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Original Research Article

National Hospital Insurance Fund Enrolment in Uasin Gishu County, Kenya

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ABSTRACT

Background: Despite the establishment of NHIF in 1966 to provide access to healthcare for all, enrolment in Uasin Gishu remains low. The low enrolment led to out-of-pocket payments which were a deterrent to seeking health care.
Objective: This study aimed to identify the determinants of uptake of NHIF among residents of Kapyemit, in Uasin Gishu County, Kenya.
Methodology: A cross-sectional study was done with a sample (N=334), selected using stratified random sampling. Questionnaires were pre-tested and Key-Informant interviews were done to collect data.
Data analysis: Data was analyzed using SPSS version 20 and Pearson's Chi-square test at 95% confidence interval to establish an association between the dependent and independent variables. The level of statistical significance was P-value <0.05. Multivariate regression was done to determine the independent factors associated with enrolment in NHIF.
Findings: The findings revealed that enrolment into NHIF was at 35%. The factors that were associated with enrolment were: being married [OR 1.133; CI =0.227-5.648; *p*=0.879], tertiary education, [OR 3.862; CI = 1.347-11.074; *p*=0.012], professional occupation, [OR 1.978; CI = 0.679-5.766; *p*=0.211], having additional source of income, [OR =3.776; CI =1.656-8.611; *p*= 0.002], having regular monthly income [OR=1.524 CI= 0.087- 3.142; *p*=0.480], prefer private facilities, [OR=6.657 CI=1.790-24.758; *p*=0.005], good quality of care [OR=1.630; CI=0.890-2.985; p=0.113] and trust in scheme assed in a scale [OR=3.418; CI=1.866-6.261; p=0.000].
Recommendation: A multi-sectoral engagement in the redesign of the scheme would be necessary to make the scheme more responsive to the needs of the population.
Keywords: health insurance, enrolment, determinants, out-of-pocket, UHC

INTRODUCTION

In Kenya, access to healthcare is largely influenced by finances - people are hindered from timely access to healthcare due to lack of finances at the time of need leading deterioration and of the illness which then requires complex treatment and may result to death. The informal sector forms the majority of the Kenyan population. [1] Targeting this group to enrol in health insurance will therefore greatly increase the potential for achieving universal health coverage.

The government reported uptake of NHIF in Uasin Gishu to be 16.6% in 2014. [2] Research on informal sector households in Uasin Gishu revealed that out of 300 households only 16 households (5%) had health insurance. [3] These findings did not look into factors linked to the low-uptake. It is important to understand what factors influenced enrolment into NHIF. The study was aimed at addressing the gaps by identifying the determinants of enrolment into NHIF by residents of Kapyemit location in Uasin Gishu County.

The study area, Uasin Gishu location is largely agricultural and is considered a food basket in Kenya and was chosen considering 75% of the Kenyan population

relies on agriculture for livelihoods. Kapyemit location was the most densely populated location in the county and an audit report from the referral hospital in 2012 indicated that 26% of waiver requests were from residents of Huruma area in Kapyemit location. This study would give information on the influence of accountability as there were no studies to indicate the influence of accountability on NHIF uptake in the country. The study also shed light on the influence of increased benefits: including outpatient care and increased premiums which were introduced in 2015 on uptake of NHIF.

The main objective of the study was to identify the determinants of uptake of NHIF among residents of Kapyemit location in Uasin Gishu County, Kenya. The specific objectives were: to determine demographic characteristics associated with enrolment into NHIF among residents of Kapyemit location in Uasin Gishu County, to determine the influence of socio-economic factors on enrollment in NHIF among residents of Kapyemit location in Uasin Gishu County, to determine the influence of scheme accountability on enrolment into NHIF among residents of Kapyemit location in Uasin Gishu County, and to determine the influence of supply-side factors on uptake of NHIF among residents of Kapyemit location in Uasin Gishu County, Kenya.

The study provided information to stakeholders and enabled informed decisions to making NHIF more attractive. It will also stimulate positive debate about health insurance which will increase awareness of benefits and possibly influence enrollment.

MATERIALS AND METHODS

The study was carried out in Kapyemit location in Uasin Gishu County. Uasin Gishu was purposively selected because it has a large population of farmers which comprises the majority of Kenyan population engagement (42%). Kapyemit location covers approximately 20.2km^2, with a population of around 67,138 people: an estimated 32735 female and 34403 male while the households number 19612 in the study area. [4] A sample of 334 households was sampled and this was determined using Fischer et al., formula. The study was done from August to December 2018. Twelve key informants were purposively selected and they were a county health officer, the Branch Manager NHIF Eldoret, a chief, 2 elders and 3 community health workers.

