

Factors Influencing
Enrolment Into The
National Health Insurance
Scheme: A Case Study Of
Lower Manya-Krobo
Municipality - Eastern
Region, Ghana

John Yao Bedzo

*Ensign College of Public Health, Kpong, Eastern
Region, Ghana*

Susan Chobbah

*Ensign College of Public Health, Kpong, Eastern
Region, Ghana*

Stephen Manortey

*Ensign College of Public Health, Kpong, Eastern
Region, Ghana*

ABSTRACT

Background: Health care financing is one of the major and pressing issues challenging the healthcare delivery sector in Ghana. Right after attaining independence, the country embraced the socialist philosophy, where the then government made healthcare services completely free, as was the case with education and other social intervention programs. However, not too long into the era, Ghanaians were made to pay out-of-pocket when receiving healthcare services in the famous “Cash-and-Carry” delivery system. Since 2003, the country introduced the National Health Insurance Scheme as a means to lessen the burden on the healthcare expenditure of the people. However, over 16 years of its implementation, there is still the problem of enrolment and retention. This study aimed at determining the factors influencing enrolment into the National Health Insurance Scheme in the Lower Manya Krobo Municipality of the Eastern Region in Ghana. **Methods:** The study employed a cross-sectional study design with a quantitative approach to determine the factoring influencing NHIS enrolment in the Lower Manya Krobo Municipality. The total sample size was 362, with data obtained through questionnaire administration. Univariate, bivariate, and multivariate analyses were conducted to respectively estimate frequencies, measure the level of associations, and predict outcomes on selected variables outputs. A p-value <0.05 was considered as significant level with 95% CI. **Results:** Almost all the respondents (98.1%) have heard about the Ghana Health Insurance Scheme. Major sources of such information were from Radio and Television, and family or relatives. NHIS enrollment stood at 69.1%, and factors such as age ($p = 0.033$), sex ($p < 0.001$), educational level ($p < 0.001$), and income status ($p < 0.05$) were significantly associated with enrolment. Again, 90% had expressed their intentions to renew membership. Indicators such as reported educational level, marital status, and income were also concomitant with respondents' intentions to renew membership. **Conclusion:** Although NHIS enrolment in the study region was higher than the national average, there were still over 30% of the respondents who have never enrolled. More efforts are needed to achieve total enrolment by all given that was the policy directive guiding the scheme.

Subject Areas: Public Health, Health Policy, Health Promotion

Keywords: NHIS, Enrollment, Lower Manya Krobo Municipality, Ghana

1. BACKGROUND

One major and pressing issue confronting the health care delivery sector in Ghana like most countries worldwide is about financial sustainability. Healthcare financing in Ghana before independence was mainly by out-of-pocket payments for all expenses at the point of service use. However, the immediate post-independence period saw some considerable improvement in this sector, when the then government introduced several social intervention programs which made health care service practically free.

The economy of Ghana following the post-independence era had worsened to such a level that the government adopted the combination of “Government-Peoples-Partnership” approach that would satisfy the needs and pockets of Ghanaians as well the government’s funds in the healthcare sector. ‘Cash-and-Carry’ system of healthcare funding was thus introduced, where patients were mandated to pay for drugs and some medical consumables, as and when they visit the hospital, while the government absorbs all other costs including consultation, salaries, and remunerations of all healthcare workers in government hospitals. The new scheme, however, has an exemption package which provided free care for those aged above 70 years, children less than five years and pregnant women for their ante-natal care. The ‘Cash and Carry’ system survived until 2004 when the present National Health Insurance Scheme (NHIS) came into being [1].

The NHIS was established under Act 650 of 2003 by the Government of Ghana to provide primary but effective healthcare services to residents in the country through mutual and private health insurance schemes [2]. This legislative instrument was later amended and replaced with the National Health Insurance Act 852 of 2012, to address the inconsistencies and the legal ambiguities in the previous act. The amendment became necessary due to the observed growing changes in the healthcare sector and as a plan to integrate the gains made ten years after the operation of the scheme. The new Act recognizes the existence of the District Mutual, Private Mutual and Private Commercial Schemes, which are controlled by the National Health Insurance Authority (NHIA).

The idea of health insurance [3] defines health insurance as “an arrangement which presents people exposed to the uncertainties of future health shocks an opportunity to contribute to a fund from which they can draw when they are ill.” To “insure” as used in this context, means to protect one's self against the unexpected, unforeseeable, and undesirable future health shocks that adversely affect human well-being. Health insurance offers financial protection to the insured by reducing out-of-pocket payments, and direct user fees or point of service payment for health care, thereby improving access to health care [4].

Healthcare financing is often done through tax payments, premiums paid by the insured, and contributions from other stakeholders and donor agencies. The most effective and easier to implement this in countries with large formal sectors workers is by taxes, owing to the ease with which income through taxes can be organized. Anything beyond, constitute what is known as a social health insurance (SHI) scheme. In countries where the informal sector is predominant, as have been the case in most developing countries, revenue mobilization through taxes could be very challenging and limited, making the SHI an easier choice. Consequently, this has changed as a favoured intervention which several countries within the Sub-Saharan region are using to provide health insurance to their citizenry in the informal sectors. Based on the ownership, the kind of benefit delivered, the degree of risk pooling, and the management of a health insurance scheme, it could be classified as private non-profit, commercial, a mutual or community-based [5].

