Purchasing Access to Healthcare for Older People: An Assessment of the Old-Age Exemption Policy under Ghana's National Health Insurance Scheme

Author Details

Fidelia A. A. Dake[a,b]

a. Centre for Research on Ageing
    University of Southampton
    Email: faad1n16@soton.ac.uk

b. Regional Institute for Population Studies
    University of Ghana
    P. O. Box LG 96
    Legon, Accra
    Ghana
    Email: faadake@st.ug.edu.gh

Abstract

Ghana's National Health Insurance Scheme (NHIS) is among the few programmes in Africa that exempts older people from paying for health insurance. This study investigates whether the old-age exemption policy under Ghana's NHIS provides health insurance coverage for older people and examines factors associated with old-age exemption under the NHIS. Descriptive statistics, chi-square test and binary logistic regression were used in analysing data from 1,704 older people in the 2012-2013 Ghana Living Standards Survey. The findings indicate that only about 4 in 10 older people had health insurance coverage and only 1 in 10 were beneficiaries of the old-age exemption policy, with majority (78.4%) still paying premiums. Older people who are 80+ years, poor or live in rural areas were less likely to be exempt under the NHIS. The old-age exemption policy is not reaching those who need it most, thus failing to provide financial risk protection for older people.

Introduction

Population ageing is occurring in all regions of the world, albeit to varying extents. The rate of population ageing in low-and-middle income countries has been observed to be occurring at a faster pace than observed in high-income countries (World Health Organisation (WHO 2012). In the African region, the absolute number of older people is expected to increase rapidly over the few next decades even though the share of older people relative to the entire population remains small (Pillay and Maharaj, 2010). The growing population of older people in the African sub-region has several implications that requires specific targeted interventions including health system planning and social health protection specifically for older people. Such planning is necessary because older people, particularly those in their later ages face a greater health burden than other population sub-groups (Awoke et al., 2017). Additionally, older people, particularly those in low-and-middle income countries are increasingly being confronted with the burden of non-communicable diseases (NCDs) such as diabetes, hypertension, stroke and heart diseases (WHO, 2012; Aboderin and Beard, 2015). The World Health Organisation (WHO) reports that the impact of NCDs is 2-3 times greater for older people in low-and-middle income countries than those in high-income countries (WHO, 2012). But while on the one hand older people have the greatest need for healthcare, on the other hand they face financial barriers in accessing healthcare because they are among the poorest and most vulnerable population sub-groups who cannot afford to pay for healthcare services (Lloyd-Sherlock et al., 2012; Lloyd-Sherlock and Agrawal, 2014; Parmar et al., 2014). Additionally, older people in low-and-middle income countries spend more per-capita on healthcare than other population sub-groups and they also have higher unmet need for healthcare than other population sub-groups (Parmar et al., 2014). The lack of social protection systems for older people in Africa, particularly in the area of healthcare therefore requires urgent attention.

In the sub-Saharan Africa region, only a handful of countries, including Ghana and Senegal have implemented social health protection programmes that target older people (Parmar *et al.*, 2014).Senegal's programme; Plan Sesame, directly and exclusively targets older people through a user-fee exemption while Ghana's programme; the National Health Insurance Scheme (NHIS), applies a premium-exemption policy for older people. The old-age premium exemption policy applies to older people aged 70 years and above who are not contributors to the Social Security and National Insurance Trust (SSNIT) pension scheme (Kusi et al. 2015; Kotoh et al. 2018). Other premium exempt groups include children under 18 years whose parents are enrolled on the scheme, pensioners under the SSNIT pension scheme, persons classified as indigents and pregnant women (whose exemption started in July 2008) (Blanchet et al. 2012; Kotoh & Van Der Geest 2016; Fenny et al. 2015; Republic of Ghana, 2012). In the implementation of the NHIS, individuals are required to register once in their lifetime but they need to have their membership renewed annually (Parmar et al., 2014). Additionally, registration and annual renewal of membership is required of all those who are exempt from paying premiums. Furthermore, older people 70 years and above (and other exempt groups) pay registration fees at the time of renewal even though they are exempt from paying premiums (Parmar et al., 2014; Kusi et al., 2015) and they are also expected to provide a proof of the condition for exemption (Dixon et al., 2011). Older people for instance must provide a proof of age in order to benefit from the premium exemption policy (Dixon et al., 2011).

The NHIS provides a benefits package that covers almost 95% of the disease burden in Ghana and includes in-patient hospital care, out-patient care at primary and secondary levels, and emergency and transfer services (Fenny et al., 2015; Amu and Dickson, 2016). Thus, although the NHIS benefit package does not have a specific focus on geriatric or chronic conditions, the wide range of benefits means that those who are enrolled on the scheme can access basic healthcare. For older people who would have otherwise not been able to pay the cost of accessing healthcare, the old-age exemption policy is a means of having access to healthcare while ensuring financial risk protection against catastrophic out-of-pocket payments.

