ENSIGN GLOBAL COLLLEGE

THE INFLUENCE OF KNOWLEDGE ON NATIONAL HEALTH INSURANCE SCHEME (NHIS) SERVICE AND ENROLLMENT IN GHANA

By

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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 the college, except where proper attribution has been indicated in the text.

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DEDICATION

I dedicate this work to God Almighty for the wisdom and strength provided throughout the production of this thesis. Also, this work goes to my family for their constant support and love. Lastly, this work goes to my supervisor, Dr. Millicent Ofori Boateng, for her continuous support and guidance.

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ABSTRACT

Background: As part of Ghana's initiatives to bridge the gap in the uneven distribution of healthcare resources and health services to achieve universal health coverage, the National Health Insurance Authority, through its Act 852, provides the gateway for the implementation of access to equitable healthcare for citizens through affordable means. Evidence shows that despite increases in population coverage of the scheme and utilization of healthcare services, enrollment into the scheme has stagnated over the years since its inception.

General Aim: This study seeks to examine the influence of the knowledge of the scheme's services and enrollment among household heads in Ghana.

Methodology: This research used a cross-sectional study based on secondary data from the Ghana Living Standards Survey Round Seven of household heads that was held over a span of 12 months between October 2016 and October 2017 with a total sample size of 5722 through a quantitative method. A descriptive analysis was carried out to obtain summary tables from sociodemographic factors and information on the insurance scheme status of study participants using Microsoft Excel. Data was analyzed using STATA Version 17.0 to test the relationship between the explanatory variable, knowledge of NHIS services and enrollment in the NHIS, the outcome variable. Bivariate analysis and multivariate logistic regression were conducted. Prior to the running of the logistic regression, the bivariate analysis was conducted using a chi-squared test to examine the significant association among the socio-demographic features and NHIS enrollment. The logistic regression was used to analyze the associations between knowledge and enrollment and all other significant variables, namely age-group, education level, geographic region and marital status ($p < 0.05$).

Findings: About a third of the respondents (62%) had poor knowledge of the health insurance scheme benefits irrespective of their enrollment status. Enrollment in the scheme was captured at 65% and factors like the level of knowledge (p<0.001), level of education (p=0.033) and geographic regions (p<0.001) were significantly associated with enrollment.

Conclusion: As knowledge plays a significant role in national health insurance scheme enrollment, there is a need for governmental bodies like the Ministry of Health and Education to consistently continue the promotion and education of the range of health service scheme benefits citizens are entitled to benefit from at interval points to boost enrollment across the nation and help fast-track the goal of universal health coverage in Ghana. Community members should also be factored in and involved in the communication strategy to ensure that communication is effective as it respects the norms and beliefs of society, making it easier to reach the masses.

LIST OF ACRONYMS

AHU   Andersen Healthcare Utilization

AOR   Adjusted Odds Ratio

CI   Confidence Interval

GLSS   Ghana Living Standards Survey

JHS   Junior High School

NHIA   National Health Insurance Authority

NHIF   National Health Insurance Fund

NHIS   National Health Insurance Scheme

REF   Reference

SHI   Social Health Insurance

SHS   Senior High School

UHC   Universal Health Coverage

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CHAPTER 1

1.0 INTRODUCTION

1.1 Background Information

The access to information, knowing and understanding the complexities of health insurance policies and navigating the healthcare system, is vital for individuals to make informed decisions about their health. Knowledge and awareness of health insurance scheme services and health insurance uptake are interconnected factors that significantly determine the overall well-being and access to healthcare services within a population (Alesane and Anang, 2018).

1.1.1 Health Insurance

Health insurance is a vital health financing option that provides individuals as well as their households with a sense of security and stability about their healthcare needs. By enrolling in a health insurance plan, it provides the sort of package that allows individuals to reduce the financial strain resulting from unexpected medical expenses and out-of-pocket spending (USAID, 2022). With the ever-increasing cost of healthcare treatment, health insurance provides an essential layer of protection by aiding in the coverage of a broad range of healthcare costs. The package includes not only medical prescriptions, outpatient care, inpatient care and various medical procedures that safeguard an individual's health but also promotes preventive care through checkups and screenings (Dalinjong et al., 2017).

As early as the 19th century, Germany was one of the few countries that instituted a health financing option known as Social Health Insurance (SHI) that later gained global recognition through implementation in other advanced and developing countries as an essential healthcare financing option (Jamal et al., 2022). Many advanced countries have employed various insurance policies like the Beveridge, where the government provides healthcare for all its citizens through

income tax payments; Bismarck, which mostly covers formal sector employees with joint contributions by the employee and employer; or private insurance models to provide healthcare coverage to their populace (Christmals and Aidam, 2020). These helped pave the way for health insurance to be recognized as a critical component of comprehensive healthcare. As the years went by through to the 21st century more countries recognized the value of health insurance and adopted it to ensure affordable and accessible healthcare (Christmals and Aidam, 2020; Fenny et al., 2021; Hanvoravongchai, 2013; Jamal et al., 2022; Sandhu et al., 2022).

In the North-American region, the popular health insurance since its inception in 2004 in Mexico, known as the Seguro Popular, is the public health insurance that has provided health coverage for various services to its people over the years (World Bank, 2015). Likewise, in the Asian zone, a social health insurance system known as the Universal Coverage Scheme (UCS) has been enrolled in Thailand (Hanvoravongchai, 2013). PhilHealth was enrolled in the Philippines. China had three (3) segments of the social health insurance system, which initially started with the Urban Employee Basic Medical Insurance (UEBMI) in 1998, then with the Urban Residents Basic Medical Insurance (URBMI) in 2007 and later with the New Rural Cooperative Medical Scheme (NRCMS) for the rural residents to ensure access to healthcare services for all its people (Jamal et al., 2022). Within the sub-Saharan terrain, African countries like South Africa, Benin, Nigeria, Kenya, Uganda, Tanzania and Ghana practice different health insurance systems. These systems are mainly community-centered like the community-based health insurance schemes (CBHIS), a kind of micro-insurance targeted at poor low-income persons or the National Health Insurance Scheme (Basaza, 2009; Christmals & Aidam, 2020; Houeninvo et al., 2022; Uzochukwu et al., 2015).

Ghana's health insurance known as National Health Insurance Scheme (NHIS) was initially established in 2003 (Act 650) and was later revised (Act 852) to align with new governmental

policies. It is headed by the National Health Insurance Authority (NHIA) to provide essential and equitable healthcare access and financial protection for Ghanaians especially those of low income. The insurance scheme is funded and supported by taxes, budgetary allocation, contributions from the formal sector workers and employees, donor funds, private investors and others to strengthen and enhance the capacity building of the healthcare system in Ghana. (Kipo-Sunyehzi et al., 2020). In alignment with the global policy of achieving universal health coverage by 2030, the government aims to improve healthcare services and expand service delivery through primary healthcare and deployment of healthcare personnel to CHPS compounds among others (Arredondo et al., 2020; Kipo-Sunyehzi et al., 2020).

