

**SCHOOL OF PUBLIC HEALTH
COLLEGE OF HEALTH SCIENCES
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**ASSESSING HEALTH CARE UTILISATION AMONG THE ELDERLY WITH
CHRONIC CONDITIONS IN GHANA**

BY

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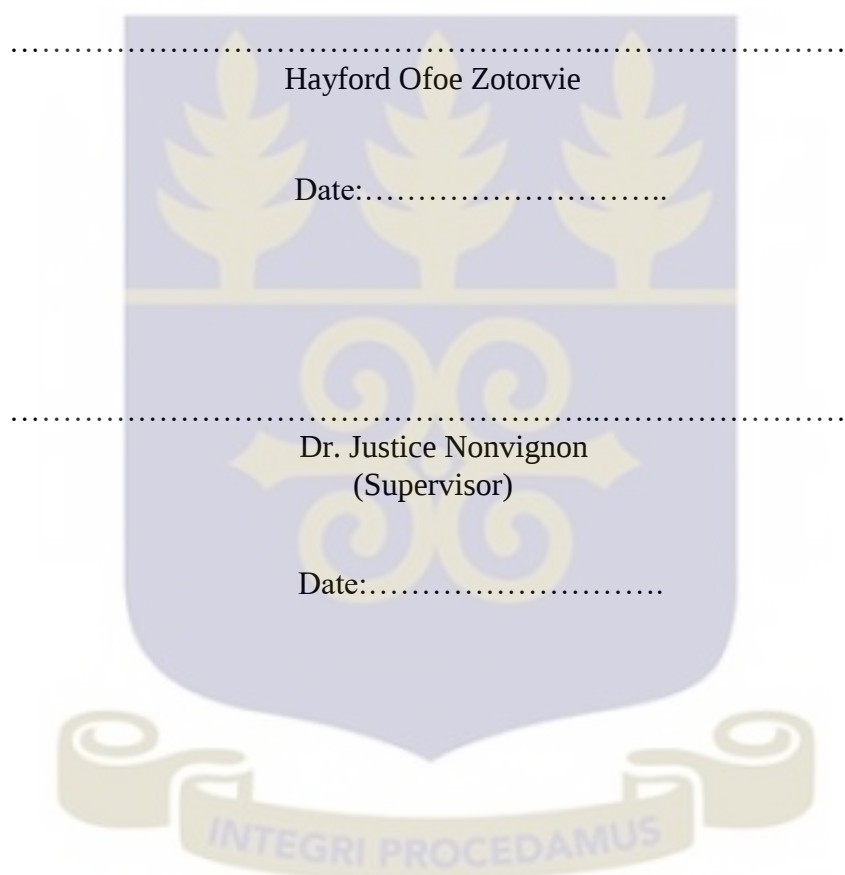
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DECLARATION

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



DEDICATION

This work is dedicated to my wife as well as Ziporah and Zivanka, my children. Thank you for being there for me.



ACKNOWLEDGEMENT

I am grateful to all the people who in diverse ways contributed to the success of this study. My heartfelt gratitude goes to Dr. Justice Nonvignon for his constructive guidance while undertaking this study. I am also indebted to Professor Moses Aikins, Dr. Reuben Esena, Dr. Genevieve Cecilia Aryeetey all of the Department of Health Policy Planning and Management, as well as Dr Eli Gaveh and Mr. Richard Akuffo for their unfailing support. I say thank you to Mrs. Lydia Boateng for the support she gave me during my data analysis. Special thanks also goes to all staff of the University of Ghana, School of Public Health especially the Department of Health Policy, Planning and Management for their unflinching support and readiness to assist anytime I called on them.

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May the Almighty God bless you all!!!



ABSTRACT

Background: The elderly are among the most vulnerable groups of people worldwide and are prone to chronic diseases such as hypertension, stroke, diabetes and cancers. The prevalence as well as associated risk factors of these chronic diseases have been observed to have increased over time in Ghana.

Methods: This study used secondary data generated from the WHO Study on Global AGEing and Adult health (SAGE) in Ghana. Information on the elderly, defined as people with age of 60 years and above, with chronic conditions was extracted from the dataset and analysed using STATA Version 12. Descriptive statistics as well as tests of association using Chi-square and multinomial logistic regression were conducted to measure the level of association between dependent and independent variables.

Results: Of 830 people who met the case definition for elderly with chronic conditions in the dataset, national health insurance as well as level of education were significantly associated with healthcare utilisation. About half of the elderly (51.8%) were enrolled on the health insurance. In addition, out-of-pocket payments were significantly different among the types of facilities used.

Conclusion: Results obtained from the study indicated that out-of-pocket payment, health insurance as well as level of education of the elderly were significantly associated with healthcare utilisation. Most of the elderly used public health facilities compared to over-the-counter and other facilities.

TABLE OF CONTENTS

DECLARATION	i
DEDICATION.....	ii
ACKNOWLEDGEMENT	iii
ABSTRACT.....	iv
TABLE OF CONTENTS.....	v
LIST OF TABLES.....	viii
LIST OF FIGURES	ix
LIST OF ABBREVIATIONS.....	x
DEFINITION OF TERMS	xi
CHAPTER ONE	1
1.0 INTRODUCTION	1
1.1 Background	1
1.2 Statement of the problem	3
1.3 OBJECTIVES	6
1.3.1 General objectives:.....	6
1.3.2 Specific objectives:	6
1.4 Conceptual Framework	7
1.5 Justification of the study	8
CHAPTER TWO	10
2.0 LITERATURE REVIEW	10
2.1 Introduction	10
2.2 Health implications of ageing	10
2.3 Health care utilisation.....	11
2.4 Chronic conditions among the elderly	12
2.5 Factors affecting health care utilisation	16
2.5.1 Socio-demographic and socioeconomic factors.....	19
2.6 Quality of healthcare and choices	22
2.7 Type of Health Care Services used	24
2.8 National health insurance and health care utilisation.....	27
2.9 Formal/Informal Healthcare	28
2.10 Private/Public Health facilities	29
2.11 Conclusion.....	30
CHAPTER THREE	31
3.0 METHODOLOGY	31
3.1 Type of study.....	31

3.2	Study location/Area.....	31
3.3	Study population	31
3.3.1	Sample size and sampling.....	31
3.4	Sampling procedure.....	32
3.5	Data Collection Techniques/Methods & Tools	32
3.6	Study Variables	33
3.7	Quality Control.....	36
3.8	Data Processing and Analysis	36
3.8.1	Data processing.....	36
3.8.2	Statistical Methods.....	37
3.9	Ethical Consideration/Issues	38
3.9.1	Confidentiality	38
3.9.2	Potential Risk Factors /Benefits.....	38
3.9.3	Data Usage and Storage	39
3.9.4	Declaration of Conflict of Interest	39
CHAPTER FOUR.....		40
4.0	RESULTS	40
4.1	Introduction	40
4.2	Type of facility used.....	40
4.3	Background characteristics of the elderly	40
4.4	Healthcare utilization among the elderly with chronic conditions.....	43
CHAPTER FIVE		48
DISCUSSION		48
5.0	Introduction	48
5.1	Healthcare utilisation.....	48
5.1.1	Type of facility used	48
5.2	Factors Influencing Healthcare Utilisation	49
5.2.1	Health Insurance Status.....	49
5.2.2	Chronic Conditions	49
5.2.3	Educational status	50
5.2.4	Out-of-Pocket Payment and Household Wealth	51
5.2.5	Self-reported Health.....	51
CHAPTER SIX.....		52
6.0	CONCLUSION, RECOMMENDATION AND LIMITATION	52
6.1	Conclusions	52
6.2	Recommendation	52
6.3	Limitations of the study	53

REFERENCES	54
APPENDICES	62
Appendix I: Informed Consent Form.....	62



LIST OF TABLES

Table 1 Description of independent study variables.....	35
Table 2 Distribution of healthcare utilization by the elderly in Ghana in 2007/08	40
Table 3: Background Characteristics of respondents.....	41
Table 4: Characteristics of study participants in Ghana in 2007/08	43
Table 5: Socioeconomic factors of the elderly in Ghana in 2007/08.....	45
Table 6: Factors associated with healthcare utilisation among respondents in Ghana in 2007/08	46
Table 7: Factors associated with healthcare utilisation in Ghana in 2007/08.....	47



LIST OF FIGURES

Figure 1: Conceptual framework on healthcare utilisation.....	8
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LIST OF ABBREVIATIONS

ADL	Activities in Daily Life
CHC	Community Health Service Centres
COPD	Chronic obstructive pulmonary disease
EA	Enumeration Area
GHS	Ghana Health Service
GSS	Ghana Statistical Service
NHIS	National Health Insurance Scheme
OTC	Over-the-counter
PCA	Principal Component Analysis
PHC	Population and Housing Census
PSU	Primary Sampling Unit
PWR	Participatory wealth ranking
SAGE	Study on Global Ageing and Adult Health
SD	Standard Deviation
WHO	World Health Organisation
TM	Traditional Medicine
WHS/SAGE	World Health Survey /Study on Global Ageing and Adult Health

DEFINITION OF TERMS

Depression:	A state of low mood and aversion to activity that can affect a person's thoughts, behaviour, feelings and sense of well-being.
Enumeration Area:	The geographic area canvassed by one census representative.
Primary Sampling Unit:	In sample surveys, primary sampling unit (PSU) arises in samples in which population elements are grouped into aggregates and the aggregates become units in sample selection.
Elderly:	In this study, the elderly are people who are 60 years and above.
Institutionalization:	Placing of the elderly into a confined health care institution where they are cared for.
Pilate exercise:	A type of exercise that puts emphasis on alignment, breathing, and improvement in coordination and balance among others.
Reminiscence:	The act of recollecting past experiences or events, such as when a person shares his personal stories with others.
Kruskal Wellis test	A rank-based nonparametric test that can be used to determine if there are statistically significant differences between two or more groups of an independent variable on a continuous or ordinal dependent variable.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Populations are ageing rapidly around the world. The transition to older populations will present numerous challenges for both developed countries and developing countries. These challenges consist of strains on pension and social security schemes; growing demand for primary health care; a health workforce that is insufficient and inadequately trained to handle older adults; increasing need for long term care; lack of integration of all forms of care as well as pervasive ageism that serves to marginalise older people and deprive them of the rights and opportunities available to other adults (Beard, 2010).

