having higher social status. Tucker (2002) found that younger, less educated, married, poorer health and high-service use were associated with lower patient satisfaction with the quality of care.

In a systematic review of factors determining patient satisfaction and healthcare quality, Naidu (2009) found that income influenced patient satisfaction; upper income customers appeared more concerned with personal health delivery such as answers they receive to medical queries, waiting time for appointments and medical care. Lower income consumers, on the other hand, were more concerned with costs and overall physical facilities, indicating value orientation. In their study of American adults, Asch *et al.* (2006) found that women received a higher proportion of recommended care than men (56.6 percent vs. 52.3 percent). Quality-of-care scores declined with age (57.5 per cent for those from 18 through 30 years of age vs. 52.1 percent for those 65 years of age or older). Participants with annual family incomes over \$50,000 had quality-of-care scores that were 3.5 percentage points higher than those with incomes of less than \$15,000. In their national Latino population study, Perez *et al.* (2009) reported that insured respondents gave significantly higher ratings of care in respect of socio-demographic characteristics.

A trend analysis of educational status of respondents showed a higher percentage of college graduates rating their care as excellent/good compared to those who did not graduate from high school (87% vs. 77%). There were no significant differences in quality ratings for those aged 65 years or above regardless of their health insurance status. Females reported receiving better quality of care (OR=1.35; 95% CI, 1.15–1.59) compared to males. However, in their study in Burkina Faso, Robyn *et al.* (2013) found that education level, sex, age and religion, had no significant impact on overall patient satisfaction with the quality of care. Region of residence was also not associated with perceived quality of care.

In a study to measure perceived quality of health care services in India, Narang (2010) found variation in perceived quality among different income groups. For respondents with monthly

income, Rs 2,500 access to services (financial access) was the only significant component that affected their perception regarding quality of service in a healthcare set-up. Although, all these healthcare providers were either charitable or state run, the income of these respondents was too meagre to meet even the small expenses associated with availing their facilities. On the other hand, for those with income between Rs 2,500-5,000 health personnel practices and conduct (interpersonal aspects of care) was significantly associated with the perception regarding quality of service. This showed that with the growth in income, the focus shifted from “access to services” to the general behaviour and attitude of the personnel providing the service. For those in the income bracket Rs 5,000-Rs 10,000 per month, adequacy of resources and services gained focus of the respondents. In higher income groups (Rs 10,000 and above) the respondents were more concerned about the manner in which the health care was delivered (technical aspects of care).

In Canada, Dunlop *et al.* (2000) found that after adjusting for differences in health need, Canadians with lower incomes and fewer years of schooling visit specialists at a lower rate than those with moderate or high incomes and higher levels of education attained despite the existence of universal health care. A drop-out analysis of community-based health insurance membership at Nouna, Burkina Faso found that female household head, higher age or lower education of a household head, lower number of illness episodes in the past three months, fewer children or elderly in a household, poor perceived health care quality, and less seeking care in the past month positively effected on drop-out. The study also found that a shorter distance to the contracted health facility increased the drop-out (Dong *et al.*, 2009).

### 3.3.4 Health Status and Quality of Care

It has been argued that knowledge of factors which play a role in determining whether a patient's judgement of the medical care received is positive or negative is important to help healthcare providers and planners to focus their changes on these factors (Al-Mandhari *et al.*, 2004). Perceived health status has been shown to be one of these factors. Al-Mandhari *et al.* (2004) assessed the influence of perceived health on the client's views of service quality in Oman, Jordan. They found that when adjusted for the relevant background factors such as age and sex, poor perceived health status predicts less positive judgments of various aspects of health care quality. According to the study, while poor mental health status, for example, predicts less positive judgements of accessibility of the service and interpersonal aspects of care such as the working hours of the health facility, doctor's attitude and time spent with the doctor, poor physical health status, on the other hand, predicts less positive judgments of aspects such as cleanliness of the building, and confidentiality of consultation with the doctor. The authors recommended that to provide more valid results regarding patients' views on their level of satisfaction with health care quality, users' perceived health status has to be evaluated concurrently with assessing satisfaction with the quality of health care services. The findings of the study by Al-Mandhari *et al.* (2004), were consistent with findings of a similar study by Westaway *et al.* (2003).

A drop-out analysis of community-based health insurance membership at Nouna, Burkina Faso found that among other factors lower number of illness episodes in the past three months, positively affected drop-out. A later study in the same area by Robyn *et al.* (2013) found that illness aggravation prior to facility care was significant and had a negative impact on overall patient satisfaction with the quality of care. Da Costa *et al.* (1999) found that self-reported physical and

mental health status and social support are more important than clinical status in understanding patients' satisfaction with the quality of care. Hall *et al.* (1993) found in a longitudinal study that self-perceived overall health predicts the level of patient satisfaction with the quality of care.

### **3.3.5 Hospital Characteristics and Perceived Quality of Care**

Hospital characteristics such as the type of hospital, whether government, mission or private; the number of staff, especially doctors; and size of hospital have been documented to have an influence on perceived quality of care. In their study of users' perceptions of outpatient quality of care in Kilosa District Hospital in Central Tanzania, Juma & Manongi (2009) reported that poor interpersonal relationship was described as one of the main reasons that patients would prefer private than public health facilities. Staffs at private facilities were described to be more compassionate and respectful compared to government facilities. Similarly, in a study in China, private facilities were hailed for good manners, respect, and attention to patients of their staff (Lim *et al.*, 2004). Several other studies indicate that quality of care in private health facilities are perceived to be higher than public health facilities (Andaleeb, 2000; Figen & Ebru, 2010; Taner & Antony, 2006; Odebiyi *et al.*, 2010; Berendes *et al.*, 2011). Andaleeb (2000) hypothesized that the quality of hospital services was contingent on the incentive structure under which these institutions operate. The author argued that since private hospitals were not subsidized and depended on income from clients (i.e. market incentives), they would be more motivated than public hospitals to provide quality services to patients to meet their needs more effectively and efficiently.

A study of the quality of private and public health services in rural Vietnam (Tuan *et al.*, 2005) however, found that public providers' infrastructure was superior to that of the private providers. The study also found that even though the quality of services provided by public providers was poor, it was significantly better than that of private providers. The authors concluded that even though private providers were successfully competing with the public providers in rural areas, it was not because they provide cheaper or better services. On the contrary, the quality of private health care services was not controlled and was significantly poorer than public services. Also, findings in a systematic review by Basu *et al.* (2012) did not support the claim that the private sector is usually more efficient, accountable, or medically effective than the public sector; however, the public sector appeared frequently to lack timeliness and hospitality towards patients.

In Tanzania, Mamdani & Bangser (2004) found that mission facilities were generally known for staff commitment and positive attitude towards patients, for availability of drugs and tests, cleanliness, few hassles and no bribery practices, whereas private facilities were known mainly for short waiting times and availability of drugs. Patients from mission facilities reported facing harassment and mistreatment when referred to the government hospitals, which they regarded as dangerous, abusive and unwilling or unable to provide care and treatment.

However, some studies suggest that quality of care in health facilities is not necessarily a function of ownership of the facility. Pérotin *et al.* (2013) found that the experience reported by patients in public and private hospitals was different. Most dimensions of quality were delivered differently by the two types of hospitals, with each sector offering greater quality in certain specialties or to certain groups of patients. The study thus concluded that hospital ownership in and of itself did

not affect the level of quality of the average patient's reported experience. Differences in mean reported quality levels between the private and public sectors were entirely attributable to patient characteristics, the selection of patients into public or private hospitals and unobserved characteristics specific to individual hospitals, rather than to hospital ownership.

Availability of health professionals, including doctors, has a bearing on the quality of service that is offered and certainly on users' perception (Smith & Sanderson, 1992; Haddad *et al.*, 1998a; Lomoro *et al.*, 2002; Groenewegen *et al.*, 2005; Lim *et al.*, 2004; Manongi *et al.*, 2006; Kamuzora & Gilson, 2007). Juma and Manongi (2009) report that health personnel in the hospital studied was generally perceived inadequate in terms of numbers. However, the authors expressed doubts whether the available staffs were functioning efficiently. According to the study people believe that health personnel do not work for the number of hours paid for. Participants in the study noted that the available health workers were in some instances engaged in special health programmes and activities that are not directly related to patients care.

In terms of size of hospital and quality of care, Keeler *et al.* (1992) found that quality varied from state to state in the USA, but teaching, larger, and more urban hospitals had better quality in general than nonteaching, small, and rural hospitals. Other studies also found a positive effect of hospital size on patient satisfaction and quality of care (Young *et al.*, 2000; El-Jardali, 2008).

### **3.3.6 Conceptual Definition of Quality of Care**

In spite of the importance of the various definitions and dimensions of health care quality discussed (see sections 3.2.1 and 3.2.2, pages 36 and 38), most of these were not developed in a developing

country context, and thus some important issues in healthcare services which have a significant influence on healthcare quality in developing countries have not been taken into consideration. Even though Haddad *et al.* (1998a, 1998b, 2000) developed dimensions and indicators to assess healthcare quality in a developing country context which has been used by some researchers in developing countries, no working definition has been provided to commensurate with these healthcare quality dimensions. Most of the well-known definitions of quality of health care tend to be rather generic and less specific, thus giving room to a varied and less uniform approach to assessing quality of care in a developing country context. Against this background, this study provides a working definition, based on a modification of one of the widely cited definitions of healthcare quality by the IOM (Lohr, 1992), as well as incorporate the views of Haddad *et al.* (1998a, 1998b, 2000) and the views from this study, to reflect perception of healthcare quality in a developing country context. Healthcare is thus defined in this study as follows:

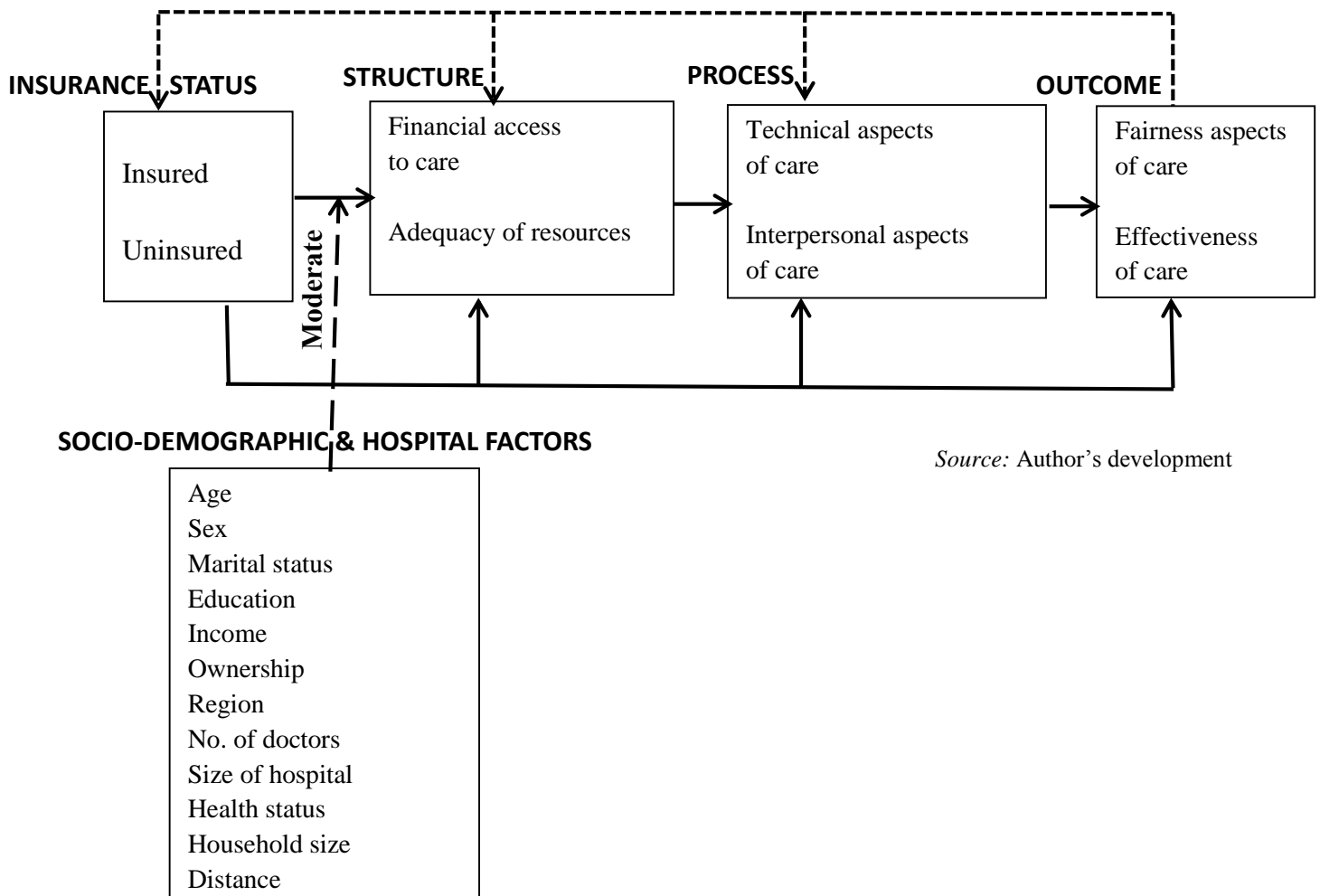
*‘Quality health care is the degree to which health services for individuals and populations is accessible, adequately resourced, provided in a technically competent and humane manner and increases the likelihood of desired health outcomes’.*

This definition is similar to the IOM definition in view of the fact that quality healthcare is “the degree to which health services for individuals and populations... increase the likelihood of desired health outcomes...” The phrase in the IOM definition, “and are consistent with current professional knowledge.” is captured in the operational definition as “*technically competent*”. However, the operational definition significantly differs from the generic IOM definition by indicating explicitly, some key dimensions of healthcare quality, namely, *accessible, adequately resourced, provided in a technically competent and humane manner*. Accessibility is a structural quality dimension, and could be financial or physical (Sharma & Narang, 2011); adequacy of

resources and services is also a structural quality dimension, and may include health infrastructure, equipment and health work force; technical competence is a process quality dimension, and includes the knowledge and skills possessed by health service professionals; humane care includes the interpersonal aspects of care, and is a process quality as well as fair treatment of all clients; and desired health outcomes may involve objective outcomes such as mortality rates, complications of treatment, and subjective outcomes such as perceived neatness and effectiveness of treatment and satisfaction with quality of care. The key weakness of the operational definition is that it is not exhaustive enough, and thus fails to capture other important quality of care dimensions such as safety and efficiency which are important quality of care indicators. However, the major strengths of this definition are based on the fact that the definition is less generic compared with other definitions such as the IOM definition. Also, the dimensions of quality of care in the definition have been identified as very relevant for a developing country context (Haddad *et al.*, 1998a, 1998b, 2000; Narang, 2010; Sharma & Narang, 2011).

### **3.3.7 Conceptual Framework of Health Insurance and Quality of Care**

Guided by the working definition in section 3.3.6 (page 65) the study adapts the quality of care scale by Haddad *et al.* (1998b, 2000) to develop a conceptual framework of health insurance and quality of care, within the context of Donabedian's structure-process-outcome healthcare quality model. Figure 3.1 (page 68) depicts the conceptual framework of health insurance status and perception of quality of care.

**Figure 3.1: Conceptual framework of the effect of health insurance on quality of care**

The framework posits that a patient's health insurance status has an influence on perceptions of quality of care, and can also be influenced in turn by perceptions of quality of care, either at the structural, process, outcome, or all levels. However, the extent to which health insurance status influences or is influenced by quality of care is moderated by socio-demographic and hospital characteristics, such as age, marriage, sex, income, number of doctors and number of beds. This study focused on the influence of health insurance on perceived quality of care, since considerable work has been done on the influence of quality of care on decision to enroll with or drop from

membership of health insurance schemes (Criel *et al.*, 2003; Dong *et al.*, 2009; Robyn *et al.*, 2012).

### **3.3.8 Justification of the Quality of Care Scale within the Conceptual Framework**

The quality of care scale is an adaptation of the scales used by Haddad *et al.* (1998a, 1998b, 2000). For detail description of the dimensions used in these studies, see section 3.2.3 (page 40). The modifications of the dimensions of quality of care used by Haddad *et al.* (1998a, 1998b, 2000) in this study include the addition of financial access to care, fairness of care, neatness and effectiveness of treatment, and overall quality of care. Even though financial access to care as a dimension of quality has been included in previous studies (Baltussen *et al.*, 2002, 2006b), only two indicators are used as sub-items. there are many sub-items under financial access in this study compared with Baltussen *et al.* (2002, 2006b). Fairness of care is a unique dimension of this study which has not been included in previous studies. Even though effectiveness of treatment for recovery and cure have been included as sub-items of dimensions of quality in Haddad *et al.* (1998a, 1998b, 2000), in this study effectiveness of treatment together with neatness is a dimension of quality of care, with five indicators under it. Overall quality of care is the addition of all the 24 indicators of quality of care and determining the overall quality of care index.

Following the conceptual framework in section 3.3.7 (see page 67), this study thus assessed quality of care by categorizing the various dimensions of quality into structural, process and outcome dimensions respectively, in line with Donabedian's model of quality of care (see section 3.2.3, page 40). Structural dimensions of quality of care include financial access, and adequacy of resources and services; process dimensions include technical and interpersonal aspects of care; and outcome dimensions include fairness aspects of care, neatness and effectiveness of treatment, and overall

perception of quality of care. The indicators (sub-items) under the six dimensions of quality of care add up to 24, the index of which is the overall quality of care, which is the seventh dimension (Details of the development of the quality scale for this study through factor analysis is in section 4.8.1, page 106).

The first dimension of the quality care scale consists of four items related to financial access to care. These include, ‘all services for insured patients are paid for by the insurance scheme’, ‘cost of hospital services are affordable’, ‘patients under NHIS exemption scheme are treated free’, and ‘only official/formal fees are charged and patients given receipts’. The justification for including financial access as a dimension of quality rests on the premise that introduction of social health insurance in Ghana, among others, seeks to remove financial barriers to access to healthcare by eliminating out-of-pocket payments at the point of service delivery. However, Brugiavini and Pace (2011), in their study on the effects of the NHIS in Ghana, concluded that the introduction of the NHIS has a positive and significant effect on the utilisation of health care services, although it does have only a weak effect on out-of-pocket expenditure. given the empirical and anecdotal evidence of out-pocket payments for health care in Ghanaian health facilities (Brugiavini & Pace, 2011; Nguyen *et al.*, 2011), a thorough assessment needs to be conducted on this dimension to examine the extent to which the problem exist, and whether there are differences between the insured and uninsured in respect of this dimension.

The second dimension consists of five items related to the adequacy of resources and services. They include ‘number of doctors are sufficient in the hospital’, ‘medical supplies and equipment is sufficient’, ‘waiting areas are spacious and rooms in out-patients department are sufficient’,

‘waiting time before doctors attend to patients is reasonable’, ‘drugs for all diseases are available on the spot’, Adequacy of these resources are important structural indicators to assess quality of care. In a developing country such as Ghana, not only is the doctor-patient ratio far higher compared to a developed country such as UK, but there are marked disparities in distribution of doctors within the country, especially between urban and rural areas or among the regions in Ghana (see Table 2.3, page 28). Also, availability of drugs has been found as a crucial indicator in assessing quality of care. The importance of drugs was pointed out in the initial study culminating in the development of the quality of care scale by Haddad *et al.* (1998a) through the following statement by a respondent:

*“The good doctor” is “the one who has drugs” and “if we have drugs, we are cured, and we are satisfied with the doctor and his care”. There cannot be a good “hospital” unless drugs are available there: “you don’t go to the hospital just because it’s a hospital, you go for the drugs”.*

According to Haddad *et al.* (1998a), availability of drugs often takes precedence over the other attributes of quality:

*“I don’t care whether the hospital looks nice, has a fresh coat of paint or not...what I care about is the drugs, no matter where I see my doctor”.*

The third dimension consists of four items related to technical aspects of care: ‘doctor tells patients what is wrong with them’, ‘doctor does a good physical examination’, ‘treatment is based on laboratory or other diagnostic tests’, and patients are involved in decisions concerning their treatment. Assessing quality of care based on the technical aspects of care has also been employed by virtually every study on quality of care (see sections 3.3.1 and 3.3.2, pages 47 and 52). Good clinical examination, for example, is cherished by patients when they meet a doctor:

*“when you go to the hospital and the doctor walks past you and does not even touch you much, the patient ends up feeling afraid; but if he looks at you and tries to do something for you, then you're happy”* (Haddad *et al.*, 1998a).

The fourth dimension consists of two items related to interpersonal aspects of care: ‘staffs show compassion and support patients’, and ‘staffs are polite and show respect for patients’. Again interpersonal aspects of care are included in most studies on quality of care (see sections 3.3.1 and 3.3.2, pages 47 and 52). In Zaire, a study on the qualities that should be found among health workers showed that women valued interpersonal qualities (respect, patience, courtesy, attentiveness, friendliness and straightforwardness), technical qualities and to a lesser extent, integrity. When they were asked about the two best qualities a nurse should have, the majority mentioned a relational component first and a technical component second. Thus, women's judgement on the quality of care may be largely based on their perception of the health providers' conduct (Haddad and Fournier, 1995; cited in Haddad *et al.*, 1998a).

The fifth dimension consists of four items related to fairness of care. These include a general perception of fairness to all patients, and more specifically, fairness in terms of giving patients same quality of drugs, and fairness in terms of treating patients based on first-come-first-served (fair queuing system) basis. The justification of this dimension is anchored on the anecdotal and empirical evidence that the insured are discriminated against compared with the uninsured patients in Ghana's health care facilities (Nguyen *et al.*, 2011; Dalinjong & Laar, 2012)

The sixth dimension consists of five items related to neatness and effectiveness of treatment. Structural elements of health service delivery, such as the cleanliness and physical appearance of health facilities, have been identified as driving factors in patients' perceptions on service quality and overall satisfaction (Zarei *et al.*, 2012). In a study of lay people perceptions of primary health care services in Guinea, Haddad (1998b) reports that expected effectiveness was the main determining factor for people resorting to treatment. It is therefore important to find out whether the improved utilization of health services is also associated with improved neatness and effectiveness of treatment, and whether there are differences in perceptions of neatness and effectiveness of treatment between the insured and uninsured. The seventh dimension is the addition of all the six dimensions of quality to generate the overall quality of care index. Each of the six dimensions were assumed to be equally important in assessing quality of care, therefore was no weighting in the computation of the overall quality of care index.

The study posits that these dimensions are influenced, and in turn, influence health insurance status. For example, perceptions of fair treatment by healthcare providers may differ by insurance status (Nguyen *et al.*, 2011; Dalinjong & Laar, 2012). Similarly, perceptions of technical or interpersonal aspects of care may also differ, depending on insurance status (Robyn *et al.*, 2013). The framework also indicates that the various dimensions of quality may have influence on each other. For example, under adequacy of resources and services, where there are adequate number of doctors and the requisite equipment to work with, this is likely to have a positive influence on the technical aspects of care such as physically examining patients, or even positively influence the interpersonal aspects of care. Similarly, the dimensions also have an influence on insurance status, especially, in regard to willingness to join or renew membership. For example, when

patients perceive healthcare providers to be fair, compassionate and respectful, this is likely to result in interest in joining or renewing membership with the insurance scheme. However, the focus of this study is the influence of insurance status on the various dimensions of quality of care. Overall quality of care is assessed by examining the influence of insurance status on the addition of all the indicators of the six dimensions of quality of care, controlling for the socio-demographic and hospital characteristics.

In a nutshell, various conceptualizations of healthcare quality were developed within the context of the developed countries. Haddad *et al.* (1998a, 1998b, 2000) developed and validated a scale to assess healthcare quality within a developing country context. Other researchers have adapted the scale in assessing healthcare quality in developing countries. This study adapted the scale developed by Haddad *et al.* (1998a, 1998b, 2000), by including financial access to care, fairness aspects of care, and neatness and effectiveness of care, giving rise to a 24-item quality of care scale. Also, no working definition has been developed to suit the quality of care scale developed by Haddad *et al.* (1998a, 1998b, 2000). This study therefore modified the most widely accepted definition of healthcare quality by the IOM (Lohr, 1992), to suit the healthcare quality scale of Haddad *et al.* (1998a, 1998b, 2000). Guided by this definition and the quality of care dimensions developed in this study, a conceptual framework was developed within the context of Donabedian's framework for assessing quality of care to guide the study. The framework indicates that health insurance status has an influence on structural, process or outcome quality of care, controlling for socio-demographic and hospital variables.

### 3.3.9 Providers versus Patients Perceptions of Quality of Care

According to Donabedian (1985), quality of care can be perceived from both providers' and clients' perspectives. Parasuraman et.al. (1985) used a conceptual framework for measuring service quality delivery. This service quality model indicates that consumers' quality perceptions are influenced by a series of five distinct gaps occurring in organizations. The first four gaps are on the healthcare providers' side, and can impede delivery of quality services. The first gap conceptualizes differences between patient expectations and management perceptions of patient expectations. The second gap is the difference between management perceptions of patient expectations and service quality specifications. The third gap is the difference between service quality specifications and services actually delivered. The fourth gap is the difference between service delivery and what is communicated about the service to patients. The fifth gap is on customers' side, and is the difference between customers' expectations and perceptions. Several studies have been conducted in health service quality, based on the fifth gap (Andaleeb, 2001; Babakus & Mangold, 1992; Kilbourne *et al.*, 2004).

However, few studies have been conducted on the providers' perception of what patients expect as constituting service quality (quality of care). Though client assessments are important, the provider's view, when combined with the client's perspective, can provide additional insight into areas where change is needed (Brown & Swartz, 1989). The provider would design, develop and deliver the services on the basis of his or her perceptions of patient expectations. Likewise, modifications to the services would be affected by the service provider's perceptions about patient expectations. Whether these perceptions of patient expectations exceed, match or measure below patient expectations can have a profound effect on future patient hospital relationship.

Rohini and Mahadevappa (2006) studied management perceptions about patient expectations of service quality in Bangalore hospitals. They found six out of 22 items on which managements underestimate customers' expectations. These include excellent hospitals will have modern looking equipment, materials associated with the services will be visually appealing in an excellent hospital, excellent hospitals will get the things right the first time, personnel in excellent hospitals will never be too busy to respond to patients' requests, personnel at excellent hospitals will be consistently courteous with their patients, and personnel of excellent hospitals will have the knowledge to answer patients' questions.

Silvestro (2005) conducted a comparative study of patient and staff perceptions of quality in UK. It was found, not so surprisingly, that managers, who had least patient contact, were the most out of touch with patient priorities, believing that access was the most important factor for patients, when in fact it was the factor with the lowest rating, and that integrity was the least important of the factors, when in fact it was one of the most important factors to both patient groups. In terms of perceptions, it appeared that all the staff believed patients' perceptions of service to be lower than they actually were. Silvestro (2005) concluded that the managers' misconceptions about patient expectations and their perceptions of the actual service delivered, may well have led to inappropriate investment decisions and improvement priorities.

Lee and Yom (2007) compared nursing service quality, satisfaction and intent to revisit the hospital perceived by hospitalized patients and nurses in Korea. The authors found that overall, nurses' expectations and performance were higher than those of patients, while patients' overall satisfaction with nursing and medical care was higher than that of nurses. There was a strong

positive relationship between satisfaction with nursing and medical care and intent to revisit the hospital for both groups.

Zhao *et al.* (2009) also compared nurses and patients perceptions of quality nursing care. They found a statistically significant difference between nurses' and patients' perceptions of quality nursing care based on staff characteristics, care-related activities and progress of nursing process. The authors concluded that nurses and patients had differing views of quality nursing care, because they may have had different standards and ways in which they viewed these characteristics of care. Nashrath *et al.* (2011) also found a statistically significant difference between nursing service quality as perceived by nurses and patients, in their study of nursing service quality in a tertiary care hospital in Maldives.

In assessing managers and patients' perceptions of primary healthcare services quality in Spain, Miranda *et al.* (2010), found that in general, managers' perception of the services provided in the health centres was quite distant from the views of patients. Most of the gaps between the patients' and the managers' perceptions indicated that the managers were too optimistic about the services that they provide. The differences were particularly important for efficiency attributes, in particular, the ease of making an appointment, waiting times in the health centre before entering the consulting room, and complaints resolution, for which the patients had a lower perception of quality.

Sewel (1997, cited in Roohi, 2011) observed that where there is often a discrepancy between managers' opinion of the clients' perceptions and expectations and the real expectations of the

latter, quality of service is susceptible to jeopardy. According to the authors, one reason for this discrepancy is lack of direct contact with clients and studying their perceptions and expectations.

In Ghana, a study was undertaken to assess the quality of services following the implementation of the NHIS. It was found that in nearly 92% of accredited healthcare facilities healthcare providers indicated that the implementation of the NHIS generally impacts negatively on their ability to acquire medicines both in terms of quality and quantity to cope with the increasing attendance. In addition, in 73% of accredited health facilities providers indicated that the NHIS affects the quality of medicine they prescribe for clients. To buttress their position, they cited high market prices of some drugs/medicines, delayed claims reimbursement and the exclusion of some effective drugs from the medicines list as the reasons (SEND-Ghana, 2010).

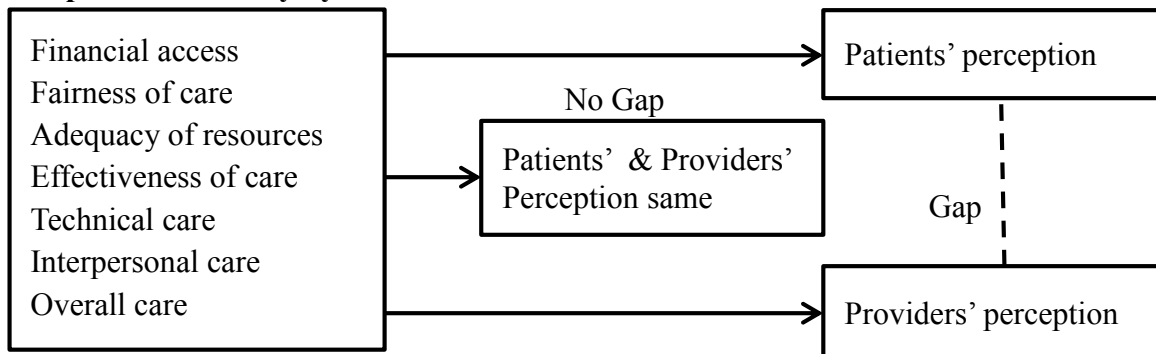
In summary, quality of care can be perceived from both providers' and clients' perspectives. Even though client assessments are important, the provider's view, when combined with the client's perspective, can provide additional insight into areas where change is needed. The provider would design, develop and deliver the service offering on the basis of his or her perceptions of patient expectations. Likewise, modifications to the service offering would be affected by the service provider's perceptions about patient expectations. Whether these perceptions of patient expectations exceed, match or measure below patient expectations can have a profound effect on future patient hospital relationship.

### 3.3.10 Conceptual Framework of Providers versus Patient's Perceptions of Quality

Based on the gap model of service quality (Parasuraman *et.al.*, 1985), a conceptual framework illustrating the perceptions of quality of care between patients and healthcare providers is shown in Figure 3.2.

**Figure 3.2: Conceptual framework of providers versus patients perceptions of quality**

#### Perceptions of Quality by Patients & Providers



Source: Author's development, 2013

Figure 3.2 shows a conceptual framework of healthcare provider versus patients' perceptions of quality of care. The framework suggests that theoretically, healthcare providers and patients may have the same perceptions of quality of care on the various dimensions of quality of care, namely, financial access, fairness of care, adequacy of resources and services, effectiveness of care, technical aspects of care, interpersonal aspects care, and overall care. In which case there is no perceived quality gap. On the other hand, providers and patients may have different perceptions of quality of care. In this case there is perceived quality gap.

### 3.4 Chapter summary

This chapter was a review of the theoretical and empirical literature on social health insurance and quality of care. Various definitions and conceptualizations of quality in the literature were discussed. Definitions of quality of care are generally categorized into two, that is, generic and disaggregated definitions. The most widely cited generic definition of quality of care was provided by the IOM as the *'degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge'* (Lohr, 1992). The most frequently used dimensions of quality of care include effectiveness, efficiency, access, safety, equity, appropriateness, timeliness, acceptability, patient responsiveness or patient-centredness, satisfaction, health improvement and continuity of care (Legido-Quigley *et al.*, 2008). Important as these generic or disaggregated definitions or dimensions of quality of care are, they fail to capture some relevant indicators related to quality of care, especially within the context of developing countries. Following the pioneer work of Haddad *et al.* (1998a, 1998b, 2000) on dimensions of quality of care considered relevant to the context of developing countries; and inspired by the IOM definition, this study provided a working definition of quality of care suitable to developing countries context as: *'...the degree to which health services for individuals and populations is accessible, adequately resourced, provided in a technically competent and humane manner and increases the likelihood of desired health outcomes'*.

A review of empirical literature shows that patients' perceptions of the various dimensions of quality of care are mixed. While some studies indicate favourable perceptions of quality of care, others do not. Generally, however, the literature on the quality of care dimension 'adequacy of resources and services' is unfavourable. Regarding differences in perceptions of quality of care between insured and uninsured patients, literature generally indicates a positive effect of insurance

membership on financial access to care, compared with the uninsured patients. Some studies also associate insurance membership with positive health outcomes. In Ghana, even though there is paucity of literature comparing perceptions of quality between insured and uninsured patients based on a more comprehensive quality assessment, there is some empirical and anecdotal evidence indicating that the insured are discriminated against in various aspects of quality of care such as poor staff attitude; payment of unofficial fees by insured patients; or insured patients made to buy drugs contrary to the tenets of the NHIS. Regarding perceptions of quality of care between patients and healthcare providers, the literature indicates that healthcare providers generally tend to rate quality of care differently from patients.

The literature concluded with the development of two conceptual frameworks to guide the study. The first conceptual frame work, which is examined within the context of Donabedian's model of quality of care, hypothesizes that health insurance status has an effect on patients' perceptions of quality of care controlling for socio-demographic and hospital characteristics. The second conceptual framework, which is based on the gap model of service quality by Parasuramal *et al.* (1985), posits that there may or may not be any gap in perceptions of quality of care between patients and healthcare providers. This thesis therefore seeks to establish whether there are any gaps in perceptions of quality of care between patients and healthcare providers. The next chapter presents the methodology of this study.

## **CHAPTER FOUR**

### **4.0 METHODOLOGY**

#### **4.1 Introduction**

This chapter presents the research methods. First of all, the research philosophy of the study is presented. Next the research design including sample size calculation, sampling methods and data collection are described. Finally, the method of data analysis is presented and described.

#### **4.2 Research Philosophy**

This study adopts the postpositivist world view of research. Postpositivism is so-called because it represents the thinking after positivism. Positivism is rooted in 19th century thought, guided by such philosophers as Mill, Newton, and Locke. Positivism reflects a broader cultural phenomenon in the humanities referred to as modernism, which emphasizes the rational and the scientific (Polit & Beck, 2012). A fundamental assumption of positivists is that there is a reality out there that can be studied and known. Adherents of positivism assume that nature is basically ordered and regular and that an objective reality exists independent of human observation. In other words, the world is assumed not to be merely a creation of the human mind (Polit & Beck, 2012). Another assumption related to positivism is determinism, which refers to the positivists' belief that phenomena are not haphazard, but rather have antecedent causes. Within the positivist paradigm, much research activity is directed at understanding the underlying causes of phenomena. Positivists value objectivity and attempt to hold personal beliefs and biases in check to avoid contaminating the phenomena under study (Polit & Beck, 2012). The positivists' scientific approach involves using

orderly, disciplined procedures with tight controls of the research situation to test researchers' hunches about the phenomena being studied and relationships among them (Polit & Beck, 2012). Strict positivist thinking has been challenged, and few researchers adhere to the tenets of pure positivism. In the postpositivist paradigm, the traditional notion of the absolute truth of knowledge, held by the positivists has been questioned (Phillips & Barbules, 2000). The postpositivists recognize that we cannot be "positive" about our claims of knowledge when studying the behaviour and actions of humans (Creswell, 2009). Even though postpositivists still hold a belief in reality and a desire to understand it, they nevertheless recognize the impossibility of total objectivity. They do, however, see objectivity as a goal and strive to be as neutral as possible (Polit & Beck, 2012).

The postpositivist philosophy is also reductionist in that the intent is to reduce the ideas into a small, discrete set of ideas to test. The knowledge that develops through a postpositivist lens is based on careful observation and measurement of the objective reality that exists "out there" in the world. Thus, developing numeric measures of observations and studying the behaviour of individuals become paramount for a postpositivist (Creswell, 2009). Appreciating the impediments to knowing reality with certainty, postpositivists therefore hold a deterministic philosophy in which causes probably determine effects or outcomes (Creswell, 2009; Polit & Beck, 2012). Postpositivists believe that there are laws or theories that govern the world, and these need to be tested or verified and refined so that we can understand the world. Thus, in the scientific method, the accepted approach to research by postpositivists is that an individual begins with a theory, collects data that either supports or refutes the theory, and then makes necessary revisions before additional tests are made (Creswell, 2009). This study proceeded on this basis. The conceptual

framework of the study is built on Donabedian's quality triad which holds the view that quality is best assessed by examining the structure, process and outcome components of healthcare delivery. The framework posits that health insurance status of an individual or population has an influence or effect on perceived quality of care. The effect may be on some or all indicators of structural, process or outcome quality components. Health insurance status is in turn influenced by perceptions of quality of care. However, the extent to which health insurance status influences or is influenced by quality of care is moderated by socio-demographic and hospital variables, such as age, marriage, sex, income, number of doctors and number of beds. The data gathered therefore sought to confirm or reject this position. The study also makes use of the Gap model of service quality, developed by Parasuramal *et al.* (1985), to explain quality gaps between patients and healthcare providers.

#### **4.3 Research Design**

This study is a cross-sectional survey. A cross-sectional study is the study of a particular phenomenon (or phenomena) at a particular time in a given population. It is a "snapshot" rather than a "diary" (longitudinal) approach to research (Saunders *et al.*, 2009). The survey method allows the collection of a large amount of data from a sizeable population in a highly economical way. Based most often on a questionnaire, survey data are standardized, allowing easy comparison. It is also generally perceived as authoritative by people because it is easily understood (Saunders *et al.*, 2009). However, data collected by the survey method may not be as wide ranging as those collected by qualitative research methods, because there is a limit to the number of questions which any questionnaire can contain (Saunders *et al.*, 2009). The biggest drawback with the questionnaire method is the probability in designing it badly (Saunders *et al.*, 2009). However, given the fact

that the quality of care scale used in this study has been validated and used by some other researchers, there is reason to be confident of its validity, in spite of the modification of the scale. The validity and reliability measures undertaken in this study will also further strengthen the questionnaire.

#### **4.4 Study Setting**

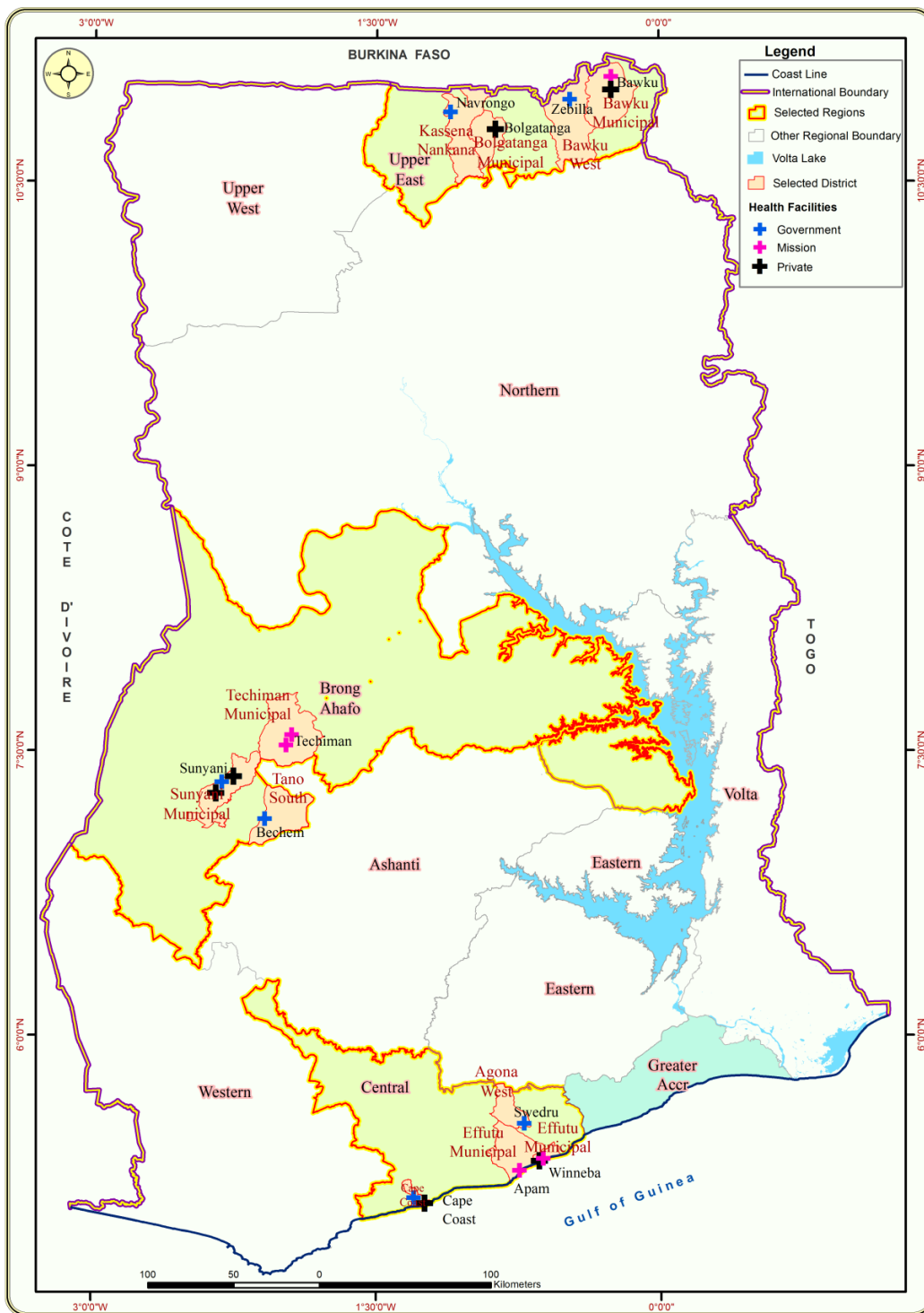
The study took place in three regions of Ghana, the Upper East, Brong-Ahafo and Central regions, representing the northern, middle and southern parts of Ghana respectively. The Upper East Region of Ghana is located in the north-eastern corner of Ghana (See Figure 4.1, page 88). According to the Ghana Health Sector Facts and Figures (GHSFF, 2010), the projected population of the region in 2010 was 1,026,458. The region has 8 administrative districts with a total of 144 healthcare facilities ((GHSFF, 2010). The GHS annual report (GHS, 2011) indicates a very high illiteracy rate in the region, with 34.4% of males and 49% of females being illiterates respectively. The Region has one of the lowest doctor-population ratios in Ghana, which is one doctor to 38,267 persons. However, it has the highest per capita utilization of health facilities of 2 (MOH, 2013), while 91% of all out-patients are members of the health insurance scheme (GHS, 2011). Even though the selection of the Upper East Region was by simple random sampling from among the three regions of the savannah zone, it is an interesting study area in view of the fact that in spite of being one of the poorest regions, and notwithstanding the relatively unfavourable resource indicators such as low doctor-population ratio, it has the highest per capita utilization of health services in the country. Does quality of care have a significant influence on the high utilization of health services?

The Brong Ahafo Region shares common boundaries with five others: Northern Region to the North, Ashanti and Western Regions to the South, the Volta Region to the East and the Eastern Region to the South East. It has an international boundary to the West which it shares with La Côte d'Ivoire. The region had a total projected population of 2,323,875 in 2010, with 19 administrative regions districts (GHSFF, 2010), with Sunyani as the regional capital. Its illiteracy level as percentage of the population stands at 17.1% for males and 24.9% for females respectively. The region has a total of 268 healthcare facilities (GHSFF, 2010), with a doctor-population ratio of 16,103 (GHS, 2011). It also has a relatively high per capita utilization of health facilities of 1.38, while 88% of all out-patient attendants are insured patients. Even though the Brong-Ahafo Region was selected randomly from among four regions in the southern zones, its location in the middle portion of Ghana is significant as it shares some features of both the northern and southern parts of the country.

The Central Region is located in the coastal belt of Ghana. It is bordered by the Ashanti and Eastern regions to the north, Western region to the west, Greater Accra region to the east, and to the south by the Atlantic Ocean. The region had a projected population of 1,961,994 in 2010, and 13 administrative districts, with Cape Coast as its regional capital. The illiteracy is one of the lowest in Ghana, 6.6% males and 16.2% of females respectively, being illiterate. The region has a total of 267 healthcare facilities (GHSFF, 2010), with a doctor-population ratio of 20,442 (GHS, 2011). The region has a relatively lower per capita utilization of health facilities in Ghana, which 0.83, as well as a relatively lower (72%) proportion of out-patients being members of the health insurance scheme in Ghana. Even though the Central Region was randomly selected from among three coastal regions, it is known to be the poorest of the

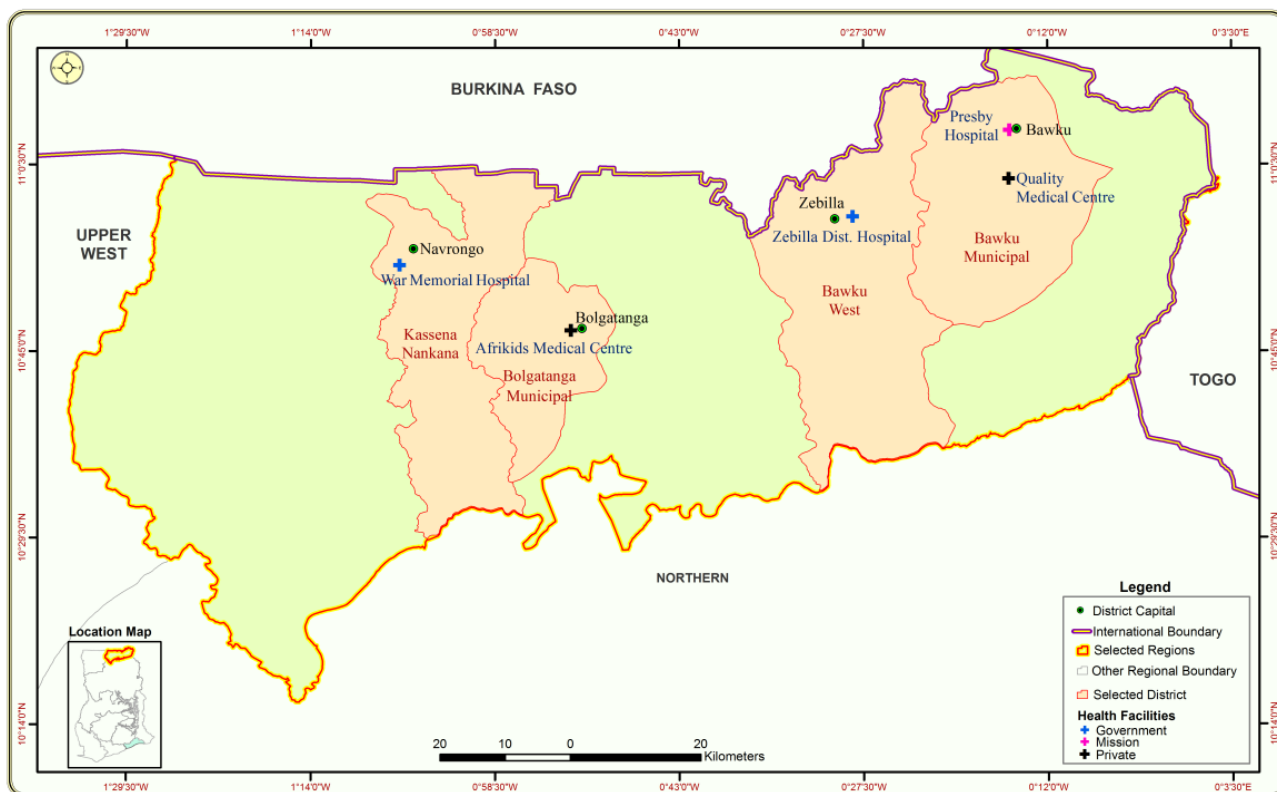
three coastal regions. Therefore financial access to healthcare in terms of health insurance membership is very crucial in this region. Figure 4.1 presents the map of Ghana, indicating the regions and districts selected for the study, while figures 4.2 to 4.4 presents the maps of the three respective regions, indicating the hospitals selected for the study.

Figure 4.1: Map of Ghana Indicating Regions and Districts Selected for Study



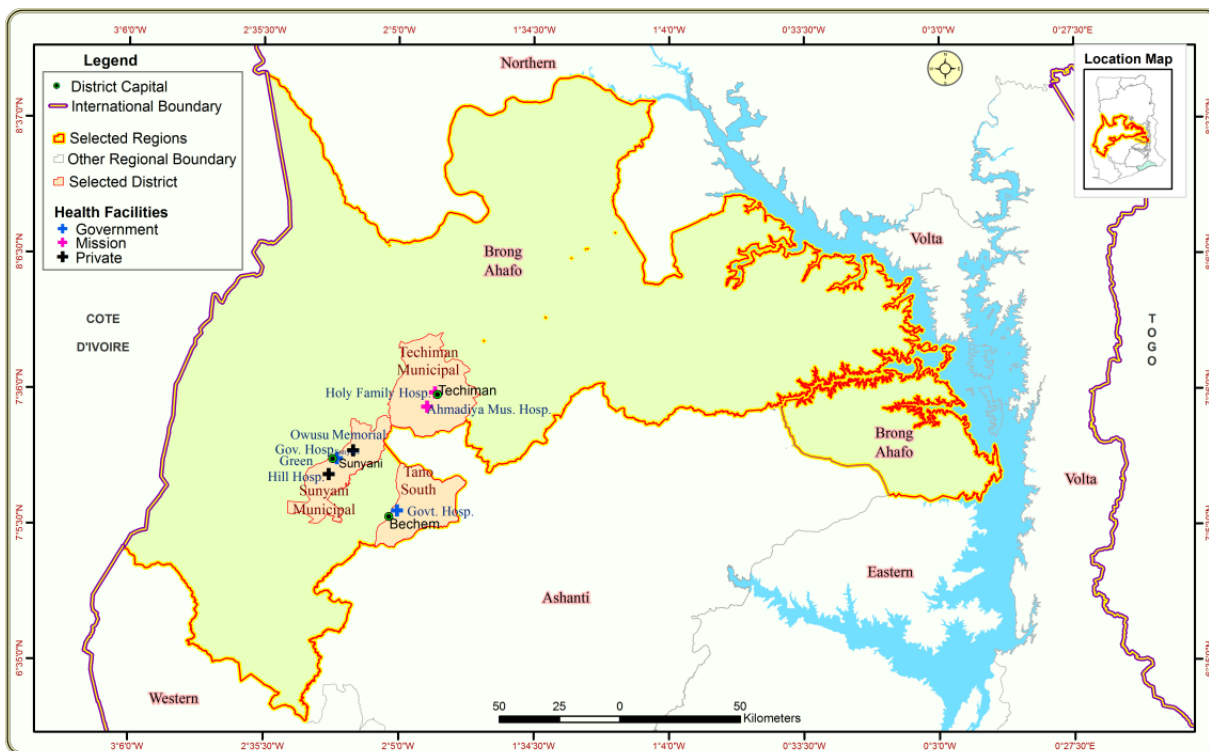
Source: Author's Field Survey, 2013

**Figure 4.2: Map of the Upper East Region, Indicating Hospitals Selected for Study**



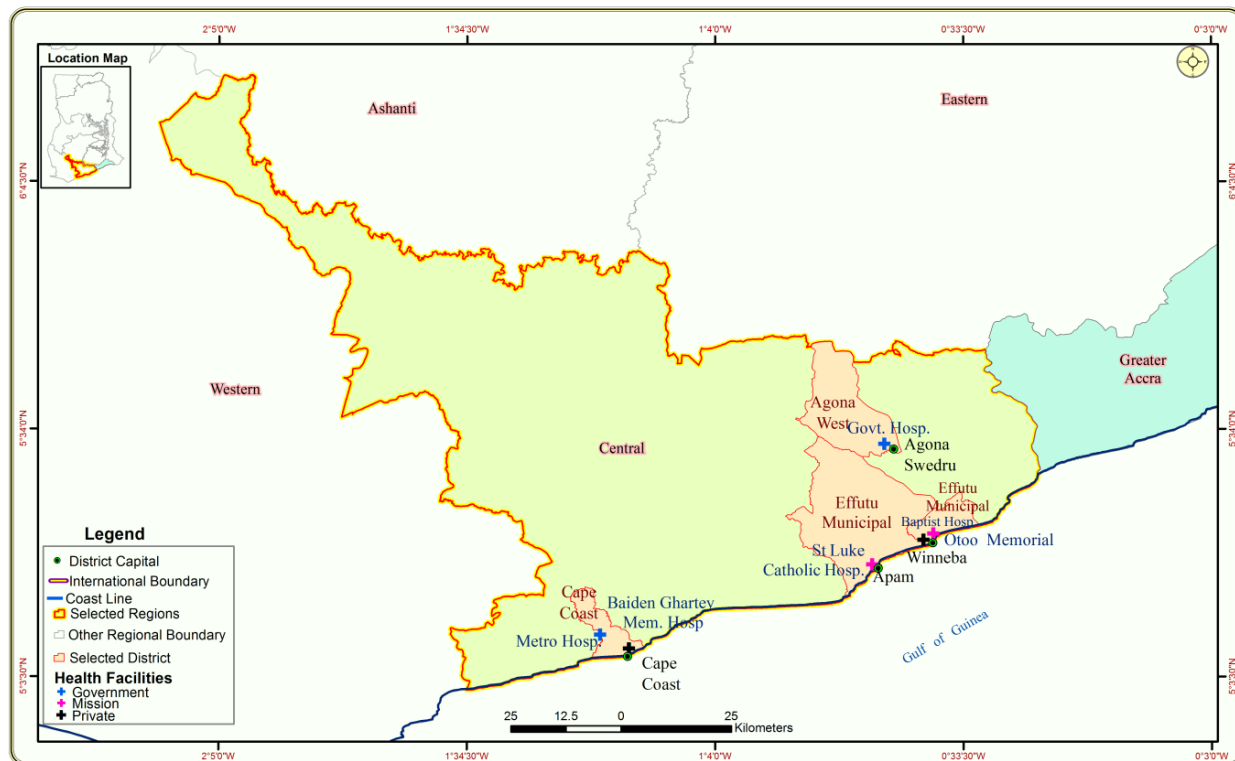
Source: Author's Field Survey, 2013

**Figure 4.3: Map of the Brong-Ahafo Region, Indicating Hospitals Selected for Study**



Source: Author's Field Survey, 2013

**Figure 4.4: Map of the Central Region, Indicating Hospitals Selected for Study**



Source: Author's Field Survey, 2013

### **Sampling Methods**

The study employed multi-stage cluster sampling, simple random sampling, purposive sampling, quota sampling and convenience sampling strategies for the study. The selection of regions was based on cluster and simple random sampling strategies; the selection of districts and hospitals was based on purposive sampling; whilst the selection of respondents was based on quota and convenience sampling strategies.