While the old-age exemption policy has been in operation since the implementation of the NHIS, there has been no assessment of the policy. It is, therefore, imperative that the old-age premium exemption policy is assessed to determine whether the intended beneficiaries are being reached and whether the policy is achieving the aim of financial risk protection for older people. Such an assessment is of utmost importance because Parmar et al. (2014) argue that "evidence on whether [social health programmes] have been successful in providing equitable healthcare to older people where they have access to healthcare on the basis of need, irrespective of their income, age, residency, or sociocultural factors is limited" (Parmar et al., 2014:37). Furthermore, while there has been extensive research on issues of equity and social exclusion with regards to the NHIS (Dixon et al., 2011; Parmar et al., 2014; Kusi et al., 2015; Kotoh and Van der Geest, 2016; Awoke et al., 2017), there has been very limited research on how these issues affect older peoples' enrolment and access to the scheme and whether or not the premium exemption policy for older people is reaching the intended target and achieving the intended benefit of providing financial risk protection from catastrophic out-of-pocket payment for older people. This study therefore seeks to examine the exemption policy for older people under Ghana's NHIS. The study specifically analyses socio-demographic differentials in exemption and health insurance coverage and also assesses which socio-demographic factors predict exemption and health insurance coverage among older people under Ghana's NHIS.

Methods
Source of Data
This study uses data from the sixth round of the Ghana Living Standards Survey (GLSS). The GLSS is the Ghanaian version of the Living Standards Measurement Study (LSMS) initiated by the Policy Research Division of the World Bank in 1980 (GSS, 2014). Ghana has conducted six rounds of the GLSS since 1987. The sixth round of the survey (GLSS 6) was conducted over a period of one year, from 18th October, 2012 to 17th October, 2013. Data for the survey were collected using different sets of instruments including a household questionnaire, a non-farm household questionnaire, a community questionnaire, a questionnaire on governance, peace and security and a questionnaire on prices of food and non-food items. GLSS 6 also included a health module which contained specific questions on health insurance. The questions on health insurance further included specific questions on the premium exemption policy. The questions on the premium exemption policy were asked of all household members including older people 70 years and above. The household questionnaire collected data on demographic characteristics of household members

including their age, sex, marital status and educational attainment. The household questionnaire also included a section on health which asked specific questions on health insurance for each household member. Given the specific focus on health insurance and the inclusion of older people 70 years and older in the GLSS 6 survey, the GLSS 6 is the most appropriate data for this study.

Sampling procedure

GLSS 6 was designed as a household probability survey that would provide regional and nationally representative data on the various indicators measured in the survey. A two-stage stratified sampling design was employed in selecting respondents for the survey. The first stage of sampling involved the selection of Enumeration Areas (EAs)[1] as the primary sampling units (PSUs). Selection of PSUs was first stratified according to the 10 administrative regions and further stratification was done based on urban and rural classification. Additionally, PSUs were selected using probability proportional to population size and each PSU had a known non-zero probability of being included in the sample. The sampling frame for the selection of PSUs was obtained from the 2010 Population and Housing Census. The first stage of sampling resulted in the selection of a total of 20 strata and 1,200 EAs as PSUs. Following the selection of PSUs, a household listing exercise was conducted in each of the selected PSUs. The resulting household listing served as the sampling frame for the second stage of sampling. In the second stage of sampling, 15 households in each PSU were systematically sampled from the sampling frame. The sampling design resulted in a nationwide sample of 18,000 households. Sampling weights that account for clustering in the sample design were incorporated into the selection of the sample for the survey.

Study Subjects

All individuals identified as household members[2] in sampled households were listed in the household roster and questions on socio-demographic characteristics and health insurance were asked of each household member listed in the household roster. The subjects for this study include members of the household who were 70 years and older and who had valid responses on questions regarding health insurance and socio-demographic characteristics. The age eligibility criterion of 70 years and above was applied in accordance with the age requirement for the old-age exemption policy under Ghana's NHIS. An analytical sample of 1,704 older people (70 years and above) was realised after excluding missing cases and missing items on some variables.

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[1] Enumeration Areas, also known as clusters are the lowest unit of sampling used by the Ghana Statistical Service for purposes such as census and survey enumeration.
[2] For the purposes of the GLSS 6 survey, a household was defined as a person or groups of persons who are related or unrelated, live together in the same housing unit, share the same housekeeping and cooking arrangements and are considered as one unit and they acknowledge an adult male or female as the head.

Variables

Measures of health insurance

The GLSS 6 survey included a number of measures of health insurance status which were applied in this study. These include a measure of whether or not the older person has ever registered for health insurance. The variable "*ever registered*" was created based on whether the older person has ever registered for health insurance and the categories include "*Yes*" for those who have ever registered and "*No*" for those who have never registered for health insurance. Another measure of health insurance status "*currently registered*" which gives an indication of respondents' health insurance status at the time of the survey included three categories of; (1) "*Yes*" for those who were currently registered, (2) "*No*" for those who were not currently registered and (3) "*Never registered*" for those who have never registered for health insurance. Additionally, "*Type of health insurance scheme*" was created based on the type of insurance scheme respondents' were registered for. The categories include; (1) "*National/District Health Insurance (NHIS)*" and (2) "*private insurance*".

