ENSIGN GLOBAL COLLEGE

KPONG, EASTERN REGION, GHANA

DEPARTMENT OF COMMUNITY HEALTH

OUT-OF-POCKET HEALTHCARE EXPENSES UNDER THE NATIONAL HEALTH INSURANCE SCHEME IN GHANA

BY

JUDITH WILLIAM

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SEPTEMBER, 2024

DECLARATION

I hereby declare that this submission is my work for the master's degree in public health and that, to the best of my knowledge, it does not contain any material previously published by any person or material accepted for the granting of any other degree from this college, except where proper attribution has been indicated in the text.

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DEDICATION

With heartfelt sincerity, I dedicate this work to God Almighty for the insight and wisdom bestowed upon me throughout the creation of this thesis. I also dedicate this work to my family for their unwavering support.

Additionally, I extend my deepest gratitude to my supervisor, Dr. Sandra Boatemaa Kushitor, for her invaluable guidance and steadfast support.

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DEFINITION OF TERMS

Out-of-Pocket Expenses	Direct payments made by individuals for healthcare services at the point of care, not covered by insurance.
National Health Insurance Scheme (NHIS)	A healthcare financing government program in Ghana designed to provide financial access to healthcare services for citizens through insurance coverage.
Healthcare Utilization	The extent to which individuals use healthcare services, including visits to health facilities, treatments received, and medications obtained.
Financial Protection	Measures or policies aimed at safeguarding individuals from financial hardship due to healthcare costs, ensuring that healthcare access does not lead to economic strain
Universal Health Coverage (UHC)	A health system intervention ensuring that all individuals have access to necessary health services without suffering financial hardship.
Health Equity	The principle that everyone should have a fair opportunity to attain their highest level of health, regardless of socioeconomic status or demographic factors.
Healthcare Access	The ability of individuals to obtain necessary medical services, influenced by factors such as availability, affordability, and acceptability of care.
Insurance Enrollment	The process by which individuals register or sign up for a health insurance plan, allowing them to access covered healthcare services.
Health Literacy	The degree to which individuals can obtain, process, and understand basic health information needed to make informed healthcare decisions.

ABBREVIATION /ACRONYMS

NHIS	National Health Insurance Scheme
ANC	Antinatal Care
aOR	Adjusted Odds Ratio
CI	Confidence Interval
cOR	Crude Odds Ratio
DHS	Demographic Health Survey
GDHS	Ghana Demographic Health Survey
GSS	Ghana Statistical Services
OPD	Outpatient Department
OOP	Out-of-pocket
OOPP	Out-of-pocket payment
OOPHE	Out-of-pocket Health Expenditure
SDG	Sustainable Development Goals
UHC	Universal Health Coverage
WHO	World Health Organization

ABSTRACT

Background: In Ghana, the National Health Insurance Scheme (NHIS) was established in 2003 to bridge the gap in the unequal distribution of health services to achieve universal health coverage. Despite some successes of the scheme, there is evidence that individuals enrolled in the NHIS still encounter out-of-pocket health expenditure (OOPHE).

General Aim: This study sought to investigate out-of-pocket health care expenses under the National Health Insurance Scheme (NHIS) in Ghana.

Methodology: This study used nationally representative household data from the 2022 Ghana Demographic and Health Survey (GDHS). The study analysed the GHDS, focusing on outcome variables such as out-of-pocket payment for drugs and services, family planning, laboratory investigations, etc. A multi-stage stratified cluster design was used in DHS, based on a list of enumeration areas (EAs), which are systematically selected units from localities and constitute the local government areas (LGAs).

Results: About two-fourths of Ghanaians have ever enrolled in the NHIS (79%), but only 32.8% had an active coverage during the survey. Among those with active NHIS, about 6% used health services within the past six months. Out of pocket payments were mainly for consultations (20%), laboratories test (40%) and medications (30%). The study found that 82.3% of NHIS-enrolled individuals in Ghana face significant out-of-pocket healthcare expenses despite insurance coverage.

Conclusion: The study concludes that the NHIS, while a step towards financial protection, has gaps such as exclusion of some drugs and enrolment barriers that need addressing to ensure equitable access to healthcare for all Ghanaians. Government must enhance NHIS coverage, improving service quality, and implementing additional financial protection measures to alleviate the burden on vulnerable populations.

Keywords: Out-of-Pocket Expenses , National Health Insurance Scheme, Ghana Demographic Health Survey, Universal Health Survey, Healthcare

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CHAPTER 1

1.0 INTRODUCTION

1.1 Background of the study

The World Health Organization (WHO) states that one of the goals that countries have to accomplish since adopting the 2030 Sustainable Development Goals (SDGs) in 2015 is Universal Health Coverage (UHC). "Universal Health Coverage means that all people have access to the full range of quality health services they need, when and where they need them, without financial hardship. It covers the full continuum of essential health services, from health promotion to prevention, treatment, rehabilitation, and palliative care across the life course." (World Health Organization, 2023). The WHO further states that for UHC to be achieved, the health service requires healthcare workers equipped with optimal skills at all healthcare system levels, equitably distributed throughout healthcare institutions, adequately supported with resources and quality-assured products, and with working conditions that they enjoy and are comfortable with (World Health Organization, 2023)

Despite countries striving to attain UHC, essential healthcare services remain inaccessible to many people who need care (Okoroh *et al.*, 2018). According to Akacili et al. (2017), about half of the world's population still cannot claim to have access to basic, high-quality healthcare services. Approximately 40% of the non-food expenses of approximately 150 million individuals are spent on healthcare. A hundred million people are forced beneath the poverty level due of out-of-pocket (OOP) spending on healthcare services (Okoroh et al., 2018; Akweongo et al., 2021a).) This is mostly because these individuals must pay for healthcare at the time of service because they do not have prepayment plans (Kusi et al., 2015). The number of individuals who pay for healthcare services out of pocket is increasing; in 2010, it was projected that 808 million people had health-related financial hardships.

(Akweongo *et al.*, 2021a). Out-of-pocket health expenditure has negative implications on the lives of families and particularly vulnerable households, may exacerbate their circumstances, potentially entrenching these households in a cyclical pattern of poverty (Akweongo *et al.*, 2021a). The amount of money that households allocate to meeting basic requirements like food, shelter, education, and utilities is also impacted by these payments. Subsequently, funds designated for these fundamental requirements would have to be utilized to cover personal medical expenses (Ekholuenetale and Barrow, 2021).
In Ghana, over 2% of households spend over 40% of their non-food household expenses on out-of-pocket health expenses (OOPHE), whereas 17% of Ghanaians were living below the 1.25 dollar per day poverty line in 2005(Akazili *et al.*, 2017). The situation therefore, makes for a dire leaving as many Ghanaians below the poverty line still have to make OOPHE whilst others are pushed closer to the poverty line (Akazili *et al.*, 2017).

Ghana, after independence in 1957, made healthcare free for the population. Services were free until the Hospital Fees Act of 1971 (Act 387) was introduced with the intention to recover cost but the fees charged was very low (Akazili *et al.*, 2017). A further reform occurred, which was called the "cash and carry", which was introduced in the 1990s with the aim of total cost recovery for drugs and services in public health facilities. The fees were deemed nominal in relation to the cost of providing healthcare but were deemed high in relation to the income levels of many Ghanaians (Akazili *et al.*, 2017). This system posed a serious threat to healthcare access. It imposed a huge financial burden on households and resulted in worse health outcomes for clients (Kusi *et al.*, 2015). Clients needed to make OOPHEs before they could have access to healthcare treatments and without OOPPs, they were refused treatment and those who were lucky to receive treatment were detained till they could make payments (Sarkodie, 2021).

1.2 The National Health Insurance Scheme (NHIS)

The National Health Insurance Scheme (NHIS) was established in 2003 through the National Health Insurance Acts (Act 650) in Ghana as a major mechanism to improve financial access and quality healthcare utilization among the people (Ekholuenetale and Barrow, 2021). The scheme enhanced healthcare access by cutting unmet medical needs, reducing out-of-pocket expenses, and increasing ANC and skilled childbirth attendance, yielding health outcomes (Dalinjong, Wang and Homer, 2018).

Ghana established the NHIS as a way of financing the country's health system. The scheme aimed at promoting financial access to healthcare to all households in the country regardless of their social status. By definition, an out-of-pocket payment for health is a fee paid directly by clients to healthcare providers at the point-of-service use" (Derkyi-Kwarteng *et al.*, 2021). The scheme was designed to pay for a large portion of the bills accrued and for the treatment of a majority of disease conditions (Sarkodie, 2021). It covers most OPD services (consultations, reviews, laboratory tests, prescription drugs on the NHIS medicines list, family planning services, etc.), inpatient services (general and specialist inpatient care, childhood cancers, accommodation in the general ward, etc.), eye care services (cataract removal, refraction, visual fields, etc.), maternity care (antenatal care, deliveries, postnatal, etc.) and emergencies (medical emergencies, pediatric emergencies, road traffic accidents, etc.). OOPPs still exist in Ghana despite the wide range of services covered by the scheme (Okoroh *et al.*, 2018).

Despite these milestones, membership into the scheme still remains below the 50% margin as only about 40% of the total Ghanaian population (estimated 26.9 million) are enrolled with valid membership cards (Alhassan, Nketiah-Amponsah and Arhinful, 2016). The scheme faces financing challenges due to its extensive benefit package, which aims to cover about 95% of diseases. This leads to poor quality healthcare and delays in payments to service providers (Akweongo *et al.*, 2021a).

Despite the establishment of the scheme which aims to provide quality healthcare service to the poor and marginalised and eliminate OOPs, there is evidence that people who are enrolled onto the scheme still make some OOPHE at the point of service delivery (Okoroh *et al.*, 2018). Patients whether insured or not are still making OOPPs and buying medications at pharmacies as a result of public health facility stock outs or because they don't know what they're entitled to as NHIS clients. The unanswered question is what services these OOPPs cover and how much the clients are spending (Akweongo *et al.*, 2021a). This study, therefore, aims to examine out-of-pocket health expenses (OOPHE) among clients who have been enrolled in the scheme.

1.3 Problem statement

Households still make OOPPs for various services that are covered by the scheme such as consultation fees and payments for drugs that under the NHIS medication list (Okoroh *et al.*, 2018).

Out-of-pocket payments on health expenditure have negative influences on household's disposable income and their capacity to afford basic needs such as food, clothing, utilities, education and shelter (Akazili *et al.*, 2017). This system puts a financial strain on the poor and marginalizes them in terms of healthcare utilization (Sarkodie, 2021). These payments reduce access to quality healthcare for households whose income is not enough to cover the expenditure. Some may have no choice but to resort to ethnomedicine (Dalinjong, Wang and Homer, 2017).

