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Demand For Health Insurance Among The Elderly In Nairobi City County, Kenya

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Abstract: ***The aging population is likely to increase the demand for health care services and social support in Kenya. As reported at the world health assembly, health systems should provide health interventions and financial protection to all individuals regardless of age. The Kenyan government has been trying to address critical issues related to older persons and their health by protecting their rights to equitable, accessible quality of health care through policy formulations such as the NSHIF bill of 2004, development of the "10/20" user fee policy at health centres and dispensaries and even incorporating their needs in the current constitution but considering the increasing number of older persons and the existing limited resources, these efforts may not be felt by most of the population more so to those who rely on their individual savings for use in accessing care. This study therefore sought to investigate demand for health insurance among the elderly in Nairobi City County, Kenya. The variables tested were socio-demographic characteristics, health system characteristics, actual barriers of health insurance ownership and their influence on the demand for health insurance. The study adopted a descriptive cross-sectional survey research design. A multi-stage sampling approach was adopted. Nairobi North administrative Unit in Nairobi City County was randomly selected as the study area. Proportionate sampling approach was used to allow for equal allocation of sample representatives in the area. Data collection tools employed both qualitative and quantitative parameters. Data was analysed using STATA to assess relationship between variables by applying the binary logistic regression technique. Thematic analysis using Nvivo 10 was done for qualitative data. The findings showed that the proportion of the elderly without health insurance cover was at 67%. Only 33% of respondents had a health insurance cover. Majority (37%) of those with a health insurance cover were covered under the National health insurance scheme. Most of the socio-demographic characteristics (age, gender, marital status and religion) were not significantly associated with demand for health insurance. For socio-demographic characteristics, income (χ^2= 42.004^a,df=6, p=0.001) and education (χ^2=48.572^a, df=6, p=0.001) were significantly associated with demand for health insurance while for health system factors, the study found that being comfortable paying premium to health insurance firm (χ2=73.302^a,df=1, P=0.0001), health insurance affordability (χ^2=95.262^a ,df=1, P=0.001), health care workers offering information on health insurance(χ^2=46.512^a ,df=4, p=0.001) and health care providers asking for health insurance card from clients(χ^2=37.804^a ,df=4,p=0.001) were significantly associated with demand for health insurance. Age (χ^2=4.675^a df=1, p=0.031) was a barrier to health insurance demand as there was a significant relationship at 95% confidence Interval. The study found a positive relationship between odds ratio for demand for health insurance and predictors of affording health insurance premium, having knowledge of health insurance, having any post- secondary education and being comfortable paying for health insurance cover. The null hypothesis for this study was rejected as there was an association between socio- demographic characteristics, health system factors, actual barriers and demand for health insurance. Findings from the study will assist NHIF to expand their services among the elderly. A study should be done to analyse the changing patterns of health insurance demand following the recent development on health insurance subsidy program for the elderly in Kenya.***

Keywords: Demand, Health Insurance, Elderly, Nairobi City County, Kenya

I. BACKGROUND OF THE STUDY

The aging population is likely to increase the demand for health care services and social support [13], [10]. The life expectancy of a 60 year old woman in Sub-Saharan Africa can be 74 years while in a high income country can be 85 years [14]. As reported in 2005 at the 58th world health assembly, health systems should provide health interventions and

financial protection to all individuals regardless of age or socio-economic factors without constraining people's financial resources to minimize ill health and poverty [12], [8]. According to WHO, it is estimated that 80% of the elderly in less developed countries have irregular income and 100 million older people who form 10% of the general population live on less than 1 dollar a day [14]. Older people aged 60 years or more are vulnerable to ill health and financial problems, especially when they are uninsured [11], [15]. Kenyan government has been trying to address critical issues related to older persons and their health through policy formulations including the introduction of the NSHIF Bill of 2004 and the development of the "10/20" user fee policy at health centers and dispensaries [6]. Despite doing this, there is still a challenge in the elderly accessing health care more so to those who spend on medical care that are not reimbursed by insurance [6]. In Kenya older persons consists of 10% of the total population [21]. Population ageing is likely to lead to an increase in demand for health care and social support in Kenya [13], [14]. It has been reported that most Kenyans cannot access affordable health care [19]. The majority of Kenyans among who lack access to healthcare, according to the document, are the elderly. Nairobi has been experiencing a rapid population growth that is mostly associated with poverty and health problems [21]. There is a high probability of an elderly person who is aged 60 years or more not having a health insured and to be vulnerable to ill health and financial problems [11].

II. PROBLEM STATEMENT

Health Insurance is a health care financing option that offers a resource that is available within one's personal capabilities for the financing of health care without discouraging the poor and the vulnerable groups in this case the elderly from seeking care when they need it [6], [10]. Health Insurance in a way enables one to manage resources effectively and efficiently to improve quality and access to care [10]. The impact of health problems in relation to the cost of financing, morbidity and mortality remains a challenge among the elderly [11], [15]. The findings of a study done in Kenya showed that the elderly are more likely to be uninsured and are susceptible to ill health and financial problems [11], [16], [15]. There is low health insurance coverage estimated at 2% among Kenyans aged 65 or more years respectively [20]. The lack of health insurance promotes non-adherence to treatment, delays in seeking care and therefore poor health outcomes [8]. According to the World Health Organization, [14] health care financing has been a challenge in less developed countries resulting in low utilization of available health facilities. The Kenya Household Utilization and Expenditure Survey, 2013 noted that catastrophic health expenditure has been declining in the past decade from 11.4 percent to the current 6.2 percent. The out of pocket showed a steady drop between 2003 and 2007 only to rise again in 2013 to over Kshs 63 billion [18]. This has a direct correlation to the health insurance demand among the elderly in Kenya. The attention to the demand for health insurance by older people in Nairobi County is almost nonexistent. More insight into determinant factors will significantly improve health insurance ownership considering the growing population of the elderly currently at 4.2% per year [17]. This research therefore aimed to reduce this dearth of knowledge by examining the demand for health insurance among the elderly.