Dependent variables

There are two primary outcome variables for this study. The first is *health insurance coverage* which was measured using the question which asked whether or not the older person has a valid health insurance card. This variable was categorised into; "*Yes*" for those who reported having a valid health insurance card which was either seen or not seen by the interviewer and *"No"* for those who reported not having a valid health insurance card. It is important to mention that under the NHIS, having a valid health insurance card is the actual measure of health insurance coverage. This is because individuals who have a valid health insurance card are able to access healthcare services as NHIS subscribers whereas those who do not have a valid card cannot access healthcare services even if they are registered. Additionally, it is worth noting that, a health insurance card is valid for a period of one year after which it needs to be renewed in order for the card holder to remain insured/covered. The second primary outcome variable is "*Payment of premiums*" for health insurance. This measure was assessed using the question that asked household members "who paid the premium for your health insurance registration". The response categories included "*paid myself*", "*paid by friend/relative*", "*paid by employers*" and *"exempt as aged"*. The "exempt as aged" category, also represented as "exempted" or "exempt" in this study was the main category of interest in assessing the old-age exemption policy.

3.5.4 Independent variables

The socio-demographic characteristics of the study subjects constitute the main independent variables for this study. These include age which was used either as a continuous variable with one year incremental intervals or as a categorical variable where respondents' were grouped into 10-year age-groups of; "*70-79 years*", "*80-89 years*" and "*90-99 years*". The study subjects were also considered as being "*male*" or "*female*" based on their biological sex. Current marital status was asked of household

members aged 12 years and above and the responses included married, in consensual union, separated, divorced, widowed and never married. For the purposes of this study, marital status includes two broad categories of those "*in union*" for those who were married or in a consensual union and those not "*in union*" which includes those who have never been married and those who were separated, divorced or widowed. The religious denomination of household members as obtained from the survey responses included those who had no religion, Catholics, Protestants, Pentecostals/Charismatics, other Christians, Muslims and Traditionalists. For the purposes of this study, respondents were grouped into four main groups of *"Traditionalists/no religion"*, *"Orthodox Christians"*, *"Pentecostal/Charismatic Christians"* and *"Muslims"*. The highest level of education attained by the study subjects and the income quintile of the household they belong to were used as measures of their socio-economic status. Level of education attained in this study included four categories of education for those who have "*no formal education*", those who have completed either "*primary*", "*middle/junior high*" or "*secondary or higher*" levels of education. Household income quintiles derived from household expenditure on food and non-food items ranged from "*1*" representing the "*poorest*" income quintile to "*5*" representing the "*richest*" income quintile. Differences in health insurance status among "*rural*" and "*urban*" dwellers was assessed using "place of residence" while regional variations were assessed using "region of residence" which had ten categories representing the ten administrative regions of Ghana.

3.6 Methods of analysis

A description of the socio-demographic characteristics of the study subjects and the differentials in their health insurance status were examined using descriptive statistical tools including means, frequencies and percentages. Bivariate associations between the dependent variable and the independent variables were examined using chi-square analysis. Statistical significance for these association was tested using the chi-square test statistic and significance was set at the 5% α-level ($p < 0.05$). The factors that predict health insurance coverage and old-age exemption were examined using binary logistic regression analysis. The analyses accounted for clustering in the sampling design by applying sampling weights and generating robust standard errors. The statistical analysis was performed in Stata version 14 while data management was performed in SPSS version 22.

3.7 Ethical considerations

This study uses secondary data collected by the Ghana Statistical Service. The data are publicly available online to all interested users for research and statistical purposes. However, permission to use the data has to be sought from the Ghana Statistical Service through written request. Data users are required not to wilfully identify any individual, household or establishment in the micro dataset and also ensure confidentiality by holding in strict confidence the identity of any individual or household or establishment that may be inadvertently revealed in any documents, discussion or analysis. Furthermore, during data collection, respondents were fully

informed about the survey and the interview conditions and their consent was sought to take part in the survey. As part of the consent process, respondents voluntarily gave consent and agreed to take part in the survey. This study was reviewed and granted ethical approval (Ethics ID: 26557) by the University of Southampton's ethics committee.

Results

Socio-demographic characteristics of older persons

The results in Table 1 show that the study subject were about 77 years old on average and there were slightly more males (56.5%) than females (43.5%). Half of the sample were in union and a little less than half (46.3%) belonged to the Orthodox Christian faith. About one-third (31.3%) of the older people had no formal education while another one-third (33.3%) had completed middle/junior high level of education. In terms of wealth, an almost equal distribution was observed across the various income quintiles. The spatial and geographical distribution shows about 6 in 10 of the older people residing in rural areas while the remaining 4 in 10 lived in urban areas. In terms of regional location, the Ashanti region had the largest share (20.1%) followed by the Eastern region (14.0%)

