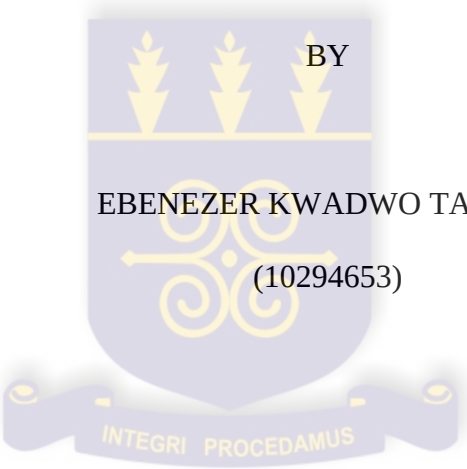
SCHOOL OF PUBLIC HEALTH

COLLEGE OF HEALTH SCIENCES

UNIVERSITY OF GHANA

FACTORS INFLUENCING ENROLMENT IN THE NATIONAL HEALTH INSURANCE SCHEME AMONG SLUM DWELLERS IN AGBOGBLOSHIE



BY

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THIS DISSERTATION IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF PUBLIC HEALTH (MPH) DEGREE

NOVEMBER, 2015

DECLARATION

I, Ebenezer Kwadwo Tawiah, declare that except for other people's work which have been duly acknowledged, this dissertation is my own original work produced from research undertaken under supervision and that this dissertation, either in whole or in part has not been presented elsewhere for another degree.

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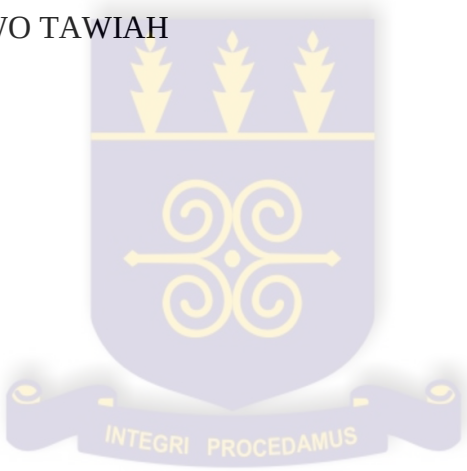

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DR. PATRICIA AKWEONGO DATE

(SUPERVISOR)

DEDICATION

This work is dedicated to my grandmother, Hajia Atikatu Moro.

ACKNOWLEDGEMENTS

I am grateful to God for giving me the mental capacity and good health to complete this work.

My sincere thanks goes to my supervisor, Dr. Patricia Akweongo, for your support and guidance throughout this study. May God richly bless you.

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Finally, to the people of Agbogbloshie for allowing me to embark on this study in their community, I say thank you.

ABSTRACT

It is estimated that about 43% of urban dwellers in Ghana live in slums, with 1.3million slum dwellers living in Accra. Slum dwellers live in overcrowded and substandard housing, lacking safe water and sanitation systems and access to quality health care services.

With increasing slum populations, equitable access to quality health care services remains a challenge. Social health protection systems such as the National Health Insurance Scheme are mechanisms that countries use to address the challenges related to providing access to health care services to their citizens, especially the poorer segments of the population such as slum dwellers.

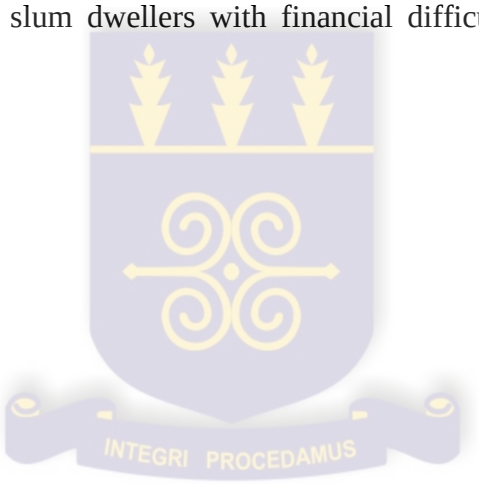
It has been shown that active membership in the National Health Insurance Scheme stood at 36.8% in 2013. The proportion of slum dwellers enrolled in the National Health Insurance Scheme and accessing care is little known. This study aims at assessing factors influencing enrolment in the National Health Insurance Scheme among slum dwellers in Agbogbloshie.

This study was a descriptive cross-sectional survey involving 371 household heads in Agbogbloshie. Multi-stage sampling was used to select household heads for the study from May-June 2015.

Results showed that 24% (373) of slum dwellers were enrolled in the National Health Insurance Scheme and this is 13% lower than the national average of 36.8% in 2013, implying that slum dwellers are not enrolling. More than half (52.5%) of households who

recorded an illness had no health insurance and close to forty-percent (143) of them sought care at Chemical shops/Pharmacies. The factors affecting enrolment among slum dwellers at the individual level were sex, type of employment, perceived health status of the household head and their inability to afford the premium. At the household level, socioeconomic status of the household, and facility used for seeking care were factors affecting enrolment in the National Health Insurance Scheme.

As Ghana aims at achieving Universal Coverage, policy makers should consider expanding the exemption policy under the National Health Insurance Scheme to include social groups such as slum dwellers with financial difficulties to enable them access health care.



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LIST OF ABBREVIATIONS

Abbreviation	Meaning
CDC	Centers for Disease Control and Prevention
CI	Confidence Interval
GLSS	Ghana Living Standards Survey
GOG	Government of Ghana
GHS	Ghanaian Cedi
GSS	Ghana statistical Service
HIV	Human Immunodeficiency Virus
LEAP	Livelihood Empowerment against Poverty
MOH	Ministry of Health
NDPC	National Development Planning Commission
NHIA	National Health Insurance Authority
NHI	National Health Insurance
NHIS	National Health Insurance Scheme
NGO	Non-governmental organization
OCHA	United Nations Office for Coordination of Humanitarian affairs
OPD	Out-patient Department
OR	Odds Ratio
PNDC	Provisional National Defense Council

PRIA	Society for Participatory Research in Asia
SSNIT	Social Security and National Insurance Trust
SD	Standard Deviation
UK	United Kingdom
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UN-HABITAT	United Nations Human Settlement Programme
US	United States
VAT	Value Added Tax
WHO	World Health Organization

DEFINITION OF TERMS

Term	Definition
Catastrophic Health Expenditure	An undue financial strain on an individual resulting from payment for health care services out-of-pocket
Census enumeration areas	Specicfic zones in a locality defined by the Ghana statistical service for easy identification and collection of census data
E-waste	Discarded electronic equipment or its components
Financial protection	To insure oneself against unexpected expenditure
Household	One or more people living together in the same house and sharing meals or accommodation
Insured household	A household having at least one person enrolled in the NHIS
Individual level factors	Factors related to the household head as an individual
Out-of- pocket expenditure	A form of expenditure resulting from paying for health services at the point of receiving care.
STATA	A type of statistical software that is used in analyzing quantitative data

CHAPTER ONE

INTRODUCTION

1.0 Background

It is estimated that up to one-third (1billion) of the World's urban population live in slums. This therefore means that approximately one in every three urban dwellers live in slums (World Health Organization [WHO], 2010). According to the United Nations Human Settlements Programme [UN-HABITAT], (2003) slum populations have been projected to increase to about 2 billion in 2030.The proportion of urban slum dwellers in Asia ranges from 25% in western Asia to 35% in Southern Asia. Sub-Saharan Africa has the highest proportion of urban slum dwellers with about 62% of its urban population residing in slums (UN-HABITAT, 2012). In Ghana, it has been estimated that about 43% of urban dwellers live in slums with 1.3million living in Accra (United Nations Development Programme [UNDP] & Government of Ghana [GOG], 2012).

Due to the conditions under which they live, slum dwellers face higher developmental challenges such as high morbidity and infant mortality rates than either non-slum dwellers or the rural population. The literature tells us that there is a 28 year difference in the life expectancy of people living in Calton slums and those living in more affluent parts of Glasgow in the United Kingdom (UK), and that in Nairobi, children under five years living in slums are over three times more likely to die compared with their colleagues living in other parts of the city (WHO Center for Health Development, 2008; WHO Commission on Social Determinants of Health, 2008).The relatively fast growth in the urban areas of developing countries suggests that the challenges related to living in

slums will deteriorate in those areas that are already most susceptible. With increasing slum populations, it is vital to address the growing disparities in health care access between different groups in cities (WHO Commission on Social Determinants of Health, 2008).

Social health protection schemes are mechanisms that countries use to address challenges associated with providing access to health care services to their citizens, especially the poorer sections of the population. Some of the benefits of social protection in health include; reducing financial hurdles associated with access to health care services and protection from hardship related to having to pay for the full cost of health care. They also help bridge the equity gap between the poor and the rich in society regarding access to and utilization of health care services (Mathauer, Schmidt &Wenyaa, 2008; WHO, 2007).

In 2003, the Government of Ghana through an act of parliament (ACT650) established the National Health Insurance Scheme (NHIS), to remove financial bottlenecks associated with receiving health care. The idea was that as a pro-poor policy, the introduction of the National Health Insurance Scheme would help bridge the gap between the poor like slum dwellers and the rich regarding access to equitable, affordable and quality health care.

However, studies indicate that most of the poor in society are less likely to enrol in Health Insurance programmes. A study conducted by Kimani, Ettarh, Kyobutungi, Mberu and Muindi, (2012) in two slums in Nairobi indicated that a high proportion (89%) of the slum dwellers were not enrolled in any form of health insurance in Kenya.

Another study by Wang, Yip, Zhan, Wang and Hsiao, (2005) in poor rural areas of China observed that, between1976-1990, enrolment rate in a community–based health insurance programme decreased from 92.6-6.1% and that most of the drop-outs were the poor who could not afford to pay the premium.

In Ghana however, ten years after its inception, enrolment rate in the National Health Insurance Scheme (NHIS) stood at 36.8% in 2013 (Ministry of Health (MOH), 2014). According to Oxfam Ghana, (2013) the NHIS is leaving the poor behind. A situation that could defeat the purpose for which it was established. As Ghana embark on the journey to achieving Universal Coverage, it will be essential to consider all segments of the population.

Even though there is evidence to the effect that, the poor in society are less likely to enrol in Health Insurance Programmes, most of these studies were done among the general population, and studies among slum dwellers have not been well-documented. The aim of this study therefore was to assess the factors influencing enrolment in the National Health Insurance Scheme among slum dwellers in Agbogbloshie.

1.1 Problem statement

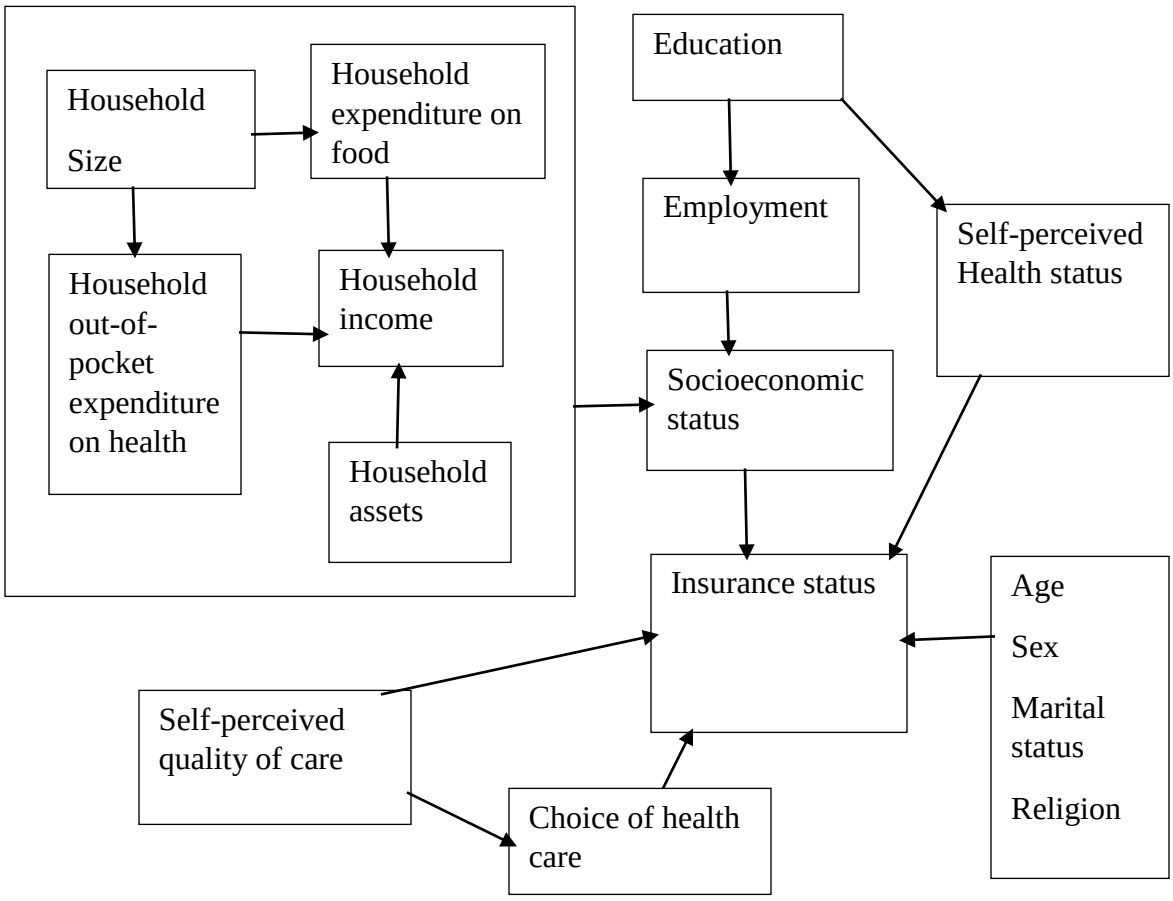
There is evidence that over 22 million people have registered with the NHIS since its inception but active membership stood at 36.8% in 2013 (MOH, 2014). Most studies show that the poor are less likely to enrol or more likely to drop out as against the rich who will enrol and sustain their membership in the NHIS (Boateng & Awunyor-Victor, 2013; Jehu-Appiah et al, 2011; Oxfam GH, 2013).