III. JUSTIFICATION

Study findings facilitate managerial interventions for improving health insurance demand among the elderly. This study shapes perceptions and attitudes towards health insurance which establishes a culture of insurance and this is important in facilitating access by the elderly to affordable health care. Knowledge from the study is an opportunity for health insurers to expand accessibility among vulnerable elderly Kenyans in resource constrained settings. The study findings expand the current body of knowledge on health insurance consumption among the elderly.

IV. RESEARCH QUESTIONS

The research objectives were translated into the following research questions:

- ✓ What are the socio-demographic characteristics of demand for health insurance among the elderly in Nairobi City, County?
- ✓ What are the health system determinants of demand for health insurance among the elderly in Nairobi City, County?
- ✓ What are the actual barriers of health insurance ownership that influence demand for health insurance among the elderly in Nairobi City, County?

V. NULL HYPOTHESIS

Socio-demographic factors, health system factors and actual barriers do not influence demand for health insurance among the elderly in Nairobi City County, Kenya.

VI. RESEARCH OBJECTIVES

A. GENERAL OBJECTIVE

To determine, demand for health insurance among the elderly in Nairobi City County, Kenya.

B. SPECIFIC OBJECTIVES

- ✓ To examine socio-demographic characteristics that determines demand for health insurance among the elderly in Nairobi City County, Kenya.
- ✓ To find out health system factors that determines demand for health insurance among the elderly in Nairobi City County, Kenya.
- ✓ To find out the actual barriers that determines demand for health insurance among the elderly in Nairobi County.

VII. SIGNIFICANCE OF THE STUDY

The persistence challenge of health care affordability prompted this study. Regardless, there is scanty information concerning any study on demand for health insurance among the elderly that has been done.

VIII. METHODOLOGY

A. STUDY DESIGN

The study was a descriptive cross-sectional study targeting individuals aged between 60 years and above.

B. STUDY POPULATION

The study population for this study was the elderly who were 60 years old and above, living in Nairobi County. This amounted to 37,346 elders.

C. STUDY SAMPLE

The required sample size that was used to make inference about the elderly population was calculated based on Fischer formula [4].

n= Z2pq/d2

Where n = the desired sample size,

Z = Standard normal deviation at required confidence level 95% or Standard value of 1.96

p = Estimated prevalence of the outcome variable (assumed to be 0.5 of the population);

q = the proportion without the characteristics;

d = Level of statistical significance (Degree of freedom is 0.05);

n = 1.96 x 1.96 x 0.5 (0.5)/ (0.05 x 0.05) = 384

(Add 5% of 384, total + 19 = 403) The sample size was adjusted by 5% to account for inconsistencies such as non-response or invalid responses.

D. SAMPLING PROCEDURE

This study used simple random sampling to get the sample of elderly respondents. A multi-stage sampling technique was employed to ensure an adequate representation of the target population by the sample population from six randomly selected locations in Nairobi North region, through probability proportionate to size sampling to obtain a suitable representative sample. Purposive sampling was applied to select the elderly according to age and sex.

E. DATA ANALYSIS

Data collection, analysis and write up of the research report followed the procedure of data processing and analysis in quantitative and qualitative research. For the qualitative data, each interview session was transcribed, summarized and analyzed using Nvivo 10 (QSR International) software. The study used descriptive statistics and binary logit regression for quantitative data. Data analysis was performed using STATA statistical software in a window 10 environment. To determine the possibilities of health insurance demand:

Pij = (α + β1 socio-demographic variables + β2 health system variables + β3 health insurance variables + β4 actual barriers + εi)

Where:

Pij = 1 if individual 'i' demands health insurance (i= 1) and equals one if individual 'j' does not demand health insurance (j = 0); (α) is the intercept term; (β's) are the estimated coefficients; and εi is the stochastic error term.

Presentation of data used tables, charts and graphs.

F. ETHICAL CONSIDERATIONS

Permission to carry out the study was sought from Kenyatta University graduate school, Kenyatta University Ethics and Review Committee, National Commission for Science, Technology and Innovation (NACOSTI) and an authorization letter from Nairobi County health officer. Informed consent was sought from all study participants before any information collected from them. The study also upheld privacy and confidentiality of all study participants besides ensuring safety storage of data collected.

IX. RESULTS

The findings of the study were as summarized in the following tables:

A. SOCIO- DEMOGRAPHIC CHARACTERISTICS

Majority of the participants were female (53.1%), married (62.8%), protestants (51.2%) with a monthly income below Kenya Shillings 5000 (30.2%) and had completed primary school (21.2%).

Variable	Category	Frequency/ Percentage
Sex	Male	207 (53.1%)
	Female	183 (46.9%)
Marital Status	Married	238 (62.8%)
	Divorced	35 (9.2%)
	Separated	13 (3.4%)
	Never Married	6 (1.6%)
	Widowed	87 (23.0%
Religion	Catholic	127 (33.7%)
	Protestant	193 (51.2%)
	Traditional	19 (5.0%)
	Muslim	14 (3.7%)
	No religion	24 (6.4%)
Monthly Net Income	Below Kshs 5,000	
	Kshs 5,000- 14,999	149 (40.2%)
	Kshs 15,000-24,999	112 (30.2%)
	Kshs 25,000- 34,999	49 (13.2%)
	Kshs 35,000- 44,999	41 (11.1%)
	Kshs 45,000- 54,999	10 (2.7%)
	Kshs 55,000 and	6 (1.6%)
	Above	4 (1.1%)
Level of Education	None	38 (10.1%)
	Some primary school	76 (20.2%)
	Completed primary	81 (21.5%)

	school	62 (16.4%)
	Some secondary school	69 (18.3%)
	Completed secondary school	49 (13.0%)
	Any post-secondary school	2 (0.5%)
	No response/refused	

Table 1: Socio-demographic characteristics of Respondents

B. ASSOCIATION BETWEEN SOCIO-DEMOGRAPHIC CHARACTERISTICS AND DEMAND FOR HEALTH INSURANCE

Majority 32(25.2%) of respondents who had health insurance reported to have had any post-secondary education or 31(24.4%) completed secondary school while fewer ones 4(3.1%) reported to have had no formal education at all. There was significant significance between educational level and having health insurance (p=0.001). The study established that higher number 61(48.8%) of respondents who reported to be having health insurance were of protestant and 43(34.4%) catholic religion. The study results revealed no significant statistical association (p=0.561) between religion and demand for health insurance. The results were presented in Table 2.