To promote health equity and maximise health insurance uptake, it is crucial to implement targeted interventions that address barriers to access of health insurance information. These may include developing plain language materials, utilizing visual aids, offering community-based education programs, and providing personalized assistance to individuals with low literacy levels (Furtado et al., 2016). When information about national health insurance services is well publicized with clear understanding, individuals are better positioned to make informed choices to better their health outcomes (Aboagye et al., 2021). More importantly, it is crucial to provide scientific evidence to establish the relationship between knowledge of National Health Insurance Scheme services and uptake of the insurance scheme to support policy-driven interventions and programmes. This study aims to contribute to the existing evidence pool for policy. By addressing access to information, society could encourage more significant health insurance enrollment, improve healthcare accessibility, and ultimately enhance communities' overall health and well-being.

1.2 Problem Statement

The increasing prevalence of chronic non-communicable diseases in low-and middle-income countries, like Ghana, poses significant challenges to achieving universal health coverage in these nations. Although the NHIS was established to promote universal healthcare access and equity, its implementation has not been entirely successful due to a skewness of coverage criteria within the healthcare system. Studies have indicated that low literacy levels are often associated with poor socio-economic conditions (Ayanore et al., 2019; Sarpong et al., 2010), which contribute to lower NHIS coverage among Ghana's poor. A number of factors, including a comparative research analysis conducted by Christmals and Aidam have been identified as barriers to enrollment and resubscription under the NHIS. Their study revealed that after ten (10) years of implementation, less than 40% of Ghana's population had subscribed to the NHIS (2003-2013). Although enrollment has steadily increased since the scheme's inception, the proportion of the population enrolled in the NHIS has remained below 41% (excluding unexpected spikes in 2008 [54.7%] and 2009 [61.9%]) with a significant decline in membership in 2016 and 2017 (Christmals and Aidam, 2020).

However, there has been a gradual increase in NHIS membership since 2013. As of December 2018, the scheme had covered 36% of the total population, approximately 10.8 million people (Nsiah-Boateng et al., 2019). The low enrollment rates and stagnation gaps in the NHIS have been attributed to both systemic and individual factors (Kipo-Sunyehzi et al., 2020).

Failure to interpret the benefits of the scheme to the population has left individual factors such as socio-economic status lingering on as a key reason for low enrollment. Nsiah-Boateng and colleagues highlight that even though the NHIS services bear the majority of the disease burden of the nation, many citizens are still ineligible to access healthcare because they are not enrolled

in the scheme, somewhat due to financial problems as a result of their socio-economic statuses. After almost ten years into the scheme's operations, a mere 18% of the core poor in the sampled population had a valid NHIS card, even though they value health insurance (Nsiah-Boateng et al., 2019). Their research and other studies again postulate that individuals with higher levels of education are more likely to enroll in the NHIS as compared with those with no formal education (Ayanore et al., 2019; Manortey et al., 2014). Hence, there is a need to enhance literacy skills to improve knowledge and awareness, especially among rural districts and communities, if this is the case. This is evident in the low enrollment rates recorded in most rural settings in Ghana (Kanchebe Derbile & Van Der Geest, 2013; Kotoh & Van Der Geest, 2016; Nsiah-Boateng et al., 2019).

Despite these suggestions on education and knowledge of NHIS services, among other factors contributing to low enrollment, no study in Ghana has established how much of an influence knowledge of national health insurance services from the GLSS 7, the current national survey, has had on enrollment. Again, there has not been a nationwide assessment of such claims and this is the gap in knowledge that this study seeks to fill.

1.3 Rationale of the Study

This study aims to assess how knowledge of the NHIS and its benefits impacts enrollment. The study's results may encourage and inform policymakers, such as the Ministry of Education and Ghana Education Service, to collaborate with the Ghana Health Service to enhance access to information on NHIS services nationwide. This will help people better understand health information, make informed health decisions, and enroll in or continuously use the National Health Insurance Scheme. Again, the study would help identify the parts of the country where more efforts will be needed to boost enrollment in the NHIS. Thus, the study findings will promote the

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attainment of the Sustainable Development Goals 3 (Good Health and Well-being), 5 (Quality Education) and 10 (Reduced Inequalities) to improve the quality of life of Ghanaians with the goal of ensuring that no one is left behind.

1.4 Conceptual Framework
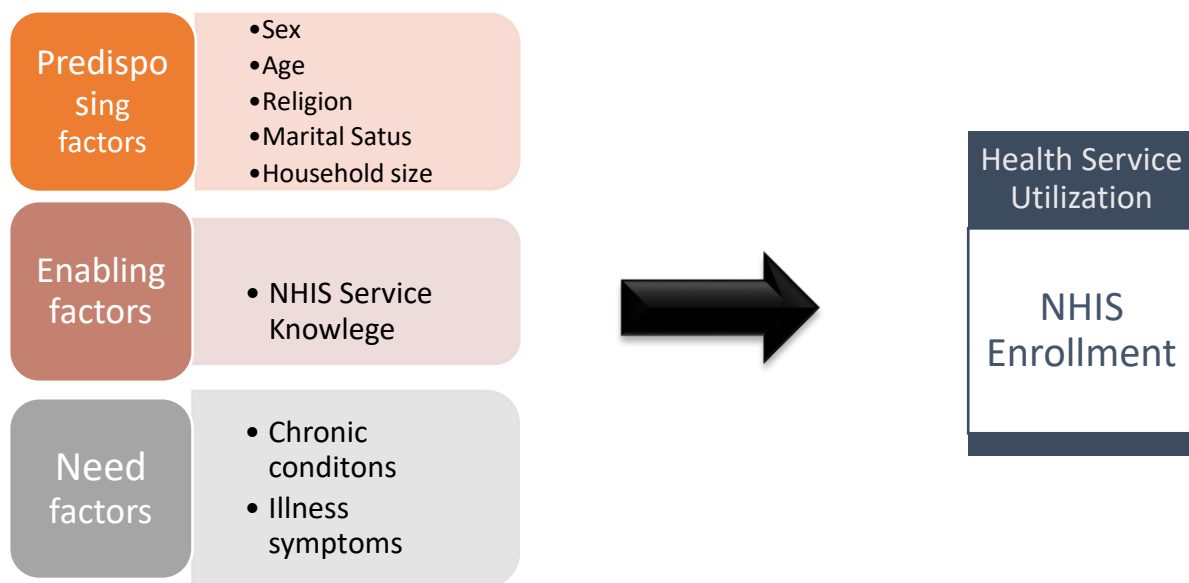
Source: Adopted (Kim & Lee, 2016)

Figure 1.1: Anderson's Behavioral Model of Health Services

This framework provides a road map for understanding and addressing barriers to healthcare use by enhancing access to health services through the NHIS. This study adopted Anderson's Healthcare Utilization (AHU) model was used by Kim & Lee (2016) on "the factors associated with health services betwwen the years 2010 and 2012 in Korea". This is a well-known model for evaluating the accessibility and utilisation of health services. This study aims to explore the

relationships between the predictor variable (NHIS service knowledge) and the outcome variable (NHIS enrollment) through accessing health services.