The government is also concerned about OOPPs in healthcare institutions. In 2023, the Ghanaian Minister for Health cautioned health professionals to desist from taking out-of-pocket payments. He noted that co-payments for services that are covered by the scheme are a major challenge for the government. The Minister agreed government's delay in payment of NHIS claims to health facilities is a challenge and the government is speedily working on it as

the arrears gap has been bridged over time (Joy Online, 2023b). The government's efforts in bridging this gap are evident as it paid 1.76 billion Ghana cedis of NHIS claims by July 2023 compared to 1.15 and 1.04 billion Ghana cedis in 2021 and 2022 respectively (Joy Online, 2023a).

At the end of 2018, the percentage of the Ghanaian population enrolled in the scheme was 36%. The NHIS estimated the enrolment rate at the end of the year 2021 was approximately 54%. The low coverage impedes the provision of healthcare access to the Ghanaian population (Adjei-Mantey and Horioka, 2023). It threatens Ghana's mission to achieve UHC as a good number of the population do not have access to quality and affordable healthcare.

Findings would add to the literature on OOPHE as there is a paucity of data that examines NHIS and OOPPs.

1.4 Rationale of the study

The NHIS was established to provide "extensive basic benefits package with no cost sharing including covering the poor and other vulnerable populations to help reduce the burden of OOP healthcare payments" (Akazili *et al.*, 2017). Despite this aim of the scheme, there still exists OOPPs under the scheme. There is scarcity of data on the extent of OOPPs on household impoverishment (Akazili *et al.*, 2017) This study aims at contributing to the literature. A study by Nguyen, Rajkotia and Wang, (2011) found that insured clients made out-of-pocket health expenditures which equalled 72% of what was incurred by non-subscribers. These were attributed to challenges such as (shortages of drugs, payment for services and drugs that should be covered by insurance, payment for uncovered drugs and tests, etc.). These were attributed to teething problems associated with implementation of the scheme since this study was conducted in the early stages of its implementation (Kusi *et al.*, 2015). It is important to assess the effect of the scheme on OOPHE as it would tell if the scheme can effectively prevent people

from sliding into health-related poverty. This study will therefore assess some of these problems to establish if these problems persist several years after implementation.

1.5 Conceptual Framework

Figure 1 describes the factors that lead to the enrollment of national health insurance, which in turn determines the utilisation of healthcare services, ultimately leading to out-of-pocket expenses. Socioeconomic factors and demographics are pivotal in influencing individuals' decisions to enroll in health insurance schemes. Those with higher income levels or better education may be more likely to enroll due to their ability to afford premiums. Conversely, individuals from lower socioeconomic backgrounds might face barriers to enrollment due to financial constraints or lack of awareness.

Health facility factors, such as accessibility and quality of care, also impact enrollment rates. If healthcare facilities are inaccessible or lack necessary resources, individuals may opt to forgo insurance and pay out of pocket for services elsewhere. Additionally, the utilization of healthcare services, influenced by factors like health needs and perceived quality of care, further determines enrollment. Those who frequently utilize healthcare services are more likely to enroll to mitigate out-of-pocket expenses. Thus, this sequential relationship shows how socioeconomic factors, health facility factors, and utilization collectively shape enrollment decisions, ultimately impacting individuals' reliance on out-of-pocket payments for healthcare expenses.

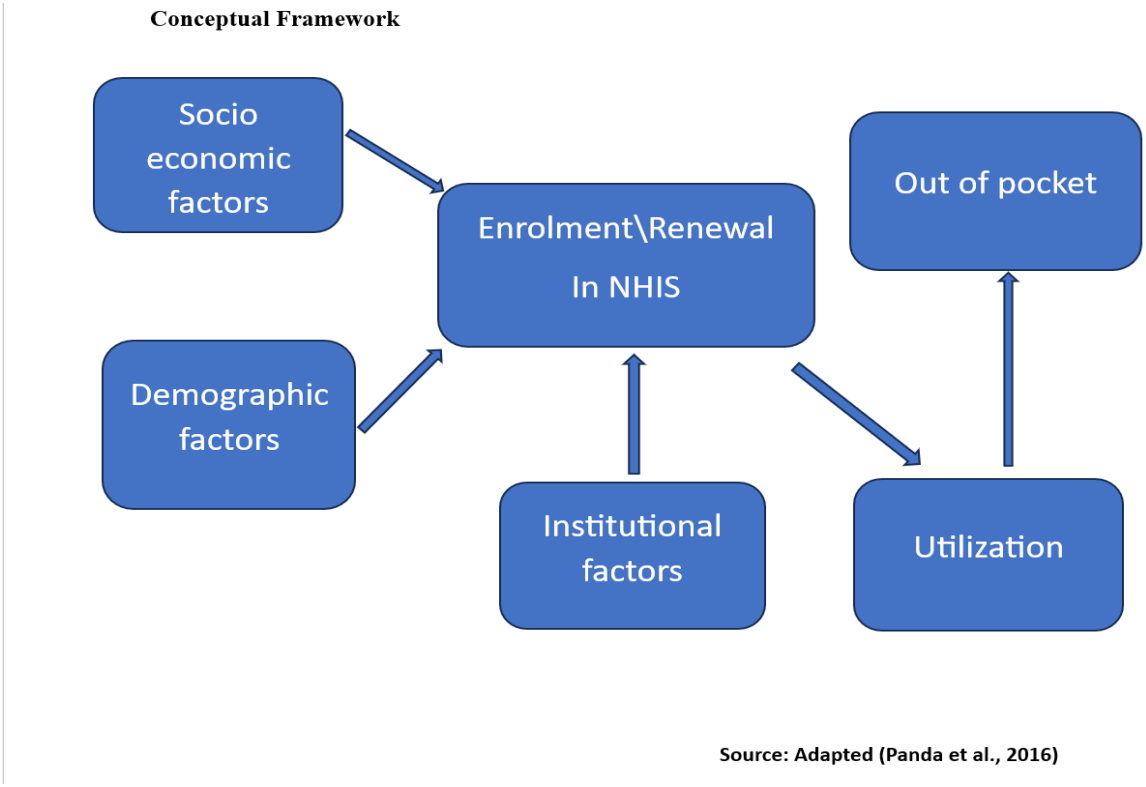

Figure 1: Conceptual Framework

1.6 Research Questions

1. What proportion of individuals have an active NHIS among those enrolled?

2. What is the percentage of individuals with active NHIS who have utilized healthcare services in the last six months?

3. Among those who sought healthcare in the last six months, how many experienced out-of-pocket payments?

1.7 General Objective

To investigate out-of-pocket health care expenses under the National Health Insurance Scheme (NHIS) in Ghana, utilizing data from the Ghana Demographic and Health Survey (GDHS-2022).

1.8 Specific Objectives

1. Assess the prevalence and activation status of individuals with NHIS coverage
2. Assess healthcare utilization among those with active NHIS status in the last six months
3. Investigate out-of-pocket payments among those who accessed healthcare in the last six months

1.9 Profile of study area

This study was conducted in Ghana, with a population of about 30,832,019 as of 2021. In order to address issues related to population size, share, and growth, sex composition, population density, number of households, and household size by region, district, and type of locale, the nation has been divided into 16 regions, 261 metropolitan, municipal, and district assemblies, and 275 constituencies. More than half of the population are from the Greater Accra Region (17.7%), Ashanti Region (17.6%), Eastern Region (9.5%), and Central Region (9.3%) and other citizens from the Northern Region (7.5%), Western Region (6.7%), Volta (6.7%), Upper East (4.2%), Bono Region (3.9%) Upper west (2.9%), Western North (2.9%), Oti Region (2.4%), Northeast(2.2%), Savannah Region(2.1%) and Ahafo Region(1.8%)(Ghana Statistical Service, 2022).

Overall, there are more females (8,961,329), representing 51.3%, in urban areas than males (8,511,201), representing 48.7%. Nevertheless, in rural areas, there are slightly more males (50.1%) than females (49.9%) (Ghana Statistical Service, 2022).

1.10 Organization of Report

This thesis consists of six main chapters. Chapter One introduces the topic under study. It outlines the background information, problem statement, study rationale, conceptual framework, general objective, research questions, specific objectives, the study area profile,

and the study's scope. Chapter Two covers literature review pertaining to the subject of investigation is covered in Chapter Two. Chapter Three details the methodology used in carrying out the study. This includes the study design, site, inclusion/exclusion criteria, study variables, data analysis, assumptions, and study limitations. Chapter Four covers data analysis, findings, and presentations of the National Health Insurance Scheme. Chapter five (5) presents discussions and implications of the study findings. Conclusion Chapter six (6) entails the summary, conclusion, and recommendations for further research.

Figure 2: Map of Ghana. Source: (The Permanent Missions of Ghana of the United Nations)

CHAPTER 2

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter examines research related to out-of-pocket health expenditures (OOPHE) and Ghana's National Health Insurance Scheme (NHIS). Despite efforts towards Universal Health Coverage, many lack access to affordable healthcare, with OOPHE pushing households into poverty. This review explores Ghana's journey from free healthcare to the "cash and carry" system and the establishment of the NHIS to reduce OOPHE. Among the objectives of the NHIS is to reduce OOPHE. However, insured individuals still face OOPHE, undermining the scheme's objectives. By synthesising existing literature, this review lays the groundwork for assessing NHIS coverage, healthcare utilization among the insured, and the extent of OOPHE in Ghana.

2.2 Free Healthcare in Ghana

The concept of free healthcare in Ghana emerged shortly after the country gained independence in 1957. The new government, led by Dr. Kwame Nkrumah, recognized health as a fundamental human right and aimed to provide universal access to healthcare services (Alatinga & Williams, 2014). The early years of independence were characterized by significant investments in public health infrastructure, including the establishment of hospitals, clinics, and health centers across the country, particularly in rural areas. This approach was supported by government funding primarily sourced from taxation and international aid, reflecting a commitment to improving the health status of the population (Amoak et al., 2024).

During this period, Ghana achieved notable health improvements. The introduction of vaccination programs led to significant declines in communicable diseases such as measles and

polio. Maternal and child health initiatives, including prenatal care and family planning services, contributed to decreased infant and maternal mortality rates (Walana et al., 2024)

Life expectancy increased, and the country made strides in achieving several health-related Millennium Development Goals. However, the free healthcare model began to face challenges by the late 1970s and early 1980s. Economic difficulties, exacerbated by global oil crises and mismanagement, strained the government's ability to fund healthcare adequately (Tulchinsky & Varavikova, 2014). The rising costs of healthcare services, coupled with limited resources, led to a decline in the quality of care. Many health facilities became underfunded and overcrowded, resulting in long waiting times and inadequate services. The lack of accountability in the healthcare system further complicated these issues, leading to inefficiencies and corruption (WHO, 2023). By the mid-1980s, the financial sustainability of the free healthcare system was in jeopardy. The government struggled to maintain funding levels, leading to significant disparities in access to healthcare services. As a response to these challenges, the government introduced the cash-and-carry system in 1985, marking a significant shift in healthcare financing (WHO, 2023).

