

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 ($p \leq 0.05$) 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%).

Table 1
Characteristics of respondents

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

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 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%).

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	0.401
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	0.221
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	0.495
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	0.001
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	0.034
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				

Characteristics	Willingness to join			
Unemployed	14.73	85.27	740	0.257
All year	15.15	84.85	2,079	
Seasonal	15.04	84.96	778	
Occasional	10.73	89.27	289	
Household members				
1–2 members	16.04	83.96	449	0.229
3–4 members	14.79	85.21	1,143	
5–6 members	14.6	85.4	1,041	
7–8 members	16.34	83.66	667	
9 + members	11.95	88.05	586	
Relationship to head				
Head	14.8	85.20	804	0.048
Wife	16.11	83.89	1,707	
Others	12.95	87.05	1,375	
Decides on health care				
Respondent alone	15.81	84.19	721	0.190
Respondent and partner	14.85	85.15	983	
Partner alone	16.72	83.28	586	
Others	13.41	86.59	1,596	

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

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).
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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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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References

1. Global Burden of Disease Health Financing Collaborator Network. Past, present, and future of global health financing: a review of development assistance, government, out-of-pocket, and other private

- spending on health for 195 countries, 1995–2050. *Lancet*. 2019;393:2233–60. doi:10.1016/S0140-6736(19)30841-4.
2. WHO. *Global spending on health: A world in transition*. Geneva: World Health Organization; 2019.
 3. Azuogu BN, Madubueze UC, Alo C, Ogbonnaya LU, Ajayi NA. Level of awareness, and factors associated with willingness to participate in the National Health Insurance Scheme among traders in Abakaliki main market, Ebonyi State, Nigeria. *Afr J Med Health Sci*. 2016;15:18–23. DOI:10.4103/2384-5589.183887.
 4. Zikusooka CM, Kyomuhangi R *Private medical pre-payment and insurance schemes in Uganda: What can the proposed SHI policy learn from them?* EQUINET Discussion Paper Series 53. 2007: Harare: EQUINET.
 5. MOH. *Annual Health Sector Performance Report. Financial year 2018/19*. Kampala, Ministry of Health (MOH); 2019.
 6. Basaza R, Kyasiimire EP, Namyalo PK, Kawooya A, Nnamulondo P, Alier KP. Willingness to pay for Community Health Insurance among taxi drivers in Kampala City, Uganda: a contingent evaluation. *Risk Management Healthcare Policy*. 2019;12:133–43.
 7. Ogundeji YK, Akomolafe B, Ohiri K, Butawa NN. Factors influencing willingness and ability to pay for social health insurance in Nigeria. *PLoS ONE*. 2019;14(8):e0220558. doi:10.1371/journal.pone.0220558.
 8. Gidey MT, Gebretekle GB, Hogan ME, Fenta TG. Willingness to pay for social health insurance and its determinants among public servants in Mekelle City, Northern Ethiopia: a mixed methods study. *Cost Eff Resour Alloc*. 2019;17(2). doi:10.1186/s12962-019-0171-x.
 9. Kibret GD, Leshargie CT, Wagnaw F, Alebel A. Willingness to join community based health insurance and its determinants in East Gojjam zone, Northwest Ethiopia. *BMC Res Notes*. 2019;12:31. doi:10.1186/s13104-019-4060-3.
 10. Noor AA, Aljunid SM. Systematic review of factors associated with willingness to pay for health financing scheme. *Malaysian Journal of Public Health Medicine*. 2017;17(2):103–12.
 11. Kuwawenaruwa A, Macha J, Borghi J. Willingness to pay for voluntary health insurance in Tanzania. *East African Medical Journal*. 2011;88(2).
 12. Adams R, Chou Y-J, Pu C. Willingness to participate and Pay for a proposed national health insurance in St. Vincent and the Grenadines: a cross-sectional contingent valuation approach. *BMC Health Services Research*. 2015;15:148. DOI:10.1186/s12913-015-0806-3.
 13. Haile M, Ololo S, Megersa B. Willingness to join community-based health insurance among rural households of Debu Bench District, Bench Maji Zone, Southwest Ethiopia. *BMC Public Health*. 2014;14:591. doi:10.1186/1471-2458-14-591.
 14. Alo CN, Okedo–Alex IN, Akamike IC. Determinants of Willingness to Participate in Health Insurance amongst People Living with HIV in a Tertiary Hospital in South–East Nigeria. *Niger Postgrad Med J*. 2020;27:196–201. doi:10.4103/npmj.npmj_11_20.
 15. StataCorp. *Stata Statistical Software. Release 15*. College Station: StataCorp LLC; 2017.

16. Kassahun S, Andargie G, Atnafu DD. Willingness to join a village-based health insurance scheme (Iddir) in Dessie town, Ethiopia. *Ethiop. J. Health Dev.* 2018;32(4).
17. Zamawe COF, Banda M, Dube AN. The impact of a community driven mass media campaign on the utilisation of maternal health care services in rural Malawi. *BMC Pregnancy Childbirth.* 2016;16(21). <https://doi.org/10.1186/s12884-016-0816-0>.
18. Murray E, Lo B, Pollack L, Donelan K, Catania J, Lee K, et al. The Impact of Health Information on the Internet on Health Care and the Physician-Patient Relationship: National U.S. Survey among 1.050 U.S. Physicians. *J Med Internet Res.* 2003;5(3):e17. doi:10.2196/jmir.5.3.e17.
19. Murray E, Lo B, Pollack L, Donelan K, Catania J, Lee K, et al. The Impact of Health Information on the Internet on Health Care and the Physician-Patient Relationship: National U.S. Survey among 1.050 U.S. Physicians. *J Med Internet Res.* 2003;5(3): e17. doi:10.2196/jmir.5.3.e17.