The utilization of health services (NHIS enrollment) is influenced by three main factors: predispoing factors, enabling factors and need factors. Under these factors are the predictor variables that affect NHIS enrollment.

The first category of the predictor variables, predisposing factors, influence perceptions of a health-related activity such as sex, age, religion, marital status and others. The enabling factors are factors that enhance a person's attempts to enroll in the scheme and can be modified by personal and collective action. NHIS service knowledge falls under the category of enabling factors that seeks to influence health-seeking behaviour through the knowledge of national health insurance policies. Thirdly, the need factors represent the perceived health need or health condition that enhances a persons demand for health service for instance, the presence of illness symptoms, chronic conditions, or the need for preventive care. That is, it constitutes any health-related characteristic that will increase the likeliood of an individual enrolling in the health insurance program (Morgan et al., 2022).

The perceived severity of illness or health conditions influences the individual's motivation to seek healthcare services and enroll in the NHIS. This study does not include any variables under needs factors. However, the framework can guide research studies or interventions focused on understanding and addressing barriers to healthcare usage to improve access to health services, particularly through the NHIS.

By considering the interplay between predisposing factors, enabling factors, and need factors, the framework aids in identifying areas for policy development and intervention to promote healthcare utilization and NHIS enrollment for improved access to health services.

1.5 General Objective

To examine the influence of the knowledge of NHIS services and enrollment among household heads in Ghana.

1.6 Research Questions

1. What is the level of knowledge of NHIS services among household heads in Ghana?

2. What are the NHIS enrollment figures among household heads in Ghana?

3. What are the factors leading to NHIS enrollment among household heads in Ghana?

1.7 Specific Objectives

1. To measure the level of knowledge of NHIS services among household heads in Ghana.

2. To examine NHIS enrollment among household heads in Ghana.

3. To investigate the factors influencing NHIS enrollment among household heads in Ghana.

1.8 Profile of Study Area

The study area, Ghana, is a republic state situated in West Africa and a member of the sub-Saharan African countries. It is engulfed by Togo, Cote d'Ivoire, and Burkina Faso with an outstretched

land area of 238,533 square kilometres and a population size of 32.1 million inhabitants as of 2022. The English language is the official language of the Republic. It is a country with citizens of different ethnic backgrounds that currently make up 16 regions in Ghana. Some various native languages spoken across the nation are Fante, Dagaare, Dagbani, Dangme, Ewe, Frafra, Ga, Gonja, Nzema, and Twi (Central Intelligence Agency, 2022).

Under the Ministry of Health of Ghana, the NHIS is managed by the National Health Insurance Authority (NHIA). The NHIA has over 166 district offices and a network of over 4000 healthcare providers of both public and private healthcare facilities across the country (Nsiah-Boateng et al., 2019). The objective of the health authority is to attain universal health insurance coverage for persons residing in the country as well as persons who are on a visit. The primary function of the insurance authority is to secure the implementation of a national health insurance policy that ensures access to basic healthcare services for all residents. The National Health Insurance Fund (NHIF) provides tax-funded support for the NHIS which is based on a 2.5% tax on certain goods and services, a 2.5% deduction from SSNIT contributions made by formal sector employees, interest from investments, premiums, donor funds amongst others (Christmals and Aidam, 2020).

1.9 Scope of study

This study is within the confines of data from the Ghana Living Standard Survey 7 (GLSS 7) which contains the level of awareness of the NHIS and the health insurance enrollment figures associated among household heads.

1.10 Organization of Report

This thesis entails six chapters. Chapter one (1) is the introduction which includes background information, problem statement, rationale of the study, conceptual framework, general objective, research questions, specific objectives, the profile of the study area and the scope of the study. Chapter two (2) deals with the literature review of the study. It is reviewed under 4 subsections: healthcare financing approaches, the NHIS in Ghana, knowledge of health insurance and enrollment and other factors influencing enrollment in national health insurance schemes. Chapter three (3) follows through with the methodology used in carrying out the study namely: the study design, study site, sample size, inclusion/exclusion criteria, study variables, data collection techniques and tools, pre-testing, data handling, data analysis, ethical consideration, assumptions and limitations of the study. Chapter Four (4) covers data analysis, findings and presentations of the influence of knowledge on NHIS service and enrollment of household heads. Chapter five (5) presents discussions and implications of study findings. Chapter six (6) entails the summary, conclusion and recommendations for further research.

CHAPTER 2

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter sought to review the literature relating to the subject matter of the study at hand by focusing on areas on healthcare financing approaches, Ghana's NHIS, knowledge of health insurance and enrollment and other factors influencing enrollment on NHIS.

2.2 Healthcare Financing Approaches

The sustainability and effectiveness of health systems are determined by the resources that finance them. Various countries engage in diverse ways of mobilizing resources to ensure their people achieve desirable standards of health. Under Vision 2030's global social strategy of reducing inequalities in healthcare access and achieving universal health coverage (UHC), most health financing approaches play a key role in achieving this major goal (Arredondo et al., 2020). Thus, different countries have explored different strategies and policies related to healthcare financing.

The United States and England, two of the leading economic powerhouses in the world exhibit different health financing strategies towards their health systems and infrastructure. In England, the health insurance system known as the National Health Service (NHS) is primarily funded by the central government through general taxation. The NHS allocates funds to Clinical Commissioning Groups (CCGs) based on a formula that considers health care needs deprivation and other factors. These CCGs liaise with and plan with hospitals and community services to provide care in their region. However, according to Alderwick, Dunn, et al., (2021) and Alderwick, Gardner, et al., (2021) reforms are being considered to replace CCGs with an integrated care system of 42 regional agencies that will be responsible for NHS resources. However, in the US,

healthcare services rely on a mixture of private and public funding. The federal government provides health coverage through programs like Medicare for older adults and Americans with disabilities and Medicaid and Children's Health Insurance Program (CHIP) for low-income adults and children. A large number of Americans also receive healthcare from private insurance companies through their employer. Other payment methods like fees-for-service payments are also practiced even though there is a recent push toward alternative payment mechanisms (Sandhu et al., 2022).

Hanvoravongchai (2013) explores the health financing reform efforts in Thailand and their impact on achieving UHC. It highlights the challenges the country faces in terms of fiscal constraints in its goal of achieving equity in healthcare access. The health financing approach applied in Thailand is a social health insurance system known as the Universal Coverage Scheme (UCS) that ensures the country's effort in achieving its goal for its citizens. The funding for UCS mainly comes from the general tax revenues as well as a percentage of the country's national budget.

Akhnif et al., (2020) highlights the challenges of the health financing strategies faced in Morocco and the need for reform at a crucial point in time through policymakers, healthcare providers and communities in crafting a comprehensive health financing mechanism to ensure sustainability and coverage expansion of health services for its populace. In Morocco, its health financing approach involves a mixture of public and private funding sources and mechanisms including out-of-pocket (OOP) payments to support the delivery of healthcare services to its people. The public financing of the national health insurance scheme which is known as Medical Assistance Regine (RAMED) is funded by the national budget allocation and tax revenues.