Reasons that account for this situation include lack of money to purchase the insurance premium package, educational status, and number of persons in the household. Without health insurance, the poor have to pay the full cost of their health care out–of-pocket. This situation leaves them in perpetual poverty and deterioration in health status leading to high morbidity and mortality among them (Olack et al, 2014).

With increasing urbanization, and growing disparities among the poor and the rich, this situation is likely to get worse. Even though there is evidence about enrolment rates and factors influencing it in the general population, not much is known about that of slum dwellers in urban Ghana. Also, existing literature have shown that enrolment among the poor such as slum dwellers is low (Kimani et al., 2012; Wang et al., 2005). It is therefore important to find out about the factors that could be driving such behaviour among slum dwellers in Ghana using Agbogbloshie as a case study.

1.2 Conceptual framework of factors affecting decision to enroll in health insurance Schemes

Figure 1: Factors affecting decision to enrol in health insurance Schemes



The conceptual framework above depicts the interactions between the various factors that influence one's decision to enrol in the NHIS. At the household level, as the size of the household increases more money is needed to buy food and feed the household. This strains the household income. If the household has more assets, the effects will not be felt much. Otherwise the situation will get worse. With a large household size it is anticipated that the amount of money needed to cater for the health care needs of the household

members may increase. Thus as the level of out of pocket expenditure on health increases, the household income may be inadequate to cater for other basic needs such as housing, drinking water and toilet facilities for the household. The interaction between these factors will cumulatively determine the household's socioeconomic status.

Also, the individual with education beyond the secondary school level (tertiary) is more likely to be gainfully employed. Persons who are employed will earn money which improves their socioeconomic status. The socioeconomic status of the individual or household will in turn, determine how they view the insurance premium (affordable or unaffordable) and this will determine whether the person or household will enrol or not.

Furthermore, with education, people become more enlightened and this influences the way they perceive their health status. Individuals who perceive their health status to be relatively good have been found to be less likely to enrol in the NHIS. Individuals who have positive perception about quality of care are likely to enrol in order to continue to enjoy such services. On the other hand, if the person thinks the quality of care is poor, he or she might resort to other forms of treatment or choose a different facility for his or her health care.

Increasing age has been associated with enrolment probably because individuals become more conscious of their health with increasing age. As such, people are likely to insure themselves against ill health. In addition, in the African society and for that matter Ghana, much of the household's health care burden is placed on women. Females would most likely insure themselves against ill health in order to relieve themselves of the extra burden of having to pay for the health care cost of self and children at the point of

receiving care (Chankova, Sulzbach& Diop, 2008)). Married people combine resources and are able to pay for care. With regards to religion, Muslims have been found to be less likely to enrol in the NHIS than Christians and other religions (Boateng & Awunyor-Victor, 2013).

1.4 Justification

Slum dwellers are considered among the poor in society. Studies show that slum dwellers do not have equitable access to quality public health services due in part to the fact that they cannot afford it. Social health insurance schemes are established to provide financial protection against ill health and to bridge the equity gap between the poor and the rich regarding access to health care. However, a decade after its implementation in Ghana, active membership in the NHIS stood at 36.8% in 2013(MOH, 2014). This study may highlight factors that influence enrolment in the NHIS among the poorer segments of the population in order to address disparities in access to quality health services between the rich and the poor. The results of this study may also help shape policymaking concerning access to health care among slum dwellers in Ghana.

1.5 Objectives of the study

1.5.1 General objective

To assess factors influencing enrolment in the National Health Insurance Scheme among slum dwellers in Agbogbloshie.

1.5.2 Specific objectives

1. To determine the proportion of slum dwellers enrolled in the National Health Insurance Scheme in Agbogbloshie.

2. To determine household and individual level factors influencing enrolment of slum dwellers in the National Health Insurance Scheme in Agbogbloshie.

1.5.3 Research question

What factors affect enrolment in the National Health Insurance Scheme among slum dwellers in Agbogbloshie?

CHAPTER TWO

LITERATURE REVIEW

2.0Introduction

This chapter presents a review of literature on factors influencing enrolment in the National Health Insurance Scheme among slum dwellers. It is divided into seven sections: section 2.1 presents literature on global health burden of urban populations, sections 2.2 to 2. 4reports on health care utilization and payment for health care among urban and slum dwellers, 2.5 gives a brief history of health financing in Ghana, section 2.6 looks at factors influencing enrolment in the National Health Insurance Scheme, 2.7 presents literature on methods of measuring socioeconomic status and catastrophic health expenditure and 2.8 gives a conclusion of the literature reviewed.

2.1 Global health burden of urban populations

More than half of the world's population (54%) is said to be presently living in urban areas, with Asia accounting for about 53% of the total urban population (United Nations, 2014). This has been projected to rise to about seven billion in 2050 with Africa and Asia expected to host approximately 90% of the urban population by that time. With the fast pace of urbanization, countries in Africa and Asia have been expected to run into serious challenges in the areas of housing, employment, education and health (United Nations, 2014).

Urban life can be satisfying since it is more varied, exciting, and full of new opportunities. However, rapid and unplanned urban growth is often associated with poverty, environmental pollution and congestion in these cities (Tellnes, 2005; WHO,

2010). Statistics show that, a significant number of people in urban areas live in overcrowded and substandard housing, lacking safe water and sanitation systems and access to quality health care particularly in the slums (WHO & UN-HABITAT, 2010).

As a result, infectious diseases remain a predominant threat to human health in many urban areas (Tellnes, 2005). Infections such as, the human immunodeficiency virus (HIV) infection, tuberculosis, pneumonia and diarrhoeal diseases are endemic in many urban areas globally. In the United States for instance it has been reported that the urban areas account for much of the HIV prevalence (Centers for Disease Control & Prevention [CDC], 2012). In some urban areas in Africa, HIV disproportionately affects urban dwellers than their rural counterparts. Reports from the 2013 Demographic and Health Survey in Sierra Leone shows that urban dwellers in Sierra Leone have twice the prevalence of HIV than their colleagues in the rural areas. It also reported that neonatal mortality was higher in urban areas compared with rural areas (Statistics Sierra Leone, 2014).

Cholera remains a major public health challenge in urban areas of most developing nations. A study by Haque et al., (2013) in Bangladesh revealed that most urban dwellers were at increased risk of cholera due to unsanitary conditions, overcrowding and lack of access to safe water.

In Nigeria, Ishaku, Shadrack, Ajumobi, Olayinka, and Nguku, (2014) found that cholera outbreaks were more common among the urban populace.

In Ghana, cholera continues to be a major public health challenge to urban dwellers every year. According to Ofori-Adjei and Koram, (2014) the cholera epidemic in Ghana is an urban problem, which affects mostly the slum dwellers. Slums are productive

breeding grounds for tuberculosis, hepatitis, pneumonia, cholera and diarrhoeal diseases, which spread easily in highly concentrated populations (Tellnes, 2005). For instance, a study in the Langas slum in Kenya revealed that almost all domestic sources of water in this slum with the exception of tap water, were contaminated with fecal matter and infectious agents such as Coliforms (Kimani-Murage & Ngindu, 2007). High prevalence of infectious diseases in urban slums, coupled with, poverty, malnutrition, inadequate refuse disposal and unsafe drinking water, results in high rates of morbidity and mortality especially among infants and children in slum populations (UN-HABITAT, 2006; Jorgenson & Rice, 2010).

A slum household according to UN-HABITAT, (2002) is a group of individuals living under the same roof in an urban area who lack one or more of the following conditions: security of tenure, structural quality and durability of dwellings, access to safe water, access to sanitation facilities and sufficient living area.

The physical layout of slums makes it prone to natural and man-made disasters. Slum dwellers are mostly overcrowded in their rooms where they cook and sleep (Jackson, 2006). Available health services are often of an inconsistent makeshift of public, private, and charity-based providers. As a result, most health outcomes are worse in slums than in neighboring urban areas or even rural areas (Fotso, 2006; Sclar, Garau &Carolini, 2005).

According to the WHO Center for Health Development, (2008) children under five years living in slums in Nairobi, Kenya are more likely to die than their colleagues living in other parts of the city.

2.2 Utilisation of health care of slum dwellers

A study by Taffa and Chepngeno, (2005) indicated that in Nairobi slums, children with diarrhoea were likely to be taken to the hospital for treatment especially male infants. The study also revealed that, most women in these slums who sought health care outside the home did so in clinics and chemical shops within the slums. This they said was due to financial constraints and fact that slum dwellers in the study area normally paid more for health care services than their counterparts in the same city.

In contrast to Taffa and Chepngeno, Muriithi, (2013) observed that, most residents in an urban slum in Kenya had an increased predisposition for private health facilities outside the slum. According to the study, increasing information about health care quality increased the probability of the slum dwellers opting for a private health facility irrespective of the location. It also stated that increasing age and large household size were significantly associated with utilizing a formal health facility relative to self-treatment. However, being a male and user fee charge reduced the likelihood of seeking care from a formal health facility.

On the other hand, Vargese, Mathew and Mathew, (2013) unlike the finding of Muriithi, noted that as a result of the distance to the health facility, slum dwellers in Maharashtra, India, did not patronize public health facilities despite attesting to the low user fees being charged. However, they preferred a private health facility that was closer to the slum even though these private facilities charged a bit higher than those in the public health facilities. This had far reaching implications for their health since those who could not afford to pay the cost of their health care were likely to resort to self-treatment.

In a similar study in Bangladesh, Kabir and Khan, (2013) showed that maternal age and education were significantly associated with the use of antenatal services among pregnant slum dwellers.

Meanwhile, Uddin et al, (2009) reported that majority of street dwellers in Bangladesh sought care from the nearest clinics and pharmacy shops. A significant number of them did not seek health care during their illness. The study also indicated that out of those who did not seek care, over 50% of them reported lack of money as the reason while majority of males said treatment was not necessary.

Levesque, Haddad, Narayana and Founier, (2006) showed that even though, the level of Out-Patient care (OPD) utilization among urban dwellers in Kerala was high, most of them (77%) opted for private allopathic services. Reasons cited for utilization of private clinics included poor quality and the fact that the public health services were not readily accessible. However, the poor were less likely to utilize private health services.

2.3 Payment for health care among urban dwellers/slum dwellers

Out– of- pocket payment for health has been shown to cause financial distress to health care users. According to the WHO, (2005) when people pay health care fees that are so high that it puts them in financial hardship, they resort to rationing expenditure on other basic necessities such as housing, water, child's education, and more inferior health care services or may even not seek health care at all. It has therefore suggested that any health expenditure that is equal to or above 40% of the household's non-subsistence income be considered catastrophic.

In order to avoid this situation, many countries have introduced health insurance to offer some financial protection for the poor. Health insurance comprises the pooling of risks in the form of premium payments or taxes that are used to protect the insured from high or unexpected health care expenses (Gobah &Zhang, 2011). It is commonly used to describe a form of insurance that pays for medical expenditures (Akande, Salaudeen & Babatunde, 2011). It may be provided through a social insurance program, or from private insurance companies (Gobah & Zhang, 2011). In social health insurance there is cross subsidisation where the healthy subsidize for the ill, the young subsidize for the old and the higher income group subsidises for the lower income group (Akande et al., 2011).

Studies have demonstrated geographical (urban) and socioeconomic (slum dwellers) differences in the mode of payment for health care.

According to Ewelukwa, Onoka and Onwujekwe, (2013) in Nigeria, urban dwellers were more likely to use health insurance to pay for their health care cost. They indicated that urban dwellers were 47% less likely to pay for health services out – of- pocket compared to rural dwellers.

Meanwhile in Bangalore, it has been shown that slum dwellers were more likely to pay for health care out of pocket. The study pointed out that out of pocket payment for Out-Patient Department (OPD) services worsened the impoverishment of the urban poor. And that most of the households in order to cope, resorted to borrowing money and selling their assets. Low household income and small household size were reported to be associated with a greater likelihood of incurring financial hardship associated with having to pay for health care services (Bhojani et al., 2012).

Xu et al., (2006) reported that in an urban area in Uganda, the poor such as slum dwellers had higher likelihood of experiencing financial catastrophe.

Furthermore, a study in Tajikistan by Falkingham, (2006) showed that private out-of-pocket payment was common among the poor like slum dwellers. The study revealed that households resorted to selling their assets in most cases in order to fund health care services.

However, Somkotra and Lagrada, (2009) have demonstrated that the richer households are equally at risk of incurring catastrophic health expenditure because they prefer using private health facilities unlike the poor who will patronize public health facilities. The study also revealed that households with greater number of elderly people and those households whose member(s) experienced hospitalization in the past year were more likely to suffer catastrophic health expenditure. On the other hand, higher education of the household head was associated with less likelihood of catastrophic health expenditure.

Eventhough everyone could experience financial hardship associated with paying for health care out-of-pocket, the depressing effects are mostly felt by the poor like slum dwellers. This is possibly due to the reason that as they use up the little money they have to pay for health care expenditure, little or even nothing is left for them to use for other needs such as food and clothing (WHO, 2005). A study in Albania showed that out-of-pocket health expenditure was higher for the higher wealth quintiles, and these could be plunged into poverty in the long run if they were not insured. However, the greatest effects of out-of-pocket health care expenditure occurred among the poorest quintiles like

slum dwellers who had the higher likelihood of experiencing catastrophic health care expenditure (Tomini, Packard & Tomini, 2013).