Cluster sampling involves a successive random sampling of units that progress from large to small (LoBiondo-Wood & Haber, 1990). The usual procedure is to begin sampling the large, inclusive unit and proceed to smaller, less inclusive units, and finally, the smallest unit of the population, the individual. This procedure involves successive stages of sampling, and so it is called multi-stage sampling (LoBiondo-Wood & Haber, 1990). The main advantage of cluster sampling is that it is considerably more economical in terms of time and money than other types of probability sampling, particularly when the population is large and geographically dispersed. The major disadvantage is that more sampling errors tend to occur than with simple random or stratified random sampling.

In line with Akazili *et al.* (2008), Ghana is divided into three ecological belts (zones). These belts include the northern belt, the middle belt and the southern belt. The northern belt has three regions, namely, the Upper East, Upper West and Northern Regions. The middle belt has four regions, namely, the Ashanti, Eastern, Brong-Ahafo and Volta regions, and the southern belt has three, namely Greater Accra, Western and Central regions. The study adopts the regions under each ecological belt as clusters. One cluster (region) is selected from each belt through simple random sampling strategy. In simple random sampling, the researcher defines the population, lists all of

the units of the population, and selects a sample of units from which the sample will be chosen (LoBiondo-Wood & Haber, 1990). The advantages of simple random sampling include the following (LoBiondo-Wood & Haber, 1990): The sample selection is not subject to the conscious biases of the researcher; the representativeness of the sample in relation to the population characteristics is minimized; the differences in the characteristics of the sample and the population are purely a function of chance; the major disadvantage of simple random sampling is that it is a time-consuming and inefficient method for obtaining a random sample (LoBiondo-Wood & Haber, 1990). The lottery method of simple random sampling was used (Mustafa, 2010). Under this system, names of the regions under each belt were written on small identical slips of paper, folded and mixed together in a container thoroughly. A blindfold selection was made, and the region picked was selected for the study. The regions thus selected from these ecological belts include the Upper East Region, representing the northern belt; the Brong-Ahafo Region representing the middle belt; and the Central Region, representing the southern belt.

Having selected a region from each ecological belt, the districts under each region were purposively selected for the study. Purposive or judgmental sampling enables the researcher to use his/her judgment to select cases which best enable him/her to answer the research questions. This form of sample is often used when working with very small samples, and when the researcher wishes to select cases that are particularly informative (Neuman, 1991; cited in Saunders *et al.*, 2009). The selection of districts was guided by distance and the availability of government, private-for-profit and mission health facilities. Generally, districts that were farther apart and had the mix of facilities described, were selected. The reason for selecting districts that were far apart was to avoid spill over effects of districts that are closer to each other. On the other hand, the

reason for selecting districts with the three ownership mix was to ensure fairness in comparisons as this would provide a reasonable basis for attributing differences in perceptions of quality of care to the type of health facilities.

Three districts each were selected from Brong-Ahafo and Central Regions, but four districts were selected from the Upper East region in order to obtain the required mix of health facilities. The districts selected include Bawku Municipal, Bawku West District, Bolgatanga Municipal and Kasena-Nankana District, representing the Upper East Region; Sunyani Municipal, Tano South District and Techiman Municipal, representing the Brong-Ahafo Region; and Agona West District, Cape Coast Municipal and Efutu District, representing the Central Region. Table 4.1 shows details of the number of regions under each ecological belt, the region selected for the study, the number of districts in the region selected, and the district selected.

**Table 4.1: Sampling of Regions and Districts**

| <b>Ecological belt</b> | <b>Regions in zone</b>  | <b>Region Selected</b> | <b>Upper East Districts<sup>1</sup></b> | <b>Districts Selected for study</b> |
|------------------------|-------------------------|------------------------|---|-------------------------------------|
| Northern               | Upper East              | Upper East             | Bawku Municipal                         | Bawku Municipal                     |
|                        | Upper West              |                        | Bawku West                              | Bawku West                          |
|                        | Northern                |                        | Bolga Municipal                         | Bolgatanga Municipal                |
|                        |                         |                        | Bongo                                   | Kasena-Nankana                      |
|                        |                         | Kasena-Nankana         |   |                                     |
|                        |                         |                        | Builsa                                  |                                     |
| <b>Ecological belt</b> | <b>Regions in zone</b>  | <b>Region Selected</b> | <b>Brong-Ahafo Districts</b>            | <b>Districts Selected for study</b> |
| Middle                 | Ashanti                 | Brong-Ahafo            | Asunafo North                           | Sunyani Municipal                   |
|                        | Eastern                 |                        | Asutifi                                 | Tano South                          |
|                        | Brong-Ahafo             |                        | Atebubu                                 | Techiman Municipal                  |
|                        |                         |                        | Volta                                   | Berekum                             |
|                        |                         |                        | Dormaa Municipal                        |                                     |
|                        |                         |                        | Jaman North                             |                                     |
|                        |                         |                        | Kintampo North                          |                                     |
|                        |                         |                        | Kintampo South                          |                                     |
|                        |                         |                        | Nkoranza South                          |                                     |
|                        |                         |                        | Pru                                     |                                     |
|                        |                         |                        | Sunyani Municipal                       |                                     |
|                        |                         |                        | Tain                                    |                                     |
|                        |                         |                        | Tano North                              |                                     |
|                        |                         |                        | Tano South                              |                                     |
|                        | Techiman Municipal      |                        |   |                                     |
|                        | Wenchi Municipal        |                        |   |                                     |
| <b>Ecological belt</b> | <b>Regions in zone</b>  | <b>Region Selected</b> | <b>Central Region Districts</b>         | <b>Districts Selected for study</b> |
| Coastal                | Greater Accra           | Central                | Abura Asebu Kwamankesi                  | Agona West                          |
|                        | Central                 |                        | Agona West                              | Cape Coast                          |
|                        |                         |                        | Western                                 | Ajumako Enyan Esiam                 |
|                        | Awutu Senya             |                        |   |                                     |
|                        | Cape Coast              |                        |   |                                     |
|                        | Efutu                   |                        |   |                                     |
|                        | Gomoa East              |                        |   |                                     |
|                        | Gomoa West              |                        |   |                                     |
|                        | Komenda Edina E. A      |                        |   |                                     |
|                        | Mfantsiman              |                        |   |                                     |
|                        | Twifo-hemang Low. Denk. |                        |   |                                     |
|                        | Upper Denkyira East     |                        |   |                                     |

*Source:* Author's Field Survey, 2013

<sup>1</sup> Only Districts with hospitals were included.

As shown in Table 4.1, the Northern belt has three regions. The selected region (Upper East) has six districts with hospitals. Three out of the six districts were selected for the study. The Middle belt has four regions. The selected region (Brong-Ahafo) has sixteen districts with hospitals, and three out of the sixteen districts were selected for the study. The Coastal belt has three regions. The selected region (Central) has twelve districts with hospitals. Three out of the twelve districts were selected for the study.

The selection of hospitals within the selected districts in each region was also based on purposive sampling strategies. Within the three districts in each region, two each of government, mission and private-for-profit hospitals were selected for study, giving a total of six hospitals in each region. The exception was the Upper East Region where there was only one mission hospital, thus five hospitals were selected, that is, two government, two private-for-profit and one mission hospital. Table 4.2 shows the hospitals sampled in each region for the study.

**Table 4.2: Sampled Hospitals**

| <b>Region</b> | <b>Government Hospitals</b>                        | <b>Mission Hospitals</b>                        | <b>Private Hospitals</b>                            |
|---------------|--|---|---|
| Upper East    | Zebilla Hospital<br>War Memorial Hospital          | Bawku Presby                                    | Quality Medical Centre<br>Afrikids Medical Centre   |
| Central       | Swedru Government Hosp.<br>Cape Coast Metro Hosp.  | Ahamadiya Hosp.<br>Baptist Hospital             | Baiden Ghartey Mem. Hosp.<br>Otoo Memorial Hospital |
| Brong-Ahafo   | Sunyani Municipal Hosp.<br>Bechem Government Hosp. | Ahmadiya Muslim Hosp.<br>Holy Family Hosp.Tech. | Owusu Memorial Hospital<br>Green Hill Hospital      |

*Source:* Author's Field Survey, 2013

Having selected the hospitals, quota sampling was used in determining the proportions of the various categories of patients to include in the study, particularly insured and uninsured patients; and males and females. Quota sampling is a form of sampling in which knowledge about the population of interest is utilized to build some representativeness into the sample. A quota sample identifies the strata of the population and proportionally represents the strata in the sample

(LoBiondo-Wood & Haber, 1990). This type of sample is not pre-selected but is chosen by the interviewer on the spot up to the level of the quota. The method is cheap and reasonably effective and in consequence is widely used. However, if done badly, substantial bias can be introduced with this system. Therefore, close control and checks must be employed to forestall bias (Lucey, 2002).

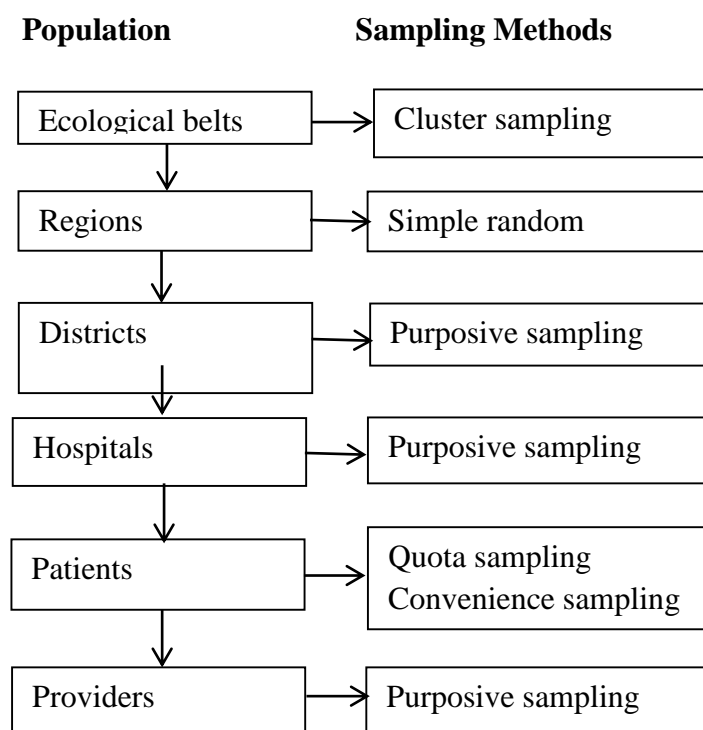
Turkson (2009) found that majority (70%) of respondents (patients) randomly selected from the various health facilities in two districts in Ghana, were females. Guided by this finding, a minimum quota of 30% of the total sample size was allocated to any category with the least OPD attendance. For example, where male OPD attendance is generally low, effort was made to ensure that at least 30% of total respondents in that hospital were males. This quota was applied to other respondent characteristics. For example, a minimum of 30% of the sample size was allocated to the uninsured patients, who were in the least in any hospital selected for the study. Thus, in any hospital where the uninsured patients were generally fewer, efforts was made to ensure that at least 30% of respondents were uninsured, and vice versa.

Having determined the quotas in the respective sample of respondents, convenience sampling was used to select patients for interview. Convenience sampling is the use of the most readily accessible persons or objects as subjects in a study (LoBiondo-Wood & Haber, 1990). Although this technique is widely used, it is prone to bias and influences which are beyond the researcher's control, as the cases only appear in the sample because of the ease of obtaining them. These problems are less important, however, where there is little variation in the population (Saunders *et al.*, 2009).

Finally, the selection of providers was based on a purposive selection of middle and top managers of hospitals for the study.

Figure 4.5 presents a flow chart of the respective populations and their corresponding sampling methods.

**Figure 4.5: Flowchart of Sampling Methods**



*Source:* Author's development, 2013

#### 4.5 Determination of Sample Size

The population of the study on which the unit of analysis was based, included out-patients and top and middle level managers in 17 selected hospitals in the Central, Upper East and Brong-Ahafo Regions of Ghana. The inclusion criteria for selecting patients were all patients 18 years and over, or caregivers of patients below 18 years, who were eligible to be insured with the national health insurance in Ghana, whether they were currently insured at the time of the study or not. Antenatal and postnatal clients were also included, and defined as patients, even though they may not necessarily be patients in the technical sense. The exclusion criterion was in-patients in hospitals. The exclusion of in-patients was partly due to resource constraints to investigate both in-patients and out-patients, and partly due to the fact that out-patients constitute over 80% of health facility attendance in developing countries. For the hospital managers, top and middle level managers who were institutional or unit heads and able to provide relevant information regarding health insurance and quality of care were included.

The sample size of patients was determined through a cluster sampling method. Cluster sample surveys have become a standard method of health surveys when populations are large and no sampling frame exists to permit simple or systematic random sampling (Lemeshow *et al.*, 1985, cited in Kaiser *et al.*, 2006). The calculation of sample size in cluster sampling is less precise compared with simple random sampling, due to greater statistical variance in the case of cluster sampling. To address this concern, the size of the sample calculated for simple random sampling must be enhanced by a factor called ‘design effect’ (Kaiser *et al.*, 2006). Design effect is defined as the ratio of the variance of the estimate under the actual design used to produce the estimate to the variance of the estimate assuming the same data to have come from a simple random sample

(Kaiser *et al.*, 2006). Unfortunately, unless information is available from a prior survey, design effects are not known until after the survey has been conducted and the sampling errors have been calculated. Moreover, each estimate in a survey has a different design effect. The sampler is thus faced with a dilemma for the calculation of sample size (Turner *et al.*, 2001). The DHS (2008) reported different design effects for the different survey indicators. However, in the area of educational level, the design effects of three regions selected for this study, namely, the Upper East, Brong-Ahafo and Central Regions were 2.487, 1.503 and 1.461 respectively. For simplicity, however, this study used a design effect of 2 across board for the sample size determination. Literature also suggests that many cluster surveys use a design effect of 2 (Yansaneh, 2005). A design effect of 2 implies that the sample size should be 2 times larger than obtains if simple random sampling was used to select regions and districts without considering them as clusters.

The sample size for patients was determined with the aid of OpenEpi version 2.3, open source calculator –Sspropor.

The sample size formula used is as follows:

$$n = deff \times \frac{N\hat{p}\hat{q}}{\frac{d^2}{1.96^2}(N-1) + \hat{p}\hat{q}}$$

where,

$n$  = sample size

$deff$  = design effect

$N$  = populationsize

$\hat{p}$  = the estimated proportion

$\hat{q} = 1 - \hat{p}$

$d$  = desired absolute precision or absolute level of precision

Since the study was a national one, it was expedient to determine the sample size from the population of out-patients in Ghana. The total out-patients' attendance in Ghana as at 2010 was 25,486,081 (NHIA, 2011). However, the OpenEpi calculator permits a default population of 1,000,000 as the maximum population size to determine the largest sample size. The estimated proportion (anticipated % frequency), provides an educated guess of the percent of the population with the outcome of interest. In this study, the outcome of interest was patients' perception of quality of care. OpenEpi indicates that where the researcher is unsure of the percentage, use of 50% will result in the largest sample size (holding the population size, confidence limits and design effect the same). The study thus adopted 50% as the anticipated frequency of patients responding to questionnaire on perceptions of quality of care. With the anticipated frequency of 50% and confidence limits as  $\pm 5$ , for the calculated sample size, the confidence interval would be  $50\% \pm 5\%$ , that is, (45%, 55%). Based on these specifications, the sample size generated by OpenEpi calculator for the study was 768. The determination of sample size is summarized in Table 4.3 below:

**Table 4.3: Sample Size determination of out-patients for study**

|  |             |
|--|-------------|
| Population size (for finite population correction factor or fpc)( $N$ ): | 1000000     |
| Hypothesized % frequency of outcome factor in the population ( $p$ ):    | 50% $\pm$ 5 |
| Confidence limits as % of 100 (absolute $\pm$ %)( $d$ ):                 | 5%          |
| Design effect (for cluster surveys- $DEFF$ ):                            | 2           |
| <b>Sample Size(<math>n</math>) for 95% Confidence Level</b>              | <b>768</b>  |

Source: OpenEpi, Version 2.3, open source calculator--SSPropor

To cater for possible non-response, 10% of 768, which is 77, was added to the sample, making it 845. Dividing this sample size by the 17 hospitals selected for the study gave 50 patients<sup>2</sup> to be

<sup>2</sup> Even though hospitals are not the same size, the effect of size was controlled for in the multiple regression model by bed capacity (see section 4.8.5).

interviewed in each hospital. However, the actual number of respondents was 818, which is about 97% response rate. Regarding sampling of the healthcare providers, three top managers and 7 unit heads were to be interviewed in each hospital. Thus, the total number of managers to be interviewed for the 17 hospitals was to be 170. However, the actual number of respondents was 152, which is about 90% response rate. The overall sample size for both patients and providers was therefore, 970.

## **4.6 Data Collection**

### **4.6.1 Survey Instrument**

Having determined the sampling strategy and sample size, questionnaire was used to interview patients and healthcare providers in the hospitals selected for the study. The questionnaire was in three sections: the first section contained the socio-demographic data of patients such as age, sex, marital status, occupation, religious affiliation, educational status and income level. Hospital characteristics such as location (region) of the hospital and ownership status were also collected. Section 2 contained data on health insurance enrolment and utilization of health services. The key variables included the health insurance status of patients, renewal of membership, reasons for non-enrolment or renewal of insurance membership, cost of health care, frequency of health facility visits, and unofficial/informal payments. Section 3 was the quality of care perception scale adapted from Haddad *et al.* (1998a, 1998b, 2000) and Baltussen *et al.* (2002) to assess patients and providers' perceptions of quality of care in hospitals. In the original scale, Haddad *et al.* (1998a) conducted focus group discussions with 180 people in Guinea (Conakry), and classified lay people's perceptions of the quality of primary health care services into five, namely, 'technical competence of the health care personnel' 'interpersonal relations between the patients and care

providers' 'availability and adequacy of resources and services' 'accessibility and 'effectiveness of care'. In a subsequent quantitative study involving 241 people, Haddad *et al.* (1998b) validated a 20-item scale consisting of three dimensions of quality of care, namely, 'health care delivery', 'personnel' and 'facility'. A subsequent scale (Haddad *et al.*, 2000) consist of 22 items under three dimensions, namely, 'interpersonal aspects of care', 'technical aspects of care' and 'outcomes of care'. However, Baltussen *et al.* (2002) modified the scale by Haddad *et al.* (1998b) to include 20 items under four dimensions, namely, 'health personnel practices and conduct', 'adequacy of resources and services ', 'health care delivery' and 'financial and physical accessibility of care'.

In the original scale by Haddad *et al.* (1998b), respondents could, for each question, express one of three opinions: unfavorable (-1), neutral (0), or favorable (+1). Later, Haddad *et al.* (2000) used a 5-point Likert scale for the response format, with the possibility of expressing the following opinions: 'negative', 'somewhat negative', 'neither negative nor positive', 'somewhat positive' or 'positive'. Baltussen *et al.* (2002) also used a 5-point Likert scale with the possibility of expressing the following opinions: 1= 'strongly disagree', 2='disagree', 3='neutral', 4= 'agree' or 5='strongly agree'.

This study employs a 5-point Likert scale, with the same responses as in Baltussen *et al.* (2002). However, the scale was initially modified into 28 items under five dimensions of quality of care to suit the Ghanaian context. The first dimension consists of five items related to interpersonal aspects of care: compassion and support, politeness and respect, privacy and confidentiality, and overall reception of patients. The second dimension consists of eight items related to technical aspects of care: listening and writing of patients' medical history, physical examination of patients,

patients involvement in their care, patients told what is wrong with them (diagnosis), diagnostic tests, quality of drugs, pharmacy instructions, and care outcomes. The third dimension consist of seven items related to the adequacy of resources and services in the facility: adequacy of doctors, adequacy of equipment, adequacy of rooms, waiting time, availability of drugs, patient complaints system, neatness of staff, and neatness of hospital premises. The fourth dimension, include four items, related to the financial accessibility of health care: payment by insurance scheme, cost of treatment, payments by exempt patients, and unofficial/informal charges. The fifth dimension includes four items related to fairness aspects of care: access to a doctor and other services, prompt identification of seriously ill patients, equal treatment for both insured and uninsured patients, and quality drugs for insured and uninsured patients. However, after conducting factor analysis of the data, the scale was further modified into 24 items under six dimensions (see Table 4.7, page 113).

#### **4.6.2 Pilot Test**

A pilot study was conducted prior to the actual field study in one hospital within the greater Accra Region (different from the three regions sampled for the actual study. A total of 30 patients made up of 18 insured and 12 uninsured patients were interviewed. In terms of sex, 21 were females and 9 were males across various age groups. For the healthcare providers, seven persons consisting of top and middle level managers were interviewed. One day was used for the pilot study. The reason for the pilot study was to ensure the validity and reliability of the instrument for data collection. For instance, initial analysis of the results of the pilot study revealed that some of the items of the questionnaire were prone to be misunderstood, while others were considered irrelevant. This led to further modifications of the questionnaire before the actual field study. The pilot study also informed the decision to provide quotas in respect of the insured and uninsured patients, as well

as the male and female patients, when it was realized that over 80% of respondents were insured; and also an overwhelming number of respondents were females. It was also observed that some illiterate patients had difficulty interpreting the Likert scale rating in the questionnaire. Therefore, a colour-coded scale ranging from 1, representing 'Strongly Disagree' to 5, 'Strongly Agree'; or 1, representing 'Very Bad' to 5, 'Very Good' was used to aid the interpretation of the rating to these categories of patients (see Appendix 2, page 280). This was then used for illiterate respondents during the actual survey.

#### **4.7 Ethical Consideration**

Ethics refers to the appropriateness of the researcher's behaviour in relation to the rights of those who become the subject of the study, or are affected by it. Wells (1994, cited in Saunders *et al.*, 2009) defines ethics in terms of 'a code of behaviour appropriate to academics and the conduct of research'. Approval for the study was granted by the Institutional Review Board (IRB) of the Noguchi Memorial Institute for Medical Research, in the University of Ghana, Legon (NMIMR-IRB 111/12-13), as well as the IRB of Navrongo Health Research Centre (NHRCIRB158) in Navrongo. Following this, permission was sought from the hospital authorities before patients were interviewed. Before any patient was interviewed, he/she was required to read and sign a consent form. For those who could not read, the researcher or assistant explained to them after which they were asked to thump-print if they consent to be interviewed. Also, contributions of all people who collaborated and assisted with the study were fully acknowledged. Finally, respect for intellectual property was maintained, and any knowledge drawn upon in producing the report was attributed to those by whom it was first discovered.

## **4.8 Data Analysis**

This section describes the way the data collected was analyzed. The data was analyzed with the aid of SPSS software version 20. First, the process of factor analysis is described, followed by factor analysis of the quality of care scale to determine the number of distinct dimensions for analysis. This is followed by a description of the reliability and validity measures, and finally, the statistical techniques employed in the data analysis are also described.

### **4.8.1 Factor Analysis**

Before proceeding with analysis of the data, the items of the quality of care scale was factor analysed to determine the number of distinct items to be used to measure perceived quality of care of patients. Factor analysis is a ‘data reduction’ technique. It takes a large set of variables and looks for a way the data may be ‘reduced’ or summarised using a smaller set of factors or components. It does this by looking for ‘clumps’ or groups among the intercorrelations of a set of variables (Pallant, 2010). Even though the quality of care scale has been used a few times in assessing quality of care, in view of the additional items and dimensions introduced in this study, and the modifications of other dimensions, factor analysis was necessary to further identify distinct variables in assessing quality of care.

#### 4.8.2 Suitability of the Data for Factor Analysis

One of the main issues to consider in determining whether a particular data set is suitable for factor analysis is the size of the sample. While there is little agreement among authors concerning how large a sample should be, the recommendation generally is the larger, the better (Pallant, 2010). Nunally (1978) recommends a 10 to 1 ratio, that is, ten cases for each item to be factor analysed. The total number of items constituting the quality of care scale used in this study was 28. The number of cases (sample size) in this study was 818. Dividing this by 28 gives a ratio of approximately 30 to 1; indicating that the data was suitable for factor analysis.

In addition to sample size, there are two statistical measures that help assess the factorability of data. These are Bartlett's test of sphericity (Bartlett, 1954) and Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (Kaiser, 1970, 1974). Bartlett's test of sphericity should be significant ( $p < 0.05$ ) for the factor analysis to be considered appropriate. The KMO index ranges from 0 to 1, with .6 suggested as the minimum value for a good factor analysis (Tabachnick & Fidell, 2007). In this study the KMO score generated was .772, exceeding the recommended value of .6 (Kaiser 1970, 1974) and Bartlett's test of sphericity (Bartlett 1954) was highly significant (Chi-square 5385.835, df 378,  $p < 0.001$ , see Table 4.4, page 107), and thus supported the appropriateness of using factor analysis to explore the underlying structure of perceived quality of healthcare services.

**Table 4.4 KMO and Bartlett's Test**

|   |                    |          |
|---|--------------------|----------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy |                    | .772     |
| Bartlett's Test of Sphericity                   | Approx. Chi-Square | 5385.835 |
|   | df                 | 378      |
|   | Sig.               | .000     |

### **4.8.3 Factor Extraction**

The most commonly used approach to factor extraction is the principal components analysis. Tabachnick and Fidell (2007) recommend that researchers adopt an exploratory approach, experimenting with different numbers of factors until a satisfactory solution is found. There are two techniques commonly used to assist in the decision concerning the number of factors to retain. These are Kaiser's criterion and Cattell's scree test. Using the Kaiser's criterion or the eigenvalue rule, only factors with an eigenvalue of 1.0 or more are retained for further investigation (Pallant, 2010). The eigenvalue of a factor represents the amount of the total variance explained by that factor (Pallant, 2010). Kaiser's criterion has been criticized, however, as resulting in the retention of too many factors in some situations (Pallant, 2010). In this study there were eight factors with eigenvalue of 1.0 or more (see Table 4.5, page 109). The eight factors explain 17.5%, 8.04%, 6.7%, 5.8%, 5.8%, 5.4%, 4.6% and 4.1% of the variance respectively.

**Table 4.5: Total Variance Explained**

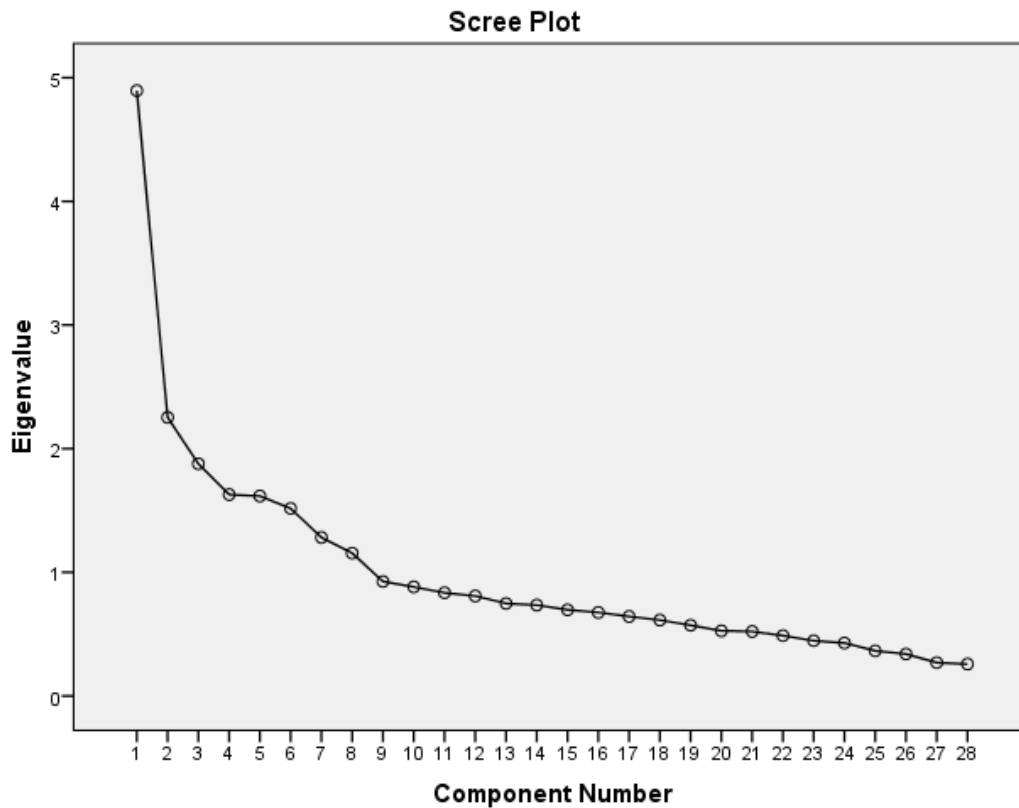
| Component | Initial Eigenvalues |               |              | Extraction Sums of Squared Loadings |               |              |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|
|           | Total               | % of Variance | Cumulative % | Total                               | % of Variance | Cumulative % |
| 1         | 4.896               | 17.485        | 17.485       | 4.896                               | 17.485        | 17.485       |
| 2         | 2.252               | 8.044         | 25.529       | 2.252                               | 8.044         | 25.529       |
| 3         | 1.878               | 6.706         | 32.234       | 1.878                               | 6.706         | 32.234       |
| 4         | 1.629               | 5.818         | 38.052       | 1.629                               | 5.818         | 38.052       |
| 5         | 1.617               | 5.774         | 43.826       | 1.617                               | 5.774         | 43.826       |
| 6         | 1.516               | 5.416         | 49.242       | 1.516                               | 5.416         | 49.242       |
| 7         | 1.282               | 4.578         | 53.819       | 1.282                               | 4.578         | 53.819       |
| 8         | 1.155               | 4.124         | 57.944       | 1.155                               | 4.124         | 57.944       |
| 9         | .926                | 3.306         | 61.249       |                                     |               |              |
| 10        | .882                | 3.149         | 64.398       |                                     |               |              |
| 11        | .834                | 2.980         | 67.378       |                                     |               |              |
| 12        | .809                | 2.888         | 70.266       |                                     |               |              |
| 13        | .748                | 2.672         | 72.938       |                                     |               |              |
| 14        | .735                | 2.624         | 75.562       |                                     |               |              |
| 15        | .697                | 2.489         | 78.051       |                                     |               |              |
| 16        | .675                | 2.412         | 80.463       |                                     |               |              |
| 17        | .643                | 2.296         | 82.758       |                                     |               |              |
| 18        | .614                | 2.192         | 84.950       |                                     |               |              |
| 19        | .572                | 2.043         | 86.993       |                                     |               |              |
| 20        | .527                | 1.881         | 88.874       |                                     |               |              |
| 21        | .521                | 1.861         | 90.735       |                                     |               |              |
| 22        | .488                | 1.742         | 92.477       |                                     |               |              |
| 23        | .446                | 1.594         | 94.071       |                                     |               |              |
| 24        | .429                | 1.531         | 95.602       |                                     |               |              |
| 25        | .365                | 1.303         | 96.905       |                                     |               |              |
| 26        | .339                | 1.212         | 98.117       |                                     |               |              |
| 27        | .269                | .961          | 99.078       |                                     |               |              |
| 28        | .258                | .922          | 100.000      |                                     |               |              |

Source: Author's Field Survey, 2013

Cattell's scree test involves plotting each of the eigenvalues of the factors and inspecting the plot to find a point at which the shape of the curve changes direction and becomes horizontal. Cattell (1966) recommends retaining all factors above the elbow, or break in the plot, as these factors contribute the most to explanation of the variance in the data set. In this study, even though there are eight factors with eigenvalue of 1.0 or more there is a clear break between the fifth and sixth components (see Figure 4.6, page 110). Components 1 to 5 therefore explain or capture much more of the variance than the remaining components. However, six components are retained for further analysis because the sixth component captures very important quality variables that need to be

retained. The six-component solution explain a total of 49.2% of the variance, with components 1 to 6 explaining 17.5%, 8.04%, 6.7%, 5.8%, 5.8% and 5.4% respectively (see Table 4.5, page 109).

**Figure 4.6: Scree Plot**



Source: Author's Field Survey, 2013

### Factor Rotation

Once the number of factors is determined through factor extraction, the next step is to try and interpret them. To assist in this process, the factors are 'rotated', that is, it presents the pattern of loadings in a manner that is easier to interpret (Pallant, 2010). This study employed the method of Varimax rotation which attempts to minimize the number of variables that have high loadings on each factor. Pallant (2010), recommends factor loadings of .3 on a factor as the minimum. However, this study used factor loadings of .4 as this led to a more expected pattern of loadings. Table 4.6 presents the rotated component matrix based on the six components.

**Table 4.6: Rotated Component Matrix<sup>a</sup>**

| Quality indicator         | Component |      |      |      |      |      |
|---------------------------|-----------|------|------|------|------|------|
|                           | 1         | 2    | 3    | 4    | 5    | 6    |
| Payments by insurance     | .721      |      |      |      |      |      |
| Costs affordable          | .711      |      |      |      |      |      |
| Exempted treated free     | .708      |      |      |      |      |      |
| Only official fees        | .570      |      |      |      |      |      |
| Complaint system          |           |      |      |      |      |      |
| Overall reception         |           |      |      |      |      |      |
| Fairness to all patients  |           | .764 |      |      |      |      |
| Same quality drugs        |           | .763 |      |      |      |      |
| First come first served   |           | .620 |      |      |      |      |
| Very ill treated first    |           | .586 |      |      |      |      |
| Doctor listens and writes |           |      |      |      |      |      |
| Doctors sufficient        |           |      | .784 |      |      |      |
| Equipment sufficient      |           |      | .739 |      |      |      |
| Rooms sufficient          |           |      | .673 |      |      |      |
| Waiting time              |           |      | .651 |      |      |      |
| Drugs available           |           |      | .473 |      |      |      |
| Staff neat                |           |      |      | .740 |      |      |
| Hospital neat             |           |      |      | .631 |      |      |
| Pharmacy instructions     |           |      |      | .585 |      |      |
| Treatment effective       |           |      |      | .501 |      |      |
| Quality drugs prescribed  |           |      |      | .445 |      |      |
| Privacy and confidential  |           |      |      |      |      |      |
| Tells patient diagnosis   |           |      |      |      | .738 |      |
| Physical examination      |           |      |      |      | .615 |      |
| Lab and other tests       |           |      |      |      | .610 |      |
| Patients involvement      |           |      |      |      | .557 |      |
| Compassion and support    |           |      |      |      |      | .865 |
| Staff polite & respectful |           |      |      |      |      | .861 |

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Source: Author's Field Survey, 2013

Table 4.6 shows the rotated component matrix based on the six components with a total of 24 items or indicators of quality of care. The items of the initial quality of care scale which was used to gather the data were 28, distributed among five dimensions, namely, 'Interpersonal Aspects of Care', 'Technical Aspects of Care', 'Adequacy of resources and services', 'Financial Access' and 'Fairness Aspects of Care' (see section 4.6, page 102). However, as shown in Table 4.6, four items were dropped from the initial 28-item scale through the process of factor analysis. These include ensuring privacy and confidentiality, and overall reception of patients both under interpersonal aspects of care; listening and writing of patients' medical history under technical aspects of care;

and availability of patient complaints system under adequacy of resources and services. Varimax rotation redistributed the 24 items into six components. The items under some of the components were grouped according to the dimensions used during the data collection. These include the items under 'Financial Access' and 'Fairness of Care'. However, the rest were mixed, and an additional component emerged. It therefore became necessary to provide a name to the new component (dimension). Thus, the names provided for the six dimensions under the new quality of care scale were 'Financial Access', 'Fairness Aspects of Care', 'Adequacy of resources and services ', 'Neatness and effectiveness of treatment', 'Technical Aspects of Care' and 'Interpersonal Aspects of Care'. Factor analysis therefore grouped the 24 items in such a way that a new dimension, 'Neatness and effectiveness of treatment' emerged, with the other dimensions retaining the earlier descriptions (see Table 4.7, page 113).

**Table 1.7: The New Dimensions of Quality of Care**

| Dimensions of quality of care             | Component |      |      |      |      |      |
|---|-----------|------|------|------|------|------|
|   | 1         | 2    | 3    | 4    | 5    | 6    |
| <b>Financial access</b>                   |           |      |      |      |      |      |
| All payments by insurance                 | .721      |      |      |      |      |      |
| Costs of services affordable              | .711      |      |      |      |      |      |
| Exempted patients treated free            | .708      |      |      |      |      |      |
| Only official fees paid                   | .570      |      |      |      |      |      |
| <b>Fairness aspects of care</b>           |           |      |      |      |      |      |
| Fairness to all patients                  |           | .764 |      |      |      |      |
| Same quality drugs for all patients       |           | .763 |      |      |      |      |
| First come first served                   |           | .620 |      |      |      |      |
| Very ill patients treated first           |           | .586 |      |      |      |      |
| <b>Adequacy of resources and services</b> |           |      |      |      |      |      |
| Doctors sufficient                        |           |      | .784 |      |      |      |
| Equipment and supplies sufficient         |           |      | .739 |      |      |      |
| Rooms in OPD sufficient                   |           |      | .673 |      |      |      |
| Waiting time reasonable                   |           |      | .651 |      |      |      |
| Drugs available                           |           |      | .473 |      |      |      |
| <b>Neatness and Effective treatment</b>   |           |      |      |      |      |      |
| Staff neat                                |           |      |      | .740 |      |      |
| Hospital neat                             |           |      |      | .631 |      |      |
| Pharmacy instructions clear               |           |      |      | .585 |      |      |
| Treatment effective for recovery and cure |           |      |      | .501 |      |      |
| Quality drugs prescribed                  |           |      |      | .445 |      |      |
| <b>Technical aspects of care</b>          |           |      |      |      |      |      |
| Tells patient diagnosis                   |           |      |      |      | .738 |      |
| Physical examination good                 |           |      |      |      | .615 |      |
| Lab and other tests done                  |           |      |      |      | .610 |      |
| Patients involvement in care              |           |      |      |      | .557 |      |
| <b>Interpersonal aspects of care</b>      |           |      |      |      |      |      |
| Staff show compassion and support         |           |      |      |      |      | .865 |
| Staff polite & respectful                 |           |      |      |      |      | .861 |

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Source: Author's Field Survey, 2013

It should be noted that the dimension 'Interpersonal Aspects of Care' now has only two instead of the initial four items, namely, staff showing compassion and support to patients, and staff being polite and respectful to patients. Pallant (2010), recommends the retention of any component with at least three items (factors) under it. However, this study retained the two factors under the 'Interpersonal Aspects of Care' dimension because not only do interpersonal aspects of care

remain crucial issues in quality of care literature, but these two items have the strongest factor loadings in the scale (see Table 4.7, page 113).

#### **4.8.4 Reliability and Validity**

In choosing appropriate scales for collecting data, there are two characteristics that a researcher needs to be aware of. These are reliability and validity. The reliability of a scale indicates how free it is from random error (Pallant, 2010). Two frequently used indicators of a scale's reliability are test-retest reliability and internal consistency. This study applied the internal consistency indicators to test for the reliability of the quality perception scale. According to Pallant (2010), internal consistency is the degree to which the items that make up the scale are all measuring the same underlying attribute (that is, the extent to which the items 'hang together'). The most common statistic used in measuring internal consistency is Cronbach's coefficient alpha. This statistic provides an indication of the average correlation among all of the items that make up the scale. Values range from 0 to 1, with higher values indicating greater reliability (Pallant, 2010). While different levels of reliability are required, depending on the nature and purpose of the scale, Nunnally (1978) recommends a minimum level of .7.

The overall Cronbach's coefficient alpha of the 24-items scale was .8 (see Table 4.8, page 115). The overall mean score was 89.92, while the standard deviation was 11.538. Cronbach's coefficient alpha for the subscales (dimensions) ranged from .61 for technical aspects of care to 0.83 for interpersonal aspects of care (see Table 4.8, page 115). Even though some of the subscales are less than .7, since the overall coefficient is .8, the instrument is still reliable. This is

corroborated by Baltussen *et al.* (2002), whose scale was considered reliable with Cronbach's alpha values ranging from 0.55 for the dimension 'health care delivery', to 0.86 for the total score.

**Table 4.8: Reliability Statistics**

| Scale                              | Cronbach's Alpha | No. of Items | Mean  | SD     |
|------------------------------------|------------------|--------------|-------|--------|
| Overall scale                      | .80              | 24           | 89.92 | 11.538 |
| Financial access                   | .67              | 4            | 14.93 | 3.275  |
| Fairness of care                   | .71              | 4            | 15.42 | 3.667  |
| Adequacy of resources and services | .72              | 5            | 15.27 | 4.350  |
| Neatness & effective treatment     | .67              | 5            | 21.27 | 2.510  |
| Technical aspects of care          | .61              | 4            | 14.99 | 3.483  |
| Interpersonal aspects of care      | .83              | 2            | 8.28  | 1.691  |

*Source:* Author's Field Survey, 2013

The validity of a scale on the other hand, is the degree to which the scale measures what it is supposed to measure (Marshall, 2014; Pallant, 2010). Unfortunately, there is no one clear-cut indicator of a scale's validity (Pallant, 2010). According to Polit & Beck (2012), validity is a property of an inference, not of a research design, but design elements profoundly affect the inferences that can be made. When researchers introduce design features to minimize potential threats, the validity of the inference is strengthened, and thus evidence is more persuasive (Polit & Beck, 2012). In this study, the following design features were done to ensure validity of the scale: the research team was properly trained; the scale was pre-tested in a hospital different from the sampled hospitals, and the necessary corrections and modifications made before the full scale data collection. In addition, spot checks and daily checks were carried out on completed questionnaire for completeness, accuracy and consistency. Reliability tests were carried out to ensure internal consistency of the instrument. Weiner (2007) argues that whereas there can be reliability without validity, there can be no validity without reliability. Finally, strict adherence to sampling methods and translation of the various items of questionnaire into the indigenous dialect were done in some areas.

#### 4.8.5 Statistical Tests

After the preliminary Factor Analysis and Reliability Analysis was conducted to refine the data collection instruments and ensure its reliability, **Chi-square statistic** was used to test for associations of insurance status and some socio-demographic and hospital characteristics. **Independent-samples t-test** was used to test the **first hypothesis (H<sub>1</sub>)** that there is a significant difference in perceptions of quality of care between insured and uninsured patients. The null hypothesis (H<sub>0</sub>) for the first hypothesis therefore, is that there is no significant difference in perceptions of quality between insured and uninsured patients. The t-tests are on all the 24 indicators of the quality of care scale. Since some of the indicators of quality of care may show significant differences while others may not, it is the overall quality of care index that is used to evaluate the hypothesis. According to Pallant (2010), Independent-samples t-test is used when the researcher wants to compare the mean scores of two different groups of people or conditions. In this study the two groups of people were the insured and uninsured patients, and the quality of care indicators being all the 24 items under the quality of care scale, and the overall quality of care index. Independent-samples t-test is accordingly suitable to employ for analysis.

Regarding the second hypothesis (H<sub>2</sub>) that there is a significant relationship between a patient's insurance status and his/her perception of quality of care in hospitals, multiple regression analysis was employed to investigate the effect of health insurance status on quality of care. The null hypothesis (H<sub>0</sub>) for the second hypothesis therefore, is that there is no significant relationship between a patient's insurance status and his/her perception of quality of care in hospitals.

The unit of analysis is perceived quality of care, represented by the indices of the various dimensions of quality of care, as the dependent variables. The analysis was done in two stages. First of all, an index of each dimension of quality of care was determined by the additions of scores of the items (quality indicators) under the dimension. From the factor analysis, six dimensions were generated. These include financial access to care, fairness of care, adequacy of resources and services, neatness and effectiveness of treatment, technical aspect of care, and interpersonal aspects of care. The overall perception of quality of care index was determined by the addition of the quality of care indices of the six dimensions. The overall quality dimension is therefore the seventh dimension of quality of care. Having determined quality of care indices of the various dimensions constituting the dependent (outcome) variables, the second stage was to test the effect of health insurance status (main independent variable) on the various dimensions of quality (dependent variables), controlling for various socio-demographic and hospital variables (other independent variables). The regression model takes the following form:

$$QoC_i = \beta_0 + \beta_1 Insurance + \beta_2 Age + \beta_3 Sex + \beta_4 Marital\ Status + \beta_5 Education + \beta_6 Income + \beta_7 Income + \beta_8 Health\ Status + \beta_9 Household\ Size + \beta_{10} Hospital\ Size + \beta_{11} Doctors + \beta_{12} Region + \beta_{13} Ownership + \epsilon_i$$

Where:

**QoC<sub>i</sub>** = Quality of care, a dependent variable which is an index. It is measured by a regression of the independent variables on the index of each of the seven dimensions of quality of care.

**Insurance** = is a dummy, and coded 1=insured; and 0=uninsured (reference).

The rest of the independent variables are control variables, defined as follows:

**Age** = age of respondents, is a continuous variable.

**Sex** = is the sex of respondent, and is coded, 1=male, 0=female (reference).

**Marital status** = is a dummy, and is coded 1=married, 0=unmarried (reference).

**Education** = is a categorical variable, and is coded 1=primary/JHS, 0=otherwise; 1=Sec/Tec/Voc, 0=otherwise; 1=tertiary, 0=otherwise; reference=no education.

**Income** = is a categorical variable, and is coded 1=no earnings, 0=otherwise; 1=GH¢101, 0=otherwise; reference= GH¢100 and below.

**Health status** = is measured using Likert type scale, ranging from 1, very poor, to 5 very good health status.

**Household size** = is a continuous variable.

**Hospital Size** = is a continuous variable, and is measured by bed capacity<sup>3</sup> as a proxy.

**Doctors** = is a continuous variable.

**Region** = is a categorical variable, and is coded 1= Brong-Ahafo Region, 0=otherwise; 1=Central Region, 0=otherwise; reference=Upper East Region.

**Ownership** = is a categorical variable, and is coded 1= mission hospitals, 0=otherwise; 1=private hospitals, 0=otherwise; reference=government hospitals.

**Distance** = is a continuous variable.

$\mathcal{E}_i$  = error term

With this model, it is possible to estimate the effect of health insurance on perceptions of quality of care in Ghanaian hospitals.

Multiple regression is a family of techniques that can be used to explore the relationship between one continuous dependent variable and a number of independent variables or predictors. Pallant (2010) outlines a variety of uses of multiple regression: it can tell how well a set of variables is able to predict a particular outcome; it will allow the researcher to test whether adding a variable

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<sup>3</sup> Other studies have used bed capacity as a proxy for hospital size (Sjetne *et al.*, 2007; Ammar *et al.*, 2013).

contributes to the predictive ability of the model, over and above those variables already included in the model; it can also be used to statistically control for an additional variable (or variables) when exploring the predictive ability of the model. The latter point is particularly important in this study, as the researcher seeks to determine the effect of health insurance status on quality of care, controlling for a variety of socio-demographic and hospital variables. Assumptions underlying multiple regression analysis and how the model is evaluated are discussed in section 5.5.2 (page 171).

**Independent-samples *t*-test** was also used to test the **third hypothesis (H<sub>3</sub>)** that there is a significant difference in perceptions of quality of care between patients and healthcare providers. The null hypothesis (H<sub>0</sub>) for the third hypothesis therefore, is that there is no significant difference in perceptions of quality between patients and healthcare providers. Like the first hypothesis (H<sub>1</sub>), the *t*-tests for the third hypothesis are on all the 24 indicators of the quality of care scale. However, since some of the indicators of quality of care may show significant differences while others may not, it is the overall quality of care index that is used to evaluate the third hypothesis also.

The three hypotheses addressed the first three objectives and research questions of the study respectively.

### **Level of Significance**

The decision to reject or accept a null hypothesis is based on a consideration of how probable it is that the observed differences are a result of chance alone (LoBiondo-Wood & Haber, 1990). Researchers cannot know with certainty whether a null hypothesis is or is not true. They can only

conclude that hypotheses are *probably* true or *probably* false, and there is always a risk of error (Polit & Beck, 2012). Researchers can make two types of statistical error: rejecting a true null hypothesis or accepting a false null hypothesis. Researchers make a Type I error by rejecting a null hypothesis that is, in fact, true (Polit & Beck, 2012). The level of significance or alpha level, is the probability of making a type I error, or the probability of rejecting a true null hypothesis (LoBiondo-Wood & Haber, 1990). The conventional level of significance is usually .05 (Polit & Beck, 2012). This significance level is therefore used in this study.

#### **4.8.6 Qualitative Analysis**

The **fourth objective** (exploring ways by which quality of care could be improved in Ghanaian hospitals) was analyzed qualitatively, by categorizing the various recommendations by patients and healthcare providers, according to themes and discussing them vis-à-vis empirical literature.

#### **4.9 Chapter Summary**

This chapter described the methodology of this study. The postpositivist philosophical world view which was adopted to examine quality of care in Ghanaian hospitals was described. A quantitative research design was thus employed. A cross-sectional survey of selected hospitals in Ghana was undertaken to interview out-patients and healthcare providers. Quota and convenience sampling strategies were employed to select patients, while purposive sampling was employed to select healthcare providers for interview. The sample size of out-patients was determined using OpenEpi statistical software<sup>4</sup>. A total of 970 out-patients and healthcare providers from 17 hospitals were interviewed from 10 districts from selected regions of Ghana. Data was collected using structured

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<sup>4</sup> Dean AG, Sullivan KM, Soe MM. OpenEpi: Open Source Epidemiologic Statistics for Public Health, Version 2.3.1. [www.OpenEpi.com](http://www.OpenEpi.com), updated 2010/19/09, accessed 2013/05/10.

questionnaire containing socio-demographic and hospital characteristics, and items addressing health insurance enrolment, health service utilization and quality of care by healthcare providers. The reliability and validity of the questionnaire and the research process were ascertained through various reliability and validity tests, as well as ethical clearance by the NMIMR and NHRC.