Independent variable	Respondent Response	Dependent variable		Statistical Significance
		No (N=258)	Yes (N=128)	
Age	60-64	121(46.9%)	70(54.7%)	χ^2=7.330[a] df=3 p=0.062
	65-69	67(26%)	26(20.3%)	
	70-74	29(11.2%)	21(16.4%)	
	75 and above	41(15.9%)	11(8.6%)	
Gender	Male	135 (53.4%)	71(56.3%)	χ^2=.303[a] df=1, p= p=0.329968
	Female	118(46.6%)	55(43.7%)	
Marital Status	Married	160 (62.5%)	79 (62.7%)	χ^2=5.395[a] df=4 p=0.24910
	Divorced	21(8.2%)	13 (10.3%)	
	Separated	6(2.3%)	7(5.6%)	
	Never Married	3(1.2%)	3(2.4%)	
	Widowed	66(25.8%)	24(19%)	
Religion	Catholic	87(33.8%)	43(34.4%)	χ^2=3.921[a] df=5 p=0.56078
	Protestant	131(51%)	61(48.8%)	
	Traditional	11(4.3%)	9(7.2%)	
	Muslim	10(3.9%)	6(4.8%)	
	No religion	18(7%)	6(4.8%)	
Income	Below Kshs 5,000	121(47.6%)	29 (23.8%)	χ^2= 42.004[a] df=6 p=0.001
	Kshs 5,000-14,999	82(32.3%)	32(26.2%)	
	Kshs 15,000-24,999	23(9.1%)	27(22.1%)	
	Kshs 25,000-34,999	20(7.9%)	21(17.2%)	
	Kshs 35,000-44,999	2(0.8%)	8(6.6%)	
	Kshs 45,000-54,999	4(1.6%)	2(1.6%)	
	Kshs 55,000 and Above	2(0.8%)	3(2.5%)	
Education	None	35(13.8%)	4(3.1%)	χ^2=48.572[a] df=6 p=0.001
	Some primary school	61(24.0%)	14(11%)	
	Completed primary school	62(24.4%)	20(15.7%)	
	Some secondary school	39(15.3%)	26(20.5%)	
	Completed secondary school	39(15.3%)	31(24.4%)	
	Any post-secondary school	18(7.1%)	32(25.2%)	

Table 2: Association between socio-demographic characteristics and demand for health insurance

C. HEALTH SYSTEM FACTORS

a. HEALTH SYSTEM FACTORS DETERMINING DEMAND FOR HEALTH INSURANCE

This study sought to investigate the health system factors that determine the demand for health insurance.

b. HEALTH CARE WORKERS ASK FOR HEALTH INSURANCE COVERS FROM RESPONDENTS

Majority of the elderly respondents disagreed that health care workers asked for the health insurance cover from them when they visit the health centre (Table 3).

Response	Frequency	Percentage
Strongly agree	23	6.1
Agree	74	19.5
Undecided	44	11.6
Disagree	177	46.7
Strongly disagree	61	16.1

Table 3: Health Care Workers Ask For Health Insurance

c. RESPONDENTS PERCEPTIONS OF HEALTH INSURANCE SERVICES

78% of respondents indicated that it is easy to receive health care services with health insurance while 53% said they did not understand what the health provider told them with regards to health insurance (See Table 4).

Statements	Yes		No	
Response	Frequency	Percent	Frequency	Percent
Easy to receive health care with health insurance	294	78%	80	22%
Understood health insurance as told by health provider	151	47%	170	53%

Table 4: Respondents perceptions of health Insurance Services

d. RESPONDENTS REASONS FOR SEEKING HEALTH CARE IN A GIVEN HEALTH FACILITY

Majority of the respondents (48%) sought health care services in a given health facility because the services were at a reasonable cost. (See table 5).

Reasons	Frequency	Percentage
Cost reasonable	183	48%
Quality of services	154	41%
Good attitude of providers	62	16%
Distance close to location	150	40%
Few patients	16	4%
Short waiting time	36	10%
Time of operation	23	6%
Accept insurance card	6	2%
Provide variety of service	3	1%
Trustworthiness	5	2%

Table 5: Respondents reasons for seeking health services in a given health facility

e. RESPONDENTS REASONS FOR NOT RECEIVING SERVICES AT THE HEALTH FACILITY ACCESSED

75% of respondents indicated that lack of needed services was the reason for them not receiving services at the health facility they accessed (See Table 6).

Reasons	Frequency	Percentage
Cost	16	9%
Not available	129	75%
Didn't have time	7	4%
The nurse/doctor did not have time	1	1%
Felt uncomfortable requesting	11	6%
Not aware of service availability	10	6%

Table 6: Reasons for not receiving all the needed services at the health facility

f. SOURCE OF FUNDS FOR PAYING HEALTH CARE SERVICES

Majority of the respondents (66%) indicated their source of funds for paying for the health services to be from out of pocket. (See Table 7)

Sources	Frequency	Percentage
Out of pocket	181	66%
NHIF	61	22%
Private health insurance	29	11%
Community based health insurance	3	1%
Waiver	6	2%

Table 7: Sources of funds for paying for the health services

g. HEALTH WORKERS OFFER INFORMATION ON HEALTH INSURANCE

Majority of the respondents (35%) agreed that the health care worker offered information on health insurance (See Table 8).

Response	Frequency	Percentage
Strongly disagree	49	12.8%
Disagree	123	32.0%
Undecided	45	11.7%
Agree	133	34.6%
Strongly agree	34	8.9%

Table 8: Health care worker offer information on health insurance

h. HEALTH FACILITIES WHERE THE ELDERLY SEEK HEALTH CARE

The findings indicated that majority 124 (32.5%) of the elderly go to the public hospital whenever they needed health services.