The elderly as defined by the Ghana Statistical Service (GSS), are people who are 60 years and above (GSS Report, 2013). Aging is continually viewed negatively as a stage in the life cycle of mankind when there is much need for support since there is cognitive impairment and a state of perceived diminished quality of life. The functional age brackets: 60- 74 (young-old), 75- 84 years (old-old) and 85+ years (very old) was employed in this study as reported by Ghana's 2010 Population and Housing Census (GSS Report, 2013). The increase in the ageing population which is common in the developed countries is now being experienced in developing countries. Globally, there are 810 million people who are 60 years and above representing 11.5% of the world's population of 7 billion (GSS Report, 2013).

This increase in the ageing population will have profound implications for labour markets, aggregate demand, politics and societal structures. In Africa as of 2010, 36 million elderly people aged 65 years and over accounted for 3.6% of the population, an increase of 3.3% in ten years (Nabalamba, Chikoko, & Complex, 2009). It was indicated by Nabalamba, Chikoko

& Complex (2009) that in 1980, 3.1% of Africa's population was elderly aged 65 and above, and there had been a steady increase during the last forty years.

Africa's ageing population is expected to increase rapidly between 2010 and 2030, as more people reach age 65, because projections show that the elderly could account for 4.5% of the population by 2030 and nearly 10% of the population by 2050 (Nabalamba, Chikoko & Complex, 2009).

The increase in the aging population is as a result of decrease fertility rate and corresponding increase in life expectancy. There is a global annual increase of 3.2% in the population aged 60 years and above. Population aging is a global concern in the World today. It is worth noting that two-thirds of elderly people (aged 60 and above) reside in developing countries including sub-Saharan Africa (Ojiambo et al., 2015).

In Ghana the population of the elderly has increased more than seven-fold since the 1960 census rising from 213,477 in 1960 to 1,643,381 in 2010. The percentage of female elderly population is 56% compared with 44% of the male elderly population, indicating a higher life expectancy of the female population. A higher proportion of the elderly population (54%) live in the rural areas. It is worth noting that 47% of females and 44% of males reside in urban areas (GSS Report, 2013).

According to the GSS (2013), most of the elderly (71.1%) live in a residents owned by a household member and almost a fifth (23.0%) live in houses that are owned by a relative. Ownership of house is quite low among the elderly, considering that the elderly are expected by the society to own their own houses in order to earn some respect (GSS Report, 2013).

The National Ageing Policy in Ghana includes proposals for ensuring that the elderly receive proper care through better collaboration. The mission and vision of the National Ageing Policy of Ghana is that the elderly must have access to good healthcare and social services; must be treated with respect and dignity; must be able to live an active life and have influence over their daily activities and be able to grow old in security and retain their independence.

The elderly are prone to chronic diseases that affect them throughout the rest of their lives. In a review of the burden of chronic disease conditions in Ghana conducted in 2003, De-Graft Aikins indicated that hypertension, stroke, diabetes and cancers had become part of the top ten in the country (De-Graft Aikins, 2007). Major chronic non-communicable diseases prevalence and their associated risk factors have increased over the years and contributed significantly to the disease burden in Ghana. Chronic conditions such as diabetes, hypertension and stroke are suffered by both young and old alike, urban and rural, and wealthy and poor populations (De-Graft Aikins et al., 2012).

Result from a study conducted using Global Ageing and Adult Health (SAGE) data in 2007 in Ghana regarding chronic conditions of the elderly showed that 45% had oral health problems, 33% were hypertensive, 14% reported having arthritis; 7% had been diagnosed with diabetes, 6% had a cardiovascular condition (Angina) and 4.9% were receiving treatment for stroke or had been diagnosed with stroke (Ayernor, 2012). The study also stated that odds of having a chronic non-communicable condition for those who lived in a rural area was twice as likely as those who reside in an urban area.

1.2 Statement of the problem

Chronic diseases are the largest cause of mortality worldwide. In 2002, cardiovascular disease, cancer, chronic respiratory disease, and diabetes caused 29 million deaths worldwide (Yach et al., 2004). Yach et al. (2004) indicated that notwithstanding growing indication of

epidemiological and economic impact, the global response to the problem remains inadequate. Globally, there is an increase in the prevalence of all the leading chronic diseases, with the majority occurring in developing countries and this is projected to increase substantially over the next two decades. Cardiovascular disease is already the leading cause of mortality in developing countries. Between 1990 and 2020, it is expected that mortality from ischemic heart disease in developing countries is to increase by 120% for women and 137% for men. Estimates for the next two decades include a near tripling of ischemic heart disease and stroke deaths in Latin America, the Middle East, and sub-Saharan Africa (Yach et al., 2004).

The rising burden of chronic conditions has drawn the attention of public health researchers and policy makers globally. Estimates indicate that chronic conditions will cause 41million deaths in 2015 (Bhojani et al., 2013). Bhojani reported in his study that the chronic disease burden is very high in low and middle-income countries, where over 80% of deaths from chronic conditions have been estimated to occur. Africa is faced with an urgent but 'neglected epidemic' of chronic disease conditions (De-Graft Aikins, Boynton, & Atanga, 2010). Disability and death rates due to chronic diseases such as diabetes, hypertension and stroke have accelerated over the last two decades in many countries according Aikins, Boynton, & Atanga, (2010) and affected populations include urban and rural, wealthy and poor, old and young. Africa's chronic disease burden has been strongly attributable to lifestyle and behavioural practices such as sedentary life and diets with high saturated fats, salts and sugars. In Ghana, there is no chronic disease policy but rather a national health insurance policy that covers drug treatment of some chronic diseases, a culture of patient advocacy for a broad range of chronic conditions and mass media campaign in chronic disease education (De-Graft Aikins, Boynton & Atanga, 2010).

In Ghana, the high cost of care for chronic disease drives the poor further into poverty (De-Graft Aikins et al., 2012). Awareness and knowledge about these chronic conditions are limited, health systems are weak, and there are no chronic disease policies and as a result there is increasing risk, morbidity and mortality (De-Graft Aikins et al., 2012).

According to the World Health Organization (WHO), the lives of far too many people in the world are being blighted and cut short by chronic diseases such as heart disease, stroke, cancer, chronic respiratory diseases and diabetes. This is no longer only happening in high income or developed countries. Four out of five chronic disease deaths today are in low and middle income countries and people in these countries tend to develop diseases at younger ages, suffer longer – often with preventable complications – and die sooner than those in high income countries (WHO, 2005).

Again, WHO reported that globally, of the 58 million deaths in 2005, approximately 35 million will be as a result of chronic diseases. Currently, chronic diseases are the major cause of death among adults in almost all countries and the toll is projected to increase by a further 17% in the next 10 years. This is a very serious situation, both for public health and for the societies and economies affected (WHO, 2005).

The elderly are among the most vulnerable groups of people worldwide. The decision of the elderly to use health care services relates to their health status, availability and accessibility of health care services. In addition, the variations in the patterns of health care utilisation depend on economic, psychological, behavioural and epidemiological factors (Fernández-Olano et al., 2006).

According to World Health Survey/SAGE report 2010, 83% of the elderly in Ghana reported needing health care. The proportion of Ghanaians who needed health care in the last three

years increased with increasing age. The proportion receiving outpatient or inpatient care was also related to the age of the individual: the aged were more likely to have needed and received inpatient or outpatient health care. Fifteen percent of those aged 70 years and above received inpatient care in the last three years compare to 11% in the 18-49 year old group. Sixty percent of the 70+ year group received outpatient care in the last three years compared to 54% in the 18-49 year old group. Urban dwellers needed more care and received both more inpatient and outpatient care in the last three years than their rural counterparts.

It is therefore important to assess the factors that influence health care utilisation of the elderly to inform policy.

1.3 OBJECTIVES

1.3.1 General objectives:

The general objective of this study was to assess the factors that influence the use of healthcare services among the elderly with chronic conditions in Ghana.

1.3.2 Specific objectives:

The specific objectives were:

1. To determine healthcare utilisation among the elderly with chronic conditions in Ghana.
2. To assess the factors that affect healthcare utilisation among the elderly with chronic conditions in Ghana.

1.4 Conceptual Framework

In terms of utilisation of health care services, one of the most frequently used frameworks has been the behavioural model(Phillips et al., 1995). The behavioural model which has been extensively revised indicates multiple influences on the utilisation of health care and patients' health status. It uses a systems perspective to integrate the characteristics of individuals (including predisposing, enabling and need factors) and contextual (environmental and provider-related) variables associated with decisions to seek care.

The use of healthcare among the elderly depends on predisposing factors, enabling factors and need based factors. Predisposing factors are socio-demographic characteristics including age, sex, marital status, education, geographic location among others. An elderly patient who is so frail will find it difficult if not impossible to seek healthcare if he is not assisted to the health facility. Enabling factors such as national health insurance status, household wealth and employment status make the elderly decide to seek healthcare or not, since they need to travel to the facility if it is a distance away or even pay for some services which are not covered by health insurance. Health status or self-reported health, chronic condition status and satisfaction with healthcare services are some of the need factors that will inform the decision of an elderly patient to seek or not to seek healthcare. Figure 1 is the conceptual framework adapted from Philips et al., (1995), for the study.