2.4 Disparities in health care utilization among urban dwellers

Braveman and Gruskin, (2003) and Braveman, (2014) reported that a health disparity occurs when there is a systematic difference in health between social groups or individuals who have different levels of underlying social advantage/disadvantage. In this way, individuals who are already socially disadvantaged are put at a further disadvantage.

Urban areas are seen to have many health resources and urban dwellers are believed to have better access to and utilization of health care than their rural counterparts. However, studies have shown that health care utilization within urban communities is not evenly distributed among the various segments of the urban population (Allender, Foster, Hutchinson, & Arambepola, 2008; Tellnes, 2005). Many factors account for these disparities ranging from social, economic to demographic factors.

According to Mathews et al., (2010) the urban poor such as slum dwellers do not have any advantage over their rural counterparts regarding access to and utilization of health care services despite their close proximity to these services. The reason being that health care services tend to be concentrated in the wealthier segments of cities and tend to be so expensive that in many cases, the poor cannot afford the cost of health care.

In an attempt to bridge this gap, many goverments have put in measures such as health insurance that offer protection to the poor like slum dwellers. Social health insurance systems offer financial protection to the poor against the cost of ill health. This has been shown to improve health care utilization among the poorer segments of the population

such as slum dwellers (Boateng & Awunyor -Victor, 2013). Yet, studies show that most of the interventions put in place such as, the NHIS of Ghana to remove social disadvantages among the various segments of the population, are in many cases benefitting the rich. Without health insurance, it will be difficult for the poorer segments of the population like slum dwellers to utilize health services when sick.

According to Jehu-Appiah et al., (2011) as a result of socioeconomic differences, the poor are not enrolling in the NHIS of Ghana with the highest enrolment rates seen among the richest. In this regard, the poor invariably without any form of financial risk protection may not visit the hospital or health facility when sick as they cannot afford the full cost of their health care.

Furthermore, Odeyemi and Nixon, (2013) indicated that the health insurance schemes of both Ghana and Nigeria seemed to be pro-rich and pro-urban and did not favour the poor. As a result, there continue to be a widening gap in health care usage between the poor and the rich.

Also Schellenberg et al., (2003) noted that health disparities existed within the rich and poor regarding health care usage in southern Tanzania. The survey revealed that care-seeking behavior among the poor families like slum dwellers was worse than the relatively rich.

2.5 Historical background of health financing in Ghana

Ghana started Health care financing with a tax-funded system which made public health services free to all after she gained independence in 1957, due to declining economic growth in the 1970's the government of Ghana could not get enough money to sustain the tax-funded system resulting in shortages of drugs and other essential medical supplies. As such, after the structural adjustment reforms in 1983, the government of Ghana (PNDC) increased user fees for public health care services in 1985 to recover some cost. This system became known as the "cash and carry" system (Agyepong & Adjei, 2008; Assensoh & Wahab, 2008).

The "Cash and Carry system" put so much strain on the poor that it seem practically impossible for them to have easy access to equitable and quality health care (Nyonator & Kutzin, 1999). Health care utilization decreased significantly as more and more people could not afford the cost of health care. As a result, Ghana began to find other methods of funding health care including non-governmental organization (NGO) initiated community –based health insurance schemes. But these insurance systems were unfriendly to the poor and did not cover majority of the population. The "cash and carry" system eventually became unpopular among Ghanaians (Rajkotia, 2009).

In 2003, the government of Ghana through an Act of Parliament (Act 650 of 2003) established the National Health Insurance Council, whose mandate was to see to the implementation of the National Health Insurance Scheme to remove financial barriers to accessing health care for all people living in Ghana. This act was replaced by the National Health Insurance Act 2012, (ACT 852) which established the National Health

Insurance Authority to remove administrative challenges, improve efficiency and ensure more effective management of the National Health Insurance Scheme. Under the Act, sources of funding for the National Health Insurance Scheme involved a combination of public and private sources which include: a 2.5% value added tax (VAT) on goods that attract VAT; a 2.5% Social Security and National Insurance Trust (SSNIT) contributions of formal sector workers; money that may be allocated to the fund by parliament; money that accrues to the fund from investments made by the National Health Insurance (NHI) Council, individual household voluntary subscriptions (premium) and grants, donations, gifts and any other voluntary contribution made to the NHI fund.

As a pro-poor policy, not everyone is expected to pay the insurance premium and premium contributions are made according to one's ability to pay. However, community health committees are to identify and classify social groups to enable them pay in line with their ability. NHIS subscribers include: the informal sector workers who pay premium and the formal sector workers who do not pay premium but contribute 2.5% of their SSNIT contributions to the NHI fund. In order to cater for the socially marginalized and vulnerable groups, categories of exemptions under the National Health Insurance Scheme have been devised to exclude persons who contribute to the SSNIT and SSNIT pensioners and adults 70 years and above; children under 18years of age and children under 5 years; pregnant women; indigents and Livelihood Empowerment against Poverty (LEAP) beneficiaries and persons with mental disorder (NHIA, 2014). There have however been challenges in implementing the exemptions for indigents who are supposed to include the poor in society (NHIA, 2010: Seddoh, Adjei & Nazza, 2011).

2.6 Factors affecting Enrolment in Health Insurance Schemes

De Allegri, Sanon, Bridges and Sauerborn, (2006a) reported that understanding consumer preferences and integrating them into the design of health insurance could increase enrolment. According to De Allegri et al., (2006a) socioeconomic status of the household did not influence enrolment but community members agreed that, individuals with larger households would find it difficult to enrol because of financial constraints. They also indicated that health worker attitudes (quality) were associated with non-enrolment.

It has been reported that scheme factors such as price, convenience, provider attitudes, peer pressure and the benefits package are linked to NHIS membership and retention. (Jehu-Appiah, Aryeetey, Agyepong, Spaan, & Baltussen, 2012).

According to Dong, De Allegri, Gnawali, Souares and Sauerborn, (2009) factors associated with dropping out of a community-based health insurance programme in Burkina Faso included; being a female household head, higher age of household head, lower household head's education, larger household size, lower number of illness episodes in the past three months and poor perceived quality of care.

Kamath, Sanah, Machado and Sekaran, (2014) showed that education of the household head, marital status, household size of less than five (5), and awareness of the cost of enrolment were seen to be significantly associated with enrolment.

In a similar study in the Volta region of Ghana, Boateng and Awunyor-Victor, (2013) reported that females, Christians, married persons and those who perceived their health status as poor were more likely to enrol in the NHIS. While receiving poor quality care

was seen to be a determinant of not renewing the NHIS membership, there was no difference in enrolment in the NHIS between the literate and the illiterates. Wang et al., (2005) also revealed that individuals who had low income and those who perceived their health status as good, were less likely to enrol in a community-based health insurance programme in rural China.

Moreover, Gobah and Zhang, (2011) indicated that educational level, age, quality of health services and socioeconomic status influenced individual's decision to enrol in the NHIS. According to the report, increasing education, age between 18-29, and perception of good quality of health care positively influenced people to enrol. For the non-insured, low socioeconomic status was a major reason cited for non-enrolment. Similar results were also reported by Kirigia et al., (2005) who cited literacy as a major factor that affected enrolment in the health insurance.

Carrin, Waelkens and Criel, (2005) and Chankova et al., (2008) also indicated that a major obstacle affecting enrolment in the National Health Insurance Scheme had to do with individual's ability to pay the premium.

Report from the Ghana Living Standards Survey five (GLSS 5) (2008) also showed that the insurance premium was considered to be high among those who did not enrol in the NHIS (Ghana Statistical Service [GSS], 2008).

Elsewhere in Moldova, Richardson, Roberts, Sava, Menon and McKee, (2012) documented that being unemployed, or self-employed and having low income and younger age were significantly associated with non-insurance. Being insured was seen to

increase health care utilization as such the poor found it more difficult in accessing care of satisfactory quality.

Liu, Yu, Phuong, Yan, Thien, and Tolhurst, (2012) reported that in China, having health insurance did not positively impact OPD (Out-Patient Department) services utilization but was significantly associated with in-patient care utilization. However, in Vietnam, it was observed that insured persons were more likely to use both OPD and in-patient services.

2.7 Methods of measuring socioeconomic status and catastrophic health expenditure

There are various ways of measuring a household's socioeconomic status in health research. It may be single, multiple or a composite measure. Occupation, education of mother and father as well as household income and wealth are some of the single measures that are commonly used in measuring socioeconomic status. Multiple measures involve the use of several indicators of socioeconomic status in the same analysis while composite measures are constructed by combing several indicators of socioeconomic status (Marks, 2011). The use of father's education alone is becoming antiquated (Beller, 2009) and the use of occupation is challenging in persons with less labour market experience (Duncan, Daly, McDonough &Williams, 2002).The major challenge associated with the use of multiple indicator measures is that with time, it becomes difficult to fairly compare estimates across countries due to changes in correlation between interaction terms (Marks, 2011). Another measure of socio-economic status involves the use of composite measures. However, literature suggests that composite measures of socioeconomic status are usually flawed due to either under or over reporting

of household characteristics in surveys (Martinelli & Parker, 2009). Similarly, evidence point to the effect that there is no significant difference between the use of single and composite indicators of socioeconomic status (Manthalu, Nkhoma & Kuyeli, 2010). Since there is no gold standard, whichever indicator is used in assessing socioeconomic status serves a great purpose as they all impact the health of the household (Metcalf et al., 2008). The use of income is said to be an important indicator of the socioeconomic status of the household due to its relationship with health status and health care access (Duncan et al., 2002). However, studies show that households tend to either not report or under report their income; bringing into light, issues regarding reliability of income data collected during surveys (Cope, Doocy, Frattaroli, & McGready, 2012; Marks, 2011). In the absence of reliable data on income, there are other indicators that may reflect the household's financial ability to secure goods and services to promote health (Fotso & Kuate-Defo, 2005). Comparatively, household expenditure data have been shown to be a much more reliable and accepted alternative to the use of income data as proxy for measuring household wealth and socioeconomic status (Morris, Carletto, Hoddinott & Christiaensen, 2000). In Jordan and Syria, Cope et al., (2012) reported that households were more willing to report their expenditure data compared to their income. As a result expenditure data was reported at a much higher level than income in that study. Household expenditure data allows one to be able to estimate how much households spend on basic necessities and on health care and also, to estimate if households could fall into catastrophic spending due to spending on health care. Existing literature shows that the poor such as slum dwellers are more likely to experience catastrophic health expenditure (Tomini et al., 2013; Falkingham, 2006; Xu et al., 2006).

There are two main ways of measuring catastrophic health expenditure. The first method involves the use of out-of-pocket health expenditure as a share of the total household expenditure. When this happens, households are classified as experiencing catastrophic health expenditure if the ratio of their health expenditure to the total annual household expenditure exceeds 10% (O'Donnell, van Doorslaer, Wagstaff, & Lindelow, 2008; Ranson, 2002).

The second method involves the use of out-of-pocket health expenditure as a share of non-food expenditure (O'Donnell et al., 2008; Xu et al., 2003). When this method is used in estimating catastrophic health expenditure, the threshold for classifying households as experiencing catastrophic health expenditure is 40% or more (Xu et al., 2003; WHO, 2005). Non-food expenditure has been said to be a better discriminator between the poor and the rich when used in the estimation of catastrophic effects of out-of-pocket health expenditure (O'Donnell et al., 2008). Hence in this study, any household whose expenditure on health is equal to or more than 40% of their non-food expenditure will be classified as experiencing catastrophic health expenditure (WHO, 2005; Xu, et al, 2003).

2.8. Conclusion

Slum dwellers live in very deplorable state, which affects their health negatively.

Financial protection mechanisms such as the National Health Insurance Scheme of Ghana are established to offer protection against catastrophic health care expenditure and to remove health care disparities between the rich and the poor regarding access to health services of appropriate quality. The literature tells us that, the poor are not benefiting from such programmes due to contraints that range from individual and household level

to service provision. However, most of these studies were done in the general population. Secondly, most of the studies that looked at factors influencing enrolment in health insurance among slum dwellers, were done in much advanced countries and might not entirely represent conditions of slum dwellers in Ghana. Socio-economic status measures such as income are prone to under reporting and over reporting, multiple indicator measures also have and expenditure as well. Catastrophic health expenditure can be measured by computing the household health expenditure as a proportion of the total annual household expenditure or as a proportion of the total annual household expenditure on non-food items. As such, this study assesses factors influencing enrolment of slum dwellers in the National Health Insurance Scheme of Ghana to inform policy making aimed at improving the lives of slum dwellers and the poor in general.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter describes the methods used in carrying out this study. The chapter gives a description of the type of study, the study area, the study population, the sampling and the sample size calculation. It also describes the data collection techniques and methods, quality control and data processing and analysis of the data. It also presents the ethical considerations, data storage and use as well as risks and benefits of participating in the study and any potential conflict of interest.

3.1 Type of study

The study was a descriptive cross-sectional study and employed quantitative methods of data gathering and analysis.