<div align="center">[Table 1 here]</div>

Health insurance status of older persons

The results in Table 2 show that a little over one-third (38.3%) of the older people have never registered for health insurance while a little less than two-thirds (61.7%) have ever registered for health insurance sometime in the past. However, considering current registration, only about half (51.2%) were registered for health insurance at the time of the survey and about one-tenth (10.5%) were not registered. The results further show that not all older people had a valid health insurance card; more than half (53.4%) of the total sample did not have a valid health insurance card and even among those who were registered at the time of the survey, about 1 in 10 (9%) did not have a valid health insurance card. Considering both the total sample of older people in the study and the sub-sample of older people who reported being currently registered for health insurance, NHIS was the most commonly used type of health insurance (50.8% and 99.6% respectively). As per the NHIS old-age exemption policy, older people aged 70 years and above should ideally not pay premiums to be registered on the scheme. However, as demonstrated in the results presented in Table 2, about 8 out of 10 (78.4%) of the older people who were registered at the time of the survey paid the premium for health insurance themselves. Only about 1 in 10 (11.2%) of the older people who were registered at the time of the survey reported that they were exempt from paying premiums.

<div align="center">[Table 2 here]</div>

Socio-demographic factors associated with health insurance coverage and old-age premium exemption

The results presented in Table 3 show that more than half (53.4%) of the older people in the study were not covered under the NHIS at the time of the survey. The results further show significant variations in health insurance status and old-age premium exemption by respondents' sociodemographic characteristics. Considering age, more than half of older people in the various age groups were not covered under the NHIS, with the highest proportion (59.5%) occurring among the oldest age group (90-99 years). In terms of gender, females appear to be disadvantaged as a higher proportion of females (55.2%) compared to males (52.1%) did not have health insurance coverage. Regarding religious denomination, a higher proportion of older people who held traditional or no religious beliefs reported having health insurance coverage while a higher proportion of their Muslim counterparts reported not having health insurance coverage (Table 3). The level of education attained by the older people was significantly related with their health insurance coverage, however, there was no clear pattern in the direction of the association. The highest level of no coverage was observed among those with primary level of education (59.6%) while those with middle/JHS recorded the lowest level of no coverage (51.4%). The results with regards to income quintiles similarly show a significant association with health insurance coverage but there was no consistent pattern. The results generally indicate that the proportion of older people who reported having health insurance coverage decreased as income quintile increased while the proportion reporting lack of coverage increased with increasing income quintile, but in both instances, the middle category deviated from this pattern (Table 3). Further, comparing the poorest and richest quintiles show that coverage among the poorest quintile was about 9 percentage point higher than coverage among the richest quintile. Similarly, lack of coverage was about 9 percentage points higher among those in the richest quintile compared to those in the poorest quintile. The results with regards to spatial distribution show that on the one hand, rural residents reported higher coverage compared to urban residents and on the other hand, lack of coverage was higher among urban residents compared to rural residents. Furthermore, regional variations show coverage being lowest among older people in the Central, Northern and Greater Accra regions (35.9%, 37.4% and 39.7% respectively) and highest in the Upper West and Upper East regions (69.2% and 64.3% respectively).

The results with regards to payment of health insurance premiums indicate that just about 1 out of 10 (11.2%) older people were beneficiaries of the exemption policy. The results further show that nearly 80% of older people pay premiums for NHIS membership even though they are exempt from paying premiums as per the NHIS old-age exemption policy. In terms of socio-demographic characteristics and old-age exemption, the results indicate that the exemption was a bit more common among the oldest age group (90-99 years) compared to the other age groups while the gender distribution shows nearly twice as many women (15.6%) compared to men (8.1%) being beneficiaries of the exemption policy with a slightly higher proportion of men (79.0%) paying health insurance premiums themselves. The results with regards to marital status also shows that, about twice as many older people who are either separated, widowed, divorced or never married benefitted from being exempted from

paying premiums compared to those who were either married or living with a partner (Table 3). Marked variations in exemption were also observed among the different religious denominations with exemption being less common among Muslims (3.7%) and more common among Pentecostal/Charismatic and Orthodox Christians (13.3% and 13.0% respectively). The results with regards to socio-economic status show a mixed pattern. Firstly, there was a negative gradient between the highest level of education attained and the proportion of older people who benefitted from the exemption policy, such that, the proportion of older people who reported benefitting from being exempted decreased as level of education increased (Table 3). The results with regards to income quintiles, however, show a pattern that is contrary to what was observed for education. Only 6.7% of older people in the poorest quintile indicated that they did not pay health premiums because of the exemption policy compared to 13.7% of older people in the richest income quintile. On the other hand, self-financing/payment of health insurance premiums was more common among older people in the poorest income quintile (81.4%). With regards to place of residence, there appears to be an urban advantage when it comes to the exemption policy. This is demonstrated in the results presented in Table 3 where a slightly higher proportion of older people in rural areas (79.3%) reported paying for health insurance premiums themselves while a slightly higher proportion of urban residents (12.4%) reported being beneficiaries of the exemption policy. The regional results also show marked variations in exemption and self-financing options with indications that while nearly half of older people in the Western region reported being beneficiaries of the exemption policy, just about 1 in 100 of their counterparts in the Northern region reported being beneficiaries of the policy. Additionally, self-financing/payment of health insurance premiums was observed to be most common among older people in the Upper West region (Table 3).