Data is analyzed with the aid of SPSS software version 20. Descriptive statistics, including frequencies, mean and standard deviation is employed in data analysis. T-tests are employed to test two hypotheses to determine differences in perceptions of quality between insured and uninsured patients, as well as perceptions of quality between providers and patients, whilst multiple regression analysis is used to test a hypothesis on the relationship between health insurance status and perceived quality of care, controlling for socio-demographic and hospital variables. Qualitative data is analysed according to themes identified. Finally, findings from the patients and providers are discussed vis-à-vis the theoretical and empirical literature, as well as the independent views of the researcher. The policy implications are also discussed.

The next chapter presents the results on patients' perceptions of quality of care.

## CHAPTER FIVE

### 5.0 PATIENTS' PERCEPTIONS OF QUALITY OF CARE

#### 5.1 Introduction

This chapter presents the results of the study on patients' perceptions of the quality of care in the study areas. First, the background characteristics including the socio-demographic and hospital characteristics such as region of respondent, ownership of hospitals and number of doctors is first presented. Next, a comparison is made between the perceptions of quality of care between the insured and uninsured patients, using t-test statistic. Finally, multiple regression analysis is conducted to assess the effect of health insurance on quality of care. The results of the t-test and regression analysis, as well as the other background characteristics are then discussed together.

Table 5.1 (page 123) presents the socio-demographic characteristics of the respondents. As shown in Table 5.1, the mean age of respondents were 35.5 years, while the median and modal ages were 32 and 28 years respectively, with a standard deviation of 14.24. A higher proportion of respondents were females, that is, 484(59.4%). With regard to marital status, a higher proportion of the respondents: 552(68.1%) were married, while 258 (31.9%) were unmarried. The results further showed that close to one-fourth: 193(23.6%) had no formal education; 351(43%) had primary or JHS education; 153(18.7%) secondary level education; and 120 (14.7%) had tertiary level education. About one in three respondents; 257 (31.9%) were not earning monthly income, these included students and those not employed; 211 (26.2%) earned GH¢100 and below; and 337(41.9%) earned GH¢101 and above. The mean household size was 5.40; the median and modal household sizes were 5 and 4 respectively, and the standard deviation was 2.73.

**Table 5.1: Socio-demographic characteristics of respondents**

| Characteristics                         | N   | Frequency |      | Mean | Median | Mode | Std. dev. |
|---|-----|-----------|------|------|--------|------|-----------|
|   |     | No.       | %    |      |        |      |           |
| <b>Sex</b>                              | 817 |           |      |      |        |      |           |
| Male                                    |     | 334       | 40.6 |      |        |      |           |
| Female                                  |     | 484       | 59.4 |      |        |      |           |
| <b>Marital status</b>                   | 810 |           |      |      |        |      |           |
| Unmarried                               |     | 258       | 31.9 |      |        |      |           |
| Married                                 |     | 552       | 68.1 |      |        |      |           |
| <b>Educational level of respondents</b> | 817 |           |      |      |        |      |           |
| None                                    |     | 193       | 23.6 |      |        |      |           |
| Primary-JHS                             |     | 351       | 43   |      |        |      |           |
| Sec/Tech/Vocational                     |     | 153       | 18.7 |      |        |      |           |
| Tertiary                                |     | 120       | 14.7 |      |        |      |           |
| <b>Income</b>                           | 805 |           |      |      |        |      |           |
| GH¢100 and below                        |     | 211       | 26.2 |      |        |      |           |
| GH¢ 101 and above                       |     | 337       | 41.9 |      |        |      |           |
| No earnings                             |     | 257       | 31.9 |      |        |      |           |
| <b>Age</b>                              | 793 |           |      | 35.5 | 32     | 28   | 14.24     |
| <b>Household size</b>                   | 723 |           |      | 5.40 | 5      | 4    | 2.73      |

Source: Author's Field Survey, 2013

## 5.2 Hospital Characteristics

Table 5.2 presents the hospital characteristics of the study

**Table 5.2: Hospital characteristics**

| Characteristics                        | N   | Frequency |      | Mean   | Median | Mode | Std. dev. |
|--|-----|-----------|------|--------|--------|------|-----------|
|  |     | No.       | %    |        |        |      |           |
| <b>Ownership of hospital</b>           | 818 |           |      |        |        |      |           |
| Government                             |     | 307       | 37.5 |        |        |      |           |
| Mission                                |     | 251       | 30.7 |        |        |      |           |
| Private                                |     | 260       | 31.8 |        |        |      |           |
| <b>Region of respondent</b>            | 818 |           |      |        |        |      |           |
| Upper East                             |     | 252       | 30.8 |        |        |      |           |
| Brong-Ahafo                            |     | 261       | 31.9 |        |        |      |           |
| Central                                |     | 305       | 37.3 |        |        |      |           |
| <b>Bed capacity (size) of hospital</b> | 818 |           |      | 112.86 | 70     | 70   | 92.28     |
| <b>Number of doctors</b>               | 768 |           |      | 2.46   | 2      | 1    | 1.44      |
| <b>Distance to hospital</b>            | 776 |           |      | 5.97   | 3      | 2    | 7.86      |

Source: Author's Field Survey, 2013

Table 5.2, indicates that the mean bed capacity of the hospitals included in the study was 112.86.

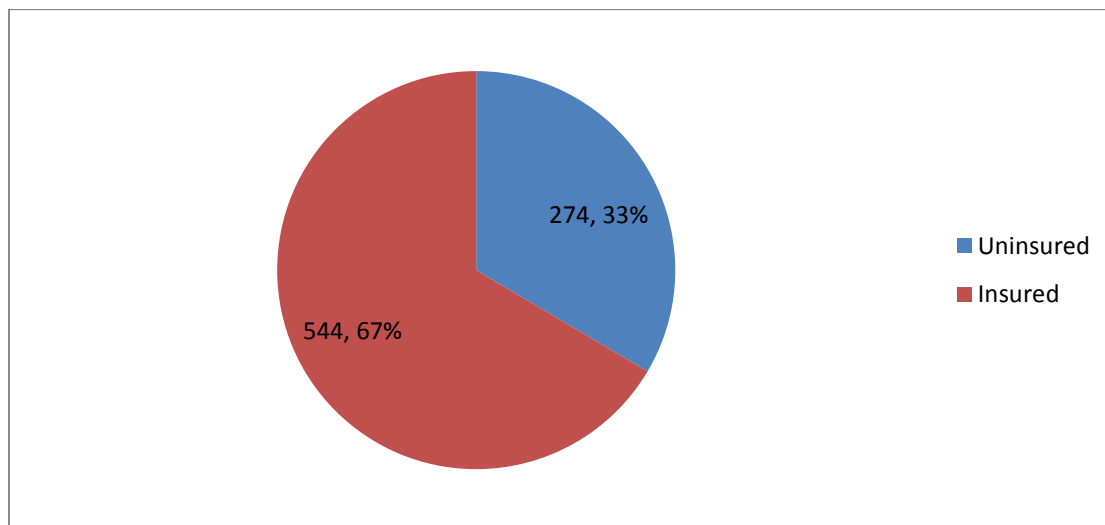
The median and modal bed capacity were 70 each, with a standard deviation of 92.28. The results also indicate that government hospitals constituted 307 (37.5%); mission hospitals constituted 251 (30.7%); and private hospitals constituted 260 (31.8%). Regarding number of doctors in a

hospital, the mean number was 2.46; the median and modal numbers of doctors were 2 and 1 respectively, with a standard deviation of 1.44. With respect to distance to hospital, the mean distance was 5.97 kilometres, the median and modal kilometres were 3 and 2 respectively, with a standard deviation of 7.86. Respondents from the Upper East Region constituted 252 (30.8%); respondents from Brong-Ahafo Region constituted 261 (31.9%); and Central Region had 305 (37.3%) respondents.

### 5.3 Health Insurance Enrolment and Utilization of Health Services

This section presents data on enrolment status of respondents and other issues related to membership, as well as the utilization of health services. Figure 5.1 depicts the enrolment status of respondents

**Figure 5.1: Enrolment status of respondents**

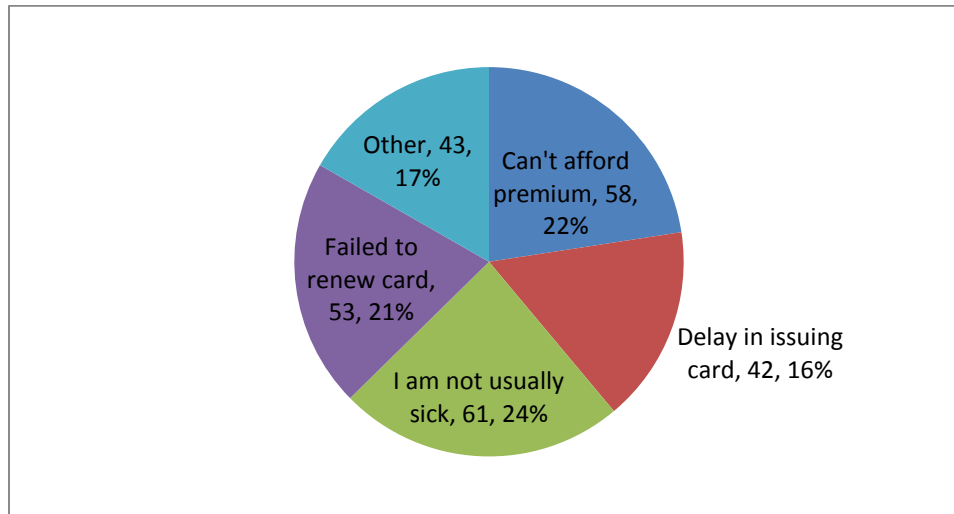


Source: Author's Field Survey, 2013

Figure 5.1 shows that about 2 out of 3 respondents were insured.

Figure 5.2 presents reasons uninsured respondents gave for their non-enrolment into the NHIS

**Figure 5.2: Reasons for non-enrolment or renewal of membership of NHIS**



Source: Author's Field Survey, 2013

Figure 5.2 shows that four major reasons accounted for non-membership or non-renewal of membership with the NHIS. These include some respondents' indicating that they could not afford the premium; this group constitute 22% of a total number of 257 respondents; other respondents did not enroll as members because they were not usually sick (24%); for some it was due to a failure to renew their membership card after it had expired (21%); and for others it was due to delays by the insurance scheme to issue membership cards to them after their registration. The remaining 17% were various minor reasons put together. Key among these include poor quality of care, lack of trust in the organizers of the NHIS, some were able to pay their medical bills out-of-pocket, and therefore did not need to enroll with NHIS, and others felt there was no need registering with NHIS since NHIS members still paid out-of-pocket for their healthcare, in spite of their insured status.

Table 5.3 presents the amount of Cedis paid as health insurance premium by insured respondents. It should be noted that the premium varied from region to region, with the minimum pegged at GH¢7.2, excluding a lesser amount paid as registration fee. Persons within the exempt group which include children below 18 years, pregnant women, the elderly (that is 70 years and above), and the indigent (abjectly poor), are not expected to pay the premium. However, with the exception of pregnant women and the indigent, the other exempt group are expected to pay a token amount as registration fee.

**Table 5.3: Amount paid as health insurance premium by insured respondents**

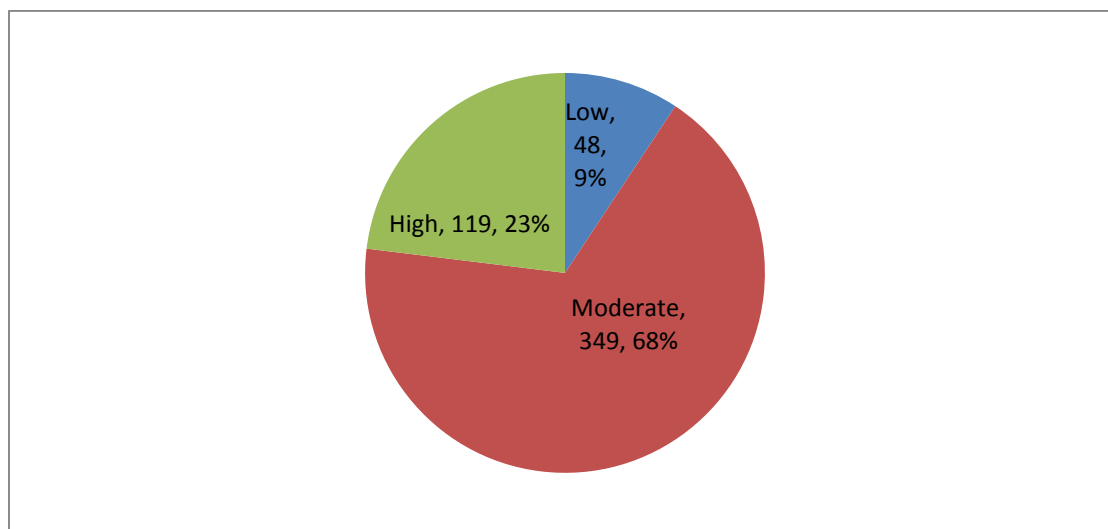
|                        | Mean (GH¢) | Median (GH¢) | Mode (GH¢) | SD    | N   |
|------------------------|------------|--------------|------------|-------|-----|
| Amount paid as premium | 12.73      | 13.00        | 12         | 7.020 | 408 |

Source: Author's Field Survey, 2013

Table 5.3 shows that the mean, median and modal amounts paid as health insurance premium were GH¢ 12.73, GH¢13.00 and GH¢12 respectively.

The views of respondents were also obtained regarding whether the level of insurance premium was low, moderate or high. Figure 5.3 presents the results of respondents' views on this.

**Figure 5.3: Respondents' views about the level of health insurance premium**



Source: Author's Field Survey, 2013

The responses were the views of both insured and uninsured respondents. From the results, 68% of a total of 516 respondents viewed the level of health insurance premium to be moderate; 23 % considered it high, while only 9% regarded the premium level as low. A cross-tabulation of respondents' region and their perception of premium level revealed that those from the Upper East Region were more likely than the Brong Ahafo and Central regions, to consider the premium level to be high. Out of 162 respondents from Upper East Region, representing 100% 65 (40.1%) considered the level of premium to be high. On the other hand the Brong Ahafo and Central Regions had 28(16.1%) and 26(14.4%) out of 174 and 180 respondents respectively, indicating that premium levels were high (see Table 5.4 below).

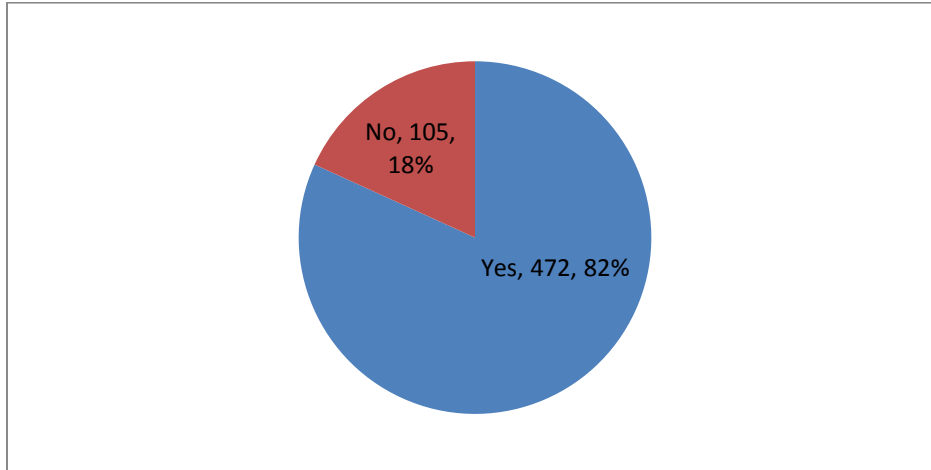
**Table 5.4: Region \* Level of Premium Cross-Tabulation**

| Region      | Level of premium |              |              | Total         | p-value |
|-------------|------------------|--------------|--------------|---------------|---------|
|             | Low              | Moderate     | High         |               |         |
| Upper East  | 19<br>11.7%      | 78<br>48.1%  | 65<br>40.1%  | 162<br>100.0% | 0.000   |
| Brong Ahafo | 15<br>8.6%       | 131<br>75.3% | 28<br>16.1%  | 174<br>100.0% |         |
| Central     | 14<br>7.8%       | 140<br>77.8% | 26<br>14.4%  | 180<br>100.0% |         |
| Total       | 48<br>9.3%       | 349<br>67.6% | 119<br>23.1% | 516<br>100.0% |         |

*Source:* Author's Field Survey, 2013

Respondents were also asked whether they had ever renewed membership with the NHIS. Figure 5.4 presents the results of this question.

**Figure 5.4: Views of members on renewal of membership of health insurance scheme**



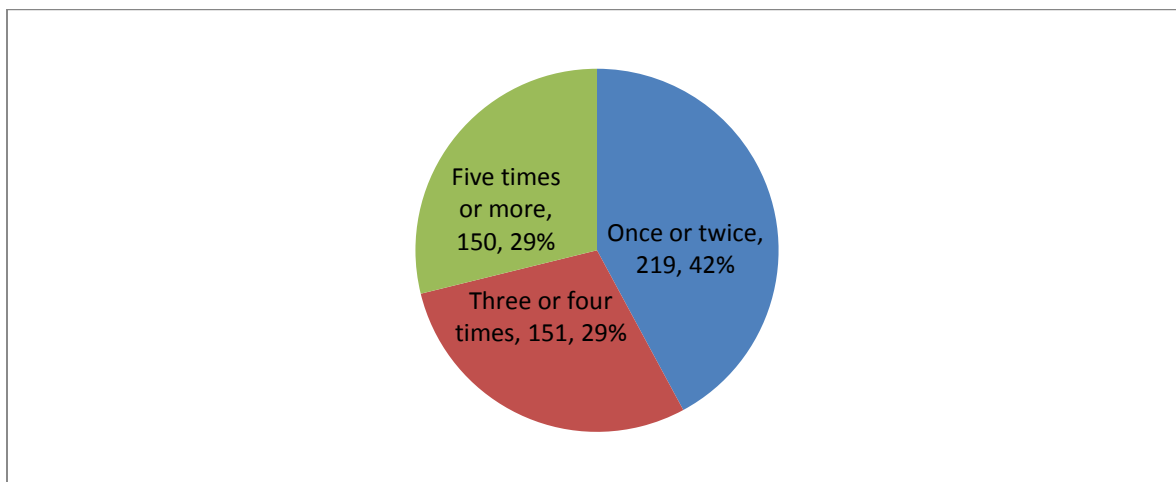
Source: Author's Field Survey, 2013

This item was responded to by both the insured and uninsured. Out of 577 respondents, 472 (82%) had ever renewed their membership, with only 18% respondents who had never renewed their membership.

As a follow-up, respondents were asked the number of times they had renewed their membership.

Figure 5.5 presents the number of times respondents renewed their membership.

**Figure 5.5: Number of times respondents renewed membership since first enrolment**



Source: Author's Field Survey, 2013

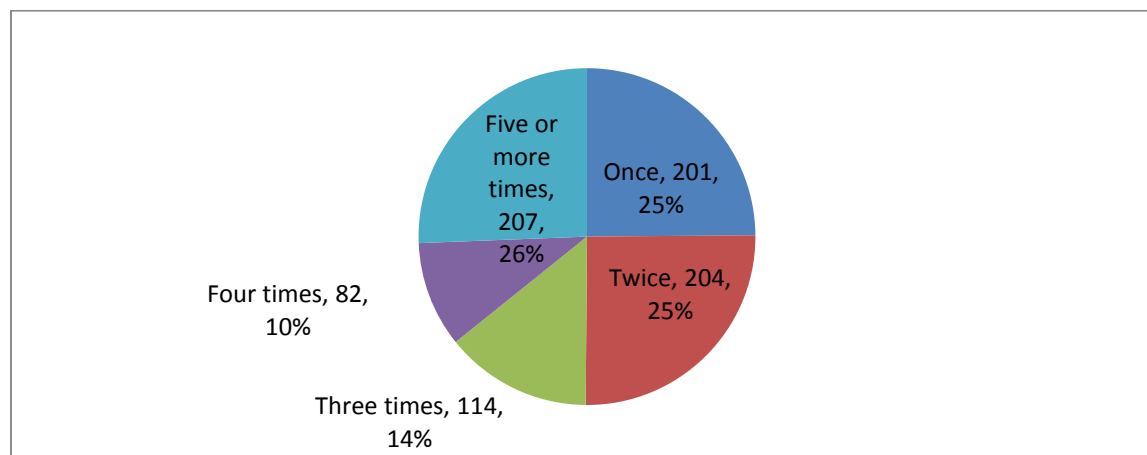
Both insured and uninsured patients responded to this question. The results in Figure 5.5 indicates that 42% of 520 respondents had renewed their insurance once or twice, while 29% each of respondents had renewed their membership three or four times, and five times or more respectively. Cross-tabulation of region of respondent and frequency of renewal of membership with the health insurance scheme revealed that respondents from the Central Region were less likely than the Upper East and Brong Ahafo Regions, to renew their membership five times or more, since their initial membership. Whereas 51(32.1%) and 67(39.6%) out of 159 and 169 respondents respectively from the Upper East and Brong Ahafo Regions indicated that they had renewed their membership with the NHIS five times or more, only 32(16.7%) out of 192 respondents from the Central Region indicated that they had renewed their membership five times or more (see Table 5.5 below).

**Table 5.5: Region \* Frequency of Renewal Cross-Tabulation**

| Region      | How many times have you renewed |                     |                    | Total         | p-value |
|-------------|---------------------------------|---------------------|--------------------|---------------|---------|
|             | Once or twice                   | Three or four times | Five times or more |               |         |
| Upper East  | 53<br>33.3%                     | 55<br>34.6%         | 51<br>32.1%        | 159<br>100.0% | 0.000   |
| Brong Ahafo | 49<br>29.0%                     | 53<br>31.4%         | 67<br>39.6%        | 169<br>100.0% |         |
| Central     | 117<br>60.9%                    | 43<br>22.4%         | 32<br>16.7%        | 192<br>100.0% |         |
| Total       | 219<br>42.1%                    | 151<br>29.0%        | 150<br>28.8%       | 520<br>100.0% |         |

*Source:* Author's Field Survey, 2013

The study required respondents' to indicate how many times they visited the health facility within the past year. Figure 5.6 presents results of the study in this regard.

**Figure 5.6: Number of times respondents visited the health facility within the past year**

Source: Author's Field Survey, 2013

There were 808 respondents to this questionnaire. From Figure 5.6, respondents who visited the hospital once within the past year were 201 (25%); those who visited twice were also 25%; those who visited three times were 114 (14%); those who visited four times were 82 (10%); and those who visited five or more times were 207 (26%).

A cross-tabulation with a chi-square test of association was used to determine the category of patients who were more likely to visit the health facility frequently. This is presented in Table 5.6.

**Table 5.6: Insurance status \* No. of visits Cross-tabulation**

| Insurance Status | No. of visits |               |                     |                    |                            | Total         | p-value |
|------------------|---------------|---------------|---------------------|--------------------|----------------------------|---------------|---------|
|                  | Visited once  | Visited twice | Visited three times | Visited four times | Visited five times or more |               |         |
| Uninsured        | 126<br>46.0%  | 66<br>24.1%   | 31<br>11.3%         | 19<br>6.9%         | 32<br>11.7%                | 274<br>100.0% | 0.000   |
| Insured          | 75<br>14.0%   | 138<br>25.8%  | 83<br>15.5%         | 63<br>11.8%        | 175<br>32.8%               | 534<br>100.0% |         |
| Total            | 201<br>24.9%  | 204<br>25.2%  | 114<br>14.1%        | 82<br>10.1%        | 207<br>25.6%               | 808<br>100.0% |         |

Source: Author's Field Survey, 2013

The cross-tabulation results in Table 5.6 indicate that the insured were more likely to visit the hospital frequently compared with the uninsured. Using the row statistics, out of 274 respondents, 126 (46%) of the uninsured visited the health facility only once, 66(24.1%) visited twice; 31 (11.3%) visited three times; 19 (6.9%) visited four times; and 32 (11.7%) visited five times or more. On the other hand, out of 534 respondents, 75 (14%) of the insured visited the health facility only once, 138(25.8%) visited twice; 83 (15.5%) visited three times; 63(11.8%) visited four times; and 175 (32.8%) visited five times or more. Table 5.7 indicates that females are more likely than males to visit the hospital five times or more. Using the row statistics, it is observed that out of 330 male respondents, representing 100%, 69(20.9%) males were likely to visit the hospital five times or more. On the other hand, out of 478 female respondents, 138(28.9%) were likely to visit the hospital five times or more (see Table 5.7 below).

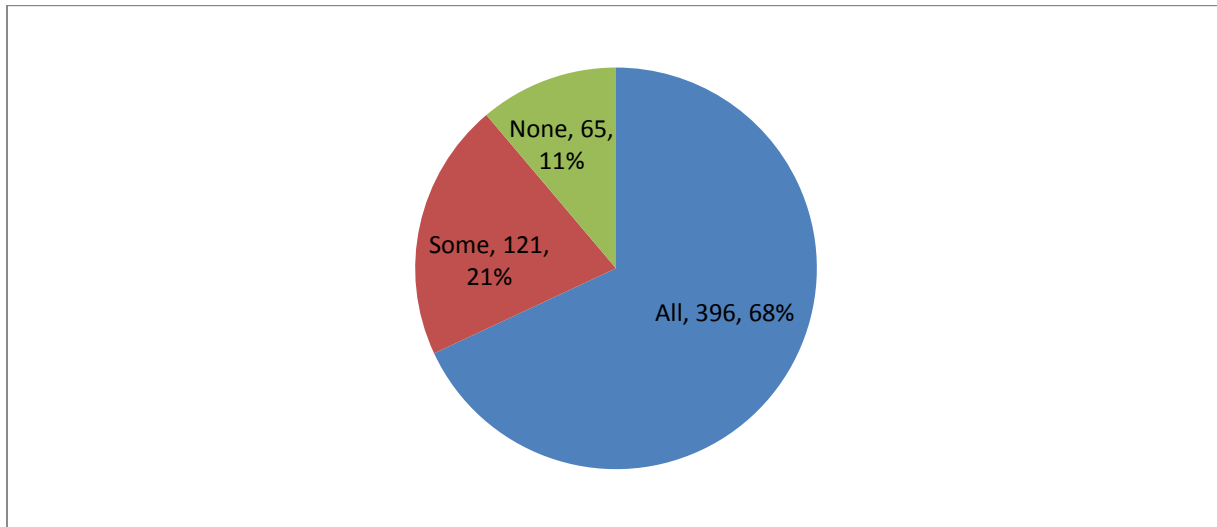
**Table 5.7: Sex \* No. of visits Cross-tabulation**

| Sex of respondent | No. of visits |               |                     |                    |                            | Total         | p-value |
|-------------------|---------------|---------------|---------------------|--------------------|----------------------------|---------------|---------|
|                   | Visited once  | Visited twice | Visited three times | Visited four times | Visited five times or more |               |         |
| Male              | 107<br>32.4%  | 94<br>28.5%   | 40<br>12.1%         | 20<br>6.1%         | 69<br>20.9%                | 330<br>100.0% | 0.000   |
| Female            | 94<br>19.7%   | 110<br>23.0%  | 74<br>15.5%         | 62<br>13.0%        | 138<br>28.9%               | 478<br>100.0% |         |
| Total             | 201<br>24.9%  | 204<br>25.2%  | 114<br>14.1%        | 82<br>10.1%        | 207<br>25.6%               | 808<br>100.0% |         |

Source: Author's Field Survey, 2013

The study also required respondents' to indicate how much of the health service cost was covered by the health insurance scheme. Figure 5.7 presents results of the study in this regard.

**Figure 5.7: Cost covered by health insurance scheme**



*Source:* Author's Field Survey, 2013

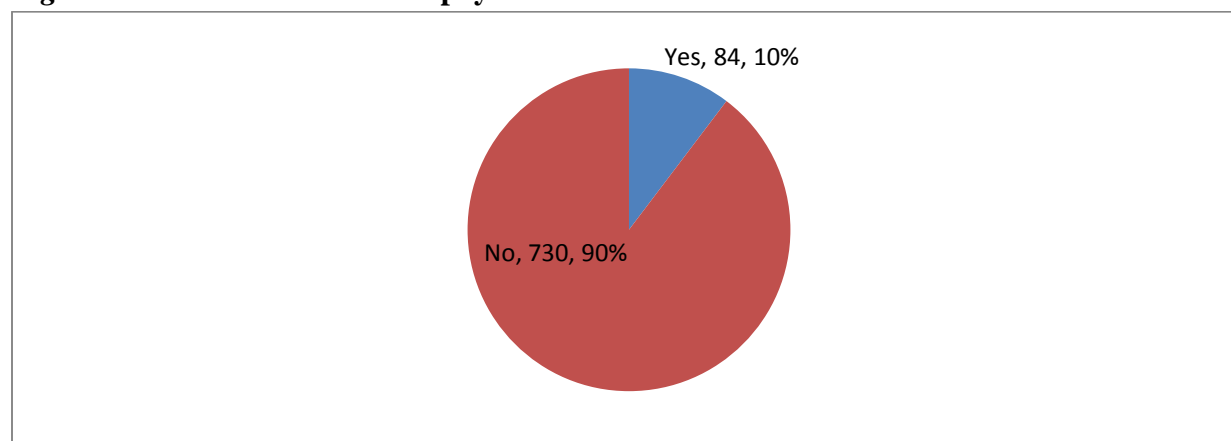
Both insured and uninsured responded to this question. From Figure 5.7 the results indicate that out of 582 respondents, 396 (68%) acknowledged that NHIS covered the costs of all treatment; 121 (21%) indicated that NHIS covered only some of the costs of treatment, with the remaining supplemented by the patient through out-of-pocket payments; and 65 (11%) indicated that NHIS did not cover any aspect of the cost of their care. A cross-tabulation of region of respondents and cost covered insurance scheme reveals that respondents from the Upper East Region were more likely than those from the Brong Ahafo and Central Regions to report that none of their cost of treatment was covered by NHIS. Table 5.8 (page 133) shows the results of a cross-tabulation of region and cost covered by the health insurance scheme. From the Table, out of 191 respondents from the Upper east Region, representing 100%, 34 (17.8%) indicated that none of their cost of care was covered by the NHIS. A corresponding proportion of respondents from the Brong Ahafo and Central Regions were 4 (2.3%), and 27 (12.3%), out 172 and 219 respondents respectively.

**Table 5.8: Region \* Cost covered by health insurance**

| Region      | Cost covered by insurance |             |             | Total         | p-value |
|-------------|---------------------------|-------------|-------------|---------------|---------|
|             | All                       | Some        | None        |               |         |
| Upper East  | 125<br>65.4%              | 32<br>16.8% | 34<br>17.8% | 191<br>100.0% | 0.000   |
| Brong Ahafo | 124<br>72.1%              | 44<br>25.6% | 4<br>2.3%   | 172<br>100.0% |         |
| Central     | 147<br>67.1%              | 45<br>20.5% | 27<br>12.3% | 219<br>100.0% |         |
|             |                           | 121         | 65          | 582           |         |
| Total       | 68.0%                     | 20.8%       | 11.2%       | 100.0%        |         |

Source: Author's Field Survey, 2013

The study elicited responses from patients as to whether any informal or unofficial fees were collected from them. The evidence of formal/official payments is usually the issuing of an official receipt in respect of the amount of charges paid for by the patient. Thus, any payments made by patients to healthcare providers without issuing of an official receipt could be suspected to be informal/unofficial charges. Figure 5.8 presents results of the study in this regard.

**Figure 5.8: Unofficial/informal payments**

Source: Author's Field Survey, 2013

Both categories of patients responded to this question. Out of 814 respondents, 730 of them, representing 90% indicated that no monies were received without the issue of an official receipt. The remaining 10% indicated that monies were received from them without official receipt. A

cross-tabulation of respondents' insurance status and likelihood of paying unofficial/informal fees revealed that uninsured patients were more likely to pay unofficial/informal compared with insured patients. Out of 274 uninsured respondents, representing 100%, 44(16%) indicated that they paid unofficial/informal fees. On the other hand, out of 540 insured respondents, representing 100%, only 40(7.4%) indicated that they paid unofficial/informal fees (see Table 5.9).

**Table 5.9: Insurance status \* Unofficial/informal payments Cross-tabulation**

| Insurance status | Unofficial/informal payment |              | Total         | p-value |
|------------------|-----------------------------|--------------|---------------|---------|
|                  | Yes                         | No           |               |         |
| Uninsured        | 44<br>16.1%                 | 230<br>83.9% | 274<br>100.0% | 0.000   |
| Insured          | 40<br>7.4%                  | 500<br>92.6% | 540<br>100.0% |         |
| Total            | 84<br>10.3%                 | 730<br>89.7% | 814<br>100.0% |         |

Source: Author's Field Survey, 2013

As a follow-up, respondents who made unofficial/informal payments were asked to indicate the amounts involved. Table 5.10 presents the results of this inquiry.

**Table 5.10: Amount paid as unofficial/informal fees**

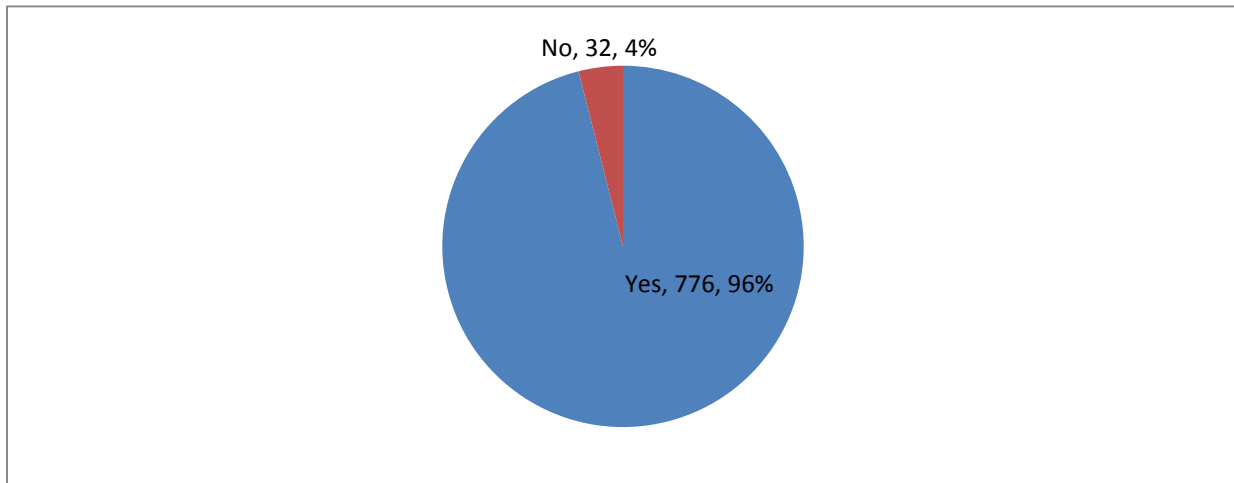
|                             | Mean (GH¢) | Median (GH¢) | Mode (GH¢) | SD     | N  |
|-----------------------------|------------|--------------|------------|--------|----|
| Amount paid without receipt | 13.28      | 7            | 5          | 15.778 | 93 |

Source: Author's Field Survey, 2013

There were only 93 respondents to this question. From Table 5.10, the results show that the mean amount paid by respondents as unofficial/informal fees was GH¢ 13.28, with the median and modal amounts being GH¢7 and GH¢5 respectively.

Respondents were also asked to indicate their willingness to renew or enroll with the NHIS in future. Figure 5.9 presents the results of respondents' level of willingness to renew or enroll with the NHIS.

**Figure 5.9: Respondents' willingness to renew or enroll with NHIS in the future**



Source: Author's Field Survey, 2013

The results in Figure 5.9 show that only a tiny proportion (4%) of respondents were not willing to renew or enroll with the NHIS. The greater majority (96%) of respondents were willing. A cross-tabulation of insurance status and willingness to renew or enroll with NHIS in future indicated that the insured were more willing to renew in future, compared with the uninsured respondents. Out of 271 uninsured respondents, representing 100%, 244(90%) indicated that they were willing to enroll with NHIS in the future. On the other hand, out of 537 insured respondents, representing 100%, 532 (99.1%) indicated that they were willing to renew their membership with the NHIS (see Table 5.11).

**Table 5.11: Insurance status \* Willingness to enroll with NHIS in future**

| Insurance status | Enrolment next time |             | Total         | p-value |
|------------------|---------------------|-------------|---------------|---------|
|                  | Yes                 | No          |               |         |
| Uninsured        | 244<br>90.0%        | 27<br>10.0% | 271<br>100.0% | 0.000   |
| Insured          | 532<br>99.1%        | 5<br>0.9%   | 537<br>100.0% |         |
| Total            | 776<br>96.0%        | 32<br>4.0%  | 808<br>100.0% |         |

Source: Author's Field Survey, 2013

A cross-tabulation of educational status and willingness to renew/enroll with NHIS in the future revealed that there was an inverse relationship between the level of educational status and willingness to renew/enroll with NHIS. Out of 538 respondents with Primary/Middle School/Junior High Secondary level education, representing 100%, 523(97.2%) indicated their willingness to renew/enroll with NHIS in future. The corresponding proportions for Secondary/Technical/Vocational School and Tertiary levels of education were 96% and 90.8% out of 150 and 119 respondents respectively.

**Table 5.12: Educational status \* Willingness to renew/enroll with NHIS in future**

| Educational status | Enrolment next time |            | Total         | p-value |
|--------------------|---------------------|------------|---------------|---------|
|                    | Yes                 | No         |               |         |
| Primary/Middle/JHS | 523<br>97.2%        | 15<br>2.8% | 538<br>100.0% | 0.005   |
| Sec/Tech/Voc       | 144<br>96.0%        | 6<br>4.0%  | 150<br>100.0% |         |
| Tertiary           | 108<br>90.8%        | 11<br>9.2% | 119<br>100.0% |         |
| Total              | 775<br>96.0%        | 32<br>4.0% | 807<br>100.0% |         |

Source: Author's Field Survey, 2013

A cross-tabulation of sex and willingness to renew/enroll with NHIS in future also revealed that females were more likely to renew/enroll with NHIS in future, compared with males. Whereas 93.6% of 328 (100%) males respondents indicated their willingness to renew/enroll with NHIS in

future, 97.7% of 469 (100%) female respondents expressed willingness to renew/enroll in future (see Table 5.13).

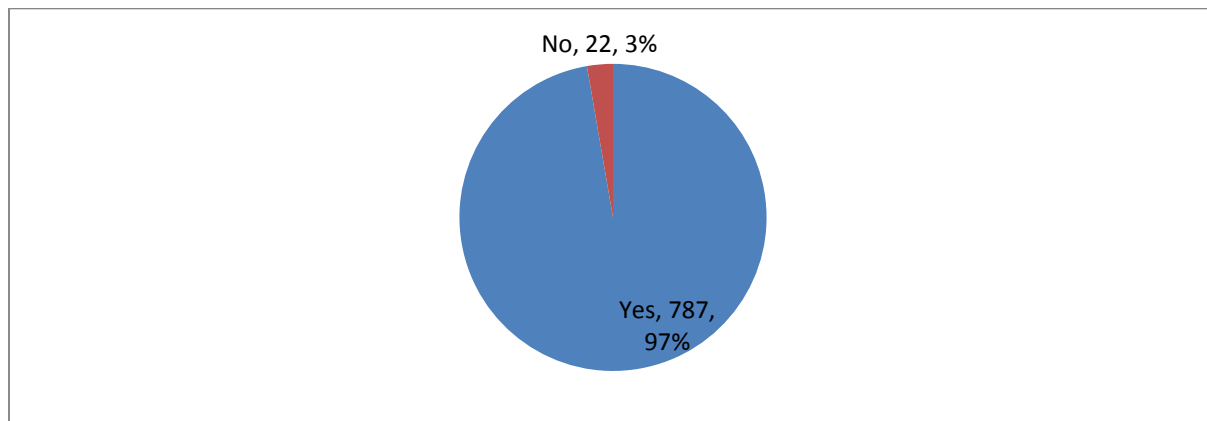
**Table 5.13: Sex \* Willingness to renew/enroll with NHIS in future cross-tabulation**

| Sex of respondent | Enrolment next time |            | Total         | p-value |
|-------------------|---------------------|------------|---------------|---------|
|                   | Yes                 | No         |               |         |
| Male              | 307<br>93.6%        | 21<br>6.4% | 328<br>100.0% | 0.003   |
| Female            | 469<br>97.7%        | 11<br>2.3% | 480<br>100.0% |         |
| Total             | 776<br>96.0%        | 32<br>4.0% | 808<br>100.0% |         |

Source: Author's Field Survey, 2013

Respondents were also asked to indicate their intention to re-visit the hospital where they were interviewed in the future, in case of any ailment. Figure 5.10 presents the results of respondents' re-visit intention.

**Figure 5.10: Respondents' intention to re-visit hospital in future**



Source: Author's Field Survey, 2013

The results in Figure 5.10 show that almost all (97%) respondents had the intention to re-visit the hospital they attended in future. Cross-tabulation of sex, location, or educational status and insurance status did not show any significant association with intention to re-visit the health facility in future.

## 5.4 Perceptions of Quality between Insured and Uninsured Patients

A t-test was conducted in order to test the first hypothesis of this thesis, that there is a significant difference in perceptions of quality of care between insured and uninsured patients. Even though the t-test was on all indicators of the 24-item quality of care scale for this study, it is the overall quality of care index that was used to test the hypothesis.

### 5.4.1 Assumptions of t-tests

There are some general assumptions that apply to all parametric techniques such as t-tests and multiple regression analysis. Some of these assumptions such as size of sample and normality of distributions are dealt with in greater detail in section 5.5.2 (page 171). There are however, two specific assumptions applicable to t-test analysis which are presented in this section. These include **'homogeneity of variance'** and **'effect size'**. Parametric techniques in respect of homogeneity of variance make the assumption that samples are obtained from populations of equal variances (Pallant, 2010). To test this, SPSS performs Levene's test for equality of variances, as part of the t-test and analysis of variance analyses. A significant value of more than .05 suggests that variation of scores for the two groups, in this case, the insured and uninsured are equal, and therefore the homogeneity of variance assumption is not violated. On the other hand a significant value of less than .05 suggests that variances for the two groups, are not equal, and therefore the assumption of homogeneity of variance is violated (Pallant, 2010). Fortunately, SPSS makes an alternative provision when the assumption is violated, by using the values for equal variances not assumed. Table 5.14 (page 140) presents the results of Levene's Test for Equality of Variances in respect of the t-tests results of the comparison of the perceptions of quality of care between the insured and uninsured.

From Table 5.14, it is observed that six out of the 24 indicators of the quality of care, namely, costs affordable, only official fees paid, waiting time reasonable, physical examination done, lab and other tests done, patients involvement in decision on their treatment, had p-values less than .05, suggesting that the variances for the insured and uninsured respondents for those indicators are not equal, and therefore the assumption of homogeneity of variance is violated. Therefore the alternative values for equal variances not assumed were used in the analysis. The rest of the indicators had p-values exceeding .05, indicating that the variances for the insured and uninsured respondents for those indicators are equal, and therefore the assumption of homogeneity of variance is not violated. Table 5.15 (page 145) provides further details on the t-tests analysis

**Table 5.14: Levene's Test for Equality of Variances**

| Quality indicator                | Equality of variances | F      | p-value |
|----------------------------------|-----------------------|--------|---------|
| Payments by insurance            | Assumed               | 1.320  | 0.251   |
| Costs affordable                 | Not assumed           | 12.268 | 0.000   |
| Exempted treated free            | Assumed               | 2.583  | 0.108   |
| Only official fees               | Not assumed           | 14.475 | 0.000   |
| Fairness to all patients         | Assumed               | 1.285  | 0.257   |
| Same quality drugs               | Assumed               | .280   | 0.597   |
| First come first served          | Assumed               | .547   | 0.460   |
| Very ill treated first           | Assumed               | .031   | 0.859   |
| Doctors sufficient               | Assumed               | .563   | 0.453   |
| Equipment sufficient             | Assumed               | .195   | 0.659   |
| Rooms sufficient                 | Assumed               | .447   | 0.504   |
| Waiting time                     | Not assumed           | 4.287  | 0.039   |
| Drugs available                  | Assumed               | .774   | 0.379   |
| Staff neat                       | Assumed               | .077   | 0.781   |
| Hospital neat                    | Assumed               | .853   | 0.356   |
| Pharm. instructions              | Assumed               | .576   | 0.448   |
| Treatment effective              | Assumed               | 1.003  | 0.317   |
| Quality drugs                    | Assumed               | .266   | .606    |
| Told diagnosis                   | Assumed               | .239   | 0.625   |
| Physical examination             | Not assumed           | 9.636  | 0.002   |
| Lab & other tests                | Not assumed           | 8.097  | 0.005   |
| Patients involvement             | Not assumed           | 4.057  | 0.044   |
| Compassion & support             | Assumed               | .300   | 0.584   |
| Total financial access           | Assumed               | .006   | 0.439   |
| Total fairness of care           | Assumed               | 0.744  | 0.389   |
| Total adequacy of resources      | Assumed               | 0.005  | 0.945   |
| Total neatness and effectiveness | Assumed               | 2.126  | 0.145   |
| Total technical care             | Assumed               | .032   | 0.858   |
| Overall quality care index       | Assumed               | .069   | 0.792   |

*Equal variance assumed =  $P > .05$ ; Equal variance not assumed =  $P < .05$*

Another way of assessing the importance of the t-test results is to calculate the ‘effect size’ (also known as ‘strength of association’). This is a set of statistics that indicates the relative magnitude of the difference between means, or the amount of the total variance in the dependent variable that is predictable from knowledge of the independent variable (Tabachnick & Fidell, 2007; cited in Pallant, 2010). There are a number of different effect size statistics, however, the *eta squared* is one of the commonest. *Eta squared* effect statistics indicate the proportion of variance of the dependent variable that is explained by the independent variable. Values can range from 0 to 1 (Pallant, 2010). Effect size can be calculated using the information provided in the SPSS output, using the following formula (Pallant, 2010):

$$\text{Eta squared} = \frac{t^2}{t^2 + (N1 + N2 - 2)}$$

Where,

t= the t value of the test

N1 and N2 =the sample sizes of the two groups respectively.

The guidelines by Cohen (1988) for interpreting the eta squared values are:

.01= small effect

.06= moderate effect

.14= large effect

The eta squared for this study was determined by using the formula provided above, and the eta squared value for each indicator of quality of care is shown in the last column of Table 5.15 (page 145).

#### 5.4.2 Presentation and Analysis of the Results

For ease of interpreting the 5-point Likert scale ranging from 1 being ‘strongly disagree’ to 5 being ‘strongly agree’, mean ratings between 1 to 3 which represented ‘strongly disagree’, ‘disagree’ and ‘neutral’ respectively, were considered as unfavourable responses or unfavourable opinions. Since 4 represented a rating of ‘agree’ in the scale, mean ratings between 3.01 to 4 were interpreted as a tendency to agree, and were considered fairly favourable responses; and since a rating of 5 represented ‘strongly agree’, mean ratings between 4.01 to 5 were interpreted as a tendency to strongly agree, and were considered favourable responses. A summary of the ratings are as follows:

*1 to 3=unfavourable*

*3.01 to 4=fairly favourable*

*4.01 to 5=favourable*

Baltussen *et al.* (2002, 2006b) also used a 5-point Likert scale ranging from -2 being very unfavourable to +2 being very favourable.

For the purpose of this study, an unfavourable rating was considered as an undesirable or unsatisfactory rating; fairly favourable was a partially desirable or fairly satisfactory rating; and a favourable rating was a desirable or satisfactory rating.

To assess the perceptions of quality based on the sum of the six major dimensions of quality, the mean ratings of the various indicators under each dimension was added to obtain a total index for that dimension, for both the insured and uninsured patients. In the case of financial access, for instance, there are four indicators of quality of care. Based on the 5-point Likert scale, if all ratings for this dimension were to be 1 (strongly disagree) for all the four indicators, then the total rating

for financial access would be 4. If all ratings were 5, then the total rating would be 20. For ease of interpretation also, the study considered mean aggregate ratings between 4 to 12 as unfavourable; ratings between 12.01 to 16 as fairly favourable; and ratings between 16.01 to 20 as favourable.

A summary of the ratings for the indicators under the various dimensions of quality of care, as well as the overall 24-indicator scale are as follows:

The summary for a two-indicator dimension of quality of care is as follows:

*2 to 6=unfavourable*

*6.01 to 8=fairly favourable*

*8.01 to 10=favourable*

A summary of the ratings for a four-indicator dimension of quality of care is as follows:

*4 to 12=unfavourable*

*12.01 to 16=fairly favourable*

*16.01 to 20=favourable*

A summary of the ratings for a five-indicator dimension of quality of care is as follows:

*5 to 15=unfavourable*

*15.01 to 20=fairly favourable*

*20.01 to 25=favourable*

A summary of the ratings for the 24-indicator overall quality of care is as follows:

*24 to 72=unfavourable*

*72.01 to 96=fairly favourable*

*96.01 to 120=favourable*

Table 5.15 shows the results of the detail comparison of perception of quality between the insured and uninsured patients. Generally, it is observed from the table that out of the 24 indicators of quality of care 11 indicators showed a significant difference in perceptions of quality between the insured and uninsured respondents. However, the eta squared values for 9 of the indicators that showed significant difference ranged from .01 to .05, indicating only a small effect size. The results therefore show that even though in some indicators there were significant differences in perceptions of quality of care between the insured and uninsured, the effect of those differences were generally small. The results also show that overall, there is no significant difference in perceptions of quality of care between insured and uninsured patients. A detail presentation of the findings based on the various dimensions of quality of care is discussed below.

### **Financial Access to Care for insured and uninsured patients**

As shown in Table 5.15, the study revealed that there was a significant difference between the insured and uninsured<sup>5</sup> with respect to all indicators of financial access to care. Whereas both the insured and uninsured gave a fairly favourable rating that health insurance paid for the cost of all services provided to them in the hospital, the rating of the insured were more favourable compared with the uninsured (Insured: M=3.85, SD=1.16; Uninsured: M=3.48, SD=1.16;  $t(489) = 4.073$ ,  $p = 001$ , two-tailed). Similarly, on costs of services being affordable, both groups of patients gave a fairly favourable rating, however, the insured gave a more favourable rating (Insured: M=3.52, SD=1.11; Uninsured: M=3.20, SD=1.24;  $t(482) = 3.522$ ,  $p = 001$ , two-tailed)); also, on treating exempted patients free of charge, both groups of patients gave fairly favourable responses, with

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<sup>5</sup> Even though the uninsured had no direct experience regarding some of the sub-items of the financial access to care dimension, such as 'health insurance pays for the cost of all services' it is assumed that they are fairly informed about the activities of the NHIS and could therefore provide responses to items on health insurance.

the insured giving more favourable responses compared with the uninsured (Insured:  $M=3.97$ ,  $SD=1.06$ ; Uninsured:  $M=3.52$ ,  $SD=1.09$ ;  $t(486) = 5.396$ ,  $p = 0.001$ , two-tailed). However, regarding payment of unofficial fees, even though both categories of patients gave fairly favourable responses, the uninsured gave a more favourable responses, compared with the insured (Insured:  $M=3.70$ ,  $SD=1.15$ ; Uninsured:  $M=3.89$ ,  $SD=1.04$ ;  $t(586) = -2.376$ ,  $p = 0.018$ , two-tailed).