3.2 Study location/area

The study was conducted in Agbogbloshie, a suburb of Accra. It is a highly mobile resource-poor nucleated settlement, with most of the residents lacking access to clean water and adequate sanitation. Most of the dwelling structures are illegally situated. As such the Accra Metropolitan Assembly taskforce often conducts exercises to demolish these illegal dwellings in an attempt to relocate them to an approved area. It has a total land area of about four acres and hosts one of the largest electronic waste (e-waste) dumping sites in the world. It has five census enumeration areas. It shares boundaries

with the left bank of the Odaw River and upper stretches of the Korle Lagoon. It is located north-west of the Central Business town of Accra. It has a total population of about 8,305(GSS, 2012) consisting mainly of economic migrants from the northern and rural parts of Ghana. The houses are a mix of concrete and wood sheds. It is prone to flooding, which has been said to be responsible for significant morbidity and mortality among the residents (Joint UNEP/OCHA Environment Unit, 2011). It has a large fresh produce market that attracts traders from all over the country. The local economy depends on import and processing of electronic waste (e-waste) and the sale of onions.

3.3 Variables

The dependent variable of the study was insurance status (Enrolment in NHIS)

The independent variables included:

Individual level factors (household head): Age, Education, sex, marital status, religion, health status, self-perceived quality of care, and employment status

Household level factors: Age Education, sex, marital status and employment status of the household head, age of household members, illness of a household member, household's place of seeking care, household income, household out – of- pocket expenditure on health, household size, household expenditure on durable assets (bicycle, tricycle [motor king] television, mobile phone, computer, motor, refrigerator radio set, jewelry), household expenditure on food items, wheat flour, maize meal, maize grain, beans, rice, roots and tubers, oils and fat, milk, vegetables, meat, fish, salt , spices) and household expenditure on utilities (electricity, water, gas, charcoal and firewood) and household socioeconomic status.

In this study, the total household expenditure was used as a proxy for the household income because it has been shown to be a more reliable indicator of household's financial wealth and socioeconomic status than income (Morris et al., 2000).

Table 1: Variable Table

Name of variable	Description	Operational definition	Scale of Measurement
Insurance status	Yes/No	Whether the person is enrolled in NHIS	Binary
Age		Household head's age at last birthday	Discrete
Age groups	18 to 30years 31-49years 50years or more	Age categories of household heads	Categorical
Age groups	0-5 years 5-17 years 18-49 years 50-69years 70+	Age categories of household members	Categorical
Sex	Male Female	Sex of household head	Binary
Marital status	Single (Never married) Widowed, Divorced Married	Marital status of respondent	Nominal
Religion	No religion, Christianity Islam, Traditional Others(specify)	Religious status of respondent	Nominal
Education	No formal education Primary education Secondary education Above secondary education	Highest level of formal education attained by respondent	Ordinal
Employment status	Unemployed, Self-employed Employed(Private sector) Employed(Public sector)	Form of employment of respondent	Nominal
Self-perceived quality of care	Poor Good	Respondent's view of the quality of care provided to him or household member during sickness	Ordinal

Table 2: Variable Table

Name of variable	Description	Definition	Scale of Measurement
Choice of health care	Faith-based	Type of health care sought	Nominal
Facility	Buys drugs from drug Peddler Chemical/pharmacy Private health facility Public health facility	by respondent during illness	
Self-perceived health status	Very poor, Poor Good, Very good	Respondent's view of his/her health status	Ordinal
Household income		Amount of money received by Household	Continuous
Household expenditure on durable assets		Amount of money spent on items like, bicycle, Television sets, Mobile phones etc.	Continuous
Household out-of-pocket expenditure on health		Amount of money spent on in order to obtain health care	Continuous
Household expenditure on food		Amount of money spent on buying food items	Continuous
Household expenditure on utilities		Amount of money spent on utilities like, water, electricity, gas and charcoal	Continuous
total annual household expenditure /socioeconomic status	Poorest, Poor Middle rich, Rich Richest	Social standing of the household	Categorical

3.4 Study population

The study population included all household heads in Agbogbloshie.

The inclusion criteria involved household heads who were18 years or older and consented to participate in the study and were residing in one of the households in the selected Census enumeration areas. These people had stayed in Agbogbloshie continuously for at least two (2) months in the preceding six (6) months to the study.

The exclusion criteria included all household heads who were not residents of Agloboshie but were visiting and household heads who did not consent to participate in the study. Household heads who had stayed in Agbogbloshie for less than two (2) months in the preceding six months were also excluded.

3.5 Sampling

A multistage sampling technique was used to select study participants. A simple random sampling technique was used first to select the slum of Agbogbloshie for the study out of the 78 slums in Accra (UN-HABITAT, 2011). Random sampling was used to select the study area to ensure each slum in the Accra metropolis had equal chance of being selected and to avoid selection bias. Agbogbloshie is a highly mobile nucleated settlement which has most of its dwellings illegally situated and not numbered. All the five enumeration areas in Agbogbloshie were included in the study but in order to decide which enumeration area to begin with, a random selection was done among the 5 enumeration areas and thus each enumeration area was visited and data collected till the required sample size for that enumeration area was achieved. Thus in each enumeration

area, the main lorry station was the central point to begin with. Starting from the main lorry station, the researcher selected a direction of movement **at random.** Depending on the direction that was chosen for instance west, the researcher moved from house to house in that direction then to the south, east and north within the same enumeration area.

In each house, a household head who was 18 years or older and consented to participate in the study and resided in a household in the selected Census enumeration area and stayed in Agbogbloshie continuously for at least two (2) months in the preceding six (6) months to the study was interviewed. In the event that a house had more than one household head, one of them was selected at random to complete a questionnaire. In the event the sample size was not gotten from one enumeration area due to lack of information on the population of each enumeration area, data gathering continued in the next enumeration area. This process was repeated until the final sample size was obtained.

3.5.1. Sample size estimation

The following formula by **Cochran, (1977)** was used to arrive at the sample size: $n = (z^2\ p\ q)/d^2$

Where n = sample size

Z=1.96 (95% confidence level)

P = 36.8% (Proportion of people enrolled in the NHIS in Ghana since that of slum dwellers in Ghana was not known at that time).

q= 1-p = 1-0.368 = 0.632

d = 0.5% = 0.05(95% CI)

Substituting into the formula:

$n = (1.96)^2 (0.368 \text{ X } 0.632)/0.05^2$

- ⇨ n = 3.8416X 0.232576/0.0025
- ⇨ n = 0.8934639616/0.0025 =557.38
- ⇨ n 357.38

Adding 10% (0.10) to cater for non-response, yielded a sample size of 393. That is (0.10 X 350) + 35.738 =35.738 +357.38 = 392.38

≈ 393

So in this study, a sample size of 393 household heads was used.

3.6 Data collection techniques and tools

A structured questionnaire was designed and used to collect data in this study. The questionnaire had closed and open - ended questions and was designed to elicit information regarding individual and household factors that influenced enrolment in the NHIS by slum dwellers in Agbogbloshie. Each household head completed one questionnaire. The researcher explained the purpose of the study to each respondent and the respondent was assured of confidentiality of information that was collected during the study. Those who agreed to participate in the study signed or thumb-printed a consent form. Data were collected using a questionnaire. Each completed questionnaire was checked for completeness of information.

3.7 Quality Control

Before the study, three research assistants were recruited and trained centrally on the data collection instrument and technique, and the use of epidata 3.1 in entering data. The researcher and the three assistants collected the data. The questionnaire was pre-tested at Nima in Accra and was modified to address shortfalls that were identified. The data were checked for completeness before entry. This helped to minimize errors during data collection and entry. In addition, data were double-entered and verified using epidata version 3.1. The data were further cleaned using STATA version 13 before it was analysed.

3.8 Data processing and analysis

Data were sorted, coded and entered twice and validated using epidata version 3.1. Statistical analysis was done using STATA version 13.

Data analysis was done in three stages. In the first stage, descriptive statistics was run to determine the proportion of each variable in the data. Age was treated as a discrete and categorical variable. Income and expenditure data were treated as continuous variables. Discrete and continuous variables were summarized using means and standard deviations. Categorical variables were presented in frequencies and percentages. Descriptive statistics were presented in tables and charts. The total household monthly income was calculated by adding all forms of money that the household members received monthly. The total monthly income was then multiplied by twelve months to

obtain the total annual household income. Total expenditures on durable assets, and on health were each multiplied by two to obtain an estimate of the annual household expenditure on health and durable assets. The factor two was used to compute the total household expenditure on health and on durable assets because data was collected for a half year. The total annual household expenditure on utilities was also obtained by multiplying the monthly utility bill by twelve months**.** Data on household expenditure on food was based on the household's food expenditure in a week based on the results of the pretest. As such, the total expenditure on food was converted into month by multiplying by four and then converted into a year by multiplying by twelve. The total annual household expenditures on health, durable assets, food and utilities were summed –up to obtain the total annual household expenditure. To get the proportion of the household expenditure that was spent on health, food, utilities and on durable assets each of these expenditures was divided by the total annual household expenditure and then multiplied by 100.

In order to obtain the non-subsistence expenditure of the household, the total household expenditure on food (subsistence expenditure) was deducted from the overall household expenditure to help know the households who had the capacity to pay. A household's "capacity to pay" has been defined as the expenditure net of spending on basic necessities or food (Xu et al., 2003). The household's expenditure on health was then divided by the household expenditure net of spending on food and multiplied by 100. This gave an idea on which households were experiencing catastrophic health expenditure.

The second stage of the analysis involved testing for association between: Age of household head, education, sex, marital status, religion, health status, self-perceived

quality of care, and employment status, illness of a household member, household's place of seeking care, and household socioeconomic status and insurance status. Chi statistic and p-values were reported.

The third stage involved comparison of independent variables with the dependent variable (insurance status) using logistic regression. Bivariate logistic regression was done using the independent variables and the dependent variable to see any likely association between them. This was followed by multivariate logistic regression to adjust for the effects of other variables within the model, control for possible confounders, and to test the strength of any association that was identified in the bivariate analysis. Odds ratios, p-values and confidence intervals were reported in the logistic regression.

3.9 Pretest

A pretest was conducted at Nima in Accra to validate the questionnaire and correct any inconsistency identified. It also helped to assess the adequacy of the questionnaire and to identify any logistical challenges that might have occurred during the actual study.

3.10 Ethical considerations

Ethical clearance was obtained from the Ethical Review Board of the Ghana Health Service, Research and Development Division, Accra, through the School of Public Health and the School of Graduate studies, University of Ghana. Permission was obtained from local authorities in Agbogbloshie before the study commenced.

3.11 Voluntary consent

Respondents were told that participation in the study was voluntary. Details of the study including the purpose and study procedure were explained to respondents and were allowed to ask questions for clarification. They were informed of their right to withdraw at any point during the study without facing any consequences. In addition, they were told that data collected would be treated with utmost confidentiality, for individual details such as names of persons were not going to be reported.

A written informed consent was obtained from eligible respondents who agreed to participate in the study. For those who could not read or write they were allowed to thump-print.

3.12 Data storage and usage

Data collected for the study were recorded onto a compact disk and together with all the other forms used in collecting data for the study, were stored in locked cabinets of the principal investigator. Equally, data entered into computer were protected with a password to avoid uncontrolled access to the data. Data collected for this study were accessible to only the principal investigator and were used exclusively for the purpose of the study.

3.13 Risks and benefits

The study did not pose any significant risk to respondents. However questions regarding disclosure of one's income and assets might have made some respondents feel uncomfortable.

3.14 Measures to reduce risks during the study

Possible risks associated with responding to questions in this study were explained to respondents before they consented. They were also told that participation was voluntary and they may withdraw at any time during the study when they wished. They were told they could decline to answer questions they thought were sensitive and as such distressing to them.

3.15 Description of possible benefits

Respondents were not given any direct benefits from this study. However, the results of the study may inform policy making that will improve livelihoods of slum dwellers in Agbogbloshie.

3.16 Compensation

Respondents were not given any form of compensation, be it monetary or non-monetary.

3.17 Conflict of interest

The researcher declares that there was no any conflict of interest in this study.

CHAPTER FOUR

RESULTS

4.0 Introduction

This chapter of results is divided into five sections. Section one presents information on socio-demographic characteristics of respondents who were interviewed; section two describes the pattern of household expenditure and income; section three describes health seeking behaviour of households and section four presents information on enrolment in the National Health Insurance Scheme in Agbogbloshie and section five presents results on factors influencing enrolment in the National Health Insurance Scheme among households in Agbogbloshie.

4.1 Socio-demographic characteristics of respondents

Three hundred and seventy-one (371) household heads were interviewed in the slums of Agbogbloshie. Of the 371 household heads, 212(57.1%) of them were females. The mean age of household heads was 31.5 years (SD 9.8). Most 208(56.6%) of the household heads were between 18 and 30 years old. On average, there were 4 members per household (SD 3.1). The smallest household size was 1 and the largest household had 20 members. There were 1551 members in 371 households that were interviewed. Out of this number, 515(33.2%) of household members were below 18years, 1031(66.5%) were between 18 and 69 years old and 5(0.3%) were 70 years old and above.

Table 3: Socio-demographic characteristics of respondents (n =371)

Variable	Frequency	Percentage (%)
18 to 30years	208	56.1
31-49years	143	38.5
50years or more	20	5.4
Age categories of household members*		
Less than 5years	202	13.0
5 to17years	313	20.2
18 to 49	986	63.6
50 to 69years	45	2.9
70 and above	5	0.3
Sex of household head		
Female	212	57.1
Male	159	42.9
Educational level of household head		
No formal education	168	45.3
Primary education	111	29.9
Secondary / Vocational education	77	20.8
Beyond secondary education	15	4.0
Religious status of household head		
Do not belong to any religion	3	0.8
Christianity	134	36.1
Islam	217	58.5
Traditional	14	3.8
Others	3	0.8
Marital status		
Single(Never married)	104	28.0
Widowed	29	7.8
Divorced	30	8.1
Married	208	56.1

***n=1551**

Table 4: Socio-demographic characteristics of respondents (n =371)

Variable	Frequency	Percentage (%)
Employment status		
Unemployed	127	34.2
Self-employed	204	55
Employed by private entity	28	7.6
Employed by government	12	3.2
Type of employment		
Street vendor	285	74
Security officer	13	3.4
Driver	17	4.4
Teacher	10	2.6
Dressmaker	26	6.8
Others	34	8.8
Wealth quintiles		
Poorest	75	20.2
Poor	74	19.95
Middle rich	74	19.95
Rich	74	19.95
Richest	74	19.95

The proportion of household heads dwelling in the slums without formal education was 168(45.3%). Of the 203(54.7%) household heads in the slums who had formal education, only 15(4.4%) had education beyond secondary school level. Close to 60%, (217) of household heads were Moslems. Most 208 (56.1%) of the household heads were married.