Empirical evidence on the evaluation of factors affecting health insurance registration indicates that age, sex, education, household size, economic wealth, and the knowledge of its importance plays a significant role in the registration. Ministry of Health (MoH)-Ghana report showed that the poor are less likely to enrol and likely to drop out of membership [6]. On the contrary, the rich will register and maintain their membership, even when they have other sources of financing for their health. The challenges to healthcare financing have become more pressing and complicate. In middle and low-income countries, the situation is worsened by the vast socioeconomic inequalities [7]. This research, therefore, aimed at exploring the factors that impact enrollment into the NHIS in the Lower Manya Krobo Municipality in the Eastern Region of Ghana.

2. METHODS

2.1 PROFILE OF THE RESEARCH AREA

The Lower Manya Krobo Municipal (LMKM), is one of the 26 administrative districts in the Eastern Region of Ghana with Odumase-Krobo as its capital. The municipality was created following the split of the then Manya Krobo District into Lower and Upper Manya Krobo in 2008. It is bounded on the North-East by Asuogyaman District, on the South-East by North-Tongu District, on the North-West by Upper Manya Krobo District, and the South by Yilo and Dangme West Districts. It covers a land area of about 591 km², constituting approximately 3.28% of the Eastern Region of Ghana. According to the 2010 National Population and Housing Census Report, the total population of the municipality stood at about 89,246, which represents 3.4% of the total population of the entire Eastern Region [8]. The residents of the area are primarily farmers and traders. The target population for this study entailed both insured and non-insured members aged 18 years and above. The age restriction was introduced because purchasing health insurance is possible only when one is 18 years and above. Those below age 18 years are classified as dependents. Such persons depend on their parents' or guardians' health insurance policies. The target population also included residents of the Lower Manya Krobo Municipality who visited any of the five selected health facilities to access health care between December 2018 and February 2019. The exclusion criteria were for individuals who had not met the above descriptions.

2.2 STUDY DESIGN AND SAMPLE SIZE

This study employed the cross-sectional design with a quantitative data collection approach, where data were collected from January and March 2019. The study participants of 329, which comprised both the insured and non-card bearing members of NHIS, were selected using a convenient sampling technique. The sample size of 329 was arrived at using a 31% enrollment coverage of the NHIS in the Municipality [9]. The sample size was calculated using Cochran's formula [10].

$$n = \left[z^2 \times \frac{pq}{e^2} \right]$$

n = required sample size,

p = prevalence of NHIS enrolment (31%)

z = the z-score that corresponds with 95% confidence interval which is 1.96,

q = proportion of non-card bearing members,

e = margin of error set at 5% (0.05).

This above gave us a sample size of 329. A 10% non-response rate was added, bringing the total number to 362.

2.3 DATA COLLECTION AND STATISTICAL ANALYSIS

A well-structured questionnaire was used to gather information from study subjects. The questionnaire design included both close-ended and open-ended questions and covered data gathered on the prevailing insurance status of the subjects during the period of the study, demographic characteristics of participants and potential variables that were attributable as factors to enrollment into the NHIS. A pilot test of the questionnaires was randomly conducted in Yilo Municipality since the Municipality has similar socio-demographic characteristics.

Data collected were entered using Microsoft Excel and merged to ensure that data is confidential. The numerically coded data was exported to STATA statistical software (*StataCorp.2007. Stata Statistical Software. Release 14.StataCorp LP, College Station, TX, USA*) for analysis. The study employed descriptive statistics presentations, including the use of pie charts, percentages and frequency tables, cross-tabulations, and predictive models to determine the factors that influence enrollment into the NHIS.

2.4 RESEARCH VARIABLES

The study variables included data gathered on the prevailing insurance status of the subjects during the period of the study. Health insurance enrollment was made the dependent variable in the study, while demographic features of the subjects and other potential variables such as knowledge, awareness, and accessibility were made independent variables.

2.5 ETHICAL CONSIDERATION

Permission to conduct this study was considered with the aid of a consent form and informed consent information. Ethical approval was granted by the Ensign College of Public Health Ethics Review Board. Participants were chosen based on their willingness to partake in the research and signed individual informed consent was sought from each subject before enrolment into the study. The participants were told about their rights to step out from the study at any point without any form of coercion since the response to the questionnaire was voluntary. Anonymity was assured, and no personal information that could be traced to a study participant was used in any part of the report.

3. RESULTS

3.1 RESEARCH POPULATION CHARACTERISTICS

All the 362 participants targeted for the research took part in the study, which resulted in a 100% response rate. The average age of subjects was 33.8 years, with the age range spanning from 18 to 79 years old. Most of the subjects were within the ages of 18 and 30 years (56%) and constituted more than half of the total respondents. Compared to males, female respondents were more than 30% higher in the study. Regarding their educational attainments at the time of the study, the majority of them had basic and secondary education, 45% and 33% respectively, with only about 6% attaining tertiary education. A little over three-fourth (75.7%) of the subjects were working while 24.3% were unemployed. With regards to participants' marital status, the majority of them were either married or cohabiting (27% and 38% respectively), the unmarried (single), or have been divorced formed 33%. Almost 95.6% of the subjects declared their faith in Christianity while the rest fitted into other religious faiths. The majority of the subjects remained of the Krobo and Ewes ethnic backgrounds. (Table 1).