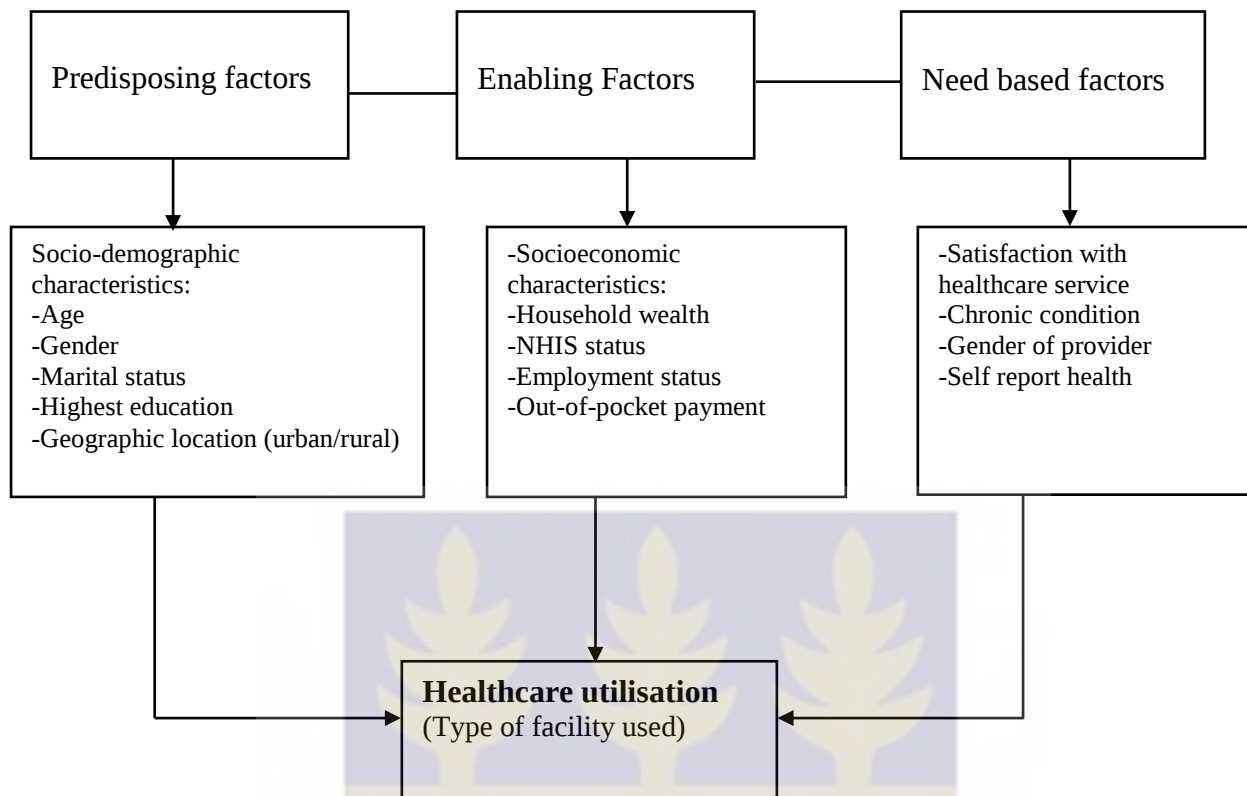


Figure 1: Conceptual framework on healthcare utilisation

1.5 Justification of the study

Though an increase in the expectancy of survival into old age is a major achievement of humanity, the elderly are still battling with chronic diseases which affect them. The frail nature of the elderly with chronic diseases indicates that there is an interplay of biological, psychological and social changes that is associated with ageing (Claver et al., 2013).

The rising burden of chronic conditions affecting the elderly places a heavy burden on the health system as a result of increased demand and access to healthcare services. Hence concerted effort is needed to develop strategies for the prevention and management of these chronic health conditions especially among socioeconomically underprivileged individuals who need these services the most (Phaswana-Mafuya et al., 2013). Healthcare utilisation among the elderly is heavily dependent on their ability to afford health services. This becomes difficult since most of them are not employed and vulnerable. Health financing for

the elderly will go long way to assist the elderly in their healthcare need. Ghana therefore needs an ageing policy that will make it mandatory that a fully financed and free healthcare is available for the elderly since it is the Government's social responsibility.

Conducting this research therefore offers an opportunity to study peculiar health issues among the elderly in Ghana and what factors influence their healthcare use.



CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This section examines and reviews studies carried out in the area of assessment of health care utilisation among the elderly. It further explores studies that address chronic conditions and use of health services among the elderly.

There is unprecedented increase in the elderly population globally. Available statistics in Ghana show similar trends in all regions and districts of Ghana (Yiranbon et al., 2014).

Our current generation owes it as a duty to honour and guarantee better living conditions for the elderly. The society in which we live today has been built through the efforts and toils of previous generations some of whom still live with us as older persons. We must make the effort to provide them with efficient health care services and favourable living environment to ensure that they advance in age actively and with adequate security and recognizable dignity(Sandberg et al., 2014).

The National Ageing Policy presents a framework that is capable of transforming the lives of the elderly, and it is our shared vision as Ghanaians to achieve the overall social, economic and cultural re-integration of the elderly into mainstream society to enable them participate in the development of the nation (Sandberg et al., 2014).

2.2 Health implications of ageing

The ageing of the global population and the attendant increases in public spending on health and social care are seen as a major threat to worldwide economic stability in the 21st century. Worldwide epidemic of chronic disease conditions is strongly linked to the ageing population

(Prince et al., 2015). According to Prince et al (2015), 23% of the global burden of disease arises in older people and chronic diseases accounting for most of the burden, with leading contributors being cardiovascular diseases, cancers, chronic respiratory diseases, musculoskeletal diseases, and mental and neurological disorders.

In 2008, the WHO stated that about 60% of deaths worldwide were caused by chronic conditions and that by 2020, this number is expected to rise to almost 75% (WHO, 2010). Chronic disease increases medical expenses and reduces the productivity of labour of care givers as the economic burden of chronic diseases is immense. In the United States, chronic diseases account for 75% of the total expenditure (Huber et al., 2013). The WHO (2010) further stated that each year, 100 million people are pushed into poverty because they have to pay directly for health services; and in some countries, this may represent 5% of the population forced into poverty each year.

Africa bears a significant percentage of the global burden of chronic diseases, along with poor countries of Asia and Latin America (De-Graft Aikins et al., 2010). According to De-Graft Aikins et al., (2010), over the next ten years the African continent is projected to experience the largest increase in death rates from cardiovascular disease, cancer, respiratory disease and diabetes.

2.3 Health care utilisation

Health care utilisation comprises of outpatient and in-patient visits. Outpatient visits included all visits to primary care physicians, specialists, paramedical practitioners and hospital outpatient departments. Studying health service utilisation is essential because it helps to identify the important characteristics related to a health system's use.

The significance of primary care arises when the focus in healthcare changes from patients with single illnesses to individuals with complex health problems. Among populations, good relations between patients and primary care contribute to more satisfactory care, trust and better health (Ranstad, Midlöv & Halling, 2014). Research has shown that strategies to encourage patient–doctor relations increase availability of care and also reduces the risk of persons not feeling the need for continuous relations in primary care thus receiving insufficient care (Ranstad, Midlöv & Halling, 2014).

2.4 Chronic conditions among the elderly

Chronic conditions are human health conditions or diseases that persist or are long-lasting in their effects or diseases that arise with time. The term chronic is usually used when the course of the disease lasts for more than three months. The chronic disease epidemics take decades to become fully recognized – they have their origins at young ages (WHO, 2005). Some of these conditions exist together in a single individual as multimorbidities or comorbidities and is associated with poorer outcomes and increased healthcare cost and probably healthcare utilisation (Nimako, 2012). According to Nimako (2012), most the information available about multimorbidities has been gathered from work done in developed countries of the world.

The prevalence of multimorbidities has often been investigated, for instance, in Europe, Australia, and the United States. Several studies have examined the distribution of multimorbidity among older persons in developed nations but available literature on multimorbidity among the elderly people in developing countries is limited. In India, it was reported in 2003 that 83% of the elderly people had more than three morbidities (Khanam,

2011). Khanam, (2011) indicated that in China, 21.7% of rural elderly people have at least two morbidities, and 15.9% have three or more morbidities.

There is strong evidence that many chronic conditions increase with age, although some increase more rapidly than others (Marengoni et al., 2008). Additionally, some chronic conditions are more likely than others to be linked with disabling conditions and thereby produce differing tendencies to require support with activities of daily living (Moore, Rosenberg, & Fitzgibbon, 2011). With regards to prevalence of chronic conditions among the elderly, the same study done in Canada showed that a great majority of individuals over 55 (72% of men and 78% of women) living in the community experience at least one chronic condition while 27% of men and 33% of women experience three or more of the conditions. The study also indicated that prevalence varies markedly from arthritis experienced by 34.7% of those over 55 years, high blood pressure by 25.2% and stroke (2.9%) among others. It is worth noting that not all chronic conditions have the same propensity to increase with age.

A study have showed that the global prevalence of diabetes among adults (aged 20-79 years) was 6.4%, affecting 285 million adults, in 2010, and are expected to increase to 7.7%, among 439 million adults by 2030. Between 2010 and 2030, the study showed that there will be a 69% increase in numbers of adults with diabetes in developing countries and a 20% increase in developed countries (Shaw, Sicree & Zimmet, 2010). Conclusions drawn from the same research (Shaw, Sicree & Zimmet, 2010) indicated that these predictions, based on a larger number of studies than previous estimates, revealed a growing burden of diabetes, particularly in developing countries. For example in Ghana, based on the national population, the 2010 diabetes prevalence was 3.6% (Shaw, Sicree & Zimmet, 2010) and is expected to increase drastically if not checked. A similar study of global estimates of diabetes showed

that in 2011, there were 366 million people with diabetes, and this is expected to rise to 552 million by 2030 (Whiting et al., 2011). Most people with diabetes live in low and middle-income countries, and these countries will also see the greatest increase over the next 19 years (Whiting et al., 2011).

Depression in the elderly mainly affects those with other chronic medical conditions and cognitive impairment (Alexopoulos, 2005). Ünsal, Al, & Uçar, (2014) indicated that depression together with other mental conditions such as anxiety disorders, and psychosis are more common than previously seen in elderly populations. Studies show that widowed state, retirement from employment, current medical condition and living in a nuclear family system are strong determinants of depression and other associated chronic conditions in the elderly population (Raul & Sagare, 2013).

The elderly people with reduced physical ability are vulnerable and a study done in the United State of America showed that the elderly with symptoms of reduced mental health and chronic conditions such as depression also constitute a hospitalized group at risk (Sandberg et al., 2012).

Studies showed that chronic conditions for example depression that is not treated can result into decreased quality of life of the elderly and this can result in suicide tendencies (Mokhtari, Nezakatalhossaini, & Esfarjani, 2013). According to Tian et al. (2012), depressive symptoms have a significant negative effect on health care utilisation and people with depressive symptoms may seek health care as a result of physical discomfort.

Research indicates that the urban wealthy are not the only high risk groups for chronic diseases in Ghana. Poverty appears to be a risk factor for both communicable and non-communicable disease (De-Graft Aikins, 2007). The same study done by De-Graft Aikins

reported that there was growing evidence that some infectious diseases precipitated chronic diseases and that some chronic conditions placed sufferers at risk of infectious diseases. Studies in poor communities in Accra since the 1970s have established stronger co-existence of communicable and non-communicable diseases compared to wealthier communities. These communities were also likely to suffer complications of, and die prematurely from, chronic diseases because they lacked access to quality healthcare (De-Graft Aikins, 2007).

The functional burden imposed by a debilitating chronic illness such as chronic obstructive pulmonary disease (COPD) is likely reflected in the significantly higher rates of long-term institutional and home care utilisation among those with COPD compared with people who had lung cancer. A study indicated that in the final years of life, 41% of those with a diagnosis of COPD were functionally compromised to the point of requiring long-term institutional supportive care for a full year (Goodridge et al., 2008).