A little over half 204(55.0 %) of the household heads in the slums were self-employed while 127(34.2%) were unemployed. Only 12(3.2%) of household heads were government employees (Table 4). Of the 127 (34.2%) unemployed household heads, most 73(57.5%) of them had no formal education and 72(56.7%) were between 18 and 30 years. Also a little over three-quarters 96 (75.6%) of the unemployed in the slums were

female household heads. About sixty-six percent (60) of unemployed household heads were married. The mean annual household income per household headed by married person was GHS 5463.50(US$ 1,270.60) and that of a household headed by a single person was GHS5, 972.50 (US$ 1,388.90). Equally, the mean annual household expenditure per household headed by married person was GHS 7,380.40 (US$ 1716.40) and that of a house hold headed by single person was GHS6, 691.80(US$ 1556.20. This means that households headed by married persons earned on average GHS 509.00(US$ 118.40) more than households headed by single persons and spent GHS 688.60 (US$160.10) less than households headed by singles.

Sixty-three percent (85) of the unemployed were Muslims while 40 (31.5%) were Christians. Majority 285 (74.0 %) of the slum household heads were engaged in street vending. A little over twenty percent 75 (20.2%) of slum households belonged to the poorest quintile.

Close to thirty-seven percent 46 (36.7%) of households with 5 or more household members were headed by unemployed household heads.

Thirty-seven percent (48) of households with 5 or more household members belonged to the richest quintile while 8 (6.2%) belonged to the poorest households.

More than forty percent 71 (42.3%) of household heads who had no formal education rated their health status as good while 29 (17.3%) of them rated their health status as very good. Most 101 (62.0%) of these household heads who rated their health status as good were between 18 and 30 years and 29 (52.7%) of those who rated their health status as

very good were within the same age group. Many 124 (59.6%) of the household heads between 18 to 30 years were females.

4.2 Household income and expenditure on food and non-food items

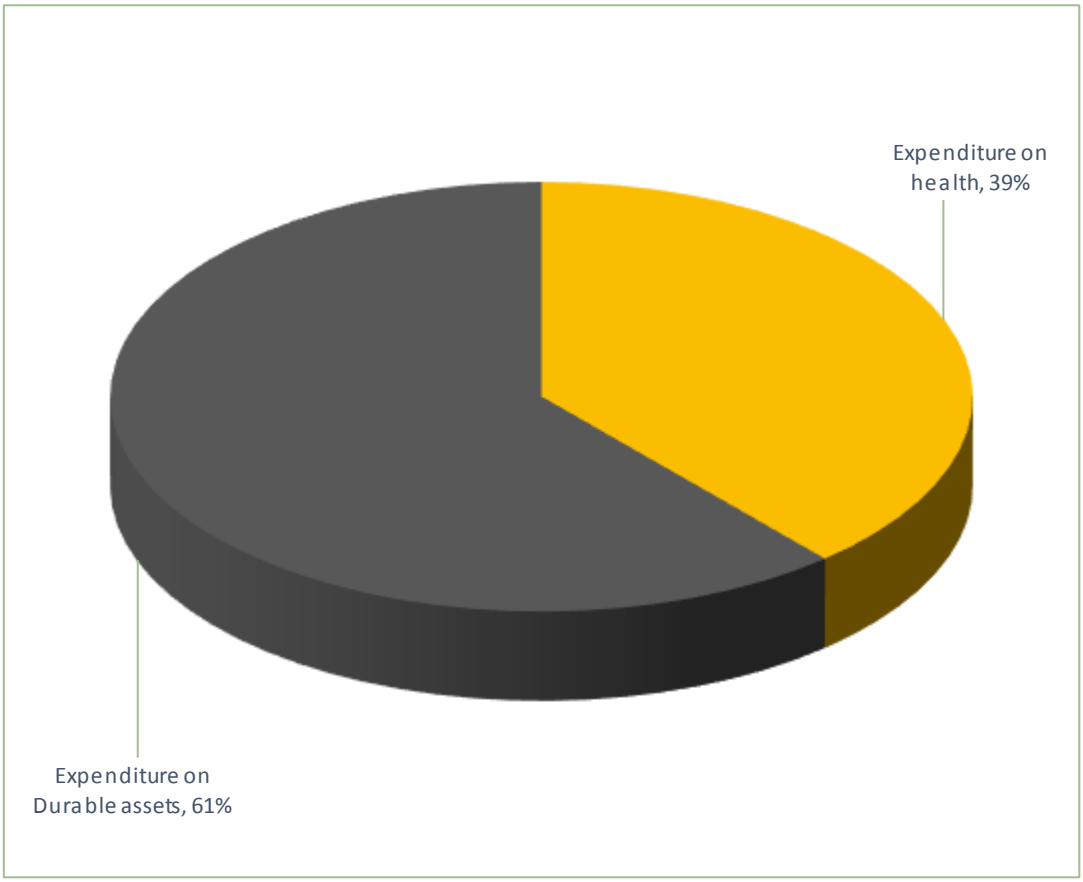
On average each household had about 3 (SD 2.5) persons who earned income on monthly basis. The total annual household income from all the households was GHS2, 120,120.00 (US$49, 3051.20). The mean monthly household income was GHS6, 16.60 (US$143.40) (SD2, 300) and the mean annual income per household was GHS 5,714.60 (US$1,329.0) (SD 7,013). The least earning household had an annual household income of GHS120.00 (US$ 27.90) and the highest was GHS63, 600.00 (US$ 14,790.70). Close to 90%, (GHS189, 9651.00; US$ 44,174.70) of the total annual household income was spent on food while GHS 47,089.40(US$ 10950.90) (2.2%) was spent on health care.

About two-thirds 241(64.9%) of all households bought durable assets in the preceding six months to the study. The commonest assets bought were mobile phones144 (36.9%) and jewelry 130(33.3%).

Using expenditure data as a proxy for household earnings, the pattern was similar with little variation in the amounts spent. The total annual household expenditure from all the households was GHS 2,521,369 (US$ 586,364.90). Of this amount, GHS 1,899,561 (US$441,758.40) (75.3%) was spent on food, GHS122, 030.00 (US$28, 379.10) (4.8%) on durable assets and GHS47,089.4 (US$156,964.70) (1.9%) on health. The mean annual total expenditure per household was GHS6, 796.10 (US$1,580.50) (SD 4654).

The highest household expenditure was GHS40, 488.00(US$9,415.80) and the least was GHS1, 169.00. (US$271.90). (Bank of Ghana, 2015;US$ 1=GHS4.315 ≈GHS 4.30).

Figure 2: Percent of health expenditure and expenditure on durable assets



4.3 Health seeking behaviour of slum dwellers in Agbogbloshie

Majority 237(63.9%) of households recorded an illness six months prior to the study. The total number of household members who fell sick was341 (21.4%). In all households that recorded an illness, they sought care for those who were sick. More than half (52.5%) of households who recorded an illness had no health insurance. Close to half 171(46.1%) of the slum households in Agbogbloshie bought drugs from drug peddlers or chemical shops and pharmacies when a member was sick. About 106(28.6%) households used public health facilities when they were sick. Close to two-thirds, 156(65.8%) of the slum households in Agbogbloshie who recorded an illness in the preceding six months to the study, paid for health care out-of-pocket(Table 5). A little over a quarter 62(26.2%) of households used both cash (out-of-pocket) payment as well as the National Health Insurance Scheme. Only eight percent (19) of the households used the National Health Insurance Scheme alone to pay for health care.

Table 5: Health seeking behaviour of slum dwellers in Agbogbloshie

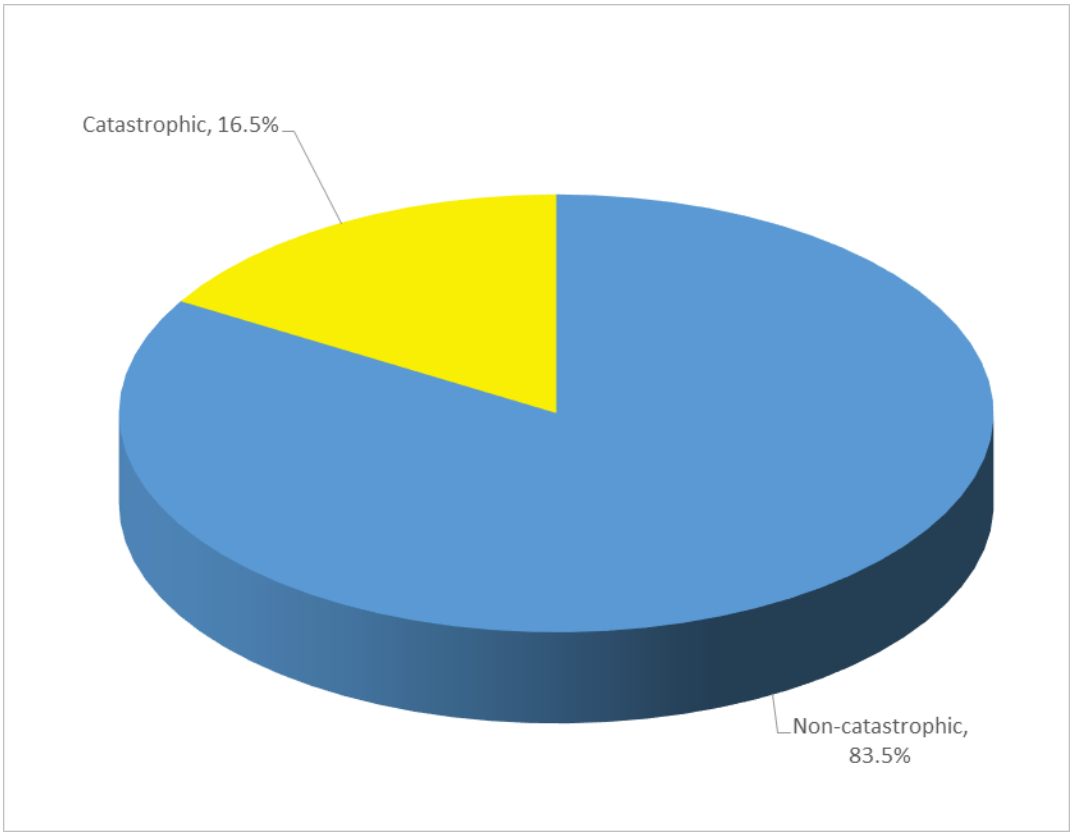
Variable	Frequency	Percentage (%)
Have any household member been ill in the past six months?		
Yes	237	63.9
No	134	36.1
Number who were ill*	341	21.9
Did you seek care for them?		
Yes	237	100
Was any of them admitted?		
Yes	54	22.8
No	183	77.2
How did you pay for health care?		
Cash (out-of-pocket)	156	65.8
NHIS	19	8.0
NHIS and Cash	62	26.2
Where do you seek care for household members are ill?**		
Faith-based	14	3.8
From drug peddler	28	7.5
From chemical shop or pharmacy	143	38.5
Private health facility	80	21.6
Public health facility	106	28.6
Self-reported health status**		
Very poor	63	17
Poor	90	24.3
Good	163	43.9
Very good	55	14.8
Self-reported quality of care**		
Poor	106	28.6
Good	265	71.4

***n=1551**
****n= 371**

Many 90(62.9%) of the households who sought care at chemical shops or pharmacies had household heads who were between the ages 18 and 30 years old. Forty-eight percent (36) of the poorest households sought care at chemical shops or pharmacies as against

32(43.2%) of the richest households and this difference was significant ($\chi 2 = 29.8$; p=0.019). Less than a fifth (16.5%) of all slum households who recorded an illness, experienced catastrophic health expenditure (Figure 3). This means that 16.5% of slum households spent 40% or more of their non-food expenditure on health.