Table 1. Demographic characteristics of the respondents

Variables (N=362)	Categories	n (%)
Age Group (yrs)	18-30	202 (55.8)
	31-50	99 (27.4)
	51-69	47 (13.0)
	70+	14 (3.9)
Gender	Male	126 (34.8)
	Female	236 (65.2)
Employment Status	Self-employed	178 (49.2)
	Public	22 (6.1)
	Private	74 (20.4)
	Unemployed	88 (24.3)
Level of Education	No education	56 (15.5)
	Primary/Middle/JHS	166 (45.0)
	S.H.S/Tech/Voc	120 (33.2)
	Tertiary	20 (5.52)
Income (n=274)	< GH¢100	73 (20.2)
	GHC100-200	154 (42.5)
	GHC200 and above	47 (13.0)
	No income	88 (24.3)
Marital Status	Single	98 (27.1)
	Married	136 (37.6)
	Co-habiting	108 (29.8)
	Divorced/widowed	20 (5.5)
Religion	Christianity	346 (95.6)
	Islam	12 (3.3)
	Traditional	4 (1.1)
Ethnicity	Krobo	272 (75.1)
	Ewe	40 (11.1)
	Akan	17 (4.7)
	Others	33 (9.1)

3.2. RESPONDENT’S AWARENESS, ENROLMENT, AND REASONS

Almost all the respondents, 355 (98.1%), admitted hearing of the National Health Insurance Scheme (NHIS). The main source of information on NHIS was from the radio (62%). Other sources of information included relatives, TV, and friends (38%) (Figure 1).

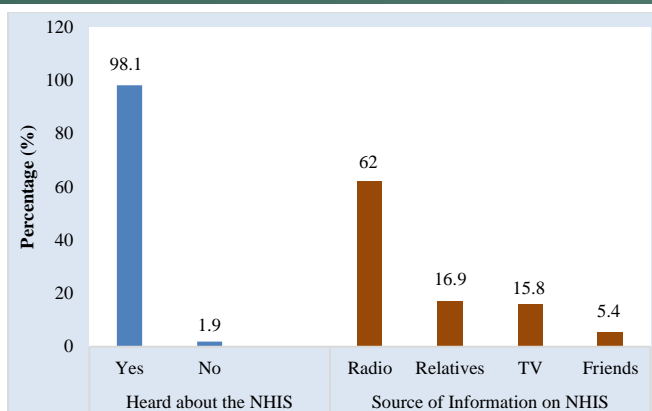


Figure 1. Awareness and source of information on NHIS

Enrolment into the national health insurance scheme was found to be nearly 70% among the respondents. Among this number, 94% indicated that they found it easy using the card at the hospital. Almost 100% of them felt every satisfied (good and very good) using the card for healthcare. 90% indicated that they would be eager to pay more to expand the quality of health services (Table 2).

Table 2. Enrolment into the NHIS among the respondents

Variables (N=362)	Categories	n (%)
Enrollment in the NHIS	Yes	250 (69.1)
	No	112 (30.9)
Among the enrolled participants (n=250)		
Convenience using the card at the hospital	Yes	235 (94.0)
	No	15 (6.0)
Grading healthcare using NHIS card	Very good	107 (42.8)
	Good	141 (56.4)
	Poor	2 (0.8)
Willingness to pay more to expand the quality of health service	Yes	225 (90.0)
	No	25 (10.0)

It was motivating to note that a higher proportion of respondents (70%) specified that they were influenced to enroll while (24%) said they need to avoid or prevent out-of-pocket payment at the accredited health facility. 6% of them said due to financial protection against sickness and the willingness to have the card for other purposes (Figure 2).

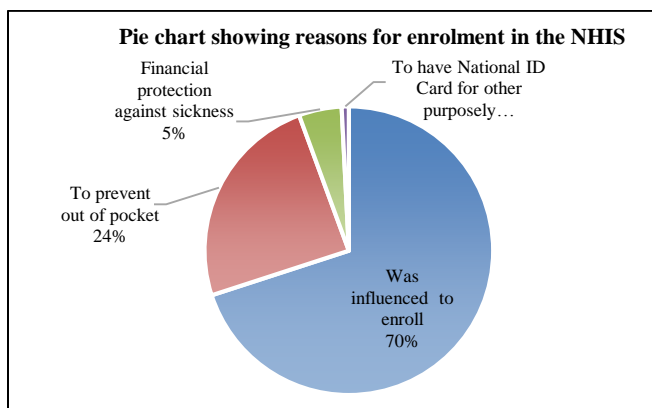


Figure 2. Reasons for enrolment into the NHIS

3.3 ACCESSIBILITY AND UTILIZATION OF NHIS ACCREDITED HEALTH SERVICES

Out of 362 subjects interviewed during the study, a little over (50%) complained that NHIS accredited health facilities were far from their homes. Almost 95% of the subjects enrolled onto NHIS admitted to the statistic that they were motivated by the NHIS subscription to visit the hospital, and 78.6% of uninsured subjects said they pay for their healthcare out of pocket. As to which type of facility they visit most, public hospitals, private hospitals, and pharmacies were the major visiting facilities forming 97.3% of the subjects (**Table 3**).