Health services Facility	Frequency	Percentage
Private Clinic	97	25.4
Dispensary	27	7.1
Health center	109	28.5
Public hospital	124	32.5
Other (specify)	4	1.0
Don't Know	10	2.6
Any Health facility	11	2.9

Table 9: Health Facilities where the elderly seek health services

i. LIKEABLE ASPECTS OF THE HEALTH FACILITY ACCESSED BY THE ELDERLY

50% of respondents revealed that the cost being reasonable was an aspect that enhanced their access to a given health facility while 41% of respondents indicated quality of services.

Reasons	Frequency	Percentage
Cost reasonable	183	50
Quality of services	161	41
Good attitude of providers	66	18
Distance close to their location	142	38
Location to the main road (easily accessible)	31	8
Language	8	5
Nationality factors	3	1
Few patients	9	2
Accept insurance card	9	2

Table 10: Likeable aspects of the health facility accessed by the elderly

j. RESPONDENTS SATISFIED WITH HEALTH CARE SERVICES RECEIVED

Majority 156 (41%) of the respondents indicated that they were very satisfied of the services offered.

Response	Frequency	Percentage
Very dissatisfied	20	5.2
Somewhat dissatisfied	80	20.9
Mostly satisfied	89	23.2
Very satisfied	156	40.7
No response	32	8.4
No response	6	1.6

Table 4.11: Satisfaction of the services received

k. RESPONDENTS COMFORTABLE WITH PAYING HEALTH INSURANCE PREMIUM

Majority (54%) of the respondents disagreed that they were comfortable paying premium to a health insurance company.

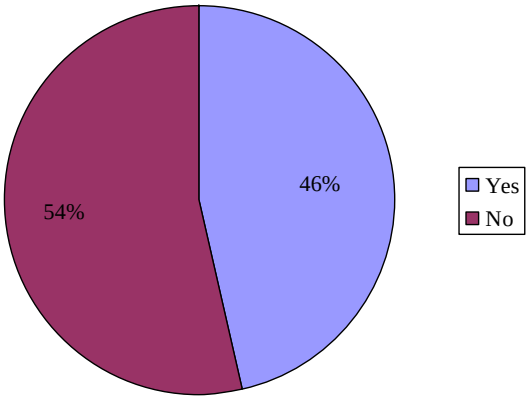

Figure 1: Comfortable paying premium to a health insurance company

l. TERMS OF AGREEMENT OF HEALTH INSURANCE FAVORABLE TO THE ELDERLY

Majority (37%) of the respondents were not sure if the terms of agreement of insurance are favourable to the elderly while 24% agreed that they were favourable.

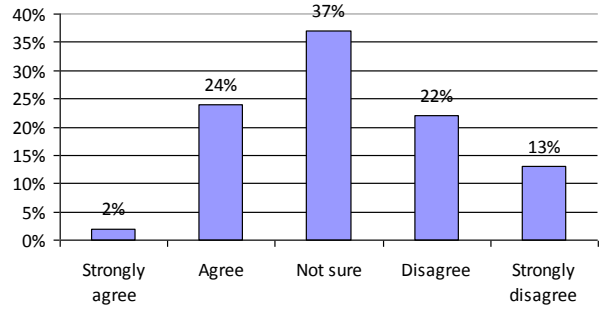

Figure 2: The terms of agreement of insurance is favorable to the elderly

m. HEALTH INSURANCE CONSISTENCY WITH PUBLIC POLICY (HUMAN RIGHTS)

Majority 184 (48.4%) of the respondents were not sure if the health insurance was consistent with public policy (human rights) while 119 (31.3%) agreed that it was consistent.

Response	Frequency	Percentage
Strongly agree	10	2.6
Agree	119	31.3
Not sure	184	48.4
Disagree	44	11.6
Strongly disagree	23	6.1

Table 12: Health insurance is consistency with public policy (human rights)

n. ASSOCIATION BETWEEN HEALTH SYSTEM FACTORS AND DEMAND FOR HEALTH INSURANCE

The study showed majority of the elderly who said they had health insurance 54(43%) agreed that health care workers offered information on health insurance. Among those who said they dint have health insurance cover 104(40%) disagreed while 79(31%) agreed, that health care workers offered information on health insurance. There was a significant statistical relationship (p=0.001) health care workers offering information on health insurance and the demand for health insurance by the elderly.

The study reported that among those having health insurance, 98(77%) said they were comfortable paying premium to a health insurance company while 29(23%) were not. Among respondents without health insurance cover, majority 179(69%) said they were not comfortable paying premium to a health insurance company. There was a significant statistical relationship (p=0.001) between being comfortable paying for health insurance premium and having health insurance.

Independent variable	Respondent Response	Dependent variable		Statistical Significance
		No	Yes	
Health care workers ask for health insurance when you seek health care	Strongly disagree	19(7.4%)	4(3%)	χ^2=37.804[a] df=4 p=0.001
	Disagree	59(22.9%)	15(12%)	
	Undecided	40(15.5%)	7(5%)	
	Agree	116(45%)	64(50%)	
	Strongly agree	24(9.3%)	38(30%)	
Easy to receive health care services when you have insurance	No	70(27%)	12(10%)	χ^2=16.046[a] df=1, P=0.001
	Yes	185(73%)	114(90%)	
Health insurance is affordable	No	209(83%)	41(33%)	χ^2=95.262[a] df=1, P=0.001
	Yes	43(17%)	85(67%)	
Health care worker offer information on health insurance	Strongly disagree	35(14%)	14(11%)	χ^2=46.512[a] df=4 p=0.001
	Disagree	104(40%)	19(15%)	
	Undecided	31(12%)	14911%)	
	Agree	79(31%)	54(43%)	
	Strongly agree	9(3%)	25(20%)	
All health services needed were available at the health facility	No	124(51%)	33(27%)	χ^2=21.544[a] df=2 p=0.001
	Yes	105(42%)	83(69%)	
	Not sure	16(7%)	5(4%)	
Terms of agreement of insurance is favourable to the elderly	Strongly agree	4(1.6%)	1(0.8%)	χ^2=23.704[a] df=4 p=0.007
	Agree	45(17.8%)	51(40.5%)	
	Not sure	108(42.7%)	35(27.8%)	
	Disagree	62(24.5%)	24(19%)	
	Strongly disagree	34(13.4%)	15(11.9%)	
Health insurance is consistency with public policy (human rights)	Strongly agree	3(1%)	7(6%)	χ^2=37.067[a] df=4 p=0.001
	Agree	57(23%)	62(49%)	
	Not sure	140(55%)	44(35%)	
	Disagree	34(13%)	10(8%)	
	Strongly disagree	19(8%)	4(3%)	
Are you comfortable paying premium to a health insurance company?	No	174(69%)	29(23%)	χ^2=73.302a df=1, P=0.0001
	Yes	77(31%)	98(77%)	