[Table 3 here]

Predictors of health insurance coverage and old-age premium exemption

Table 4 shows the results of a binary logistic regression model that examines the socio-demographic characteristics of older people that influence their likelihood of having health insurance coverage and being exempted from paying premiums under the NHIS. The results generally show that older people are less likely to be covered under the NHIS as they grow older (Mode1, Table 4). Considering gender, the results indicate that females are disadvantaged as they are significantly less likely (OR=0.866, p<0.001) to be covered under the NHIS compared to males. The results with regard to marital status show that older people who are married or in a consensual union are less likely to be covered under the NHIS compared to those who are not in union (Model 1, Table 4), while the results with regards to religious denomination indicate that Orthodox Christians and Muslims are less likely (OR=0.858 and 0.686 respectively) to be covered under the NHIS compared to traditionalists and those who have no religious beliefs but Pentecostal/Charismatic Christians are more likely (OR= 1.020, p<0.05) to be covered under the NHIS. Regarding educational attainment and the likelihood of health insurance coverage, older people who have no formal education and those who have primary level of education are significantly less likely

to be covered compared to those who have completed secondary or higher levels of education. Additionally, older people who have completed middle/junior high school were observed to have a 5.2% higher chance of being covered under the NHIS compared to those who have completed secondary or higher levels of education. In terms of income quintiles, the results indicate that older people belonging to income quintiles other than the richest are significantly more likely to be covered under the NHIS with the odds being highest for those in the middle quintile (OR=1.275). The results in terms of rural-urban residence give indication of older people in urban areas being at an advantage in terms of being covered under the NHIS (OR=1.021) compared to their counterparts in rural areas. And in terms of regional variations, older people in the Central region were the only ones who were observed to have a lower likelihood of being covered under the NHIS while older people from the other regions were more likely to be covered under the NHIS compared to their counterparts in the Greater Accra region (Model 1, Table 4).

The results with regards to the socio-demographic determinants of old-age premium exemption are shown in Model 2, Table 4. The model predicts the likelihood of being exempt versus paying health insurance premiums through other means (including self-financing). The results indicate that, older people 80-89 years are less likely (OR= 0.867) to benefit from the exemption policy compared to the 70-79 year olds. Additionally, the results with regards to gender show females being at an advantage of being exempt from paying health insurance premiums (OR=2.506) compared to their male counterparts. In terms of marital status, older people who are in union have a 63% higher chance of being exempt compared to those who are not in union. And in terms of religious denomination, older people belonging to the various religious denominations other than traditionalists and those with no religious beliefs were significantly less likely to be exempt from paying premiums. The results in terms of education show that compared to those who have secondary or higher level of education, those who have no formal education, those who have completed primary and those who have completed middle/junior secondary level of education were all more likely to be exempt from paying premiums (OR=2.422, 2.089 and 1.119 respectively). Regarding income quintiles, the results indicate that older people in the poorest and second poorest income quintiles were less likely to be exempt from paying premiums (OR=0.609 and 0.878 respectively) compared to older people in the richest quintile. Also, older people in the fourth income quintile were less likely to be exempt from paying premiums compared to older people in the richest quintile. Those in the middle income quintile were the only category of older people who were observed to have a higher likelihood (OR=1.104) of being exempt from paying premiums. The urban rural results show an urban advantage when it comes to the old-age exemption policy as older people in urban areas had a 33% higher chance of being exempt from paying NHIS premiums compared to their counterparts in rural areas. Regarding regional variations, on the one hand, older people from the Northern region were significantly less likely to be exempt compared to older people from the Greater Accra region while on the other hand, older people from the remaining eight regions were more likely to be exempt (the effect was not statistically significant for older people in

the Upper East region) with the odds being highest for older people from the Western, Central, Volta and Brong Ahafo regions respectively (Model 2, Table 4).

[Table 4 here]

Discussion

The findings of this study indicate that only about 4 in 10 older people aged 70 years and above have health insurance coverage by virtue of possessing a valid health insurance card that they can use to access health services. This means that, a little more than half of older people in Ghana have to pay for healthcare at the point of service delivery because they do not have a valid health insurance coverage. This further implies that more than half of the population of older people in Ghana are exposed to the risk of financial hardship from catastrophic out-of-pocket payments in spite of being eligible for the old-age exemption policy under the NHIS. Older people who are poor and who are not covered under the NHIS in spite of being eligible for exemption are particularly vulnerable to the risk of catastrophic out-of-pocket payments. The sub-optimal level of NHIS coverage among older people in spite of the existence of the exemption policy may be due to mandatory requirements for enrolment such as having a valid insurance card. Nearly one-fifth (data not shown) of the older people involved in this study did not have health insurance coverage because they were either in a waiting period following their registration or waiting to receive their card. Another barrier to coverage is the requirement of annual membership renewal. More than half (57.7%) of the older people in this study were not covered under the NHIS because they had not renewed their membership (data not shown). Renewal of NHIS membership presents a major barrier to older people benefitting from the exemption policy because even though they are exempt from paying premiums, they are required to pay registration fees for the annual membership renewal (Kusi et al., 2015; Parmar *et al.*, 2014, Kuuire et al., 2017). Even though the registration fee which is the equivalent of about $1 (Kuuire *et al.*, 2017) is a relatively small cost, for older people it is a substantial cost and a barrier to accessing the old-age exemption policy.