Table 3. Respondents' perceived accessibility and utilization of NHIS accredited health service

Variables	Category	n (%)
How far is the NHIS accredited health facility from your home?	Very Far	51 (14.1)
	Far	189 (52.2)
	Not Far	122 (33.7)
NHIS subscription motivates me to visit health facility (n=250)	Yes	236 (94.4)
	No	14 (5.6)
Payment for health care for those not enrolled (n=112)	Out of Pocket	88 (78.6)
	Payment Family Support	24 (21.4)
Health facilities visited when sick	Herbal clinic	10 (2.8)
	Pharmacy	81 (22.4)
	Private hospital	46 (12.7)
	Public hospital	225(62.2)

3.4 CHALLENGES DURING NHIS REGISTRATION AND USE OF HEALTH FACILITY WITH NHIS

About (94%) of the subjects acknowledged easy access to the NHIS office during the registration. 90.8% of the respondents pointed out clearly that NHIS cards were issued to them instantly. On the question regarding the experiences for the use of the card in accredited health facilities, the data revealed 42% of the respondents admitted it was “*Very good*” with an insignificant proportion (3%) reporting it was “*Poor*”(Table 4). Long waiting time was cited as the major challenge during NHIS registration (66.8%) followed long queues (31.6%) and the absence of officials (1.6%). Also, some major challenges during the use of the card at the health facility included long queues (74%) and unavailability of drugs (18.4%) (Figure 3).

Table 4. Perceived challenges encountered during NHIS registration and its use

Variables (N=250)	Category	n (%)
Easy access to the NHIS office during registration	Yes	234 (93.6)
	No	16 (6.4)
Period of receiving card after registration	Instantly	227 (90.8)
	2days	21 (8.4)
	Above 2days	2 (0.8)
How is your experience in using the NHIS card in the health facility?	Very good	106 (42.4)
	Good	137 (54.8)
	Poor	7 (2.80)

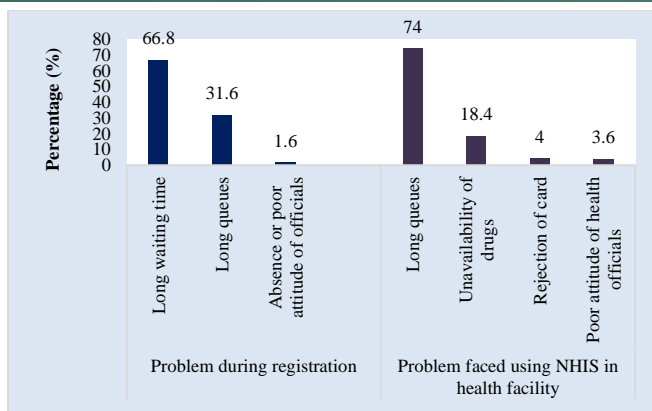


Figure 3: Reported challenges during enrollment and use of health facility

3.5 BIVARIATE ANALYSIS BETWEEN DEMOGRAPHIC FACTORS AND NHIS ENROLLMENT

Table 5 represents a bivariate analysis of demographic factors associated with NHIS enrollment.

It was clearly observed that all the demographic variables under study were meaningfully related to the NHIS enrolment at the time of the study indicating age (p = 0.033), gender (p < 0.001), employment status (p = 0.001), educational level (p = 0.001), marital status (p = 0.004) and income status (p = 0.006).

Table 1. Bivariate analysis of demographic factors associated with NHIS enrollment

Variables (N=362)	Enrolled n=250(%)	Not Enrolled n=112(%)	P-Value
Age Group (yrs)			
18-30	130 (52.0)	72 (64.3)	0.033*
31-50	71 (28.4)	28 (25.0)	
51-69	40 (16.0)	7 (6.25)	
70+	9(3.60)	5 (4.46)	
Gender			
Female	186 (74.4)	50(44.6)	<0.001*
Male	64 (25.6)	62(55.4)	
Employment Status			
Self-employed	132 (52.8)	46(41.1)	0.001*
Public	21 (8.4)	1(0.9)	
Private	46 (18.4)	28(25.0)	
Unemployed	51 (20.4)	37(33.0)	
Educational level			
No education	34 (13.6)	22 (19.6)	0.001*
Primary/Middle/JHS	108 (43.2)	58 (51.8)	
S.H.S/Tech/Voc	88 (35.2)	32 (28.6)	
Tertiary	20 (8.0)	0 (0.0)	
Marital Status			
Single	54 (21.6)	44(39.3)	0.004*
Married	105 (42.0)	31(27.7)	
Co-habiting	77 (30.8)	31(27.7)	
Divorced/Widowed	14 (5.6)	6(5.4)	
Income status			
< GH¢100	27 (24.1)	46 (18.4)	0.006*
GHC100-200	40 (35.7)	114 (45.6)	
GHC200 and above	8 (7.1)	39 (15.6)	
No income	37 (33.0)	51 (20.4)	

*Measured association is statistically significant at a chosen α -level of 0.05

3.6 BIVARIATE ANALYSIS OF AWARENESS AND NHIS ENROLLMENT

Table 6 shows the bivariate analysis of awareness factors associated with NHIS enrollment. There was no observed statistically significant association between NHIS enrollment and sources of information on NHIS ($p = 0.567$). However, the analysis revealed there were very significant associations between NHIS enrollment and the participants' hearing about the NHIs and distance to NHIS accredited health facilities at ($p = 0.004$), ($p = 0.001$) respectively.