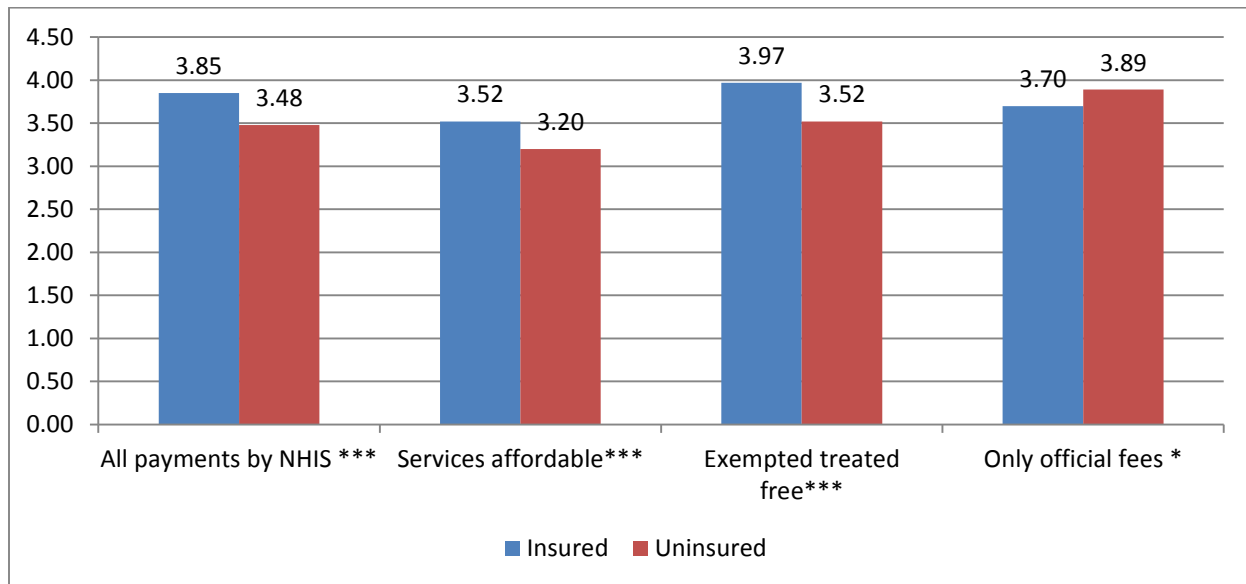
**Table 5.15: Perceived quality of care by insurance status**

| Indicators of quality of care               | Insured |        |     | Uninsured |        |     | t-test | df  | p-value      | Eta squared |
|---|---------|--------|-----|-----------|--------|-----|--------|-----|--------------|-------------|
|   | Mean    | SD     | N   | Mean      | SD     | N   |        |     |              |             |
| <b>Financial access</b>                     |         |        |     |           |        |     |        |     |              |             |
| Payments by NHIS                            | 3.85    | 1.16   | 542 | 3.48      | 1.16   | 252 | 4.073  | 489 | 0.000        | 0.02        |
| Services affordable                         | 3.52    | 1.11   | 531 | 3.20      | 1.24   | 267 | 3.522  | 482 | 0.000        | 0.02        |
| Exempt treated free                         | 3.97    | 1.06   | 532 | 3.52      | 1.09   | 254 | 5.396  | 486 | 0.000        | 0.04        |
| Only official fees                          | 3.70    | 1.15   | 536 | 3.89      | 1.04   | 268 | -2.376 | 586 | 0.018        | 0.01        |
| <b>Fairness of care</b>                     |         |        |     |           |        |     |        |     |              |             |
| Fairness to all                             | 3.40    | 1.36   | 540 | 3.49      | 1.32   | 268 | 0.863  | 806 | 0.388        | 0.00        |
| Same quality drugs                          | 3.37    | 1.30   | 541 | 3.40      | 1.30   | 268 | 0.316  | 807 | 0.752        | 0.00        |
| First-come-first-served                     | 3.92    | 1.34   | 543 | 3.97      | 1.28   | 270 | 0.487  | 811 | 0.626        | 0.00        |
| Very ill treated first                      | 4.26    | 1.13   | 541 | 4.22      | 1.12   | 268 | -0.457 | 807 | 0.648        | 0.00        |
| <b>Adequacy of resources &amp; services</b> |         |        |     |           |        |     |        |     |              |             |
| Doctors sufficient                          | 2.79    | 1.30   | 543 | 2.92      | 1.28   | 273 | -1.303 | 814 | 0.193        | 0.00        |
| Supplies sufficient                         | 3.14    | 1.13   | 540 | 3.04      | 1.17   | 273 | -1.136 | 811 | 0.256        | 0.00        |
| Rooms in OPD sufficient                     | 3.24    | 1.31   | 539 | 3.24      | 1.29   | 272 | 0.080  | 809 | 0.936        |             |
| Waiting time reasonable                     | 2.75    | 1.37   | 540 | 2.94      | 1.30   | 271 | -1.897 | 567 | 0.058        | 0.00        |
| Drugs available                             | 3.29    | 1.27   | 540 | 3.33      | 1.23   | 271 | 0.354  | 808 | 0.723        | 0.00        |
| <b>Neatness &amp; effective treatment</b>   |         |        |     |           |        |     |        |     |              |             |
| Hospital is neat                            | 4.34    | 0.68   | 541 | 4.41      | 0.66   | 273 | -0.934 | 811 | 0.351        | 0.00        |
| Staff are neat                              | 4.24    | 0.78   | 541 | 4.29      | 0.77   | 273 | -1.434 | 812 | 0.152        | 0.00        |
| Pharmacy instructions                       | 4.56    | 0.63   | 537 | 4.51      | 0.65   | 269 | 0.988  | 804 | 0.324        | 0.00        |
| Treatment effective                         | 4.14    | 0.86   | 541 | 3.99      | 0.85   | 272 | 2.349  | 11  | 0.019        | 0.01        |
| Quality drugs                               | 3.97    | 0.91   | 538 | 3.92      | 0.86   | 270 | 0.714  | 806 | 0.475        | 0.00        |
| <b>Technical care</b>                       |         |        |     |           |        |     |        |     |              |             |
| Tells patient diagnosis                     | 3.38    | 1.48   | 540 | 3.30      | 1.44   | 273 | 0.691  | 811 | 0.490        | 0.00        |
| Physical examination                        | 3.92    | 1.24   | 543 | 3.75      | 1.35   | 271 | 1.745  | 501 | 0.082        | 0.00        |
| Lab and other tests                         | 3.92    | 1.26   | 540 | 3.64      | 1.35   | 273 | 2.838  | 515 | 0.005        | 0.01        |
| Patients involvement                        | 3.68    | 1.32   | 541 | 3.71      | 1.22   | 272 | -0.274 | 580 | 0.784        | 0.00        |
| <b>Interpersonal care</b>                   |         |        |     |           |        |     |        |     |              |             |
| Compassion & support                        | 4.08    | 0.97   | 543 | 4.19      | 0.89   | 274 | -1.519 | 815 | 0.129        | 0.00        |
| Polite & respectful                         | 4.12    | 0.98   | 543 | 4.19      | 0.91   | 274 | -1.008 | 815 | 0.314        | 0.00        |
| Total financial access                      | 15.03   | 3.215  | 520 | 14.06     | 3.444  | 245 | -3.78  | 763 | 0.000        | 0.05        |
| Total fairness of care                      | 14.93   | 3.785  | 538 | 15.04     | 3.583  | 262 | 0.382  | 798 | 0.703        | 0.00        |
| Total adequacy of resources                 | 15.24   | 4.362  | 530 | 15.44     | 4.388  | 268 | 0.635  | 796 | 0.525        | 0.00        |
| Total neatness & effectiveness              | 21.28   | 2.580  | 528 | 21.14     | 2.471  | 266 | -0.748 | 792 | 0.455        | 0.00        |
| Total technical care                        | 14.92   | 3.555  | 532 | 14.42     | 3.593  | 270 | -1.864 | 800 | 0.063        | 0.01        |
| Total interpersonal care                    | 8.20    | 1.833  | 542 | 8.38      | 1.652  | 274 | 1.371  | 814 | 0.171        | 0.01        |
| Overall quality of care                     | 89.48   | 11.263 | 486 | 88.38     | 11.836 | 237 | -1.212 | 721 | <b>0.226</b> | 0.01        |

Source: Author's Field Survey, 2013

The implication however, is that the uninsured pay more unofficial fees, compared with the insured. On the whole, both categories of patients tended to rate financial access to health services fairly favourable. However, the insured were more favourable compared with the uninsured. Figure 5.11 is a graphical presentation of the mean differences between the insured and uninsured in terms of financial access to care.

**Figure 5.11: Financial access to care**



\*\*\*= $p < .001$ ; \*\*= $p < .01$ ; \*= $p < .05$

Source: Author's Field Survey, 2013

Figure 5.11 shows that both the insured and uninsured rated financial access to health care fairly favourably, with the insured giving a more favourable rating compared with the uninsured. Figure 5.11 also shows that there was a significant difference between the insured and uninsured in all indicators of financial access to health care.

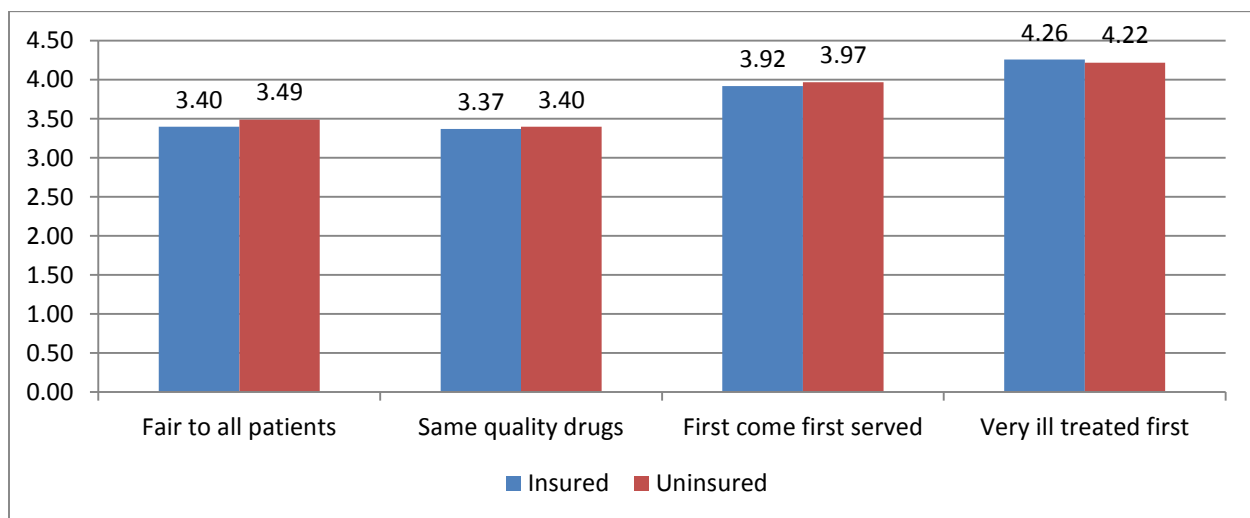
### **Fairness of care**

Concerning the dimension of fairness in patient care, there was no significant difference in the ratings between the insured and uninsured patients in all the indicators. Both categories of patients

gave fairly favourable responses to three indicators of fairness of care (see Table 5.15, page 145). However, both groups expressed favourable opinions on very seriously ill patients being attended to first by health providers (Insured:  $M=3.26$ ,  $SD=1.13$ ; Uninsured:  $M=4.22$ ,  $SD=1.12$ ;  $t(807) = -0.457$ ,  $p = 0.648$ , two-tailed).

Figure 5.12 is a graphical presentation of the mean differences between the insured and uninsured in terms of fairness aspects of care.

**Figure 5.12: Fairness of care for insured and uninsured patients**



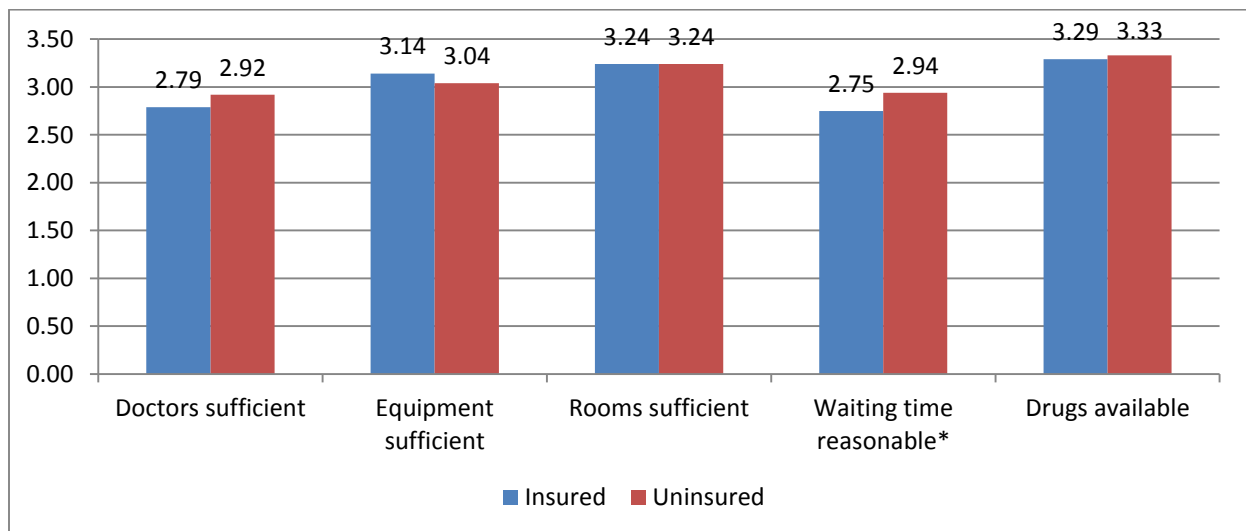
Source: Author's Field Survey, 2013

Figure 5.12 shows that both the insured and uninsured rated fairness of care fairly favourably, except the 'very ill treated first', which was rated favourably. Figure 5.12 also shows that there was no significant difference between the insured and uninsured in all indicators of fairness of care.

### Adequacy of resources and services

With respect to the dimension of adequacy of resources and services, there was no significant difference between the insured and uninsured patients in all indicators, except waiting time (see Table 5.15, page 145). Both categories of patients expressed unfavourable opinions about adequacy of doctors (Insured:  $M=2.79$ ,  $SD=1.30$ ; Uninsured:  $M=2.92$ ,  $SD=1.28$ ;  $t(814) = -1.307$ ,  $p = 0.193$ , two-tailed). Similarly, both groups also responded unfavourably that waiting time was reasonable. However, the insured were more likely to express a stronger disagreement (Insured:  $M=2.75$ ,  $SD=1.37$ ; Uninsured:  $M=2.94$ ,  $SD=1.30$ ;  $t(567) = -1.897$ ,  $p = 0.058$ , two-tailed). Figure 5.13 is a graphical presentation of the mean differences between the insured and uninsured in terms of adequacy of resources and services.

**Figure 5.13: Adequacy of resources and services**



\*\*\*= $p < .001$ ; \*\*= $p < .01$ ; \*= $p < .05$

Source: Author's Field Survey, 2013

Figure 5.13 shows, in regard to adequacy of resources and services, that both the insured and uninsured rated sufficiency of doctors and sufficiency of equipment and supplies unfavourably, while the rest of the indicators were rated fairly favourably. Figure 5.13 also shows that there was

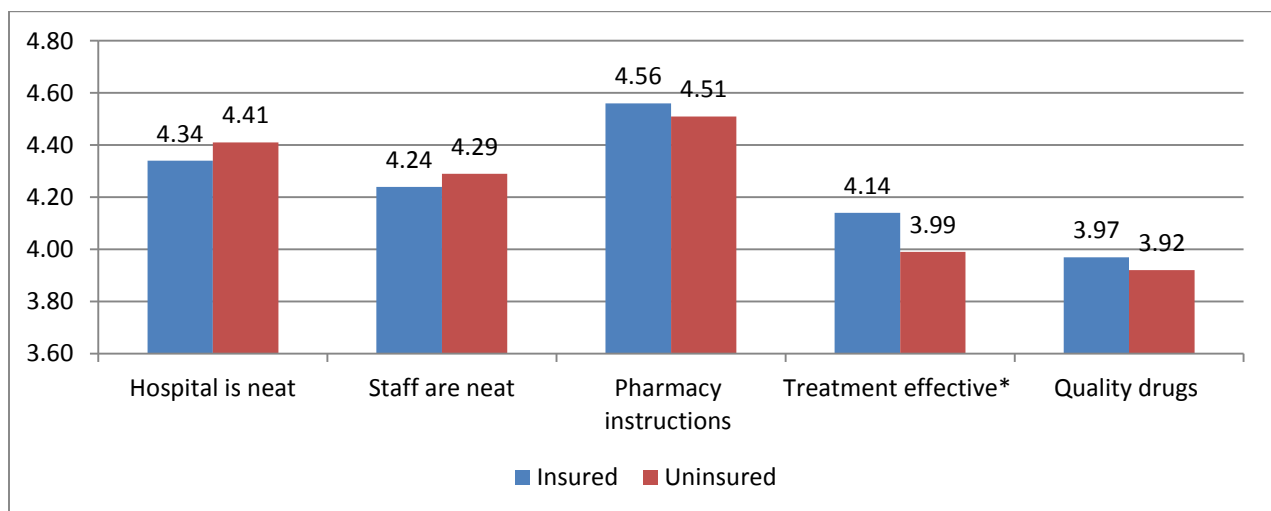
no significant difference between the insured and uninsured in all indicators of adequacy of resources and services except waiting time being reasonable, where the insured patients gave a more unfavourable response.

### Neatness and effectiveness of treatment

On neatness and effectiveness of treatment, there was no significant difference between both groups of patients, except the indicator ‘treatment is effective for recovery and cure’ where the insured patients gave a favourable response, whereas the uninsured gave a fairly favourable response (Insured:  $M=4.14$ ,  $SD=0.86$ ; Uninsured:  $M=3.99$ ,  $SD=0.85$ ;  $t(811) = 2.349$ ,  $p = 0.019$ , two-tailed). All patients were favourable in their response that instructions on drug use by the pharmacy or dispensary staff were clear (Insured:  $M=4.56$ ,  $SD=0.63$ ; Uninsured:  $M=4.51$ ,  $SD=0.65$ ). There was also a fairly favourable response by both insured and uninsured patients that they were given quality drugs (see Table 5.15, page 145).

Figure 5.14 is a graphical presentation of the mean differences between the insured and uninsured in terms of neatness and effectiveness of treatment.

**Figure 5.14: Neatness and effectiveness of treatment**



\*\*\*= $p < .001$ ; \*\*= $p < .01$ ; \*= $p < .05$

Source: Author's Field Survey, 2013

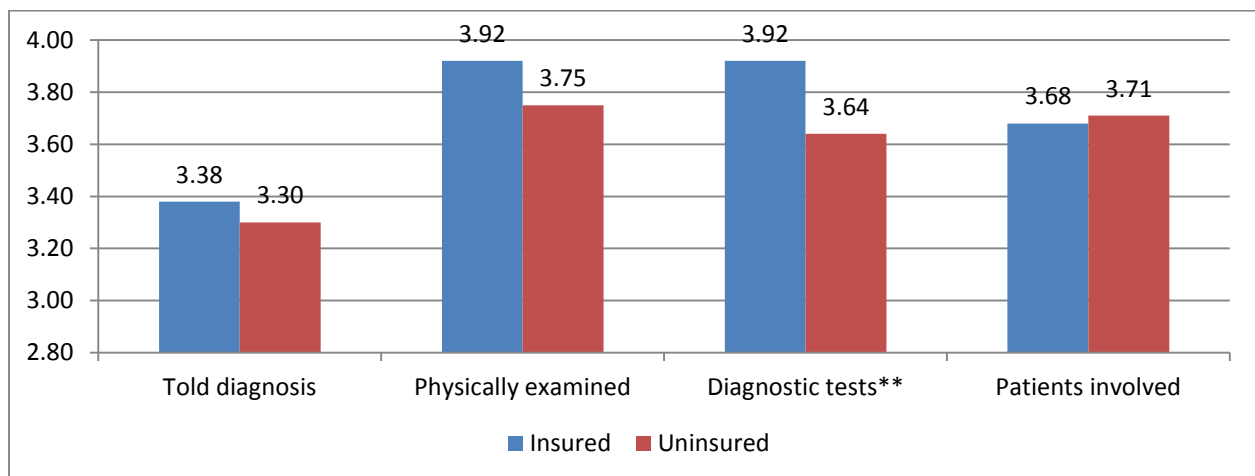
Figure 5.14 shows that both the insured and uninsured rated neatness of hospital and health staff favourably. On treatment being effective, the insured gave a favourable rating, whereas the uninsured gave a fairly favourable rating. On quality of drugs both insured and uninsured gave a fairly favourable rating. Figure 5.14 also shows that there was no significant difference between the insured and uninsured in all indicators of neatness and effectiveness of treatment, except treatment being for recovery and cure.

### Technical aspects of care

With regards to technical aspects of care, the study found that patients gave fairly favourable responses to all indicators of technical quality, however, there was no significant difference between their mean quality ratings except in the area of laboratory and other diagnostic investigations where the insured were more favourable in their responses (Insured:  $M=3.92$ ,  $SD=1.26$ ; Uninsured:  $M=3.64$ ,  $SD=1.35$  (see Table 5.15, page 145).

Figure 5.15 is a graphical presentation of the mean differences between the insured and uninsured in terms of technical aspects of care.

**Figure 5.15: Technical aspects of care**



\*\*\*= $p<.001$ ; \*\*= $p<.01$ ; \*= $p<.05$

Source: Author's Field Survey, 2013

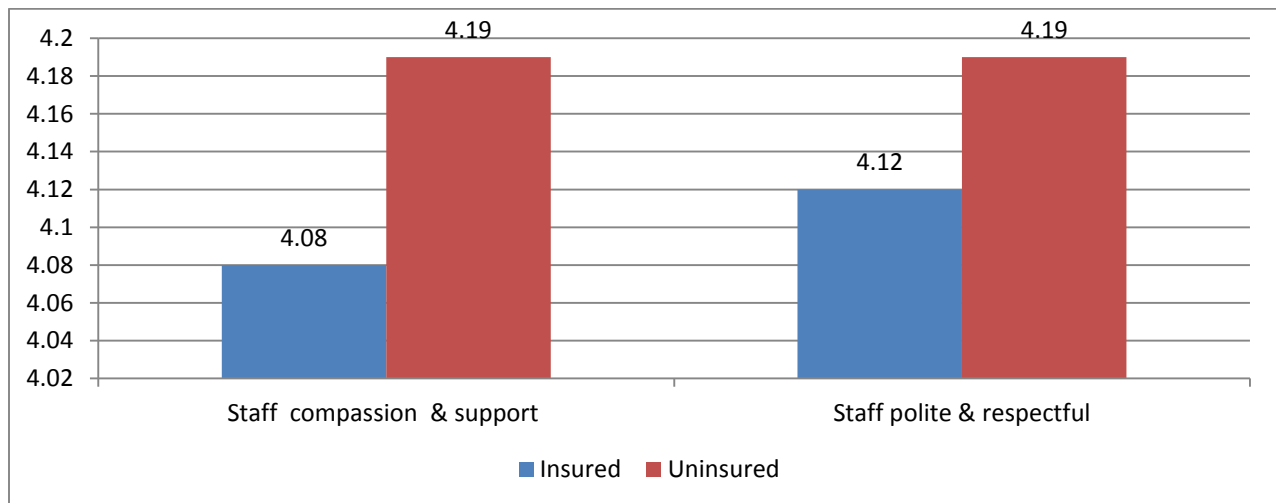
Figure 5.15 shows that both the insured and uninsured rated all indicators of technical aspects of care fairly favourably. Figure 5.15 also shows that there was no significant difference between the insured and uninsured in all indicators of technical aspects of care, except treatment being based on diagnostic tests.

### Interpersonal aspects of care

Regarding patients' perceptions about interpersonal aspects of care, both the insured and uninsured rated this dimension favourably (see Table 5.15, page 145). However, there was no significant difference in perceptions of interpersonal aspects of care between the insured and uninsured patients.

Figure 5.16 is a graphical presentation of the mean differences between the insured and uninsured in terms of interpersonal aspects of care.

**Figure 5.16: Interpersonal aspects of care**



\*\*\*= $p < .001$ ; \*\*= $p < .01$ ; \*= $p < .05$

Source: Author's Field Survey, 2013

Figure 5.16 shows that the insured and uninsured respond favourably to interpersonal aspects of care. Figure 5.16 also shows that there was no significant difference between the insured and uninsured regarding interpersonal aspects of care.

Table 5.16 presents the total perceptions of quality of care in terms of the addition of all indicators of quality of care under each of the dimensions of quality of care, as well as the overall perception of quality of care in terms of the addition of all the 24 indicators of quality of care of the scale.

**Table 5.16: Total and overall perceived quality of care by insurance status**

| Quality Dimensions  | Insured      |               |            | Uninsured    |               |            | t-test       | df         | p-value     | Eta Sq.     |
|---------------------|--------------|---------------|------------|--------------|---------------|------------|--------------|------------|-------------|-------------|
|                     | Mean         | SD            | N          | Mean         | SD            | N          |              |            |             |             |
| Total Financial     | 15.03        | 3.215         | 520        | 14.06        | 3.444         | 245        | 3.780        | 763        | .000        | 0.02        |
| Total Fairness      | 14.93        | 3.785         | 538        | 15.04        | 3.583         | 262        | -.382        | 798        | .703        | 0.00        |
| Total Adequacy      | 15.24        | 4.362         | 530        | 15.44        | 4.388         | 268        | -.635        | 796        | .525        | 0.00        |
| Total Effectiveness | 21.28        | 2.580         | 528        | 21.14        | 2.471         | 266        | .748         | 792        | .455        | 0.00        |
| Total Technical     | 14.92        | 3.555         | 532        | 14.42        | 3.593         | 270        | 1.864        | 800        | .063        | 0.00        |
| Total Interpersonal | 8.20         | 1.833         | 542        | 8.38         | 1.652         | 274        | -1.371       | 814        | .171        | 0.00        |
| <b>Overall</b>      | <b>89.48</b> | <b>11.263</b> | <b>486</b> | <b>88.38</b> | <b>11.836</b> | <b>237</b> | <b>1.212</b> | <b>721</b> | <b>.226</b> | <b>0.00</b> |

*Source: Author's Field Survey, 2013*

The results from Table 5.16 show that respondents were fairly favourable in respect of total financial access, as the mean ratings of 15.03 for the insured and 14.06 for the uninsured are within the range of 12.01 to 16. However, there was a significant difference between the insured and uninsured patients, as the rating of the insured were more favourable compared with the uninsured (Insured:  $M=15.03$ ,  $SD=3.215$ ; Uninsured:  $M=14.06$ ,  $SD=3.444$ ;  $t(763) = 3.780$ ,  $p < .001$ , two-tailed). However, the eta squared results for total financial access was .05, indicating only a small effect size on the differences in perceptions of quality of care between the insured and uninsured patients.

Regarding total fairness of care, the insured patients were unfavourable in their view of fairness of care, since the mean rating of 14.93 is within the range of 5 to 15. However, with a mean rating of

15.04, the uninsured patients rated total fairness of care fairly favourably, since this is within the range of 15.01 to 20. There was however, no significant difference between the insured and uninsured on fairness of care.

With respect to total adequacy of resources and services, both categories of patients gave fairly favourable responses since the respective mean ratings of 15.24 and 15.44 are within the range of 15.01 to 20. There was however, no significant difference between the insured and uninsured on total perceptions of adequacy of resources and services.

The study further found that respondents were favourable regarding total neatness of hospital and staff and neatness and effectiveness of treatment. The mean ratings were 21.28 and 21.14 for insured and uninsured respectively, which was within the favourable range of 20.01 to 25. However, there was no significant difference in total perceptions of quality between the insured and uninsured respondents.

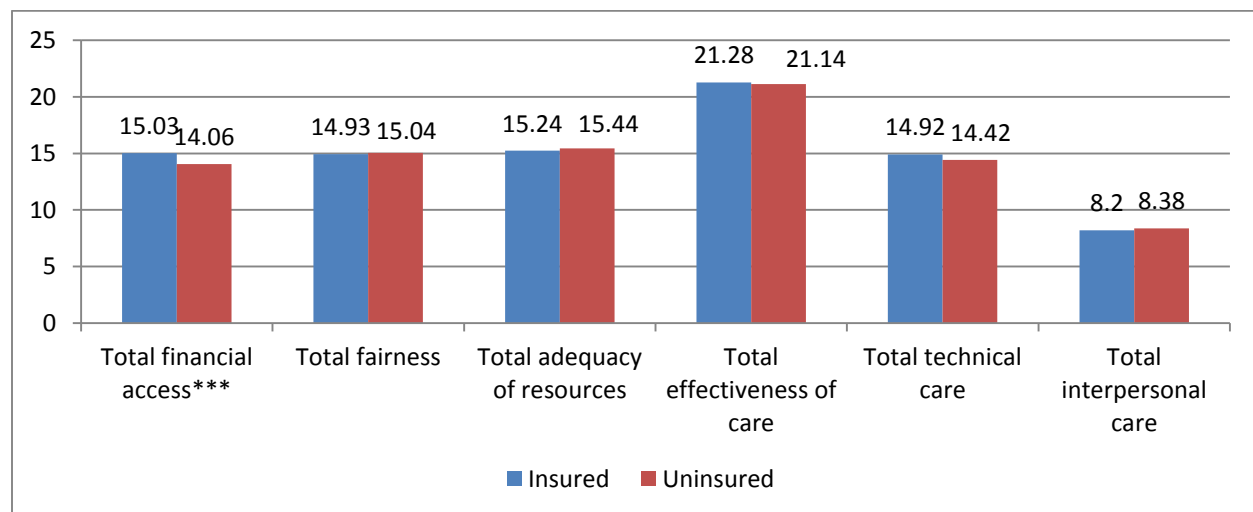
On total technical aspects of care, the study found that respondents expressed a fairly favourable opinion on it, as the mean rating of 14.92 and 14.42 for the insured and uninsured respondents respectively, were within the fairly favourable range of 12.01 to 16. There was however, no significant difference in total perceptions of technical quality between the insured and uninsured respondents.

Concerning interpersonal aspects of care, the study found that respondents had a favourable opinion about it as the mean ratings were 8.20 and 8.38 respectively, for the insured and uninsured,

which was within the favourable range of 8.01 to 10. There was however, no significant difference in total perceptions of interpersonal quality between the insured and uninsured respondents.

Figure 5.17 is a graphical presentation of the total mean perceptions of quality of care by the insured and uninsured, for the various dimensions of quality of care.

**Figure 5.17: Total perceptions of quality between the insured and uninsured**



\*\*\*= $p < .001$ ; \*\*= $p < .01$ ; \*= $p < .05$

Source: Author's Field Survey, 2013

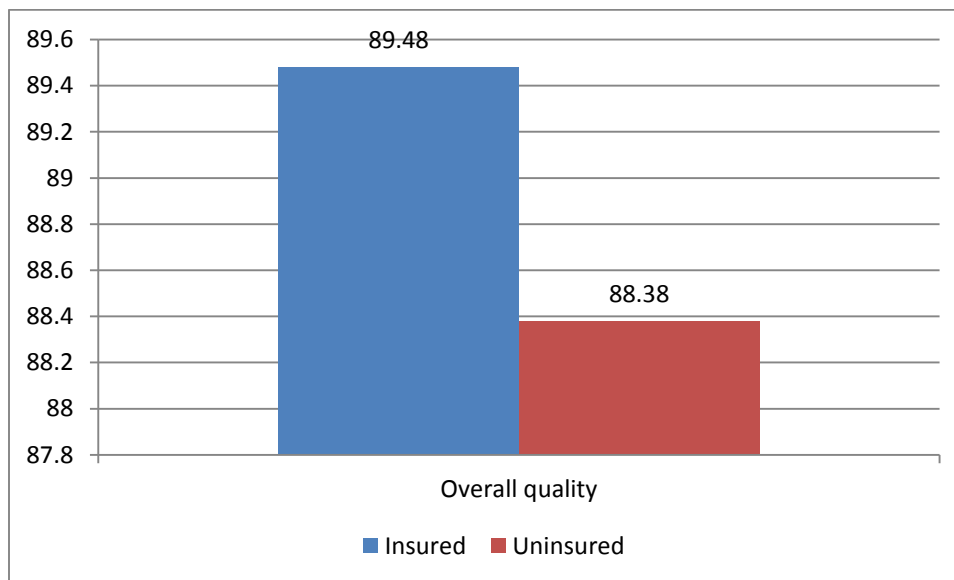
From Figure 5.17 the results show that total financial access, adequacy of resources and services, technical care, and interpersonal care were rated fairly favourably. With regard to total fairness of care, whereas the insured rated it unfavourably, the uninsured rated it fairly favourably. Total neatness and effectiveness of treatment was rated favourably. Figure 5.17 also shows that apart from total financial access to care, there was no significant difference between the insured and

uninsured in respect of total perceptions of quality of care for the other dimensions of quality of care.

Finally, regarding the overall perception of quality, the study found that both the insured and uninsured patients had a fairly favourable opinion on it. The mean ratings for the two categories of patients were 89.48 and 88.38 respectively, which was within the fairly favourable mean range of 72.01 to 96. However, overall, there was no significant difference in perception of quality of care between the insured and uninsured patients (see Table 5.16, page 152).

Figure 5.18 is a graphical presentation of the total mean perceptions of quality of care by the insured and uninsured, for the overall mean perception of quality of care.

**Figure 5.18: Overall perception of quality between the insured and uninsured**



\*\*\*= $p < .001$ ; \*\*= $p < .01$ ; \*= $p < .05$

Source: Author's Field Survey, 2013

Figure 5.18 indicates that both the insured and uninsured patients had a fairly favourable opinion on the overall perception of quality of care. However, overall, there was no significant difference in perception of quality of care between the insured and uninsured patients.

In summary, there was a significant difference between the insured and uninsured in all indicators of financial access to care. The other indicators of quality which showed a statistically significant difference between the insured and uninsured were waiting time being reasonable, under adequacy of resources and services; treatment being effective for recovery and cure, under neatness and effectiveness of treatment; and diagnostic investigations being done, under technical aspects of care. Thus, there was a significant difference between the insured and uninsured in 7 (29%) out of the 24 indicators of the quality of care scale, while the remaining 17 (71%) indicators did not show any statistically significant difference between the insured and uninsured.

In terms of quality ratings, the insured rated virtually all the indicators of quality under neatness and effectiveness of treatment and interpersonal aspects of care favourably. Another indicator of quality the insured rated favourably was the very ill patients being treated first, under the dimension of fairness aspects of care. On the other hand, the uninsured rated the two indicators of interpersonal aspects of care and four out of five indicators of quality of care under neatness and effectiveness of treatment favourably. Thus, the uninsured rated 6 (25%) of the 24 indicators of quality of care favourably. The insured responded unfavourably to 2 (8%) of the indicators of quality of care, that is, doctors being sufficient and waiting time being reasonable, both under adequacy of resources and services. Like the insured, the uninsured also responded unfavourably to 2 (8%) of the indicators of quality of care, that is, doctors being sufficient and waiting time being reasonable, both under adequacy of resources and services. Majority 15 (63%) of the

indicators of quality of care were rated fairly favourably by the insured. Similarly, majority 16 (67%) of the indicators of quality of care were rated fairly favourably by the uninsured.

Regarding total perceptions of quality for the various dimensions of quality of care, there was a significant difference between the insured and uninsured patients on total financial access to care, with the insured having a more favourable rating of financial access to health care. There was however no significant difference in total quality perceptions for all the other dimensions of quality of care. Also, there was no significant difference between the insured and uninsured patients with regard to the overall perception of quality of care. Generally, all respondents had a fairly favourable rating of total perceptions of quality for all dimensions, except the dimensions 'neatness and effectiveness of care' and 'interpersonal aspects of care' where patients considered quality of care as favourable. The overall rating of quality was fairly favourable.

### **5.4.3 Discussion of Findings**

#### ***5.4.3.1 Evaluation of the first hypothesis***

The first hypothesis was that *there is a significant difference in perceptions of quality of care between insured and uninsured patients*. The null hypothesis was that *there is no significant difference in perceptions of quality of care between insured and uninsured patients*. At a .05 significance level, the results of the t-test on the overall quality of care index indicates that there is no significant difference in perceptions of quality of care between insured and uninsured patients (see Table 5.15, page 145). The research hypothesis is therefore not supported, and the null hypothesis is retained. Notwithstanding the fact that the overall quality of care index does not show any statistically significant difference between the insured and uninsured, 7 out of the 24-indicators of quality of care, that is, all the four indicators of financial access to care, and three other indicators show significant differences in perceptions of quality of care between the insured and uninsured

patients. Detail discussion of the findings under the various dimensions of quality of care is presented below:

#### 5.4.3.2 *Financial access*

Even though, overall, there was no significant difference in perception of quality of care between the insured and uninsured, the study found a significant difference between the insured and the uninsured with respect to financial access to care. Generally, the insured had a more favourable view on financial access, compared with the uninsured. The study thus demonstrates that membership of health insurance for Ghanaians has a significant effect on improving financial access to health care (Jehu-Appiah *et al.* 2012; NHIA 2011; Perez *et al.*, 2009; Skinner & Mayer 2007; Witter & Garshong, 2009). However, considering that the effect size is small (see Table 5.15, page 145), coupled with the fact that all the four indicators of financial access to care were given fairly favourable rating by both insured and uninsured patients, which is a partially desirable or fairly satisfactory rating, the implication is that problems still exist regarding financial access to healthcare, in spite of the health insurance scheme. Other findings from this study seem to support this view. Figure 5.2 (page 128) shows that almost a quarter (22%) of respondents indicated that their inability to enroll or renew their membership was because they could not afford the health insurance premium, even though other reasons include some respondents indicating that they are not usually sick, a failure to renew membership, delays by the insurance scheme to issue membership cards to registrants, and poor quality of care, among others. However, this finding was an improvement over previous studies five years earlier which found that about 50% of respondents attributed their inability to enroll or renew their membership to high premium (NDPC, 2009).

This study also found that about a quarter (23%) considered the level of health insurance premium as high (see Figure 5.3, page 126). The reduction in number of respondents who consider the

insurance premium to be high was probably due to the fact that there had not been any significant upward review of the health insurance premiums since the nation-wide implementation of the NHIS in 2005, even though individual incomes must have improved and inflation must have devalued the rate of premium. From inception, the minimum official amount of premium for the informal sector was GH¢7.2 (about \$3). The premium however excludes administrative charges which differ from place to place in Ghana. Even though the rate of premium is a sliding scale ranging from GH¢7.2 being the lowest, to GH¢48 being the highest, to be paid based on socio-economic status, anecdotal evidence suggests that the implementation of the differential rates of premium has not been effective, even though there are variations across the country. This study found that the mean and modal amounts paid by respondents as health insurance premium (including administrative charges) were GH¢12.73 and GH¢12 respectively (see Table 5.3, page 126). In a systematic review of the impact of health insurance schemes for the informal sector in low- and middle-income countries, Acharya *et al.* (2012) found that insurance is offered at premiums that are considerably below the actuarially fair price. In Ghana, this is evidenced by the fact that the health insurance premium constitutes only 5% of the source of revenue for the NHIS (NHIA, 2011).

In spite of the low levels of premium, however, the fact that about a quarter of respondents consider the amount of premium as the reason for the low enrolment seems to suggest that about a quarter of the population may be within the abjectly poor bracket who may be having serious difficulties with financial access to health care. The call by some respondents for the level of premium to be reduced (see section 7.2.1, page 227) provides further evidence of the serious difficulties some people may have with financial access to health care, in spite of payment exemptions schemes for

the abjectly poor and others, instituted by the NHIS. Serious measures therefore need to be taken to ensure that the very poor are enrolled into the NHIS. The cross-tabulation results (see Table 5.4, page 127), also reveal that respondents in the Upper East Region were more likely than the Brong Ahafo and Central Regions to indicate that NHIS premium levels were high. Another cross-tabulation of region and cost covered by insurance further revealed that a considerable number of patients in the Upper East Region pay out-of-pocket for healthcare, as respondents in the region were more likely than the other regions studied to indicate that the health insurance scheme does not cover the cost of care provided. This should be of great concern to policy makers and other stakeholders in healthcare, in view of the fact that the Upper East Region is a relatively poor region. Another threat to financial access to care was the finding that about 10% of respondents reported paying unofficial/informal fees out-of-pocket during their hospital visits (see Figure 5.8, page 133). The mean and modal amounts paid as unofficial/informal fees were GH¢13.28 and five respectively (see Table 5.10, page 134). Even though Schieber *et al.* (2012) report that informal/unofficial payments in Ghana's health facilities are uncommon, anecdotal evidence suggests that informal/unofficial payments exist. The results of the cross-tabulation of insurance status and payment of unofficial/informal fees indicates however, that even though both categories of patients pay unofficial/informal fees, less number of insured patients pay, compared with uninsured patients (see Table 5.9, page 134). This may be due to health staffs being afraid to collect money from insured patients since, in principle, insured patients are not expected to pay any monies when they visit a health facility.

Related to unofficial/informal payments in terms of effect on financial access to health care are the out-of-pocket payments by the insured patients. The study found that 21% of respondents (all

insured) indicated that the insurance scheme only paid some of the cost of health care, with the rest being paid out-of-pocket by patients. This finding about out-of-pocket payments by the insured in health facilities is consistent with existing literature (Nguyen *et al.* 2011; Dalinjong & Laar; 2012; Macha *et al.*, 2012). Even though no detail studies seem to have been conducted about the nature of out-of-pocket payments by the insured patients, concerns raised by respondents suggest that purchasing medicines out-of-pocket in spite of being members of the health insurance scheme was a major source of out-of-pocket payments:

*“We are not on ‘cash- and-carry’ yet we have to go outside to buy certain drugs”*

*“NHIS does not cover all the drugs prescribed for patients, so something should be done about it”* (see section 7.2.1, page 227).

It is not very clear whether the medicines prescribed for which insured patients have to buy outside the health facility are indeed not covered by the insurance scheme or they are often short in supply for some reasons. However, the implication of the unofficial/informal fees and out-of-pocket payments by the insured is that it could pose a severe financial burden to out-patients, especially the abjectly poor, and this could result in some patients resorting to seeking cheaper, and less effective alternative sources of treatment for their illnesses. It could also discourage existing or potential health insurance members from renewing or enrolling as members, since membership with the NHIS may not exonerate anyone from out-of-pocket payments. Adamba (2010) observes that even if what insured members paid out-of-pocket is significantly less than the uninsured, the unexpected demand for cash from the insured can be frustrating. Regarding total financial access to care even though the results indicate a significant difference between the insured and uninsured patients, the effect is small. This small effect in the difference further reinforces the problem of

affordability of the cost of services and the unofficial payments made by both insured and uninsured respondents.

Further study is required to explore the nature of out-of-pocket and unofficial/informal payments by patients, and to establish whether the problem of affordability of hospital charges may be partly linked to out-of-pocket and unofficial payments.

#### 5.4.3.3 *Fairness of care*

The study found no significant difference in perceptions of fairness of care between the insured and uninsured patients, in all indicators of fairness of care. This is inconsistent with previous studies which showed that insured patients were discriminated against, compared with the uninsured patients, in respect of poor staff attitude and poor quality of drugs, among others (Nguyen *et al.*, 2011; Devadasan *et al.*, 2011; Dalinjong & Laar, 2012). However, both categories of patients had concerns about fairness of care, in view of the fact that they rated all indicators of fairness of care fairly favourable except very ill patients being treated first (see Table 5.15, page 145). One possible explanation for the fair rating of the fairness dimension of quality is that both insured and uninsured patients may be mutually suspicious of some unfair treatment by healthcare providers in respect of overall perception of fairness, giving patients same quality medicines, and treating patients on first-come-first-served basis. An alternative explanation may be that even though there may be discrimination between the insured and uninsured patients, as evidenced by the suggestion that “*Staff should be discouraged from discriminating between insured and uninsured patients*” (see section 7.2.2, page 229), ensuring fairness to all categories of patients, and giving special attention to vulnerable patients are of greater concern, as these were the predominant suggestions of respondents to improve quality of care (see section 7.2.2, page 229). These findings are not surprising, considering that over 80% of the OPD attendants in health

facilities are insured (GHS, 2011). Thus, there are hardly uninsured patients to discriminate against. Regarding the total rating of fairness, even though the insured gave an unfavourable rating, while the uninsured gave a favourable rating on total fairness of care, there was no significant difference between the two groups of respondents.

Further study is therefore needed to explore the nature of unfairness of care by healthcare providers toward the insured and/or uninsured patients, especially in relation to overall perception of fairness, and fairness in terms of patients being given same quality medicines. Fairness in terms of special attention to vulnerable patients in Ghana's health facilities also deserves a further study.

#### ***5.4.3.4 Adequacy of resources and services***

Even though there is no significant difference between the insured and uninsured on perceptions of adequacy of resources and services, except on waiting time, the unfavourable rating on adequacy of doctors by both the insured and uninsured is an indication that inadequate number of doctors is a serious problem. The study found that about 60% of hospitals studied have one or two doctors, and the remaining 40% of hospitals studied had between three to six doctors (see Table 5.2, page 123). This is not so different from a survey in 2010 which found that among district hospitals in Ghana, 33% had one general practitioner, 54% had two or more general practitioners, and 13% had no general practitioner (MOH 2011a, cited in Saleh, 2012). According to Appiah-Denkyira *et al.* (2012; cited in Saleh, 2012) only 3 percent of clinical staffs in Ghana were physicians as at 2009. Even though Ghana's physician ratio of 0.1 per 1,000 population (2009) has improved over time, it remains low relative to the country's comparators (Appiah-Denkyira *et al.*, 2012; cited in Saleh, 2012). A three-year trend analysis in the doctor/population ratio in Ghana shows that the three northern regions of Ghana continue to have a poor doctor/population ratio, compared with the rest of the regions (see Table 2.3, page 28). Although the doctor/population ratio for other

regions are comparatively better than the northern regions, most doctors, especially in the Ashanti and Greater Accra Regions are in the two Teaching Hospitals (GHS 2011), where about 50% of doctors are employed. There is therefore a need for the government of Ghana to seriously explore more sustainable strategies to push up the number of doctors nationwide. The need for more doctors is further supported by suggestions provided by respondents which dwelt very heavily on the need to increase the number of health workers, especially doctors to cope with increased workload, and reduce long waiting times (see section 7.2.3, page 230).

Waiting time was the only indicator under adequacy of resources and services that showed a significant difference between the insured and uninsured. Even though both groups of patients rated waiting time unfavourably, the insured patients gave a more unfavourable rating, compared with the uninsured. The problem of long waiting time, especially for insured patients, is consistent with previous studies (Bruce *et al.*, 2008; Jehu-Appiah *et al.*, 2012; Atinga, 2011; Dalinjong & Laar; 2012; Robyn *et al.*, 2012). Jehu-Appiah *et al.* (2012) found long waiting time as causing dissatisfaction among the insured patients in Ghana, and thus recommended an urgent action to be taken to address the problem. On the contrary, Atinga (2012) found that even though insured patients experienced longer waiting times in health facilities, this was not a big quality of care problem. The study observed that the inadequate numbers of health professionals in the country had created a situation where patients no longer placed emphasis on the duration of time spent in a particular hospital to form their experience of quality of care. What patients would rather cherish are the human dimensions of quality (interaction with service provider and attitude of healthcare providers). These were perceived by the insured patients to constitute significant determinants of perceived quality of care (Atinga 2012). The conclusion drawn by Atinga (2012) portrays the

theory of learned helplessness postulated by the psychologists Seligman & Maier (1967). Notwithstanding this conclusion, it could be argued that patients would be happier if waiting time in health facilities were shorter. Suggestions made by respondents to improve adequacy of resources and services seem to suggest that patients are only tolerant with healthcare providers when they experience long waiting times, due to inadequate number of healthcare providers, but they are not happy with the delays. Some suggestions by respondents to improve quality support this argument:

*“Increase the number of medical doctors to reduce the waiting period”*

*“Staff at dispensary should be increased to shorten waiting period”* (see section 7.2.3, page 230).

In addition to increasing numbers of health providers, since the problem seems to affect the insured patients more, serious measures must be taken to address factors associated with long waiting times of the insured patients, such as the long administrative and manual processes undertaken before a patient accesses health care (Atinga 2012). Further study is required to explore innovative ways of reducing waiting times in health facilities. The other indicators of adequacy of resources and services, namely, sufficiency of equipment and supplies, sufficiency of rooms in the OPD and availability of drugs were all rated fairly favourably, implying that the adequacy of these resources is partially desirable or fairly satisfactory. Regarding total adequacy of resources and services, both categories of patients gave a fairly favourable rating. There was no significant difference between insured and uninsured patients. The literature on adequacy of resources and services such as availability of drugs and equipment and adequacy of health personnel in developing countries is generally less favorable (Duong *et al.*, 2004; Baltussen

*et al.*, 2002; Baltussen & Ye, 2006b; Hansen *et al.*, 2008; Mashego & Peltzer, 2005; Juma & Manongi, 2009; Kamuzora & Gilson, 2007; Turkson, 2009).

#### 5.4.3.5 *Neatness and effectiveness of treatment*<sup>6</sup>

Under the dimension, neatness and effectiveness of treatment, there was no significant difference between the insured and uninsured in all the indicators, except ‘treatment is effective for recovery and cure’, which the insured agreed more that treatment outcomes were effective for recovery and cure, compared with the uninsured. This could be due to the fact that the insured has better access to health care and therefore benefit from frequent utilization of the health facilities (Witter and Garshong 2009; Jehu-Appiah 2012; NHIA 2011). Findings of this study further show that the insured indeed visit modern health facilities more frequently compared with the uninsured, as 32.8% of the insured indicated visiting a modern health facility five times or more within the past 12 months, compared with 11.7% of the uninsured (see Table 5.6, page 130). These frequent visits albeit the possibility of moral hazard, may either be for review of treatment for previous illness or for treatment of a new illness, if even the latter is minor. The implications are that minor illnesses may be cured earlier before they develop complications. The insured may also benefit more from health education by healthcare providers by virtue of their frequent visits to health facilities. The net effect is that the insured may experience better health outcomes, and are therefore more likely to perceive treatment as being effective, relative to the uninsured. On the other hand, due to the less frequent visits to health facilities by the uninsured, some may only seek health care under severe conditions when treatment is more difficult, thus the possibility of the uninsured perceiving treatment as less effective relative to the insured. Generally, however, both insured and uninsured respondents had favourable opinions about neatness and effectiveness of treatment, except quality

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<sup>6</sup> ‘neatness and effectiveness of treatment’ is a shortened phrase for ‘neatness and effectiveness of treatment for recovery and cure’

drugs being prescribed, where both insured and uninsured rate it fairly favourably, and treatment being effective for recovery and cure, where the uninsured rated fairly favourably. The favourable findings on neatness of staff and hospital environment are inconsistent with previous study in Ghana which found that patients' assessment about the availability of modern medical equipment, hospital attractiveness, medical materials and medical staff appearance were fairly good (Abuosi & Atinga, 2012).

The inconsistency may be explained by the fact that the previous study dealt with in-patients whose expectations of neatness of staff and the environment within the wards and general environment must have been much higher than the current study which dealt with out-patients. On the favourable responses on neatness and effectiveness of treatment, literature shows that patients' responses are generally favourable (Robyn *et al.*, 2013; Juma & Manongi, 2009). Haddad *et al.* (1998a) opined that expected neatness and effectiveness of treatment is the main determining factor for people resorting to treatment. Even though there was no significant difference in perceptions of quality between the insured and uninsured respondents regarding total neatness of hospital and staff and neatness and effectiveness of treatment, respondents gave a favourable rating of this dimension of quality of care. In spite of the favourable quantitative results regarding neatness and effectiveness of treatment, however, the major qualitative findings on suggestions to improve neatness and effectiveness of treatment indicate that respondents expect an improvement in sanitation and general cleanliness of hospitals. They also expect to be provided with high quality drugs, and also, more competent health personnel should be made to render services to ensure effective recovery. This does not necessarily indicate a contradiction or inconsistency, since the qualitative findings on this dimension represented the responses of a relatively fewer patients, and

thus could not be generalized. On the other hand, it could be that even though respondents may be generally satisfied with neatness and effectiveness of treatment, there is more room for improvement. Another explanation may stem from the argument that given that the health system in Ghana is fraught with inadequate medical personnel and logistics, against the background of limited or no alternatives, health care users tend to be content with the status quo (Nketiah-Amponsah & Hiemenz, 2009).

#### **5.4.3.6 Technical aspects of care**

There was no significant difference between the two categories of patients in respect of all indicators of the technical aspects of care, except treatment being based on laboratory and other diagnostic investigations. The insured were more favourable in their opinion that treatment was informed by diagnostic investigations, compared with the uninsured. This finding is consistent with a study in Egypt (Bassili *et al.* 2000) which found insured clients to have had a significantly higher frequency of physical examination and laboratory tests compared to their uninsured colleagues. In Ghana, the provider payment mechanism under the NHIS is based on the Ghana Diagnostic Related Group (G-DRG). Under this scheme, treatment for a group of related illnesses including diagnostic investigations, attract the same cost throughout the country. Since the costs of diagnostic investigations are passed on to the NHIS, healthcare providers may not hesitate to include diagnostic investigations as part of the treatment process for insured patients. On the other hand, since the uninsured pay out-of-pocket for treatment, healthcare providers may hesitate in some cases to include diagnostic investigations due to difficulties in the ability of the uninsured to afford the cost of treatment. Generally, however, both insured and uninsured respondents rate technical aspects of care fairly favourably, implying that patients' perception of quality in this dimension is partially desirable or fairly satisfactory. The worst of the ratings on the technical aspects of care was doctors telling patients the diagnosis of their illness (see Table 5.15, page 145).

Findings from the qualitative data also indicate that respondents expect healthcare providers to involve them in the treatment process and to conduct thorough medical assessment to inform an appropriate treatment (see section 7.2.7, page 233).

