Factors Associated With Willingness To Join a Health Insurance Scheme Among Females in Uganda

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Research

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Abstract

Background

Access to quality and affordable health services is a fundamental human right. Therefore, there is a need for more reliable, affordable, and sustainable approaches to financing health services. This study sought to identify factors associated with willingness to join a health insurance scheme among females in Uganda.

Methods

The assessment was done using a logistic regression model and secondary data from the 2016 Uganda Demographic and Health Survey.

Results

The majority of females were willing to join health insurance schemes (85.28%). The willingness to join health insurance schemes increased among females with primary or secondary education as well as among females who used the internet less than once a week or almost every day.

Conclusion

There is a need for government to increase literacy among women since it will have an implication on their understanding of health insurance information and subsequently influence their willingness to join and pay. There is a need for the government of Uganda to revise the tax on the internet and internet-enabled devices to increase affordability and access to the internet which provides a cheaper and faster way to disseminate health-related information.

Background

Access to quality and affordable health services is a fundamental human right. However, challenges to the financing of health care services have persisted especially in developing countries. Financial resources are crucial for purposes of buying medicines and supplies, construction of health facilities, and payment of health workers among others [1]. But for most developing countries, health care funding is heavily reliant on out-of-pocket expenditure which limits access to quality health services especially for the poor plus increased disease burden and poverty. Out-of-pocket payments per capita grew from US$14 in 2000 to US$18 in 2017 in low-income countries [2]. Therefore, there is a need for more reliable, affordable, and sustainable approaches to financing health services to achieve universal health coverage under Goal 3 of the Sustainable Development Goals (SDGs).
Health insurance (HI) presents one of the possible solutions to help address the high and ever-increasing health care costs. HI is a means of making periodic prepayments to enable one to receive health services when the need arises without paying out-of-pocket [3]. The increased interest in HI can be partly attributed to the need by countries to reduce the high dependence on out-of-pocket expenditure as a health service financing mechanism [4]. Except for Uganda, other East African countries have implemented National Health Insurance (NHI) schemes placing them a step ahead towards achieving the World Health Organization (WHO) maximum household health expenditure percentage which stands at 15% of Current Health Expenditure (CHE). As of 2015/16, this stood at 37% for Uganda [5]. Currently, a section of the population is voluntarily covered by private health insurance (PHI) schemes where the highest proportion is covered by their employers and the remainder paying their own HI premiums.

In Uganda, the proportion of women and men with HI improved slightly from 1% and 2%, respectively, in 2011 to 6% each in 2016 [6] which is still very low. Several studies have been carried out to assess willingness to pay for HI [7, 8, 9] but this is preceded by the willingness to join. Some of the factors reported influencing willingness to join HI include household education status, the experience of borrowing for medical expenses, sex of household head, household animal asset [10, 11, 12], socioeconomic status [13], age family size, community-level horizontal trust, individual social capital [14], employment status [15]. This calls for a need to ascertain possible factors that could explain the willingness or unwillingness to join health insurance schemes among the population.

Aim

This paper aimed to identify factors associated with willingness to join a health insurance scheme among females in Uganda.

Methods

Data

The data used in this study was from the 2016 Uganda Demographic and Health Survey (UDHS). The sample was stratified and selected in two stages. Firstly, 697 enumeration areas (EAs) were selected from the 2014 Uganda National Population and Housing Census (NPHC) comprising 162 EAs in urban areas and 535 in rural areas though one cluster from the Acholi sub-region was eliminated due to land disputes [6]. At the second stage of sampling, households were selected. A listing of households was compiled in each of the 696 accessible selected EAs [6]. Every EA that was selected and had more than 300 households was segmented and one segment was selected for the survey with probability proportional to segment size and it's within these that household listing was conducted [6]. Therefore, a 2016 UDHS cluster is either an EA or a segment of an EA. In total, a representative sample of 20,880 households (30 per EA or EA segment) was randomly selected [6]. The sample EAs were selected independently from each stratum using probability proportional to size. This study specifically considered only households
where females responded to the questions “Would you consider joining a health insurance scheme to pay for your health care?” Therefore, the final sample size considered for this study was 3886 females.

**Statistical analysis**

The data were analyzed using STATA version 14.2 [16] at three stages. Firstly, a descriptive summary of the female's characteristics using frequencies and percentages was done. Secondly, Pearson's Chi-square test was used to test the association between willingness to join an HI scheme and the plausible independent variables. Significant associations (p ≤ 0.05) were considered for further analysis. Finally, since the response to the question of knowing about health insurance was binary, a logistic regression model was fitted at a 5% level of significance.