There is little research on chronic disease experiences compared to epidemiological studies (De-Graft Aikins, 2007). However existing work on experiences of diabetes, cancers and other chronic diseases build a consensual picture of the complex challenges of living life lost per 1000 persons per year, researchers found 10,400 days to cardiovascular disease and 5,100 days to hypertension. Secondly these conditions posed economic challenges (De-Graft Aikins, 2007). A meta-analysis carried out by Song et al., (2014) showed that among the chronic diseases, depression was one of the misdiagnosed and untreated conditions among the elderly population especially in third world countries. This revelation could account for the increased prevalence of depression among the elderly population in recent times. The same study showed that reminiscence has been used by researchers in various nations for management of elderly with depression in recent years and the technique has been found to

be yielding positive results in improving the detection and management of depressive state of the elderly (Song et al., 2014). Apart from reminiscence and pilate exercise among others, social support programs for the elderly needed to be put in place to ensure their well-being. Public awareness about risk factors will help design effective and suitable strategies for averting depressive disorders in the elderly population (Raul & Sagare, 2013).

2.5 Factors affecting health care utilisation

Most health systems in developed countries endorsed equity goals in terms of making sure that access to healthcare is irrespective of socioeconomic status (Allin, Grignon, & Le Grand, 2010). One of the main goals of health system reform across the globe is to guarantee that the use of healthcare is as high for the deprived as it is for the rich in society. The WHO ranks health systems according to evidence on such disparity. Nevertheless, in measuring equity in the use of health care, studies typically pay no attention to traditional medicine use. Consequently, it is assumed that the failure to utilize up to date health care is comparable to not getting any health care at all (Sato, 2012a). Literature showed that income level, wealth or socioeconomic status are fundamental to health seeking behaviour and healthcare utilisation, and most of which concentrate on utilisation of modern providers (Sato, 2012b).

There are many other reasons why people use healthcare services. The decision of the elderly to utilise healthcare results from multiple factors linking to one's self-perceived health, healthcare availability and the type of health care facility used. Furthermore, one's experience and beliefs in the healthcare system plays an important role in his decision to seek healthcare (Exavery, Klipstein-grobusch, & Debpuur, 2013).

A study showed that personal characteristics which possibly influence the individual to seek health care, included illness, enabling factors such as financial ability to pay for healthcare, knowledge about the type of healthcare services provided in the community and proximity to healthcare service. Educational attainment, national health insurance coverage, ethnicity, household wealth and geographic location or region are significant factors that affect the use of healthcare services (Saeed, Aidoo, & Yawson, 2013).

In societies where there is equity, utilisation of healthcare should reflect individual differences in health status and needs, and not depend on socioeconomic status of the individual (Hoeck et al., 2011). In the elderly therefore, it is not well established whether the association between functional limitation and use of health care services differ with the type of health care coverage (León-Muñoz et al., 2007).

A person's choice of using health care services is the result of a multifaceted interaction of factors relating to the individual's health status as well as his or her self-reported health status, and the availability and accessibility of the health care offer. In an ideal condition, this would exclusively depend on the health status of a person or community; nevertheless, the actual situation is quite different. The reasons why health care utilisation patterns vary from one person to another has been the subject of numerous studies for several decades (Fernández-Olano et al., 2006). Various theoretical models of health care utilisation have been formulated in an attempt to understand from various perspectives (economic, psychosocial, behavioural, epidemiological, etc.) which variables are influencing health care utilisation and to what extent.

In many countries around the globe, the health outcomes of indigenous people are far worse than the non-indigenous populations. This can be due to poor lifestyle choices and a lack of

access to health care services when ill (Whelan & Wright, 2013). Satisfaction of the patient is widely regarded as a vital indicator in the efficient use of health care services as it evaluates the extent to which the services meet the medical needs of the patient (Whelan & Wright, 2013). A result from a study showed that while the large majority of persons with high use or cost had chronic disease conditions, the minority of persons with chronic conditions had high health care utilisation. Nevertheless, among individuals with chronic disease conditions, disability was a significant predictor of high utilisation (Reichard et al., 2015).

The elderly require resources and medical care in a proportion that is greater than their younger counterparts in the population. Furthermore, the number of visits to health facility by patients in this age category accounts for most of the patient load in primary care clinics. Some of these patients may be defined as “frequent visitors” or in the “high utilisation group”. Understanding the causes that make these patients visit their doctors so often may help reduce the frequency of visits and improve their quality of care (Press et al., 2012).

Studies conducted in the USA showed that the elderly make extensive use of health care resources as this data indicated that the elderly population requires 33% of health expenditure. A study conducted in Spain revealed that the elderly accounted for 40% of the general practitioner activity, 25% - 65% of home visits and 52% of medicines prescribed at primary care facilities (Fernández-Olano et al., 2006). Studies showed that high health care utilisation is associated with advanced age and lower self-report health is supported by various literature (Canadian et al., 2015). A similar study conducted in Manitoba found that high-cost users of medications were more likely to be of low income status, older age and more likely to have a chronic condition (Kozyrskyj et al., 2005). But a study done in Canada regarding health care utilisation tends to show that older individuals have substantially fewer visits to specialists care than middle-aged individuals, and younger individuals have more

visits. Those elderly who are over the age of 75 have 1½ to 2¼ fewer visits than average (Macminn, 2015).

According to Peytremann-Bridevaux, Voellinger & Santos-Eggimann, 2008 depressive symptoms were significantly associated with greater use of all health care services but not preventive services, with the exception of colorectal cancer screening. Studies showed that health care utilisation among the elderly was mainly determined by socio-demographic factors, age-related diseases, geriatric conditions and lifestyle (Chang et al., 2010).

Study done in Mexico finds that various health conditions increase the use of certain services more than others; that older age per se just increases the use of health services only slightly; and that beyond socioeconomic attributes of the individuals and health conditions, the availability of health insurance plays an important role in enabling the use of services (Wong & Díaz, 2007). It is also reported that overall health has an effect on the use of health care services in the population of older adults, beyond the effect of having particular health conditions (Wong & Díaz, 2007).

It is expected that, even though socio-demographic characteristics will determine the propensity to use health care services, a dominant factor for the use of services will be the health needs. Additionally, it is expected that socio-demographic factors and health needs will affect the propensity to use services differently, depending on the type of services.

2.5.1 Socio-demographic and socioeconomic factors

Socioeconomic status is considered as a combination of educational attainment, income status, wealth, employment and occupational status, which is generally representative of the social standing or social class of an individual or a group of people (Kong et al., 2014). In some countries such as the United States of America, socioeconomic status varies markedly

by ethnicity and race. Asians and whites are disproportionately represented among the higher socioeconomic groups whereas Blacks and Hispanics are disproportionately represented among the lower socioeconomic status groups. Previous studies done showed that while education and income in many cases are comparable as socioeconomic indicators in the context of health care utilisation, equity in one socioeconomic dimension does not rule out inequity in the other (Vikum, Krokstad & Westin, 2012).

A study conducted in Tanzania (Khan et al., 2006) indicated that both poor and non-poor families residing in areas of low poverty concentration have better service utilisation rates than persons living in higher poverty areas.

It has long been demonstrated by social scientists that wealthy people tend to be healthier and live longer than poor individual in society (Maskileyson, 2014). The positive association that exists between economic resources and health can be attributable to two main reasons. First, economic resources can be used to purchase better health care services (Van Doorslaer, Masseria, & Koolman, 2006). Second, poor health status of the population may lead to a depletion of economic resource (Maskileyson, 2014). Although both methods are logical and quite undoubted, they are by no means conflicting.

Economists usually regard detailed data on household income and/or expenditure as the gold-standard measure of current socioeconomic status. Nevertheless, health researchers seldom have the means or expertise necessary to carry out such assessments (Hargreaves et al., 2007). Hargreaves et al also indicated that total wealth, reflecting the balance between income and expenditure over a longer period, may be a more appropriate marker of socioeconomic position when health outcomes are considered. Therefore, rapid techniques

for assessing household wealth are needed. A number of measures of socioeconomic position have been developed including shortened income or expenditure questionnaires and measures of housing quality, education, nutritional status and so on. Others involve a combination of multiple socioeconomic variables that usually includes data on housing and ownership of fixed assets, into a measure of household wealth (Hargreaves et al., 2007).

The combination of such data can be realized through simple counts, weighting of variables based on local consultation, or through the application of statistical procedures such as principal components analysis (PCA). The study also indicates another alternative technique which uses participatory wealth ranking (PWR), in which community members rank the wealth of households in their community. This approach according to the study is widely used in development practice but rarely used in health research (Hargreaves et al., 2007).

Wealth inequality measure is based on an index that operationalizes wealth as ownership of household assets and household structural components (Zimmer, 2008; Khan et al., 2006). Because the wealth scores are usually based on patterns of asset ownership among households rather than the monetary value of assets owned, the scores obtained can be used to define relative socioeconomic position and relative poverty (Khan et al., 2006). Results from a research conducted in rural Cambodia confirmed difficult economic conditions which is similar to those in Ghana and other African countries. From the study, the lowest wealth quintile lives in households that own nothing, while the next quintiles are only slightly better off (Zimmer, 2008). Analysis from the same study suggested the ability to generalise the relationship between wealth inequality and health to extremely poor people as a very minor difference in wealth makes a relatively large difference with respect to health associations among those in meagre surroundings.

Income quintile is a major determinant of health care utilisation therefore those in the highest income quintile needed care and also received more care compared to those in the lowest income quintile; nearly half of the respondents in the lowest quintile did not receive care, compared to only 22% of respondents in the highest income quintile (Biritwum & Mensah, 2013).

2.6 Quality of healthcare and choices

The client's decision to use health care services and the type of health care services used is not affected by the perceived quality of health care. Health is a fundamental human right and everyone has equal right to any form of health services. Although choice may be seen as an end in itself, choice policies examined in European healthcare systems is aimed to be effective instruments for ameliorating the systemic pressures from the iron triangle of equity, efficiency, and cost (Bevan, Helderman & Wilsford, 2010) . A study outlined current policies in England, Denmark and Sweden (Bevan, Helderman & Wilsford, 2010) and how those policies emphasized increasing patient choice of provider. The same paper also considered how government policies that sought to restrict choice of healthcare provider within systems of universal coverage had been subjected to challenges. It is worth noting that provider choices are the prerogative of the individual patient to make.

Patients have the right to choose their own healthcare provider, and this encourages them to make active choices. Today's patients are more demanding and want a more active role in their own health care (Victoor et al., 2012). Patients are empowered when they are given the right and possibility to choose, and this gives them a strong instrument to influence their own healthcare.