2.3 Cash and Carry System in Ghana

The cash and carry system was introduced in Ghana in 1985 as a direct response to the unsustainable nature of the free healthcare model. Faced with deteriorating economic conditions and a declining ability to fund healthcare through taxation, the government implemented this system to generate revenue for health facilities and reduce the financial burden on the state (Arhr, 2022). Under the cash and carry system, patients were required to pay for healthcare services at the point of delivery, fundamentally altering the dynamics of healthcare access in the country. The historical context of this transition is crucial for understanding its implications. Structural adjustment programs imposed by the International Monetary Fund (IMF) and World Bank in the 1980s mandated significant cuts in government

spending on social services, including healthcare. The cash and carry system was introduced as a pragmatic response to these fiscal constraints, aiming to improve the financial sustainability of healthcare facilities while encouraging better resource management (*The IMF's Enhanced Structural Adjustment Facility (ESAF): Is It Working?* 1999).

However, the cash and carry system had profound consequences for access to healthcare. While it aimed to bolster funding for health services, it created significant barriers for many citizens, particularly those from low-income backgrounds (Arhr, 2022). Patients were required to pay upfront for consultations, investigations (laboratory, medical imaging) medications, and treatments. As a result, there is now a clear disparity in healthcare service accessibility, with more individuals and families unable to afford necessary medical care. Consequently, some patients delayed seeking treatment until their conditions worsened, resulting in increased morbidity and mortality rates among vulnerable populations, including women and children (Domapielle et al., 2023).

Public reaction to the cash and carry system was overwhelmingly negative. Many Ghanaians viewed it as a violation of the right to health, undermining the principles of equity and accessibility that had previously characterized the healthcare system. Healthcare professionals expressed ethical concerns about denying care to those who could not afford to pay, leading to a moral dilemma for providers committed to serving their communities (Blanchet et al., 2012).

The shortcomings of the cash and carry system ultimately led to calls for reforms. In response to growing public dissatisfaction and the negative impact on health outcomes, the Ghanaian government introduced the National Health Insurance Scheme (NHIS) in 2003, aiming to provide a more equitable and sustainable approach to healthcare financing (Christmals & Aidam, 2020).

2.4 National Health Insurance Scheme (NHIS) in Ghana

The introduction of the National Health Insurance Scheme (NHIS) in Ghana in 2003 marked a significant turning point in the country's healthcare financing landscape (Blanchet et al., 2012). The NHIS was established to address the limitations of the cash and carry system, which had created substantial barriers to healthcare access, particularly for vulnerable populations. The primary aim of the NHIS was to provide a more equitable and sustainable framework for healthcare financing, ensuring that all citizens could access essential health services without facing financial hardship (Akor et al., 2004).

The NHIS was designed to replace the cash-and-carry system, which had come under increasing scrutiny for its adverse effects on health outcomes. Under the NHIS, citizens are required to pay an annual premium to access a comprehensive package of health services (Aikins et al., 2021). The premium structure is tiered based on income levels, with different rates for various categories of enrollees. As of recent years, the average premium for adults is approximately GHS 50-100 per year (Wang et al., 2017), a cost intended to be manageable for most citizens while ensuring that health facilities receive adequate funding to provide necessary services. One of the key features of the NHIS is its provision for exemptions (Kipo-Sunyehzi et al., 2019). Certain groups are exempt from paying premiums including minors under the age of eighteen and senior citizens older than seventy years, individuals with disabilities, and patients suffering from specific chronic illnesses like diabetes, hypertension, HIV/AIDS and cancer. These exemptions are crucial in promoting equity within the healthcare system, as they ensure that the most vulnerable populations can access necessary healthcare services without financial constraints. This approach reflects a commitment to inclusivity and recognizes the need to support those who may be disproportionately affected by healthcare costs (Acquah-Hagan et al., 2021).

Despite the potential of the NHIS, enrollment and renewal rates have fluctuated over the years, posing challenges to the scheme's sustainability. To address these issues, the Ghanaian government has implemented several strategies aimed at enhancing participation in the NHIS (Christmals & Aidam, 2020). Public awareness campaigns have been launched to educate citizens about the benefits of the scheme and the importance of timely enrollment and renewal. These campaigns utilize various media platforms to reach a broad audience, aiming to dispel misconceptions and encourage greater participation (Ibrahim et al., 2024). Additionally, mobile registration units have been deployed to rural and underserved areas to facilitate easy registration and renewals. This initiative aims to increase access to the NHIS, particularly for populations that may face challenges in traveling to registration centers. Furthermore, the government has integrated NHIS enrollment with other social protection programs, ensuring that beneficiaries are informed about their options for healthcare coverage. Incentives for timely renewal have also been introduced, such as discounts or additional health benefits for those who renew their membership on time (Akweongo et al., 2023). These efforts are designed to encourage individuals to maintain their coverage and access necessary healthcare services, ultimately contributing to improved health outcomes across the population.

2.5 Prevalence and activation status of individuals with NHIS coverage

Wang et al. (2017) found in their study "Ghana National Health Insurance Scheme: Improving Financial Sustainability Based on Expenditure Review" that over the years, the NHIS has made significant progress in increasing health insurance coverage among Ghanaians. Recent statistics indicate that by 2014, almost 40% of the population was registered with the NHIS, reflecting a notable increase from earlier years. Despite this, the enrollment rates in the National Health Insurance Scheme (NHIS) are low, with about 60% of the population not signed up for the program. This includes many older adults who are 60 years old and above (Adjei-Mantey & Horioka, 20220)

Urban areas typically exhibit higher coverage rates compared to rural regions, primarily due to better access to information and healthcare services (Florio et al., 2023). This study revealed that individuals in urban areas are generally more likely to utilize NHIS services compared to their rural counterparts, primarily due to better access to healthcare facilities and more comprehensive information about available services. Demographic factors also play a crucial role in NHIS coverage. Research shows that women and individuals with higher levels of education are more likely to be enrolled in the scheme. Conversely, marginalized populations including the poor and those living in remote areas, often face significant barriers to its enrollment (Kwarteng et al., 2019). These disparities highlight the need for targeted efforts to ensure that vulnerable groups can access health insurance. A 2014 Demographic and Health Survey (DHS) found that 48% of men and 62% of women were currently enrolled in some form of health coverage. However, it's important to note that the survey only includes women of reproductive age (15-49 years) and offers free enrollment for pregnant women, meaning the 62% figure does not represent all women. Additionally, the survey indicated that only 1% of respondents had other types of insurance (*Ghana Demographic and Health Survey 2014*, 2015). The result from a logistic regression analysis in a recent study revealed that Compared to individuals without food insecurity, older adults with severe family food insecurity had a lower enrollment rate in the National Health Insurance Scheme ($OR = 0.48, p < 0.001$) (Amoak et al., 2024).

While enrolment in the NHIS is essential, the activation status of enrolees—defined as their ability to utilize health services under the scheme—is equally important. Despite high enrolment figures, many individuals do not actively use their NHIS benefits (Kwarteng et al., 2019). Several factors contribute to low activation rates. The quality of care provided by NHIS-accredited facilities significantly influences activation. Perceived quality of care is a critical predictor of service utilization among NHIS enrolees. Those who believe that the quality of

care is inadequate are less likely to use their insurance benefits, which further exacerbates the issue of underutilization (Nketiah-Amponsah et al., 2019).

2.6 Assess to healthcare among those with active NHIS status in the last six months

A recent study has found that active NHIS enrolment was associated with increased utilization of outpatient services, particularly among women and individuals from wealthier households. The results indicated enrolment in NHIS greatly increased the proportion of children whose mothers attended at least four antenatal care (ANC) visits, had a skilled healthcare professional present at the time of birth, and were delivered via cesarean section (Bonfrer et al., 2016). Study conducted by Van Der Wielen et al. (2018) also investigated the impact of the NHIS on outpatient department (OPD) utilization which found that individuals with active NHIS membership were more likely to utilize OPD services. This indicates the NHIS has promoted access to outpatient care, which is often the first point of contact with the healthcare system.

From September 8, 2022, to December 5, 2022, 460 rural Ghanaians participated in a community-based cross-sectional survey, and it revealed that Half (50 %) of the insured respondents sought care most often from formal healthcare providers, while the majority (62 %) of the uninsured sought care most often from informal healthcare providers. More uninsured individuals (21.2 %) engaged in self-treatment compared to the insured (15.7 %) (Kumah et al., 2024). Also, in a study where a bivariate analysis was conducted, there was a significant difference in healthcare use between insured and uninsured respondents resulting in a statistically significant difference (df = 4; n = 283, p = 0.000). This establishes that respondents with active insurance coverage utilized healthcare more than those without active insurance coverage (Asibey & Agyemang, 2017).

Furthermore, another study found that healthcare utilization, is noticeably greater for all older adults with active NHIS memberships than for those without, including inpatient and

outpatient, even before taking into consideration variations in the features of enrolled and non-enrolled individuals. A larger number of older persons reported being hospitalized overnight, and 20% of members consulted a health professional as opposed to 10% of non-members.

2.7 Out-of-pocket payments among those who accessed healthcare

Studies have investigated out-of-pocket (OOP) payments among individuals who accessed healthcare services in Ghana, particularly those enrolled in the National Health Insurance Scheme (NHIS). According to a research by Akweongo et al (2021) on insured clients' out-of-pocket medical expenses under Ghana's national health insurance program, out-of-pocket expenses are incurred by medical facilities at all levels. Patients paid up to 40% out of pocket in lower-class health facilities and up to 53% in hospitals. Nearly 47% of NHIS clients with active cards disclosed paying for OPD services with their own money.

Similarly, in an analysis of 2066 respondents to a cross-sectional descriptive health facility survey, 49.7% reported paying out-of-pocket for out-patient care while 46.9% of the insured clients paid out-of-pocket. Forty-two percent of the insured poorest quintile also paid out-of-pocket. Insured clients paid for consultation (75%) and drugs (63.2%) while 34.9% purchased drugs outside the health facility they visited. The unavailability of drugs (67.9%) and drugs not covered by the NHIS (20.8%) at the health facility led to out-of-pocket payments. On average, patients paid GHS33.00 (USD6.6) out-of-pocket.