Table 6. Bivariate analysis of awareness factors association with NHIS enrollment

Variables (N=362)	Enrolled n=250(%)	Not Enrolled n=112(%)	P-Value
Heard about the NHIS?			
Yes	249 (99.6)	106(94.6)	0.004*
No	1(0.4)	6(5.36)	
Source of information about NHIS			0.567
Friends	15 (6.0)	4(3.8)	
Relatives	38 (15.3)	22(20.8)	
Radio	156 (62.7)	64(60.4)	
TV	40 (16.1)	16(15.4)	
Distance to NHIS accredited HF			0.001*
Very far	24 (9.6)	27 (24.1)	
Far	133 (53.2)	56 (50.0)	
Not Far	93 (37.2)	29 (25.9)	

*Measured association is statistically significant at a chosen α -level of 0.05.

3.7 MULTIVARIATE LOGISTIC REGRESSION ANALYSIS OF FACTORS ASSOCIATED WITH NHIS ENROLLMENT

Table 7 represents a logistic regression model that was fitted to determine the strength of the association between selected factors from the bivariate analyses performed. Subjects within the age-group (51 - 69) were six times more likely to be enrolled compared to those within the age-group (18-30) (AOR = 5.60, 95% CI: 1.52 – 20.53). Also, subjects 70 years and above, were two times more likely to be enrolled compared to the subjects age group (18-30) (AOR = 1.69, 95% CI: 0.37 – 7.61). The study revealed a significant association between gender and NHIS enrolment. That is, compared to females, males were 86% less likely to enrol adjusting for other demographic variables (AOR: 0.14; $p < 0.001$; 95% CI: 0.07-0.25). Also, concerning those who had no formal education, those who had secondary education had 3.5 times higher odds to enrol on NHIS, and this was statistically significant at $p < 0.05$ (AOR: 3.53; 95% CI: 1.30-9.57). Other factors, such as awareness of NHIS and distance to the nearest NHIS accredited facilities, were found to be significantly associated with the enrolment status. Compared to those who had heard about NHIS, those who had not shown lesser odds of 0.05 (95% less likely) of enrolment (AOR: 0.05; 95% CI: 0.01-0.52; $p = 0.012$) after adjusting for other covariates in the model.

Table 7. Multivariate Logistic Regression of potential factors associated with his enrollment

Variables	P-value	COR (95%CI)	P-value	AOR (95%CI)
Age Group (yrs)				
18-30	Ref	1	Ref	1
31-50	0.204	1.40 (0.83-2.38)	0.894	0.95 (0.43-2.10)
51-69	0.006*	3.16 (1.33-7.54)	0.009*	5.60 (1.52-20.53)
70+	0.995	0.99 (0.32-3.10)	0.497	1.69 (0.37-7.61)
Gender				
Female	Ref	1	Ref	1
Male	<0.001*	0.28 (0.17-0.45)	0.001*	0.14 (0.07-0.25)
Employment Status				
Self-employed	Ref	1	Ref	1
Public	0.027*	7.32 (0.93-57.69)	0.384	2.72 (0.29-25.94)
Private	0.057	0.57 (0.32- 1.03)	0.285	0.68 (0.34-1.37)
Unemployed	0.007*	0.48 (0.28- 0.83)	0.258	empty
Educational level				
No education	Ref	1	Ref*	1
Primary/Middle/JHS	0.559	1.20 (0.64-2.25)	0.479	1.35 (0.59-3.06)
S.H.S/Tech/Voc	0.092	1.78 (0.90-3.51)	0.013*	3.53 (1.30-9.57)
Tertiary	0.001	Empty	Empty	empty
Marital Status				
Single	Ref	1	Ref	1
Married	0.004	2.75 (1.54-4.93)	0.649	1.25 (0.48-3.23)
Co-habiting	0.016	2.02 (1.12-3.64)	0.269	1.53 (0.72-3.28)
Divorced/widowed	0.221	1.90 (0.67-5.42)	1.675	1.39 (0.30-6.53)
Income status				
< GH¢100	Ref	1	Ref	1
GHC100-200	0.090	1.67 (0.91-3.04)	0.121	1.83 (0.85-3.93)
GHC200 and above	0.019*	2.86 (1.17-7.02)	0.229	2.07 (0.63-6.79)
No income	0.515	0.80 (0.43-1.53)	Omitted	1
Heard about the NHIS?				
Yes	Ref	1	Ref	1
No	0.0016	0.071 (0.01-0.62)	0.012*	0.05 (0.01-0.52)
Farness of NHIS accredited HF from your home.				
Very far	Ref	1	Ref	1
Far	0.0019	2.67 (1.40-5.10)	0.214	1.63 (0.75-3.52)
Not Far	0.002	3.61 (1.75-7.43)	0.045*	2.40 (1.02-5.63)

3.8 UNIVARIATE ANALYSIS ON RENEWAL OF NHIS MEMBERSHIP AFTER THE EXPIRATION

Ninety percent (90%) of the subjects enrolled expressed their willingness to renew their membership card after the expiration date. As to why they will be willing to renew, 98.8% of them said it is better than out of pocket and easy access to healthcare. The majority of the 10% insured respondents who were not willing to renew their membership stated clearly that, they were unable to afford renewal payment and also difficulty in accessing services (Table 8).