Studies show that high service quality is directly associated with a rise in market share, profits and savings, and like quality in most service sectors, healthcare quality is not easy to measure due to inherent intangibility heterogeneity and inseparability features associated with some of the variables (Naidu, 2009). An individual's satisfaction with previous healthcare can influence his choice of subsequent healthcare service or his choice of provider. Patient satisfaction with healthcare enhances a hospital or health facility's image (Naidu, 2009), which in turn translates into increase service utilisation as well as improvement in market share of that health facility or provider.

Utilisation of health services depends on the quality of the services and how effective and efficient the health service provided is, and differences can exist in health needs, efficiency and effectiveness and the quality of care that health providers render (Galal & Al-Gamal, 2014). A study done on choice of health services in Egypt indicated that outpatient clinics in public health facilities were the first choice for urban families and the second choice for rural families as a result of distance to the district hospital. Rural families will only visit these public health care facilities if they do not find cure for their health problems from healthcare facilities within their vicinity (Galal & Al-Gamal, 2014).

In advanced countries, healthcare services provide a wide range of options for health care in response to urgent perceived need by the patient. Patients with chronic conditions such as hypertension, stroke and diabetes are usually the frequent users of health care (Hunter et al., 2013). In the USA and UK, there are policies targeted at people with long term conditions in an attempt to restrict them to the use of emergency care services (Hunter et al., 2013).

2.7 Type of Health Care Services used

The type and choice of healthcare facilities used depends on both the characteristics of the facilities such as area of expertise, level of care, cost and quality and the characteristics of patients including economic status, health status, education and gender. The quality of care, especially perceived quality is based on patients' evaluations and opinions of the healthcare provider or facility and, is an important deciding factor in choosing a health facility (Karkee & Kadariya, 2013).

Results from (Karkee & Kadariya, 2013) in Nepal regarding choice of healthcare facility after introduction of free essential health services showed that 68% of the respondents sought treatment from public healthcare facilities in the first instance. Also, illiterate people were more likely to choose public facilities than people with higher secondary education. In the same study, respondents who used public facilities stated that their choice was based on financial and physical accessibility. The study further asserted that those who used private facilities indicated that their choice was based on adequacy of resources/services and healthcare delivery.

Study showed that apart from the formal health services where health care can be sought, some patients also have other alternative sources where they sought health care for various reasons (Prosser, 2007). Studies done in China indicated that overall, private clinics were vital sources of healthcare for low consumption households, that insured patients were less likely to use private clinics but more likely to use public health services. A number of other factors, including city size and severity of illness were found to play a role in determining provider utilization in that study (Qian et al., 2010).

Apart from the orthodox medical care, some of the elderly used the services of traditional or herbal medical providers (Saeed et al., 2012). As reported by Saeed et al., (2012), traditional/herbal medical treatment existed among the Ghanaian people before the colonial days when the British brought along with them, the conventional medical services to Ghana. The use of traditional medical treatment has since increased alongside the ever expansion of conventional medical advancement and improved awareness and education. The traditional/herbal medicine in Ghana has also gained support from the Ministry of Health in recent years as a way to supplementing the efforts of the government in the provision of healthcare in the rural areas of Ghana. Traditional medicine (TM) is perceived to be easily accessible and effective in Ghana, and sometimes cheaper for the treatment of certain common illness in Ghana as compared to orthodox medical treatment (Saeed et al., 2012). TM is a comprehensive term used to refer to both TM systems such as traditional Chinese medicine, Indian ayurveda and Arabic unani medicine and to various forms of indigenous medicine and involves approaches, knowledge and beliefs incorporating plant, animal and mineral based medicines, spiritual therapies, manual techniques and exercises, applied singularly or in combination to treat, diagnose and prevent illnesses or maintain the well-being of the individual (Zhang, 2002). It is reported by Zhang that TM is widely used and is of economic importance in the health systems in developing countries. In Africa, nearly 80% of the population use TM to help meet the health care needs. In Latin America and Asia, people continue to patronize TM as a result of historical circumstances and cultural beliefs. In China, TM accounts for about 40% of all health care delivered (Zhang, 2002).

Traditional medicine constitutes a junction of beliefs, practices and stories (culture) of ancestral origin observed by large groups within the population in different countries in the world. It is worth noting that traditional medicine forms a medical system that can diagnose,

treat and prevent diseases of different aetiology. It is believed that traditional healers can play a positive and vital role in the promotion of health care in a community. This is because their methods are culturally accepted and holistic, compared to ‘modern medicine’ (Stekelenburg et al., 2005).

Research again showed that traditional medical practitioners provided treatments on diseases that were not adequately covered by the modern health care system, and refer certain diseases to modern health practitioners when they realized that such diseases were outside their domain (Habtom & Ruys, 2007). According to Habtom & Ruys (2007), one-fourth (25%) of the patients who treat themselves visited a traditional healer to cure an illness or injury. Only few/exceptional fatal illnesses are treated through the help of traditional medical practitioners. The study also indicated that patients usually referred themselves to traditional medical system when the treatment through modern medical system failed. The study further asserted that public hospitals were comparatively better resourced and had many medical staff than mission and private clinics especially at secondary and tertiary health care levels. Yet, despite the wide networks of primary public health facilities many people in rural areas still went to traditional medical practitioners or treat themselves through traditional medicine. In that study, about 30.3% of the respondents self-treated themselves; and 10.5% visited traditional medical practitioners.

The quality of health care services in developing countries influences demand for health care. Therefore literate individuals in small households are more likely to choose private health facilities instead of public health care facilities (Nonvignon et al., 2010). Studies conducted by Nonvignon et al. (2010), regarding treatment choices for fevers in children under-five years in a rural Ghanaian district indicated that longer travel, waiting times and treatment times at the healthcare facilities encouraged people to use self-medication and over-the-

counter providers as opposed to public and private providers. The study further showed that caregivers with the National health insurance coverage also utilised health care from public facilities compared to over-the-counter or private facilities. A study carried out in China also indicated that generally, private clinics were important sources of health care for low spending households, and that insured patients were less likely to utilise private clinics and more likely to use community health service centres (CHC) (Qian et al., 2010).

2.8 National health insurance and health care utilisation

Implementation of the Social Health insurance over the past decades has been increasing in low-income countries. The main reason for this is to curtail the out-of-payment treatment done at the point of service use and increase access the utilisation of healthcare services in Ghana (Atinga, 2012).

A study done in the USA showed that one in three Americans under 65 years of age does not have health insurance during some portion of each year and lack of insurance has previously been linked to decreased access to primary and ambulatory care (Fowler et al., 2010). The study also reported that for patients diagnosed with certain chronic illnesses or suffering from unintentional injury, the uninsured are also more likely to suffer worse outcomes than their insured counterparts. The study concluded that patients in the United States who were critically ill and did not have health insurance received fewer critical care services and may experience worse clinical outcomes.

The National Health Insurance Scheme (NHIS) is one of the most generous benefit packages when it comes to free health care for the poor and the vulnerable including the elderly. The package includes general out-patient and in-patient care, normal and assisted maternity care,

oral health, eye care, diagnostic tests, generic medicines and emergency care. It is widely reported that about 95% of the diseases in Ghana are covered by the NHIS. A comprehensive level of free care and treatment is available for valid NHIS premium holders. Studies showed that health care utilization increased after the introduction of the NHIS in Ghana and the NHIS brought about significant changes to the health seeking behaviour and choice of providers among Ghanaians (Atinga, 2012). For example, a study by Health Systems 20/20 Project and Research and Development Division of the Ghana Health Service (2009) revealed that enrolees of the scheme are twice more likely to seek care from orthodox providers compared to the non-insured. The study further found that, compared to the non-insured, insured patients were less likely to use self-medication (GHS, 2009).

2.9 Formal/Informal Healthcare

The need for care is constantly changing both in quantity of care offered to satisfy the demand of population and in the types of care provided. The driving forces of these changes stem from changes in demographic trends and technological revolution in healthcare (Torbica, Calciolari, & Fattore, 2015). The ageing trends of population puts pressure on a society's ability to support its elderly citizens and impacts the epidemiology of diseases (Carmichael, Charles, & Hulme, 2010).

Formal healthcare is defined in terms of what is considered conventional medicine in registered outfits such as private or public hospitals, health centres and clinics that are authorized by the state to render health care services (Prosser, 2007). The use of formal and informal health care is related to socioeconomic status in many settings.

Informal care which is defined as assistance supplied by close relatives or friends to the sick, plays a significant role in the total care provided to the elderly and patients with disabling

disease conditions. Given this premise, it is not surprising to witness increasing attention towards this form of care in both the scientific literature and in the policy debate of various countries (Torbica, Calciolari & Fattore, 2015).

The informal health care service is mostly patronized by those in the low socioeconomic levels with low education and or income. Studies have shown that sexually transmitted infections are treated through diverse care options practiced in the communities including self-care, traditional healers, medicine sold in the markets and streets, injections administered in homes, private and public health facilities (Prosser, 2007).

2.10 Private/Public Health facilities

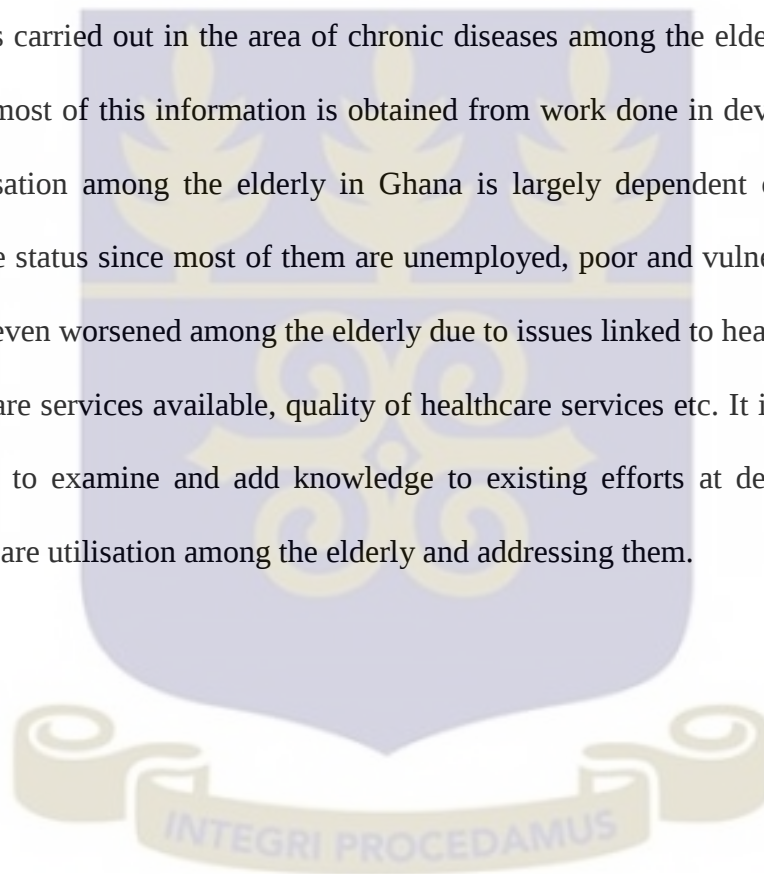
Private health facilities are owned by private individual and the primary objective for running such services is for profit. The public health care facilities are generally viewed as entities under the auspices of the state. It is obvious that most people will tend to seek for health care at the public health care facilities since it is cheaper to seek care there. One would argue that the introduction of the national health insurance means that health care is now affordable but it is not all the services that are covered by the national health insurance. It is not surprising that treatment from private sources increases with household wealth. Government health care services despite their public nature are also used by wealthier households.