Furthermore, a study investigated the determinants of OOP payments among NHIS enrolees who accessed healthcare services within the last six months. It found that factors such as higher household wealth quintile for the richest quintile), urban residence (OR = 1.4, 95% CI: 1.1-1.8), and seeking care at private facilities were associated with a higher likelihood of incurring OOP payments (Njagi et al., 2020). A study by Kumbeni et al. (2023) focused specifically on OOP payments for maternal healthcare services among NHIS enrolees. The authors found that

28.5% of insured women who accessed antenatal care (ANC) or delivery services in the last six months made OOP payments, with an average payment of GH¢ 32.7. The study again identified factors such as higher education level for secondary or higher education and seeking care at private facilities as significant predictors of OOP payments for maternal healthcare services (Alatinga et al., 2024).

A systematic review conducted by Okoroh et al. (2018) found that out of Of the 1094 articles initially identified, 7 were eligible for inclusion. These were cross-sectional household studies published between 2008 and 2016 in Ghana. They demonstrated that the uninsured paid 1.4 to 10 times more in out-of-pocket payments (OOPs) and were more likely to incur CHEs than the insured. Yet, 6 to 18% of insured households made catastrophic payments for healthcare and all studies reported insured members making OOPs for medicines.

2.8 Conclusion

This literature review highlights the effects of out-of-pocket health expenditures (OOPHE) in Ghana and the National Health Insurance Scheme's (NHIS) effectiveness in alleviating these costs. Although the NHIS aims to reduce OOPHE and enhance healthcare access, many insured individuals continue to face substantial out-of-pocket expenses. Research reveals varying levels of NHIS coverage and activation, with significant gaps in coverage and disparities across different population groups. While active NHIS enrolment is linked to increased healthcare utilization, especially for outpatient and maternal services, challenges persist in ensuring equitable access and utilization. The continued existence of OOPHE among NHIS enrolees highlights the need for additional policy interventions to enhance the scheme's effectiveness. By synthesizing existing literature, this review lays the groundwork for future research aimed at evaluating and improving the NHIS's role in achieving universal health coverage and financial protection for all Ghanaians.

CHAPTER 3

3.0 METHODOLOGY

3.1 Introduction

This section discusses the methods and techniques that were employed in the study. It describes the study design, study site, study population, exclusion and inclusion criteria, sample size determination, sampling methods, data collection procedures, data analysis, ethical issues, work plan and budget for the study.

3.2 Research Methods and Design

This study is a cross-sectional study based on data from the 2022 Ghana Demographic and Health Survey (GDHS) gathered by the Ghana Statistical Service (GSS). This is a household and individual survey comprising data on indicators for monitoring and effect, specifically in population, well-being, and diet. The data represents the whole of Ghana.

3.3 Source of data

The Demographic and Health Survey of Ghana provided data for this study for the year 2022. The study focused on woman and men of reproductive age 15-49 and 15-59 years respectively, with data on their health insurance coverage, National Health Insurance, reasons for dropping NHIS coverage, access to and utilization of health services, and their utilization of health services and type of payment.

3.4 Data Collection Techniques and Tools

Records of health insurance coverage among women (age 15-49) and men (age 15-59) from the Ghana Demographic and Health Survey were reviewed for this study. The questionnaire used for the GDHS had questions on background characteristics, reproduction, family planning, maternal and newborn, marriage and sexual activity, fertility, partner's background

and work, HIV/AIDS and other health issues. The data wereobtained from the DHS website after an online form describing the goals for the study was submitted.

3.5 Study Variables

There were two types of parameters measured in this study: independent and dependent variables. The dependent variable for this study was out-of-pocket expenses under the NHIS. The independent variables of interest for this study were: demographics, the socioeconomic situation of the participant which was defined by wealth index, access and utilization of health service, type of coverage, and type of payment that is whether or not the participants made full or co-payment of the services rendered to them at the hospital, NHIS coverage, validity, and reasons for dropping NHIS coverage.

3.6 Study population

The study population consists of women aged 15–49 and men aged 15–59 in all sixteen (16) regions of Ghana.

3.7 Inclusion Criteria

The study includes all individuals (men aged 15-59 and women aged 15-49) from the survey who had complete observations on their NHIS coverage status, healthcare utilisation patterns, and out-of-pocket healthcare expenses or costs.

3.8 Exclusion Criteria

The study excluded all household heads (both men and women) from the survey aged 15 – 59 years who had incomplete or missing observations on their NHIS coverage status, healthcare utilisation patterns, and out-of-pocket healthcare expenses or costs.

3.9 Sample Size

A sample of 18,450 households from all 16 regions, indicative of the nation provided data for the 2022 GDHS, which resulted in 15,014 interviewed women aged 15–49 and 7,044

interviewed men aged 15–59 all making a total of 22058. Therefore, this study utilised the calculated sample from the GDHS.

3.10 Sampling Method

The GDHS is the seventh survey of its kind conducted by the Ghana Statistical Service between 17th October 2022 to 14th January 2023. The 2022 GDHS data was collected using four survey questionnaires: questionnaires for men, women, the household, and fieldworkersGiven the objectives of the study, the data generated from the woman's questionnaire and man's questionnaire, particularly the section on health insurance coverage was employed. The questionnaire collected information from all adult women (15-49 years) and men (15-59) identified as household residents or visitors who were staying with the household the night before the survey.

3.11 Outcome and Explanatory Variables

Variable	**Operational explanation**
Independent variable	
Demographic features of participants	
Sex	Biological sex of woman/man
Age	Participant's age in years. Indicate if you are using it as a categorical or continuous variable
Residence	Place where participants stay and how far it is from facility urban or rural
Region	Region where participant live provide the details
Socioeconomic status	

Wealth quintile	Wealth status of participant
Access and utilization of health service	The services used by the participant when he/she visited the hospital
Type of coverage	The type indicates whether the insurance of participant is a private or the national insurance
Utilization of health services and type of payment	The payment type tells whether participant paid for various services in full or co-paid
NHIS Coverage	Shows if the participant is registered under the NHIS
Validity	Shows the activation status of the participant
Reasons for dropping out of NHIS coverage	Why participant stopped renewing the NHIS after it had expired.
Dependent variable	
Out-of-pocket expenses	The amount of money participant paid for health services at the health facility

In investigating out-of-pocket health care expenses under the National Health Insurance Scheme (NHIS) in Ghana, the patients who were insured and who paid out-of-pocket made up the main outcome variable, and the explanatory variables included sociodemographic traits like age, gender, educational attainment, work status, and socioeconomic status as determined by the wealth index, which was created using the assets and possessions of patients who were interviewed. Families were divided into five quintiles, where the first quintile represented the poorest household and the fifth quintile the least impoverished (Akweongo *et al.*, 2021b).

3.12 Data storage and ownership

The data, obtainedin the form of a softcopy was stored by the principal investigator. The softcopy of the data was stored on a computer.

3.13 Statistical Analysis

The data analysis was carried out using Stata version 18.0 (Stata Corporation, College Station, TX, USA). The data was first extracted from the 2022 GDHS dataset with 6134 variables. Later, the data was cleaned and all variables not relevant to this study dropped, making use of 56 variables. Only men aged 15-59 and women aged 15-49 years with complete observations on the studied variables were included in the final analysis. Percentages were used to present the findings of the proportions of insured patients who cover their own medical costs.

A multivariable binary logistic regression was used to determine the strength of the association between the studied variables and out-of-pocket healthcare expenses. The results of the regression analysis were presented in a tabular form using crude odds ratio and adjusted odds ratio. Statistical significance was set at $p<0.05$. The men and women sample weights (v005/1,000,000) were applied to obtain unbiased estimates according to the DHS guidelines and the survey command in Stata was used to adjust for the complex sampling structure of the data in regression analyses.

3.14 Assumptions

This study assumed that the interactions among various elements, such as healthcare access, financial barriers, and sociodemographic factors, significantly influence the healthcare experiences of NHIS-enrolled individuals in Ghana. It posits that these factors are interconnected and impact individuals' ability to utilize healthcare services effectively. Furthermore, it is expected that a variety of systemic interventions can address existing challenges within the NHIS framework, ultimately enhancing healthcare accessibility and

equity for all enrolled individuals. The study will summarize the challenges identified through primary research and provide insights for stakeholders to improve the NHIS and promote better health outcomes.

3.15 Ethical Considerations

To have access to this dataset, a formal request was submitted to the Ghana Statistical Service through their website. Ethical clearance was sought from Ensign Global College Board for Institutional Review. The dataset will be kept for a duration of three years to facilitate its use as a point of reference in publications produced within that time frame.

3.16 Dissemination of Results

The results of the study will be disseminated to health managers and other stakeholders through seminars, conferences, health service review meetings among others for health system planning and informed decision-making regarding NHIS interventions in Ghana and a variety of healthcare settings within the region and the nation.

3.17 Limitations of the study

This study has several limitations that should be considered when interpreting its findings. Firstly, the reliance on self-reported data from the Ghana Demographic and Health Survey (GDHS-2022) may have introduced recall bias and potential inaccuracies in the reported out-of-pocket expenses and healthcare utilization. The study's cross-sectional nature precludes the establishment of causal relationships and limits the ability to capture temporal changes in NHIS coverage and healthcare expenditures. Additionally, the study's scope is constrained by the variables available in the GDHS-2022, which may not encompass all relevant factors influencing out-of-pocket expenses. Geographical variability in healthcare access and quality across Ghana may not be fully captured, potentially limiting the generalizability of the findings.

Lastly, including uninsured individuals in some variables and their exclusion in others may affect the comprehensive assessment of out-of-pocket expenses under the NHIS.

CHAPTER FOUR

4.0 RESULTS

4.1 Introduction

The result of this study was presented based on the following objectives of the study: (i) Assess the prevalence and activation status of individuals with NHIS coverage (ii) Assess healthcare utilization among those with active NHIS status in the last six months and (iii) Investigate out-of-pocket payments among those who accessed healthcare in the last six months.

4.2 Sociodemographic characteristics of participants

Table 4.1 shows data from the GDHS with a total sample of 22,058, most of the participants were aged between 15-19 years with a frequency of 4,105.9574 (18.61%). The participants are widely distributed across various regions, with the highest respondents from the Ashanti region 4,242.9845 (19.24%). A greater majority of participants 11,513.975 (52.20%) have attained secondary education. Christianity is the predominant religion among the participants 16,492.746 (74.77%). Islam is the second most common religion 4,362.696 (19.78%), followed by Traditional beliefs 553.0104893 (2.51%) and those with no religion 625.094794 (2.83%).

The Akan ethnic group constitutes the largest proportion of participants 10,158.18 (46.05%), followed by Mole-Dagbani 4,059.0064 (18.40%) and Ewe 2,535.5438 (11.49%). A majority of the participants 10,753.39 (48.75%) have never used the internet. Most respondents marital are currently married 9,007.76489 (40.84%). A substantial majority 18,701.766 (84.78%) of the respondents were covered by health insurance.