In a comparative analysis of five countries carried out by Fenny et al., (2021), the various types of health insurance schemes in Africa are brought to light. Tanzania since 1999 has the National Health Insurance Fund (NHIF) which offers compulsory coverage to all formal workers as well as the Community Health Fund (CHF) and Tiba Kwa Kadi (TIKA) scheme that targets those in the informal sector. Kenya's National Hospital Insurance Fund (NHIF) also provides mandatory health coverage for all formal sector workers and Community-based Insurance Schemes (CBHIS) for informal sector persons as well as the Social Health Insurance Benefit (SHIB) that covers private-sector employees. Likewise, Rwanda operates a community-based health insurance scheme called Mutuelles de Sante which covers about 84% of the population in Rwanda. Ethiopia also has the CBHIS has been implemented in selected districts and further scaled up to cover a larger number of districts. Ghana has a National Health Insurance Scheme that provides health coverage for formal and informal sector employees and voluntary coverage for citizens and through this mechanism funding comes from various sources including budget allocation, general taxation, contributions from Social Security and National Health Insurance Trust (SSNIT) and premiums (Fenny et al., 2021).

2.3 The National Health Insurance Scheme in Ghana

The National Health Insurance Scheme in Ghana was established in 2003 and later amended in 2012 to promote and ensure access to equitable and quality healthcare for all residents in Ghana while also removing financial barriers. It has contributed to reducing out-of-pocket payments and ruinous healthcare expenditures. The NHIS has improved health-seeking behaviours, reduced risky health behaviours, and improved access to a continuum of care (Ayanore et al., 2019). The NHIS covers a wide range of services, including outpatient services, inpatient services, maternity

care, eye care, and oral healthcare services. Services covered by the scheme encompass about 95% of the burden of diseases in Ghana (Christmals and Aidam, 2020; Kipo-Sunyehzi et al., 2020).

The NHIS employs various financing mechanisms to sustain its operations. It is predominantly funded through various sources, including 2.5% of the 17.5% Value-Added Tax (VAT), 2.5% of the 17.5% Social Security and National Insurance Trust (SSNIT) contributions from formal sector employees, dividends of investments made by the NHIA Council, donations, and premiums paid by scheme subscribers from the informal sector (Ayanore et al., 2019; Christmals & Aidam, 2020). Under Ghana's current NHIS policy, certain groups are exempted from premium payment, including pregnant women, indigents, persons with mental disorders, children below 18 years, the elderly (above 70 years), and differently-abled persons. Additionally, it also provides premium exemptions for social security recipients, SSNIT pensioners, and beneficiaries of the Livelihood Empowerment Against Poverty (LEAP) program (Ayanore et al., 2019; Christmals and Aidam, 2020; Kipo-Sunyehzi et al., 2020; Nsiah-Boateng et al., 2019).

Despite improved access to healthcare services and financial protection to Ghanaians, organizational, financial, and administrative problems have posed challenges to the NHIS as some include long waiting times in hospitals, defaults in paying service providers, poor attitudes of providers, false claims for reimbursement, insufficient healthcare personnel, weak institutional systems and lack of transparency (Christmals and Aidam, 2020; Fenny et al., 2016). Thus, from the scoping review conducted by Christmals and Aidam, some studies have reported lower satisfaction ratings among insured individuals compared to the uninsured.

2.4 Knowledge of Health Insurance and Enrollment

Health insurance knowledge is a significant factor in health insurance scheme enrollment. Findings from Acharya et al., (2019) suggest that respondents in Nepal who know Health Insurance (HI) are more likely to enroll in the scheme compared to those who were unaware of HI. In Ethiopia, knowledge about HI was positively associated with CBHIS enrollment (Abdilwohab et al., 2021).

In the northern part of Ghana, the results from (Schultz et al., 2013) show that HI education towards microfinance clients intervention shows no significant difference among respondents on NHIS enrollment, as the baseline of enrollment in insurance was already high among participants. Notwithstanding, the findings of the Barekese subdistrict in Ghana from Manortey et al., (2014) assert that enrollment in the NHIS significantly increases with the higher education level of the household head. Across seven regions in Ghana Aboagye et al., (2021) asserts that the ramifications of not registering and enrolled into the scheme were due to the lack of understanding of the health insurance policies as many people were hesitant to seek services from NHIS-accredited facilities. Kanchebe Derbile and Van Der Geest (2013) postulated that 61% of respondents from 18 communities in Northern, Upper East and Upper West regions of Ghana did not know about the exemptions to the core poor. More so, Kotoh and Van Der Geest (2016) interviewed respondents from the Northern Region were not even aware of the exemption policy that the core poor are entitled to under the health insurance scheme.

2.5 Other factors influencing enrollment in National Health Insurance Schemes

National Health Insurance (NHI) schemes, a type of social health insurance, are designed to provide accessible and affordable healthcare services to populations. Here are some various factors

that also influence individuals' decision to enroll in NHI schemes. Factors such as socioeconomic status, household size, health system characteristics or structure, accessibility to health services, provider payment mechanisms, affordability of premiums and contributions, governance structures and public perception among others determine peoples support for the healthcare financing program.

In Nepal, enrollment in the National Health Insurance Program (NHIP) was seen to be significantly dependent on ethnicity, socio-economic status, past experience of acute illness in family and presence of chronic illness. Households from certain privileged groups such as Barima were more 1.7 times more likely to enroll than those from underprivileged ethnic groups like Janajatis. More so, households who experienced 3 months of illness prior to the survey study were about 1.5 more times likely to enroll than households who did not have such experience. Chronically ill members of household were also 1.8 more times likely to enroll than those with no chronic illness (Ghimire et al., 2019). In other districts like Kailali and Baglung socioeconomic status of household heads, including income level, employment status, and wealth distribution significantly influences NHIS enrollment (Acharya et al., 2019).

The NHIF in the Ithanga division, Muranga County of Kenya was influenced in its uptake by the awareness of premium payment mechanisms and the benefit packages (Ndung'u, 2015). Parmar et al., (2014) also asserts that people in West Africa who utilize health services frequently as a result of an underlying condition are more likely to be registered in the insurance scheme.