Table 2: Univariate analysis on Renewal of NHIS membership among respondents

Variables	Category	Frequency (%)
Renewal of membership	Yes	225 (90.0)
	No	25 (10.0)
Reasons for not willing to renew (n=25)	Unable to afford renewal payment	11 (44.0)
	Not satisfied with the provider	11 (44.0)
	Difficulty in accessing services	3 (12.0)
Reasons for willing to renew Membership	To avoid cut-off from service	3 (1.3)
	To access healthcare	188 (83.7)
	It is better than out of pocket	34 (15.1)

3.9 BIVARIATE ANALYSIS OF SELECTED FACTORS AND WILLINGNESS TO RENEW MEMBERSHIP

Table 9 shows the bivariate associations of factors influencing respondents' willingness to renew their membership when expiration is due. Most of the factors considered here did not show a statistical significance except for educational level, marital status, and income. However, the data revealed that the educational level of respondents was significant at $p < 0.05$. Also, the reported marital status and income of the subjects during the period of the study showed a statistically significant association with the intent to renew coverage at the time of expiration with p-values of 0.009 and 0.044 respectively.

Table 9: Bivariate analysis of factors associated with willingness to renew membership

Variables (N=250)	Willing to renew n=225 (%)	Not willing to renew n=25 (%)	P-Value
Age Group (yrs)			0.220
18-30	112 (49.8)	17 (68.0)	
31-50	65 (28.9)	6 (24.0)	
51-69	39 (17.3)	1 (4.0)	
70+	9 (4.0)	1 (4.0)	
Gender			0.98
Female	170 (75.6)	15 (60.0)	
Male	55 (24.4)	10 (40.0)	
Employment Status			0.065
Self-employed	123 (54.7)	8 (32.0)	
Public	19 (8.4)	2 (8.0)	
Private	41 (18.2)	5 (20.0)	
Unemployed	42 (18.7)	10 (40.0)	
Educational level			0.014*
No formal education	35 (15.6)	0 (0.0)	
Primary/Middle	100 (44.4)	8 (32.0)	
S.H.S	72 (32.0)	15 (60.0)	
Tertiary	18 (8.0)	2 (8.0)	
Marital Status			0.009*
Single	41 (18.2)	12 (48.0)	
Married	100 (44.4)	6 (24.0)	
Co-habiting	70 (31.1)	7 (28.0)	
Divorced/widowed	14 (6.2)	0 (0.0)	
Income status			0.044*
< GH¢100	45 (20.0)	1 (4.0)	
GHC100-200	102 (45.3)	11 (44.0)	
GHC200 and above	36 (16.0)	3 (12.0)	
No income	42 (18.7)	10 (40.0)	

Distance to the nearest accredited facility			
Very far	20 (20.8.9)	4 (16.0)	0.396
Far	122 (54.2)	11 (44.0)	
Not far	83 (36.9)	10 (40.0)	
Easy access to NHIS office			
Yes	209 (92.9)	25 (100.0)	0.381
No	16 (7.1)	0 (0.0)	

*(measured association is statistically significant); p<0.05.

4. DISCUSSION

The average age among respondents in this current study was 33.8 years old, with the majority of respondents falling within the age group of 18-30 years (55.8%). A similar mean age was reported by [11] and [12] in their studies conducted in the Sekyere South District and five selected districts across three ecological zones (coastal, forest and savanna) of Ghana, respectively.

The data revealed that the majority of the subjects were married or cohabiting (67.4%). The higher proportion of married respondents may be partly due to the age group in which most of the participants were found, that is, 18-50 years. Reports from Ghana Statistical Services [13] shown that most Ghanaians who were married were within such age groups. In this study, most of the respondents were self-employed (49.2%). This finding confirms the occupational status of most people in Ghana as earlier surveys confirm that the majority of the active working forces in Ghana are in the informal sector [13].

Health insurance is as one of the effective methods of health financing compared to cash for treatment [14] or what was previously termed in Ghana as ‘cash and carry’ [11]. In Ghana, the National Health Insurance Scheme was introduced in the year 2003 to replace the ‘cash and carry’ system [15]. This study found a high level of NHIS enrollment among the respondents as the majority of them (69.1%) were registered unto the scheme. This finding was encouraging because the proportion of enrollees found among this population was nearly 100% greater than the national average (36.8%). Contrary to this finding, a study conducted in 2015 among less privileged areas of the Greater Accra Region, such as Agogbloshie, found the percentage of enrollment to be lower than the national average of 24% at the time [16].

Furthermore, this current study observed that almost all those enrolled in the scheme expressed their interest in renewing their membership when the expiration date is due. Dissimilar to reports by [17], they observed that dropouts or non-renewal had increased from 6.5% in 2008 to 34.8% in 2012. They reported that people’s interest to renew their memberships dropped every year.