Regarding socioeconomic status, the wealth index showed an almost equal distribution among the different quintiles, with the poorest constituting 3,685.1305 (16.71%) and the richest 4,988.0501 (22.61%). Educational attainment was diverse, with a majority 10,204.084(46.26%) having completed secondary education.

Table 4.1 Sociodemographic Characteristics

Variables	Frequency (n=22,058)	Percentage (%)
Age In 5-Year		
15-19	4106	18.6
20-24	3728	16.9
25-29	3227	14.6
30-34	3105	14.1
35-39	2868	13.0
40-44	2388	10.8
45-49	1869	8.5
50-54	429	2.0
55-59	338	1.5
Sex		
Male	7044	31.9
Female	15014	68.1
Region		
Western	1413	6.4
Central	2468	11.2
Greater Accra	3538	16.0
Volta	991	4.5
Eastern	1776	4.5
Ashanti	4243	8.1
Western North	619	19.2
Ahafo	474	2.8
Bono	808	2.2
Bono East	1019	3.7
Oti	614.	4.6
Northern	1674	2.8
Savannah	495	7.5
North East	418	2.2
Upper East	942	1.8
Upper West	566	4.3
Educational Level		
No Education	5460	24.8
Primary	2216	10.0
Secondary	11514	52.2
Higher	2868	13.0
Religion		
Christianity	16493	74.8
Islam	4363	19.8
Traditional	553	2.51
No Religion	625	2.83
Other	24	0.11
Ethnicity		
Akan	10158	46.1
Ga/Dangme	1510	6.9
Ewe	2536	11.5
Guan	737	3.3
Mole-Dagbani	4059	18.4

Grusi	761	3.5
Gurma	1478	6.7
Mande	621	2.8
Other	199	0.9
Use Of Internet		
Never	10753	48.8
Yes, Last 12 Months	10592	48.0
Yes, Before Last 12 Months	713	3.2
Current Marital Status		
Never In Union	8502	38.5
Married	9008	40.8
Living With Partner	2678	12.2
Widowed	408	1.8
Divorced	502	2.3
Separated	960	4.4
Covered By Health Insurance		
No	3356	15.2
Yes	18702	84.8
Wealth index		
Poorest	3685	16.7
Poorer	3985	18.6
Middle	4403	19.4
Richer	4997	22.7
Richest	4988	22.6
Occupation		
Not working	4185	19.0
Professional/technical/managerial	1727	7.8
Clerical	331	1.5
Sales	1667	7.6
Agricultural	1388	6.3
Services	8688	39.4
Skilled manual	3494	15.8
Unskilled manual	403	1.8
Other	176	0.8

4.3 Prevalence and activation status of individuals with NHIS coverage

The percentage of respondents registered under the NHIS was 29%and 71% not registered (Figure 4.1). Among those not registered with NHIS, the primary reasons were uniformly distributed across various barriers, including affordability, lack of trust, and perceived irrelevance of the scheme.

Figure 4. 1

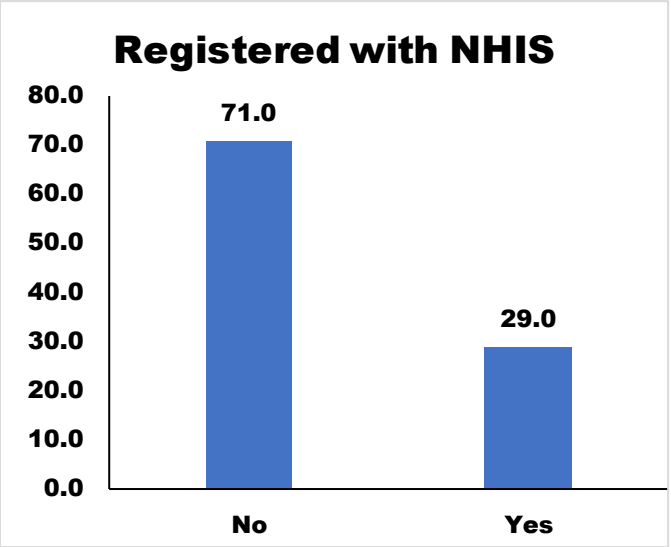

Figure 4. 2

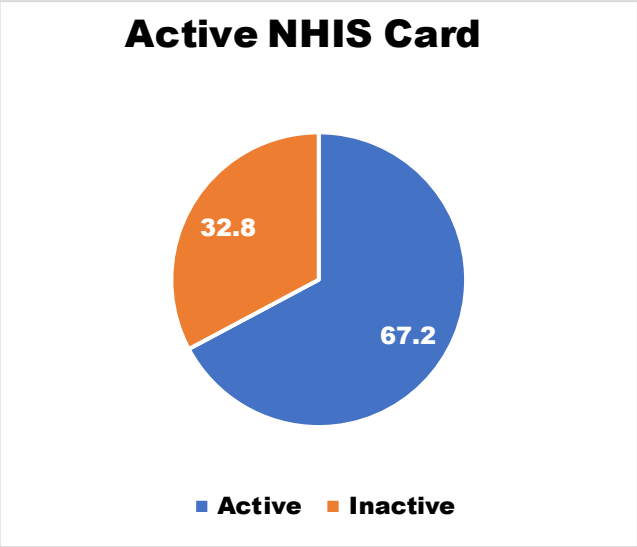

Figure 4.1 & 4.2 : Prevalence and activation status of individuals with NHIS coverage

4.4 Why people have never registered for the National Health Insurance Scheme

The table below shows why people have never registered for the National Health Insurance Scheme. Notably, none of the participants cited reasons such as affordability, trust issues, perceived necessity, lack of coverage for needed services, misunderstandings about the scheme, difficulties in registration, limited access to health facilities, negative staff attitudes, and concerns about service quality. The overwhelming majority (99.03% for not getting sick and 99.68% for lack of time) reflected a significant disengagement from health insurance.

Table 4. 2 Why people have never registered for the National Health Insurance Scheme

Variable	Yes, (n%)	No, (n%)
Not heard of NHIS	0 (0)	22058 (100.0)
Cannot afford premium	0 (0)	22058 (100.0)
Do not trust	0 (0)	22058 (100.0)
Don't need health insurance	0 (0)	22058 (100.0)
NHIS does not cover health services I need	0 (0)	22058 (100.0)
Don't understand scheme	0 (0)	22058 (100.0)
Don’t know where to register	0 (0)	22058 (100.0)
No easy access to health facility	0 (0)	22058 (100.0)
Do not like the attitude of staff in a health	0 (0)	22058(100.0)
Those with insurance are given substandard service	0 (0)	22058 (100.0)
Don't get sick (cs)	215 (0.97)	21843 (99.0)
Has no time to go (cs)	72 (0.32)	21986 (99.7)
Other	134 (0.61)	21924 (99.4)

4.5 Why people dropped out of the national health insurance scheme.

The data reveal that the most significant barrier to renewal is the inability to afford the premium, with an overwhelming 99.69% of respondents citing this reason. Other reasons for non-renewal are relatively minor, with only 0.21% indicating distrust in the NHIS and an equal percentage stating they don't feel the need for insurance. Additionally, a small fraction of

participants reported that the NHIS does not cover necessary health services (0.18%), and misunderstandings about the scheme were noted by 0.16%. Access issues, such as difficulty in registering (0.24%) and inadequate access to health facilities (0.15%), also contributed to the decision not to renew.

Table 4. 3 why people dropped out of the national health insurance scheme.

Reasons participant did not renew their NHIS	Yes, (n%)	No, (n%)
Cannot afford premium	21990 (99.69)	68 (0.31)
Do not trust NHIS	18 (0.2)	22040 (99.8)
Don't need NHIS	46 (0.2)	22012 (99.8)
NHIS does not cover health services I need	40 (0.2)	22018 (99.8)
Don't understand scheme	35 (0.2)	22023 (99.8)
Don't know where to register	35 (0.2)	22005 (99.8)
Those with insurance are given substandard service	36 (0.2)	22022 (99.8)
No easy access to health facility	33 (0.2)	22025 (99.8)
Do not like the attitude of staff in a health Facility	109 (0.5)	21949 (99.5)
Those with insurance are given substandard service	59 (0.3)	21999 (99.7)
Don't get sick (cs)	96 (0.4)	21962 (99.6)
Has no time to go (cs)	62 (0.3)	21996 (99.7)
Card not renewed/ missing or lost/ burnt	5388 (24.4)	16670 (75.6)
Lost NHIS	814 (3.7)	21244 (96.3)
Other	108 (0.5)	21950 (99.5)

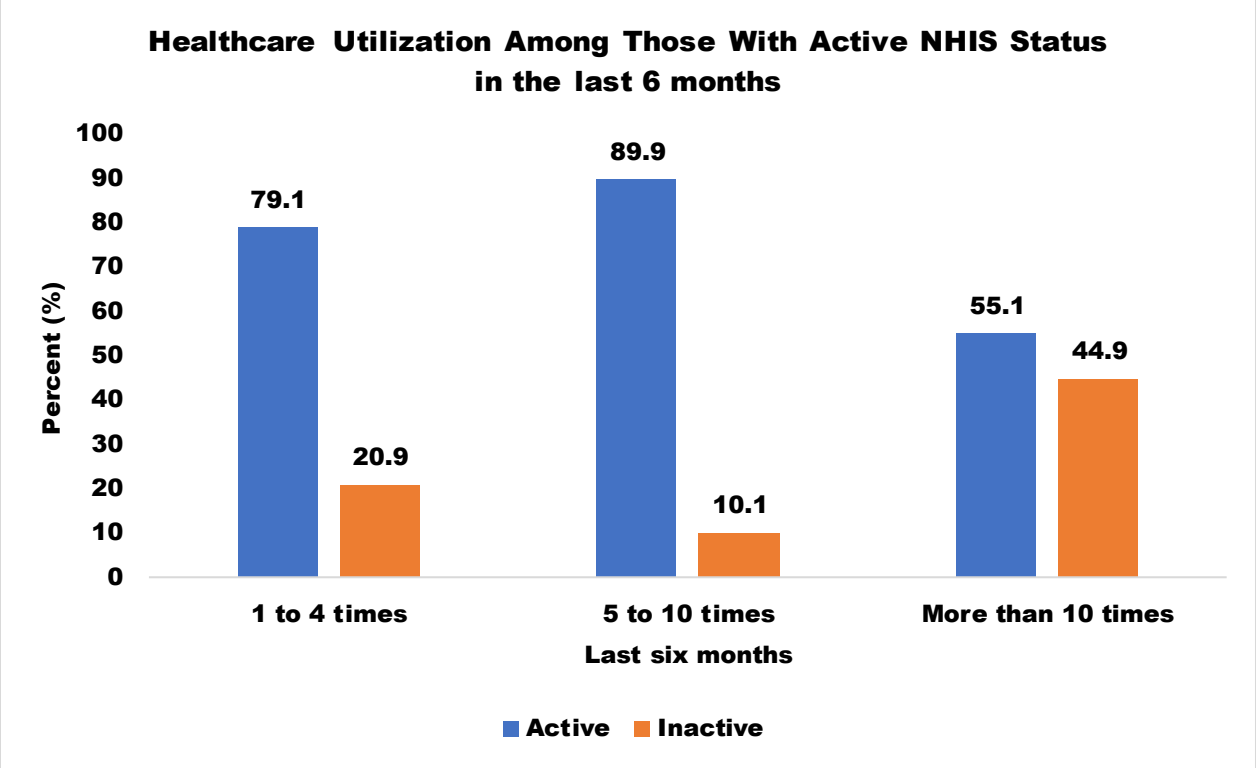

Figure 4. 3 Healthcare utilization among those with active NHIS status in the last six months