The problem of not telling patients diagnosis of their illness is consistent with Turkson (2009) who found that clients' perceptions of the quality of healthcare delivery at the district level in rural Ghana was high except in patients not being told the diagnosis of their illness or given instructions or advise about their illness. Generally, much literature on technical aspects of care including patients being physically examined, told diagnosis, or being involved in their care, is less favourable (Duong *et al.*, 2004; Baltussen *et al.*, 2002; Baltussen & Ye, 2006b; Turkson, 2009). In spite of the provision of GHS Patient's Charter<sup>7</sup> to the effect that the patient has the right to full information on his or her condition and management and the possible risks involved, it is not very clear why what seems to be a simple task of telling patients what is wrong with them remains a rather intractable problem. If there is difficulty in disclosing the diagnosis of cancer or HIV to a patient, these may be attributed respectively to the terminal nature or stigma associated with these disease conditions. However, the failure to inform patients in this study, for example, cannot be associated with cancer or HIV. Perhaps, doctors take it for granted that all that a patient needs is to get cured of his/her disease, and therefore it will make no difference whether he/she is told the diagnosis or not. Another possible explanation is that the patient may not understand the technicalities associated with being told what is wrong with him/her. Further study is however, required to identify the reasons and how this problem may be addressed.

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<sup>7</sup> <http://www.ghanahealthservice.org/ghs-subcategory.php?cid=2&scid=46> (accessed: 24/6/2014).

On the aspect of not involving patients in decisions concerning their treatment, it may be attributed to pressure of work in the midst of the few doctor- to-patient ratio, coupled with the possible difficulty in discussing technical treatment processes with patients, but these need to also be empirically confirmed.

#### **5.4.3.7 Interpersonal aspect of care**

Finally, both the insured and uninsured were unanimous in giving a favourable rating on interpersonal aspect of care in respect of compassion and support as well as staff politeness and respect for patients. The total rating on this dimension of quality was also favourable. There was no significant difference between the insured and uninsured in their perceptions of interpersonal aspects of care. The literature on interpersonal aspects of care is mixed. In some studies there are positive reports of interpersonal aspects of care (Duong *et al.*, 2004; Baltussen *et al.*, 2002; Baltussen & Ye, 2006b; Hansen *et al.*, 2008). However, other reports are negative (Mashego & Peltzer, 2005; Juma & Manongi, 2009; Turkson, 2009). Juma and Manongi (2009), assessed users' perceptions of quality of care given at OPD in Central Tanzania, where discussants stated that if patients are welcomed well with respect and compassion they assume that other services are good too. The favourable rating of interpersonal aspects of care could therefore have a positive influence on the ratings of some of the quality indicators in this study. Notwithstanding the favourable opinion on interpersonal aspects of care, the call by respondents for the improvement in interpersonal relationship, especially the need for respect, tolerance and descent speech to patients by hospital staff, suggests that more needs to be done to improve the interpersonal aspects of care in hospitals.

## **5.5 Effect of Health Insurance on Quality of Care**

### **5.5.1 Introduction**

In section 5.4.2 (page 141) the study found a significant difference between the insured and uninsured in financial access to healthcare, but there was no significant difference in majority of the other indicators of quality of care. This section went further to investigate whether insurance status could predict perceptions of quality of care, by examining the effect of insurance status on perceived quality of care. First of all assumptions underlying multiple regression analysis was made, vis-à-vis the study data, followed by a presentation and analysis of the results.

### **5.5.2 Assumptions of Multiple Regressions**

#### *5.5.2.1 Sample size.*

For purposes of generalization the sample size should be reasonably large. Stevens (1996) recommends that for social science research, about 15 participants per predictor are needed for a reliable equation. In this study there were 13 predictors to assess the effect of health insurance on quality of care (see section 4.8.5, page 116). Multiplying 15 participants by the 13 predictors gives 195 as the sample size, which is far below the actual sample size of 818 patients selected for study, based on a more complex formula for determining sample size (see section 4.5, page 99).

#### *5.5.2.2 Multicollinearity.*

This refers to the relationship among independent variables. Multicollinearity exists when the independent variables are highly correlated ( $r=.9$  and above) (Pallant, 2010). Pallant (2010) recommends that the independent variables show at least some relationship with the dependent variable, preferably above  $.3$ . In this study there was no problem of multicollinearity (see Appendix

18, page 308). However, the correlations between the independent variables as well as between the independent and dependent variables were generally below .3. This notwithstanding, the model is still useful, based on the results of the other evaluation tools discussed in this section. The correlation results for financial access to care are presented in Appendix 18, page 308. The results of the remaining dimensions of quality of care which are not included as appendices are not drastically different from those of financial access dimension.

#### *5.5.2.3 Collinearity diagnostics: Tolerance and VIF.*

SPSS performs ‘collinearity diagnostics’ as part of the multiple regression procedure which can pick up problems with multicollinearity that may not be evident in the correlation matrix. Two values are given: Tolerance and Variance Inflation Factor (VIF). Tolerance is an indicator of how much the variability of the specified independent variable is not explained by the other independent variables in the model and is calculated by the formula  $1 - R^2$  for each variable. If this value is very small (less than .10) it indicates that the multiple correlation with other variables is high, suggesting the possibility of multicollinearity. VIF is the inverse of the tolerance value (1 divided by tolerance). VIF values above 10 indicates multiple collinearity (Pallant, 2010). In this study the tolerance values for the various dimensions of quality of care range between .384 to .922 which are more than .10; therefore the multicollinearity assumption has not been violated. The VIF values also range from 1.043 to 2.604 for all dimensions of quality of care which is well below the cut-off of 10 (Pallant, 2010).

#### ***5.5.2.4 Outliers, normality, linearity, homoscedasticity, independence of residuals***

All these refer to the various aspects of the distribution of the scores and the nature of the underlying relationship between the variables. Outliers are extreme (very high or very low scores). Multiple regression is very sensitive to outliers (Pallant, 2010). Residuals are the difference between the obtained and the predicted dependent variable scores. These residuals should be normally distributed (normality) about the predicted dependent variable scores. The residuals should also have a straight-line (linearity) relationship with predicted dependent variable scores; and the variance of the residuals about predicted dependent variable scores should be the same for all predicted scores (homoscedasticity). One of the ways that these assumptions can be checked is by inspecting the Normal Probability Plot (P-P) of the Regression Standardised Residual and the Scatter Plot generated as part of SPSS analysis. In the normal P-P Plot, it is expected that the points will lie in a reasonably straight diagonal line from bottom left to top right. This would suggest no major deviations from normality. In this study, six out of the seven multiple regression analysis conducted in respect of the various dimensions of quality of care, had reasonably straight diagonal lines from bottom left to top right, the only exception being the dimension ‘interpersonal aspects of care’ (see Appendix 14, page 292). In the scatterplot of the standardized residuals, it is expected that the residuals will be roughly rectangularly distributed, with most of the scores concentrated in the centre (along the 0 point). Deviations from a centralized rectangle suggest some violation of the assumptions. In six out of the seven scatterplots generated in this study, the residuals are roughly rectangularly distributed, the exception being the overall perception of quality of care dimension (see Appendix 17, page 293). The presence of outliers can also be detected from the Scatterplot. Tabachnick & Fidell (2007) define outliers as cases that have a standardized residual (as displayed in the scatterplot) of more than 3.3 or less than -3.3. Pallant

(2010) observes that with large samples, it is not uncommon to find a number of outlying residuals, and that where only a few are found it may not be necessary to take any action. In this study, however, there were no noticeable outliers in all the seven scatterplots (see Appendices 5, 7, 9, 11, 13, 15 and 17, pages 287-293). Outliers can also be checked by inspecting the Mahalanobis distances that are produced by the multiple regression programme. To identify which cases are outliers, critical chi-square values are determined, using the number of independent variables as the degrees of freedom. Tabachnick and Fidell suggest using an alpha level of .001. Using Tabachnick and Fidell (2007) guidelines, a summary of the values are presented in Table 5.17 (page 175). Any Mahalanobis Distances score above that critical value is an outlier (Pallant, 2010). Table 5.17 shows the critical chi-square and Mahalanobis distance values for the seven dimensions of quality of care. Since the critical chi-square value is above the Mahalanobis Distances scores for all the dimensions of quality of care, this suggests that there were no major problems with outliers.

**Table 5.17: Critical values for evaluating Mahalanobis distance values**

| <b>Dimension of quality of care</b>     | <b>No. of independent variables<sup>8</sup></b> | <b>Mahal. Distance (Max.)</b> | <b>Critical <math>\chi^2</math> Value</b> |
|---|---|-------------------------------|---|
| Financial access to care                | 18  | 41.811                        | 42.312                                    |
| Fairness of care                        | 18  | 41.541                        | 42.312                                    |
| Adequacy of resources and services      | 18  | 41.602                        | 42.312                                    |
| Neatness and effectiveness of treatment | 18  | 41.243                        | 42.312                                    |
| Technical aspects of care               | 18  | 42.011                        | 42.312                                    |
| Interpersonal aspects of care           | 18  | 41.686                        | 42.312                                    |
| Overall quality of care                 | 18  | 41.024                        | 42.312                                    |

*Source:* Author's Field Survey, 2013

Another information in the SPSS output concerning unusual cases is the Casewise Diagnostics.

This presents information about cases that have standardized residual values above 3.0 or below -

<sup>8</sup> Even though there were 13 independent (predictor) variables for each of the dimensions of quality of care, the recoding of some categorical variables into dummy variables produced a picture of 18 independent variables.

3.0. In a normally distributed sample, it is expected that only one percent of cases would fall outside this range (Pallant, 2010). Cook's Distance values, generated by SPSS as an output of multiple regression, is employed to check the possibility of any strange case having undue influence on the results of the model. According to Tabachnick and Fidell (2007), cases with values larger than 1 are a potential problem, and the researcher may need to consider removing the offending case(s). Table 5.17 presents results of the casewise diagnostics and Cook's distance values of this study. From Table 5.18 (page 176) it is observed that even though some variables have standardized residual values above 3.0 or below -3.0, Cooks Distance values for all the variables are far less than 1, suggesting that these abnormal values from the casewise diagnostics have no undue influence on the results for the model as a whole.

**Table 5.18: Casewise Diagnostics and Cook's Distance values**

| Case Number                                  | Std. Residual | Quality Dimension | Predicted Value | Residual | Cook's Distance (Max.) |
|--|---------------|-------------------|-----------------|----------|------------------------|
| <b>Financial access to care</b>              |               |                   |                 |          |                        |
| 62   | -3.347        | 4                 | 13.73           | -9.728   | 0.030                  |
| 602  | -3.036        | 5                 | 13.82           | -8.824   |                        |
| 671  | 3.224         | 20                | 10.63           | 9.368    |                        |
| 684  | 3.198         | 20                | 10.71           | 9.293    |                        |
| <b>Fairness of care</b>                      |               |                   |                 |          |                        |
| 20   | -3.027        | 4                 | 14.50           | -10.497  | 0.019                  |
| 349  | -3.550        | 4                 | 16.31           | -12.312  |                        |
| 724  | -3.287        | 4                 | 15.40           | -11.398  |                        |
| <b>Neatness &amp; effective of treatment</b> |               |                   |                 |          |                        |
| 92   | -3.017        | 7                 | 12.16           | -5.156   | 0.016                  |
| 349  | -3.288        | 8                 | 13.62           | -5.618   |                        |
| 567  | -3.150        | 8                 | 13.38           | -5.383   |                        |
| 763  | -3.615        | 7                 | 13.18           | -6.178   |                        |
| <b>Technical care</b>                        |               |                   |                 |          |                        |
| 83   | -3.055        | 4                 | 14.64           | -10.638  | 0.016                  |
| 199  | -3.295        | 5                 | 16.48           | -11.476  |                        |
| 490  | -3.041        | 5                 | 15.59           | -10.590  |                        |
| <b>Interpersonal care</b>                    |               |                   |                 |          |                        |
| 10   | -3.419        | 2                 | 7.94            | -5.944   | 0.035                  |
| 13   | -3.356        | 2                 | 7.83            | -5.834   |                        |
| 18   | -3.474        | 2                 | 8.04            | -6.038   |                        |
| 30   | -3.183        | 2                 | 7.53            | -5.533   |                        |
| 53   | -3.520        | 2                 | 8.12            | -6.119   |                        |
| 75   | -3.348        | 2                 | 7.82            | -5.820   |                        |
| 101  | -3.336        | 2                 | 7.80            | -5.799   |                        |
| 126  | -3.803        | 2                 | 8.61            | -6.611   |                        |
| 259  | -3.149        | 2                 | 7.47            | -5.475   |                        |
| 314  | -3.416        | 2                 | 7.94            | -5.938   |                        |
| 555  | -3.181        | 2                 | 7.53            | -5.530   |                        |
| 677  | -3.713        | 2                 | 8.45            | -6.455   |                        |
| 709  | -4.165        | 2                 | 9.24            | -7.241   |                        |
| 728  | -3.387        | 3                 | 8.89            | -5.888   |                        |
| 778  | -3.531        | 2                 | 8.14            | -6.139   |                        |
| 813  | -3.095        | 3                 | 8.38            | -5.381   |                        |
| <b>Overall quality</b>                       |               |                   |                 |          |                        |
| 349  | -3.662        | 45                | 81.80           | -36.798  | 0.024                  |

Source: Author's Field Survey, 2013

### 5.5.3 Evaluation of the Regression Model

#### 5.5.3.1 Summary Information

Table 5.19 is a summary of information about the quantity of variance that is explained by the predictor variables.

**Table 5.19: Model Summary**

| <b>Model Summary</b>               | <b>R</b> | <b>R Square</b> | <b>Adjusted R Square</b> | <b>Std. Error of the Estimate</b> |
|------------------------------------|----------|-----------------|--------------------------|-----------------------------------|
| Financial access                   | .456     | .208            | .187                     | 2.993                             |
| Fairness of care                   | .326     | .106            | .082                     | 3.563                             |
| Adequacy of resources and services | .388     | .151            | .128                     | 4.081                             |
| Neatness and effectiveness         | .389     | .152            | .129                     | 2.374                             |
| Technical care                     | .288     | .083            | .058                     | 3.468                             |
| Interpersonal care                 | .282     | .080            | .055                     | 1.726                             |
| Overall quality of care            | .407     | .166            | .141                     | 10.616                            |

*Predictors: (Constant), Central Region, Number of doctors, Tertiary, Marital status (married=1), Mission Hospitals, Age of respondent, Health status, No earnings, Insurance status (Insured=1), Distance to hospital, Size of household, Sex (Male=1), Sec/Tec/Voc, 101 and above, Private Hospitals, Primary-JHS, Brong-Ahafo Region, Bed capacity*

*Source: Author's Field Survey, 2013*

In Table 5.19, the first statistic, R, is the multiple correlation or regression coefficient between all of the predictor variables and the dependent variables. Cohen (1988, cited in Pallant, 2010) suggests the following guidelines in interpreting correlation coefficients (r):

small (weak relationship)  $r = .10$  to  $.29$ ; medium (moderate relationship)  $r = .30$  to  $.49$ ; large (strong relationship)  $r = .50$  to  $1.0$ .

In the model of financial access to care, for example, the R value is .456, which implies that the regression coefficient for financial access is a medium one, implying a moderate relationship between the independent variables and financial access to care. The rest of the R values range from .282 to .407, implying that the correlation between the independent variables and the dependent variables (all the seven dimensions of quality of care) are virtually all medium or moderate relationship. The next value, R Square is simply the squared value of R. This is frequently used to describe the goodness-of-fit, or the amount of variance explained by a given set of predictor variables. In this study, the R Square range from a high of .208 for financial access, to a low of .080 for technical aspects of care. Alternatively, the amount of variance explained by the set of predictor variables range from a high of 20.8% (.208 x 100) for financial access, to a low of 8.0%

for technical care. The adjusted square value is used mostly in situations where a small sample is involved (Pallant, 2010). When a small sample is involved, the R square value in the sample tends to be a rather optimistic over-estimation of the true value in the population (Tabachnick and Fidell, 2007). The Adjusted R square statistic ‘corrects’ this value to provide a better estimate of the true population value. In this thesis, however, the sample size of 818 is large enough, and therefore R squared, rather than Adjusted R square statistic is used.

Table 5.20 (page 179) is an ANOVA table that describes the overall variance accounted for in the regression model. In Table 5.29, the F statistic represents a test of the null hypothesis that the expected values of the regression coefficients are equal to each other, and that they equal zero. In other words, the F statistic tests whether the R square proportion of variance in the dependent variable accounted for by the predictors is zero. If this were true, this would indicate that there is no regression relationship between the dependent and predictor variables. However, the predictor variables in this study are not equal to each other, and thus could be used to predict the various dependent variables, as indicated by the F values and small significance levels.

**Table 5.20: ANOVA**

| <b>Dependent variable</b>          | <b>Model</b> | <b>Sum of Squares</b> | <b>df</b> | <b>Mean Square</b> | <b>F</b> | <b>Sig.</b> |
|------------------------------------|--------------|-----------------------|-----------|--------------------|----------|-------------|
| Financial access                   | Regression   | 1553.266              | 18        | 86.293             | 9.635    | .000        |
|                                    | Residual     | 5902.104              | 659       | 8.956              |          |             |
|                                    | Total        | 7455.370              | 677       |                    |          |             |
| Fairness of care                   | Regression   | 998.415               | 18        | 55.467             | 4.369    | .000        |
|                                    | Residual     | 8416.337              | 663       | 12.694             |          |             |
|                                    | Total        | 9414.751              | 681       |                    |          |             |
| Adequacy of resources and services | Regression   | 1960.316              | 18        | 108.906            | 6.540    | .000        |
|                                    | Residual     | 11040.541             | 663       | 16.652             |          |             |
|                                    | Total        | 13000.857             | 681       |                    |          |             |
| Neatness and effectiveness         | Regression   | 667.700               | 18        | 37.094             | 6.582    | .000        |
|                                    | Residual     | 3736.410              | 663       | 5.636              |          |             |
|                                    | Total        | 4404.110              | 681       |                    |          |             |
| Technical care                     | Regression   | 720.911               | 18        | 40.051             | 3.331    | .000        |
|                                    | Residual     | 7972.783              | 663       | 12.025             |          |             |
|                                    | Total        | 8693.694              | 681       |                    |          |             |
| Interpersonal care                 | Regression   | 170.849               | 18        | 9.492              | 3.186    | .000        |
|                                    | Residual     | 1975.222              | 663       | 2.979              |          |             |
|                                    | Total        | 2146.071              | 681       |                    |          |             |
| Overall quality care               | Regression   | 13929.659             | 18        | 773.870            | 6.866    | .000        |
|                                    | Residual     | 70214.883             | 623       | 112.704            |          |             |
|                                    | Total        | 84144.542             | 641       |                    |          |             |

*Predictors: (Constant), Central Region, Number of doctors, Tertiary, Marital status (married=1), Mission Hospitals, Age of respondent, Health status, No earnings, Insurance status (Insured=1), Distance to hospital, Size of household, Sex (Male=1), Sec/Tec/Voc, 101 and above, Private Hospitals, Primary-JHS, Brong-Ahafo Region, Bed capacity*

Source: Author's Field Survey, 2013

### 5.5.3.2 Evaluating each of the independent variables

The multiple regression estimates displays regression (unstandardized) coefficient B, standard error of B, standardized coefficient beta, t value for B, and two-tailed significance level of t (see Tables 5.21 to 5.28, pages 181 to 193). The coefficients (unstandardized and standardized) as well as the significant values are important for interpreting the regression model. The coefficients indicate the increase in the value of the dependent variable for each unit increase in the predictor variable. A well-known problem with the interpretation of unstandardized coefficients is that their values are dependent on the unit of measurement for the independent and the dependent variables. That makes it hard to compare coefficients for two different variables (Allison, 1999). To compare the different variables, standardized coefficients are used. 'standardized' means that

the values for each of the different variables have been converted to the same scale so that they can be compared (Pallant, 2010). Standardized coefficients indicate how many standard deviations the dependent variable changes with an increase of one standard deviation in the independent variable. However, Pallant (2010) recommends that where the author is interested in constructing a regression equation, unstandardized coefficient values should be used. Since this study was interested in predicting the effect of health insurance on perceived quality of care based on the regression equation (see section 4.8.5, page 116), the unstandardized coefficient values were used. Another reason for preferring the unstandardized coefficient values is that their interpretation is simpler and straight-forward.

#### **5.5.4 Presentation and Analysis of the Results**

##### **5.5.4.1 Multiple Regression Analysis of the various Dimensions of Quality of Care**

Tables 5.21 to 5.28 present summary results of the multiple regression analysis, based on a regression of insurance status of patients, on the various dimensions of quality of care, controlling for socio-demographic and hospital variables. The results in Table 5.21 show that there is a significant relationship between insurance status and financial access to care, controlling for socio-demographic and hospital variables. From the results, respondents with health insurance have .80 units more financial access to care compared with the uninsured ( $B=.80, p=.002$ ). This implies that a unit increase in health insurance enrolment would lead to an increase in financial access by .80. The health status of respondents also had a positive significant influence on financial access. A unit improvement in health status would result in a .25 units increase in financial access to care (see Table 5.21, page 181).

**Table 5.21: Regression of health insurance status on financial access to care**

| Independent Variables        | B      | SE   | Beta  | t      | Sig. |
|------------------------------|--------|------|-------|--------|------|
| (Constant)                   | 12.204 | .805 |       | 15.155 | .000 |
| Insurance status (Insured=1) | .803   | .253 | .114  | 3.171  | .002 |
| Age of respondent            | .009   | .009 | .040  | 1.082  | .280 |
| Marital status (married=1)   | -.234  | .265 | -.033 | -.881  | .379 |
| Sex (Male=1)                 | -.345  | .259 | -.051 | -1.331 | .184 |
| Primary-JHS                  | .043   | .319 | .006  | .136   | .892 |
| Sec/Tec/Voc                  | -.069  | .400 | -.008 | -.173  | .863 |
| Tertiary                     | .032   | .413 | .003  | .076   | .939 |
| 101 and above                | .485   | .303 | .066  | 1.601  | .110 |
| No earnings                  | .502   | .285 | .070  | 1.761  | .079 |
| Distance to hospital         | -.008  | .015 | -.020 | -.541  | .589 |
| Health status                | .249   | .127 | .069  | 1.964  | .050 |
| Number of doctors            | -1.125 | .156 | -.491 | -7.195 | .000 |
| Size of household            | .008   | .046 | .007  | .178   | .859 |
| Bed capacity                 | .021   | .003 | .582  | 7.777  | .000 |
| Mission Hospitals            | -1.199 | .291 | -.167 | -4.118 | .000 |
| Private Hospitals            | .594   | .335 | .083  | 1.775  | .076 |
| Brong-Ahafo Region           | 1.833  | .347 | .258  | 5.288  | .000 |
| Central Region               | 1.835  | .351 | .268  | 5.233  | .000 |

**Dependent variable: Financial access**

*Source:* Author's Field Survey, 2013

There was a significant, but inverse relationship between the number of doctors in a hospital and financial access to health care ( $B = -1.12$ ,  $p < .001$ ). This implies that a unit increase in number of doctors would decrease financial access to health care by 1.12 units.

Another predictor of financial access to care was bed capacity, a proxy for size of hospital. The results suggest that a unit increase in bed capacity of hospitals would improve financial access by .02 units (see Table 5.21, page 181).

The results also indicate that ownership of hospitals had a significant influence on financial access to care. Compared with government hospitals, patients in mission hospitals had 1.20 units less financial access to healthcare ( $B = -1.20$ ,  $p < .001$ ). The implication is that a unit increase in number of mission hospitals would decrease financial access by 1.20 units.

Finally, there was a significant relationship between the region of respondents and financial access to health care. With reference to the Upper East Region, being in the Brong-Ahafo and Central Regions of Ghana had a positive influence in financial access to care, as respondents in Brong-Ahafo and the Central Regions had 1.83 units respectively, more financial access to care compared with those in the Upper East Region (see Table 5.21, page 181). On the other hand, variables that had no significant influence on financial access to care include age, sex, marital status, education, income, distance to hospital and household size.

In a nutshell, health insurance status has a significant influence on financial access to health care. Some of the control variables also have a significant influence on financial access to care. These include respondents' health status, number of doctors, size of hospital, region and ownership of hospital.

Table 5.22 presents results of fairness aspects of care. The results in Table 5.22 (page 183) show that there is no significant relationship between insurance status and fairness of care ( $B = -.06$ ,  $p = .851$ ).

Regarding the control variables, there was a significant relationship between age and perception of fairness of care. The model predicts that a one year increase in age will result in a minimal improvement in perception of fairness of care by .02 units, holding all other variables fixed (see Table 5.22, page 183).

There was also a statistically significant relationship between health status of respondents and perceived fairness of care, controlling for socio-demographic and hospital variables. From the results, a unit improvement in health status would have a positive effect on perceived fairness of care by .39 units ( $B=.39$ ,  $p=003$ ).

**Table 5.22: Regression of health insurance status on fairness of care**

| <b>Independent Variables</b> | <b>B</b> | <b>SE</b> | <b>Beta</b> | <b>t</b> | <b>Sig.</b> |
|------------------------------|----------|-----------|-------------|----------|-------------|
| (Constant)                   | 11.764   | .956      |             | 12.307   | .000        |
| Insurance status (Insured=1) | -.057    | .301      | -.007       | -.188    | .851        |
| Age of respondent            | .024     | .010      | .090        | 2.313    | .021        |
| Marital status (married=1)   | -.323    | .315      | -.041       | -1.027   | .305        |
| Sex (Male=1)                 | .311     | .308      | .041        | 1.010    | .313        |
| Primary-JHS                  | .120     | .379      | .016        | .318     | .751        |
| Sec/Tec/Voc                  | .214     | .474      | .022        | .451     | .652        |
| Tertiary                     | .031     | .491      | .003        | .062     | .950        |
| 101 and above                | -.269    | .359      | -.033       | -.749    | .454        |
| No earnings                  | -.522    | .338      | -.065       | -1.543   | .123        |
| Distance to hospital         | -.005    | .018      | -.011       | -.276    | .783        |
| Health status                | .394     | .150      | .098        | 2.617    | .009        |
| Number of doctors            | -.613    | .186      | -.239       | -3.305   | .001        |
| Size of household            | .021     | .054      | .015        | .378     | .705        |
| Bed capacity                 | .010     | .003      | .256        | 3.231    | .001        |
| Mission Hospitals            | .236     | .346      | .029        | .681     | .496        |
| Private Hospitals            | .930     | .397      | .116        | 2.340    | .020        |
| Brong-Ahafo Region           | .516     | .411      | .065        | 1.254    | .210        |
| Central Region               | 2.294    | .416      | .299        | 5.511    | .000        |

**Dependent variable: Fairness of care**

*Source:* Author's Field Survey, 2013

Increasing number of doctors in a hospital had a significant, but negative influence on patients' perception of fairness in their care. The results suggest that a unit increase in number of doctors, holding other variables fixed, would result in patients' perception of fairness of care reducing by .61 units ( $B=-.61$ ,  $p=001$ ).

The size of a hospital was also found to have a minimal influence on perceptions of fairness of care. The results indicates that an increase in the capacity of a hospital by one additional bed would result in improvement in patients' perception of fairness by .01 points, holding other variables fixed ( $B=.01$ ,  $p=001$ ).

The type of hospitals patients visited also had some influence in their perceptions of fairness of care. Compared with government hospitals, patients in private hospital had .93 units higher perceptions of fairness of care (see Table 5.22, page 183). The implication is that a unit increase in the number of private hospitals would improve patients' perceptions of fairness of care by .93 units.

Finally, in terms of location, patients in the Central Region had a higher perception of fairness of care by 2.29 units, compared with those in the Upper East Region, holding other variables fixed (see Table 5.22, page 183).

In summary, age, health status, number of doctors, size of hospital, type (ownership) of hospital and location had significant influence in patients' perception of fairness of care.

Table 5.23 (page 185)presents results of patients' perceptions on adequacy of resources and services for effective health service delivery. The results in Table 5.23 show that there is no relationship between insurance status and adequacy of resources and services ( $B= -.201$ ,  $p=560$ ).

With respect to the control variables, the results indicate that there is a significant relationship between income levels of respondents and their perceptions about adequacy of resources and services.

**Table 5.23: Regression of health insurance status on adequacy of resources and services**

| <b>Independent Variables</b> | <b>B</b> | <b>SE</b> | <b>Beta</b> | <b>t</b> | <b>Sig.</b> |
|------------------------------|----------|-----------|-------------|----------|-------------|
| (Constant)                   | 10.717   | 1.095     |             | 9.788    | .000        |
| Insurance status (Insured=1) | -.201    | .344      | -.022       | -.583    | .560        |
| Age of respondent            | .000     | .012      | .001        | .015     | .988        |
| Marital status (married=1)   | .271     | .360      | .029        | .753     | .452        |
| Sex (Male=1)                 | -.490    | .353      | -.055       | -1.389   | .165        |
| Primary-JHS                  | .079     | .434      | .009        | .183     | .855        |
| Sec/Tec/Voc                  | -.470    | .543      | -.042       | -.865    | .387        |
| Tertiary                     | -.595    | .562      | -.048       | -1.059   | .290        |
| 101 and above                | -.949    | .412      | -.099       | -2.307   | .021        |
| No earnings                  | .789     | .387      | .084        | 2.036    | .042        |
| Distance to hospital         | .025     | .021      | .046        | 1.213    | .226        |
| Health status                | .427     | .172      | .090        | 2.475    | .014        |
| Number of doctors            | -.052    | .213      | -.017       | -.243    | .808        |
| Size of household            | .145     | .062      | .091        | 2.330    | .020        |
| Bed capacity                 | .001     | .004      | .023        | .295     | .768        |
| Mission Hospitals            | 1.817    | .396      | .192        | 4.588    | .000        |
| Private Hospitals            | 3.197    | .455      | .341        | 7.027    | .000        |
| Brong-Ahafo Region           | .553     | .471      | .059        | 1.174    | .241        |
| Central Region               | 1.544    | .477      | .171        | 3.238    | .001        |

**Dependent variable: Adequacy of resources and services**

*Source:* Author's Field Survey, 2013

Those who earned GH¢101 and above had .949 units lower perception on adequacy of resources and services, compared with respondents who earned GH¢100 or less ( $B=-.949$ ,  $p=.021$ ). This suggests that a one cedi increase in earnings of patients would reduce perceptions of adequacy of resources and services by .949 units. On the other hand, those with no earnings had more positive perceptions of resource adequacy, compared with those who earned GH¢100 or less ( $B=.789$ ,  $p<.042$ ). This implies that a one cedi increase in incomes of those without earnings, would increase their perception about adequacy of resources and services by .789, holding other variables fixed.

The study also found that health status was significantly related to perceptions of adequacy of resources and services. A unit improvement in health status would increase perception that resources are adequate by .427 units, holding other variables fixed (see Table 5.23, page 185).

The size of respondents' households was positively associated with their perceptions of adequacy of resources and services. The results show that an increase in the number of people in the household by one person would result in improved perception of adequacy of resources and services by .145 (see Table 5.23, page 185)

There was also a significant relationship between ownership of hospitals and perceptions about adequacy of resources and services in hospitals. Compared with government hospitals, respondents in mission and private hospitals had 1.817 and 3.197 units more positive perceptions about adequacy of resources and services (see Table 5.23, page 185). This suggests that a unit increase in number of mission and private hospitals would increase perceptions of adequacy of resources and services in these health facilities by 1.817 and 3.197 units respectively, holding other variables fixed.

Finally, there was a significant relationship between region of respondents and adequacy of resources and services ( $B=1.544$ ,  $p=.001$ ). Compared with respondents in the Upper East Region, those in the Central Region had 1.544 units more in their perception of adequacy of resources and services in hospitals. This implies that for every one additional hospital attendance by patients in the Central region, perception of adequacy of resources and services would be improved by 1.544 units, holding other variables fixed.

In summary, there was no relationship between insurance status and adequacy of resources and services. However, with respect to the control variables, there was a significant relationship between income levels of respondents, health status of respondents, size of households, ownership of hospitals, and region of respondents. Table 5.24 presents results of patients' perceptions on neatness and effectiveness of treatment.

**Table 5.24: Regression of health insurance status on neatness and effectiveness of treatment**

| <b>Independent Variables</b> | <b>B</b> | <b>SE</b> | <b>Beta</b> | <b>t</b> | <b>Sig.</b> |
|------------------------------|----------|-----------|-------------|----------|-------------|
| (Constant)                   | 16.770   | .637      |             | 26.330   | .000        |
| Insurance status (Insured=1) | .188     | .200      | .035        | .940     | .347        |
| Age of respondent            | -.004    | .007      | -.021       | -.563    | .574        |
| Marital status (married=1)   | .421     | .210      | .077        | 2.009    | .045        |
| Sex (Male=1)                 | -.136    | .205      | -.026       | -.664    | .507        |
| Primary-JHS                  | .354     | .253      | .069        | 1.403    | .161        |
| Sec/Tec/Voc                  | .444     | .316      | .068        | 1.404    | .161        |
| Tertiary                     | -.322    | .327      | -.045       | -.986    | .324        |
| 101 and above                | -.467    | .239      | -.083       | -1.952   | .051        |
| No earnings                  | -.084    | .225      | -.015       | -.373    | .709        |
| Distance to hospital         | .002     | .012      | .006        | .157     | .875        |
| Health status                | .378     | .100      | .137        | 3.766    | .000        |
| Number of doctors            | .551     | .124      | .314        | 4.453    | .000        |
| Size of household            | .100     | .036      | .107        | 2.750    | .006        |
| Bed capacity                 | -.004    | .002      | -.141       | -1.830   | .068        |
| Mission Hospitals            | -.070    | .230      | -.013       | -.303    | .762        |
| Private Hospitals            | .705     | .265      | .129        | 2.665    | .008        |
| Brong-Ahafo Region           | 1.583    | .274      | .290        | 5.774    | .000        |
| Central Region               | 1.591    | .277      | .303        | 5.734    | .000        |

**Dependent variable: Neatness and effectiveness of treatment**

*Source:* Author's Field Survey, 2013

From Table 5.24, the results show that there is no significant relationship between insurance status and perceptions of respondents about the neatness of hospitals and staff, as well as effectiveness of care ( $B=.188$ ,  $p=.347$ ).

For the control variables, however, there was a significant relation between marital status and perceptions of neatness and effectiveness of treatment. Compared with those who are unmarried,

perceptions of neatness and effectiveness of treatment by those who are married were .421 points more ( $B = .421$ ,  $p = .045$ ). This implies that an increase in hospital attendance by one additional married person would result in improved perception of neatness and effectiveness of treatment, by .421 units.

Another variable significantly related to neatness and effectiveness of treatment was the level of income of respondents. Reference to respondents whose monthly earnings were GH¢100 and below, those who were earning above GH¢100 had a lower perception of neatness and effectiveness of treatment by .467 points ( $B = -.467$ ,  $p = .051$ ). The implication is that an increase in hospital attendance by one additional patient with earnings above GH¢100 would result in a decrease in perception on neatness and effectiveness of treatment, by .467 points.

Other variables that were positively related to neatness and effectiveness of treatment were household size ( $P = .006$ ), health status ( $p < .001$ ), number of doctors ( $p < .001$ ), private ownership of hospitals ( $p = .008$ ), and hospitals in Brong-Ahafo ( $p < .001$ ) and Central Regions ( $p < .001$ ).

In summary, there was a significant relationship between marital status, income, household size, health status, number of doctors, ownership of hospitals and region of respondents and neatness and effectiveness of treatment. Table 5.25 (page 189) presents the regression results of the effect of health insurance status on technical aspects of care. From Table 5.25, the results indicate that there is no significant relationship between insurance status and respondents perceptions about the technical aspects of care ( $B = .473$ ,  $p = .106$ ).

However, for the control variables, there was a significant relationship between age of respondents and perceptions of technical aspects of care ( $B = .019$ ,  $p = .059$ ). The results suggest that an increase in respondents' age by one year would result in improved perception of technical aspects of care by .019 points, holding other variables fixed.

**Table 5.25: Regression of health insurance status on technical care**

| <b>Independent Variables</b> | <b>B</b> | <b>SE</b> | <b>Beta</b> | <b>t</b> | <b>Sig.</b> |
|------------------------------|----------|-----------|-------------|----------|-------------|
| (Constant)                   | 11.523   | .930      |             | 12.385   | .000        |
| Insurance status (Insured=1) | .473     | .293      | .063        | 1.616    | .106        |
| Age of respondent            | .019     | .010      | .075        | 1.891    | .059        |
| Marital status (married=1)   | .216     | .306      | .028        | .704     | .482        |
| Sex (Male=1)                 | -.555    | .300      | -.076       | -1.852   | .064        |
| Primary-JHS                  | -.241    | .369      | -.033       | -.654    | .513        |
| Sec/Tec/Voc                  | .139     | .462      | .015        | .300     | .764        |
| Tertiary                     | .099     | .477      | .010        | .208     | .835        |
| 101 and above                | -.090    | .350      | -.011       | -.256    | .798        |
| No earnings                  | -.753    | .329      | -.098       | -2.286   | .023        |
| Distance to hospital         | .030     | .018      | .067        | 1.694    | .091        |
| Health status                | .076     | .146      | .020        | .517     | .605        |
| Number of doctors            | .037     | .181      | .015        | .205     | .838        |
| Size of household            | .014     | .053      | .010        | .257     | .797        |
| Bed capacity                 | .005     | .003      | .123        | 1.527    | .127        |
| Mission Hospitals            | .204     | .336      | .026        | .607     | .544        |
| Private Hospitals            | 1.953    | .387      | .255        | 5.052    | .000        |
| Brong-Ahafo Region           | 1.645    | .400      | .215        | 4.107    | .000        |
| Central Region               | .726     | .405      | .098        | 1.793    | .073        |

**Dependent variable: Technical aspects of care**

*Source:* Author's Field Survey, 2013

Another variable significantly related to perceptions of technical aspects of care was the level of income of respondents. With reference to respondents whose monthly earnings were GH¢100 and below, those who were not earning income had a lower perception of technical aspects of care by .629 points ( $B = -.753$ ,  $p = .023$ ). This implies that an increase in hospital attendance by one additional patient with no monthly income earnings would result in a decrease in perception of technical aspects of care by .753 points, holding other variables constant.

Ownership of hospitals was another variable significantly related to perceptions of technical aspects of care. With reference to government hospitals, private hospitals were 1.953 points more in their perceptions of technical aspects of care ( $B=1.953$ ,  $p<.001$ ). The implication is that holding other variables constant, an increase in attendance to a private hospital by one additional patient, would result in improvement in patients' perceptions of technical aspects of care by 1.953 points. Finally, region of respondents was also significantly related to perceptions of technical aspects of care (see Table 5.25, page 189).

In a nutshell, there was a significant relationship between age, income, hospital size, ownership of hospitals and region of respondents and perceptions of technical aspects of care. Table 5.26 (page 190) presents results of the effect of health insurance status on interpersonal aspects of care. From Table 5.26, the results show that there is no significant relationship between insurance status and respondents' perceptions about the interpersonal aspects of care ( $B= -.129$ ,  $p=.376$ ). For the control variables, however, there was a significant relationship between age of respondents and perceptions about the interpersonal aspects of care ( $B= .011$ ,  $p=.028$ ). The results show that an increase in respondents' age by one year would result in improved perceptions of interpersonal aspects of care by .011 points, holding other variables fixed.

Another variable significantly related to perceptions of interpersonal aspects of care was the level of education of respondents. Reference to respondents with no formal education, those who were educated up to the tertiary level had a lower perception of technical aspects of care by .560 points ( $B= -.560$ ,  $p=.019$ ). This implies that an increase in hospital attendance by one additional patient educated at the tertiary level would result in a decrease in perceptions about the interpersonal

aspects of care by .560 points, holding other variables constant. Other variables that have a positive significant relationship with perceptions about the interpersonal aspects of care include health status ( $p=.002$ ), number of doctors ( $p=.008$ ), hospital size ( $p=.034$ ), private hospitals ( $p=.007$ ), the Brong-Ahafo and Central Regions (see Table 5.26).

**Table 5.26: Regression of health insurance status on interpersonal care**

| <b>Independent Variables</b> | <b>B</b> | <b>SE</b> | <b>Beta</b> | <b>t</b> | <b>Sig.</b> |
|------------------------------|----------|-----------|-------------|----------|-------------|
| (Constant)                   | 6.322    | .463      |             | 13.653   | .000        |
| Insurance status (Insured=1) | -.129    | .146      | -.034       | -.886    | .376        |
| Age of respondent            | .011     | .005      | .087        | 2.199    | .028        |
| Marital status (married=1)   | -.004    | .152      | -.001       | -.027    | .979        |
| Sex (Male=1)                 | -.059    | .149      | -.016       | -.398    | .691        |
| Primary-JHS                  | -.154    | .184      | -.043       | -.837    | .403        |
| Sec/Tec/Voc                  | -.243    | .230      | -.053       | -1.059   | .290        |
| Tertiary                     | -.560    | .238      | -.112       | -2.356   | .019        |
| 101 and above                | -.151    | .174      | -.039       | -.866    | .387        |
| No earnings                  | .030     | .164      | .008        | .182     | .856        |
| Distance to hospital         | .010     | .009      | .043        | 1.086    | .278        |
| Health status                | .228     | .073      | .119        | 3.125    | .002        |
| Number of doctors            | .240     | .090      | .196        | 2.673    | .008        |
| Size of household            | .034     | .026      | .053        | 1.305    | .192        |
| Bed capacity                 | -.003    | .002      | -.171       | -2.129   | .034        |
| Mission Hospitals            | -.021    | .167      | -.005       | -.125    | .901        |
| Private Hospitals            | .525     | .192      | .138        | 2.729    | .007        |
| Brong-Ahafo Region           | .769     | .199      | .202        | 3.855    | .000        |
| Central Region               | .407     | .202      | .111        | 2.017    | .044        |

**Dependent variable: Interpersonal aspects of care**

*Source:* Author's Field Survey, 2013

In a nutshell, there was a significant relationship between age, education, number of doctors, hospital size, ownership of hospitals, health status, and region of respondents and perceptions of interpersonal aspects of care. Table 5.27 presents results of the effect of health insurance status on overall quality of care. From the results in table show that there is no significant relationship between insurance status and respondents perceptions about the overall quality of care ( $B=1.120$ ,  $p=.225$ ).

**Table 5.27: Regression of health insurance status on overall quality of care**

| <b>Independent Variables</b> | <b>B</b> | <b>SE</b> | <b>Beta</b> | <b>t</b> | <b>Sig.</b> |
|------------------------------|----------|-----------|-------------|----------|-------------|
| (Constant)                   | 69.911   | 2.936     |             | 23.813   | .000        |
| Insurance status (Insured=1) | 1.120    | .923      | .046        | 1.214    | .225        |
| Age of respondent            | .060     | .031      | .075        | 1.919    | .056        |
| Marital status (married=1)   | .276     | .966      | .011        | .285     | .775        |
| Sex (Male=1)                 | -.936    | .946      | -.040       | -.989    | .323        |
| Primary-JHS                  | .476     | 1.164     | .021        | .409     | .683        |
| Sec/Tec/Voc                  | -.253    | 1.457     | -.009       | -.174    | .862        |
| Tertiary                     | -2.120   | 1.506     | -.066       | -1.408   | .160        |
| 101 and above                | -1.460   | 1.104     | -.058       | -1.322   | .187        |
| No earnings                  | -.153    | 1.039     | -.006       | -.147    | .883        |
| Distance to hospital         | .046     | .056      | .031        | .809     | .419        |
| Health status                | 1.497    | .462      | .121        | 3.239    | .001        |
| Number of doctors            | -1.098   | .570      | -.139       | -1.927   | .054        |
| Size of household            | .309     | .167      | .074        | 1.848    | .065        |
| Bed capacity                 | .033     | .010      | .265        | 3.353    | .001        |
| Mission Hospitals            | .849     | 1.062     | .034        | .800     | .424        |
| Private Hospitals            | 7.945    | 1.220     | .323        | 6.512    | .000        |
| Brong-Ahafo Region           | 7.443    | 1.264     | .303        | 5.890    | .000        |
| Central Region               | 8.762    | 1.278     | .370        | 6.854    | .000        |

**Dependent variable: Overall quality of care**

Source: Author's Field Survey, 2013

For the control variables, however, there was a significant relationship between age of respondents and perceptions about the overall quality of care ( $B=.060$ ,  $p=.056$ ). The results show that an increase in respondents' age by one year would result in improved perceptions about the overall quality of care by .060 points, holding other variables fixed. Other variables that have a significant relationship with perceptions of overall quality of care include health status ( $p=.001$ ), number of doctors ( $p=.054$ ), hospital size ( $p=.001$ ), private hospitals ( $p<.001$ ), Brong-Ahafo Region ( $p<.001$ ) and Central Region ( $p<.001$ ) (see Table 5.27, page 192).

In a nutshell, there was a significant relationship between age, number of doctors, hospital size, ownership of hospitals, health status, and region of respondents and perceptions about the overall quality of care.

### 5.5.4.2 Summary of the Regression Results of the various Dimensions of Quality of Care

In summary, health insurance status had a significant influence on only financial access to health care, but not on any other dimension of quality of care. Some of the control variables, however, had a significant influence on the various dimensions of quality of care. Table 5.28 presents a summary of the regression results of the various dimensions of quality of care.

**Table 5.28: Summary of regression results**

| Independent Variables        | Dependent variables |          |          |               |           |               |         |
|------------------------------|---------------------|----------|----------|---------------|-----------|---------------|---------|
|                              | Financial           | Fairness | Adequacy | Effectiveness | Technical | Interpersonal | Overall |
| Insurance status (Insured=1) | S(+)                | NS       | NS       | NS            | NS        | NS            | NS      |
| Age of respondent            | NS                  | S(+)     | NS       | NS            | S(+)      | S(+)          | S(+)    |
| Marital status (married=1)   | NS                  | NS       | NS       | S(+)          | NS        | NS            | NS      |
| Sex (Male=1)                 | NS                  | NS       | NS       | NS            | NS        | NS            | NS      |
| Primary-JHS                  | NS                  | NS       | NS       | NS            | NS        | NS            | NS      |
| Sec/Tec/Voc                  | NS                  | NS       | NS       | NS            | NS        | NS            | NS      |
| Tertiary                     | NS                  | NS       | NS       | NS            | NS        | S(-)          | NS      |
| 101 and above                | NS                  | NS       | S(-)     | S(-)          | NS        | NS            | NS      |
| No earnings                  | NS                  | NS       | S(+)     | NS            | S(-)      | NS            | NS      |
| Distance to hospital         | NS                  | NS       | NS       | NS            | NS        | NS            | NS      |
| Health status                | S(+)                | S(+)     | S(+)     | S(+)          | NS        | S(+)          | S(+)    |
| Number of doctors            | S(-)                | S(-)     | NS       | S(+)          | NS        | S(+)          | S(-)    |
| Size of household            | NS                  | NS       | S(+)     | S(+)          | NS        | NS            | NS      |
| Bed capacity                 | S(+)                | S(+)     | NS       | NS            | NS        | S(-)          | S(+)    |
| Mission Hospitals            | S(-)                | NS       | S(+)     | NS            | NS        | NS            | NS      |
| Private Hospitals            | NS                  | S+       | S(+)     | S(+)          | S(+)      | S(+)          | S(+)    |
| Brong-Ahafo Region           | S(+)                | NS       | NS       | S(+)          | S(+)      | S(+)          | S(+)    |
| Central Region               | S(+)                | S(+)     | S(+)     | S(+)          | NS        | S(+)          | S(+)    |

Legend: S(+) = Significant (positive effect)

S(-) = Significant (negative effect)

NS = Non-Significant

Source: Author's Field Survey, 2013

From Table 5.28 it is observed, regarding financial access to care, that being insured had a positive significant effect on financial access to care. Some control variables also had positive significant effect on financial access to care. These include respondents' health status, size of hospital, and region of respondent. However, higher number of doctors and mission hospitals had a negative significant effect on financial access to health care.

Age, health status, size of hospital, ownership of hospital and region of hospital had positive significant effect on perception of fairness. However, higher numbers of doctors had a negative significant effect on fairness of care.

There was a positive significant effect of respondents without monthly income earnings, health status of respondents, size of household, ownership of hospitals, and region of respondents on adequacy of resources and services. However, there was a negative significant effect of respondents with income levels above GHC 100 on adequacy of resources and services.

Concerning neatness and effectiveness of treatment, there was a positive significant effect of marital status, household size, health status, number of doctors, ownership of hospitals and region of respondents on respondents' perception of neatness and effectiveness of treatment. However, there was a negative significant effect of respondents with income levels above GHC 100 on neatness and effectiveness of treatment.

With regard to technical aspects of care, there was a positive significant effect of age, ownership of hospitals, and region of respondents on perceptions of technical aspects of care. However, those without monthly income earnings had a negative significant effect on technical aspects of care.

There was a positive significant effect of age, number of doctors, ownership of hospitals, health status, and region of respondents on perceptions of interpersonal aspects of care. However, those with tertiary level education, and hospitals with higher bed capacity had a negative significant effect on interpersonal aspects of care.

Finally, there was a positive significant effect of age, hospital size, ownership of hospitals, health status, and region of respondents on perceptions about the overall quality of care. However, there was a negative significant effect of number of doctors on overall perception of quality of care.

## **5.5.5 Discussion of Findings**

### **5.5.5.1 Evaluation of the Second Hypothesis**

The second research hypothesis was as follows: *H<sub>2</sub>: There is a significant relationship between a patient's insurance status and his/her perception of quality of care<sup>9</sup> in hospitals.* At a significance level of .05, the second research hypothesis is rejected, and the null hypothesis is retained. That is, *there is no significant relationship between a patient's insurance status and his/her perception of quality of care in hospitals.* This implies that insurance status of patients is not a significant predictor of perceptions of quality of care. The study however revealed that some socio-demographic and hospital variables are significant predictors of quality of care. Detail discussion of the findings under the various dimensions of quality of care is presented below. The study found that compared with the uninsured, being insured with the NHIS had a positive effect on financial access to health care, controlling for socio-demographic and hospital variables. This further reinforces the earlier conclusion that health insurance has been shown to improve financial access to health care (see section 5.4.3, page 157). It is also consistent with extant literature (Skinner & Mayer 2007; Witter & Garshong, 2009; Perez *et al.*, 2009; Jehu-Appiah *et al.* 2012; NHIA 2011). However, insurance status had no effect on any other dimension of quality of care. The finding therefore suggests that apart from financial access to health care quality problems related to all

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<sup>9</sup> The overall perception of quality of care dimension was used to test the hypothesis. Thus, even though there is a positive association between insurance status and financial access to care, there is no significant association between insurance status and overall quality score.

other dimensions of quality are general concerns for all patients regardless of insurance status. Thus, the presence of insurance improves financial access to health care.

Some control variables however, had significant influence on the various dimensions of quality of care. Age had a positive significant influence on fairness of care, technical aspects of care, interpersonal aspects of care, and overall perception of care. Findings in extant literature on the influence of age on perceptions of quality are mixed. In USA, Hall & Dornan (1990) found that higher satisfaction with the quality of medical care was significantly associated with greater age. However, Asch *et al.* (2006) also found in the USA that quality of care scores declined with age. In Burkina Faso, Robyn *et al.* (2013) found that age had no significant impact on overall patient satisfaction with the quality of care. The possible explanations to the positive effect of age on some dimensions of quality care in this study are that as individuals mature in age they become more realistic in expectations of quality of care in health facilities, considering contextual challenges such as inadequacy of resources and services. It may also be that most of those who are mature in age have little or no education, and may also have less exposure to modern health care facilities which could serve as standards for comparison, and thus they may have relatively lower standards of comparison.

Respondents who are married had a relatively more positive perception of neatness and effectiveness of treatment. Hall & Dornan (1990) found that patients' satisfaction with medical care was marginally significantly associated with being married. However, Tucker (2002) found that being married was associated with lower patient satisfaction with the quality of care. Since the specific dimension of quality that marital status has an effect is neatness and effectiveness of

treatment, it could be argued, as in the argument regarding age, that the married may be more mature in age and therefore be more realistic in quality standards expected of healthcare providers; or they may have less exposure relative to the unmarried, and thus may have relatively lower standards of quality compared with the unmarried, hence the more positive perception on neatness and effectiveness of treatment.

Respondents, whose educational level was at the tertiary level, had a negative perception of the interpersonal aspect of care. Literature on effect of educational status on quality of care is inconsistent. Perez *et al.* (2009) found a higher percentage of college graduates rating their care as excellent/good compared to those who did not graduate from high school. However, Robyn *et al.* (2013) found that education level had no significant impact on overall patient satisfaction with the quality of care. With respect to the finding in this study, it is probable that the more educated the individual, the more likely he or she is exposed to modern health facilities with high standards of care, and thus the higher the expectations of quality service. Where these expectations are not met, quality of care is therefore likely to be rated negatively.