In an integrative review, factors influencing enrollment in Ghana's NHIS among older adults aged 50 years and older include underlying health conditions. Those with such conditions were more likely to enroll in the scheme. Persons with disabilities were less likely to enroll than those without disabilities. In addition, married older adults were more likely to be enrolled in a health protection program than older who adults who never married, divorced, widowed (Morgan et al., 2022). Systemic factors like client satisfaction, quality of care, easy payment mechanism, provider capacity, availability of prescribed drugs, health providers' positive behaviour, long waiting time, dissatisfaction with health providers' behaviour and service delivery challenges significantly affect and influence enrollment and renewal of the insurance scheme (Kotoh et al., 2018). Individuals with poor health are more likely to enroll and renew their membership compared to healthy respondents in Ghana's NHIS (Adjei-Mantey and Horioka, 2022; Duku, 2018; Kotoh et al., 2018). Adjei-Mantey and Horioka, (2022) assert that risk-adverse people are more likely to enroll in the NHIS than those who are not. Poor people as well as smaller households are more likely to enroll than non-poor people and larger households. In Kansanga et al., (2018) exposure to mass media is positively associated with NHIS enrollment. Results from the 2014 Ghana Demographic and Health Survey (GDHS) data showed that women with exposure to radio or television were more likely to enroll in the NHIS than those with no exposure and men who were exposed to print media had high odds of enrollment than those without exposure

The table below shows the difference in health insurance enrollment between two distinct socio-economic districts that are adjoined together.

Table 2.1 Trends in new registrations and renewals by district from 2010 – 2013

Year	New registrations	Renewals	Active membership	Total pop	% Total pop. new registration	% Total pop renewal	% Total pop active membership
Municipal mutual health insurance scheme							
2010	40,824	42,736	83,560	271,881	0.15	0.16	0.31
2011	31,170	68,794	99,964	275,062	0.11	0.25	0.36
2012	28,268	90,401	118,669	278,280	0.10	0.32	0.43
2013	32,922	109,746	142,668	281,536	0.12	0.39	0.51
Rural district mutual health insurance scheme							
2010	6594	7426	14,020	64,404	0.10	0.12	0.22
2011	9036	10,901	19,937	65,158	0.14	0.17	0.31
2012	16,480	15,479	31,959	65,920	0.25	0.23	0.48
2013	10,082	20,811	30,893	66,691	0.15	0.31	0.46

Source: (Agyepong et al., 2016)

A purposive sampling technique carried out by Agyapong and her colleagues, shows two different insurance scheme figures, one in a municipality and the other in a rural district. The data suggests that renewals of membership are increasing, while new enrollments stagnate as the years progresses. Notwithstanding, total active membership increases progressively at a yearly rate in both districts. The rural district mutual health insurance scheme, which is strongly linked to lower socioeconomic status shows a huge percentage drop in enrollment figures in 2013.

In conclusion, this chapter provides diverse healthcare financing approaches implemented worldwide, a comprehensive overview of Ghana's NHIS and its financing mechanisms, the role of knowledge in enrollment of health insurance services, and various influencing factors such as systemic, individual, and socio-economic factors.

CHAPTER 3

3.0 METHODOLOGY

3.1 Study Design

This paper was a cross-sectional study based on secondary data from the Ghana Living Standards Survey Round Seven (GLSS7) gathered by the Ghana Statistical Service (GSS). A quantitative method was employed with the national data gathered over a span of 12 months between October 22nd, 2016 and October 17th, 2017.

3.2 Study Site

The GLSS7 provided information for understanding and monitoring living conditions in all regions in Ghana.

3.3 Sample Size

The secondary data from the GLSS7 had a sample size of 5722 household heads.

3.4 Inclusion Criteria

All heads of household from the survey of the GLSS7 who were 15 years and above.

3.5 Exclusion Criteria

All persons who were not household heads in the survey data of GLSS7.

3.6 Study Variables

The study variables included data acquired on the respondents' insurance status at the time of the study, demographic characteristics of the respondents, and prospective variables that were potential factors in NHIS enrollment.

Independent Variables

- Socio-demographics (gender, age, educational background, household size, household setting, geographic region)

- Knowledge of NHIS service

Dependent Variables

- NHIS enrollment

3.6 Data Collection Methods

The GLSS7 is the seventh survey conducted by the Ghana Statistical Service between October 2016 to October 2017. The survey collected detailed information on the demographic characteristics of the households, education, health, employment, migration and remittances, governance, information communication and technology (ICT), tourism, housing, household agriculture, non-farm household enterprises, financial services, and many more. One of the data collective ways in achieving the set objectives of the survey was through household questionnaires. The household questionnaires were based on four modules; and the first module (Module A) was characterized by household demographic questions including, educational level and marital status, as well as awareness of health insurance programs and national health insurance enrollment, which this study seeks to carry out. As the dataset of the GLSS7 from the Ghana Statistical Service can be made available to the general public, the dataset was obtained through a formal request by filling out the Data Request Form on GLSS7 to attain access to the data.

3.7 Pre testing

Since it is a derived secondary data, no pretesting was required to take place.

3.8 Data Handling, Security and Confidentiality

The data was obtained from a secured data set from the Ghana Living Standard Survey. A copy of the dataset was kept on a secured storage device to avoid it being tampered with.

3.9 Statistical Analysis

Data was extracted from the GLSS7. A descriptive analysis was carried out to obtain summary tables from sociodemographic factors, knowledge of NHIS services (scheme benefits) and information on NHIS status using Microsoft Excel.

Study Variables:

The outcome variable for the study was NHIS enrollment. In this study, enrollment means respondents who had valid NHIS card as at the time of the national survey study, otherwise were not categorized as enrolled in the scheme.

The explanatory variable of interest was knowledge of NHIS services. The knowledge of NHIS services knowledge refers to an individual's awareness and understanding of the health insurance scheme services available, including awareness of its benefits, coverage, and enrollment procedures. Participants were asked about their knowledge of the six NHIS benefits in a multiple-choice question. The benefits included OPD services, in-patient services, medications, diagnostics, minor surgery and major surgery. In this study, knowledge of NHIS was categorized into poor and high knowledge level where high knowledge levels represent respondents who ticked four (4) or more of the benefits otherwise, categorized as poor knowledge.

Data was analyzed using STATA Version 17.0 to test the relationship between the explanatory variable, knowledge of NHIS services and enrollment in the NHIS, the outcome variable. Prior to the running of a multivariate logistic regression, bivariate analysis was conducted through a chi-

squared test to examine the significant association among the socio-demographic features and NHIS enrollment. The logistic regression was used to analyze the associations between knowledge and enrollment and all other significant variables, namely age-group, education level, geographic region and marital status (p<0.05).

3.10 Ethical Considerations

Ethical approval was sought from the ethics committee of Ensign Global College. No informed consent will be obtained since secondary data is being used.

3.11 Limitations of the study

This study relied on secondary data obtained from the survey of the GLSS 7 which was designed for various socio-economic analyses, and as with any large-scale survey, measurement error may have been present among respondents such as recall bias on the self-reported variables of awareness of the NHIS benefits.

The study had to make do with the constituents or the make-up of variables based on the survey questionnaire like NHIS service knowledge. The GLSS7 was also a cross-sectional survey conducted at a specific period of time which may not capture changes in the variables like NHIS enrollment over time.

3.12 Assumptions of the study

This study assumed that observations within the GLSS 7 dataset were independent of each other and thus, the responses of one participant do not influence the responses of other participants. Secondly, the nonresponse bias in the GLSS 7 data was assumed to be minimal. The variables used in the survey, NHIS service knowledge and NHIS enrollment, were appropriately defined. Another

assumption was that other unmeasured factors that may affect both NHIS knowledge and enrollment are adequately controlled for in the data analysis.