Table 13: Association between Health System Factors and Demand for Health Insurance

D. ACTUAL BARRIERS

This study examined the actual barriers that determine the demand for health insurance by investigating the reasons for the elderly not purchasing a health insurance product and the barriers to health insurance ownership by the elderly.

a. REASONS FOR NOT PURCHASING A HEALTH INSURANCE PRODUCT

Majority of the respondents had no health insurance covers. 34% of respondents said that no one had ever communicated to them about health insurance.

Responses	Yes		No	
	Frequency	Percentage	Frequency	Percentage
No one has communicated to me about health insurance.	130	34	252	66
Insurance staffs are incompetent and dishonest	39	10	343	90
No reason	43	11	339	89
Claims are not paid	70	18	312	82
I have a health insurance policy	128	33	258	67
Health insurance payment is not accepted at the health facility that I use more frequently	42	11	340	89

Table 14: Reasons for not purchasing a health insurance product

b. BARRIERS TO HEALTH INSURANCE OWNERSHIP

A large number 245 (62.8%) agreed that cost of the product income was a barrier to health insurance demand by the elderly.

Actual Barriers	Yes		No	
	Frequency	Percentage	Frequency	Percentage
Legal and judicial system	19	5	362	95
Cost of the product Income	245	62.8	136	34.9
Limited reach to the informal sector	142	37.3	239	62.7
Limited knowledge of the product	143	37.5	238	62.5
Fear of being able to service it continuously	78	20.5	303	79.5
Age	97	25.5	284	74.5

Table 15: Barriers to health insurance ownership by the elderly

c. ASSOCIATION BETWEEN ACTUAL BARRIERS AND HEALTH INSURANCE DEMAND

Study respondents who reported having health insurance cover 80(63%) of them said cost of the product was a barrier to health insurance demand while 165(65%) those who had no health insurance they have ever heard about health insurance, 124(97%) of those without health insurance also said the same. There was no significant relationship between cost of the product and health insurance demand at 95% level of confidence. 59(46.5%) respondents with health insurance reported that limited reach to the informal sector was a barrier while 83(32.7%) of those without health insurance also reported the same. There was a significant relationship between limited reach of the product to informal sector (p=0.0001) and demand for health insurance.

Actual barriers		Do you have health insurance cover? No (N=254)	Yes (N=127)	Significance
Legal and judicial system	No	245 (96.5%)	117 (92%)	χ^2=3.351[a]
	Yes	9 (3.5%)	10 (8%)	df=1, p=0.067
Limited knowledge of the product	No	166 (65.4%)	72 (56.7%)	χ^2=2.709[a]
	Yes	88 (34.6%)	55 (43.3%)	df=1, p=0.100
Cost of the product	No	89 (35%)	47(37%)	χ^2=.143[a]
	Yes	165 (65%)	80 (63%)	df=1, p=0.705
Limited reach to the informal sector	No	171 (67.3%)	68 (53.5%)	χ^2=6.876[a]
	Yes	83 (32.7%)	59 (46.5%)	df=1, p=0.009
Fear of being able to service it continuously	No	200 (78.7%)	103 (81.1%)	χ^2=.290[a]
	Yes	54 (21.3%)	24 (18.9%)	df=1, p=0.590
Age	No	198 (78%)	86 (67.7%)	χ^2=4.675[a]
	Yes	56 (22%)	41 (32.3%)	df=1, p=0.031

Table 16: Association between Actual Barriers and Health Insurance Demand

E. KNOWLEDGE AND PRACTICES

This study examined knowledge and practices regarding health insurance demand by probing the respondent's possession of a health insurance cover, if respondents have heard before about health insurance and if they think health insurance is important.

a. RESPONDENTS ABLE TO GET HEALTH CARE WITH HEALTH INSURANCE

Majority 339 (90%) of the respondents agreed that health insurance can be able to help get health care

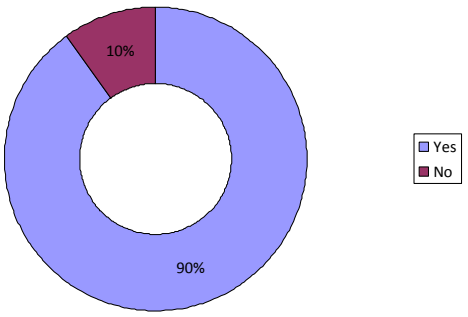

Figure 3: Health insurance can be able to help get health care

b. KNOWLEDGE OF AVAILABLE FIRMS IN THE AREA OFFERING HEALTH INSURANCE SERVICES

Majority 113 (30%) of the respondents disagreed that they knew of any firm offering health insurance in their area.

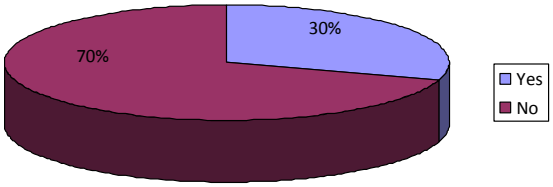

Figure 4: Firms offering health insurance services in the area

c. RESPONDENTS REASONS FOR NOT HAVING A HEALTH INSURANCE COVER

Majority (62.4%) of respondents without health insurance cover said the high cost of premium is the reason for them not opting for health insurance.