It was also found that respondents with income level of GH¢101 or above had a negative perception of adequacy of resources and services, neatness and effectiveness of treatment. This may stem from high expectations from the relatively enlightened and higher income group who may have higher standards and expectations of healthcare providers. On the other hand, respondents with no earnings had a positive perception of adequacy of resources and services, but negative perception of technical aspects of care. Those with no earnings may not be much enlightened about the basic resource needs of hospitals, and may therefore be content with the

prevailing level of resources. However, when there is deficiency in technical aspects of care such as absence of physical examination, or absence of diagnostic investigations, these would be apparent and therefore technical quality would be rated negatively by those with no earnings.

Respondents with more than five members in a household had a positive perception of adequacy of resources and services, and neatness and effectiveness of treatment. In Ghana, households with large sizes tend to be less educated and mostly within the low income bracket. These people may have lower expectations of quality due to less exposure to modern health care facilities, and thus may be content with the quality care of the hospitals they attend. On the other hand, Dong, *et al.* (2009) found that households with fewer children effected drop-out from the community health insurance scheme in Burkina Faso, suggesting that they were dissatisfied with the quality of care. In Ghana, households with fewer members tend to be highly educated with relatively higher income levels. These people may have higher expectations of quality and may rate quality below their expectations negatively, as suggested by other findings in this study. A drop-out analysis study in Ghana may shed light on whether household size may be one of the factors influencing drop-outs from the NHIS.

The positive effect of health status on virtually all dimensions of quality of care is generally consistent with literature (Hall *et al.*, 1993; Da Costa *et al.*, 1999; Westaway *et al.*, 2003; Al-Mandhari *et al.*, 2004). It could therefore be argued that as long as the individual's health status is improved, he or she is likely to perceive quality of care more favourably.

A surprising finding was that higher number of doctors in a hospital had a negative effect on financial access, fairness of care and overall quality of care, but had a positive effect on neatness and effectiveness of treatment and interpersonal aspects of care. Availability of health professionals, including doctors, has been shown to have a positive effect on the quality of service that is offered and on users' perception (Smith & Sanderson, 1992; Haddad *et al.*, 1998b; Lomoro *et al.*, 2002; Groenewegen *et al.*, 2005; Lim *et al.*, 2004; Manongi *et al.*, 2006; Kamuzora & Gilson, 2007). However, Juma and Manongi (2009) report that even though health personnel in the hospital studied was generally perceived inadequate, there were doubts whether the available staffs were functioning efficiently. According to the study people believe that health personnel do not work for the number of hours paid for. Participants in the study noted that the available health workers were in some instances engaged in special health programmes and activities that are not directly related to patients care. The inverse relationship between the number of doctors and the respective quality dimensions may be partly explained by this observation. In Ghana, it is reported that absenteeism and moonlighting is a common phenomenon in urban public health facilities (Ruwoldt *et al.*, 2007). On the contrary, hospitals located in relatively rural or deprived areas with fewer doctors neither have the time nor access to private health facilities to do locum. Such doctors who are often continuously at work, may therefore endear themselves to their patients. There is therefore the likelihood that patients in urban hospitals with a higher number of doctors might rate fairness of care and overall perception quality of care less favourably, compared with patients in rural hospitals with relatively fewer doctors.

Another possible explanation may be that patients in smaller hospitals might be experiencing better continuity of care than those in urban areas. Literature indicates that continuity of care improves patient satisfaction, early diagnosis of patient condition, and compliance to medical treatment,

although other studies report that the effect of continuity on patient satisfaction is variable (Adler, Vasiliadis and Bickell 2010; van Walraven *et al.* 2010 cited in Ansa, 2011). It is reported that doctors in rural or deprived areas with relatively fewer doctors provide more continuity of services. They also have convenient hours and locations, available drug stocks, fewer social barriers with their fellow villagers, helpful attitudes and longstanding relationships with them compared with doctors in urban areas (Brugha & Zwi, 1998; Rohde & Viswanathan, 1995).

On the inverse relationship between the number of doctors and financial access, a possible explanation is the possibility that drug stocks are lower in urban health facilities where doctors are many, compared with rural or deprived health facilities (Brugha & Zwi, 1998; Rohde & Viswanathan, 1995). This, coupled with the ready availability of retail pharmacies in urban areas compared with the rural areas in Ghana, may create an incentive for doctors to prescribe drugs that may not be available on the spot in hospitals, therefore making patients to purchase drugs covered by health insurance scheme, out-of-pocket, thus creating problems of financial access to drugs for patients in urban areas. Notwithstanding the preceding arguments, the positive effect of many doctors on neatness and effectiveness of treatment and interpersonal aspects of care seems to confirm other literature that satisfaction with quality of care in health facilities is variable (Adler, Vasiliadis and Bickell 2010; van Walraven *et al.* 2010 cited in Ansa, 2011). In the case of Ghana, it is probable that hospitals with many doctors may have more time to interact with patients in spite of heavy workload and absenteeism or moonlighting, and this may explain the positive effect on neatness and effectiveness of treatment and interpersonal aspects of care.

It was also found that increase in bed capacity of hospitals, a proxy for size of hospitals, had positive effect on financial access, fairness of care, technical aspects of care and overall quality of care. The finding is consistent with literature (Keeler *et al.*, 1992; Young *et al.*, 2000). Larger hospitals may have more resources especially health personnel and this is likely to reflect positively on some dimensions of quality of care. However, the negative effect of larger hospitals on interpersonal aspects of care may be a result of pressure of work in spite of relatively many doctors and other staff, which could be a result of high attendance due to the NHIS. It could also be due to a possible tendency for health personnel to become less personal towards patients due to their large numbers.

There was a negative effect of mission hospitals on perceptions of financial access to care. It is possible that in view of the location of mission hospitals largely in deprived areas, various factors such as poverty and bottlenecks in enrolling with the NHIS could work together to make some people in communities served by mission hospitals unable to have financial access to health care. Further study is however required to substantiate or explore any other reasons behind this finding. However, mission hospitals had a positive effect on perceptions of adequacy of resources and services. According to the literature, mission facilities are generally known for staff commitment and positive attitude towards patients, for availability of drugs and tests, cleanliness, few hassles and no bribery practices (Mamdani & Bangser, 2004). In Ghana, anecdotal reports also indicate that staffs of mission hospitals are more dedicated, disciplined, hardworking, and also use health resources more efficiently compared with public health care providers. These may therefore explain the positive perception of adequacy of resources and services by patients in mission hospitals.

The positive effect of private hospitals on almost all dimensions of quality of care is consistent with extant literature. In their study of users' perceptions of outpatient quality of care in Kilosa District Hospital in Central Tanzania, Juma & Manongi (2009) reported that poor interpersonal relationship was described as one of the main reasons that patients would prefer private to public health facilities. Staffs at private facilities were described to be more compassionate and respectful compared to government facilities. Similarly, in a study in China, private facilities were hailed for good manners, respect, and attention to patients of their staff (Lim *et al.*, 2004). Several other studies indicate that quality of care in private health facilities are perceived to be higher than public health facilities (Andaleeb, 2000; Figen & Ebru, 2010; Taner & Antony, 2006; Odebiyi *et al.*, 2010; Berendes *et al.*, 2011). Andaleeb (2000) provided a justification for the tendency for private providers to be rated high in terms of quality of care. The author hypothesized that the quality of hospital services was contingent on the incentive structure under which these institutions operate. According to him since private hospitals were not subsidized and depended on income from clients (i.e. market incentives), they would be more motivated than public hospitals to provide quality services to patients to meet their needs more effectively and efficiently. Findings from the study supported the hypothesis.

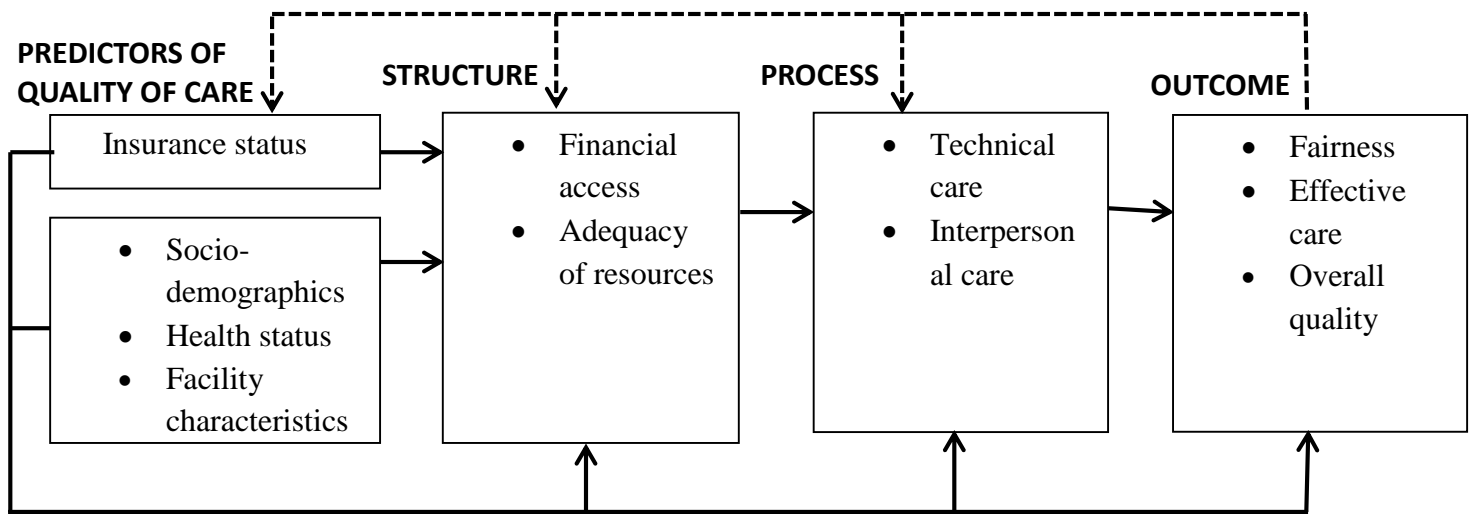
The current study tends to agree with the conclusions of Andaleeb (2000). This is because since the survival of private hospitals depends on their profitability they are more likely to take quality care seriously in order to attract more patients and generate more profit from which staff could be paid well. On the other hand, even though government and mission health facilities in Ghana are generally perceived to be more endowed with resources, especially in regard to qualified doctors and nurses, they are not profit-oriented, and job security of staff is not necessarily linked to quality

of care since salaries of government and mission health workers are fixed and not linked to performance.

The Brong-Ahafo Region had a positive effect on all dimensions of quality of care except fairness of care and adequacy of resources and services. The Central Region also had a positive effect on all dimensions of quality of care except technical aspects of care. In terms of resource endowments, the two regions are relatively more endowed compared with the upper East Region. For instance, the doctor-population ratio consistently portrays an unfavourable picture of the Upper East Region, relative to the Brong Ahafo and Central Regions between 2009 and 2011 (see Table 2.3, page 28). This relatively privileged advantage the two Regions have over the Upper East Region may make it possible to improve upon quality of care.

### **5.5.6 New Conceptual Framework**

From the results and discussion on the effect of health insurance on quality of care, it emerged that insurance status only had an effect on financial access to care. Regression analysis of the data indicated that the moderating factors had no influence on the effect of health insurance on financial access to care. However, the moderating factors independently had effect on one or more dimensions of quality of care. This suggests that rather than considering them as moderating factors, they should be considered as independent predictors of quality of care. In view of this proposition, the initial conceptual framework has been modified based on findings of the study. Figure 5.19 presents the new conceptual framework.

**Figure 5.19: New conceptual framework of the effect of health insurance on quality of care**

*Source:* Author's development

Figure 5.19 indicates that insurance status or other background factors may independently predict quality of care at the structural, process, outcome or all the three levels. The solid arrows indicate an effect or influence. The background factors include socio-demographic characteristics such as age, sex, marital status, education, income and household size; it also includes health status of patients and hospital characteristics such as ownership, size, distance, number of doctors and region the hospital is located. The broken arrows constitute a feedback effect or influence, and indicates that the three components of quality of care: structure, process and outcome, may also have an influence on each other or on insurance status of patients. This was however not the focus of this study. Thus, the difference between the new and the initial framework is that, whereas in the initial framework the background factors were moderators with broken arrows influencing the effect of health insurance status on perceived quality of care, in the new framework the background factors are no more moderators, but directly influence perceived quality of care, as shown by the solid arrows.

## 5.6 Chapter Summary

This chapter presented results and discussion of perceptions of quality of care between insured and uninsured patients, as well as the effect of patients' health insurance status on perceived quality of care. Preliminary analysis was done to ensure that the underlying assumptions of the various statistical tests are not violated. The study revealed that there is no significant difference in perceptions of quality of care between insured and uninsured patients except in respect to financial access to healthcare which favours insured patients. This finding suggests that health insurance improves financial access to health care. However, barriers to financial access still remain as informal fees were being collected in hospitals, regardless of the insurance status of patients, while some insured patients paid for healthcare out-of-pocket contrary to the tenets of the NHIS. The study also found that long waiting time remains a major concern for both insured and uninsured patients. However, the insured seem to be affected more than the uninsured. It was also found that insured patients perceive effectiveness of treatment and treatment based on laboratory and other investigations more positively than uninsured patients. On fairness of care to patients, the general perceptions that insured patients are discriminated against compared with uninsured patients is largely not supported. On the contrary, quality of care is a concern for both insured and uninsured patients. Major quality problems affecting both insured and uninsured patients were inadequacy of resources and services, not telling patients what is wrong with them (diagnosis), and not involving patients in decisions concerning their treatment. Neatness and effectiveness of treatment for recovery and cure, as well as interpersonal aspects of care were generally perceived favourably by both categories of patients. Even though findings on interpersonal aspects of care were favourable, qualitative analysis suggest that there are still problems with this dimension of quality of care. Also, since under 30% of the 24-indicator quality of care scale was rated favourably by

both insured and uninsured patients, this implies that there are problems with quality of care in hospitals.

Regarding the effect of health insurance status on quality of care, membership of health insurance scheme has a positive effect on patients' perceptions of financial access to care, but not on other dimensions of quality of care. However, socio-demographic, health status and hospital factors also have some effect on the various dimensions of quality of care. Socio-demographically, increasing age and being married have a positive influence on perceptions of quality of care in hospitals. Higher income status has a negative effect on adequacy of resources, and neatness and effectiveness of care. Patients educated up to tertiary level of education tend to have problems with interpersonal aspects of care. Improvement in health status of patients is associated with positive perceptions of virtually all dimensions of quality of care. In terms of hospital characteristics, having many doctors in a hospital is associated with positive perceptions of interpersonal aspects of care and neatness and effectiveness of treatment, however, there is an inverse relationship between increasing the number of doctors and perceptions of financial access to care, fairness of care, and overall perception of quality of care. Compared with government hospitals, mission hospitals seem to have problems with financial access. However, the latter is perceived to be more adequately resourced, compared with the former. Private hospitals are perceived to provide more quality of care in many dimensions of quality, compared with government hospitals. Finally, relative to the Upper East Region, Brong-Ahafo and Central Regions are perceived to provide more quality of care.

## CHAPTER SIX

### 6.0 PATIENTS VERSUS PROVIDERS' PERCEPTIONS OF QUALITY OF CARE

#### 6.1 Introduction

This chapter presents the results of the study on providers' perceptions of the quality of care in the study areas. First, the socio-demographic and other background characteristics of respondents are presented. Next, a comparison of perceptions of quality of care between healthcare providers and patients is then made using t-test statistic, followed by a discussion of the results.

#### 6.2 Background Characteristics

The total number of providers was 152, representing 100% of the sampled providers. The mean ages of providers were 38.9 years, while the median and modal ages were 34 and 28 years respectively. Table 6.1 (page 208) presents the rest of socio-demographic characteristics of respondents. The results indicate that males constituted a greater proportion (64.2%) of the healthcare providers' respondents. Those who were married were 91 (61.5%), while the unmarried were 57 (38.5%). Over 80% of the health services providers were educated up to the tertiary level. In terms of work experience, about half of the respondents had five years' experience or lower, and remaining half had six or more years of experience. In terms of category of respondents, 58.6% of were clinical managers such as medical officer in-charge, nurse in-charge, pharmacists, laboratory and radiology in-charge. On the other hand, 41.4% of respondents were non-clinical managers such as the hospital administrator, accountant, medical records in-charge and NHIS claims personnel.

**Table 6.1: Socio-demographic and other background characteristics of providers<sup>10</sup>(N=152)**

| <b>Characteristics</b>                  | <b>No.</b> | <b>Value %</b> |
|---|------------|----------------|
| <b>Sex</b>                              |            |                |
| Male                                    | 97         | 64.2           |
| Female                                  | 54         | 35.8           |
| <b>Marital status</b>                   |            |                |
| Unmarried                               | 57         | 38.5           |
| Married                                 | 91         | 61.5           |
| <b>Educational level of respondents</b> |            |                |
| Primary-JHS                             | 14         | 9.3            |
| Sec/Tech/Vocational                     | 13         | 8.6            |
| Tertiary                                | 124        | 82.1           |
| <b>Work experience</b>                  |            |                |
| 5 years or lower                        | 77         | 50.7           |
| 6 years or more                         | 75         | 49.3           |
| <b>Category of healthcare provider</b>  |            |                |
| Clinical managers                       | 89         | 58.6           |
| Non-clinical managers                   | 63         | 41.4           |

*Source:* Author's Field Survey, 2013

<sup>10</sup> Socio-demographic and background characteristics that were already captured in Chapter five have been excluded here to avoid repetition.

### 6.3 Perceptions of Quality between Healthcare Providers and Patients

Independent sample t-test was used to compare differences in perceptions of quality of care between the providers and patients. The justification for t-tests and the assumptions underlying the use of t-tests has been discussed in section 4.8.5 and 5.4.1 respectively (pages 116 and 138).

**Table 6.2: Perceived Quality of Care between Patients and Healthcare Providers**

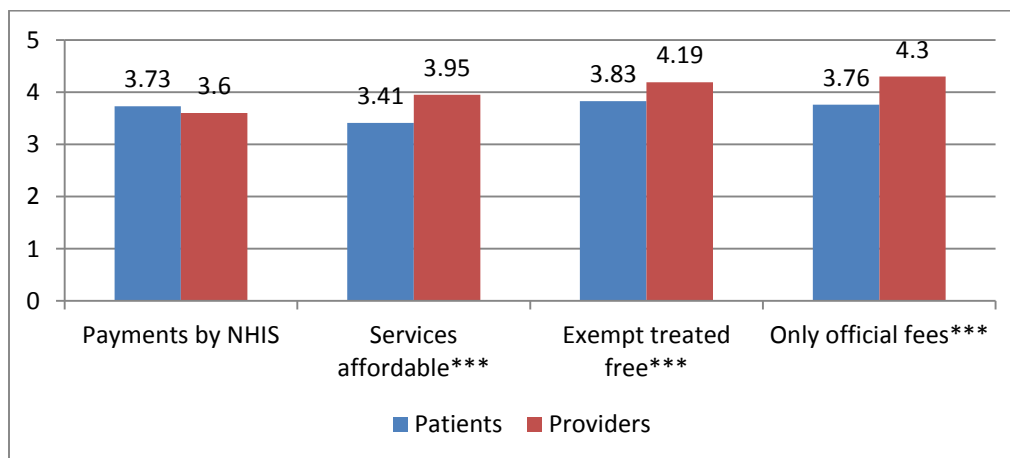
| Quality Indicators         | Patients |      |       | Providers |      |       | t-test | df  | p-value | Eta Sq. |
|----------------------------|----------|------|-------|-----------|------|-------|--------|-----|---------|---------|
|                            | N        | Mean | SD    | N         | Mean | SD    |        |     |         |         |
| <b>Financial access</b>    |          |      |       |           |      |       |        |     |         |         |
| Payments by NHIS           | 794      | 3.73 | 1.179 | 149       | 3.60 | 1.268 | 1.262  | 941 | .207    | 0.002   |
| Services affordable        | 798      | 3.41 | 1.166 | 151       | 3.95 | .897  | -6.486 | 256 | .000    | 0.043   |
| Exempt treated free        | 786      | 3.83 | 1.098 | 150       | 4.19 | 1.161 | -3.642 | 934 | .000    | 0.014   |
| Only official fees         | 804      | 3.76 | 1.122 | 151       | 4.30 | .987  | -6.044 | 229 | .000    | 0.037   |
| <b>Fairness of care</b>    |          |      |       |           |      |       |        |     |         |         |
| Fairness to all            | 808      | 3.43 | 1.348 | 152       | 4.60 | .590  | 17.341 | 503 | .000    | 0.239   |
| Same quality drugs         | 809      | 3.38 | 1.329 | 152       | 4.50 | .789  | 14.158 | 337 | .000    | 0.173   |
| First-come-first-served    | 813      | 3.94 | 1.314 | 150       | 4.09 | 1.023 | -1.553 | 249 | .122    | 0.003   |
| Very ill treated first     | 809      | 4.24 | 1.132 | 152       | 4.66 | .650  | -6.390 | 350 | .000    | 0.041   |
| <b>Adequacy of res.</b>    |          |      |       |           |      |       |        |     |         |         |
| Doctors sufficient         | 816      | 2.83 | 1.301 | 149       | 2.60 | 1.288 | 1.970  | 963 | .049    | 0.004   |
| Supplies sufficient        | 813      | 3.11 | 1.147 | 150       | 2.84 | 1.199 | 2.613  | 961 | .009    | 0.007   |
| Rooms sufficient           | 811      | 3.24 | 1.303 | 151       | 3.17 | 1.163 | .712   | 226 | .477    | 0.001   |
| Waiting time reason.       | 811      | 2.81 | 1.352 | 149       | 3.46 | .983  | -6.959 | 262 | .000    | 0.048   |
| Drugs available            | 810      | 3.30 | 1.262 | 150       | 3.05 | 1.086 | 2.526  | 230 | .012    | 0.007   |
| <b>Effective treatment</b> |          |      |       |           |      |       |        |     |         |         |
| Hospital is neat           | 813      | 4.25 | 0.775 | 145       | 4.08 | 0.777 | 2.457  | 956 | .014    | 0.006   |
| Staff are neat             | 814      | 4.36 | 0.677 | 152       | 4.34 | 0.662 | .341   | 964 | .733    | 0.000   |
| Pharmacy instructions      | 806      | 4.54 | 0.644 | 151       | 4.32 | 0.744 | 3.757  | 955 | .000    | 0.015   |
| Treatment effective        | 813      | 4.09 | 0.86  | 152       | 4.26 | 0.648 | -2.819 | 261 | .005    | 0.008   |
| Quality drugs              | 808      | 3.95 | 0.902 | 151       | 4.46 | 0.609 | -8.724 | 289 | .000    | 0.074   |
| <b>Technical care</b>      |          |      |       |           |      |       |        |     |         |         |
| Tells diagnosis            | 813      | 3.35 | 1.472 | 150       | 3.93 | 0.928 | -6.286 | 307 | .000    | 0.039   |
| Physical exam.             | 814      | 3.87 | 1.287 | 151       | 4.19 | 0.822 | -4.023 | 306 | .000    | 0.017   |
| Lab and other tests        | 813      | 3.83 | 1.303 | 149       | 4.19 | 0.817 | -4.414 | 306 | .000    | 0.020   |
| Patients involved          | 813      | 3.69 | 1.289 | 150       | 4.03 | 0.862 | -4.073 | 288 | .000    | 0.017   |
| <b>Interpersonal care</b>  |          |      |       |           |      |       |        |     |         |         |
| Compassion & sup.          | 817      | 4.12 | 0.951 | 151       | 4.28 | 0.624 | -2.628 | 297 | .009    | 0.007   |
| Polite & respectful        | 817      | 4.15 | 0.962 | 152       | 4.11 | 0.642 | .651   | 294 | .515    | 0.000   |

Source: Author's Field Survey, 2013

As shown in Table 6.2 under financial access to care, there was no significant difference between the two categories of respondents with respect to all payments being made by the NHIS. Both

categories of respondents however, gave a fairly favourable rating that health insurance paid for the cost of all services provided to patients in the hospital (Patients:  $M=3.73$ ,  $SD=1.179$ ; Providers:  $M=3.60$ ,  $SD=1.268$ ;  $t(941) = 1.262$ ,  $p = .207$ , two-tailed), and also that costs of services are affordable, (Patients:  $M=3.41$ ,  $SD=1.166$ ; Providers:  $M=3.95$ ,  $SD=.897$ ;  $t(256) = -6.486$ ,  $p = 001$ , two-tailed). On treating exempted patients free of charge, whereas patients gave a fairly favourable response, providers gave a favourable response. There was a significant difference in the responses between the two groups of respondents (Patients:  $M=3.83$ ,  $SD=1.098$ ; Providers:  $M=4.19$ ,  $SD=1.161$ ;  $t(934) = -3.642$ ,  $p = 001$ , two-tailed). Similarly, regarding payment of unofficial fees, whereas patients gave a fairly favourable response, providers gave a favourable response. There was a significant difference in the responses between the two groups of respondents (Patients:  $M=3.76$ ,  $SD=1.122$ ; Providers:  $M=4.30$ ,  $SD=.987$ ;  $t(229) = -6.044$ ,  $p = 001$ , two-tailed). For all the indicators of financial access that show a significant difference between patients and providers, the eta squared values indicate a small effect size (see Table 6.2, page 209). Figure 6.1 is a graphical presentation of the mean differences between patients and providers in terms of financial access to care.

**Figure 6.1: Financial Access to Care**



\*\*\*= $p < .001$ ; \*\*= $p < .01$ ; \*= $p < .05$

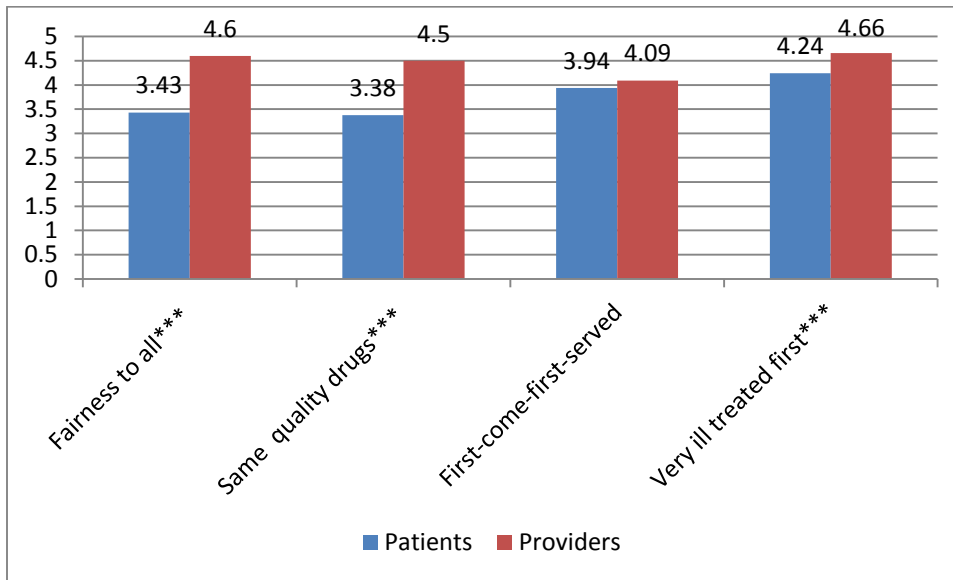
*Source:* Author's Field Survey, 2013

Figure 6.1 indicates that both patients and healthcare providers rate the indicators 'All payments are made by the NHIS' and 'Cost of services is affordable' fairly favourably. However, with respect to 'Exempted patients are treated free of charge' and 'Only official fees are paid for services provided', patients rated these fairly favourably, whereas providers rated them favourably. Figure 6.1 also indicates that apart from the indicator 'all payments made by NHIS', there is a significant difference between patients and providers in the rest of the indicators for financial access to care.

Concerning the dimension of fairness of care, whereas patients gave a fairly favourable response in the first indicator of being fair to all patients, providers gave a favourable response. There was a significant difference in the responses between the two groups of respondents (Patients:  $M=3.43$ ,  $SD=1.348$ ; Providers:  $M=4.60$ ,  $SD=.590$ ;  $t(503) = -17.341$ ,  $p = .001$ , two-tailed). The eta squared value indicates a large effect size (eta squared = 0.24). Similarly, regarding patients given same quality care regardless of insurance status, patients gave a fairly favourable response, whereas providers gave a favourable response. There was a significant difference in the responses between the two groups of respondents (see Table 6.2, page 209). The eta squared value also indicates a large effect size (eta squared=0.17). Regarding patients treated based on first-come-first-served basis, patients gave a fairly favourable response, whereas providers gave a favourable response. There was however, no significant differences in the responses of the two groups (see Table 6.2, page 209). On the very seriously ill being treated first, both categories of respondents gave a favourable response, however healthcare providers responded more favourably. There was a significant difference between the two groups of respondents (see Table 6.2, page 209). However, the eta squared value indicates a small effect size (eta squared=0.04).

Figure 6.2 is a graphical presentation of the mean differences between patients and providers in terms of fairness of care.

**Figure 6.2: Fairness of care**



\*\*\*= $p < .001$ ; \*\*= $p < .01$ ; \*= $p < .05$

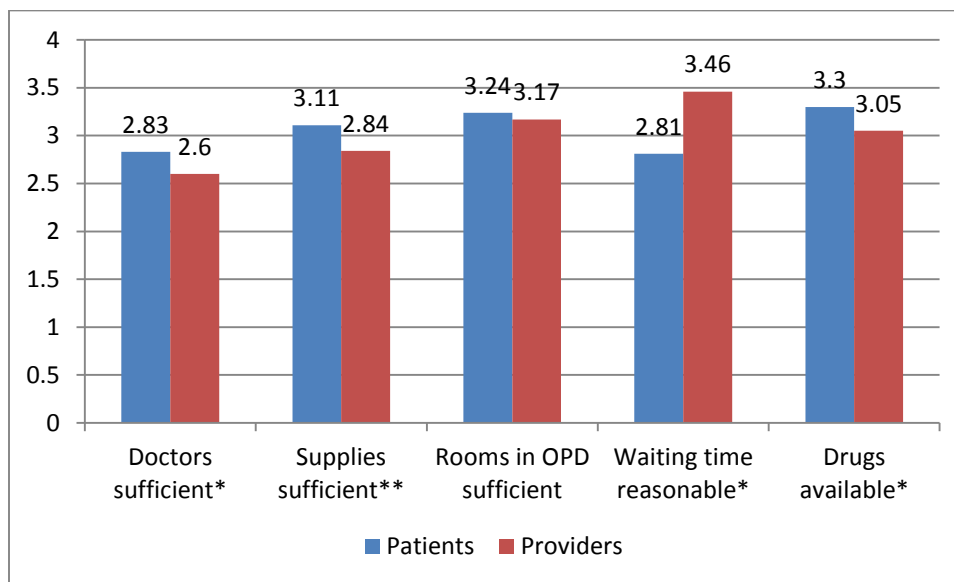
Source: Author's Field Survey, 2013

Figure 6.2 shows that patients rated all indicators of fairness of care fairly favourably, except 'very ill patients are treated first' which patients rated favourably. On the other hand, providers rated all indicators favourably. Figure 6.2 also shows that there was a significant difference between patients and providers in all indicators of fairness of care, except patients being treated on first-come-first-served basis, where there was no significant difference between patients and providers.

With respect to the dimension of adequacy of resources and services, both categories of patients expressed unfavourable opinions about adequacy of doctors (Patients:  $M=2.83$ ,  $SD=1.30$ ; Providers:  $M=2.60$ ,  $SD=1.28$ ;  $t(963) = 1.970$ ,  $p = 0.049$ , two-tailed). Concerning sufficiency of supplies, patients responded fairly favourably, whereas providers responded unfavourably that

supplies are sufficient. Regarding rooms being sufficient in the OPD, both categories of respondents responded fairly favourably that rooms were sufficient. The same applies to availability of drugs (see Table 6.2, page 209). However, on waiting time being reasonable, patients responded unfavourably, while providers responded favourably (see Table 6.2, page 209). There was a significant difference between the patients and providers in all indicators of adequacy of resources and services, except rooms being sufficient. However, the eta squared values indicate a small effect size (see Table 6.2, page 209). Figure 6.3 is a graphical presentation of the mean differences between patients and providers in terms of adequacy of resources and services.

**Figure 6.3: Adequacy of resources and services**



\*\*\*= $p < .001$ ; \*\*= $p < .01$ ; \*= $p < .05$

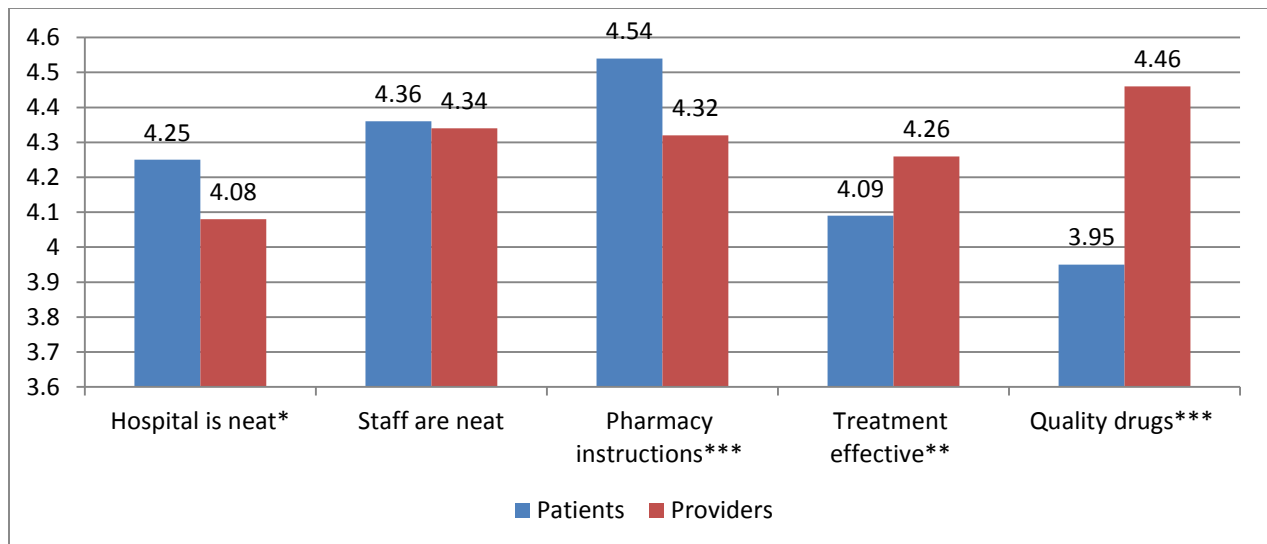
Source: Author's Field Survey, 2013

Figure 6.3 shows that patients rated doctors being sufficient and waiting time being reasonable unfavourably, but all other indicators of adequacy of resources and services were rated fairly favourably. On the other hand, providers rated doctors being sufficient and equipment and supplies being sufficient unfavourably, but all other indicators were rated fairly favourably. Figure 6.3 also

shows that there was a significant difference between patients and providers in all indicators of adequacy of resources and services, except rooms in OPD being sufficient.

On neatness and effectiveness of treatment, both patients and providers gave favourable ratings on all indicators except quality of drugs where patients gave a fairly favourable rating, whereas providers gave a favourable rating (see Table 6.2, page 209). There was a significant difference between patients and healthcare providers on all, except the indicator on neatness of staff. However, the eta squared values indicated a small effect size except quality of drugs where there was a moderate effect (see Table 6.2, page 209). Figure 6.4 is a graphical presentation of the mean differences between patients and providers in terms of neatness and effectiveness of treatment.

**Figure 6.4: Neatness and effectiveness of treatment**



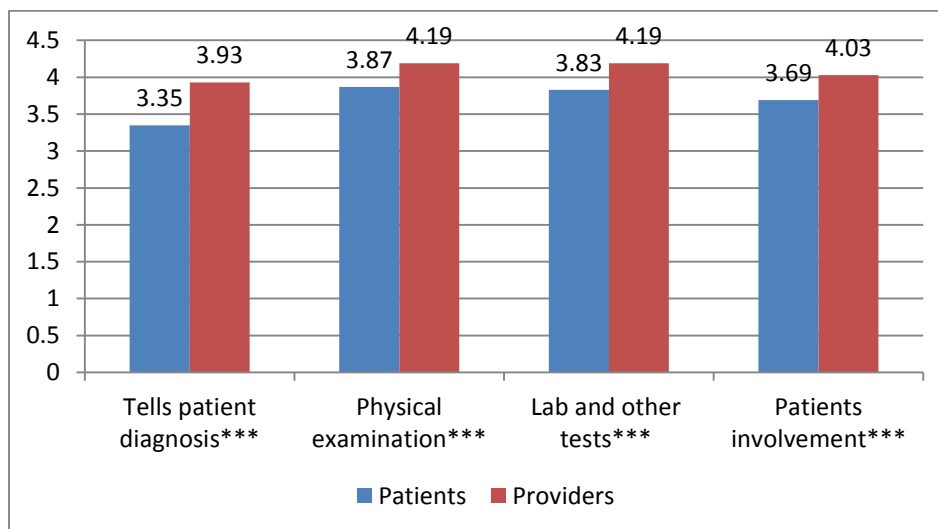
\*\*\*= $p < .001$ ; \*\*= $p < .01$ ; \*= $p < .05$

Source: Author's Field Survey, 2013

Figure 6.4 indicates that both patients and providers rated all indicators of neatness and effectiveness of treatment favourably, except quality drugs being prescribed, which patients rated fairly favourably. Figure 6.4 also showed that there was a significant difference between patients and providers in all indicators except staff being neat.

The study found that in all indicators of technical aspects of quality, patients responded fairly favourably. On the other hand providers responded favourably to all indicators of technical quality except telling patients the diagnosis of their diseases, where they responded fairly favourably (see Table 6.2, page 209). There was a significant difference between patients and providers in all indicators of quality. However, results of the eta square indicate a small effect size in all indicators (see Table 6.2, page 209). Figure 6.5 is a graphical presentation of the mean differences between patients and providers regarding technical aspects of care.

**Figure 6.5: Technical aspects of care**



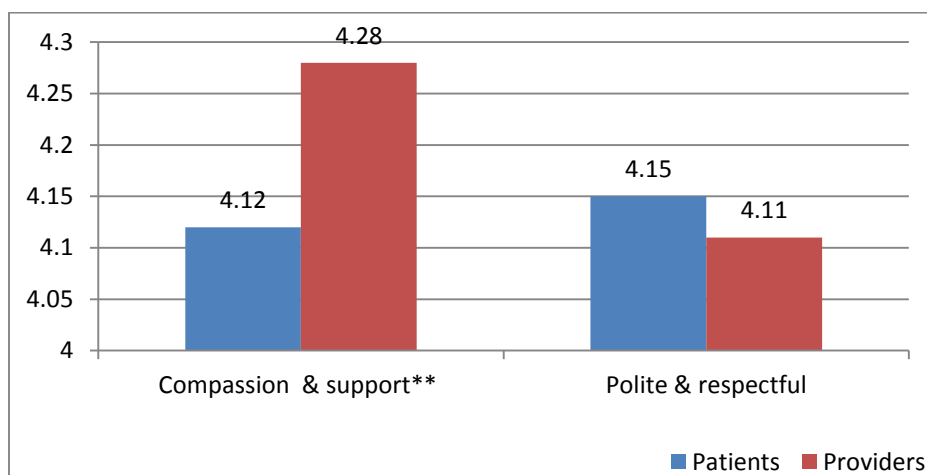
\*\*\*= $p < .001$ ; \*\*= $p < .01$ ; \*= $p < .05$

Source: Author's Field Survey, 2013

Figure 6.5 indicates that patients rated all indicators of technical aspects of care fairly favourably. On the other hand, providers rated all the indicators favourably, except telling patients the diagnosis of their illness, which was rated fairly favourably. Figure 6.5 indicates that there was a significant difference between patients and providers in all indicators of technical aspects of care.

Another important finding is patients' perceptions about interpersonal aspects of care. Both the patients and providers rated favourably, the interpersonal aspect of care in respect of compassion and support (Patients:  $M=4.12$ ,  $SD=.951$ ; Providers:  $M=4.28$ ,  $SD=0.624$ ;  $t(297) = -2.628$ ,  $p = 0.009$ , two-tailed), as well as staff politeness and respect (Patients:  $M=4.15$ ,  $SD=.962$ ; Providers:  $M=4.11$ ,  $SD=0.642$ ;  $t(294) = .651$ ,  $p = 0.515$ , two-tailed). There was a significant difference between patients and providers in respect of compassion and support. However, the eta square value indicates that the effect size was small (see Table 6.2, page 209). On the other hand, there was no significant difference between patients and providers in respect of politeness and respectfulness. Figure 6.6 is a graphical presentation of the mean differences between patients and providers regarding interpersonal aspects of care.

**Figure 6.6: Interpersonal aspects of care**



\*\*\*= $p < .001$ ; \*\*= $p < .01$ ; \*= $p < .05$

Source: Author's Field Survey, 2013

Figure 6.6 indicates that both patients and providers rated both indicators of interpersonal aspects of care favourably. Figure 6.6 indicates that there was a significant difference in perceptions of interpersonal aspects of care between patients and providers regarding providers showing compassion and support to patients, but there was no significant difference regarding providers

being polite and respectful to patients. Table 6.3 presents results of total and overall perception of quality of care by patients and healthcare providers.

**Table 6.3: Total and overall perceived quality of care by patients and providers**

| Quality Dimensions | Patients |       |        | Providers |       |        | t-test | df  | p-value | Eta Sq. |
|--------------------|----------|-------|--------|-----------|-------|--------|--------|-----|---------|---------|
|                    | N        | Mean  | SD     | N         | Mean  | SD     |        |     |         |         |
| Financial          | 765      | 14.72 | 3.318  | 148       | 16.04 | 2.802  | -5.100 | 234 | .000    | 0.03    |
| Fairness           | 800      | 14.97 | 3.718  | 150       | 17.86 | 2.095  | 13.413 | 354 | .000    | 0.16    |
| Adequacy           | 798      | 15.31 | 4.369  | 142       | 15.08 | 4.252  | .558   | 938 | .577    | 0.00    |
| Effectiveness      | 794      | 21.23 | 2.543  | 143       | 21.48 | 2.316  | -1.089 | 935 | .277    | 0.00    |
| Technical          | 802      | 14.75 | 3.573  | 146       | 16.32 | 2.572  | -6.317 | 259 | .000    | 0.04    |
| Interpersonal      | 816      | 8.26  | 1.775  | 151       | 8.39  | 1.131  | -1.146 | 306 | .253    | 0.00    |
| <b>Overall</b>     | 723      | 89.11 | 11.457 | 124       | 94.60 | 10.922 | -4.956 | 845 | .000    | 0.03    |

Source: Author's Field Survey, 2013

The results from Table 6.3 show that in respect of total financial access, patients' responses were fairly favourable as the mean ratings of 14.72 for patients are within the range of 12.01 to 16. Responses of providers on the other hand, were favourable. There was a significant difference between the patients and providers. The rating of the providers were more favourable compared with the patients (Patients: M=14.72, SD=3.318; Providers: M=16.04, SD=2.802;  $t(234) = -5.100$ ,  $p < .001$ , two-tailed). However, the eta squared results for total financial access was .03, indicating only a small effect size on the difference between the patients and providers.

Regarding total fairness of care, patients responses were fairly favourable, since the mean rating of 14.97 is within the range of 12.01 to 16. However, with a mean rating of 17.86, the providers rated total fairness of care favourably, since this is within the range of 16.01 to 20. There was a significant difference between patients and providers in their total perceptions of fairness of care (Patients: M=14.97, SD=3.718; Providers: M=17.86, SD=2.095;  $t(354) = -13.413$ ,  $p < .001$ , two-tailed). The eta squared results for total fairness of care was .16, indicating a large effect size on the difference between the perceptions of patients and providers.

With regard to total adequacy of resources and services, both categories of respondents gave fairly favourable responses since the respective mean ratings of 15.31 and 15.08 are within the range of 15.01 to 20. There was however, no significant difference between the patients and providers on adequacy of resources and services (see Table 6.2, page 209).

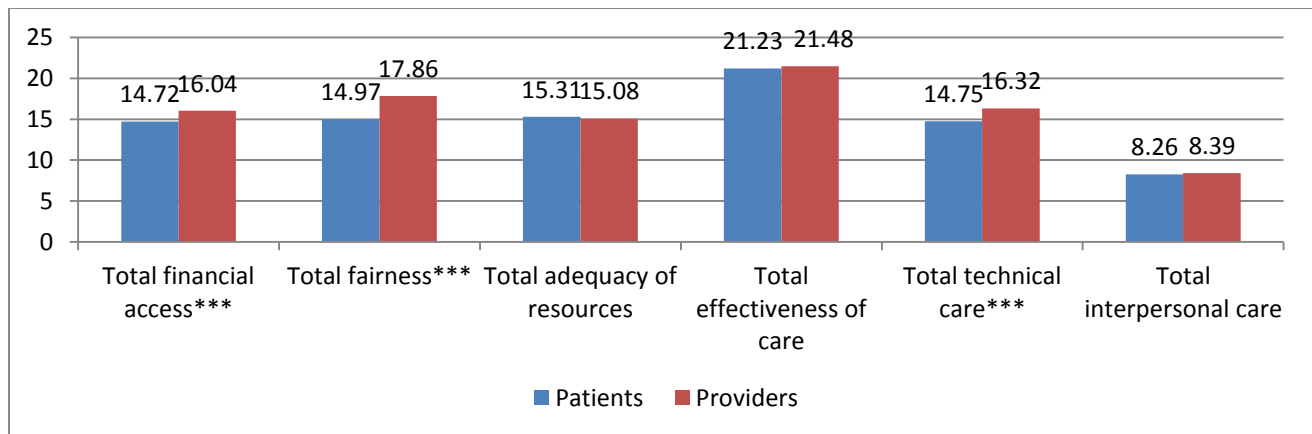
The study further found that respondents were favourable regarding total neatness of hospital and staff and neatness and effectiveness of treatment. The mean ratings were 21.23 and 21.48 for patients and providers respectively, which was within the favourable range of 20.01 to 25. However, there was no significant difference in perceptions of quality between patients and providers.

On total technical aspects of care, the study found that whereas patients expressed a fairly favourable opinion on it, with a mean rating of 14.75, providers expressed a favourable opinion with a mean rating of 16.32. There was a significant difference in perceptions of technical quality between the patients and providers (Patients:  $M=14.75$ ,  $SD=3.573$ ; Providers:  $M=16.32$ ,  $SD=2.572$ ;  $t(259)=-6.317$ ,  $p < 001$ , two-tailed). The eta squared results for total technical quality of care was .04, indicating a small effect size on the difference between the perceptions of patients and providers.

Concerning interpersonal aspects of care, the study found that respondents had a favourable opinion about it as the mean ratings of 8.26 and 8.39 respectively, for patients and providers, were within the favourable range of 8.01 to 10. There was however, no significant difference in perceptions of interpersonal quality between patients and providers.

Finally, regarding the overall perception of quality, the study found that both the patients and providers had a fairly favourable opinion on it. The mean ratings for the two categories of patients were 89.11 and 94.60 respectively, which was within the fairly favourable mean range of 72.01 to 96. There was a significant difference in the overall perception of quality of care between patients and providers (Patients:  $M=89.11$ ,  $SD=11.457$ ; Providers:  $M=94.60$ ,  $SD=10.922$ ;  $t(845) = -4.956$ ,  $p < .001$ , two-tailed). The eta squared results for overall perception of quality of care was .03, indicating a small effect size on the difference between the perceptions of patients and providers. Figure 6.7 is a graphical presentation of the total mean perceptions of quality of care by patients for the various dimensions of quality of care.

**Figure 6.7: Total perceived quality of care by patients and providers**



\*\*\*= $p < .001$ ; \*\*= $p < .01$ ; \*= $p < .05$

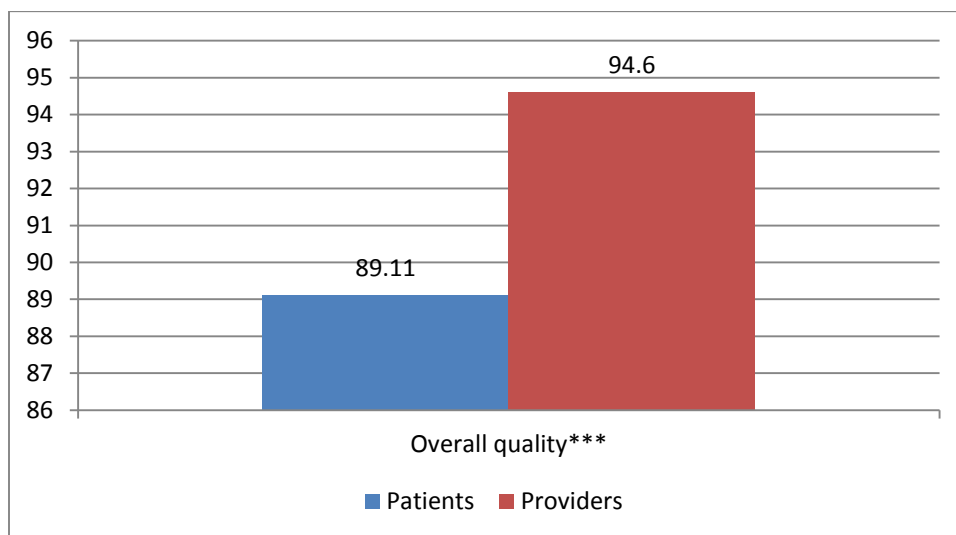
Source: Author's Field Survey, 2013

In Figure 6.7, the results show that patients rated total financial access, total fairness, total adequacy of resources and services, and total technical aspects of care fairly favourably. However, they rated total effectiveness of care and total interpersonal aspects of care favourably. On the other hand, providers rated all dimensions of care favourably, except total adequacy of resources and services, which they rated fairly favourably. There was a significant difference between

patients and healthcare providers in respect of total financial access, total fairness of care, and total technical aspects of care. However, there was no significant difference between the two categories of respondents in respect of total adequacy of resources and services, total neatness and effectiveness of treatment, and total interpersonal aspects of care.

Figure 6.8 is a graphical presentation of the overall mean perception of quality of care by patients and healthcare providers for the various dimensions of quality of care.

**Figure 6.8: Overall perceived quality of care by patients and providers**



\*\*\*= $p < .001$ ; \*\*= $p < .01$ ; \*= $p < .05$

Source: Author's Field Survey, 2013

Figure 6.8 shows that both the patients and providers had a fairly favourable opinion on overall perception of quality of care. Figure 6.8 also shows that there was a significant difference between patients and providers regarding overall perceptions of quality of care.

In a nutshell, there was a significant difference between patients and providers in all indicators of quality of care under the various dimensions except payments being made by the NHIS, under the dimension of financial access to care; first-come-first-served under fairness of care dimension;

rooms being sufficient under adequacy of resources and services; staff being neat under neatness and effectiveness of treatment; and staff being polite under interpersonal aspects of care.

In terms of the level of quality of care, whereas patients rated 7(29%) of all the 24 indicators of quality of care favourably, providers rated 16 (67%) of the indicators favourably. Both patients and providers responded unfavourably to 2 (8%) of the 24 indicators of the quality of care scale. Whereas patients rated 15 (63%) indicators of quality of care fairly favourably, providers rated 6(25%) of the indicators fairly favourably.

Regarding total perceptions of quality for the various dimensions of quality of care, there was a significant difference between patients and healthcare providers with respect to financial access to care, fairness of care, technical aspects of care, and overall quality of care. There was however, no significant difference between patients and providers with respect to total adequacy of resources and services, total neatness and effectiveness of treatment, and total interpersonal aspects of care. Concerning the level of quality of care, whereas patients responded fairly favourably to five dimensions of quality of care; providers rated one dimension fairly favourably. Also, whereas patients rated only two dimensions favourably, providers on the other hand responded favourably to five dimensions of total quality of care. Overall, both patients and providers rated quality of care fairly favourably.

## 6.4 Discussion of Findings

### 6.4.1 Evaluation of the Third Hypothesis

The third research hypothesis was as follows: **H<sub>3</sub>**: *There is a significant difference in perceptions of quality of care between patients and healthcare providers.*

At a significance level of .05, the results of the overall quality of care indicate that indeed, there is a significant difference in perceptions of quality of care between patients and healthcare providers.