Figure 4.3 illustrates the healthcare utilization patterns of individuals with active and inactive National Health Insurance Scheme (NHIS) status over the past six months. The data is categorized into three frequency groups: 1 to 4 times, 5 to 10 times, and more than 10 times. For those who accessed healthcare 1 to 4 times, there is a stark contrast between active and inactive NHIS status holders. 79.1% of individuals with active NHIS status fell into this category, compared to only 20.9% of those with inactive status. The disparity becomes even more pronounced for those who accessed healthcare 5 to 10 times. An overwhelming 89.9% of active NHIS status holders used healthcare services this frequently, while only 10.1% of inactive status holders did so. Interestingly, for those who accessed healthcare more than 10 times, the trend reverses. Only 55.1% of active NHIS status holders used healthcare this frequently, while 44.9% of inactive status holders did.

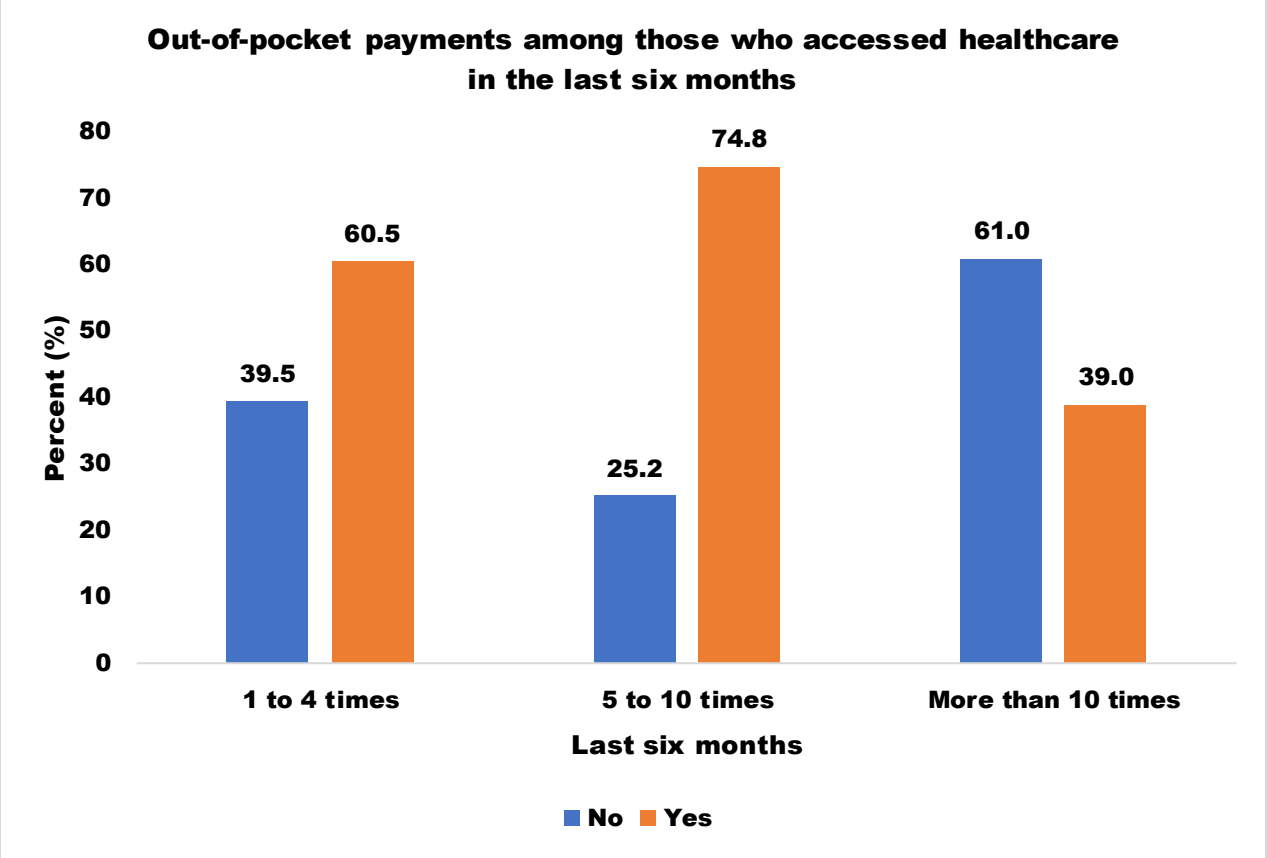

Figure 4. 4 Out-of-pocket payments among those who accessed healthcare in the last six months

This graph presents data on out-of-pocket payments for healthcare services over the last six months, categorized by frequency of healthcare utilization. For individuals who accessed healthcare 1 to 4 times, 60.5% made out-of-pocket payments, while 39.5% did not. The proportion of people making out-of-pocket payments increases significantly for those who accessed healthcare 5 to 10 times. In this category, 74.8% of individuals made out-of-pocket payments, compared to 25.2% who did not. For individuals those who accessed healthcare more than 10 times, the trend reverses. Only 39% of individuals in this category made out-of-pocket payments, while 61% did not. This could imply that very frequent healthcare users might have better insurance coverage, chronic conditions that are fully covered, or access to special programs that reduce their out-of-pocket expenses.

4.5.1 Specific services that demanded Out-Of-Pocket Payments

Out-of-pocket payments were prevalent, with 26.29% making payments for consultations, and 72.86% for medications. Co-payments were common, with 52.84% co-paying for consultations and 54.5% for medications.

Regarding diagnostic services, 42.43% made out-of-pocket payments, with co-payments and full payments almost equally divided. Surgical services saw fewer out-of-pocket payments (5.38%), but those who did pay mostly made full payments.

Table 4. 4 Services demanding out of pocket payments

Variables	Frequency	Percentage (%)
Out of pocket payments for consultation		
No	3513	73.7
Yes	1254	26.3
Co-payment of full payment for consultation		
Copayment	662	52.8
Full payment	569	45.4
Don't remember	23	1.8
Out of pocket payment for drugs		
No	1294	27.1
Yes	3473	72.9
Co-payment of full payment for drugs		
Copayment	1893	54.5
Full payment	1528	44.0
Don't remember	52	1.5
Out of pocket payment for diagnosis		
No	2744	57.6
Yes	2023	42.4
Co-payment of full payment for diagnosis		
Copayment	886	43.8
Full payment	1098	54.3
Don't remember	39	1.9
Out of pocket payment for admission		
No	3,880	81.4
Yes	887	18.6
Co-payment for surgical		
Copayment	442	49.9
Full payment	419	47.3
Don't remember	26	2.9
Out of pocket payment for surgical		
No	4,511	94.6
Yes	256	5.9

Co-payment of full payment for surgical		
Copayment	100	39.0
Full payment	135	53.0
Don't remember	21	8.0
Out of pocket payment for other health services		
No	4,389	92.1
Yes	378	7.9
Co-payment for other health services		
Copayment	149	39.4
Full payment	219	57.8
Don't remember	10	2.8

4.6Association between out-pocket payment and sociodemographic characteristics

This study examined factors associated with out-of-pocket healthcare payments in Ghana, revealing significant sociodemographics. Age played a role in out-of-pocket payments, with young adults aged 20-24 [aOR: 1.26 (1.10-1.44), p=0.001] and 25-29 [aOR: 1.22 (1.05-1.42), p=0.008] more likely to make such payments compared to teenagers (15-19). Regional variations were prominent, with most regions showing higher odds of out-of-pocket payments than the Western region. The Eastern region demonstrated the highest likelihood [aOR: 1.96 (1.58-2.44), p<0.001], followed by Volta [aOR: 1.68 (1.30-2.16), p<0.001] and Oti [aOR: 1.64 (1.29-2.08), p<0.001]. Individuals with higher education were significantly more likely to make such payments [aOR: 2.35 (2.05-2.70), p<0.001] compared to those with no education. This trend was consistent across all education levels, with secondary [aOR: 1.77 (1.60-1.96), p<0.001] and primary education [aOR: 1.54 (1.34-1.76), p<0.001] also showing increased odds.

Also, religious affiliation influenced out-of-pocket payments. Compared to Christians, those practicing traditional religions [aOR: 0.72 (0.55-0.96), p=0.023] and individuals with no religious affiliation [aOR: 0.56 (0.41-0.76), p<0.001] were less likely to make out-of-pocket payments. This could reflect differences in healthcare-seeking behaviours or access among various religious groups. Marital status emerged as a significant factor, with married

individuals [aOR: 1.97 (1.75-2.21), p<0.001] and those living with a partner [aOR: 1.63 (1.42-1.87), p<0.001] more likely to make out-of-pocket payments compared to those never in a union. Notably, widowed individuals had the highest odds [aOR: 2.28 (1.72-3.04), p<0.001]. Counter-intuitively, individuals with health insurance had substantially higher odds of making out-of-pocket payments [aOR: 32.50 (21.11-50.04), p<0.001].

When it comes to education, hose who has no education, individuals who completed secondary school, went to secondary school but did not complete and those who have completed higher educations are 1.32, 1.31 and 1.84 times more likely to pay out of pocket for healthcare respectively [aOR: 1.32(1.13-1.54), p<0.001] [aOR: 1.31(1.15-1.51), p <0.001] [aOR: 1.84(1.52-2.23), p<0.001], respectively. Also, those who were not able to read a complete sentence were 18 percent times less likely to pay out of pocket for healthcare compared to those who cannot read at all [aOR:0.82(0.72-0.93), p=0.003], those who are blind/visually impaired are 2.60 times more likely to pay out of pocket for healthcare compared to those who cannot read at all [aOR:2.60(1.04-6.52), p=0.041].