Reasons for not having Health Insurance	Frequency	Percentage
High cost of premiums	156	62.4%
Poor agents Integrity	6	2.4%
Poor customer service	8	3.2%
Not enough disposable income to buy health insurance	58	23.2%
Lack of product variety	13	5.2%
Complicated nature of the health insurance product	13	5.2%
Lack of country wide presence	11	4.4%
Unexploited distribution channels	3	1.2%
No one has communicated to me about health insurance	29	11.6%
Claims are not paid	4	1.6%
Health insurance payment is not accepted at the health facility that I use more frequently	4	1.6%
Religion	1	0.4%

Table 17: Respondents Reasons for not having Health Insurance

d. RESPONDENTS WILLING TO CONTRIBUTE IN SUPPORT OF HEALTH CARE FOR THE ELDERLY

63.9 % of respondents indicated that they were willing to make contributions to support health care for the older people.

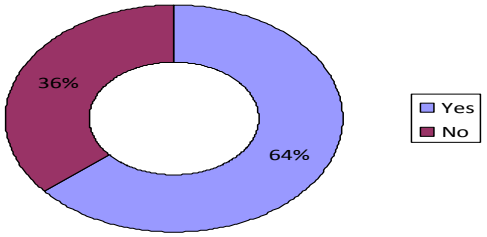

Figure 5: Respondents Willing to Contribute to Support Healthcare for the elderly

e. RESPONDENTS WILLING TO JOIN A HEALTH INSURANCE COMPANY

Out of the 67% of respondents without a health insurance cover, 77 % of respondents indicated that they were willing to join a health insurance company (Figure 4.6).

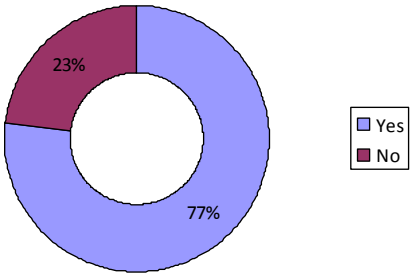

Figure 6: Respondents Willingness to Join Health Insurance Scheme

f. ASSOCIATION BETWEEN KNOWLEDGE AND HAVING HEALTH INSURANCE

Study respondents who reported having health insurance cover said 127 (99%) they have ever heard about health insurance, 124 (97%) of them said they thought health insurance is important while 123 (96.9%) said they thought health insurance is able to help them get health care. There was a significant relationship between having ever heard about health insurance (p=0.007), thinking health insurance is important (p=0.001), thinking health insurance is able to help one get health care (p=0.001), there being a firm offering health insurance in the area with demand for health insurance (Table 4.25).

	Respondent Response	No	Yes	Statistical Significance
Have you ever heard about health insurance?	No	32(12.6%)	1(1%)	χ^2=15.130[a]
	Yes	221(87.4%)	127(99%)	df=1, P=0.0001
Do you think health insurance is important?	No	35(14%)	4(3%)	χ^2=10.892[a]
	Yes	214(86%)	124(97%)	df=1, P=0.001
Do you think health insurance can be able to help you get health care	No	34(13.6%)	4(3.1%)	χ^2=10.148[a]
	Yes	216(86.4%)	123(96.9%)	df=1, p=0.001
Is there any firm that is offering health insurance services in this area	No	195(77.7%)	69(54.8%)	χ^2=21.009[a]
	Yes	56(22.3%)	57(45.2%)	df=1,p=0.0001

Table 18: Association between knowledge and demand for health insurance

g. TYPE OF HEALTH INSURANCE COVER

Majority 47 (36%) of the respondents indicated that they had a social security type of insurance

Type of health insurance cover	Frequency	Percentage
Social Security	47	36%
Employer- based insurance	18	14%
Privately purchased	5	4%
Commercial insurance/MTIBA	27	21%
Community based health insurance	34	25%

Table 18: Type of health insurance cover

h. MODE OF PAYING HEALTH INSURANCE PREMIUM

Majority 60 (20%) of the respondents indicated that they pay their premiums using mobile money (MPESA).

Mode of payment	Frequency	Percentage
Cash	31	14%
Cheque	5	2%
Mobile money (MPESA)	60	20%
Direct Debits	32	13%
Employer	1	1%

Table 20: Mode of paying for health insurance premiums

i. SOURCE OF INFORMATION ABOUT HEALTH INSURANCE COMPANY

Majority 51 (40%) of the respondents got the information about the health insurance company from a referral by a friend/relative.

Source of information	Frequency	Percentage
Media advertisement	12	9%
Posters	10	8%
Referral by a friend/ relative	51	40%
Visit by health insurance sales agent	31	24%
Through trade fairs	3	2%
Employer	21	17%

Table 21: Source of information about the health insurance company

F. THE DEMAND FOR HEALTH INSURANCE

The study probed the demand of health insurance among the elderly by investigating if they had a health insurance cover, if they were willing to join a health insurance scheme and if they were willing to make contributions to support health care for older people.

a. RESPONDENTS DEMAND FOR HEALTH INSURANCE

The findings indicate that majority 258 (67) did not have a health insurance cover while 191 (74%) were willing to join a health insurance scheme. The study found out that majority 266 (75%) were willing to make contributions to support health care for older people.

Statements	Yes		No	
	Frequency	Percentage	Frequency	Percentage
Do you have a health insurance cover?	128	33%	258	67%
Are you willing to join a health insurance scheme?	191	74%	67	26%
Are you willing to make contributions to support health care for older people?	266	75%	91	26%

Table 22: Respondents demand for health insurance

b. CHALLENGES ENCOUNTERED BY ELDERLY WHILE ACCESSING HEALTH CARE

Majority of the respondent said age, access to information, Lack of income, distance to health facility accepting health insurance cards and high cost of premium to be a challenge to them accessing health insurance services. .

c. SUGGESTION FOR IMPROVING SERVICES AT THE HEALTH FACILITIES

Majority of the respondents suggested that health facilities should: accept insurance cards for payment, increase medical supplies especially for chronic illnesses such as kidney and heart diseases, provide a range of services, increase the number of staff especially doctors and laboratory staff, improve quality of services, reduce the waiting time for the elderly, reduce cost of services and make them affordable to the elderly, accept health insurance cover for outpatient services, create awareness on health insurance, open health facility early, accept health insurance coverage for chronic illnesses and expand coverage to the informal settlement.

d. PROPORTION WITH HEALTH INSURANCE COVER

67% of the total respondents indicated that they had no health insurance coverage while 33% were covered.