A systematic review of comparative analyses of public and private healthcare systems in low- and middle-income countries carried out by Basu et al., (2012) found strengths and limitations in both sectors for each of six main WHO health systems framework themes. According to the study, private sector healthcare systems tended to lack published data by which to measure and evaluate their performance, had greater risks of low-quality care, and tended to serve higher socio-economic groups, whereas the public sector tended to be less

responsive to patients and lacked availability of supplies. Contrary to exiting assumptions, the private sector seemed to have lower efficiency than the public sector, resulting from higher drug costs, perverse incentives for unnecessary testing and treatment, resulting in provider moral hazards, greater risks of complications and weak regulation. Both public and private sector systems had poor accountability and transparency (Basu et al., 2012).

2.11 Conclusion

Little research is carried out in the area of chronic diseases among the elderly in developing countries since most of this information is obtained from work done in developed countries. Healthcare utilisation among the elderly in Ghana is largely dependent on their National Health Insurance status since most of them are unemployed, poor and vulnerable. Utilisation of healthcare is even worsened among the elderly due to issues linked to healthcare financing, types of healthcare services available, quality of healthcare services etc. It is in this vein that this study seeks to examine and add knowledge to existing efforts at determining factors affecting healthcare utilisation among the elderly and addressing them.



CHAPTER THREE

3.0 METHODOLOGY

3.1 Type of study

The study is a cross-sectional study.

3.2 Study location/Area

This study was carried out in Ghana. Ghana is a country in sub-Saharan Africa, located in West Africa and bordered by the Ivory Coast in the west, Burkina_Faso in the north, Togo in the east and the Gulf of Guinea and Atlantic Ocean in the south. The population of Ghana is about 25.9 million. The country has 10 regions, and the regions are further divided into districts.

3.3 Study population

The study population was all survey participants aged 60 years and above. The population of the elderly in Ghana is 1,643,381 as of 2010 according to the population and housing census of 2010. The proportion of the female elderly population is 56% as compared with 44% of the male elderly population. A higher proportion (54%) resides in the rural areas whilst 47% of the females and 44% of the males are resident in urban areas.

3.3.1 Sample size and sampling

A total of 5,565 adults were sampled and interviewed during the WHO Study on Global AGEing and Adult health (SAGE) in Ghana in 2007/08. Of this, 2600 individuals were the population of interest (aged 60 and over). For this study, 830 elderly with valid responses, who were 60 years and above and who reported one or more chronic conditions were used.

3.4 Sampling procedure

The sampling method used for the Ghana SAGE Wave 1 was based on the World Health Survey 2003 design where primary sampling units (PSUs) were stratified by region and location (urban and rural). The PSU selections were based on proportional allocation by size. Each enumeration area (EA) was selected independently within each stratum. A total of 5000 respondents aged 50 years and above and 1000 respondents aged 18-49 years were required and therefore 250 EAs out of 298 EAs of WHS/SAGE 0 were used based on the availability of aged 50+ years within the EAs. Enumeration areas with no 50+ individuals were not included.

Within each EA, 20 households with one or more 50+ individuals and four households with members aged 18-49 were selected. All respondents aged 50+ within households with over 50s from the WHS were automatically selected and additional households with members aged 50+ years were randomly selected to make a total of 20 households for each EA. The four households of the 18–49 years age group were randomly selected from the WHS/SAGE Wave 0 households list per EA. All the 50+ year olds within the selected households were interviewed together with the four identified under-50 respondents. Field work and data entry were undertaken between May 2007 and June 2008.

3.5 Data Collection Techniques/Methods & Tools

The study employed the use of structured questionnaires.

Six types of questionnaires were used in the SAGE study. Selection of the respondents was made in advance and interviewers visited their homes for interviews and measurements. One household and one individual questionnaire were administered to each respondent. In a follow-up, households reporting a death in the past two years were given a verbal

questionnaire to complete. For respondents who were found to be incapable of answering the individual questionnaire, a proxy questionnaire was completed.

Within a PSU, two respondents were randomly selected for re-test and one for proxy validation. In all, each PSU was to have 20 completed interviews for 50+ years respondents (household and individual), four interviews for the 18-49 years respondents, two re-test questionnaires, one proxy validation questionnaire and verbal autopsy questionnaires where applicable. One of the 251 selected PSUs was not used. The household and individual questionnaires were translated into three local languages (“*Akan*”, “*Twi*”, and “*Ga*”) and used for training. Back translations were also done before use. However, the questionnaire used for the survey was printed in English. Interviewers were given appendices to illustrate various items, response options and concepts.

Information about the elderly captured on questionnaires, relating to healthcare utilisation among the elderly with chronic conditions was analysed in this study. The analytical sample for this study was restricted to individual respondents aged 60 and over with one or more chronic conditions. A sample of 925 elderly who met the criteria and aged 60 and above and had one or more chronic condition were extracted from the dataset. For analysis, 830 of them were used. Younger respondents were excluded from the analysis as they did not meet the criteria.

3.6 Study Variables

The dependent variable used in this study was the type of health facility used by the respondent during the last reported illness (care for chronic condition). Four options (categories) of the dependent variables were used in this study. These included private health facility (which included private clinics and hospitals), public health facility (which included public clinics and hospitals), mission facility (which are sometimes referred to as private not-

for-profit) and over-the-counter (OTC) services (which included pharmacies, traditional and herbal clinics and prayer camps). The dependent variable was categorised as follows: 0 - OTC; 1-public health facilities; 2- private health facilities and 3-mission facilities. The independent/explanatory variables include age, gender, marital status, employment status, household wealth, highest educational level, health insurance status, geographic location, gender of provider, out-of-pocket payments, health service satisfaction, chronic condition and self-reported health. The study variables are described in table 1.



Table 1 Description of independent study variables

Name of variable	Description	Operational definition	Scale of Measurement
Age		Household head's age at last birthday	Discrete
Sex	Male Female	Sex of Household elderly	Binary
Marital status	Not currently married Married/cohabiting	Marital status of respondent	Nominal
Geographic location	Urban Rural	Place of residence	Nominal
Education	No education Basic education Secondary education Post-secondary education	Highest level of formal education attained by respondent	Ordinal
Employment status	Working Not working	Employment status	Nominal
Sex of provider	Male Female	Sex of healthcare provider	Ordinal
Health service satisfaction	Satisfied Neutral Dissatisfied	Satisfaction with healthcare service	Nominal
Self-reported health status	Good Poor	Respondent's view of his/her health status	Ordinal
Chronic condition	1 chronic condition > 1 chronic condition	Chronic condition of respondent	Categorical
Health insurance status	Insured Not insured	Health insurance status of respondent	Binary
Household out-of-pocket expenditure on health	-----	Total amount of money spent in order to obtain health care	Continuous
Household wealth	Lowest Low Middle High Highest	Household wealth	Nominal

3.7 Quality Control

This involved measures that were put in place to ensure that the results obtained were accurate and valid. The data was adequately cleaned and information about the elderly with chronic conditions obtained from the dataset and some variables were recoded.

3.8 Data Processing and Analysis

3.8.1 Data processing

The data concerning the elderly was extracted from the WHS/SAGE individual and household dataset with the individual dataset being the primary dataset used. The only information extracted from the household dataset was the household assets. The data was sorted and variables of interest were used. Marital status with categories such as never married, separated or divorced and widowed were coded as “not currently married” (0). Those who were currently married or cohabiting were put together and coded as Married/cohabiting (1).

Highest educational level variable of the respondents was also re-categorized. Those with no formal education were coded as “no education” (0). Those with less than primary school education or completed primary school education were put together as having “basic education” and coded as 1, and those who had completed secondary/high school, were put together and named as “secondary education” and coded as 2. Additionally, those respondents who completed college, university or post graduate education were put together and named as post-secondary and coded as 3.

The health insurance status variable was also re-categorized. Those who said they have none were named as “not insured” and coded as 0 and those respondents who indicated that they have mandatory or voluntary or both were named as “insured” and coded as 1.

Self-rated health was assessed by asking respondents: “In general, how would you rate your health today” with the possible choices being “very good” (1), “good” (2), “moderate” (3), “bad” (4) or “very bad” (5). Self-rated or self-reported health was analysed as a dichotomous measure: good health (0), poor health (1). Household wealth was also measured by using the quintile scale. The data collected on assets of the respondents in the household dataset were merged into the individual dataset and the wealth quintiles were computed to obtain the household wealth. The household wealth of correspondents was categorized as lowest (1), low (2), middle (3), high (4) and highest (5). Chronic condition was categorized into one chronic condition and more than one chronic condition and coded 0 and 1 respectively.

In the original dataset, health service satisfaction variable was coded as very satisfied (1), satisfied (2), neither satisfied/nor dissatisfied (3), dissatisfied (4) and very dissatisfied (5). This was collapsed into three categories as satisfied, neutral and dissatisfied.

3.8.2 Statistical Methods

Descriptive statistics in the form of frequencies and percentages was shown in tables. Chi-square was also used to measure the association between the dependent variable (type of facilities used: public, private, mission and over-the-counter) and independent variables (age, sex, marital status, geographic location, education, employment status, sex of provider, health service satisfaction, self-reported health status, chronic condition, health insurance status, out-of-pocket expenditure and household wealth). Multinomial Logit (MNL) Regression

model was used to estimate the type of facility used in relation to the independent variables. This model was selected based on the nature of the dependent variable having four options (categories): public facility, private facility, mission facility and over the counter. The significance level was set at 0.05 and P-values were measured at 95% confidence interval (95% CI). All statistical analyses were carried out in STATA Version 12.

3.9 Ethical Consideration/Issues

Ethical clearance was sought from Ghana Health Service Ethical Review Committee.