The study fails to accept the null hypothesis that: *There is no significant difference in perceptions of quality of care between patients and healthcare providers.* The research hypothesis is therefore retained, and the null hypothesis is rejected. This implies that consistent with empirical evidence, the results of this study reveal that overall, there is a significant difference in perceptions of quality of care between the patients and healthcare providers. However, results of the individual indicators and dimensions of quality of care indicate that few of them did not show any significant difference in perceptions of quality of care between patients and healthcare providers, but majority of the indicators show wide disparities between patients and healthcare providers. The wide disparities between patient and provider ratings of quality of care suggest that while patients may be having some quality of care concerns in many areas of health care delivery, thus rating them fairly favourably, providers do not seem to recognize or acknowledge these quality gaps by patients, thus rather rating many of them favourably. These conclusions are consistent with findings by Rohinin and Mahadevappa (2006), who studied management perceptions about patient expectations of service quality in Bangalore hospitals. They found six out of 22 items on which managements underestimate customers' expectations. Also, Silvestro (2005) conducted a comparative study of patient and staff perceptions of quality in UK. It was found that managers, who had least patient contact, were the most out of touch with patient priorities, believing that access was the most important factor for patients, when in fact it was the factor with the lowest rating and, conversely,

that integrity was the least important of the factors, when in fact it was one of the most important factors to both patient groups. In terms of perceptions, the study found that all the staff believed patients' perceptions of service to be lower than they actually were.

These conclusions therefore confirm the theoretical postulations by Parasuramal *et al.* (1985) that there could be a gap between management perceptions of quality needs of patients, and patients' expectations of what they consider as quality care.

Findings of the current study should however be interpreted with caution, considering that some of the management members are non-clinical, such as accounts and general administration staff, others are clinical, such as doctors and staff in charge of clinical departments such as laboratory and pharmacy. The non-clinical management members may be more detached from direct contact, and this could result in a wider gap between their perceptions and patients' expectations of quality care. On the other hand, the clinical managers are directly in touch with patients and therefore are in a better position to appreciate patients' perceptions of quality of care. It is therefore expected that the gap between clinical managements' perceptions and patients' expectations of quality care should be narrower. Notwithstanding this argument, however, a number of factors may work together to make the gap between the clinical managements' perceptions and patients' expectations of quality care also wide. Some of the suggestions provided by patients highlight some of these factors that could serve to widen the gap. Under technical aspects of care (see 7.2.7, page 228), respondents indicated that "*Doctors should involve patients in health matters concerning them*", and that "*Patients should be considered as human beings with the ability to decide*". Others are: "*The use of interpretation is an intrusion of our privacy*", "*Doctors should ask a lot of questions*

*to know what exactly is wrong with patients before medical treatment”, and “Feedback about patient’s tests and diagnosis should be communicated to patients”.*

Under interpersonal aspects of care some of the suggestions were:

*“Staff should ensure equality of social status, they should not look down on people”; “Good interpersonal relationship between health workers and patients should be encouraged”; “Human relations between staff and patients should be improved”; “The attitude of some nurses is very bad, they shout at patients”; and “They should let their relationship with patients be more cordial than it is now so that patients will feel free to disclose any problem concerning their health to them without fear or shyness”*

These concerns of patients, which largely border on communication between staff and patients, and negative staff attitude towards patients, have the potential to widen the gap between providers’ perceptions of patients’ expectations of quality of care. Thus, in spite of the favourable rating of interpersonal relationship by both patients and healthcare providers, the qualitative findings seem to suggest that it remains a problem in Ghana’s efforts to provide quality health service delivery. Senah (2002, cited in Kotoh, 2013) observed that practicing and assessing biomedicine is embedded in and influenced by master-servant relationship where patients must submit to the authority of health providers. However, both healthcare providers and patients rated adequacy of doctors unfavourably. This shows the seriousness of this problem as discussed earlier (see section 5.4.3, page 157). Another area of concern was adequacy of equipment and supplies. Whereas patients rated this indicator fairly favourably, providers rated it unfavourably. Lack of logistics and supplies has been a major finding of previous studies in Ghana (GHS, 2007; NDPC, 2009).

Further evidence indicating that both categories of respondents acknowledge the problem of inadequacy of equipment and supplies were the suggestions they provided for more equipment and supplies to be made available to health facilities for efficient health service delivery (see sections 7.2.3 and 7.3.2, pages 230 and 237).

Another area of concern to both categories of respondents was waiting time. Whereas providers rated waiting time fairly favourably, staff rated it unfavourably. The nagging issue of waiting time has been discussed earlier (see section 5.4.3, page 157).

Some quality indicators were rated fairly favourably by both providers and patients. It could be argued that since generally, providers seem to have the tendency to rate the quality of care indicators favourably, a fairly favourable rating of any indicator by providers probably suggests a serious problem. This implies that providers, like patients, do not fully agree that NHIS pays for all treatment; that cost of services are affordable; that rooms in the OPD are adequate; that drugs for all diseases are available; and that patients are told what is wrong with them.

## **6.5 Chapter Summary**

This chapter presented results and discussion of perceptions of quality of care between patients and healthcare providers. There were significant gaps in perceptions of quality between patients and healthcare providers. The latter generally rate quality of care favourably, while the former generally rate it fairly favourably. The findings suggest that in many situations, patients may be having quality of care concerns that are either not recognized, or not given priority by service providers. There were however, areas of consensus regarding perceptions of quality of care

between providers and patients. These areas relate to interpersonal aspects of care and neatness and effectiveness of care, which were given favourable ratings; and adequacy of rooms, availability of drugs on the spot, and telling patients the diagnosis of their illness, which were given fairly favourable rating. In spite of the favourable rating of the interpersonal aspects of care, however, there was evidence to suggest that some staff exhibit poor attitude towards patients. The study also found areas of quality that need serious attention, as acknowledged by both providers and patients. These included inadequacy of doctors, and inadequacy of medical equipment and supplies. Further studies are required to identify the reasons for the quality gaps between patients and health service providers. Further studies are also needed to reconcile the apparent paradox of favourable interpersonal rating in the midst of poor staff attitude.

## **CHAPTER SEVEN**

### **7.0 IMPROVING QUALITY OF CARE IN GHANA'S HOSPITALS**

#### **7.1 Introduction**

This chapter presents the results of suggestions provided by respondents to improve quality of care in hospitals. These suggestions were based on a qualitative response by individual respondents to an item of the questionnaire used in data collection (see Appendix 1, page 291) For convenience, the suggestions were categorized according to the various dimensions of quality of care where appropriate. However, other suggestions that could not fit into the known quality dimensions were either given a new and separate dimension or discussed under other suggestions. Not every suggestion was necessarily taken into consideration. To avoid developing numerous dimensions of quality of care, it was arbitrarily decided, having taken a global view of the data, that a suggestion must be recurrent for at least four times to be included in a dimension. For convenience, the dimension of adequacy of resources and services was split into two in the case of patients. These were adequacy of resources and promptness of services. Suggestions of patients were not distinguished according to insurance status. This is because the responses by insured and uninsured patients were similar. However, patients' suggestions were presented separately from those of healthcare providers.

#### **7.2 Improving Quality of Care: Patients' views**

##### **7.2.1 Financial Access to Care**

The suggestions provided by patients under financial access to care could be categorized into costs of health services and the effective role of the NHIS. On costs of health services patients were

generally concerned about the high costs of medicines and services, especially to uninsured patients. Some of the main concerns were as follows:

*“Cost of drugs should be reduced”*

*“Something should be done about the cost of medical care, it is expensive”*

*“Cost of treatment for uninsured patients should be subsidized”*

*“People who are uninsured and do not have money to pay for services in the hospital when sick should be cared for so they can be given time to pay back later”*

Regarding the effective role of the NHIS, patients were generally worried about buying drugs outside the health facility in spite of being members of the NHIS; the sustainability of the NHIS; the cost of premium; delays in issuing NHIS card to new members; limited scope of NHIS in respect of medicines and diseases covered; and delay in reimbursing health facilities to ensure quality health service delivery. Some of the key suggestions were as follows:

*“Doctors should stop writing drugs for patients to buy and push the NHIS to buy them for patients”*

*“We are not on ‘cash- and-carry’ yet we have to go outside to buy certain drugs”*

*“NHIS does not cover all the drugs prescribed for patients and something should be done about it”*

*“NHIS doesn't cover all types of sicknesses. This should be reconsidered because that may be my only sickness”*

*“Some exempted diseases like prostate cancer should be involved in the NHIS”*

*“Efforts must be made to sustain the NHIS because it is a relief to the poor and vulnerable people”*

*“Health insurance premium is high and should be reduced”*

*“It is difficult getting your NHIS card even after paying. The waiting time is too long”*

*“An NHIS renewal centre should be provided in hospitals for NHIS members to renew their membership”*

### **7.2.2 Fairness of Care**

Under the fairness dimension of quality of care, respondents’ suggestions were predominantly dwelling on eliminating discrimination between the insured and uninsured or eliminating preferential treatment in favour of staff relatives, ensuring fairness during the treatment process, and providing special attention to vulnerable patients. The following were some of the suggestions made by respondents:

*“Staff should be discouraged from discriminating between insured and uninsured patients”*

*“When you don't have a relative who is a staff, you always have to suffer; therefore they should stop from this act”*

*“Patients should be treated on a first-come-first-served basis, because I have observed that staffs allow their friends and family to skip the queue”.*

*“Seriously ill patients should be given separate consulting room”.*

*“Kids and adults should be separated from each other so that the kids could be attended to first”*

*“Very poor people whether aged or not should be exempted and treated free of charge”*

### 7.2.3 Adequacy of Resources

Adequacy of resources seemed to be the issue of greatest concern to respondents because there were so many suggestions under this dimension of quality of care. The most prominent concern of respondents was the need to increase the number of health staff, especially doctors. Another major concern was the need to acquire more equipment, expand the hospital infrastructure, and ensure the availability of medicines always. The following were some of the key suggestions:

*“Add doctors to the only one doctor in this big hospital “*

*“Doctors should be increased and they should report to work early”*

*“Employ more doctors, some doctors often vacate their office for a long time”*

*“Increase the number of medical doctors to reduce the waiting period”*

*“Government should train more health workers”*

*“Increase number of doctors and nurses”*

*“More health personnel are needed “*

*“More Lab technicians are needed”*

*“Staff at dispensary should be increased to shorten waiting period”*

*“More hospital equipment and supplies must be purchased by the hospital”*

*“More laboratory equipment must be brought here so we don’t have to go outside to do more lab tests”*

*“Infrastructure of the hospital needs to be improved significantly “*

*“The hospital should be expanded as a result of increase in the number of patients who come”*

*“The waiting area of the OPD needs expansion to accommodate all patients”*

*“An additional dispensary is required in this hospital to ease congestion “*

*“More chairs should be provided at the OPD waiting area”*

*“More drugs should be provided to cater for all prescriptions”*

*“Drugs should be made readily available to patients”*

#### **7.2.4 Promptness of Services**

Closely related to adequacy of resources, respondents expressed concerns about the promptness of services. Most of the suggestions dwelt on reducing delays at various service delivery points, ready availability of drugs, continuous services all the time, and reporting early for duties. Some of the prominent suggestions included the following:

*“Patients spend too much time before seeing the doctor. This problem must be addressed”*

*“The hospital staff should always attend to patients promptly”*

*“The records department should help locate patient folders fast to speed treatment”*

*“Dispensary also delays and we stay in queues for far too long”*

*“All drugs should be made readily available to patients”*

*“The hospital authorities should always ensure that all drugs are available so that patients who come from afar will not have to go home and come back for drugs”*

*“Consulting should not be only weekdays, it should cover weekends”*

*“The doctors should work weekends because i suffered during weekend when i was brought here”*

*“Pharmacy should be working in the night”*

*“Staff should always come to work on time”*

*“The nurses and doctors should report early to attend to patients”*

### 7.2.5 Neatness and Effectiveness of Treatment

On the dimension of neatness and effectiveness of treatment, respondents were concerned with the need to improve upon the cleanliness and general sanitation of hospitals, the prescription practices of pharmacists, the competence of health personnel, and quality of medicines for effective treatment and cure. Some of the predominant suggestions were as follows:

*“Management should improve on overall sanitation of the hospital”*

*“The environment and waiting area should be well cleaned and done regularly”*

*“Cleanliness should be ensured in the gutters and washrooms”*

*“The washroom must be kept clean”*

*“Pharmacists should be careful when issuing medicine e.g. they issue wrong medicine to patients on several occasions”*

*“More experienced physicians should attend to patients rather than inexperienced ones”*

*“Quality doctors and nurses must be brought to work at the hospital”*

*“There should be provision of qualified doctors and well trained nurses to every hospital in order to improve quality health care to patients”*

*“Quality drugs must be provided for both insured and uninsured”*

*“They should give quality medication for quick recovery”*

*“They should take time to diagnose diseases presented before prescribing drugs”*

### **7.2.6 Special Care**

From suggestions provided by respondents, it emerged that there is need for special care to certain categories of patients considered vulnerable. These include children, pregnant women and the aged. Some of the key suggestions include the following:

*“Seriously ill patients, especially children should be treated first before processing documents”*

*“More attention should be given to the aged especially those who are weak and fragile”*

*“Aged and children should be treated differently from adults and young people”*

*“Dispensary for pregnant women should be separate from general one”*

### **7.2.7 Technical Aspects of Care**

On technical aspects of care, respondents dwelt more on involving patients in decisions concerning their treatment, respecting patients’ privacy, thorough history taking and diagnostic investigations, and convenient processes of treatment. Some of the suggestions were as follows:

*“Doctors should involve patients in health matters concerning them”*

*“Patients should be considered as humans beings with the ability to decide”*

*“The use of interpretation is an intrusion of our privacy”*

*“Doctors should ask a lot of questions to know what exactly is wrong with patients before medical treatment”*

*“Feedback about patient’s tests and diagnosis should be communicated to patients “*

*“Treatment must be based on laboratory and diagnostic tests”*

*“When patients are referred to the lab, X-ray and so on when you come back you have to join queue again, that should be looked at”*

In summary, respondents emphasized the need to involve patients in their treatment, thorough medical examination and ensuring privacy.

### **7.2.8 Interpersonal Aspects of Care**

Under interpersonal aspects of care, respondents emphasized the need for proper reception and directions to the respective service areas, respect for patients, tolerance by health workers and politeness in speech. Some of the main suggestions were as follows:

*“New patients find it difficult to access the hospital without directions, hence both written and picture directions should be provided”*

*“There should be someone around to direct the patients who come to ensure orderliness”*

*“Staff should ensure equality of social status they should not look down on people”*

*“Good interpersonal relationship between health workers and patients should be encouraged”*

*“Human relations between staff and patients should be improved”*

*“Nurses and other staff should exercise patience with clients”*

*“Nurses must be talked to some of the nurses are not receptive”*

*“Some of the nurses must be advised on how to deal with patients especially when pregnant women are in labour”*

*“The attitude of some nurses is very bad, they shout at patients”*

*“They should always comfort patients instead of shouting at them”*

*“They should be more client friendly”*

*“They should let their relationship with patients be more cordial than it is now so that patients will feel free to disclose any problem concerning their health to them without fear or shyness”*

*“Workers of the hospital must be more compassionate and receptive when there are more patients”*

*“Young nurses should know how to talk to patients, they are disrespectful”*

### **7.2.9 Other quality expectations**

Respondents made other suggestions which are put together under other quality expectations. Some of these were calls for doctors to stop going on strikes, the need for food canteens in hospitals, the need for provision of specialized services such as dermatological services, the need for close supervision of staff, patient education, and control of noise at the OPD. The key ones include the following:

*“Government should ensure doctors don't go on strike again”*

*“Access to cars to the facility is very difficult; a taxi system should operate here”*

*“The hospital roads are bad”*

*“No food is sold around the facility, a canteen should therefore be provided in this hospital like other hospitals”*

*“Other tests like skin/dermatological test should be established here”*

*“Supervision over nurses should be intensified because sometimes they are relaxed”*

*“There should be transfer of some personnel from time to time”*

*“Public education on health issues when we come to the hospital- issues on nutrition etc.”*

*“The hospital should conduct sensitization to surrounding communities about the routines of the hospital. This will prevent the mistakes committed by patients when they attend the hospital”*

*“They should get a way to reduce the noise level at the OPD and medications unit”*

### **7.2.10 Commendation**

To some respondents, the quality of care of the hospital was good and commendable. While some considered everything in the hospital to be good, others commended the effort of healthcare providers, but added that there was room for improvement. Some of the key commendations were as follows:

*“Everything is ok here”*

*“The staff should continue with the good work they are doing”*

*“They are good but not heard on radio so there should be adverts about them”*

*“They are doing their best but they can work harder”*

*“They should keep up good work and do better”*

## **7.3 Improving Quality of Care in Ghana’s Hospitals: Healthcare providers’ views**

### **7.3.1 Financial Access**

The predominant suggestions made by providers under financial access to health care were on prompt re-imburement of hospital bills by the NHIS. Other suggestions were for the NHIS to include high quality drugs, and patients should be educated to take receipts for payments made some of the key suggestions were as follows:

*“Prompt payment of claims to the facility by NHIS could enhance quality of care and improve access to the needs of the hospital”*

*“Re-imburement of claims must be prompt”*

*“NHIS should spread their scheme to cover high quality drugs”*

*“NHIS should cover important drugs”*

*“Patients should be educated to take receipt for every payment made”*

### **7.3.2 Adequacy of Resources and Services**

Respondents made some suggestions which could conveniently be classified under ‘adequacy of resources and services’. Under this dimension respondents’ views were predominantly on the need to employ more doctors, expand or refurbish the infrastructure, acquire more equipment and supplies, and provide convenient services to patients. Some of the key suggestions include the following:

*“More doctors should be employed”*

*“Posting of more specialist Doctors”*

*“More staff should be employed”*

*“More qualified staff should be posted here by government”*

*“More consulting rooms should be created”*

*“Government should assist with infrastructure”*

*“Total renovation of the hospital infrastructure”*

*“More space should be created in OPD”*

*“Better access roads to the hospital are needed”*

*“Acquisition of modern machines for the lab”*

*“Old equipment should be replaced with new ones”*

*“Ambulance is needed for the hospital”*

*“Regular supply of drugs and equipment to various units”*

*“Provide staff accommodation”*

*“Provide more nurses accommodation”*

*“Waiting time of patients at the OPD should be improved upon”*

*“Good and safe environment to patients”*

*“Introduce other services that are critical to patients”*

*“There should be a proper system for patients/clients complaints”*

### **7.3.3 Staff Training and Motivation**

Another area of concern expressed by healthcare providers was staff training and motivation. The major areas they wished could be improved are updating staff knowledge and skills through organizing more workshops and seminars, training staff on ethics and customer care, providing better remuneration and allowances, and special rewards for hard work. The following were some of the key suggestions:

*“Organize more workshops and seminars for workers”*

*“Continuous in-service training for staff”*

*“Train auxiliary staff on ethics and etiquettes”*

*“Training on customer care should be organized for staff”*

*“Better remuneration for staff”*

*“Best and serious staff members should be motivated”*

*“More allowances should be provided to improve services”*

### 7.3.4 Management

Management of hospitals was also an area of concern by respondents. Suggestions in this dimension dwelt on the need for supervision by the various levels of management, the need for team work, involving staff in decision-making, a call for change of management, peer-review, and the promotion of staff-community durbars. Some of the suggestions include the following:

*“Regular visit or supervision by the municipal director and the management members of the hospital is needed”*

*“Ensure effective supervision at all levels”*

*“There should be team work to enhance proper patients care”*

*“Staff should be united and work together as a team”*

*“Management Decision making should involve staff”*

*“Transfer the management team and bring new ones”*

*“Peer-review by other hospitals”*

*“Promote staff-community durbars”*

### 7.3.5 Commitment to work and discipline

Another dimension of quality of care respondents made suggestions for improvement was commitment to work and discipline. Suggestions under this dimension included the need for staff to be committed to their work, the need to ensure discipline and sanction staffs who misconduct themselves, the need to report for work early, treat patients promptly, and work efficiently. The following were some of the key suggestions:

*“Staff must be committed to work”*

*“Dedicated staff is what we need”*

*“Bad staff should be sanctioned”*

*“High staff discipline and morals should be maintained”*

*“Some staffs do not report for work on time”*

*“Prompt treatment should be given to patients”*

*“Every staff member of the hospital should carry out his/her duties in an efficient and effective manner”*

*“Hard work on the part of all staff”*

### **7.3.6 Attitudes towards Patients**

Another concern expressed by respondents was the need to improve attitudes towards patients.

Some of the suggestions were as follows:

*“Provision of tender love and care to patients”*

*“There should be proper staff relationship with patients”*

*“Respect for clients”*

*“Ensure patients’ privacy and confidentiality”*

*“Staff should be tolerant”*

### **7.3.7 Patient Education**

Finally, respondents were also of the view patient education must form part of routine health service delivery. Some of the suggestions were as follows:

*“There should be morning talk at the OPD about health issues”*

*“Patients should be educated on their condition and treatment options by all health workers”*

*“Patients should be educated on the do's and dont's of the hospital, especially about sanitation”*

#### **7.4 Discussion of Findings**

Regarding financial access to health care, whereas patients’ main concern was addressing the problem of affordability of the cost of health services and the elimination of out-of-pocket payments, healthcare providers’ main concern was prompt reimbursement for services rendered. The problem of affordability of the cost of health services is consistent with findings of earlier studies in Burkina Faso and Ghana (Baltussen & Ye, 2006b; Baltussen *et al.*, 2002; Turkson, 2009). The concern by healthcare providers regarding delays by NHIA to reimburse claims for services provided has been reported as one of the factors affecting quality of care in Ghana (SEND-Ghana, 2010). The exhortation by some providers for patients to ask for receipts after making payments seems to be an acknowledgement that some unofficial fees are being collected from patients in some hospitals. Even though Schieber *et al.* (2012), report that informal/unofficial payments in Ghana’s health facilities are uncommon, anecdotal evidence suggests that informal/unofficial payments exist. It is recommended that a thorough study be done on unofficial payments.

Eliminating discrimination, ensuring fairness to all categories of patients, and giving special attention to vulnerable patients were the main suggestions made by patients in respect of ensuring fairness of care to all categories of patients. Even though these suggestions by patients seem to give credence to empirical evidence of discrimination between insured and uninsured patients (Nguyen *et al.*, 2011; Devadasan *et al.*, 2011; Dalinjong & Laar, 2012), results of the quantitative

survey found no significant difference in perceptions of fairness of care between the insured and uninsured patients, in all indicators of fairness of care. On the contrary, both categories of patients rated fairness of care fairly favourably, except very ill patients being treated first (see Table 5.15, page 145). This suggests that both insured and uninsured patients may be mutually suspicious of some unfair treatment by healthcare providers in respect of fairness of care. On the other hand, no suggestion was made by healthcare providers regarding fairness of care, implying that providers seem to see nothing wrong with their own conduct in terms of fairness of care. It is therefore not surprising that all indicators of fairness of care were rated favourably by providers, whereas patients rated virtually all indicators fairly favourably.

Inadequacy of resources and services was an area of consensus by both patients and healthcare providers, as both groups suggested that there was the need for an increase in the numbers of health staff in order to cope with workload in the hospital. They also expected an improvement in availability of equipment and supplies, especially medicines, and expansion in infrastructure of the hospitals, among others. This concern regarding inadequacy of resources and services is consistent with extant literature (Duong *et al.*, 2004; Baltussen *et al.*, 2002; Baltussen & Ye, 2006b; Hansen *et al.*, 2008; Mashego & Peltzer, 2005; Juma & Manongi, 2009; Kamuzora & Gilson, 2007; Turkson, 2009).

Even though in line with literature (Robyn *et al.*, 2013; Juma & Manongi, 2009) neatness and effectiveness of treatment is given a favourable response by both patients and healthcare providers, it was only patients who recommended that general cleanliness and sanitation of hospitals needs

to be improved. This finding suggests that as far as patients are concerned effectiveness of care for recovery and cure is associated with neatness of the health facility.

With respect to technical aspects of care, patients emphasized the need to involve patients in their treatment, the need for thorough medical examination, and ensuring privacy during their treatment process. Generally, much literature on technical aspects of care including patients being physically examined, told diagnosis, or being involved in their care, is less favourable (Duong *et al.*, 2004; Baltussen *et al.*, 2002; Baltussen & Ye, 2006b; Turkson, 2009). On the other hand, healthcare providers had no issues with the technical aspects of care. Perhaps, doctors and the other healthcare providers assume that what is important to patients is to get cured of their diseases, and not so much about, for example, about whether the patients are told their diagnosis or not.

Regarding interpersonal aspects of care, patients called for improvement in interpersonal relationship, especially the need for respect, tolerance and descent speech to patients by staff. The literature on interpersonal aspects of care is mixed. Whereas in some studies there are positive reports of interpersonal aspects of care (Duong *et al.*, 2004; Baltussen *et al.*, 2002; Baltussen & Ye, 2006b; Hansen *et al.*, 2008), other reports are negative (Mashego & Peltzer, 2005; Juma & Manongi, 2009; Turkson, 2009). On the other hand, healthcare providers also saw the need to improve on their attitude towards patients by being caring, respectful, confidential and tolerant with patients.

There were other areas of concern to patients beyond the quality indicators used in the study. Patients expect prompt services at various service delivery points, and also expect continuous

services in hospitals throughout the week. The suggestion to provide prompt services is supported by an earlier study which found that prompt services were given low ratings in the hospitals studied (Abuosi & Atinga, 2013). Patients were also of the view that special attention should be given to the care of various vulnerable groups such as the seriously ill, pregnant women and children and the aged. These were all not identified by healthcare providers as issues deserving attention to improve quality of care. Even though the NHIS makes provision for vulnerable groups such as pregnant women, children and the aged from paying health insurance premium, healthcare providers do not have a policy to give priority of care to these groups. It is therefore recommended that future assessment of quality of care from the patient's perspective may include indicators or dimensions such as promptness of services, attention to vulnerable patients and 24-hour services throughout the week, in order to inform health policy reforms on quality improvement.

On the other hand, healthcare providers identified the need for staff training and motivation, effective supervision to ensure quality service provision, team work among themselves, involvement of staff in decision-making, peer-review and organizing community durbars, and serious commitment to work and discipline. The suggestion by providers for training and motivation is consistent with a recent study in Ghana on the association between health worker motivation and healthcare quality efforts in Ghana (Alhassan *et al.*, 2013). According to the author, there was a significant positive association between staff satisfaction levels with working conditions and the clinic's effort towards quality improvement. Providers also suggested that patients visiting the hospital need to be educated on various health issues ranging from their personal health needs to issues of sanitation. It is therefore recommended that future assessment of quality of care from the provider perspective may include such indicators or dimensions as staff

motivation, effective supervision, team work, involvement of staff in decision-making, subjecting the hospital to peer-review, organization of community durbars, discipline and patient education.

### **7.5 Chapter Summary**

This chapter presented results and discussion of suggestions provided by patients and healthcare providers to improve quality of care. Affordability of the cost of health services and the elimination of out-of-pocket payments seems to be the major problem affecting financial access to health care, according to patients. On the other hand, prompt reimbursement for services rendered is the major pre-occupation of providers. In addition, providers seem to acknowledge that some unofficial fees are being collected in some hospitals. Adequacy of resources and services is an area of concern for both patients and providers as they demanded an increase in the numbers of health staff in order to cope with workload in the hospital. They also demanded an improvement in availability of equipment and supplies, and expansion in infrastructure of the hospitals. Both patients and providers also emphasized the need for improvement in interpersonal relationship, especially the need for respect, tolerance, politeness, caring, and confidential. The call by patients on healthcare providers to eliminate discrimination and ensure fairness to all categories of patients suggests that there are problems of fairness in health care. Patients also called for steps to be taken to improve upon the cleanliness and general sanitation of hospitals. Regarding technical aspects of care, patients emphasized the need to be involved in their treatment; the need for thorough medical examination; and ensuring privacy during their treatment process. Other areas of quality expectations by patients beyond the quality indicators used in the study included the provision of prompt services at various service delivery points, continuous services in hospitals throughout the week, special attention to the care of vulnerable groups. On the other hand, healthcare providers

identified the need for staff training and motivation, effective supervision, team work, involvement of staff in decision-making, peer-review, organizing community durbars, serious commitment to work and discipline, and the need for patients to be educated on various health issues.

## CHAPTER EIGHT

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### 8.1 Introduction

This concluding chapter summarises the thesis and draws conclusions based on the findings. Recommendations, contribution of the study and suggestions for further studies are also presented.

#### 8.2 Summary

Social health insurance is a catalyst through which all populations can attain universal health coverage. Ghana recently introduced a social health insurance system as an approach to provide quality and affordable healthcare and to improve access to health care and health outcomes. The introduction of the National Health Insurance Scheme (NHIS) has led to a drastic increase in service utilisation at all levels of accredited healthcare institutions. However, there is growing public concern over the quality of services that do not seem to meet the expectations of consumers of health services, especially those insured with the NHIS. Some of the concerns include verbal abuse of patients, discrimination against the insured in terms of healthcare, long waiting times in health facilities for insured patients, unofficial payments to healthcare providers and shortage of medicines and other logistics to work.

Previous studies related to patients' perceptions of quality of care in Ghana are limited in scope in terms of dimensions of quality assessment, as well as socio-economic and demographic characteristics of respondents. There is also no evidence of any study comparing perceptions of quality of care between patients and healthcare providers to determine whether there are any

differences. This thesis therefore, sought to examine whether there are any differences in perceptions of the quality of care between the insured and uninsured patients. In addition, the study also examined whether there are any differences in perceptions of quality between patients and healthcare providers.

The specific objectives were:

- i. to compare the perceptions of quality of care between the insured and uninsured patients
- ii. to investigate the effect of health insurance status on perceived quality of care
- iii. to compare the perceptions of quality of care between patients and healthcare providers
- iv. to explore ways by which quality of care could be improved in Ghanaian hospitals by soliciting the views of patients and healthcare providers

The study is important because if there are significant differences in perceptions of quality of care between insured and uninsured patients it implies that there is discrimination between patients in terms of quality of care. This would be an undesirable situation because according to the Patients' Charter, patients are supposed to be given equal treatment in health facilities regardless of their status, not least, their insurance status. Also, if there are significant differences in perceptions of quality of care between patients and healthcare providers, it would be an undesirable situation because it would imply that what patients consider as important quality issues may not necessarily be what healthcare providers lay emphasis on. The study would therefore be of interest to healthcare policy makers and the health insurance scheme.

Two theoretical models of quality were adopted to guide the study. These were the Donabedian model and the gap model of service quality. The Donabedian model was used to analyse perceptions of quality by the insured and uninsured patients, while the gap model was used to

analyse perceptions of quality by patients and healthcare providers. Donabedian proposes that quality of health care can be measured by evaluating its structure, processes and outcomes, arguing that “good structure increases the likelihood of good process, and good process increases the likelihood of good outcome”. Structure refers to the attributes of the settings in which care occurs and the resources needed for health care. Process measures explore the manner in which the health care provider interacts with the patient. Processes are either technical, referring to what care is delivered, or interpersonal processes, referring to the manner in which care is delivered. Outcomes describe the effects of health care on the health status of patients and populations and comprise final outcomes such as mortality and morbidity, as well as intermediate outcomes, such as personal well-being and satisfaction with care. The gap model on the other hand, postulates that consumers’ quality perceptions are influenced by a series of five distinct gaps occurring in organisations. The first gap which is less studied, and for which this study focused on, conceptualizes differences between patient expectations and management (or provider) perceptions of patient expectations. Though client assessments of quality are important, the provider’s view, when combined with the client's perspective, can provide additional insight into areas where change is needed.

A conceptual framework was developed, with an adapted version of an earlier healthcare quality scale developed by Haddad *et al.* (1998a, 1998b, 2000), within the context of Donabedian framework. The framework posits that health insurance status has an influence on quality of care, controlling for socio-demographic and hospital variables.

The study was based on the postpositivist philosophy. Postpositivism is an offshoot of positivism. Adherents of positivism assume that nature is basically ordered and regular and that an objective

reality exists independent of human observation. Like positivists, postpositivists hold a belief in reality and a desire to understand it. Unlike positivists, however, postpositivists recognize the impossibility of total objectivity. They do, however, see objectivity as a goal and strive to be as neutral as possible. Following this philosophy the study posits that insurance status has an influence on perceptions of quality of care, moderated by socio-demographic and hospital variables; and that there is a significant gap in perceptions of quality of care between patients on one hand, and healthcare providers on the other. However, views of patients and providers were sought regarding the improvement of quality of care.

A cross-sectional survey of patients seeking outpatient consultations was conducted in 17 general hospitals from three regions. Both insured and uninsured patients were selected for interview. The instrument for data collection was based on a modification of a quality of care scale developed by Haddad *et al.* (1998a, 1998b, 2000), in order to suit the Ghana healthcare context. The instrument was approved by the Institutional Review Board (IRB) of the Noguchi Memorial Institute for Medical Research, in the University of Ghana, Legon (NMIMR-IRB 111/12-13), as well as the IRB of Navrongo Health Research Centre (NHRCIRB158) in Navrongo. A total of 850 patients were contacted. A response rate of 96.2 per cent was obtained resulting in 818 completed questionnaires. Multi-stage sampling strategy was employed in the study. These include cluster sampling for regions, purposive for districts and hospitals and convenience for selection of respondents. The sample size of patients was determined with the aid of openEpi software. For healthcare providers, top and middle level managers were interviewed in all the hospitals.

IBM SPSS version 20 software was used for performing all statistical analysis. Chi-square statistic was used to test for association of variables, factor analysis was used to determine distinct quality of care constructs, t-test statistic was used to test for differences in quality perceptions between the insured and uninsured patients, as well as healthcare providers and patients, then multiple regression analysis was employed to test the effect of insurance on quality of care. Suggestions by respondents for quality improvement were qualitatively analysed according to various dimensions of quality of care. The findings were then discussed.

The study found that overall, there was no significant difference in perceptions of quality between insured and uninsured patients. The main difference in perceptions of quality of care between the two categories of patients was in respect of the financial access to care dimension of quality. Thus the prevailing empirical and anecdotal views that insured patients are discriminated against, compared with uninsured patients is largely not supported in this study. It was found instead, that quality of care is a general concern to both categories of patients, as only few respondents from both insured and uninsured categories rated quality of care favourably. It was also found that even though long waiting times was a problem for both categories of patients, it was a bigger concern for insured patients. This is probably due to administrative delays rather than discrimination. Inadequacy of resources was another major quality of care problem expressed by patients irrespective of insurance status. These include lack of doctors, lack of basic equipment, drugs, and other medical supplies. Fairness of care was another major problem expressed by both categories of patients. The findings suggest that there is mutual suspicion by both groups that they are being discriminated against by healthcare providers. Telling patients the diagnosis of their illnesses and involving them in decisions concerning their treatment also emerged as important concerns

expressed by respondents, regardless of insurance status. There was however, an inverse relationship between the number of doctors and perceptions of quality in respect of financial access, fairness of care and overall perceptions of quality of care. However, neatness and effectiveness of treatment, as well as interpersonal aspects of care received positive quality ratings.

Multiple regression analysis revealed that being insured had a positive effect on only financial access to care. However, some socio-demographic and hospital variables had effect on various dimensions of quality of care. As individuals mature in age they seem to have positive perceptions of quality of care. Compared with respondents who were not married those who were married had positive perceptions of quality of care. Highly educated patients evaluated interpersonal aspect of care positively. Improvement in a patient's health status was also associated with positive perceptions of quality of care. Patients in large-sized hospitals had positive perceptions of most aspects of quality of care. However, they had a negative perception of interpersonal aspect of care. Compared with government hospitals, there was a problem of financial access to health care in mission hospitals. However, mission hospitals were perceived to be more adequately resourced. Also, compared with government hospitals, private hospitals were perceived to have a positive effect on virtually all dimensions of quality of care. Relative to patients in the Upper East Region, patients in the Brong-Ahafo and Central Regions had more positive perceptions of quality of care.

The study also found a significant difference in perceptions of quality of care between patients and healthcare providers. Whereas patients tended to rate quality of care less favourably, healthcare providers tended to rate it more favourably. Interpersonal aspects of care and neatness and effectiveness of care were given favourable ratings by both patients and healthcare providers.

However, the areas of quality that both providers and patients considered as requiring serious attention include inadequacy of doctors, and inadequacy of medical equipment, drugs and supplies.

On suggestions to improve quality of care in Ghana's hospitals, some patients called for a reduction in the health insurance premium. This suggests that financial access to health care is still a major problem for some Ghanaians. On the other hand, prompt reimbursement for services rendered were the major pre-occupation of providers. Patients also called for healthcare providers to eliminate discrimination and to ensure fairness to all categories of patients. This suggests that some patients still have a feeling of being discriminated against, albeit insignificant, in spite of contrary findings from the quantitative survey. The need to increase the numbers of health staff, especially doctors, in order to cope with workload in the hospitals, as well as ensure the availability of equipment and supplies, and expansion in infrastructure of the hospitals were emphasized by both patients and providers. The need for patients to be involved in their treatment, as well as the need for thorough medical examination and ensuring privacy of patients during treatment was also emphasized by patients. Both patients and providers called for improvement in interpersonal relationship, especially the need for respect, tolerance, politeness, caring, and confidential. Patients expect to be provided prompt services at various service delivery points in the hospitals. Patients also suggested that hospitals should provide continuous services throughout the week and give special attention to vulnerable patients in the hospitals. Healthcare providers on the other hand, identified staff training and motivation, effective supervision, team work, involvement of staff in decision-making, peer-review, organizing community durbars, serious commitment to work and discipline, and the need for patients to be educated on various health issues as important areas to improve quality of care.

### 8.3 Theoretical implications

Two theoretical models were adopted for this study. The first model which explains the major part of the study is Donabedian's quality of care framework. According to Donabedian, the measurement of quality of care is a function of structure, process and outcome: *“good structure increases the likelihood of good process, and good process increases the likelihood of good outcome”* The structural dimensions of quality in this study include financial access to care and adequacy of resources and services; the process dimensions include interpersonal aspects of care and technical aspects of care; and the outcome dimensions include fairness of care; neatness and effectiveness of care; and overall quality of care. This study however examined the effect of patients' health insurance status on these dimensions of quality within Donabedian's framework. The study did not therefore directly assess the influence of structural, process and outcome quality on each other. Nevertheless, it is possible that the effect of insurance status on structural quality of care, for instance, could influence perceptions of process and outcome quality of care. From the results health insurance status has a positive influence on financial access to care, which is a structural quality dimension. However, how improved financial access to care by patients influences interpersonal and technical processes of care as well as outcomes of care is a subject for further investigation.

Even though insurance status of patients has no effect on any other dimension of quality of care, other control variables such as age, household size, health status and number of doctors had an effect on more than one dimension of quality of care within the various components of Donabedian's framework. For example, improved health status has a positive effect on perceptions of structural, process and outcome quality of care. This suggests that measures aimed at improving

health status of patients such as ensuring that treatment is effective for recovery and cure would have a positive effect on perceptions of structural quality of care, which in turn would have a positive effect on perceptions of processes of care, as well as outcomes of care, as postulated by Donabedian.

The second theoretical framework is based on the gap model of service quality, developed by Parasuramal *et al.* (1985). Five potential quality gaps have been postulated by the authors. This thesis focused on the first gap which posits that there could be a gap between what service users (customers) perceive as constituting quality of care and what providers perceive as constituting quality of care. Even though the original gap model is based on customers' expectations of service quality and their actual experience of service quality, this study is based on patients' experiences only. The findings support the theoretical position by Parasuramal *et al.* (1985), as there were significant gaps between patients' perceptions of quality of care and providers' perceptions under the various dimensions of quality of care. However, a major limitation of the gap model, which is also the case in this study, is that it only identifies the gaps, but not necessarily the reasons for the gaps. Further studies are required for identifying the reasons for the quality gaps between patients and healthcare providers.

## 8.4 Conclusions

Overall, there was no significant difference in perceptions of quality of care between the insured and uninsured patients. Regarding individual indicators and dimensions of quality of care, however, the difference between the insured and uninsured patients was mainly in respect of financial access to care. Thus, problems related to quality of care are a concern for all patients regardless of insurance status. However, problems related to affordability and unofficial payments remain significant barriers to financial access to health care.

With respect to the other dimensions of quality of care, the empirical findings suggest that there is mutual suspicion by both insured and uninsured respondents regarding whether equal (fair) treatment is given to patients regardless of patients' insurance status, and whether quality of drugs is the same for insured and uninsured patients. Inadequacy of resources, especially inadequacy of doctors and drugs remain a major problem requiring serious attention. Long waiting times also remain a nagging problem. Neatness of staff and hospitals do not appear to be a problem for patients. The same conclusions could be made about interpersonal aspects of care, in relation to staff showing compassion and support to patients, and staff being polite. However, the call by patients for improved staff attitude, coupled with previous evidence of poor staff attitude suggests that problems related to interpersonal aspects of care persist, albeit insignificant. The major problem with technical aspects of care is doctors telling patients what is wrong with them (diagnosis), and involving patients in decisions concerning their care. Patients expect to be provided prompt and continuous services at various service delivery points in the hospitals.

Regarding the effect of health insurance status on perceived quality of care, being insured is a positive predictor of only financial access to care, but it is not a predictor of any other dimension of quality of care. Increasing age and those who are married are also positive predictors of quality of care. Highly educated patients seem to be more interested in processes of care such as interpersonal aspect of care than structures and outcomes of care. Improvement in patients' health statuses is associated with positive perceptions of quality of care. Large-sized hospitals have positive effect on most aspects of quality of care. However, there is a negative effect of large sized hospitals on interpersonal aspect of care. There is a problem of financial access to health care in mission hospitals. However, mission hospitals are perceived to be more adequately resourced. Private hospitals are perceived to have a positive effect on virtually all dimensions of quality of care.

Comparing healthcare providers and patients' perceptions of quality of care found that the former generally rate quality of care favourably, whereas the latter rate it fairly favourably. Areas of quality that demands special attention include inadequacy of doctors, and inadequacy of medical equipment and supplies. Prompt reimbursement of claims by the NHIS for services rendered to insured patients were the major pre-occupation of healthcare providers. Other quality concerns raised by providers include the need for continuous staff training and motivation, effective supervision, and team work, among others.

## **8.5 Contribution of the Study**

The contribution of this study to knowledge is categorized into theoretical and empirical contribution.

### **8.5.1 Theoretical Contribution**

The study provides a conceptual definition of quality of care within the context of perceived quality of care in developing countries such as Ghana. Even though the definition is a modification of the most widely accepted definition of health care quality by the IOM, it is nevertheless less generic as compared to the IOM definition. The definition is also unique in the sense that it captures dimensions of health care quality empirically considered relevant to developing countries context such as accessibility, adequate resources, and providing services in a technically competent and humane manner.

Another theoretical contribution to this study is the development of a quality of care scale suitable to the conceptual definition. Even though the scale is an adaptation of previous validated quality of care scales used in developing countries context, this scale is nevertheless unique by the addition of new indicators and new dimensions of quality of care such as all services for insured patients are paid for by the insurance scheme, patients under NHIS exemption scheme are treated free, and only official/formal fees are charged and patients given receipts, which are all quality indicators under financial access to care; fairness of care, and neatness and effectiveness of care dimensions of quality of care. Indeed, five of the six dimensions of quality of care were modifications of quality of care scales of previous studies. These include financial access, adequacy of resources and services, technical aspects of care, interpersonal aspects of care and effectiveness of care. However, a sixth dimension, namely, fairness of care, was entirely developed by the author. The

development of this dimension of quality of care was motivated by the prevailing perception that insured patients are discriminated against compared with the uninsured patients in some aspects of quality of care. Since this dimension of quality of care is related to sustainability of health insurance schemes, it strengthens the quality of care scale as a tool for assessing quality care in developing countries which are now embracing health insurance schemes as a mechanism of ensuring universal health covering. The rest of the scale has proven reliable through the various reliability tests used in the study, and thus it could be adopted or adapted as a useful tool for the assessment of quality of health care in developing countries.

Two conceptual frameworks were developed to guide the study. The first conceptual framework used Donabedian's health care quality triad of structure, process and outcome quality to examine the effect of health insurance status on perceived quality of care. Thus, the seven dimensions of quality of care (the seventh being overall quality of care), constituting the scale were categorized according to structure, process and outcome quality, and the analysis was done accordingly. This conceptual framework may therefore also guide future quality of care studies. The second framework used the gap model of service quality by Parasuramal *et al.* (1985). The gap model has traditionally been used with a 22-item SERVQUAL (Service Quality) scale developed by Parasuramal *et al.* (1985), even though several studies have modified the original 22-item SERVQUAL scale to suit various contexts. However, this study used a 24-hour quality of care scale developed for this study to assess perceptions of quality between patients and healthcare providers, within the framework of the gap theory of service quality. This is the first of its kind, to the best of the authors' knowledge.

### **8.5.2 Contribution to Empirical Literature**

The comparison of perceptions of quality between the insured and uninsured patients based on the dimensions and indicators of quality of care used in this study is the first of its kind, to the best of the author's knowledge. The comparison has made it possible to ascertain the similarities and differences in perceptions of quality between insured and uninsured patients, which served as a basis to draw some conclusions including the fact that there is no discrimination against insured patients. This finding is significant in view of the fact that over 80% of out-patients are insured.

Also, the finding that some socio-economic and demographic indicators such as age, marital status, educational status, distance, household size, health status; as well as organizational factors such as number of doctors, bed capacity of hospitals, and ownership of hospitals are predictors of various indicators of perceived quality of care under the various dimensions of quality of care, is a significant contribution to this study, given the modified quality of care scale.

The comparison of perceptions of quality between patients and healthcare providers on the same dimensions and indicators of quality of care is also the first of its kind. This has also made it possible to identify significant gaps in perceptions of quality between patients and healthcare providers. Further studies could be conducted to explore reasons for the gaps and measures taken to address them.

The qualitative responses revealed other areas of quality concerns by patients and healthcare providers which could be included in future assessment of quality of care in health facilities. The concerns were the need for healthcare providers to render special care to certain categories of

patients considered vulnerable; training and motivation of healthcare workers, managerial practices such as supervision at various levels of management and involving staff in decision-making; and staff discipline and commitment to work.

### **8.6 Policy Implications and Recommendations**

Since the NHIS has proven to provide significant financial access to healthcare, every effort must be made to sustain it. The out-of-pocket payments by insured patients pose a threat to financial access to health care, hence, measures must be taken to eliminate or drastically reduce it. The NHIS must ensure that the essential medicines list is enough to cover diseases under the benefit package, so that patients would not need to purchase drugs outside the health facility. The NHIS must also impose sanctions on healthcare providers who perpetuate out-of-pocket payments without justification. Also, since over 80% of hospitals IGF are from the NHIS, the NHIA must take steps to ensure prompt payment of claims submitted by healthcare providers, in order that they may be able to procure enough drugs and other basic equipment and supplies to provide quality health care. It is hoped that the on-going biometric registration of NHIS members at the time of this study would facilitate the speedy processing of claims submitted by providers, since delays in processing of claims is one of the causes of delays in reimbursing healthcare providers. In addition, innovative measures such as reimbursing a proportion of bills submitted by healthcare providers promptly before vetting (auditing) all the claims would minimize the inconvenience of healthcare providers having to wait for several months before being reimbursed, due partly to delays in claims processing.

Inadequacy of doctors is an area of great concern expressed by the various respondents. Innovative measures must therefore be found to increase the supply of doctors in Ghana. In this direction, it

is recommended that the training of medical doctors could be demystified by, for example, accrediting some universities or even polytechnics offering biological science programmes to admit students who would graduate in biological sciences and proceed for post-graduate training in clinical medicine in teaching hospitals. To increase the number of teaching hospitals from the current four which are inadequate for training doctors, all regional hospitals in the ten regions of Ghana, and some mission hospitals which are several times bigger than some regional hospitals in Ghana, could be upgraded to teaching hospitals status to absorb graduates of biological sciences for further training to become doctors. Since the polytechnics and regional hospitals are already in existence, infrastructural cost would be relatively less compared with having to construct new teaching hospitals. In terms of teaching faculty, the biological sciences could be taught by existing polytechnic science teachers, and not necessarily medical doctors. When students are finally recruited into medical schools for clinical courses, more focused and specialized training on the biological sciences could be undertaken, building on the prior knowledge of the biological sciences from the polytechnics. Beyond increasing numbers of doctors, strict criteria for distribution of doctors must be put in place, in order to address the current skewed distribution of doctors. The Ghana Ministry of Health policy of rural service by doctors as a prerequisite for post-graduate medical training should be rigorously enforced, in order to attract more doctors from urban areas to the rural areas. Also, stringent policies must be developed to reduce the incidence of moonlighting as one of the possible explanations of the inverse relationship between the number of doctors and perceived quality of care in respect of financial access and fairness of care.

Innovative measures must also be found to address the nagging problem of long waiting times. In this direction, hospital managers may need to seriously consider adopting electronic medical

record system which would partially reduce delays associated with manual processing of patients' medical records. An additional advantage of electronic medical record system is to address the problem of missing records of patients, which is a common problem in many hospitals. Another way of reducing long waiting times is to introduce an appointment system where patients may call to book an appointment to meet their doctor at a convenient time. This is practiced in many developed countries, and is probably long overdue in adapting to developing countries context. Even though the low doctor-population ratio may pose a challenge to this recommendation, it could be worth experimenting. It could help reduce the long queues currently experienced in many Ghanaian hospitals.

Involving patients in decisions concerning their care, and telling them the diagnosis of their illness requires serious attention by healthcare providers. To this end, hospital managers must educate patients on the Ghana patients' charter which outlines in detail responsibilities of healthcare providers towards patients, not least, involving them in decisions concerning their care, and telling them the diagnosis of their illnesses. The charter also contains the responsibilities of patients to healthcare providers.

In line with the theoretical framework, healthcare providers and policy makers need to give a balanced attention to structural, process and outcome components of quality of care. This implies that resources mobilized or other measures taken to improve quality of care in hospitals should not be focused mainly on one component of quality of care, such as structural component, but must also consider process and outcome quality components.

## 8.7 Summary of Key Challenges and Recommendations

Table 8.1 presents a summary of the key challenges identified in this study, their potential effects, and recommendations to address the challenges.

**Table 8.1: Summary of the key challenges, potential effects, and recommendations**

| Key Challenges  | Potential Effects  | Recommendations  |
|---|--|--|
| Insured patients pay out-of-pocket (OOP) at the point of service delivery   | Threat to financial access to healthcare   | Eliminate or drastically reduce OOP payments by insured patients<br><br>Essential Medicines list must cover all diseases under the NHIS benefit package<br><br>NHIS must impose sanctions on service providers who perpetuate OOP  |
| Delay in provider reimbursements  | Difficulty of purchasing medicines and logistics to work                                       | NHIS should pay claims submitted by providers promptly<br><br>With the introduction of the biometric registration and electronic claims processing, claims should be processed speedily<br><br>A percentage of claims submitted by providers should be paid up-front before vetting of the claims is undertaken  |
| Inadequacy of doctors   | Poor quality of care<br><br>Long waiting times   | Innovative measures must be found to increase the supply of doctors e.g. accredit some universities or polytechnics to teach biological science courses, then proceed for clinical years in teaching hospitals<br><br>Equip Regional Hospitals to become teaching hospitals<br><br>Develop a strict criteria for distribution of doctors, in order to cover deprived areas |
| Long waiting times  | Poor quality of care<br><br>Adverse economic effect  | Adopt electronic medical record system<br><br>Introduce patient appointment system   |
| Non-involvement of patients in decisions concerning their care<br><br>Failure to tell patients the diagnosis of their illness | Poor quality of care<br><br>Ignorance of nature of illness<br><br>Poor compliance to treatment | Involve patients in decisions concerning their care<br><br>Hospital managers must educate patients on the Ghana patients' charter  |

## **8.8 Limitations of the Study**

This study has a number of limitations discussed below:

### **8.8.1 Limitations of the research philosophy**

First of all, following the postpositivist philosophy, the findings are generally quantitative. Even though, this is useful for the purpose of generalization, the quantitative approach may not be able to delve deeper in order to uncover detailed explanations behind the quantitative findings. Notwithstanding this view, the scale used in assessing quality of care is comprehensive enough, and the findings could therefore provide greater insight that could inform a subsequent qualitative inquiry into some quality of care concerns in the Ghanaian healthcare delivery. Also, even though not exhaustive, the suggestions made by respondents to improve quality of care, provides some qualitative insights into the quality concerns of respondents.

### **8.8.2 Focus on out-patients**

Secondly, the study focused on out-patients and not in-patients. Results therefore need to be interpreted with caution, since the quality expectations of out-patients and in-patients may differ markedly due to differences in their care setting and other characteristics.