**Results**

A summary of the attributes of female respondents is provided in Table 1. The majority of the females were willing to join HI schemes (85.28%). The highest proportion of respondents was aged 30–39 years (25.4%); from the Central region (36.39%); resided in rural areas (61.25%); had attained at most primary level education (39.76%); were Catholic (37.24%) and were in the richest wealth quintile (41.79%). The majority of the females never read the newspaper or magazine at all (57.41%), listened to the radio at least once a week (70.66%), and didn't use the internet at all (79.62%). The highest proportion of females didn't watch television at all (48.51%); were married (31.91%); were employed seasonally (20.02%); had others decide on their health care (41.07%) resided in households with 3–4 members (29.41%) and headed by wives (43.93%).
| Characteristics      | Frequency | Percent |
|----------------------|-----------|---------|
| Willingness to join  |           |         |
| No                   | 572       | 14.72   |
| Yes                  | 3,314     | 85.28   |
| Age                  |           |         |
| 15–19                | 686       | 17.65   |
| 20–24                | 896       | 23.06   |
| 25–29                | 783       | 20.15   |
| 30–39                | 987       | 25.40   |
| 40+                  | 534       | 13.74   |
| Region               |           |         |
| Central              | 1,414     | 36.39   |
| Northern             | 457       | 11.76   |
| Western              | 1,102     | 28.36   |
| Eastern              | 913       | 23.49   |
| Residence            |           |         |
| Urban                | 1,506     | 38.75   |
| Rural                | 2,380     | 61.25   |
| Education level      |           |         |
| No education         | 146       | 3.76    |
| Primary              | 1,545     | 39.76   |
| Secondary            | 1,415     | 36.41   |
| Higher               | 780       | 20.07   |
| Religion             |           |         |
| Anglican             | 1,200     | 30.88   |
| Catholic             | 1,447     | 37.24   |
| Muslim               | 516       | 13.28   |
| Pentecostal          | 597       | 15.36   |
| Characteristics                        | Frequency | Percent |
|---------------------------------------|-----------|---------|
| Others                                | 126       | 3.24    |
| Wealth quintile                       |           |         |
| Poorest                               | 273       | 7.03    |
| Poorer                                | 483       | 12.43   |
| Middle                                | 627       | 16.13   |
| Richer                                | 879       | 22.62   |
| Richest                               | 1,624     | 41.79   |
| Reading the newspaper or magazine     |           |         |
| Not at all                            | 2,231     | 57.41   |
| Less than once a week                 | 894       | 23.01   |
| At least once a week                  | 761       | 19.58   |
| Listening to radio                    |           |         |
| Not at all                            | 554       | 14.26   |
| Less than once a week                 | 586       | 15.08   |
| At least once a week                  | 2,746     | 70.66   |
| Watching television                   |           |         |
| Not at all                            | 1,885     | 48.51   |
| Less than once a week                 | 529       | 13.61   |
| At least once a week                  | 1,472     | 37.88   |
| Using the internet                    |           |         |
| Not at all                            | 3,094     | 79.62   |
| Less than once a week                 | 106       | 2.73    |
| At least once a week                  | 246       | 6.33    |
| Almost every day                      | 440       | 11.32   |
| Marital status                        |           |         |
| Never in union                        | 1,080     | 27.79   |
| Married                               | 1,240     | 31.91   |
| Cohabiting                            | 1,057     | 27.2    |
Table 2 provides a summary of results from Pearson's chi-square test of association. Except for education level, using the internet, marital status, and relationship to head, the rest of the respondent characteristics had no significant association (p > 0.05) with the willingness to join HI schemes. The highest proportion willing to join an HI scheme was among females with higher education level (86.9%); who used the internet less than once a week (93.4%); who were never in union (86.94%) and divorced/separated (86.75%); and were related to the household head in other ways (87.05%).