3.9.1 Confidentiality

The information that was extracted from the WHS/SAGE dataset was handled with utmost care and kept confidentially. The private information about the elderly that was kept in the dataset was not made available to any third party.

3.9.2 Potential Risk Factors /Benefits

This research was safe and posed no potential risks to the study population or the society. It intended to benefit both the study subjects and the general society in many ways. For instance, the study provided information about the current conditions of the elderly in society with regards of their use of health care and the factors that affect their health care use. Secondly, this research provided policy makers with information about the pertinent issues confronting the elderly with respect to health care use. Finally the study provided useful information to policy makers for strategic planning and evaluation of policies regarding the health care utilisation among the elderly.

3.9.3 Data Usage and Storage

The WHS/SAGE dataset was requested for the purpose of academic research. The data extracted was accessed by only those directly involved in the research. Data was stored on CD-ROMS and pen drive and safely kept together with the hard copies made.

3.9.4 Declaration of Conflict of Interest

This study was purely an academic exercise and of public health importance. I therefore declare that I had no other personal interest in the study apart from its intended purpose.



CHAPTER FOUR

4.0 RESULTS

4.1 Introduction

This chapter presents the results of the study. A total of 830 elderly who were 60 years and above with one or more chronic conditions were extracted from the WHO study on global AGEing and adult health (SAGE) 2007/08 dataset for Ghana and used for the analysis.

4.2 Type of facility used

Table 2 shows that about 74.2% of the participants used public facilities during the last illness episode compared to the other available facilities, with over-the-counter facilities being the least patronised.

Table 2 Distribution of healthcare utilization by the elderly in Ghana in 2007/08

Type of facility	Number (n)	Percentage (%)
Over-the-counter	38	4.6
Public	616	74.2
Private	128	15.4
Mission	48	5.8
Total	830	100.0

4.3 Background characteristics of the elderly

The background characteristics of respondents are described below. It includes age of the respondents, sex, marital status, educational level, geographic location, employment status, household wealth, and national health insurance status.

The mean age of the study respondents was 71 years (SD=8.2) with a minimum age of 60 and maximum of 110 years. From the analysis, 70.1% (582) of the study respondents were young-old (60-74 years), 21.7% (180) were old-old (75-84 years) and 8.2% (68) were very old (85 years and above), table 3.

Table 3: Background Characteristics of respondents

Variables	Number (n) (N=830)	Percentage (%)
Age		
60-74 (young-old)	582	70.1
75-84 (old-old)	180	21.7
85+ (very old)	68	8.2
Sex		
Male	346	41.7
Female	484	58.3
Marital Status		
Not currently married	490	59.0
Married/Cohabiting	340	41.0
Highest Educational level		
No formal education	472	56.9
Basic Education	158	19.0
Secondary Education	169	20.4
Post-secondary	31	3.7
Health insurance		
Insured	430	51.8
Not insured	400	48.2
Geographic location		
Urban	407	49.0
Rural	423	51.0
Gender of Provider		
Male	678	81.7
Female	152	18.3
Household wealth		
Lowest	169	20.4
Low	157	18.9
Middle	163	19.6
High	167	20.1
Highest	174	21.0
Employment Status		
Currently working	389	46.8
Not working	441	53.1
Health service satisfaction		
Satisfied	655	78.9
Neutral	104	12.5
Dissatisfied	71	8.6
Chronic condition		
1 chronic condition	553	66.6
>1 chronic condition	277	33.4
Self-reported health		
Good	606	73.0
Poor	224	27.0

Table 3 shows that 41.7% (346) of respondents were males and 58.3% (484) were females.

The highest number of respondents, 59% (490) were not currently married and those who were currently married or cohabiting were 41% (340).

Most of the respondents (472) had no formal education representing 56.9% of the sample population. Secondary school education constituted the highest level of education for 169 respondents. This was followed by the respondents with basic school education who made up 158. Only 31 respondents had post-secondary school education.

About 51% (423) of the respondents live in rural areas whereas 49% (407) reside in urban areas. Using household wealth (wealth quintile) to determine the socio-economic status of respondents, 20.4% of respondents belonged to the lowest quintile, 18.9% belonged to the low quintile, the middle quintile had 19.6%, the high quintile had 20.1 and 21% of respondents belonged to the highest quintile. Table 3 further shows that 46.8% (389) of the respondents were currently working and 53.1% (441) indicated that they were not working.

About 52% (430) of the respondents had health insurance while 48.2% (400) did not have health insurance. Most of the study participants were not employed. This represents about 53%. The rest, about 47% were working.

Table 4: Characteristics of study participants in Ghana in 2007/08

Socio-Demographic Factors	Type of facility n (%)			
	Over-the-counter	Public	Private	Mission
Age				
***	70(14.0)	71(12.0)	70(10.5)	70(10.0)
Sex				
Male	18(5.2)	260 (75.1)	52(15.0)	16(4.6)
Female	20(4.1)	356(73.6)	76(15.7)	32(9.3)
Marital Status				
Not currently married	21(4.3)	365(74.5)	70(14.3)	32(6.6)
Married/Cohabiting	17(5.0)	251(73.8)	58(17.1)	14(4.1)
*Highest Educational level				
No formal education	22(4.7)	367(77.8)	53(11.2)	30(6.4)
Basic Education	9(5.7)	114(72.2)	29(18.4)	6(3.8)
Secondary Education	5(3.0)	117(69.2)	37(21.9)	10(5.9)
Post-secondary	2(6.5)	18(58.1)	9(29.0)	2(6.5)
Geographic location				
Urban	16(4.0)	289(71.0)	75(18.4)	27(6.6)
Rural	22(5.2)	327(77.3)	53(12.5)	21(5.0)
Gender of Provider				
Male	33(4.9)	510(75.2)	99(14.6)	36(5.3)
Female	5(3.3)	106(69.7)	29(19.1)	12(8.0)
Health service satisfaction				
Satisfied	31(4.7)	478(73.0)	109(16.6)	37(5.7)
Neutral	5(4.8)	76(73.1)	14(13.5)	9(8.7)
Dissatisfied	2(2.8)	62(87.3)	5(7.0)	2(2.8)
Chronic condition				
1 chronic condition	26(4.7)	410(74.1)	80(14.5)	37(6.7)
>1 chronic condition	12(4.3)	206(74.4)	48(17.3)	11(4.0)
Self-reported health				
Good	26(4.3)	449(74.1)	102(16.8)	29(4.8)
Poor	12(5.4)	167(74.6)	26(11.6)	19(8.5)

n (%) represents frequency and proportion of covariates with that particular outcome.

* indicates that covariate was significantly associated with outcome variable of interest.

4.4 Healthcare utilization among the elderly with chronic conditions

Of the 830 respondents, 74.2 % (616) of them used public health facilities, 15.4% (128) used private health facilities, 5.8% (48) used mission health facilities and the rest 38, representing 4.6% utilised over-the-counter facilities.

Of the 346 male respondents, 75.1% utilised public facilities, 15% utilised private health facilities, 5.2% utilised over-the-counter facilities and the least used health facility was the mission facility with 4.6% of the males patronising it (table 4). Table 4 also shows that out of the 484 females, most them (73.6%) used public health facilities, 15.7% used private health

facilities, 9.3% utilised mission health facilities and the least patronised was over-the-counter facilities with only 4.1% of the female respondents using them. The result shows that more males prefer using over-the-counter facilities than females. Most of the respondents (74.5%) who were not currently married utilised public health facilities. Those who used private health facilities were 14.3%, 5% used over-the-counter and the rest used mission health facilities. Majority of the respondents who were married also used public health facilities with the rest using private, over-the-counter and mission facilities.

About 78 % of the respondents with no formal education used public health facilities with 11.2% of them using private health facilities and the rest patronizing mission and over-the-counter facilities. For those with basic school education, majority of them (72.2%) also used public health facilities. The least used facility among them was mission health facilities with only 3.8% of them utilising it. Similar pattern of usage applies to the respondents who attained secondary school education. For this group, 69.2% of the respondents used public health facilities, 18.4% used private health facilities, 5.9% used mission health facilities and the rest used over-the-counter facilities (table 4).

For the respondents who live in urban areas, 71% of them utilise public health facilities. Most of those in the rural areas also used public health facilities (table 4). It is shown in table 5 that most of the respondents with national health insurance (75.6%) utilised public health facilities, 13% used private health facilities, 8.6% used mission facilities and only 2.8% them used over-the-counter facilities. For those who had no health insurance, about 73% used public health facilities and the rest used the other facilities. Relatively more respondents without health insurance used over-the-counter facilities than those with health insurance (table 5).

Table 5: Socioeconomic factors of the elderly in Ghana in 2007/08

Variables	Type of facility n (%)			
	OTC n(%)	Public n(%)	Private n(%)	Mission n(%)
*Health insurance				
Insured	12(2.8)	325(75.6)	56(13.0)	37(8.6)
Not insured	26(6.5)	291(72.8)	72(18.0)	11(2.8)
*Out-of-Pocket payment				
***	2(9.0)	3(11.6)	24(11.3)	3.3(14.0)
Household wealth				
Lowest	7(4.1)	120(71.0)	32(18.9)	10(5.9)
Low	6(3.8)	123(78.3)	20(12.7)	8(5.1)
Middle	5(3.1)	125(76.7)	26(16.0)	7(4.3)
High	8(4.8)	128(76.7)	22(13.2)	9(5.4)
Highest	12(7.0)	120(69.0)	28(16.1)	14(8.1)
Employment Status				
Employed	18(4.6)	284(73.0)	62(15.9)	25(6.4)
Not employed	20(4.5)	332(75.3)	66(15.0)	23(5.2)

*** Represents Kruskal-wallis estimates and the p-value respectively.

median (interquartile range) with the significance values obtained using the test.

n (%) represents frequency and proportion of covariates with that particular outcome.

* indicates that covariate was significantly associated with outcome variable of interest.

Table 5 shows that 73% of the respondents who were employed utilised public health facilities with about 16% using private health facilities, 6.4% using mission health facilities and the rest utilising over-the-counter facilities. Most of the unemployed respondents (75.3%) used public health facilities with the remaining using other facilities.

4.5 Factors affecting healthcare utilisation among the elderly

Table 6 shows that national health insurance significantly influences healthcare utilisation among the elderly. For the insured relative to the non-insured, the relative risk for the use of public health facilities relative to the use of over-the-counter facilities would be expected to increase by a factor of 4.1 given that all other variables remain constant. Similarly, the relative risk for the use of private and mission health facilities relative to over-the-counter facilities would be expected to increase by a factor of 1.9 and 8.1 respectively given that all other variables in the model are held constant.