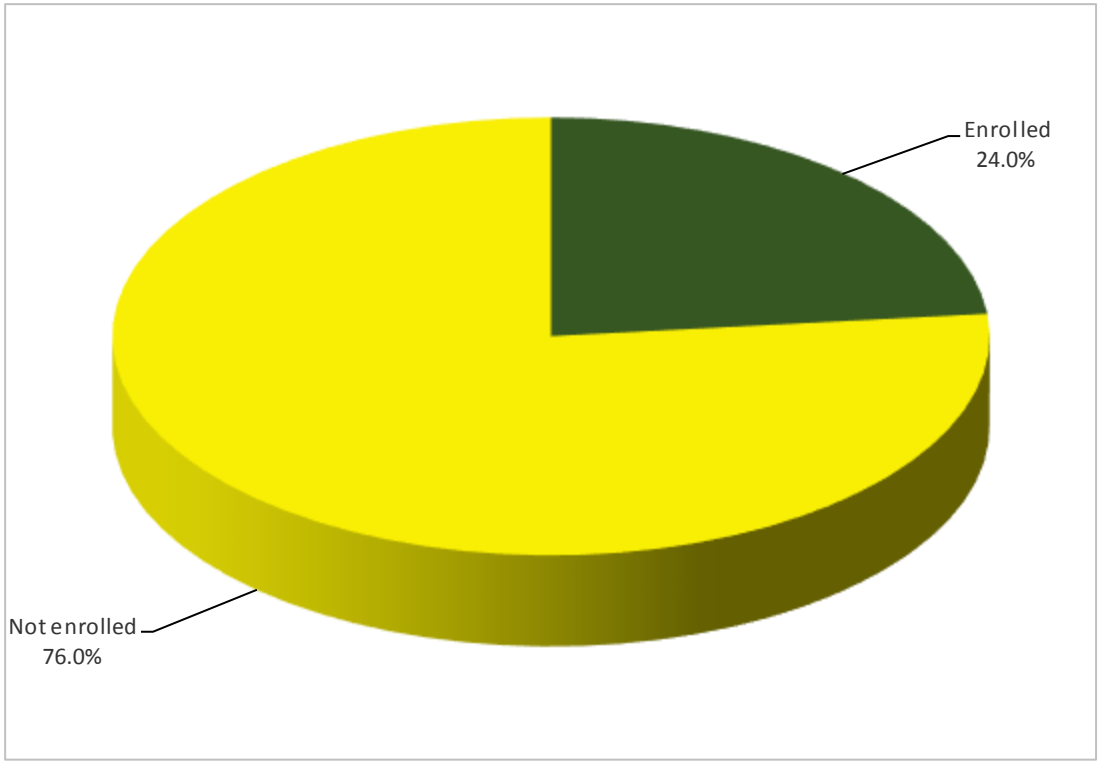
Figure 3: Proportion of households spending under catastrophic threshold



4.4 Enrolment in the National Health Insurance Scheme in Agbogbloshie

About a quarter 373(24.0%) of slum dwellers in Agbogbloshie were enrolled in the National Health Insurance Scheme. Of this number, 142 (9.1%) were household heads and 231(14.9%) were other members of the household. More than fifty percent 199 (53.4%) of slum dwellers who enrolled in the National Health Insurance Scheme, lived in households headed by females. There were 200 households in the slums that enrolled at least one member of the household in the National Health Insurance Scheme. Of the 200 households, 58(29%) of their household heads were not enrolled. About a quarter 49 (24.5%) of these 200 households enrolled all their members. The major reason 84(59.2%) cited for enrolling in the National Health Insurance Scheme was to help reduce health care expenditure during ill health. For those who did not enrol, 107 (46.7%) of them indicated that they could not afford to pay the premium (Figure 4). About fifty percent (122) of all slum households, who bought durable assets enrolled in the NHIS.

Figure 4: Proportion of slum dwellers enrolled in the National Health Insurance Scheme in Agbogbloshie.



More male 77(54.2%) headed slum dwellers were enrolled in the National Health Insurance Scheme than female household heads and this was statistically significant (Chi statistic (χ^2) 12.1; $p<0.001$). Over fifty percent 72(50.7%) of slum household heads who enrolled, were between the ages of 18 and 30 years. However there was no significant relationship between age of household head and enrolment in the National Health Insurance Scheme ($\chi^2= 4.1$; $p=0.14$) (Table 6).

Table 6: Association between individual level factors and Enrolment in the National Health Insurance Scheme.

Variable	Enrolled 142 (%)	Not enrolled 229(%)	Chi statistic(d.f)	P-value
Age of household head				
18 to 30years	72(50.7)	136(59.4)		
31-49years	59(41.5)	84(36.7)	4.1(2)	0.13
50years or more	11(7.8)	9(3.9)		
Sex				
Male	77(54.2)	82(35.8)	12.1(1)	p<.001
Female	65(45.8)	147(64.2)		
Education				
No formal education	52(36.6)	116(50.7)		
Primary education	43(30.3)	68(29.7)	12.1(3)	0.007
Secondary /Vocational	37(26.1)	40(17.5)		
Beyond secondary education	10(7.0)	5(2.1)		
Religion				
Do not belong to any religion	1(0.7)	2(0.9)		
Christianity	61(43.0)	73(31.9)		
Islam	74(52.1)	143(62.4)	4.7(4)	0.322
Traditional	5(3.5)	9(3.9)		
Others	1(0.7)	2(0.9)		
Marital status				
Single(Never married)	40(28.2)	64(28.0)		
Widowed	9(6.3)	20(8.7)	1.5(3)	0.671
Divorced	14(9.9)	16(7.0)		
Married	79(55.6)	129(56.3)		

A little over one-third 52(36.2%) of households heads who enrolled in the National Health Insurance Scheme had no formal education compared with those with formal education and the difference was statistically (χ^2=12.1; p=0.007) significant.

Majority 102(71.8%) of household heads who were enrolled in the National Health Insurance Scheme were employed but this difference was not statistically significant

(χ^2= 3.8, p value =0.053). About fifty one percent 65(51.2%) of unemployed slum household heads enrolled while 103(50.5%) of self-employed household heads enrolled and 32(80%) of household heads who were employed by government or private were enrolled. There was a statistical significant difference (χ^2=12.3; p= 0.002) between employment and enrolment in the National Health Insurance Scheme among household heads in the slums of Agbogbloshie.

Thirty-one percent (44) of household heads in the slums who enrolled in the National Health Insurance Scheme reported poor health status (Table 7) and this showed a statistical significant difference (χ^2= 14.7, p = 0.002) between poor health and enrolment.

Table 7: Association between individual level factors and enrolment in the National Health Insurance Scheme

Variable	Enrolled (%)	Not enrolled (%)	Chi statistic(d.f)	P-value
Employment status				
Unemployed	40(28.2)	87(38.0)		
Employed	102(71.8)	142(62.0)	3.8(2)	0.053
Health status				
Very poor	32(22.5)	31(13.5)		
Poor	44(31.0)	46(20.1)	14.7(3)	0.002
Good	51(35.9)	112(48.9)		
Very good	15(10.6)	40(17.5)		
Self-reported quality of care				
Poor	31(21.8)	75(32.8)	5.1(1)	0.024
Good	111(78.2)	154(67.2)		

A greater proportion 111(78.2%) of household heads who reported good quality of health care were enrolled in the National Health Insurance Scheme (χ^2= 5.1, p =0.024). This implies that there is a significant association between quality of health care received and enrolment in the National Health Insurance Scheme among household heads in Agbogbloshie.

A quarter (50) of household heads who enrolled were single headed (Table 8). Most 120(60.0%) of households who enrolled had a household size of less than five (χ^2= 5.1; p=0.022).

Table 8: Association between household level factors and enrolment in the National Health Insurance Scheme

Variable	Enrolled 200 (%)	Not enrolled 171 (%)	Chi statistic(d.f)	P-value
Age of household head				
18-30 years	103(51.5)	105(61.4)		
31-49 years	83(41.5)	60(35.1)	4.7(2)	0.096
50-59 years	14(7.0)	6(3.5)		
Ages of household members*				
Less than 5years	89(21.5)	62(19.7)		
5 to17years	106(25.7)	71(22.5)		
18 to 49	196(47.5)	170(54.0)	3.6(4)	0.46
50 to 69years	19(4.6)	11(3.5)		
70 and above	3(0.7)	1(0.3.0)		
Sex of household head				
Female	105(52.5)	107(62.6)		
Male	95(47.5)	64(37.4)	3.8(1)	0.051
Marital status of household head				
Single	50(25.0)	54(31.6)		
Divorced	19(9.5)	11(6.4)		
Widow	14(7.0)	15(8.8)	3.3(3)	0.344
Married	117(58.5)	91(53.2)		
Educational level				
No formal education	86(43.0)	82(48.0)		
Primary education	62(31.0)	49(28.7)	0.9(2)	0.631
Secondary and above	52(26.0)	40(23.4)		
Employment of the household head				
Unemployed	65(32.5)	62(36.3)	0.6(1)	0.447
Employed	135(67.5)	109(63.7)		

****Number of households with persons in that age group**

Fifteen percent (31) of households who enrolled in the National Health Insurance Scheme were in the poorest quintile whereas 46(23.0%) of households who enrolled were in the richest quintile (χ^2= 14.0, p= 0.007). There was thus a statistical significant association between household's socioeconomic status and enrolment in the National Health Insurance Scheme. About one-third 66 (33.0%) of households who enrolled in the National Health Insurance Scheme used public health facilities (Table 9). However, 70 (35.0%) of households who enrolled sought care at chemical shops or pharmacies (χ^2= 16.6, p=0.002) and the difference was statistically significant.

Table 9: Association between household level factors and enrolment in the National Health Insurance Scheme

Variable	Enrolled (%)	Not enrolled (%)	Chi statistic(d.f)	P-value
Wealth quintiles				
Poorest	31(15.5)	44(25.7)		
Poor	33(16.5)	41(24.0)		
Middle rich	41(20.5)	33(19.3)	14.0(4)	0.007
Rich	49(24.5)	25(14.6)		
Richest	46(23.0)	28(16.4)		
Household size				
Less than 5	120(60.0)	122(71.3)		
5 or more	80(40.0.0)	49(28.7)	5.2(1)	0.022
Place of seeking care				
Faith-based	5(2.5)	9(5.3)		
Buys drugs from drug peddler	8(4.0)	20(11.7)		
Chemical shop/ Pharmacy	70(35.0)	73(42.7)	16.6(4)	0.002
Health facility (Private)	51(25.5)	29(16.9)		
Health facility(Public)	66(33.0)	40(23.4.)		
Illness of a household member				
No	68(34.0)	66(38.6)	0.84(1)	0.358
Yes	132(66.0)	105(61.4)		

Most 132(66%) of households that enrolled in the National Health Insurance Scheme reported an illness of a member six months prior to the study but that did not significantly influence enrolment(χ^2= 0.84; p=0.358).

At the household level, mean annual household expenditure for households who enrolled in the National Health Insurance Scheme was GHS7, 443.20 (US$1,731.0) (SD 5, 285.30) whereas the mean annual household expenditure for households who did not enrol was GHS6, 039.40 (US$1,404.50) (SD 3658.10). Thus for those who enrolled their mean annual expenditure was 18.9% higher than households who did not enrol. Similarly, the mean annual income at household level of those who enrolled in the National Health Insurance Scheme was GHS5, 889.20 (US$1,369.60) (SD 7, 692.0) and that of households who did not enrol was GHS5, 510.40 (US$1, 281.50) (SD 6139.80) and households that enrolled earn 6% income more than the households that did not enrol.

Similarly, at the household level a little over one-third 70(35.0%) of households who enrolled sought care at chemical shops or pharmacies while 66(33%) sought care at public health facilities (χ^2= 16.6, P-value 0.002). Thus there is a significant association between place of seeking care and enrolment into the National Health Insurance Scheme. About a quarter 36(25.2%) of households who sought care at pharmacy shops were in the poorest quintile while 32(22.4%) of the richest households sought care at pharmacy shops. Also, while 17(21.3%) of households who sought care at private health facilities were the poorest, only 10(12.5%) of those who sought care at private health facilities were the richest (χ^2= 29.8, p= 0.019). Similarly, 16(15.9%) of the poorest households sought care at public health facilities (clinic/hospital) compared with 26(24.5%) of the

richest households, who sought care at public health facilities (clinic/hospital). Socioeconomic status of the household thus had a significant association with the household's place of seeking care.

4.5 Factors influencing enrolment in the National Health Insurance Scheme in Agbogbloshie

The logistic regression showed that being a male household head in the slum , a person was 70% times more likely to enrol in the National Health Insurance Scheme than female household heads (OR 1.7; p = 0.035; 95% CI 1.03-2.8) (Table 10) . Also, being employed by private/government, a household head was 2.5 times more likely to enrol (OR: 3.5, p-value: 0.004, 95%CI: 1.5-8.1) than being unemployed household head. Similarly, household heads who reported good quality of health care were 1.8 times more likely to enrol in the National Health Insurance Scheme (OR:2.8 , p< 0.001, 95%CI:1.7-9.8) than those who reported poor quality of health care. On the other hand, having good health status was protective and hence household heads were less likely to enrol compared to those who reported poor health status (OR: 0.3, p<0.001, 95%CI 0.2-0.5)

Table 10: Factors influencing enrolment in the National Health Insurance Scheme at individual level

	Bivariate(Unadjusted)			Multivariate (Adjusted)		
Variable	**OR**	**P-value**	**95% CI**	**OR**	**P-value**	**95% CI**
Ages of household heads						
18-30 years		0				
31-49 years	1.3	0.207	0.9-2.1	1.1	0.819	0.6-1.8
50+	2.3	0.077	0.9-5.8	2.2	0.16	0.7-6.9
Sex						
Female		0				
Male	2.1	**0.001**	1.4-3.3	1.7	**0.035**	1.03-2.8
Marital status						
Single		0				
Widow	0.7	0.465	0.3-1.7	0.8	0.633	0.3-2.1
Divorced	1.4	0.421	0.6-3.2	1.2	0.681	0.5-3.1
Married	0.9	0.934	0.6-1.6	1.0	0.963	0.6-1.7
Educational level						
No formal education			0			
Primary	1.4	0.18	0.9-2.3	1.3	0.382	0.7-2.2
secondary and above	2.3	**0.002**	1.4-3.9	1.3	0.458	0.7-2.3
Religion						
No religion		0				
Christianity	1.7	0.678	0.1-18.9	2.9	0.419	0.2-42.9
Islam	1	0.978	0.1-11.6	2.1	0.595	0.1-29.2
Traditional	1.1	0.938	0.1-15.5	2.1	0.610	0.1-37.6
Others	1	1	0-29.8	1.4	0.847	0-53.8
Employment status						
Unemployed		0				
self-employed	1.3	0.286	0.81-2.1	1.2	0.508	0.7-2.0
Private/government	4	**<0.001**	1.9-8.6	3.5	**0.004**	1.5-8.1
Health status						
Poor						
Good	0.4	**<0.001**	0.3-0.7	0.3	**<0.001**	0.2-0.5
Self-reported quality of care						
Poor						
Good	1.7	**0.024**	1.1-2.8	2.8	**<0.001**	1.6-5.0

Household level factors that showed significant difference in enrolment among households in the slum were; private/government employment seeking care in a private health facility and belonging to a rich household. Households whose heads were employed by government or private entities were 2.5 times more likely to enrol members compared with the unemployed (OR 3.5; P = 0.012; 95%CI 1.3-9.5) (Table 11).