Response		Frequency	Percentage
	Yes	258	66.8
	No	128	33.1

Table 23: Respondents with health insurance covers

e. FACTORS THAT INFLUENCE DEMAND FOR HEALTH INSURANCE AMONG THE ELDERLY

According to the logit model, the log of the odds of an elderly having health insurance was negatively related to: sex, age, elderly never married, widowed, earning 10,000, earning 50,000 and 60,000 thousand. There was a positive relationship between odds ratio for demand for health insurance and predictors of affording health insurance premium, having knowledge of health insurance, having any post-secondary

education and being comfortable paying for health insurance cover. Respondents with these characteristics were more likely to demand for health insurance.

In other words the higher the age the less likely it is that an elderly will demand health insurance. Given the same conditions, women were less likely to demand for health insurance than men. The elderly never married and widowed were less likely to demand for health insurance compared to the married. The elderly earning less than 10,000 and those earning more than 50,000 are less likely to demand for health insurance as well as those who have had some primary education.

The elderly not comfortable paying insurance premiums were less likely to demand for health insurance. Those having ever heard of health insurance before were more likely to demand for health insurance. The elderly who said that they did not understand health workers information on health insurance were less likely to demand for health insurance. Those who agreed that terms of health insurance agreement favour the elderly were less likely to demand for health insurance.

The log of an elderly having health insurance was positively related to: being divorced, separated, of catholic religion, Muslim, protestant, traditional, earning 20,000 to 40,000 thousand shillings, having completed primary school, some secondary school, having completed secondary education, any post- secondary education, ease to receive health care with health insurance, disagreeing that terms of agreement are favourable to the elderly, think that health insurance is important and availability of health insurance in the area ($p<0.05$; Table 28).

The elderly who were divorced and separated were more likely to demand for health insurance compared to their married counterparts. The elderly affiliated to a religious group were more likely to demand for health insurance compared to those without any religion. The elderly earning KSH 20,000 to 40,000 were more likely to have health insurance compared to their counterparts. The elderly having completed secondary school or any post-secondary school education were more likely to have a health insurance than those without any form of education. The elderly who said it was easy to receive health care with health insurance were more likely to have health insurance. The elderly disagreeing that term of health insurance agreement are favourable to the elderly are more likely to demand health insurance. The elderly who think that health insurance is available in the area and that it is easy to receive health care with health insurance are more likely to demand health insurance. A study that analyzed determinants of health insurance using Kenya Demographic and health survey data [3] [21]. The aim of the study was to identify factors associated with health insurance ownership among women. Using logit regression analysis the study found that socio-demographic factors were associated with health insurance demand.

A study that used primary data to investigate barriers to insurance penetration in Kenya [2]. Descriptive statistics showed that other than income, knowledge, cost of insurance and other demographic factors, the nature of insurance industry was also a contributor to low insurance penetration. These findings correspondent to findings from a study on factors determining the choice of health insurance schemes in Kenya which found out that socio-economic status among other demographic factors such us level of education, household size and information asymmetry are important determinants of health insurance demand and choice [4].

Have Health Insurance	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Sex	-0.1145235	0.3059431	-0.37	0.708	-0.7141609	0.485114
Age	-0.0174678	0.0202022	-0.86	0.387	-0.0570634	0.0221277
Marital Status						
Divorced	0.5214345	0.5079109	1.03	0.305	-0.4740526	1.516922
Never Married	-0.2738034	1.101413	-0.25	0.804	-2.432534	1.884927
Separated	0.3289124	0.7743884	0.42	0.671	-1.188861	1.846686
Widowed	-0.4164314	0.3995953	-1.04	0.297	-1.199624	0.366761
Religion						
Catholic	0.2011877	0.7197798	0.28	0.78	-1.209555	1.61193
Muslim	0.8325439	1.001477	0.83	0.406	-1.130316	2.795403
Protestant	0.1620094	0.7215014	0.22	0.822	-1.252107	1.576126
Traditional	0.8374053	0.9118445	0.92	0.358	-0.949777	2.624588
Monthly Income						
10000	-0.2186823	0.370647	-0.59	0.555	-0.9451371	0.5077725
20000	0.5003636	0.4830727	1.04	0.3	-0.4464416	1.447169
30000	0.4697794	0.5423641	0.87	0.386	-0.5932346	1.532793
40000	1.752398	1.087294	1.61	0.107	-0.3786595	3.883456
50000	-0.7469021	1.227487	-0.61	0.543	-3.152732	1.658928
60000	-0.8543936	1.176684	-0.73	0.468	-3.160652	1.451865
Level of Education						
Any Post-Secondary	1.37497	0.5185502	2.65	0.008	0.3586301	2.391309
Completed Secondary	0.4997883	0.4325179	1.16	0.248	-0.3479311	1.347508
Completed Primary	0.4714109	0.5032356	0.94	0.349	-0.5149128	1.457735
Some Secondary	0.5359869	0.476431	1.13	0.261	-0.3978006	1.469774
Easy to receive health care with Health Insurance)	0.4934905	0.4789815	1.03	0.303	-0.445296	1.432277
Health insurance is affordable	1.515318	0.3157015	4.8	0.000	0.8965541	2.134081
Understood health workers information on health insurance	0.3434739	0.2999985	1.14	0.252	-0.2445123	0.9314602
Comfortable paying premium to a health insurance firm	1.171559	0.3126907	3.75	0.000	0.5586961	1.784421
Ever heard of health insurance	2.857381	1.133986	2.52	0.012	0.634809	5.079953
Think health insurance is important	0.5125135	0.7142521	0.72	0.473	-0.8873949	1.912422
Availability of health insurance in the area	0.5313459	0.3233923	1.64	0.100	-0.1024913	1.165183
_constant	-5.524214	1.974301	-2.8	0.005	-9.393773	-1.654655

Table 24: Factors that influence demand for health Insurance

X. DISCUSSION

From the research findings, the proportion of the elderly without health insurance cover was at 67%. Majority (37%) of those with a health insurance cover were covered under the National health insurance scheme. This agrees with the study study on uptake of health insurance among patients in Embu county, Kenya where majority of those covered were under NHIF [7]. NHIF has high popularity since it is a national

health insurance scheme. Due the current focus by the Kenyan government towards UHC, NHIF has been putting more efforts to expand its membership base especially in the informal sector. However, NHIF is yet to adopt more innovative technologies that can be of benefit to the fund and to the elderly and to some extent reduce the cost.