### **8.8.3 The assessment of quality of care is based on perceptions**

Thirdly, the assessment of quality of care is based on perceptions, which are largely subjective. However, perceptions of quality have been increasingly accepted as valid and important measures of health care quality (Blendon, et al., 2007; Cleary & Edgman-Levitan, 1997).

#### **8.8.4 Limitations of the gap model of quality assessment**

Another limitation of the study is that the use of the gap model to compare perceptions of quality between patients and health care providers only identifies gaps in quality of care, but not reasons for the gaps. Further studies are therefore required to provide reasons behind the gaps identified.

#### **8.8.5 Statistical limitations**

One statistical limitation of the study is the inability to do additional diagnostic checks such as model specification on the regression estimates. This limitation arises from the use of SPSS software which does not perform this test. However, the various diagnostic checks using SPSS software are credible enough, and there is no reason to doubt the validity of the statistical conclusions.

### **8.9 Suggestions for Further Study**

Following the findings of this thesis, a number of suggestions are given to guide future studies. Further studies are required to examine the nature and effect of the unofficial/informal payments made by some patients to some healthcare providers.

Studies are also required to explore innovative ways by which the nagging problem of long waiting times may be addressed in hospitals.

Why doctors fail in what appears to be a simple task of telling patients what is wrong with them, coupled with not involving patients in decisions concerning their care, also needs further investigations.

It would also be useful to explore reasons behind the inverse relationship between number of doctors and perceived quality of care.

Reasons why private hospitals are perceived to provide high quality of care in spite of anecdotal reports of less human and material resources also requires further studies.

Finally, studies are required to identify the reasons for the quality gaps between patients and healthcare providers.

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## APPENDICES

### Appendix 1: Questionnaire

#### University of Ghana Business School, Legon

University of Ghana Business School is pleased to submit a questionnaire to you in respect of a research carried out by our faculty members on “Social health Insurance and quality of care in Ghanaian Hospitals”. Please take some time off your busy schedules to kindly fill out this questionnaire. This is purely an academic exercise and as such all responses will be treated with the strictest confidence.

Date:..... Start time: .....Questionnaire Code:.....Insured  Uninsured

### SECTION 3: PERCEPTIONS OF QUALITY OF CARE

The following set of statements relate to your perceptions of the quality of care in this hospital you have attended. For

| SECTION 1: SOCIO-DEMOGRAPHIC AND BACKGROUND DATA  |   |  |      |
|---|---|--|------|
| <i>The questionnaire below is to get your socio-demographic and other background data</i> |   |  |      |
| NO  | QUESTIONS AND FILTERS                             | CODING CATEGORIES  | SKIP |
| 1   | Region  | Upper East 1 <input type="checkbox"/> Brong-Ahafo 2 <input type="checkbox"/> Central 3 <input type="checkbox"/>  |      |
| 2   | District  | Specify District.....  |      |
| 3   | Ownership of hospital                             | Government 1 <input type="checkbox"/> Mission 2 <input type="checkbox"/> Private 3 <input type="checkbox"/>  |      |
| 4   | Location of hospital                              | Rural 1 <input type="checkbox"/> Urban 2 <input type="checkbox"/>  |      |
| 5   | Distance from home to hospital (in KM/Mile & MIN) | Please, estimate the distance.....Km<br>.....Miles<br>.....Minutes   |      |
| 6   | Are you the head of your household?               | Yes 1 <input type="checkbox"/><br>No 2 <input type="checkbox"/>  |      |
| 7   | What is the size of your household ?              | Please, indicate household size<br>.....   |      |
| 8   | Type of outpatient                                | General 1 <input type="checkbox"/> Antenatal 2 <input type="checkbox"/> Postnatal 3 <input type="checkbox"/>   |      |
| 9   | Age of respondent                                 | Please, specify your age .....   |      |
| 10  | Sex of respondent                                 | Male 1 <input type="checkbox"/> Female 2 <input type="checkbox"/>  |      |
| 11  | What is your marital status?                      | Married 1 <input type="checkbox"/><br>Never Married 2 <input type="checkbox"/><br>Co-habitation 3 <input type="checkbox"/><br>Widow/Widower 4 <input type="checkbox"/><br>Divorced/Separated 5 <input type="checkbox"/>  |      |
| 12  | What is your highest level of education?          | None 1 <input type="checkbox"/><br>Primary 2 <input type="checkbox"/><br>JHS/JSS/MSLC 3 <input type="checkbox"/><br>Secondary/Technical/Vocational 4 <input type="checkbox"/><br>Post-Secondary/other Tertiary 5 <input type="checkbox"/><br>University 6 <input type="checkbox"/> |      |

each statement, please show the extent to which you believe the hospital has the feature described by the statement. Circling 1 means that you strongly disagree; 2 means you disagree; 3 means you neither disagree nor agree, or not sure; 4 means you agree; and 5 means you strongly agree, that the hospital you have attended has this feature. There is no right or wrong answers - all we are interested in, is a number that best shows your perceptions about quality of care of the hospital which has treated you.

|  |  |   |          |
|--|--|---|----------|
| 13   | What is your religious affiliation?  | Catholic 1 <input type="checkbox"/><br>Protestant 2 <input type="checkbox"/><br>Pentecostal/Charismatic 3 <input type="checkbox"/><br>Muslim 4 <input type="checkbox"/><br>Traditionalist 5 <input type="checkbox"/><br>Atheist 6 <input type="checkbox"/><br>Other (Specify) ..... 7 <input type="checkbox"/>  |          |
| 14   | What is your occupation?   | Farmer 1 <input type="checkbox"/><br>Fisherman 2 <input type="checkbox"/><br>Govt/company employee 3 <input type="checkbox"/><br>Trader 4 <input type="checkbox"/><br>Service provider 5 <input type="checkbox"/><br>Unemployed 6 <input type="checkbox"/><br>Student 7 <input type="checkbox"/><br>Other (specify)..... 8 <input type="checkbox"/>   |          |
| 15   | What is your level of income?<br><i>Tick whatever is appropriate</i>   | 1. GH¢ 0 – 20 mthly <input type="checkbox"/> weekly <input type="checkbox"/> daily <input type="checkbox"/><br>2. GH¢ 21 – 50 mthly <input type="checkbox"/> weekly <input type="checkbox"/> daily <input type="checkbox"/><br>3. GH¢ 51 – 100 mhly <input type="checkbox"/> weekly <input type="checkbox"/> daily <input type="checkbox"/><br>4. GH¢ 101 – 200 mthly <input type="checkbox"/> weekly <input type="checkbox"/> daily <input type="checkbox"/><br>5. GH¢ 201 – 300 mthly <input type="checkbox"/> weekly <input type="checkbox"/> daily <input type="checkbox"/><br>6. GH¢ 301 – 400 mthly <input type="checkbox"/> weekly <input type="checkbox"/> daily <input type="checkbox"/><br>7. GH¢ 401 – 500 mthly <input type="checkbox"/> weekly <input type="checkbox"/> daily <input type="checkbox"/><br>8. GH¢ 501 or more mthly <input type="checkbox"/> wkly <input type="checkbox"/> daily <input type="checkbox"/><br>9. NA <input type="checkbox"/> |          |
| <b>SECTION 2:INSURANCE ENROLMENT</b>   |  |   |          |
| <i>The questionnaire below is to get some information about your health insurance status</i> |  |   |          |
| NO   | QUESTIONS AND FILTERS  | CODING CATEGORIES   | SKIP     |
| 16   | What is your health insurance status?  | Since I joined health insurance I never stopped 1 <input type="checkbox"/><br>I joined, stopped and joined again 2 <input type="checkbox"/><br>I joined, and later stopped 3 <input type="checkbox"/><br>I have never joined health insurance 4 <input type="checkbox"/>  | →8<br>→8 |
| 17   | If you never joined health insurance or joined and stopped, please, give reasons<br><br><i>(after this question, uninsured respondents should skip to question 28)</i> | Cannot afford premium 1 <input type="checkbox"/><br>Do not trust the organizers 2 <input type="checkbox"/><br>Can pay my medical bills out-of-pocket 3 <input type="checkbox"/><br>Delay in issuing cards after registration 4 <input type="checkbox"/><br>I am not usually sick 5 <input type="checkbox"/><br>Poor quality of care in health facilities 6 <input type="checkbox"/><br>Insured still pay out-of-pocket for treatment, so no need to insure 7 <input type="checkbox"/><br>Other (Specify)..... 8 <input type="checkbox"/>  | →8       |
| 18   | What type of health insurance?   | NHIS1 <input type="checkbox"/> Private Mutual 2 <input type="checkbox"/> Private Commercial 3 <input type="checkbox"/>  |          |
| 19   | Do you hold a valid health insurance card?   | Yes 1 <input type="checkbox"/><br>No 2 <input type="checkbox"/>   | →1       |
| 20   | If No to Question 19, why are you not holding a valid health insurance card?   | Registered, not paid fully 1 <input type="checkbox"/><br>Registered, in waiting period 2 <input type="checkbox"/>   |          |

|    |  |   |    |
|----|--|---|----|
|    | <i>(write any additional reasons in this space)</i>  | Registered, no card, even after waiting period 3 <input type="checkbox"/><br>Not yet renewed my registration 4 <input type="checkbox"/><br>Lost card 5 <input type="checkbox"/><br>Other (Specify)..... 6 <input type="checkbox"/>  |    |
| 21 | How long has it been since you first registered with NHIS or other insurance?  | Please, specify period of registration :<br>NHIS.....<br>Other insurance.....   |    |
| 22 | How much money did you pay for your current health insurance?  | Paid GH¢.....<br>Don't Know <input type="checkbox"/><br>Other (Specify).....  |    |
| 23 | What is your view about the level of health insurance premium?   | Low 1 <input type="checkbox"/> Moderate 2 <input type="checkbox"/> High 3 <input type="checkbox"/>  |    |
| 24 | Have you ever renewed your insurance card?   | Yes 1 <input type="checkbox"/><br>No 2 <input type="checkbox"/>   | →6 |
| 25 | How many times have you renewed your insurance card since your very first registration?  | Please, specify number of renewals .....<br>Don't Remember <input type="checkbox"/>   |    |
| 26 | If No, to Question 24, why have you not renewed your current insurance registration?   | Has not been sick 1 <input type="checkbox"/><br>Premium expensive 2 <input type="checkbox"/><br>My preferred services not covered by insurance 3 <input type="checkbox"/><br>Poor quality of care in health facilities 4 <input type="checkbox"/><br>Waiting times for card too long 5 <input type="checkbox"/><br>Do not have money to pay the premium 6 <input type="checkbox"/><br>Not yet time for renewal 7 <input type="checkbox"/><br>Insured still pay out-of-pocket for treatment, so no need to renew 8 <input type="checkbox"/><br>Other (specify)..... 9 <input type="checkbox"/> |    |
| 27 | In today's visit to the hospital, how much of the health cost was covered by the insurance scheme?                               | All 1 <input type="checkbox"/> Some 2 <input type="checkbox"/> None 3 <input type="checkbox"/>  |    |
| 28 | How many times have you visited a health facility during the past 12 months?<br><i>(to be answered by insured and uninsured)</i> | Please, specify number of visits:.....<br>Don't Know/Can't remember <input type="checkbox"/>  |    |
| 29 | Did you or the household have to pay any money in this hospital without official receipt?  | Yes 1 <input type="checkbox"/><br>No 2 <input type="checkbox"/>   |    |
| 30 | If Yes, to Question 29, how much did you have to pay without receipt?  | Amount GH¢.....<br>NA <input type="checkbox"/>  |    |

|    |  | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|----|--|-------------------|----------|---------|-------|----------------|
|    | <b>Interpersonal Aspects of Care</b>           |                   |          |         |       |                |
| 31 | Staff show compassion and supports patients    | 1                 | 2        | 3       | 4     | 5              |
| 32 | Staff are polite and show respect for patients | 1                 | 2        | 3       | 4     | 5              |

|        |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|
| 3<br>3 | Patients' privacy and confidentiality of information is ensured           | 1 | 2 | 3 | 4 | 5 |
| 3<br>4 | Doctor involves patients in decisions concerning treatments               | 1 | 2 | 3 | 4 | 5 |
| 3<br>5 | Overall reception of patients is good                                     | 1 | 2 | 3 | 4 | 5 |
|        | <b>Technical aspects of Care</b>  |   |   |   |   |   |
| 3<br>6 | Doctor listens carefully to what patients say and then writes             | 1 | 2 | 3 | 4 | 5 |
| 3<br>7 | Doctor does a good physical examination                                   | 1 | 2 | 3 | 4 | 5 |
| 3<br>8 | Doctor tells patients what is wrong with them                             | 1 | 2 | 3 | 4 | 5 |
| 3<br>9 | Treatment is based on laboratory or other diagnostic tests                | 1 | 2 | 3 | 4 | 5 |
| 4<br>0 | Quality drugs are prescribed  | 1 | 2 | 3 | 4 | 5 |
| 4<br>1 | Pharmacist gives patients clear instructions about drugs                  | 1 | 2 | 3 | 4 | 5 |
| 4<br>2 | Treatment is effective for recovery and cure                              | 1 | 2 | 3 | 4 | 5 |
|        | <b>Adequacy of resources and services</b>                                 |   |   |   |   |   |
| 4<br>3 | Number of doctors are sufficient in the hospital                          | 1 | 2 | 3 | 4 | 5 |
| 4<br>4 | Medical supplies and equipment is sufficient                              | 1 | 2 | 3 | 4 | 5 |
| 4<br>5 | Waiting areas are spacious and rooms in OPD are sufficient                | 1 | 2 | 3 | 4 | 5 |
| 4<br>6 | Waiting time before doctors attend to patients is reasonable              | 1 | 2 | 3 | 4 | 5 |
| 4<br>7 | Drugs for all diseases are available on the spot                          | 1 | 2 | 3 | 4 | 5 |
| 4<br>8 | There is a system for client complaints                                   | 1 | 2 | 3 | 4 | 5 |
| 4<br>9 | Staff are neat in appearance  | 1 | 2 | 3 | 4 | 5 |
| 5<br>0 | Hospital premises is clean and neat                                       | 1 | 2 | 3 | 4 | 5 |
|        | <b>Financial access</b>   |   |   |   |   |   |
| 5<br>1 | All services for insured patients are paid for by the insurance scheme    | 1 | 2 | 3 | 4 | 5 |
| 5<br>2 | Cost of hospital services are affordable                                  | 1 | 2 | 3 | 4 | 5 |
| 5<br>3 | Patients under NHIS exemption scheme are treated free                     | 1 | 2 | 3 | 4 | 5 |
| 5<br>4 | Only official/formal fees are charged and patients given receipts         | 1 | 2 | 3 | 4 | 5 |
|        | <b>Fairness aspects of care</b>   |   |   |   |   |   |
| 5<br>5 | Access to a doctor and other services is on first come first served basis | 1 | 2 | 3 | 4 | 5 |
| 5<br>6 | Seriously ill patients are identified and treated promptly                | 1 | 2 | 3 | 4 | 5 |
| 5<br>7 | Equal (fair) treatment is given to both insured and uninsured patients    | 1 | 2 | 3 | 4 | 5 |

|        |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|
| 5<br>8 | Quality of drugs is the same for insured and uninsured patients   | 1   | 2 | 3 | 4 | 5 |
| 5<br>9 | On a scale of 1-5, how will you rate your overall perception of the quality of care in this hospital?<br><i>Circle your choice</i>                | Very poor <span style="float:right">Very good</span>    |   |   |   |   |
|        |   | 1   | 2 | 3 | 4 | 5 |
| 6<br>0 | On a scale of 1-5, how will you rate your overall perception of your health status?<br><i>Circle your choice</i>                                  | Very <span style="float:right">poor</span><br>Very good |   |   |   |   |
|        |   | 1   | 2 | 3 | 4 | 5 |
| 6<br>1 | Are you willing to enroll with health insurance next time?  | Yes 1 <input type="checkbox"/>                          |   |   |   |   |
|        |   | No 2 <input type="checkbox"/>                           |   |   |   |   |
| 6<br>2 | In case you are sick next time will you visit this hospital again?  | Yes 1 <input type="checkbox"/>                          |   |   |   |   |
|        |   | No 2 <input type="checkbox"/>                           |   |   |   |   |
| 6<br>3 | Will you recommend this hospital to another person seeking quality health care?   | Yes 1 <input type="checkbox"/>                          |   |   |   |   |
|        |   | No 2 <input type="checkbox"/>                           |   |   |   |   |
| 6<br>4 | What do you think could be done to improve quality of care to patients in this hospital?<br>.....<br>...<br>.....<br>...<br>.....<br>...<br>..... |   |   |   |   |   |

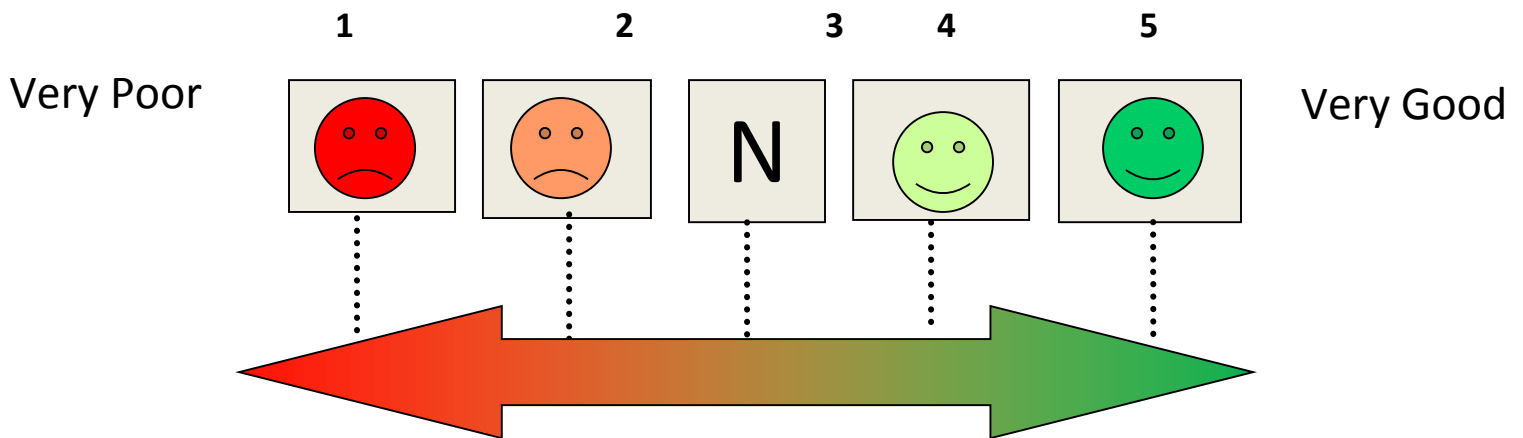
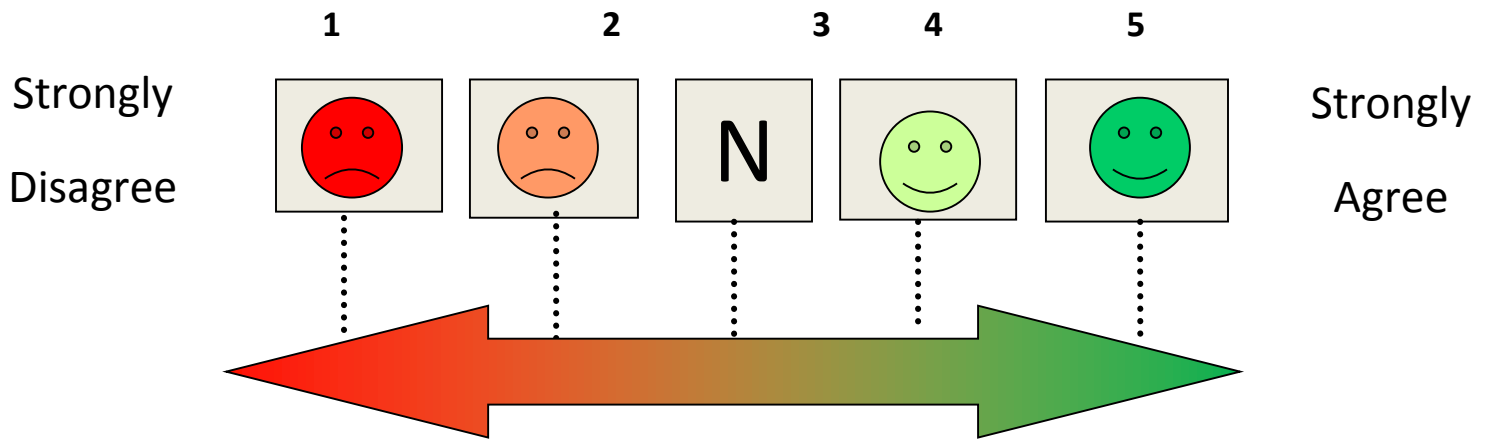
Thank you for the time you have spent in completing this questionnaire.

Phone number of interviewee.....

End Time.....

Name of interviewer.....

Signature of interviewer.....

**Appendix 2: 5-point Colour coded Likert Scale**

### **Appendix 3: Consent Form**

**Title:** *Social Health Insurance and Quality of Care in Ghanaian Hospitals*

**Principal Investigator:** Aaron Asibi Abuosi

**Address:** University of Ghana Business School,

Post Office Box LG 78,

**Telephone:** 0244757436,

**Email:** aaabuosi@ug.edu.gh

*This study requires the consent of patients or parents/caregivers of minors before being interviewed. The following shall be read to you as a patient or parent/caregiver before you give your consent to be interviewed.*

#### **General Information about Research**

The aim of the research is to describe and compare perceptions of quality of care for insured and uninsured patients. If you decide to participate in this research, an interviewer will ask you questions about health insurance and quality care in this hospital. Your task will be to respond to the questionnaire as truthfully as possible. The interview would take approximately 20 to 30 minutes.

#### **Possible Risks and Discomforts**

There are no physical risks involved in your participation in this study. However, you might feel inconvenienced if the interview lasts a long time. You may also feel uncomfortable answering some questions. If you are not comfortable to be interviewed feel free to let us know.

#### **Possible Benefits**

There is no direct personal benefit to you for being in this study. However, what we learn from your participation may help the MOH and government institutions to evolve policies and programmes that would improve quality of care in our healthcare institutions to all Ghanaians.

#### **Confidentiality**

All research projects carry some risk that information about the participant may become known to people outside of the study. We will do everything we can to minimize this risk. After writing your responses, we will use the information for analysis solely for the study. When we write any report on the study we will not include your name or those of other participants. All persons involved in the study shall treat all research data confidentially. We will not share what you

tell us with your employer, supervisor, friends, family, or co-workers. The results of the research may be shared with Ministry of Health and government, health facilities, and others working to improve the health of people in Ghana but the results would never identify any individual by name or specific location such as household. We can speak in any place that is comfortable for you. You can choose any place that is comfortable for you to have the interview that you consider will guarantee your privacy.

### **Compensation**

We do not provide any form of compensation to you for participating in the study, except our gratitude to you for your time.

### **Voluntary Participation and Right to Leave the Research**

Participation in this research is completely voluntary. You do not have to be in this study if you so desire. If you decide to participate in the study, you may change your mind at any time and withdraw without any consequences.

### **Contacts for Additional Information**

In case of any doubt or any need for additional information concerning the study contact the Principal Investigator. Aaron A. Abuosi, University of Ghana Business School, Legon. Telephone: 0202836995 or email address: [aaabuosi@ug.edu.gh](mailto:aaabuosi@ug.edu.gh)

### **Your rights as a Participant**

This research has been reviewed and approved by the Institutional Review Board of Noguchi Memorial Institute for Medical Research (NMIMR-IRB). If you have any questions about your rights as a research participant you can contact the IRB Office between the hours of 8am-5pm through the landline 0302916438 or email addresses: [nirb@noguchi.mimcom.org](mailto:nirb@noguchi.mimcom.org)

## **VOLUNTEER AGREEMENT**

The above document describing the benefits, risks and procedures for the research title: *Social Health Insurance and Quality of Care in Ghanaian Hospitals* has been read and explained to me. I have been given an opportunity to have any questions about the research answered to my satisfaction. I agree to participate as a volunteer.

\_\_\_\_\_

Date

\_\_\_\_\_

Name and signature or mark of volunteer

### **If volunteers cannot read the form themselves, a witness must sign here:**

I was present while the benefits, risks and procedures were read to the volunteer. All questions were answered and the volunteer has agreed to take part in the research.

\_\_\_\_\_

\_\_\_\_\_

Date

Name and signature of witness

I certify that the nature and purpose, the potential benefits, and possible risks associated with participating in this research have been explained to the above individual.

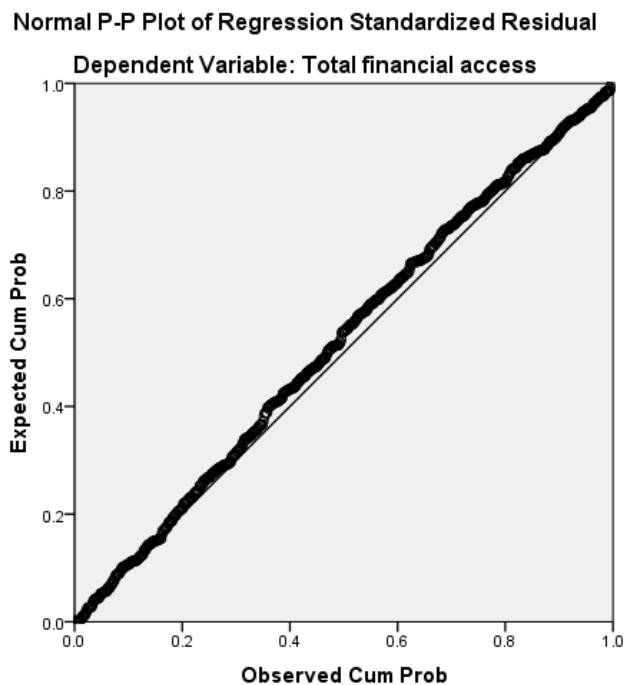
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Date

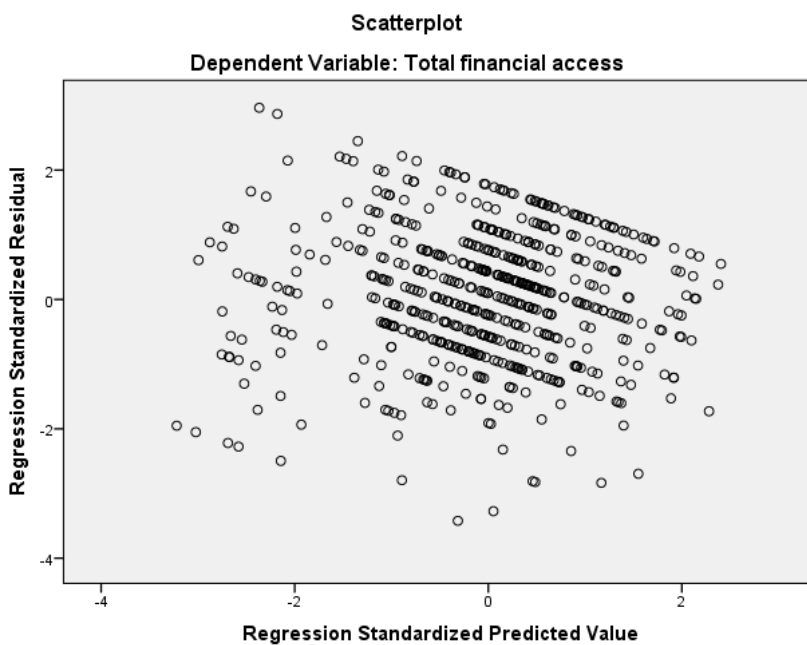
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Name Signature of Person Who Obtained Consent

#### Appendix 4: Normal P-P Plot for Financial access to care

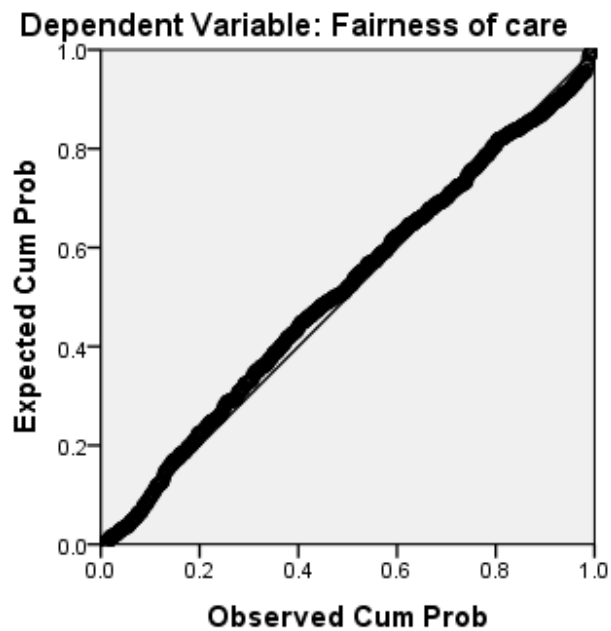


#### Appendix 5 Scatterplots for Financial access to care

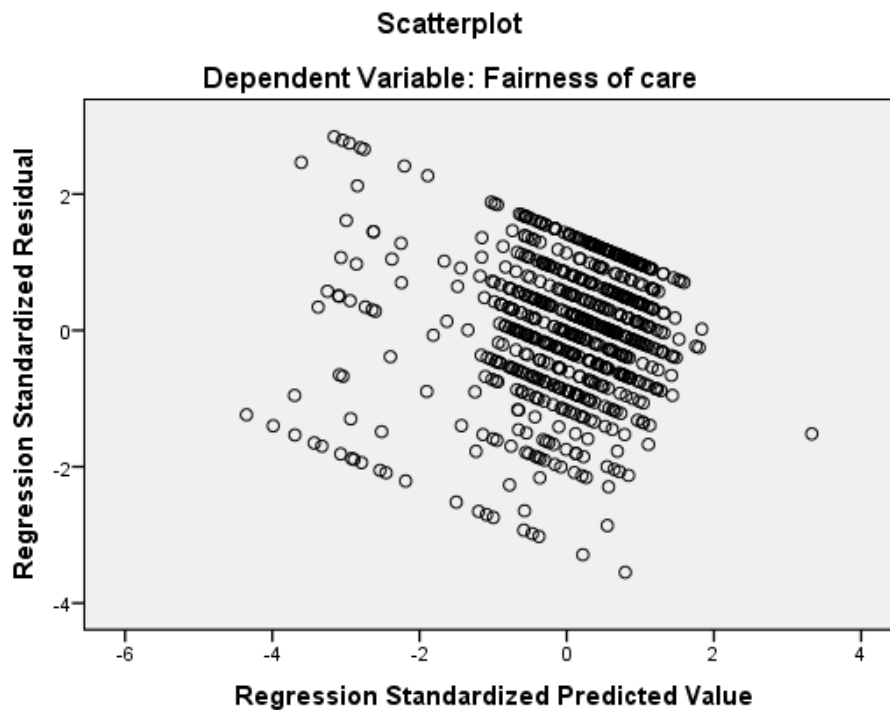


## Appendix 6 Normal P-P Plot for Fairness of care

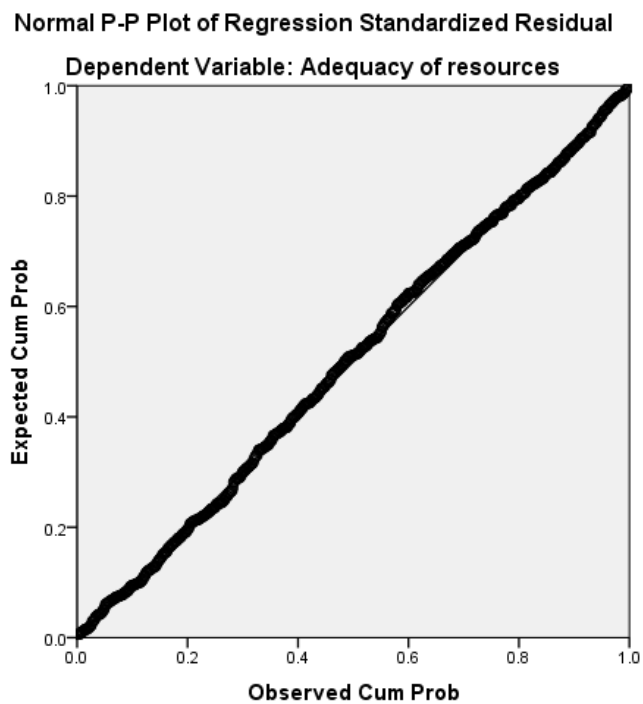
### Normal P-P Plot of Regression Standardized Residual



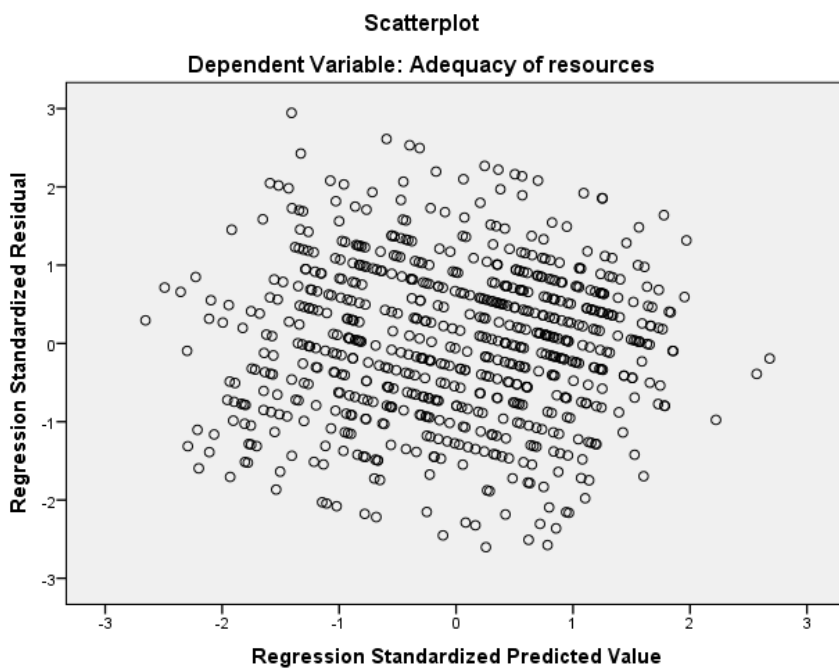
## Appendix 7 Scatterplots for Fairness of care

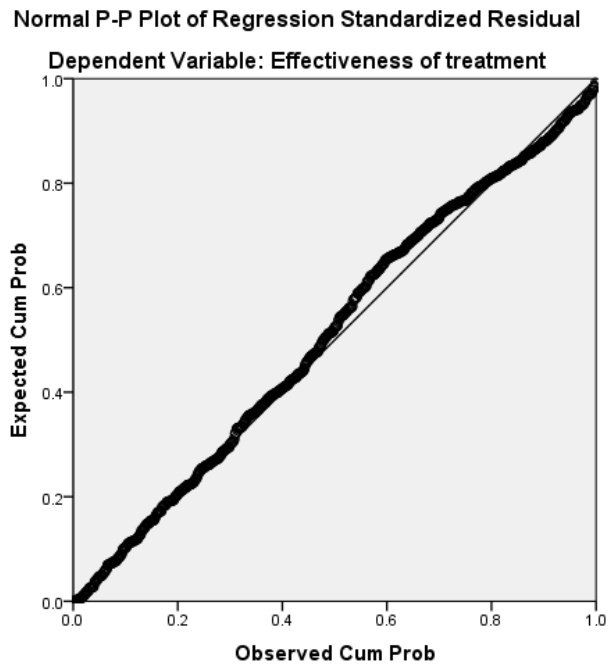
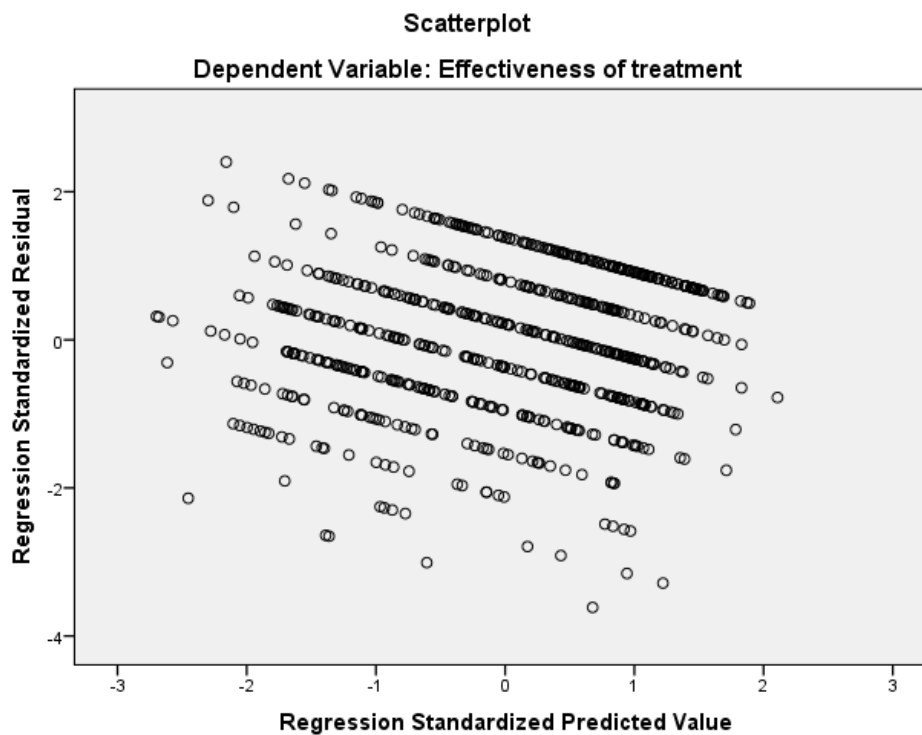


## Appendix 8: Normal P-P Plot for Adequacy of resources and services

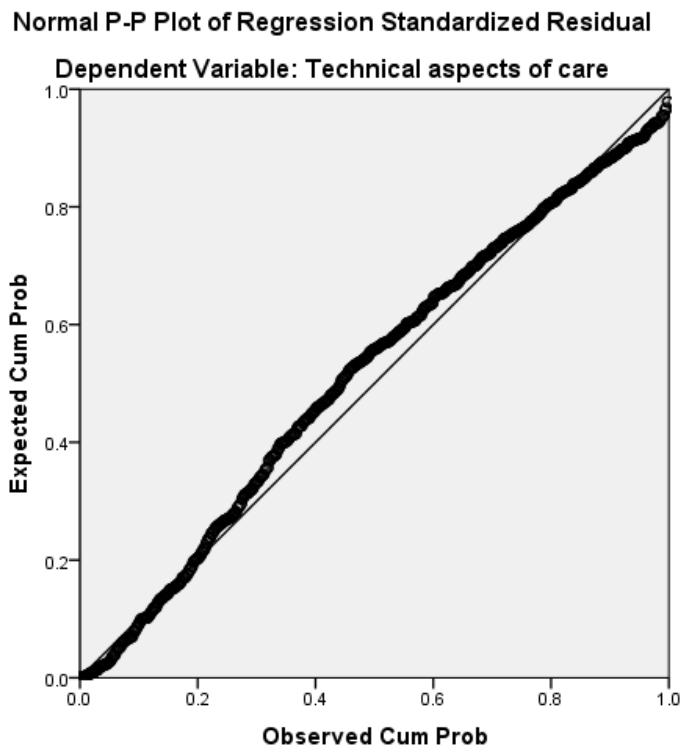


## Appendix 9 Scatterplots for Adequacy of resources and services

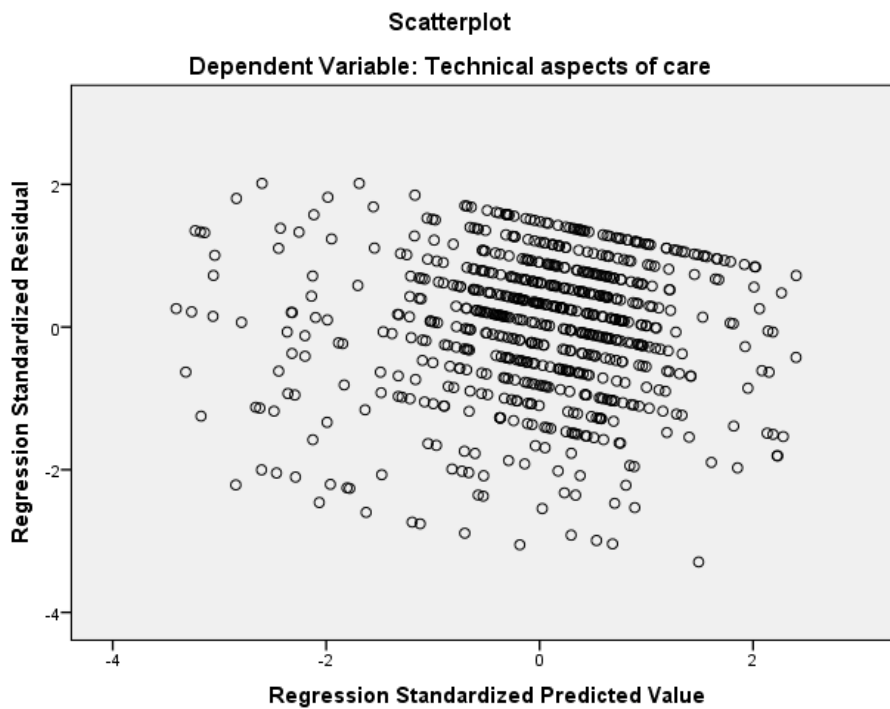


**Appendix 10: Normal P-P Plot for Neatness and effectiveness of treatment****Appendix 11 Scatterplots for Neatness and effectiveness of treatment**

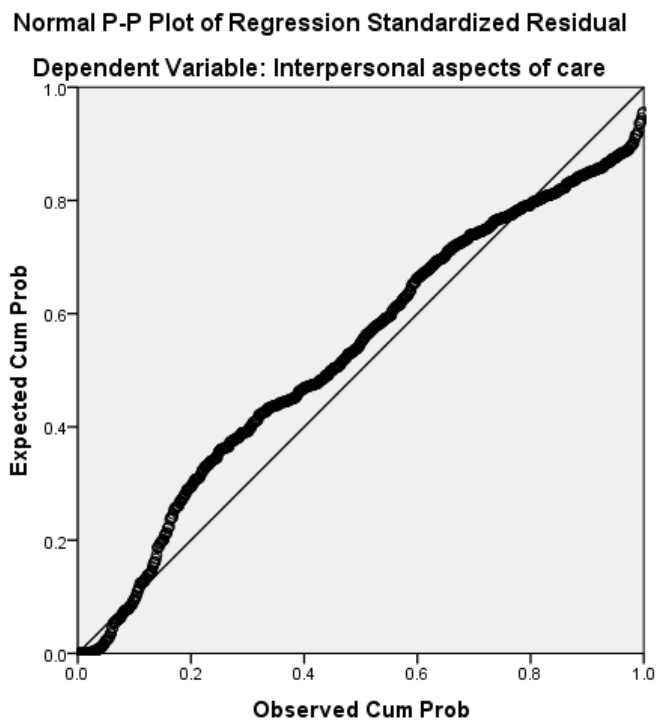
## Appendix 12: Normal P-P Plot for Technical aspects of care



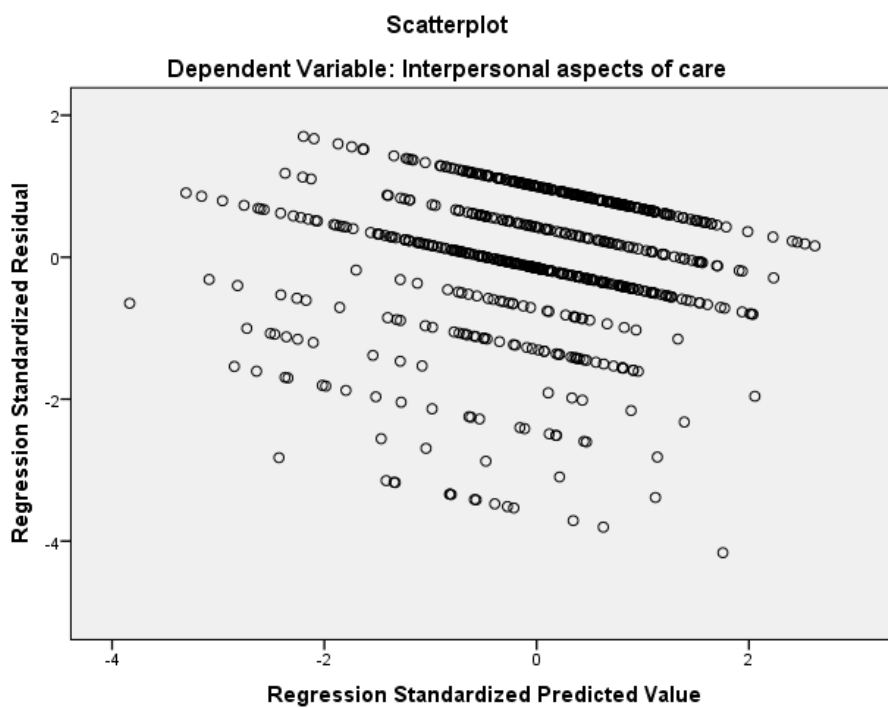
## Appendix 13 Scatterplots for Technical aspects of care

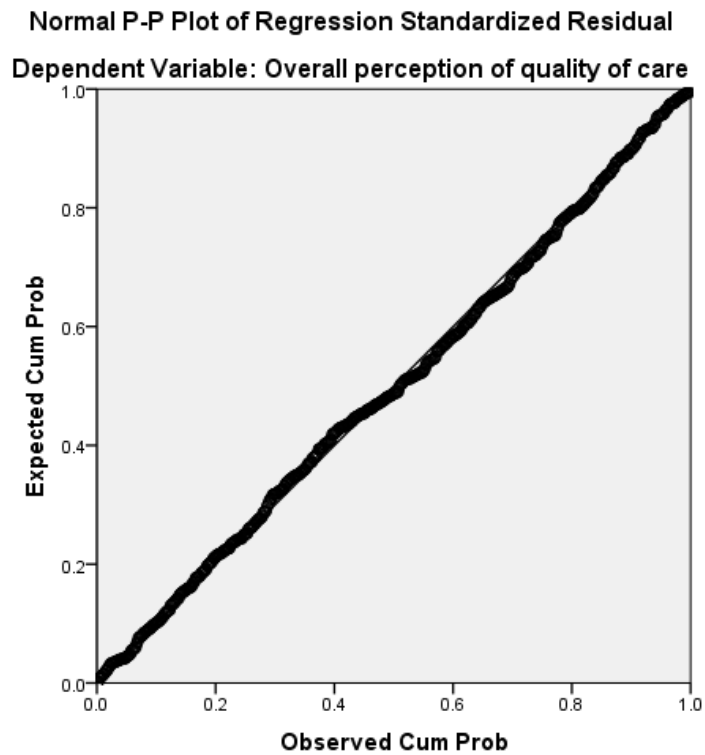
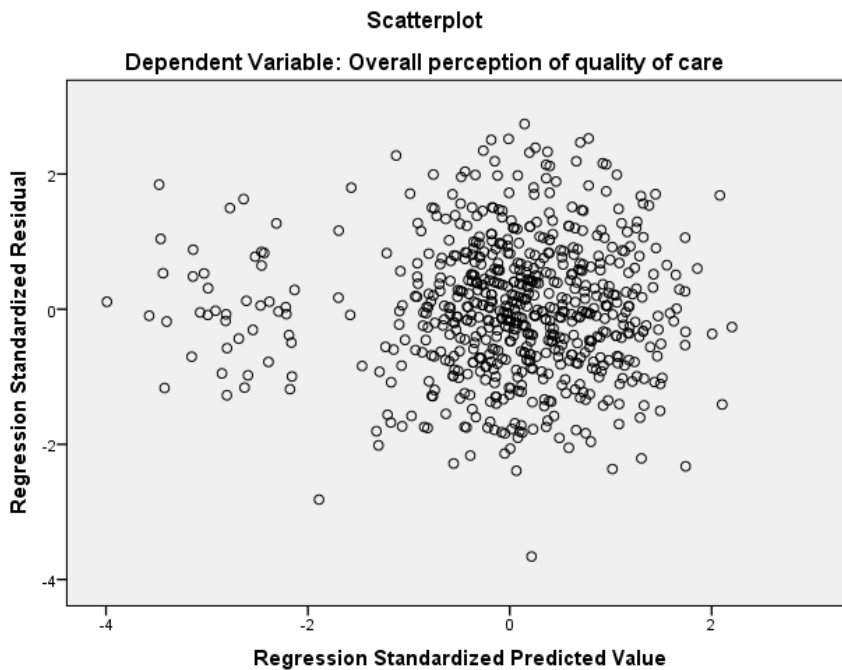


## Appendix 14: Normal P-P Plot for Interpersonal aspects of care



## Appendix 15: Scatterplots for Interpersonal aspects of care



**Appendix 16: Normal P-P Plot for Overall Perception of Quality of Care****Appendix 17 Scatterplots for Overall Perception of Quality of Care**

**Appendix 18: Pearson Correlation of Socio-Economic and Hospital Characteristics and Financial Access to Care<sup>11</sup>**

|                   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |   |  |  |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---|--|--|
| Financial access  | 1      |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |   |  |  |
| Insurance status  | 0.136  | 1      |        |        |        |        |        |        |        |        |        |        |        |        |        |        |   |  |  |
| Age of respondent | 0.014  | -0.059 | 1      |        |        |        |        |        |        |        |        |        |        |        |        |        |   |  |  |
| Sex               | -0.03  | -0.178 | 0.185  | 1      |        |        |        |        |        |        |        |        |        |        |        |        |   |  |  |
| Marital status    | -0.044 | 0.118  | 0.108  | -0.108 | 1      |        |        |        |        |        |        |        |        |        |        |        |   |  |  |
| Primary-JHS       | 0.065  | 0.045  | 0.005  | -0.167 | 0.126  | 1      |        |        |        |        |        |        |        |        |        |        |   |  |  |
| Sec/Tec/Voc       | 0.018  | -0.012 | -0.06  | 0.107  | -0.279 | -0.416 | 1      |        |        |        |        |        |        |        |        |        |   |  |  |
| Tertiary          | 0.029  | 0.001  | -0.054 | 0.164  | -0.038 | -0.359 | -0.199 | 1      |        |        |        |        |        |        |        |        |   |  |  |
| Above GHC 100     | 0.066  | -0.017 | 0.066  | 0.215  | 0.011  | -0.127 | 0.082  | 0.209  | 1      |        |        |        |        |        |        |        |   |  |  |
| No earnings       | 0.01   | -0.044 | -0.087 | -0.011 | -0.056 | 0.014  | 0      | -0.057 | -0.431 | 1      |        |        |        |        |        |        |   |  |  |
| Distance          | -0.117 | -0.069 | 0.079  | 0.005  | 0.053  | -0.012 | -0.057 | -0.05  | -0.084 | 0.043  | 1      |        |        |        |        |        |   |  |  |
| Household size    | -0.031 | -0.059 | 0.094  | 0.113  | -0.058 | -0.017 | -0.029 | -0.061 | -0.076 | 0.143  | 0.059  | 1      |        |        |        |        |   |  |  |
| Health status     | 0.066  | 0.049  | 0.012  | 0.02   | 0.016  | 0.017  | 0.024  | 0.057  | 0.088  | -0.041 | -0.048 | -0.027 | 1      |        |        |        |   |  |  |
| No. of doctors    | -0.172 | -0.109 | -0.052 | -0.053 | -0.006 | 0.004  | -0.005 | -0.032 | -0.013 | 0.033  | 0.024  | -0.043 | 0.097  | 1      |        |        |   |  |  |
| Above 70 beds     | 0.094  | -0.049 | -0.052 | -0.07  | -0.053 | 0.025  | -0.02  | -0.013 | -0.044 | -0.054 | -0.079 | -0.064 | 0.069  | 0.73   | 1      |        |   |  |  |
| Mission Hospitals | -0.083 | 0.006  | -0.057 | -0.059 | -0.052 | 0.028  | -0.054 | 0.001  | -0.084 | 0.035  | 0.033  | 0.066  | -0.043 | 0.111  | 0.216  | 1      |   |  |  |
| Private Hospitals | 0.006  | -0.022 | 0.062  | 0.066  | 0.01   | -0.019 | 0.05   | -0.001 | 0.046  | -0.072 | 0.026  | -0.025 | -0.012 | -0.581 | -0.596 | -0.454 | 1 |  |  |

<sup>11</sup> The other dimensions of quality of care include fairness of care, adequacy of resources and services, neatness and effectiveness of treatment, technical aspects of care, and overall quality of care. The results of these dimensions of quality of care were not drastically different from the results of financial access to care.