| Characteristics          | Frequency | Percent |
|--------------------------|-----------|---------|
| Widowed                  | 94        | 2.42    |
| Divorced/Separated       | 415       | 10.68   |
| Employment status        |           |         |
| Unemployed               | 740       | 19.04   |
| All year                 | 2,079     | 53.5    |
| Seasonal                 | 778       | 20.02   |
| Occasional               | 289       | 7.44    |
| Household members        |           |         |
| 1–2 members              | 449       | 11.55   |
| 3–4 members              | 1,143     | 29.41   |
| 5–6 members              | 1,041     | 26.79   |
| 7–8 members              | 667       | 17.16   |
| 9 + members              | 586       | 15.08   |
| Relationship to head     |           |         |
| Head                     | 804       | 20.69   |
| Wife                     | 1,707     | 43.93   |
| Others                   | 1,375     | 35.38   |
| Decides on health care   |           |         |
| Respondent alone         | 721       | 18.55   |
| Respondent and partner   | 983       | 25.3    |
| Partner alone            | 586       | 15.08   |
| Others                   | 1,596     | 41.07   |
Table 2
Bivariate analysis of factors associated with willingness to join HI scheme

| Characteristics     | Willingness to join |   |   |   |
|---------------------|---------------------|---|--|--|
|                     | No   | Yes  | n  | p-value |
| **Age**             |       |      |    |         |
| 15–19               | 15.01 | 84.99 | 686 | 0.850   |
| 20–24               | 13.62 | 86.38 | 896 |          |
| 25–29               | 14.56 | 85.44 | 783 |          |
| 30–39               | 15.3  | 84.7  | 987 |          |
| 40+                 | 15.36 | 84.64 | 534 |          |
| **Region**          |       |      |    |         |
| Central             | 13.65 | 86.35 | 1,414 | 0.419 |
| Northern            | 16.63 | 83.37 | 457  |         |
| Western             | 14.88 | 85.12 | 1,102 |        |
| Eastern             | 15.22 | 84.78 | 913  |         |
| **Residence**       |       |      |    |         |
| Urban               | 14.74 | 85.26 | 1,506 | 0.976 |
| Rural               | 14.71 | 85.29 | 2,380 |        |
| **Education level** |       |      |    |         |
| No education        | 23.97 | 76.03 | 146  | 0.007   |
| Primary             | 14.11 | 85.89 | 1,545 |        |
| Secondary           | 15.27 | 84.73 | 1,415 |        |
| Higher              | 13.21 | 86.79 | 780  |         |
| **Religion**        |       |      |    |         |
| Anglican            | 13.33 | 86.67 | 1,200 | 0.132  |
| Catholic            | 15.55 | 84.45 | 1,447 |        |
| Muslim              | 16.47 | 83.53 | 516  |         |
| Pentecostal         | 13.07 | 86.93 | 597  |         |
| Others              | 19.05 | 80.95 | 126  |         |
| **Wealth quintile** |       |      |    |         |
| Poorest             | 13.92 | 86.08 | 273  | 0.937   |
| Characteristics                          | Willingness to join |
|-----------------------------------------|---------------------|
| Poorer                                  | 15.53  84.47   483  |
| Middle                                 | 13.88  86.12   627  |
| Richer                                  | 15.02  84.98   879  |
| Richest                                | 14.78  85.22  1,624 |
| Reading the newspaper or magazine       |                     |
| Not at all                              | 15.33  84.67  2,231 |
| Less than once a week                   | 14.32  85.68  894  |
| At least once a week                    | 13.4   86.6   761   |
| Listening to radio                      |                     |
| Not at all                              | 16.43  83.57  554   |
| Less than once a week                   | 12.8   87.2   586   |
| At least once a week                    | 14.79  85.21  2,746 |
| Watching television                     |                     |
| Not at all                              | 15.28  84.72  1,885 |
| Less than once a week                   | 15.12  84.88  529   |
| At least once a week                    | 13.86  86.14  1,472 |
| Using the internet                      |                     |
| Not at all                              | 15.77  84.23  3,094 |
| Less than once a week                   | 6.6    93.4   106   |
| At least once a week                    | 12.6   87.4   246   |
| Almost every day                        | 10.45  89.55  440   |
| Marital status                          |                     |
| Never in union                          | 13.06  86.94  1,080 |
| Married                                | 14.11  85.89  1,240 |
| Cohabiting                              | 17.41  82.59  1,057 |
| Widowed                                | 18.09  81.91   94   |
| Divorced/Separated                      | 13.25  86.75   415  |
| Employment status                       |                     |
Table 3 shows the logistic regression model of the factors associated with willingness to join an HI scheme. Marital status and relationship to the household head had no significant association with willingness to join an HI scheme. Females with primary level education (AOR = 1.85) were more likely to be willing to join an HI scheme than those with no education. Similarly, females with secondary level education (AOR = 1.54) were more likely to be willing to join an HI scheme than those with no education. Females who used the internet less than once a week (AOR = 2.72) were more likely to be willing to join an HI scheme than those who didn’t use the internet at all. Likewise, those who used the internet almost every day (AOR = 1.69) were more likely to be willing to join an HI scheme than those who didn’t use the internet at all.
Table 3
Multivariate analysis of factors associated with willingness to join HI scheme