Furthermore, the findings indicate that the exemption policy is not working properly and it is also not reaching the intended target beneficiaries. This can be inferred from the results which show that only 11.2% of older people were exempt from paying premiums while majority (78.4%) reported paying premiums themselves. Additionally, older people in the poorest quintile were more likely to pay health insurance premiums themselves while those in the richest quintile were more likely to be exempt. This finding indicates that the exemption policy is not achieving the aim of financial risk protection for the poor. These findings corroborates those from other studies that show that the poor bear a higher financial burden in acquiring health insurance yet they are also less likely to have access to health insurance compared to the rich (Dixon et al., 2011; Parmar et al., 2014; Kusi et al., 2015; Kuuire et al., 2017). One of the main reasons why the poor are disadvantaged in their ability to purchase health insurance is the cost factor. Findings from several studies indicate that poverty is a major barrier to enrolment on the NHIS among the poor. For instance, in a study conducted in the Central and Eastern regions of Ghana, Kotoh and Van der Geest found that

community members cited "No money to pay premium" (Kotoh and Van der Geest, 2016:6) as the most common reason for why they had not enrolled or renewed their NHIS membership. Similar to the findings reported by Kotoh and Van der Geest (2016), a little more than one-tenth of the older people in the present study reported reasons such as having no money or premiums being too high as the reason why they were not enrolled on the NHIS and older people in the poorest income quintile constituted the highest proportion of those who reported financial barriers (data not shown).

The results with regards to age show that older people at older ages are less likely to be covered under the NHIS and they are also less likely to be exempt from paying premiums. This means that older people in the later years of their life may not have access to the much needed healthcare associated with ageing (Parmar et al., 2014) and they also stand the risk of having to make out-of-pocket payments as they are less likely to benefit from the NHIS exemption policy. This implies that the exemption policy is not reaching older people aged 80 years and older. Some of the possible reasons why these older people are less likely to be exempt may include their inability to provide proof of their age (Dixon et al., 2011) or their inability to go and register due to frailty. The shows contrasting gender disparities in health insurance coverage and exemption.

While on one the hand, females are more likely to be exempt from paying premiums compared to males, on the other hand, females are less likely to be covered under the NHIS compared to males. Similar findings have been reported in Ghana and South-Eastern Nigeria where health insurance coverage was found to be low among females and their households (Van Der Wielen et al., 2018b; Onah and Govender, 2014). This means that females may be at an advantage in terms of being exempted but they need to overcome other barriers in order to be actually enrolled on the NHIS. Some of these barriers include unfavourable socio-cultural practices and discrimination against women in accessing social services such as health insurance (Etobe and Etobe, 2015). Furthermore, the requirement of paying registration fees even for those who are exempt may prevent older women from enrolling on the NHIS under the exemption policy. This is because older women are relatively poorer and they face financial barriers which can prevent them from enrolling for health insurance (Onah and Govender, 2014; Adisa, 2015). This is observed in the present study where women were found to constitute a higher proportion of those who reported financial barriers as the reason for not being registered for health insurance.

Older people who were in union were found to be less likely to have health insurance coverage. This finding is contrary to the findings of another study conducted among older people (70 years and above) from Ghana in the Study on Global Ageing where it was found that older people who are separated or divorced were less likely to have health insurance (Kuuire et al., 2017). In the present study, older people who were in union were also found to be more likely to be exempt compared to those who were not in union. For these older people who are in union, they stand a double advantage; first of being exempt and second of having a better chance of being able to pool together resources with their partners (Dixon et al., 2011) considering their lower likelihood of having health insurance coverage. Additionally, being in a marital union offers older people a form of social capital (Kawachi *et al.*, 2008; Dixon et al., 2011; Parmar et al.,

2014; Gong et al., 2016) that enhances their chances of being able to purchase health insurance.

In the present study, the odds of exemption and health insurance coverage were both lowest for Muslims compared to traditionalists and those who have no religious affiliation. Similar results have been reported in other studies conducted in Ghana and Senegal where Christians were significantly more likely to have health insurance coverage in Ghana while Muslims were found to be less likely to enrol in health insurance in Senegal (Van Der Wielen et al., 2018a; Odeyemi, 2014). Several reasons have been proposed for the religious differences in health insurance coverage. In Ghana, there are indications that religious differences are a function of differences in socio-economic status among the different religious groups with Christians being relatively richer than other religious groups (Kuuire et al., 2017). Another likely reason for these religious differences is that Christian norms, particularly Orthodox Christians encourage western medicine (Gyimah *et al.*, 2008) and public health facilities that accept health insurance include mission hospitals set up by Orthodox churches such as Catholic and Presbyterian missions (Awoke et al., 2017).