Compared to the poorest group, even the poorer category 1.23 times more likely to pay of out-of-pocket payments [aOR: 1.23 (1.08-1.41), p=0.003], those in the middle class were 1.38 times more likely to pay out of pocket than those in the poorest class [aOR: 1.38 (1.22-1.57), p=0.001], those in the richer class were also 1.58 times more likely to pay out of pocket than those in the poorest class [aOR: 1.58 (1.20-1.72), p<0.001], and those in the richest class were 1.43 times more likely to pay out of pocket than those in the poorest class [aOR: 1.43 (1.20-1.72), p<0.001].

Those with professional/technical/managerial workers were 1.19 times more likely to pay of out-of-pocket compared to those not working [aOR: 1.19 (1.01-1.40), p=0.040]. Conversely, agricultural employees and unskilled manual workers were 34 percent times and 23 percent

times less likely to pay out of pocket compared to those not working [aOR: 0.66 (0.56-0.79), p<0.001], [aOR: 0.37 (0.24-0.56), p<0.001] respectively.

Table 4. 5 Association between out-pocket payment and sociodemographic characteristics

Variables	cOR (95% C.I, p-value)	aOR (95% C.I, p-value)
Age In 5-Year		
15-19	**Ref**	**Ref**
20-24	**1.69(1.50-1.91), <0.001**	**1.26(1.10-1.44), 0.001**
25-29	**1.94(1.71-2.19), <0.001**	**1.22(1.05-1.42), 0.008**
30-34	**1.83(1.61-2.07), <0.001**	1.08(0.92-1.27), 0.320
35-39	**1.58(1.38-1.80), <0.001**	0.96(0.81-1.14), 0.672
40-44	**1.44(1.25-1.66), <0.001**	0.93(0.78-1.11), 0.424
45-49	**1.60(1.38-1.86), <0.001**	1.05(0.87-1.27), 0.616
50-54	1.15(0.87-1.52), 0.334	0.73(0.53-1.01), 0.057
55-59	1.18(0.85-1.65), 0.317	0.67(0.46-0.96), 0.324
Region		
Western	**Ref**	**Ref**
Central	**1.34(1.08-1.65), 0.007**	**1.55(1.24-1.93), <0.001**
Greater Accra	1.06(0.87-1.32), 0.573	1.06(0.84-1.34), 0.604
Volta	**1.71(1.38-2.12), <0.001**	**1.68(1.30-2.16), <0.001**
Eastern	**1.97(1.60-2.42), <0.001**	**1.96(1.58-2.44), <0.001**
Ashanti	**1.42(1.16-1.75), 0.001**	**1.37(1.11-1.69), 0.003**
Western North	**1.40(1.13-1.74), 0.002**	**1.41(1.12-1.76), 0.003**
Ahafo	**1.44(1.16-1.79, 0.001**	**1.40(1.21-1.76), 0.003**
Bono	**1.27(1.02-1.59), 0.034**	1.17(0.93-1.46), 0.184
Bono East	1.21(0.97-1.50), 0.080	1.20(0.96-1.50), 0.108
Oti	**1.40(1.13-1.73), 0.002**	**1.64(1.29-2.08), <0.001**
Northern	**0.79(0.63-0.98), 0.034**	0.86(0.67-1.10), 0.219
Savannah	1.08(0.87-1.33), 0.503	1.27(0.99-1.62), 0.052
North East	1.23(0.99-1.52), 0.062	1.21(0.95-1.54), 0.115
Upper East	**1.77(1.44-2.16), <0.001**	**1.51(1.20-1.90), 0.001**
Upper West	**1.28(1.04-1.59), 0.022**	1.30(1.02-1.65), 0.037
Highest Educational Level		
No Education	**Ref**	**Ref**
Primary	**1.77(1.56-2.02), <0.001**	**1.54(1.34-1.76), <0.001**
Secondary	**1.94(1.78-2.13), <0.001**	**1.77(1.60-1.96), <0.001**
Higher	**2.92(2.60-3.28), <0.001**	**2.35(2.05-2.70), <0.001**
Religion		
Christianity	**Ref**	**Ref**
Islam	**0.86(0.79-0.93), <0.001**	0.95(0.86-1.06), 0.373
Traditional	**0.47(0.36-0.60), <0.001**	**0.72(0.55-0.96), 0.023**
No Religion	**0.35(0.26-0.47), <0.001**	**0.56(0.41-0.76), <0.001**
Other	0.99(0.33-2.95), 0.987	1.24(0.40-3.85), 0.711
Ethnicity		
Akan	**Ref**	**Ref**
Ga/Dangme	**0.78(0.64-0.94), 0.009**	0.84(0.68-1.03), 0.092
Ewe	1.05(0.93-1.18), 0.443	1.02(0.87-1.19), 0.842
Guan	0.99(0.85-1.18), 0.967	1.03(0.85-1.25), 0.766

Mole-Dagbani	**0.90(0.82-0.98), 0.018**	1.01(0.89-1.16), 0.844
Grusi	1.04(0.88-1.22), 0.649	1.11(0.92-1.33), 0.294
Gurma	**0.85(0.74-0.96), 0.011**	1.14(0.97-1.34), 0.110
Mande	1.20(0.99-1.45), 0.057	1.48(1.18-1.84), 0.061
Other	0.73(0.50-1.06), 0.101	0.84(0.56-1.24), 0.378
Use Of Internet		
Never	**Ref**	**Ref**
Yes, Last 12 Months	**1.41(1.32-1.51), <0.001**	**1.15(1.06-1.26), 0.001**
Yes, Before Last 12 Months	1.12(0.91-1.38), 0.298	1.04(0.830-1.29), 0.741
Current Marital Status		
Never In Union	**Ref**	**Ref**
Married	**1.58(1.45-1.71), <0.001**	**1.97(1.75-2.21), <0.001**
Living With Partner	**1.56(1.38-1.75), <0.001**	**1.63(1.42-1.87), <0.001**
Widowed	**1.72(1.33-2.23), <0.001**	**2.28(1.72-3.04), <0.001**
Divorced	1.28(0.99-1.66), 0.062	1.59(1.20-2.11), 0.073
No Longer Living Together/Separated	**1.38(1.14-1.67), 0.001**	**1.50(1.22-1.84), <0.001**
Covered By Health Insurance		
No	**Ref**	**Ref**
Yes	**38.56(25.07-59.31), <0.001**	**32.50(21.11-50.04), <0.001**
Educational attainment		
No education	**Ref**	**Ref**
Incomplete primary	1.18(0.95-1.46), 0.135	1.12(0.90-1.40), 0.290
Complete primary	**1.18(1.03-1.36), 0.019**	1.12(0.97-1.29), 0.135
Incomplete secondary	**1.46(1.29-1.66), <0.001**	**1.32(1.13-1.54), <0.001**
Complete secondary	**1.51(1.37-1.67), <0.001**	**1.31(1.15-1.51), <0.001**
Higher	**2.64(2.32-2.99), <0.001**	**1.84(1.52-2.23), <0.001**
Literacy		
Cannot read at all	**Ref**	**Ref**
Able to read only parts of sentence	1.03(0.92-1.15), 0.601	**0.82(0.72-0.93), 0.003**
Able to read whole sentence	**1.51(1.40-1.63), <0.001**	0.97(0.87-1.09), 0.600
No card with required language	1.59(0.84-3.04), <0.155	1.40(0.73-2.69), 0.310
Blind/visually impaired	**2.79(1.12-6.93), 0.027**	**2.60(1.04-6.52), 0.041**
Wealth index combined		
Poorest	**Ref**	**Ref**
Poorer	**1.33(1.19-1.49), <0.001**	**1.23(1.08-1.41), 0.003**
Middle	**1.64(1.47-1.83), <0.001**	**1.38(1.22-1.57), 0.001**
Richer	**1.99(1.79-2.23), <0.001**	**1.58(1.20-1.72), <0.001**
Richest	**2.22(1.99-2.49), <0.001**	**1.43(1.20-1.72), <0.001**
Wealth index for urban/rural		
Poorest	**Ref**	Ref
Poorer	**1.17(1.05-1.30), 0.006**	1.03(0.92-1.16), 0.607
Middle	**1.36(1.22-1.52), <0.001**	0.99(0.87-1.15), 0.991
Richer	**1.64(1.47-1.83), <0.001**	1.12(0.98-1.29), 0.090
Richest	**1.90(1.71-2.12), <0.001**	1.13(0.97-1.32), 0.120
Respondent's occupation (grouped)		
Not working	**Ref**	**Ref**
Professional/technical/managerial	**1.82(1.59-2.08), <0.001**	**1.19(1.01(1.40), 0.040**
Clerical	**1.54(1.17-2.03), 0.002**	1.17(0.88-1.54), 0.285
Sales	1.16(0.99-1.35), 0.056	1.16(0.99-1.36), 0.057

Agricultural - self employed	0.51(0.22-1.20), 0.123	0.74(0.31-1.72), 0.479
Agricultural - employee	**0.54(0.45-0.63), <0.001**	**0.66(0.56-0.79), <0.001**
Services	1.02(0.93-1.12), 0.696	**1.12(1.01-1.24), 0.025**
Skilled manual	0.94(0.83-1.06), 0.323	0.93(0.83-1.06), 0.284
Unskilled manual	**0.38(0.25-0.57), <0.001**	**0.37(0.24-0.56), <0.001**
Other	1.10(0.74-1.62), 0.638	0.95(0.64-1.40), 0.793

CHAPTER FIVE

5.0 DISCUSSION

5.1 Introduction

This chapter discusses the key findings of a study on National Health Insurance Scheme (NHIS) coverage and healthcare utilization in Ghana. It examines the prevalence of NHIS coverage, healthcare utilization patterns among those with active NHIS status, and out-of-pocket payments for healthcare services. The discussion compares the study's results with existing literature, exploring the implications of NHIS coverage on healthcare access and utilization, as well as the factors influencing out-of-pocket healthcare expenditures in Ghana.

5.1.1 Summary of key findings

The study on Ghana's National Health Insurance Scheme (NHIS) revealed a low coverage, with 29.0% of respondents enrolled. Active NHIS status significantly increased healthcare utilization, with members twice as likely to visit health facilities 1-4 times and six times more likely to visit 5-10 times in six months. Educational attainment influenced out-of-pocket payments, with higher education linked to an increased likelihood of such payments. Occupation also played a role, as professional/technical/managerial workers were more likely to pay out-of-pocket compared to agricultural and unskilled manual workers. These findings highlight NHIS's positive impact on healthcare access while revealing socioeconomic disparities in healthcare financing, informing potential policy improvements to enhance healthcare accessibility across all population segments.