The key reasons given by respondents for enrolling in the scheme were to permit them to access quality health care and also to enable them to reduce their health care expenditure. These reasons specified by the subjects were exactly some of the purposes for instituting a health care insurance system. In a qualitative study on factors

that impact enrolment and retention in Ghana's National Health Insurance Scheme, it was found that similar motivation among the people served as their main motives for enrolling [15]. Other studies have reported similar motives for enrolling in the NHIS [11]; [14]. In this current study, a higher proportion was of the view that they were forced to enrol in the scheme.

This study found that those who were not eager to renewal membership on the scheme did so because they believed that they do not receive the quality of care they required from providers. They also complained that their inability to afford the renewal fees. These findings were no different from the general perception held among the people of Ghana about the NHIS [15] reported that most Ghanaians believe that having health insurance or going to the hospital with health insurance does not assure quality health care. They continued that most Ghanaians who have visited the hospital with health insurance complained about delay or difficulty in accessing service from health care providers [11].

The enrollment on NHIS can be influenced by several factors that may determine whether a person will decide to sign on or not. This study, as part of its objectives, examined socio-demographic factors, awareness factors that could be associated with NHIS enrollment among the people of the Lower Manya Krobo Municipality. A bivariate analysis presented a statistically significant association between enrollment status and age group, gender, employment status, educational level, marital status, and income level ($p < 0.05$). This study also found a strong association between respondents who have heard about NHIS, distance to NHIS accredited health facility and enrolment. On the issue of gender factor, it was revealed from the study that males had 86% lesser odds of registering into the scheme compared to females. This finding corroborates findings of similar work done by [18] in selected rural communities in the Ashanti Region of Ghana, which indicated that male household heads were less likely to register into the scheme.

Again, the odds of enrollment were 3.5 times higher among those with secondary education compared with those with no formal education (AOR: 3.53; 95 % CI: 1.30-9.57). Educational status was also established to be a positive predictor of NHIS subscription among some households. Another factor identified to be a significant predictor of NHIS enrolment was the income status of the public. It was also found that participants with a monthly earning above GH¢ 200.00 were two times more likely to be enrolled in the scheme compared to those with monthly earning of below GH¢ 200.00, controlling for other covariates in the model. Income or wealth has been reported in several studies as one of the determinants of health insurance enrollment [15]; [19]. A case study of Bugando Medical Center of Tanzania found more membership among households with middle or high-level income than those who have low incomes [19]. Also, in the Upper West Region of Ghana, [5], found individual and household wealth were the primary determinants of enrolment [18], also showed in their research finding, that residents in the categorized Middle and High SES brackets had 1.47 and 1.66 times higher odds, respectively, of enrollment compared to their colleagues in the Low SES category. This confirms that peoples' income influence greatly their ability to be enrolled in a health insurance scheme [20]; [21]; [22].

Additionally, awareness of the existence of NHIS and the distance to an NHIS accredited health facility were found to be some of the factors influencing enrollment (p-value=0.012 and 0.045 respectively) in this study. Compared to those who had heard about NHIS, those who claimed they had not heard about NHIS were 95% less likely to enrol in the NHIS (AOR: 0.05; 95 % CI: 0.01-0.52). The study also revealed that among those who registered in the NHIS, 90% of them had intentions of renewing their membership when it expired. It was also revealed that, out of the 380 respondents, 264 (69.5%) were active members of the scheme and were willing to stay active in the future.

A test of association performed by this study found that respondents' education level, marital status, and income status were associated with intentions to renew NHIS membership and were statistically significant. Aside these factors found by this current study as influencing renewal intentions, other factors that have been reported by previous studies included staff attitude, benefit package and premium price as scheme factors as well as waiting time, provider staff attitude, drug availability and distance to the facility [17];[14].

5. CONCLUSIONS

The study revealed high NHIS enrolment among the respondents which was almost 100% higher than the national average. It was observed that the foremost reasons for enrolment in the NHIS were to serve as financial protection against sickness and also to prevent out of pocket payment for health care services. From the logistic regression analysis, it was noted that enrollment tends to increase as the ones' earnings increase and when one's residence was closer to an accredited NHIS facility. Other demographic features such as sex, educational status, marital status, and age group were also established to be related to NHIS enrollment.

It was further established in the gathered data that almost all the respondents had intentions of renewing their membership when it expires. Those who had no such intention to renew their NHIS believed that they could not afford the fee; there were also not satisfied with provider services and had difficulty to access services. The educational status, marital status, and income status were the factors established to be significantly associated with intentions to renew membership.

Notwithstanding the contribution of this study to scientific knowledge, it cannot go without stating some intrinsic limitations that came with it. The study did not cover other forms of health insurance, such as the private commercial and private mutual health insurance schemes, the small nature of the sampled size used will make it impossible to generalize the key findings to a larger population. A further comprehensive qualitative study should be conducted as a follow-up study.

AUTHORS' CONTRIBUTIONS

All authors contributed effectively to the study. JYB, SM, and SC took part in conceiving the study and in the development of data gathering tools. JYB and SC carried out data gathering. SM, SC, and JYB participated in the data analysis and drafting of the manuscript. All authors read and approved the final manuscript.

CONFLICT OF INTEREST

There was no conflict of interest among the authors.