The coefficient for having any post-secondary education (1.648593) was statistically significant at 1% and this shows that there was a positive relationship between the odds ratio for demanding health insurance and having post-secondary school education. Education had positive relationship with demand for health insurance and this implies that the more educated respondents' demand health insurance more compared to the uneducated counterparts. Marital status was statistically insignificant at 95% level of confidence with coefficient of being widowed (-0.1593738) being negative while the separated, divorced and never married respondents being positive compared to their married counterparts. A study that investigated barriers to insurance penetration in Kenya [2]. A sample of 65 MBA students was drawn from JKUAT University, Nairobi CBD campus. Descriptive statistics showed that other than income, knowledge, cost of insurance and other demographic factors, the nature of insurance industry was also a contributor to low insurance penetration. These findings correspondent to findings from a study on factors determining the choice of health insurance schemes in Kenya which found out that socio-economic status among other demographic factors such us level of education, household size and information asymmetry are important determinants of health insurance demand and choice [4].

Chi-square results showed that majority of the elderly who said they had health insurance 54(43%) agreed that health care workers offered information on health insurance. There was a significant statistical relationship (p=0.001) between health care workers offering information on health insurance and the demand for health insurance by the elderly. This study results were similar to the study that was conducted on the strategy of health insurance education as a way of increasing the insured among the older population in rural Kenya which found that introducing education as an intervention increased the insured amongst older population [15].

The study revealed that 64(50%) of the elderly who agreed that health is affordable were those with a health insurance cover while 59(22.9%) of those who disagreed did not have a health insurance cover. There was an association (p=0.001) between health insurance affordability and demand for health insurance. This finding agrees with a study done in Burkina Faso which confirmed that the elderly in did not take up a health care insurance because they viewed it as expensive. They also observed that through government paying for health; more elderly people are able to register for such services. [1]

The study findings showed a significant relationship (p=0.001) between having received all the needed services at the health facility and demand for health insurance. This is consistent with the objective on promoting universal health care which advocates for equity in access to health services where those who need the services should get those [8].

The study reported that the elderly who demanded health insurance services 114 (90%) agreed that it is easy to receive health care services with health insurance while 185(73%) of those without health insurance disagreed. There was a significant statistical relationship (p=0.001) between easiness to receive health care with insurance and demand for health insurance. This finding agree with a study on factors that determine ownership of health insurance in rural Nigeria which found that an individual will be reluctant to spend money in health scheme with respect to income and the individuals utilization of health insurance scheme and therefore influence there expenditure on health care services [9].

When the respondents were asked whether health care workers asked for health insurance from them while they sought health care, majority of those with health insurance cover 64(50%) agreed that they did ask for health insurance cover from them. Those without health insurance 116(45%) equally agreed that health care providers ask for health insurance cards from them. There was an association (p=0.001) between health care providers asking for health insurance cover and demand for health insurance. This study results were similar to the study that was conducted on the strategy of health insurance education as a way of increasing the insured among the older population in rural Kenya which found that introducing education as an intervention increased the insured amongst older population [15].

Study respondents who reported having health insurance cover 63%(80) of them said cost of the product was a barrier to health insurance demand while 165(65%) who had no health insurance said they have ever heard about health insurance. 97%(124) of those without health insurance also said that they have ever heard of health insurance. There was no significant relationship between cost of the product and health insurance demand at 95% level of confidence.

Study respondents who reported having health insurance cover said 127(99%) they have ever heard about health insurance, 124(97%) of them said they thought health insurance is important while 123(96.9%) said they thought health insurance is able to help them get health care. There was a significant relationship between having ever heard about health insurance (p=0.007), thinking health insurance is important (p=0.001), thinking health insurance is able to help one get health care (p=0.001), there being a firm offering health insurance in the area with demand for health insurance (Table 4.8). This study results were similar to the study that was conducted on the strategy of health insurance education as a way of increasing the insured among the older population in rural Kenya which found that introducing education as an intervention increased the insured amongst older population [15]. It further explained that inadequate knowledge on insurance benefits, sources of insurance and insurance access procedures are key reasons for being uninsured.

XI. CONCLUSION AND RECOMMENDATIONS

The proportion of the elderly without health insurance cover was at 67%. Only 33% of respondents had a health insurance cover. Majority (37%) of those with a health insurance cover were covered under the National health insurance scheme. Most of the socio-demographic

characteristics (age, gender, marital status and religion) were not significantly associated with demand for health insurance. However it was noted that income and education were significantly associated with demand for health insurance.

The study established that most health system factors had a significant effect on demand for health insurance. Health care workers asking for health insurance from respondents, easiness to receive health services with health insurance, health insurance being affordable, health care workers offering information on health insurance and services being available at the health facility were strongly associated with demand for health insurance. Respondents who said they had ever heard of health insurance before were more likely to take up health insurance. Similarly, respondents who thought health insurance is important were likely to take up health insurance. Health insurance service being available in the area was significantly associated with demand for health insurance at 95% confidence interval.

The study found a positive relationship between odds ratio for demand for health insurance and predictors of affording health insurance premium, having knowledge of health insurance, having any post- secondary education and being comfortable paying for health insurance cover. Respondents with these characteristics were more likely to demand for health insurance. The null hypothesis for this study was rejected since most of the variables had their p values less than 0.005 signifying that there was an association between socio- demographic characteristics, health system factors, actual barriers and demand for health insurance.

From the findings, this study makes the following recommendations:

- ✓ NHIF to expand service coverage to increase enrolment so that the elderly with limited access to financial resources and education are able to benefit especially from the recent government development on health insurance subsidy program for the elderly.
- ✓ More comprehensive health care services should be made available at health care facilities for the government to realize Universal Health Coverage with the aid of health Insurance services.
- ✓ Insurance companies should scale up introduction of health insurance in remote areas so that more elderly people are able to access and enroll. There should also introduce insurance packages that are friendly to the elderly people to remove geographical and financial barriers.

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