CHAPTER 4

4.0 RESULTS

4.1 Introduction

This chapter covers the results and the interpretation of the study's findings. The results are presented in tables showing percentages and frequencies. Further analysis provides descriptive statistics and tests for the statistical significance between the explanatory variables and outcome variable. This chapter begins with a presentation of demographic characteristics of the nationwide survey of the GLSS7 of 5722 household head representatives.

4.2 Demographic Profile of the Respondents

A detailed presentation of the demographic profile can be found in table 4.1. Demographic variables including age group, gender level of education, marital status, religion, household size, household setting and geographic region were studied.

Table 4. 1 Demographic Characteristics of the Respondents

Table 4.1 provides the socio-demographic features of the study participants. With the age group distribution, most respondents (1497 [26%]) were between 26-36 years closely followed by those between the age group 37-47 years (1437 [25%]) and 48-58years (1101 [19%]). The least number of respondents was 359 (6%) between 15-25 years.

Variables (N=5722)	Categories	n (%)
Age-group (years)	15-25	359 **(6.3)**
	26-36	1497 **(26.2)**
	37-47	1437 **(25.1)**
	48-58	1101 **(19.2)**
	59-69	748 **(13.1)**
	70+	580 **(10.1)**
Gender	Male	4001 **(69.9)**
	Female	1721 **(30.1)**
Level of Education	No formal education	27 **(0.7)**
	Primary	846 **(21.1)**
	JHS	1869 **(46.5)**
	SHS	596 **(14.8)**
	Tertiary	381 **(9.5)**
	Others	296 **(7.4)**
Marital Status	Single	704 **(12.3)**
	Married	3712 **(64.9)**
	Separated	597 **(10.4)**
	Widowed	709 **(12.4)**
Religion	No religion	331 **(5.8)**
	Christian	3714 **(64.9)**
	Islam	1173 **(20.5)**
	Traditionalist	494 **(8.63)**
	Other	10 **(0.2)**
Household size	1-5 members	4122 **(72.0)**
	6-10 members	1421 **(24.8)**
	11 and above members	179 **(3.1)**
Household setting	Rural	2560 **(44.7)**
	Urban	3162 **(55.3)**
Geographic Region	Western	421 **(7.4)**
	Central	478 **(8.3)**
	Greater Accra	475 **(8.3)**
	Volta	618 **(10.8)**
	Eastern	612 **(10.7)**

Ashanti	616 **(10.8)**
Brong Ahafo	548 **(9.6)**
Northern	532 **(9.3)**
Upper East	704 **(12.3)**
Upper West	718 **(12.5)**

In comparing both genders, the results showed there were more male heads than females, consisting of 4001 (70%) and 1721 (30%) respectively. With respect to education, formal education was achieved by majority of the respondents. Basic education, comprising of primary and JHS, constituted 2715 respondents (68%) while secondary and tertiary level of education for respondents accounted for 596 (15%) and 381 (9%) respectively. Others (Vocation, Professional, Teacher and Agric/Nursing Training) comprised of 296 participants (7.4%).

The marital status of respondents depicted that the majority were married totaling 3712 (65%) while the least numbers were those that were separated 579 (10%). Respondents who were widowed and single did not differ much, showcasing 709 (12.4%) and 703 (12.3%), respectively.

Christianity was the most held religious status held by 3174 participants (65%) followed by Islam of 1173 participants (20%).

More so, within the household setting, most household heads had between one (1) to five (5) members, totaling 4122 (72%). The least group of respondents had a household size of 11 and more members totaling 179 (3%).

Most respondents settled in the urban zones across all ten (10) regions of the country which indicated 55% while the rural areas contributed to 45% of total respondents. Upper West region had the highest number of respondents settled in with 718 (12.5%) closely followed its neighbor

Upper East with 704 (12.3%) while the Western region had the lowest number of respondents at 421 (7.4%).

4.3 NHIS knowledge and enrollment among household heads

This section provides details of the study variables at hand. In table 4.2 NHIS service knowledge and enrollment are sought further among the respondents with the data provided below.

Table 4.2: Descriptive table on NHIS service knowledge and enrollment among respondents

Variables (N=5722)	Categories	n (%)
Knowledge of NHIS services	OPD services	3874 **(67.7)**
	In-patient services	4049 **(70.8)**
	Medications	5224 **(91.3)**
	Diagnostics	2682 **(46.9)**
	Minor Surgery	1457 **(25.5)**
	Major Surgery	1702 **(29.7)**
	None benefits known	50 (0.9)
	One benefit known	645 (11.3)
	Two benefits known	1033 (18.0)
	Three benefits known	1829 (32.0)
	Four benefits known	832 (14.5)
	Five benefits known	536 (9.4)
	Six benefits known	797 (13.9)
	Poor Knowledge (3 known benefits or less)	3557 **(62.2)**
	High Knowledge (4 known benefits or more)	2165 **(37.8)**
NHIS enrollment	Not enrolled (non-valid NHIS card)	2021 **(35.3)**
	Enrolled (valid NHIS card)	3701 **(64.7)**

The data findings in table 4.2 showed that medications had the most acknowledgement of the insurance benefits by respondents, that is 5224 (91%), followed by in-patient services with 4049 (71%) and closely with OPD services 3874 (31.5%). Minor surgery had the least response from respondents, signaling 1457 (25.5%) while major surgery had 1702 responses (14%).

High Knowledge was characterized by acknowledging four (4) known scheme benefits or more had a total of 2165 (38%) respondents while those with poor knowledge knew of three (3) or less scheme benefits comprising of 3557 (62%) respondents. This vividly showed that about one-third of the nationwide study participants had poor awareness of the benefits an individual is entitled to under the NHIS.

Table 4.3: Bivariate analysis of potential demographics factors associated with NHIS enrollment

Table 4.3 shows a statistical significance test level with the α-level of 0.05 that provides the association of the demographic factors with the outcome variable, enrollment.