Table 11: Factors influencing enrolment in the National Health Insurance Scheme at the household level

	Bivariate (Unadjusted)			Multivariate (Adjusted)		
Variable	**OR**	**P-value**	**95% CI**	**OR**	**P-value**	**95% CI**
Age of household head						
18-30yeas		0				
31-49 years	1.4	0.116	0.9-2.2	1.2	0.449	0.7-2.0
50+	2.4	0.088	0.9-6.4	1.4	0.622	0.4-5.7
Ages of household members						
0-5 years	1.4	0.108	0.9-2.1	1.1	0.628	0.7-1.9
5-17 years	1.6	**0.028**	1.1-2.4	1.2	0.572	0.7-1.9
18-49 years	0.3	0.268	0.03-2.6	0.3	0.358	0.0-3.8
50-69 years	1.5	0.283	0.7-3.3	0.7	0.538	0.2-2.1
70+	2.6	0.412	0.3-25.1	3.5	0.396	0.2-63.7
Sex						
Female						
Male	1.5	0.051	1.0-2.3	1.6	0.075	1.0-2.6
Marital status						
Single		0				
Widow	**1**	0.985	0.4-2.3	0.8	0.64	0.3-2.1
Divorced	**1.9**	0.144	0.8-4.3	1.2	0.672	0.5-3.3
Married	1.4	0.173	0.9-2.2	1.2	0.514	0.7-2.1
Education						
No formal education		0				
Primary education	1.2	0.445	0.7-1.9	1.4	0.197	0.8-2.5
Secondary and above	1.2	0.41	0.7-2.0	1.1	0.813	0.6-2.0
Employment						
Unemployed						
Self-employed	1	0.903	0.6-1.5	0.9	0.832	0.6-1.6
Private/government	3.8	**0.002**	1.6-8.9	3.5	**0.012**	1.3-9.5
Illness						
No						
Yes	1.2	0.358	0.8-1.9	1.1	0.577	0.7-1.9

Table 12: Factors influencing enrolment in the National Health Insurance Scheme at the household level

	Bivariate(Unadjusted)			Multivariate (Adjusted)		
Variable	OR	P-value	95% CI	OR	P-value	95% CI
Place of seeking care						
Faith-based	0					
Buys drugs from drug peddler	0.7	0.638	0.2-2.8	0.7	0.668	1.2-3.2
Chemical shop/ Pharmacy	1.7	0.349	0.6-5.4	2.6	0.143	0.7-1.5
Health facility (Private)	3.2	0.057	0.96-10.3	4.8	**0.021**	1.3-18.3
Health facility(Public	2.97	0.066	0.9-2.4	3.5	0.061	0.9-12.8
Wealth quintiles						
Poorest	0					
Poor	1.1	0.688	0.6-2.2	1	0.893	0.5-2.1
Middle rich	1.8	0.087	0.9-3.4	1.5	0.268	0.7-3.2
Rich	2.8	**0.003**	1.4-5.4	2.3	**0.032**	1.1-4.8
Richest	2.3	**0.012**	1.2-4.5	1.6	0.256	0.7-3.4
Household size						
Less than 5	0					
5 or more	1.7	**0.023**	1.1-2.6	1.5	0.161	0.9-2.6

Households which sought care at private health facilities were 3.8 times more likely to enrol (Table 12) compared with slum households which sought care at faith-based facilities (OR 4.8; p=0.021; 95%CI 1.3-18.3). Also, rich slum households had 1.3 times greater likelihood of enrolment in the National Health Insurance Scheme than households which were poor ((OR 2.3; P=0.032; 95%CI 1.1-4.8).

CHAPTER FIVE

DISCUSSION

5.0 Introduction

This chapter presents discussion by objectives of the study. The study sought to determine the proportion of slum dwellers in Agbogbloshie who enrolled in the National Health Insurance Scheme and to assess individual and household level factors influencing enrolment in the National Health Insurance Scheme among slum dwellers in Agbogbloshie.

5.1 Proportion of slum dwellers enrolled in the National Health Insurance Scheme in Agbogbloshie

The study found that about one-fourth (24.0%) of slum dwellers were enrolled in the National Health Insurance Scheme in Agbogbloshie. This is about 13% lower than the National average in 2013.This may be due to the youthful nature of the population in Agbogbloshie as over 56% of the household heads were between 18 to 30 years and 58.8% rated their health status as good. As youthful as they are, they may not see the need to enrol due to perceiving their health status as good (Wang et al., 2005). It may also be related to their inability to pay the insurance premium. This is a major reason cited for non-enrolment in this study. Previous studies in Ghana have showed that the poor such as slum dwellers are not enrolling in the NHIS of Ghana (Jehu-Appiah et al., 2011; GSS, 2008, 2014). Nevertheless, other studies have reported lower rates of enrolment in health insurance among slum dwellers similar to that of this study. One such study in Kenya by Kimani et al., (2012) found an enrolment rate of 10% in the National Health Insurance Fund among slum dwellers in the slums of Nairobi. However, this study was done prior

to the introduction of social health insurance in Kenya unlike the case of Ghana, which has an established social health insurance scheme. Additionally, the society for participatory research in Asia (PRIA), reported an enrolment rate of 2.22% among slums in Kalkota- India (PRIA, 2014). The finding of this study also conforms to that of Wagstaff, (2007) who reported low enrolment rate among the poor such as slum dwellers in Vietnam. According to the Wag staff study, even though enrolment rate was expected to be around 31% in 2004, only 15% of the poor had enrolled in an insurance program designed for them in Vietnam.

5.2 Factors influencing enrolment in the National Health Insurance Scheme at the individual level

Factors influencing enrolment into the National Health Insurance Scheme in this study include sex of household head, employment in the private/government sector, self-reported health status, and self-reported quality of care. These show statistical significant association with enrolment in the National Health Insurance Scheme among slum dwellers in Agbogbloshie.

The literature is varied regarding sex and health insurance uptake. While some suggest that females are more likely to purchase health insurance (Kusi, Enemark, Hansen, & Asante, 2015), others found that males are more likely to own health insurance(Owusu-Sekyere, & Chiaraah, 2014) and yet other studies find no significant difference in enrolment in health insurance between males and females (De Allegri et al., 2006b). Nevertheless the conceptual framework for this study presumed that, since much of the household's healthcare burden in Africa is placed on women, they will insure themselves in order to avoid the additional burden of having to pay for health care for self and for

children at the point of service use. However, this study observes that male household heads were 70% more likely to enroll in the NHIS compared to their female counterparts. This difference might stem from the fact that majority of larger household sizes (5 or more persons) had female household heads. Considering that a greater proportion of the total annual household income and 75.3% of the total annual household expenditure is spent on food, most of these large households may be spending more on food and as such, financially are not able to buy the insurance premium.

This finding can also be due to the patriarchal nature of the Ghanaian society and the fact that historically, men tend to be the breadwinners of the households in Ghana hence; male household heads may have more money to insure their household members. Studies show that slum dwellers tend to prioritize insurance coverage within households by giving priority to either the head of the household or the spouse and the children (Panda, Chakraborty, Dror & Bedi, 2014). As such it is possible that in the absence of enough resources, these female slum dwellers might have sacrificed to insure their children instead of themselves. Equally, most of the household heads who had no formal education were females. Since formal education has been shown to increase enrolment (Kamath et al., 2014) this might be the reason why males were more likely to enrol than females. However, evidence shows that poor women such as women slum dwellers tend to not be insured (Akazili et al, 2014; Montez, Angel, & Angel, 2009) and most (64.2%) of the non-enrolled household heads in this study were females. This finding is also in line with that of Dong et al., (2009) who indicated that female household heads tended to drop out of a community health insurance scheme in Burkina Faso.

The study also finds that household heads who are employed in the private/government sectors are almost three times more likely to enrol in the National Health Insurance Scheme than the unemployed. Similar findings have been reported in other studies (Kirigia et al., 2005; Govender, Ataguba, & Alaba, 2014; Owusu-Sekyere, & Chiaraah, 2014). These studies indicated that employment was a significant predictor of enrolment in health insurance.

However, taking cognizance of the fact that, the insurance premium of public sector workers (government) in Ghana is deducted directly from their salaries, and some private sector employers enrol their employees, this finding may not be coincidental. Kimani et al. (2012) reported a similar finding where they indicated that public sector employment was positively linked with enrolment in the National Health Insurance Fund among slum dwellers in the slums of Nairobi. Nevertheless, considering the fact that those who are employed earn income, part of which they use to insure themselves much emphasis may not be placed on the sector of employment but may probably be related to earnings from the work that the individuals do. This may be the case as it has been shown that employment in other sectors of the economy such as commerce/trade and agric is positively associated with enrolment in health insurance (Chankova et al., 2008).

Health insurance involves risk pooling wherein the rich sacrifices some of their wealth to cater for the health needs of the poor and those in good health status sacrifices for those whose health status is poor. Contrary to this, studies have shown that people who perceive their health status as good are less likely to enrol in health insurance. Customarily, these persons may not see the need to insure themselves as they may not visit the hospital often (Boateng & Awunyor-Victor, 2013; Wang et al, 2005;Lucas, Barr-

Anderson & Kington, 2003; Kirigia et al., 2005; Kusi et al., 2015). This study reports similar results where household heads who perceived their health status as good are less likely to enrol in the National Health Insurance Scheme in Agbogbloshie. This raises concerns about adverse selection in enrolment in the National Health Insurance Scheme. In adverse selection, people enrol in health insurance based on their health risk perception wherein the higher risk group tend to enrol (Nguyen, 2014). This puts undue financial constraints on the insurance agency because there will be little or no risk sharing and health care expenditure from those who enrol may disproportionately be higher than the risk pool.

More than three-quarters of household heads who reported good quality of health care have National Health Insurance cover and are almost 2 times more likely to enrol than those who reported poor quality of health care ($p<0.001$). This means that quality of health care is a strong predictor of enrolment in the National Health Insurance Scheme. As put forth by Grossman, (1972) consumers will demand for health in order to increase their health stock and to obtain some utility from it. Since consumers of health will want to maximize utility, household heads who receive quality health care services will like to enrol in order to continue to enjoy such services. This finding concurs with that of Dong et al., (2009) who showed that persons who perceived the quality of health care they received as poor had a high probability of dropping out of a community health insurance scheme in Burkina Faso. Similar results on poor quality being the reason for dropping out of health insurance were also reported by Atinga, Abiiro and Kuganab-Lem, (2015) in a study among urban slum dwellers in Ghana. Other studies have also implicated health care quality as a predictor of enrolment and sustaining membership in health insurance

(Gobah & Zhang, 2011; Boateng & Awunyor-Victor, 2013; Mebratie, Sparrow, Yilmaa, Alemuc & Bedia, 2015). All these studies showed that persons who reported good quality of health care were more likely to enrol in health insurance.

Almost half of the household heads who did not enrol indicate the premium is high and unaffordable. Similar findings have been reported in other studies (Atinga et al., 2015; Carrin et al., 2005; Chankova et al., 2008; GSS, 2008, 2014). Slum dwellers are classified among the poor in society. Poor people have been shown to be less likely to enrol in the National Health Insurance Scheme due to their inability to afford the premium (Jehu-Appiah et al., 2011). This may be the reason for the similarities in the findings. The NHIS exempts the poor and indigent from paying insurance premium. Since slum dwellers are considered among the poor in society, it should be possible for them to be exempted from paying insurance premium. It is possible that most of these slum dwellers do not know much about the exemption policy of the NHIS and the fact that they may qualify for exemption.

5.3 Household level factors influencing enrolment in the National Health Insurance Scheme

At the household level, the household's place of seeking care was significantly associated with enrolment in the National Health Insurance Scheme. Households seeking care at private health facilities are more likely to enrol in the National Health Insurance Scheme. This may be related to the quality of health care provided in private health facilities as majority (72.5%) of households who used these private health facilities rated the quality as good. Since these facilities are mostly NHIS accredited facilities, providing quality health care will likely attract more household heads to enrol in order to continue to

benefit from these services. Similar findings were reported by Gobah and Zhang, (2011) in Ghana and Mebratie et al., (2015) in Ethiopia. These studies indicated that quality of health care was a significant predictor of enrolment in health insurance.

Low household socioeconomic status has been shown to hinder enrolment in health insurance (Jehu-Appiah et al., 2011; Sarpong et al., 2010; Richardson et al., 2012). The explanation is that people with lower socioeconomic status find it difficult to purchase the insurance premium (Carrin et al., 2005; Chankova et al., 2008). The NHIS of Ghana has been shown to be pro-rich (Odeyemi & Nixon, 2013). This is similar to the finding of this study as rich households were more likely to enrol in the NHIS than the poorest households. Households that enrol earn on average 6% more income than households that do not enrol. This finding agrees with that of Atinga et al., (2015) who indicated that low-income households had greater likelihood of dropping out of the National Health Insurance Scheme among urban slum dwellers in Ghana. The only difference is that while that of Atinga et al. (2015) looked at drop out analysis, this study considered factors that influenced enrolment decisions. Similar results were also reported by; Wang et al., (2005) China, Gobah and Zhang, (2011) in Ghana and by Richardson et al., (2012) Maldova, Kiplagat, Muriithi and Kioko, (2013), in Kenya which all showed that low socioeconomic status was associated with non-insurance.