The results with regards to education shows that people at the lower ends of the education spectrum are significantly less likely to have health insurance coverage but there are more likely to be exempt from paying premiums. The lower likelihood of health insurance coverage among those with low or no formal education has been reported in other studies (Jehu-Appiah et al., 2011). This finding shows that the relationship between education and health behaviours such as purchasing health insurance is not as direct as often presented. In the case of older people and the NHIS, those who are less educated may be more likely to be exempt but this does not necessarily translate into health insurance coverage because of reasons such as the registration requirement for exempt groups and the associated cost (Kusi et al., 2015; Dixon et al., 2011). Older people who have low levels of education or are not educated at all are likely to be engaged in the informal sector. They are also less likely to have social protection benefits such as pensions. Thus for such older people, even though they may be exempt from paying premiums they may not be able to meet other requirements that will give them access to health insurance coverage. The results with regards to wealth supports findings from other studies that indicate that the NHIS is not meeting the pro-poor intention for setting up the scheme (Akazili et al., 2014; Parmar et al., 2014). This was observed among older people in the present study. Older people in the lowest income quintiles (poorest and second poorest) were significantly less likely to be exempt from paying premiums, indicating that the exemption policy is not reaching the poorest section of the population of older people. Furthermore, the policy is not providing financial risk protection for the most vulnerable older people as a high proportion of older people in the poorest quintile reported that they paid health insurance premiums themselves. This probably explains why the poorest were more likely to have health insurance coverage even though they were less likely to be exempt. It is reported that the poor value health insurance because it is an affordable option for accessing health than out-of-pocket payments (Kusi et al., 2015; Kotoh and Van der Geest, 2016). Thus even in their lack, the poor would rather purchase health insurance compared to the rich as was observed in the present study. The results also indicate that there is an urban advantage in health insurance coverage and exemption. Older people in urban areas are more likely to have

insurance coverage and they are also more likely to exempt from paying premiums compared to their counterparts in rural areas. Some of the plausible reasons for these urban rural differences are the inequitable distribution of resources including health facilities, access to information, proximity to registration centres and socio-economic differences between urban and rural areas (Parmar et al., 2014). Urban areas in most African countries tend to be more developed compared to rural areas and urban areas also tend to have more facilities of higher quality which are more accessible compared to rural areas. This differential access to resources and associated implications for health insurance coverage are also apparent in the regional variations in Ghana. For example, Dixon et al. (2011) report that enrolment in health insurance is higher in the Northern sector of Ghana because of the prior history of community-based health insurance schemes.

Conclusion

In conclusion, this study reveals that, firstly, more than half the population of older people in Ghana are not covered under the NHIS. Secondly, nearly 8 out of 10 older people (70 years and above) in Ghana still pay health insurance premiums even though they are eligible for exemption. Thirdly, the policy is not reaching those who need it most, particularly the poorest and rural dwellers. Fourthly, the old-age exemption policy is not achieving the intended goal of providing financial risk protection for older people. These findings imply that older people who are not insured, particularly the poor and rural dwellers, face the risk of catastrophic out-of-pocket payments. The old-age exemption policy is therefore failing to provide financial risk protection for the most vulnerable older people. The government of Ghana needs to review several aspects of the old age exemption policy in order for the policy to be effective. There is the need for deliberate efforts to reach those older people who are not covered under the NHIS in spite of being eligible for the old-age exemption. Some groups of older people, particularly those aged 80 years and above, the poorest and rural dwellers need to be targeted. Furthermore, requirements such as providing proof of age, annual renewal of membership and payment of registration fees need to be reviewed. Finally, there is the need for further research to investigate why some older people still pay membership premiums in spite of being eligible for the old-age exemption policy.

Abbreviations

NHIS   National Health Insurance Scheme

WHO   World Health Organisation

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Tables

Table 1: Distribution of study subjects by socio-demographic characteristics

Variable	Mean	Standard deviation
Age (single years)	76.93	6.67
	Percentage (%)†	Frequency‡
Age (10-year age groups)		
70-79	71.4	1,206
80-89	21.7	376
90-99	6.9	122
Sex		
Male	56.5	1,027
Female	43.5	677
Marital status		
In union	50.0	
Not in union	50.0	
Religious Denomination		
No religion/Traditionalist	17.0	406
Orthodox Christian	46.3	716
Pentecostal/Charismatic Christian	20.9	312
Muslim	15.7	270
Highest Educational Qualification		
No education	31.3	672
Primary	19.0	316
Middle/JHS	33.3	480
Secondary and higher	16.5	236
Income quintiles		
1 (Poorest)	19.8	467
2	20.5	360
3	19.4	297
4	19.8	293
5 (Richest)	20.4	287
Place of residence		
Urban	40.5	525
Rural	59.5	1179
Region of residence		
Western	6.4	114
Central	10.9	180
Greater Accra	10.1	101
Volta	11.6	225
Eastern	14.0	215
Ashanti	20.1	161
Brong Ahafo	11.0	173
Northern	7.1	148
Upper East	6.0	213
Upper West	2.7	174
Total % (N)	100.0	1,704