Variables (N=5722)	Enrolled n =3701 (%)	Not Enrolled n = 2021 (%)	P-value
Age-group (years)			0.024*
15-25	236 (6.4)	123 (6.1)	
26-36	922 (24.9)	575 (28.4)	
37-47	938 (25.3)	499 (24.7)	
48-58	744 (20.1)	357 (17.7)	
59-69	472 (12.8)	276 (13.7)	
70+	389 (10.5)	191 (9.4)	
Gender			0.361
Male	2603 (70.3)	1398 (69.2)	
Female	1098 (29.7)	623 (30.8)	

Variables (N=5722)	Enrolled n =3701 (%)	Not Enrolled n = 2021 (%)	P-value
Level of Education			0.037*
No formal education	8 (0.3)	4 (0.3)	
Primary	556 (21.4)	290 (20.5)	
JHS	1233 (47.4)	636 (45.0)	
SHS	356 (13.7)	240 (17.0)	
Tertiary	247 (9.5)	134 (9.5)	
Others	197 (7.6)	99 (7.0)	
Marital Status			0.028*
Single	441 (11.9)	263 (13.0)	
Married	2426 (65.6)	1286 (63.6)	
Separated	359 (9.7)	238 (11.8)	
Widowed	475 (12.8)	234 (11.6)	
Religion			0.951
No religion	219 (5.9)	112 (5.5)	
Christian	2395 (64.7)	1319 (65.3)	
Islam	756 (20.4)	417 (20.6)	
Traditionalist	324 (8.8)	170 (8.4)	
Others	7 (0.2)	3 (0.2)	
Household size			0.784
1-5 members	2666 (72.0)	1456 (72.0)	
6-10 members	915 (24.7)	506 (25.0)	
11 and more members	120 (3.2)	59 (2.9)	
Household setting			0.903
Rural	2043 (55.2)	1119 (55.4)	
Urban	1658 (44.8)	902 (44.6)	
Geographic Region			0.000 *
Western	332 (9.0)	89 (4.4)	
Central	227 (6.1)	251 (12.4)	
Greater Accra	289 (7.8)	186 (9.2)	
Volta	414 (11.2)	204 (10.1)	
Eastern	405 (10.9)	207 (10.2)	
Ashanti	430 (11.6)	186 (9.2)	
Brong Ahafo	370 (10.0)	178 (8.8)	
Northern	329 (8.9)	203 (10.0)	
Upper East	443 (12.0)	261 (12.9)	
Upper West	462 (12.5)	256 (12.7)	

* (measured association is statistically significant at chosen α-level 0.05)

It revealed that half of the variables were statistically significant associated with enrollment in the scheme and the other half were not. Age-group, level of education, marital status and geographic region showed its significant association with their respective p-value less than 0.05; p<0.05.

Table 4.4: Logistic Regression of potential factors influencing NHIS enrollment

Variables (N=5722)	P-value	COR (95%CI)	P-value	AOR (95%CI)
Age-group (years)				
15-25	Ref	1	Ref	1
26-36	0.145	0.84 (0.66-1.06)	0.561	0.92 (0.70-1.21)
37-47	0.869	0.98 (0.77-1.25)	0.711	1.06 (0.78-1.42)
48-58	0.520	1.09 (0.84-1.40)	0.807	1.04 (0.76-1.42)
59-69	0.393	0.89 (0.68-1.16)	0.992	1.00 (0.71-1.41)
70+	0.674	1.06 (0.80-1.40)	0.495	1.15 (0.76-1.74)
Level of Education				
No formal education	Ref	1	Ref	1
Primary	0.064	2.06 (0.96-4.45)	0.031	2.37 (1.08-5.20)
JHS	0.058	2.09 (0.97-4.47)	0.032	2.34 (1.08-5.11)
SHS	0.235	1.60 (0.74-3.46)	0.137	1.82 (0.83-4.03)
Tertiary	0.086	1.98 (0.91-4.35)	0.047	2.25 (1.01-5.02)
Others	0.059	2.14 (0.97-4.73)	0.025	2.52 (1.12-5.67)
Marital Status				
Single	Ref	1	Ref	1
Married	0.167	1.12 (0.95-1.33)	0.417	1.09 (0.89-1.34)
Separated	0.354	0.90 (0.72-1.12)	0.401	0.89 (0.67-1.18)
Widowed	0.087	1.21 (0.97-1.51)	0.421	1.14 (0.82-1.59)
Geographic Region				

Western	Ref	1	Ref	1
Central	0.000*	0.24 (0.18-0.33)	0.000*	0.25 (0.18-0.34)
Greater Accra	0.000*	0.42 (0.31-0.56)	0.000*	0.42 (0.31-0.59)
Volta	0.000*	0.54 (0.41-0.72)	0.000*	0.51 (0.37-0.71)
Eastern	0.000*	0.52 (0.39-0.70)	0.000*	0.53 (0.39-0.72)
Ashanti	0.001*	0.62 (0.46-0.83)	0.003*	0.62 (0.45-0.85)
Brong Ahafo	0.000*	0.56 (0.41-0.75)	0.001*	0.56 (0.40-0.77)
Northern	0.000*	0.43 (0.32-0.58)	0.000*	0.39 (0.26-0.57)
Upper East	0.000*	0.45 (0.34-0.60)	0.000*	0.41 (0.29-0.58)
Upper West	0.000*	0.48 (0.36-0.64)	0.000*	0.47 (0.33-0.68)
NHIS Knowledge				
Poor Knowledge	Ref	1	Ref	1
High Knowledge	0.000*	1.38 (1.24-1.56)	0.000*	1.36 (1.18-1.57)

*(measured association is statistically significant); AOR: Adjusted odds ratio; CI: Confidence interval; Ref: Reference group

In table 4.4, the multivariate logistic regression results are provided. It entails the crude odds ratio and the adjusted odds ratio of the variables along with their respective p-value. The odds ratio shows forth the strengthen of association between the independent variable and the dependent variable, NHIS enrollment. It was found that after all other demographic variables when adjusted for, were not statistically significant except for the level of education and geographic regions.

Primary, JHS, tertiary and others which consist of (Vocation, Professional, Teacher and Agric/Nursing Training) are more likely to enroll in the NHIS as compared to no formal education. More so, those with level of education at SHS were 1.82 times less likely to enroll in the NHIS as compared with those with no formal education. In addition, all regions showed they were

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significantly associated with enrollment. Those in Ashanti region showed lesser odds 0.62 of enrollment than the base region, Western region (AOR:0.62; 95%CI: (0.45-0.85); p=0.003). More so, the explanatory variable high knowledge was also significantly associated with the health enrollment scheme. Compared to those with poor knowledge those with high knowledge were 1.36 times more likely to enroll in the health insurance scheme (AOR:1.36; 95%CI: (1.18-1.57); p<0.001.

CHAPTER 5

5.0 DISCUSSION

5.1 Introduction

This chapter provides discussions of the findings of the study. The purpose of this quantitative study was to assess the influence of knowledge of NHIS services on NHIS enrollment. The study sought to assess the knowledge of NHIS services of heads of households in Ghana, the NHIS enrollment figures among the household heads and lastly determine the various possible factors leading to NHIS enrollment among household heads in Ghana. Furthermore, in this chapter, it is compared with other findings of studies of the National Health Insurance Scheme.

5.2 Demographic characteristics of respondents

With the age range of respondents spanning from 15 to 99 years, the study found out that the average age among the respondents was 46 years with the majority age distribution group falling between 26 and 36 years (26%) and closely followed by those between 37-47 years (25%). A similar mean age (44) that was reported by Nsiah-Boateng et al., (2019) in the study that was carried out to assess whether Ghana's NHIS was a pro-poor scheme.

Marriage among respondents was another that was revealed as the majority of the respondents were married (65%). The higher proportion of married respondents could be partly due to the majority of respondents who fall between 26 and 47 years (51%).