5.2 Assess the prevalence and activation status of individuals with NHIS coverage

This study found that majority (71.0%) of the respondents were not covered by NHIS. This low level of National Health Insurance coverage suggests that the population has relatively

poor access to healthcare services and resources, which can have significant implications for their overall health and well-being as suggested by Ayanore et al. (2019) in their study that an increase in the rate of NHIS enrolment results in a larger population having relatively good access to healthcare services and resources.

A previous studyconducted by Wiredu et al. (2021) revealed that the majority (80%) of the respondents had enrolled in the NHIS before with 65.3% being classified as active enrolees. This finding contradicts with currents with the findings of this current study which found a majority of 71.0% being the prevalence of individuals not enrolled and covered by National Health Insurance. Another study that analyzed the trends and characteristics of enrolment in the National Health Insurance Scheme in Ghana identified that Ghana's NHIS enrolment rates from 2010 to 2017 were 33% (8.2 million), 41% (11.3 million), and 35% (10.3 million) of the country's total population in 2010, 2015, and 2017, respectively (Nsiah-Boateng & Aikins, 2018). As per the findings, the prevalence of NHIS enrolment continues to increase over the years. This may be due to increased education on the need for NHIS enrolment and also a result of variation in population demographics or geographic focus. Consistent with findings of this study, findings from a study conducted by Agyepong et al. (2016) found that NHIS had an active enrolment hovering around 40 % of the population which also reflects a relatively low health insurance coverage and enrolments within the Southern part of Ghana.

5.3 Assess healthcare utilization among those with active NHIS status in the last six months

Findings from this study revealed that respondents with active NHIS were 2 times more likely to visit the health facility between 1 to 4 times in the last 6 months,. Also, respondents with active NHIS were 6 times more likely to visit the health facility between 5 to 10 times in the last 6 months.

This study is among one of the first studies to assess healthcare utilization among those with active NHIS status in the last six months. Nevertheless, several studies assessed the healthcare utilization among those with active NHIS status but not in the last six months. The healthcare-seeking behavior of a population cannot be elaborated without considering the health insurance status of that population. Recent studies have discovered a strong correlation between having health insurance and seeking medical attention (Kumah et al., 2024).

Consistent with this study, a similar study assessed the effect of Ghana's National Health Insurance Scheme on healthcare utilization and found that women enrolled in the NHIS appear to be substantially more likely to seek formal care and go to a clinic. Keeping all other factors constant, NHIS-enrolled women are 40 percent more likely to have attended a clinic over the past year (Blanchet et al., 2012). Another study also found that NHIS members were 6% and 9% more likely to use inpatient and outpatient care, respectively than non-members (Van Der Wielen et al., 2018). This study's findings are consistent with a previous observation that determined the health insurance enrollment and health expenditure in Ghana suggesting that active NHIS coverage plays a crucial role in promoting healthcare utilization. Respondents with active NHIS were found to be more likely to visit health facilities (Adjei-Mantey & Horioka, 2022). This indicates that the availability of health insurance coverage can significantly improve access to and use of healthcare services, which is essential for early detection, prevention, and management of health conditions.

5.4 Investigate out-of-pocket payments among those who accessed healthcare in the last six months

The findings from this study highlight a strong association between educational attainment and the likelihood of incurring out-of-pocket healthcare expenses. Compared to individuals with no formal education, those who completed secondary school, attended but did not complete secondary school, and those with higher education were 1.32, 1.31, and 1.84 times more likely

to pay out-of-pocket for healthcare, respectively. This pattern suggests that higher levels of education are linked to a greater likelihood of making direct payments for healthcare services. A study by Getachew et al. (2023) that sought to find the Catastrophic health expenditure and associated factors among households of non-community-based health insurance districts, found similar results, where individuals with higher levels of education were more likely to incur catastrophic healthcare expenditures, including out-of-pocket payments. Another study also reported that higher education levels were positively associated with out-of-pocket healthcare spending Łyszczarz and Abdi (2021). The researchers suggested that educated individuals may have a better understanding of the healthcare system and be more proactive in seeking care, even if it requires direct financial contributions. However, some studies have presented contrasting findings. For instance, a systematic review by Njagi et al. (2018)) across multiple low- and middle-income countries found that higher education was associated with a lower likelihood of incurring catastrophic health expenditures. The authors argued that education can enhance an individual's ability to navigate the healthcare system and access financial risk protection mechanisms, such as health insurance.

The finding that those who were not able to read only parts of a sentence were 18% less likely to pay out-of-pocket compared to those who cannot read at all, while those who are blind/visually impaired are 2.60 times more likely to pay out-of-pocket, highlights the complex relationship between-n literacy, visual impairment, and healthcare-seeking behavior. Individuals with partial literacy or visual impairment may face unique challenges in navigating the healthcare system and accessing services, which could influence their out-of-pocket expenditures. A study by Alatinga et al., 2022 in northern Ghana found that individuals with higher levels of education were more likely to seek healthcare and incur out-of-pocket payments. This aligns with the current study's findings that those with higher educational attainment, including secondary and higher education, were more likely to pay out-of-pocket

for healthcare. Also consistent with current findings of a study by Howard (2019) in a rural district of Ghana, the researchers found that individuals with visual impairments were less likely to be enrolled in the National Health Insurance Scheme (NHIS). While this does not directly address out-of-pocket payments, it suggests that visual impairment may pose barriers to accessing formal healthcare financing mechanisms, which could potentially lead to a higher reliance on out-of-pocket payments. In contrast to these current findings, a recent study found that despite the National Health Insurance Scheme of Ghana's availability for cataract surgery, the condition is quite common in causing blindness and visual impairment.

This current studyfound that occupation also played a role with out-of-pocket payment for healthcare services, those with professional/technical/managerial workers were 1.19 times more likely to pay of out-of-pocket compared to those not working,. Conversely, agricultural employees and unskilled manual workers were 34 percent times and 23 percent times less likely to pay out of pocket compared to those not working respectively. A study by Nsiah-Boateng et al. (2024) in a rural district of Ghana found that individuals engaged in formal sector employment, such as professional and managerial occupations, were more likely to be enrolled in the National Health Insurance Scheme (NHIS) compared to those in informal or agricultural jobs. This aligns with this study's finding that professional/technical/managerial workers were more likely to pay out-of-pocket for healthcare. The higher likelihood of out-of-pocket payments among this occupational group may be attributed to their better access to financial resources and a higher perceived value of healthcare services. Conversely, this study's findings show that agricultural employees and unskilled manual workers were less likely to pay out-of-pocket compared to those not working is consistent with other Ghanaian studies. A systematic review by Sychareun et al. (2016) found that individuals in the informal sector, including agricultural and manual workers, faced significant barriers to accessing and utilizing healthcare services due to financial constraints and a lack of social protection mechanisms. Similarly, a

study by Sapkota et al. (2023) in Ghana reported that individuals from lower socioeconomic backgrounds, including those engaged in agricultural and informal occupations, were less likely to seek healthcare and incur out-of-pocket payments. This suggests that these occupational groups may have limited financial resources and face challenges in accessing affordable healthcare options, leading to a lower likelihood of out-of-pocket payments.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter serves as the culmination of this research, synthesizing the findings and insights derived from the investigation into out-of-pocket healthcare expenses under the National Health Insurance Scheme (NHIS) in Ghana. This chapter provides a comprehensive overview of the implications of the study's results, drawing relationshipsbetween the data analyzed and the broader context of healthcare access and financial protection in Ghana. Itdiscusses the key challenges identified, including the persistent out-of-pocket payments faced by insured individuals and the barriers to effective healthcare utilization. Furthermore, this chapter will outline specific recommendations aimed at enhancing the NHIS's effectiveness, ensuring that it fulfills its mission of providing equitable and affordable healthcare for all Ghanaians. By addressing these issues, the chapter seeks to contribute to ongoing discussions about health policy reform and the pursuit of universal health coverage in Ghana. Through a focused approach, Chapter 6 aims to offer actionable insights that can inform stakeholders, policymakers, and health practitioners in their efforts to improve the healthcare landscape in the country.

6.2 Conclusion

This study has highlighted the significant challenges associated with out-of-pocket healthcare expenses under the National Health Insurance Scheme (NHIS) in Ghana. Despite the establishment of the NHIS to promote financial access to healthcare and reduce the burden of OPPs, many insured individuals continue to face substantial healthcare costs. The findings indicate that a considerable portion of the population remains uninsured, which limits access to essential health services and contributes to ongoing health inequities. Furthermore, the study

revealed that various sociodemographic factors, such as education, occupation, and regional disparities, are important predictors of healthcare utilization and out-of-pocket expenses. The persistence of out-of-pocket payments, even among those enrolled in the NHIS, underscores the need for policy interventions aimed at improving the scheme's effectiveness and ensuring that it fulfills its intended purpose of providing financial protection and equitable access to healthcare for all who enrol in the National Health Insurance Scheme

6.3 Recommendation

1. Strategies should be implemented to increase enrollment in the NHIS, particularly among marginalized populations. This could include targeted outreach programs to raise awareness about the benefits of the scheme and also to promote the use of the NHIS mobile app. Additionally, to encourage the public to utilize the provided short code for the convenient renewal of NHIS services.

2. The government and relevant stakeholders should concentrate on enhancing the quality of healthcare services provided under the NHIS. Additionally, investigations such as laboratory, imaging requests and rehabilitations should be made readily available to prevent out of pocket payment. Additional measures, such as the introduction of co-payment caps or subsidies for low-income households, could be considered to further reduce the financial burden of healthcare costs on vulnerable populations.

3. Public health campaigns should be launched to educate citizens about their rights under the NHIS, including what services are covered and how to access them. This could help mitigate the confusion and mistrust that currently exist regarding the scheme.

4. Engaging community-based organizations in the implementation and promotion of the NHIS can help reach underserved populations and facilitate better access to healthcare services.

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APPENDIX

Ethical Clearance

ENSIGN GLOBAL
COLLEGE

OUR REF: ENSIGN/IRB/EL/SN-262/02
YOUR REF:

April 29, 2024.

INSTITUTIONAL REVIEW BOARD SECRETARIAT

Judith William
Ensign Global College
Kpong.

Dear Judith,

ETHICAL CLEARANCE TO UNDERTAKE POSTGRADUATE RESEARCH

At the General Research Proposals Review Meeting of the *INSTITUTIONAL REVIEW BOARD (IRB)* of Ensign Global College held on Thursday, April 25, 2024, your research proposal entitled **"Out-of-Pocket Healthcare Expenses under the National Health Insurance Scheme in Ghana"** was considered.

You have been granted Ethical Clearance to collect data for the said research under academic supervision within the IRB's specified frameworks and guidelines.

We wish you all the best.

Sincerely,

Dr. (Mrs.) Rebecca Acquaah-Arhin
IRB Chairperson

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