Source: Generated from GLSS 6 data
†Weighted Percentages   ‡Unweighted frequencies

Table 2: Distribution of older persons by health insurance status

Variable	Total Sample (%)	Currently registered sample only (%)
Ever registered for health insurance		
Yes	61.7	
No	38.3	
Currently registered for health insurance		
Yes	51.2	
No	10.5	
Never registered	38.3	
Type of health insurance		
NHIS	50.8	99.6
Private insurance	0.4	0.4
No health insurance	48.8	-
Has valid health insurance card		
Yes	46.6	91.9
No	53.4	9.0
Who paid premium		
Paid premium myself		78.4
Premium paid by relative/friend		4.9
Premium paid by employers		1.0
Paid by SSNIT		4.4
Exempt as aged		11.2
Total (n)	1,704	924

Source: Generated from GLSS 6 data

Table 3: Socio-demographic factors associated with health insurance coverage and old-age premium exemption

Variable	Health Insurance Coverage			Payment of Health Insurance Premium		
	Covered	Not covered	p-value	Myself	Exempt as aged	p-value
Age			0.000			0.000
70-79	47.0	53.0		78.2	11.0	
80-89	46.9	53.1		79.6	11.8	
90-99	40.5	59.5		77.6	12.7	
Sex			0.000			0.000
Male	47.9	52.1		79.0	8.1	
Female	44.8	55.2		77.6	15.6	
Marital Status			0.000			0.000
In union	47.4	52.6		79.1	8.8	
Not in union	45.8	54.2		77.8	13.9	
Religious Denomination			0.000			0.000
No religion/Traditionalist	52.5	47.5		76.1	10.6	
Orthodox Christian	45.5	54.5		77.3	13.0	
Pentecostal/Charismatic	48.6	51.4		80.3	13.3	
Muslim	40.7	59.3		82.3	3.7	
Level of education			0.000			0.000
No education	48.1	51.9		74.0	15.4	
Primary	40.4	59.6		78.4	11.6	
Middle/JHS	48.6	51.4		82.2	9.5	
Secondary and higher	46.7	53.3		79.7	5.9	
Income quintiles			0.000			0.000
1 (Poorest)	50.2	49.8		81.4	6.7	
2	46.8	53.2		76.4	11.7	
3	48.1	51.9		79.2	13.0	
4	46.7	53.3		77.2	1.8	

			p-value			p-value
5 (Richest)	41.3	58.7		77.8	13.7	
Place of residence			0.000			0.000
Urban	44.9	55.1		77.1	12.4	
Rural	47.7	52.3		79.3	10.4	
Region of residence			0.000			0.000
Western	55.0	45.0		41.5	48.5	
Central	35.9	64.1		76.4	20.1	
Greater Accra	39.7	60.3		82.9	3.1	
Volta	44.5	55.5		74.1	14.6	
Eastern	51.4	48.6		81.3	7.1	
Ashanti	43.5	56.5		85.3	6.4	
Brong Ahafo	50.9	49.1		80.0	11.0	
Northern	37.4	62.6		81.1	1.1	
Upper East	64.3	35.7		83.6	4.0	
Upper West	69.2	30.8		88.2	4.6	
Total %	46.6	53.4		78.4	11.2	

Source: Generated from GLSS 6 data

Table 4: Predictors of health insurance coverage and old-age premium exemption

Variable	Odds Ratio	
	Model 1 Health Insurance Coverage	Model 2 Old-age Premium exemption
Age		
70-79 (RC)	1.000	1.000
80-89	0.969***	0.867***
90-99	0.750***	1.034ns
Sex		
Male (RC)	1.000	1.000
Female	0.866***	2.506***
Marital Status		
In union	0.907***	1.630***
Not in union (RC)	1.000	1.000
Religious Denomination		
No religion/Traditionalist (RC)	1.000	1.000
Orthodox Christian	0.858***	0.671***
Pentecostal/Charismatic Christian	1.020*	0.665***
Muslim	0.686***	0.340***
Highest Educational Qualification		
No education	0.902***	2.422***
Primary	0.718***	2.089***
Middle/JHS	1.052***	1.119***
Secondary and higher (RC)	1.000	1.000
Income quintiles		
1 (Poorest)	1.258***	0.609***
2	1.149***	0.878***
3	1.275***	1.104***
4	1.233***	0.862***
5 (Richest) (RC)	1.000	1.000

Place of residence		
Urban	1.021**	1.332***
Rural (RC)	1.000	1.000
Region of residence		
Western	1.866***	29.588***
Central	0.850***	7.686***
Volta	1.214***	5.163***
Eastern	1.570***	2.439***
Ashanti	1.222***	2.298***
Brong Ahafo	1.629***	3.517***
Northern	1.030*	0.397***
Upper East	2.723***	1.105^{ns}
Upper West	3.673***	1.717***
Greater Accra (RC)	1.000	1.000
Model Fit Information		
N	1,704	924
Nagelkerke R^2	0.075	0.210
Likelihood Ratio Test (X^2 test statistic, p-value)	99.076,0.000	101.425, 0.000

Source: Generated from GLSS 6 data