6. REFERENCES

- [1] Ministry of Health, Annual Report 2006. http://www.gov.pe.ca/photos/original/doh_ar06-07heal.pdf
- [2] National Health Insurance Authority-Annual Report, 2013. <http://www.nhis.gov.gh/files/2013%20Annual%20Report-Final%20ver%2029.09.14.pdf>
- [3] Dixon J, Tenkorang E, & Luginaah I (2011). National health insurance scheme enrolment and antenatal care among women in Ghana: is there any relationship? *Tropical Medicine and International Health*. 19 (1) 98–106 <https://doi.org/10.1111/tmi.12223>
- [4] Chankova S, Sulzbach S., Diop F (2008). **Impact of mutual health organizations: evidence from West Africa: Health Policy and Planning, Volume 23, Issue 4, July 2008, Pages 264–276**, <https://doi.org/10.1093/heapol/czn011>
- [5] Asomani, F. (2014). Understanding non-enrolment in Ghana's National Health Insurance Scheme : a view from beneath (Thesis). Universitetet I Oslo. Retrieved from <https://www.duo.uio.no/handle/10852/40404>
- [6] MOH, the Health Sector in Ghana Facts And Figures 2014. <http://www.moh.gov.gh/wp-content/uploads/2017/07/Facts-and-figures-2014.pdf>
- [7] Amo-Adjei, J., Anku, P.J., Amo, H.F. *et al.* Perception of quality of health delivery and health insurance subscription in Ghana. *BMC Health Services Research* 16, 317 (2016). <https://doi.org/10.1186/s12913-016-1602-4>
- [8] Ghana Statistical Services (2012) Population and Housing Census Post Enumeration Survey Report, 2010. Accra. http://www.statsghana.gov.gh/gssmain/fileUpload/pressrelease/2010_PHC_Nationa_l_Analytical_Report.pdf
- [9] Lower Many Krobo Municipal Health Directorate (2017) Ghana Health Service, Annual Report. <http://www.ghanahealthservice.org>
- [10] Cochran, W.G. (1977) Sampling Techniques. 3rd Edition, Wiley, New York, 428 p. https://archive.org/details/Cochran1977SamplingTechniques_201703/page/n115
- [11] Fenny, A. P., Kusi, A., Arhinful, D. K., & Asante, F. A. (2016). Factors contributing to low uptake and renewal of health insurance : a qualitative study in Ghana. *Global Health Research and Policy*, 1–10. <https://doi.org/10.1186/s41256-016-0018-3>
- [12] Ghana Statistical Service, Ghana Health Service (GHS) and ICF Macro (2014) Ghana Demographic and Health Survey. GSS, GHS and ICF Macro, Accra. <https://dhsprogram.com/pubs/pdf/fr307/fr307.pdf>
- [13] Boateng, D., & Awunyor-vitor, D. (2013). Health insurance in Ghana : evaluation of policyholders ' perceptions and factors influencing policy renewal in the Volta region. *International Journal for Equity in Health*, 12(1), 1. <https://doi.org/10.1186/1475-9276-12-50>
- [14] Kotoh, A. M., Aryeetey, G. C., & Geest, S. Van Der. (2018). Original Article Factors That Influence Enrolment and Retention in Ghana's National Health Insurance Scheme. *Kerman University of Medical Sciences*, 7(5), 443–454. <https://doi.org/10.15171/ijhpm.2017.117>
- [15] Tawiah, E. K. (2015). Factors influencing Enrolment in the National Health Insurance Scheme among Slum Dwellers in Agbogbloshie. (Thesis). University of Ghana. Retrieved from <http://ugspace.ug.edu.gh/bitstream/handle/123456789/21693/>
- [16] Atinga, R. A., Abiuro, G. A., & Kuganab-lem, R. B. (2015) Factors influencing the decision to drop out of health insurance enrolment among urban slum dwellers in Ghana. *Tropical Medicine and International Health*, 20 (3), 312–321. <https://doi.org/10.1111/tmi.12433>
- [17] Manortey, S., Alder, S., Crookston, B., Dickerson, T., Vanderslice, J., & Benson, S. (2014). Social deterministic factors to participation in the National Health Insurance Scheme in the context of rural Ghanaian setting. *Journal of Public Health in Africa*, 5(352), 51–56. <https://doi.org/10.4081/jphia.2014.352>
- [18] Luhanga, A. (2015). Factors Influencing Coverage of Health Insurance in Tanzania: A Case of Bugando Medical Center. *Mzumbe University, Unpublished*. <http://hdl.handle.net/11192/1069>

- [19] Dixon, J. (2014). *Determinants of Health Insurance Enrolment in Ghana's Upper West Region*. Electronic Thesis and Dissertation Repository. 2057. <https://ir.lib.uwo.ca/etd/2057>
- [20] Greef, T. D. G., Monareng, L. V, & Roos, J. H. (2016). A quantitative study on factors influencing enrolment of dairy farmers in a community health insurance scheme. *BMC Health Services Research*, 1–10. <https://doi.org/10.1186/s12913-016-1925-1>
- [21] Wal R. Van Der, Nsiah-boateng, E., & Asante, F. A. (2018). Does a provider payment method affect membership retention in a health insurance scheme? A mixed-method study of Ghana's capitation payment for primary care. *BMC Health Services Research* (2018) 18:52. <https://doi.org/10.1186/s12913-018-2859-6>
- [22] Awudu, S. (2016). National Health Insurance Scheme : Predictors of Card Renewal Among Subscribers in the East Declaration. *Ugspace, Unpublished* (10551904).