Compared with the GLSS 6 that was held between October 2012 and October 2013 in the study by Nsiah-Boateng and others, the Ashanti region had the most represented participants (19%),

unlike the current survey study that has the Upper West region established with the highest number of represented participants (718 [12.5%]) and closely followed by the Upper East (704 [12.3%]). This may partly be seen as the continuous spread of the national health insurance scheme nationwide to the north of the country, notwithstanding other factors like population age structure. Furthermore, the distribution of the household setting of the nationwide survey has been fairly maintained since the GLSS 6. The GLSS 6 showcased rural zones at 44 % and urban zones at 56% while the current survey study (GLSS 7) shows that the rural zone amounted to 45% and the urban zone at 55% (Nsiah-Boateng et al., 2019).

More so, some other studies have showcased the effect of socio-demographic features or also known as predisposing factors, under Andersen's Healthcare Utilization (AHU) model that directly impacts the use of health care services. The bivariate analysis in Seidu (2020) on the use of HIV testing services by sexually active men in Ghana asserted that the predisposing factors associated with HIV testing were age, educational level, religion, marital status, ethnicity, region, and condom use. Likewise, Nagdev et al., (2023) bivariate analysis of children's use of dental health services in Bangalore, India was influenced by their age, the size of their family, their parents' education levels, how long it takes them to visit the dentist, how well they care for their teeth, and their parents' attitudes.

5.3 NHIS enrollment and demographic factors

This section reveals the demographic factors that significantly influenced NHIS enrollment. Despite the largest number of respondents aged 26-36 years, they came second fiddle to those between 37- 47years concerning enrollment in the insurance scheme. Enrollment in these age groups were 24.9% and 25.3% respectively, showcasing the slightest of differences likewise with

those not enrolled. The enrollment revealed a wide gap between male heads and female heads with 70% amounting to the males and 30% to the females.

With the Upper West region and the Upper East region being the regions with the most representatives, they also had the highest representation of those who were enrolled (12.5%, 12%) in the scheme respectively. As the regions are significantly more likely to enroll (p<0.001), findings from Nsiah-Boateng et al., (2019) also assert that those living in less developed regions are significantly more likely to enroll in the NHIS as compared to those in developed regions. Furthermore, in recent years, the coverage of NHIS has been pushed to rural sectors and hard-to-reach places (Alesane and Anang, 2018; Nsiah-Boateng et al., 2019).

5.4 NHIS knowledge and enrollment among household

The study revealed that a large percentage of the respondents (62%) showcased poor knowledge of what the scheme entails through its associated benefits unlike that of (Fenny et al., 2016). Nonetheless, with high knowledge showing its statistical significance (p-value < 0.001), this shows that people's knowledge of the national health insurance services is an important factor in healthcare utilization and health outcomes through the implementation of the NHIS. Thus, it is a positive influence towards healthcare services through the increase in NHIS enrollment.

As previously said, the constituents of knowledge of the scheme benefits were OPD services, inpatient services, medication, diagnostics, major and minor surgery. Study findings by Dalinjong et al., (2017) assert that the association between health insurance status and utilization of health services in rural Northern Ghana revealed that registered clients of the NHIS are significantly more likely to visit clinics, get prescriptions, use formal health facilities when in need, and receive

outpatient and inpatient services than those who were uninsured. This points out the significance of the knowledge on National Health Insurance Scheme.

Also, an earlier study by Seddoh and Sataru, (2018) conducted in Ashaiman and Adaklu districts showed that respondents within the districts demonstrated a high level of knowledge of 98% emancipating from secondary data questions that asked whether participants were knowledgeable about NHIS by simply having a yes or no answer as the respective response. Regardless, the multichoice question limits participants to demonstrate their deeper knowledge of NHIS benefits.

With healthcare usage from the AHU acting as the embodiment of healthcare services by enrolling in NHIS, with the enabling factor being a major determinant, Seidu (2020) informs us that the enabling factors associated with HIV testing were household wealth index, health insurance subscription, and frequency of reading newspapers, watching television and listening to radio.

5.5 Factors associated with National Health Insurance Scheme enrollment

A multivariate analysis was run through the various factors to enrollment, and it was revealed that that after statistically identifying the significant demographic factors and adjusting for all variables, knowledge of NHIS services, level of education and geographic regions were those that were statistically significant with p-value < 0.001 for each variable at α-level = 0.05.

Kansanga et al., (2018) affirms and aligns with the significance of knowledge and awareness of the National Health Insurance Scheme through media exposure such as radio, television and print media and NHIS enrollment. Study findings show that both men and women from the data of the 2014 Ghana Demographic and Health Survey were statistically significant to enroll in the NHIS than those who had no exposure. Men and women were more likely to enroll by being exposed to print media and radio or television respectively. Thus, this goes to assert that NHIS campaigns

disseminated through such channels can enhance individuals' understanding of the scheme's benefits, coverage and enrollment processes.

Additionally, studies from Adjei-Mantey and Horioka (2022), Duku (2018) and Nsiah-Boateng et al., (2019) emphatically assert that formal education is significantly associated with NHIS enrollment. This could partly mean there is strong level of influence between the level of education and knowledge of the scheme benefits.

CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

This study probed into the knowledge and the awareness of Ghana's NHIS with respect to the benefits of various services the scheme comes with and how it affects healthcare utilization through NHIS enrollment. The study showed that about one-third of the respondents were not aware of the various kinds of services to benefit from the health insurance scheme for better health outcome even if they were enrolled in the health service scheme or not. It showed the influence exerted towards the use of health care services through the impact and increase in NHIS enrollment to help achieve UHC. The study findings concluded that level of knowledge, educational level and geographic region were significant factors to NHIS enrollment.

6.2 Recommendations

The following recommendations are made to the appropriate organizational bodies for consideration based on the outcomes of this study.

- To Policy Makers

The Ministry of Education and the Ministry of Health should work together to continue the education of NHIS services. As information has been laid out over the years before through communication channels like radio, TV stations, and even social media platforms, consistency of information should be practiced at interval points to keep creating awareness and educating citizens about the range of services they are entitled to benefit from under the scheme. Community members should also be factored in and involved in the communication strategy to ensure that

communication is effective as it respects the norms and beliefs of society, making it easier to reach the masses.

- Further Research

A qualitative study is recommended for further research to understand the depth of knowledge and awareness of respondents enrolled in the National Health Insurance Scheme for tailored interventions.

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APPENDIX I

ETHICAL CLEARANCE

ENSIGN GLOBAL
COLLEGE

OUR REF: ENSIGN/IRB/EL/SN-221   May 3, 2023.
YOUR REF:

INSTITUTIONAL REVIEW BOARD SECRETARIAT

Francis Addai-Nimoh Jr.
Ensign Global College
Kpong

Dear Francis,

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 Wednesday, May 3, 2023, your research proposal entitled **"The Influence of Literacy Levels on National Health Insurance Scheme (NHIS) Service Knowledge and Enrollment"** 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

APPENDIX II

PLAGIARISM REPORT