| Characteristics          | AOR | p-value | [95% CI] |
|--------------------------|-----|---------|----------|
| Education level          |     |         |          |
| No education (ref)       | 1.00|         |          |
| Primary                  | 1.85**| 0.00   | 1.23     | 2.78     |
| Secondary                | 1.54**| 0.04   | 1.02     | 2.33     |
| Higher                   | 1.47| 0.10    | 0.92     | 2.34     |
| Using the internet       |     |         |          |
| Not at all (ref)         | 1.00|         |          |
| Less than once a week    | 2.72**| 0.01   | 1.24     | 5.94     |
| At least once a week     | 1.37| 0.13    | 0.91     | 2.07     |
| Almost every day         | 1.69**| 0.01   | 1.17     | 2.43     |
| Marital status           |     |         |          |
| Never in union (ref)     | 1.00|         |          |
| Married                  | 1.18| 0.38    | 0.82     | 1.70     |
| Cohabiting               | 0.92| 0.62    | 0.64     | 1.30     |
| Widowed                  | 0.84| 0.58    | 0.46     | 1.55     |
| Divorced/Separated       | 1.10| 0.61    | 0.77     | 1.58     |
| Relationship to head     |     |         |          |
| Head (ref)               | 1.00|         |          |
| Wife                     | 0.89| 0.44    | 0.67     | 1.19     |
| Others                   | 1.12| 0.47    | 0.83     | 1.52     |

Discussion

This study sought to identify the factors associated with willingness to join HI schemes among females in Uganda. The study found an increased willingness to join an HI scheme among females with primary and secondary education levels. This was consistent with findings by [17]. This could be attributed to more educated women being in a better position to understand information regarding HI. The significance of internet use demonstrates how influential the media is with regards to circulating health information [7, 18] as well as increased use of the internet to obtain health information by the public [19]. This could also
be attributed to the increased availability and affordability of internet-enabled phones, increased internet coverage across Uganda, and increased use of social media platforms which are partly used by insurance companies to advertise their products.

**Conclusion**

This study reveals a high level of willingness (85.3%) to join HI schemes among females in Uganda. The willingness to join HI schemes increased among females with primary or secondary education as well as among females who used the internet less than once a week or almost every day. There is a need for government to increase literacy among women since it will have an implication on their understanding of HI information and subsequently influence their willingness to join and pay. For those with no education, alternative approaches should be devised for communicating HI information such as translating adverts into local languages. There is a need for the government of Uganda to revise the tax on internet and internet enabled devices to increase affordability and access to the internet since it provides a cheaper and faster way to disseminate health-related information.

**List Of Abbreviations**

AOR Adjusted Odds Ratio

CHE Current Health Expenditure

EA Enumeration Area

HI Health Insurance

HIV Human Immunodeficiency Virus

ICF ICF (originally, *Inner City Fund*)

MPF Multiple Partner Fertility

NHI National Health Insurance

NPHC National Population and Housing Census

SDG Sustainable Development Goals

UBOS Uganda Bureau of Statistics

UDHS Uganda Demographic and Health Survey

UNAIDS Joint United Nations Programme on HIV/AIDS

US United States
WHO World Health Organization

**Declarations**

**Ethical Approval and Consent to participate**

Ethical clearance to use the data was obtained from The Demographic and Health Surveys (DHS) Program, ICF. 530 Gaither Road, Suite 500, Rockville, MD 20850, USA

**Consent for publication**

Not applicable.

**Availability of data and materials**

The dataset used for this study is publicly available upon formal request from the [DHS program website](https://dhsprogram.com/data/dataset/Uganda_Standard-DHS_2016.cfm?flag=0).

**Competing interests**

The author declares that there are no competing interests.

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Not applicable

**Author's contribution**

DAC developed the research question, conducted analysis, and wrote the final manuscript. DAC read and approved the final manuscript.

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