However, the study also finds no significant difference between the richest households and the poorest. This lack of difference between the richest and poorest households may be due to the large household sizes (5 or more persons) of the richest households as this had been shown to hinder enrolment in national insurance schemes (Kamath et al., 2014: Kusi et al., 2015). The large number of members in the household might have constrained

the household's finances making it difficult for them to enrol. Additionally, since they are very rich, they may not see the need to enrol as they can afford the cost of health care of their members. Conversely, the study also shows that close to two-thirds of households buy durable assets and 39% of the expenditure is on these (luxury) goods while 2.0% is allocated to their health during the same period. Also fifty percent of all slum households who bought durable assets are not enrolled in the NHIS. Since the insurance premium is GHS25.00(US$5.80, including processing fee) and the mean household size was four persons, it means that on average, all other things being equal, about fifty percent of all slum households who bought durable asset scan insure all members by allocating 20% of their expenditure on durable assets to health insurance. It therefore seems to suggest that the main issue for non-enrolment may not necessarily be related to their inability to pay the premium (Kusi et al., 2015) as indicated by majority of those who did not enrol. It may be partly explained by the lack of education. Thus these household heads may not be enlightened enough to realise the need to invest in their health for self and household members (Grossman, 1972).

Most of the literature on health insurance tells us that households whose heads have higher education tend to enrol in health insurance than households whose heads have low literacy (Kirigia et al., 2005; Gobah & Zhang, 2011; Jehu-Appiah et al., 2011; Kamath et al., 2014). Contrary to this however, this study finds no significant difference in enrolment in the NHIS between the formally educated and those without education. This difference could result from the fact that this study was done among slum dwellers whereas previous studies have been done among the general population. It could also result from the fact that majority of the household heads were between 18 and 30 years.

As youthful as they are, they may not see the need to enrol as they are healthy. Nevertheless, Boateng and Awunyor-victor, (2013) also reported similar findings to that of this study as they indicated that enrolment decisions were not influenced by educational status.

At the household level, differences in sex affects enrolment in health insurance and this has been well documented. Most of the literature tells us that households with female heads tend to enrol more than those with males as their heads (Jehu-Appiah et al., 2011; Kusi et al., 2015**).** However, Govender et al., (2014) found that members of male–headed households were more likely to be insured than female-headed household members. On the other hand, this study did not find any significant difference in enrolment in the NHIS between both sexes at the household level.

This disparity may be attributable to the observation that more than three-quarters of unemployed household heads were females and most (69.6%) of them had no formal education. In addition, these female headed had household sizes of 5 or more members as a result, these female household heads may not have enough resources to enrol the household members. Large household sizes have been associated with less likelihood of enrolment in health insurance (Kamath et al., 2014) probably because households spend more on other basic needs making it difficult for them to enrol their members.

Marital status of the household head has been shown to affect enrolment of its members. The assumption is that married persons combine resources and are able to enrol themselves and other members of the household (Kirigia et al., 2005; Kamath et al., 2014; Owusu-Sekyere, & Chiaraah, 2014). Conversely, this study finds no significant

relationship between marital status of the household head and enrolment of its members in the NHIS. What was however evident in this study was that closed to 60% of households who enrolled in NHIS were headed by married persons. The difference in the findings could result from the fact that greater proportion of married household heads had no higher education and were not employed. The understanding is that with higher education, people get to know more about their health including the benefits of health insurance and as such will most likely enrol. With employment these households would earn income, which they could use to enrol (Chankova et al., 2008). But what was obvious was that households headed by married persons earned on average GHS 509(US$118.40) less than households that were headed by singles annually but spent on average GHS688.60 (US$ 160.10) more than households headed by single persons annually. It therefore seems that households headed by married persons in this study had less money and this may be the underlying reason for the differences in enrolment observed in this study.

Moreover, existing literature predicts that large household sizes (5 or more persons) affect enrolment in health insurance (De Allegri et al., 2009; Kamath et al., 2014). But this study finds no significant difference in enrolment regarding household size. This difference in findings may be due to differences in the study populations used in these studies. First while my study was conducted in an urban slum, that of De Allegri et al., (2009) and Kamath et al., (2014) were both done at the district level. Moreover, Kamath et al. (2009) used both qualitative and quantitative methods while my study used quantitative methods. Also the study population of Kamath et al., (2014) was people who

were officially regarded as poor by the government of India. Obviously the poor in India may not possess the same characteristics as slum dwellers in Agbogbloshie.

5.5 Limitations of the study

The study looked at individual and household level factors influencing enrolment in the NHIS of Ghana and did not cover other forms of health insurance such as the private commercial and private mutual health insurance schemes. Also, the nature of the slum and the time limitations of this study did not allow for proportionate sampling to ensure each cluster was adequately represented.

Moreover, as a cross-sectional study, it is unable to establish causality. Hence we are unable to emphatically state that the factors identified in this study were the causes of enrolment or non-enrolment in the National Health Insurance Scheme among slum dwellers in Agbogbloshie. Moreover, some slum dwellers might have over or under reported their income or expenditure and since it was a retrospective study, the responses given may be subject to recall bias.

Nevertheless, the findings of this study provides a strong basis for understanding the individual and household level factors influencing enrolment in the National Health Insurance Scheme among slum dwellers.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

Enrolment of 24% among slum dwellers in Agbogbloshie is 13% lower than the national average of 36.8% in 2013 implying that slum dwellers are not enrolling in the NHIS. Factors that are associated with enrolment include, sex of household head, employment in private/government, quality of health care, self-reported health status, choice of health facility and socioeconomic status of the household. As Ghana aims to achieve universal coverage, the need for policy makers to design interventions that will enhance enrolment in the National Health Insurance Scheme among slum dwellers is essential.

6.2 Recommendations

Based on the findings of this study, the following recommendations have been made for consideration:

1. The National Health Insurance Authority should consider expanding the exemptions policy under the National Health Insurance Scheme to include social groups such as slum dwellers with financial difficulties to enable them enrol in the National Health Insurance Scheme.

2. The National Health Insurance Authority should fashion out an educational program that target slum dwellers to enable them understand the benefits of enrolling in the National Health Insurance Scheme.

3. The Ministry of Youth, Employment and Labour Relations should fashion out technical skills building programmes for slum dwellers to enable them develop employable skills and to enhance their chance of being gainfully employed.

4. The Ministry of Education should put in place a scholarship scheme to sponsor slum dwellers education to enable them have access to information and to develop employable skills.

5. A qualitative study should be conducted as a follow-up to this study to further explore perceptions of slum dwellers in Agbogbloshie on the National Health Insurance Scheme.

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APPENDICES

Appendix 1. Consent form

I am EBENZER KWADWO TAWIAH, a Master of Public Health student at the School of Public Health, College of Health Sciences University of Ghana, Legon. I am carrying out a study on "Factors Influencing Enrolment in the National Health Insurance Scheme among Slum Dwellers in Agbogbloshie." The aim of the study is to assess factors that affect enrolment in the NHIS among slum dwellers in Agbogbloshie in order to inform policy making regarding interventions to improve slum health and general well-being. There isn't any real risk associated with participating in this study. However, questions regarding disclosure of one's income and religion might make some people feel uncomfortable. Participation is voluntary and you can withdraw at any time during the study or decline to answer any question you feel distresses you. Any data collected here will be treated with utmost confidentiality. As a result, names of respondents are not needed. All data and documents used in this study shall be kept under lock and will be accessible to only the principal investigator. The questionnaire will take about 15 minutes to complete. If you agree to take part in the study, please sign or thump-print the form below.

I agree to participate in the study willingly after the risks, benefits and procedure for the research has been explained to me. I have also been given enough time to clarify any concerns I had. I have the right to withdraw from the study at any time without any further consequences.

…….. …. …….

Signature/thumb print of respondent Signature of person administering questionnaire

A WITNESS TO SIGN IN THE CASE OF THOSE WHO CAN NOT READ

I a relative of the respondent acknowledge that I was present when the content of the written consent was explained to the respondent. The purpose of the study, risks and benefits and issues regarding confidentiality were clearly explained to the respondent. The respondent was made to understand that he/ she could withdraw from the study at any time during the study without any further consequences. The respondent was given enough time to ask any question he/ she did not understand and appropriate answers were given by the researcher. The respondent voluntarily agreed to participate in the study. I therefore serve as a witness to the consent given by the respondent.

…… … .. .... ……

Signature thump-print of witness Signature of person administering questionnaire

For further information regarding this study, you can contact any of the following persons:

1. **Hannah Frimpong (Administrative secretary; Ethical review Board-Ghana Health Service): 0243235225/0507041223**
2. **Ebenezer Kwadwo Tawiah (Principal Investigator): 0242020180/0508948547**

Appendix 2. Questionnaire

Instructions: Tick in the appropriate box the option that best addresses your situation.

Where applicable, please write down the answer in the space provided.

Section A. Background characteristics

1. Age at last birth day (household head)……

2. How many people live in this household?.....

3. How many people within the household are:

Less than 5 yrs…….

5-17yrs……..

18-49yrs…….

50-69yrs…….

70yrs and above……

4. Sex of household head

Female 〔 〕

Male 〔 〕

5. Level of education of household head

No formal education 〔 〕

Primary education 〔 〕

Secondary/vocational 〔 〕

Above secondary education 〔 〕

6. Which religion do you belong to?

Do not belong to any religion 〔 〕

Christianity [ ]

Islamic [ ]

Traditional [ ]

Others (Specify)…….

7. Marital status

Single (never married) [ ]

Widowed [ ]

Divorced [ ]

Married [ ]

8. Which of the following best describes your employment status?

Unemployed [ ]

Self-employed [ ]

Employed by private entity [ ]

Employed in the formal sector [ ]

Section B: Household income and expenditure

9. What type of work do you do? Tick as many as may be applicable.

Street vending [ ]

Security [ ]

Dress making [ ]

Teaching [ ]

Health worker [ ]

Banking/ Finance professional [ ]

Farming [ ]

Other [ ]

10. How many people within the household earn income? .....

11. What is the total monthly household income from all household members who earn income? GHS…… ……

12. Apart from the above mentioned, do you earn income from any other source?

No [ ]

Yes [ ]

If yes in 12 above, answer question 13 otherwise continue from question 14.

13. How much do you earn from that additional source? GHS.... .....

14. Have you or any of the household members bought any of the following assets in the past six months? If yes tick as many as may be applicable, otherwise continue from question 16.

Item	Yes	No
Mobile phone		
Bicycle		
Motor bicycle		
Tricycle		
Fridge		
Television		
Radio set		
Computer		
Jewelry		

15. How much did you spend in buying them? Indicate the amount against each item.

Item	Amount (GHS)
Mobile phone	
Bicycle	
Motor bicycle	
Tricycle	
Fridge	
Television	
Radio set	
Computer	
Jewelry	

16. How much do you pay for each of the following items in a month?

Item	Amount (GHS)
Water	
Firewood	
Charcoal	
Gas	
Electricity	

17. How much do you spend on the following food items in a week?

Food items	Amount (GHS)
Grains (Maize, Rice, and Wheat)	
Beans	
Roots and tubers (yam, cassava, and cocoyam)	
Plantain	
Milk	
Ingredients (Vegetables, Salt, Spices, Maggi, Oils and fat)	
Protein (Meat and fish)	

18. On a scale of 0-4, where 0 means very poor and 4 means very good, how would yourate your health status over the past 6 months?

Very poor [ ]

Poor [ ]

Good [ ]

Very good [ ]

19. Have you or any member of the household been ill in the last six months?

No [ ]

Yes [ ]

If yes in 19 above continue from question 20; otherwise move to question 25.

20. How many have been ill in the last six months.....

21. Did you seek care for these members who were ill?

No [ ]

Yes [ ]

22. Was s/he admitted?

No [ ]

Yes [ ]

23. By what means did you pay for treatment?

Cash (out of pocket) [ ]

NHIS [ ]

Both NHIS and Cash [ ]

24. How much did you pay in cash in total on each member who was ill, on?

Consultation (GHS)	Drugs(GHS)	Lab. Services (GHS)	Transportation (GHS)	Total (GHS)

25. Where do you seek care for household members who are ill?

Faith-based [ ]

Buy drugs from a dug peddler [ ]

Buy drugs from chemical shop/pharmacy [ ]

Health facility (private) [ ]

Health facility (public) [ ]

26. How would you rate the quality of health care given to you in the facility mentioned in 26 above?

Poor [ ]

Good [ ]

Section C. Enrolment in NHIS

27. Are you currently enrolled in the National Health Insurance Scheme?

No [ ]

Yes [ ]

28. How many members of the household are enrolled in the NHIS excluding you? ……..

If no in 27 above, answer questions 28 and 30-32 otherwise, answer question 28, 29 and 32.

29. What made you to enrol?

To reduce my expenditure on health [ ]

So that I can access health care during ill health [ ]

NHIS clients receive quality health care [ ]

A friend recommended it to me [ ]

Other……

30. Why haven't you enrolled?

Premium is too much for me to afford [ ]

Long distance to point of enrolment [ ]

Delay in getting card when you enrol [ ]

I do not fall sick frequently [ ]

NHIS clients do not receive quality health care [ ]

31. Would you like to enrol in the NHIS?

No [ ]

Yes [ ]

32. Averagely how many times do you visit the health facility in a year?

Not at all [ ]

Less than 3 times in a year [ ]

3-5 times in a year [ ]

More than 5 times in a year [ ]

Thank you