Table 7 shows that education is significantly associated with healthcare utilisation among the elderly. For the elderly with secondary school education relative to those with no formal education, the relative risk for the use of private health facilities relative to over-the-counter facilities would be expected to increase by a factor of 3.7 and the relative risk for the use of public health facilities relative to over-the-counter would be expected to increase by a factor of 1.7 given that all other factors are held constant. Out-of-pocket payment significantly differed among the type of facility used by the elderly (table 6).

Table 6: Factors associated with healthcare utilisation among respondents in Ghana in 2007/08

Socio-economic Characteristics	Public		Private		Mission	
	RRR	95% CI	RRR	95% CI	RRR	95% CI
*Health insurance status						
Insured	4.1	1.9-8.8	1.9	0.8-4.2	8.1	3.0-22.0
Not insured	Ref					
Employment status						
Employed	Ref					
Not employed	1.0	0.5-2.2	0.8	0.4-1.9	0.5	0.2-1.4
Out-of-pocket payment	1.0	1.0-1.1	1.0	0.9-1.0	m1.0	0.9-1.0
Household wealth						
Lowest	Ref					
Low	0.9	0.3-2.9	0.6	0.2-2.3	0.7	0.2-3.1
Middle	1.2	0.3-4.1	1.1	0.3-4.0	0.9	0.2-4.1
High	0.9	0.3-2.6	0.6	0.2-1.9	0.6	0.2-2.7
Highest	0.5	0.2-1.3	0.4	0.1-1.3	0.6	0.2-2.1

*denotes variables that were significant at 0.05

Outcome OTC==0 is the comparison group

(ref) indicates the reference category and has been placed in front of variables that were used as reference category

Table 7: Factors associated with healthcare utilisation in Ghana in 2007/08

Socio-demographic characteristics	Public		Private		Mission	
	RRR	(95% CI)	RRR	(95% CI)	RRR	(95% CI)
Age	1.0	1.0-1.1	1.1	1.0-1.2	1.0	1.0-1.2
Sex						
Male	Ref					
Female	1.4	0.5-3.7	2.3	0.8-6.5	1.7	0.5-6.1
Marital status						
Not currently married	Ref					
Married/cohabiting	1.0	0.4-2.3	1.3	0.5-3.7	0.6	0.2-2.0
*Educational Status						
No formal education	Ref					
Basic education	0.8	0.3-2.0	1.4	0.5-3.8	0.6	0.2-2.0
Secondary education	1.7	0.5-5.1	3.7	1.1-12.2	1.8	0.5-7.4
Post sec. education	0.5	0.1-2.8	1.8	0.3-11.1	0.7	0.1-6.9
Geographic location						
Urban	Ref					
Rural	0.6	0.3-1.4	0.6	0.3-1.5	0.5	0.2-1.4
Health service satisfaction						
Satisfied	Ref					
Neutral	0.6	0.2-1.9	0.7	0.2-2.2	1.0	0.3-3.5
Dissatisfied	0.7	0.2-3.6	0.5	0.1-3.2	0.6	0.1-4.6
Sex of health provider						
Male	Ref					
Female	3.0	1.1-8.1	2.3	0.8-6.6	2.0	0.6-6.8
Chronic conditions						
1 chronic condition	Ref					
>1 chronic condition	1.3	0.6-2.7	1.1	0.5-2.5	0.6	0.2-1.6
Self-reported health						
Good health	Ref					
Poor health	0.9	0.4-2.0	0.6	0.2-1.4	1.7	0.6-4.5

Log likelihood = -524.3

Number of obs = 559

Wald chi2(57) = 89.5

Prob > chi2 = 0.0

*denotes variables that were significant at 0.05

(ref) indicates the reference category and has been placed in front of variables that were used as reference category

CHAPTER FIVE

DISCUSSION

5.0 Introduction

This chapter focuses on shedding more light on the findings of this study in relation to relevant literature. There are some relevant findings from this study.

National health insurance was found to significantly influence utilisation among the elderly. Educational level of the respondent was also found to influence their healthcare utilisation. Results from this study show that most of the respondents are more likely to use public health facilities as compared with private, mission and over-the-counter facilities. There was a significant association between out-of-pocket payment and type of facility used. A significant association was observed between level of educational and the type of facility used.

5.1 Healthcare utilisation

5.1.1 Type of facility used

Most of the respondents utilised public health facilities with the least number using over-the-counter facilities. A study conducted in Egypt supports this finding as it shows that public hospitals were the first choice for urban families, recording 49.7% patronage (Galal & Al-Gamal, 2014). Most patients using public hospitals could be as result of the fact that these facilities maintain the standard of practice better than that of private and other facilities.

People who utilized over-the-counter, even though it is not a generally accepted facility to visit when ill, may have done so as a result of longer travel, waiting and treatment times experienced at public, private and mission facilities (Nonvignon et al., 2010).

5.2 Factors Influencing Healthcare Utilisation

5.2.1 Health Insurance Status

Health insurance is significantly associated with healthcare utilisation. A study carried out in small number of districts in Ghana suggested that national health insurance has encouraged utilisation of curative health services (Nguyen, Rajkotia, & Wang, 2011). A study conducted by Atinga et al., (2012) also showed that healthcare utilization increased after the introduction of the National Health Insurance Scheme in Ghana. This reduced the patronage of over-the-counter facilities (GHS, 2009).

Most studies could not determine whether the large differences in healthcare utilisation between the insured and the uninsured were due to insurance status or to other unobserved differences between the two groups. A large body of research documents a strong association between insurance status and particular patterns of health care utilisation (Chen et al., 2015; Antwi, Moriya, & Simon, 2014; Fowler et al., 2010).

In this study, most of the elderly with health insurance used public health facilities (68.8%) with the rest using mission health facilities, and private health facilities as against the use of over-the-counter facility. The findings from a study indicated that pharmacies become the leading source of healthcare services for majority of poor people, although the overall quality of such services is low (Khan, Grbner, & Krämer, 2012).

5.2.2 Chronic Conditions

Majority of the respondents had one chronic condition (66.5%) as compared to those with more than one chronic condition (33.5%). Available literature supports this findings as it is indicated that most US citizens reported one chronic condition than >1 chronic condition

(Ward, Schiller, & Goodman, 2014; Vogeli et al., 2007). From this study, most of the patients with one chronic condition visited public facilities (60.5%) and also most patients with more than one chronic condition used public facilities. Results from a study carried out in China using data from the study on global ageing and adult health (SAGE wave 1) indicated that 50% the of respondents reported having one of the selected chronic conditions, 18.9% two conditions, 5.8% three conditions, and 1.4% reported having four or more chronic conditions (Wu et al., 2013).

5.2.3 Educational status

There is low level of literacy among the respondents in this study as a large number of the elderly had no formal education as compared to those with formal education. This finding agrees with the information from the 2010 population and housing census conducted by the Ghana Statistical Service. According to the GSS (2010), literacy rate and educational status is generally low among the elderly and their various Subgroups. Sex differentials in educational status are very wide among the elderly, as almost three quarters of the female elderly compared to less than half of the males are not literate.

Educational status of the respondents was seen to be significantly associated with healthcare utilisation. This correlates with literature (Fernández-Olano et al., 2006) which indicates that predisposing variable (educational level) have strong independent associations with the degree of health care utilisation. In another study, (Exavery et al., 2013), education level was assessed and it was found that 88% of the participants reported that they had never been to school. A study conducted by Saeed et al. (2013) indicated that in contrast with non-educated, educated Ghanaians tend to prefer any other alternative health service other than traditional healers (i.e. over-the-counter).

5.2.4 Out-of-Pocket Payment and Household Wealth

Patients who pay out-of-pocket are less likely to utilise healthcare services. This finding relates to a research data which showed that there are significant differences in health-care utilisation rates across socio-economic groups and that these differences are related to ability to pay for healthcare (Falkingham, 2004; Sato, 2012b)

Another study results indicated that choice of hospital type by the elderly is affected by an increase in co-payment, but that differences in hospital type choice before and after the increase in co-payments did not increase much (Huang & Tung, 2006). Huang & Tung's (2006) study also showed that the frequency of visits decreased significantly after the new co-payment policy was implemented. Another study (Peters et al., 2008) showed that low utilisation of healthcare is directly associated with dimensions of poverty and that, direct costs incurred to receive healthcare deter the poor from seeking treatment.

This study show that household wealth did not significantly influence healthcare utilisation or the type of health facility used. Wealth signifies the economic status of the individual or family. Contrary to this study, several studies done showed that wealth influences the utilisation of services and household wealth is positively associated with healthcare utilisation (Arthur, 2012; Allin, Masseria, & Mossialos, 2009).

5.2.5 Self-reported Health

The study reveals that those respondents who reported poor health status are likely to seek healthcare than those who reported good health. This findings correlates with literature. For example, a study showed that health and healthcare utilisation are linked and that as health improved, utilisation of healthcare services reduced (O'Hara & Caswell, 2012).

CHAPTER SIX

6.0 CONCLUSION, RECOMMENDATION AND LIMITATION

6.1 Conclusions

This study concludes that health insurance, as well as level of education significantly influence healthcare utilisation, with out-of-pocket payment significantly varying among types of facility. Relatively high percentage of the elderly use public health facilities compared to the use of over-the-counter and other facilities. Most of the elderly have health insurance compared to those without health insurance. The study also found that majority of the elderly without health insurance were more likely to use public health facilities as compared with over-the-counter and other facilities. High proportion of the elderly in this study had no formal education.

6.2 Recommendation

The following recommendations are made.

1. Implementation of the Ghana Ageing Policy should focus on increasing access of the elderly to the NHIS in order to ensure that the elderly are able to access quality health care.
2. Enforcement of the free compulsory and universal education policy in Ghana should be encouraged for the current children and youth to be adequately educated in order to make informed healthcare choices when they become old.
3. Adult education programs targeted at improved healthcare choices should be made available to the elderly, most (57%) of whom have no formal education according to the study.

6.3 Limitations of the study

Limitations which may affect the scope and analysis performed as part of this study included the amount of missing data in the WHS/SAGE dataset resulting in the reduction of the total number of the elderly respondents with chronic conditions from 925 to 830.



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APPENDICES

Appendix I: Informed Consent Form

Project Title: “Assessing Health Care Utilisation among the Elderly with chronic conditions in Ghana”. This study uses secondary data for analysis and therefore would not directly include study participants; hence no informed consent form is included. Meanwhile ethical approval was sought from the Ghana Health Service Ethical Review Committee.