The study used a descriptive cross-sectional design to identify the determinants of enrolment into the NHIF. The design gives a snap-shot of the population at the time of the study. The study collected both qualitative and quantitative data. The dependent variable in the study was: enrolment into NHIF which was measured using 'yes' for enrolled participants and 'no' for those not enrolled. The independent variables were: demographic characteristics, socio-economic factors, accountability in NHIF, and supply-side factors. Accountability of the NHIF institution was assessed using a trust scale adopted from other studies, [5,6] and measured on a 5-point scale ranging from 'strongly agree' to 'strongly disagree'. Sampling was done using stratified random sampling: the villages were the strata and the sample per village was picked proportional to the number of households in the village. Households to be interviewed were picked using simple random sampling and information collected from those who agreed to consent. Data was collected using a questionnaire from the households which had been pretested to ensure validity while reliability was ensured through proper random sampling and through training of supervision of research assistants. The data was analyzed using SPSS version 20. Data was summarized into tables showing descriptive statistics for each variable. Frequency tables and graphs were also used to represent data. Tests for significant association were done using Chi-square and logistic regression to ascertain determinants of enrolment.

Approval to carry out the research was sought from Kenyatta University Ethics Review Committee, graduate school and NACOSTI. Data was double-entered into Ms-Access database and password-protected to ensure no loss of information of tampering. Person's Chi-square test and odds ratio with corresponding 95% confidence interval computed to establish the association between the dependent variable (enrolment in NHIF) and the independent variables. Qualitative data was analyzed thematically. Written consent was sought for each participant and the questionnaires were coded to ensure confidentiality.

RESULTS

Socio-demographic characteristics of the study sample

There were slightly more males than females, and a large proportion was in the age group of 18-35 years. Approximately 45.8% of the respondents work in sales and services which includes salon, market and shop businesses while only 8.1% indicated agriculture as their source of income. Respondents with tertiary education were 26%, while 69.5% were married.

Table 1: Socio-demographic characteristics of respondents in the study on NHIF membership in Kapyemit Location, Uasin Gishu County

Variable	Categories	Frequency	Percent
Age of respondents (μ =37.3, σ =10.56)	18-35 years	191	57.1
	36-45 years	70	21.0
	46-55 years	53	15.9
	Above 55 years	20	6.0
Gender	Female	156	46.7
	Male	178	53.3
Marital status	Married	232	69.5
	Never married	55	16.5
	Separated	33	9.9
	Widowed	14	4.2
Number of dependents (μ = 2.43; σ =1.59)	Living alone	20	6.0
	1-4 people	280	83.8
	> 4 people	34	10.2
Level of education	No education/incomplete primary	58	17.4
	Completed Primary	56	16.8
	Secondary	132	39.5
	Tertiary	88	26.3
Occupation of respondents	Agriculture	27	8.1
	Professional/technical	66	19.8
	Sales & services	153	45.8
	Unskilled manual	65	19.5
	Others	23	6.9

NHIF Membership

Approximately 35% of the study sample had NHIF membership. More than half of the NHIF members (51.7%) reported that they had their spouses and children registered in NHIF, while for the rest it was only the principal member who was covered by NHIF. Among the reasons for partial household-cover were that NHIF cover was a job requirement, lack of birth certificates for their children or lack of marriage certificates for their spouses.

Table 2: Proportion of study sample with NHIF membership, Kapyemit location, Uasin Gishu County

NHIF membership	Frequency	Percent
No	216	64.7
Yes	118	35.3
Total	334	100.0

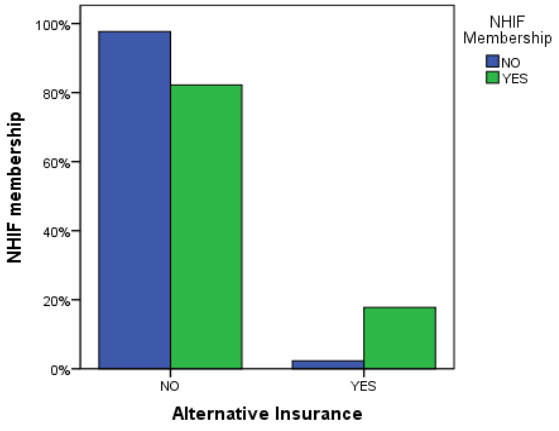

Figure 1: Proportion of study sample with other health insurance cover by NHIF membership status, Kapyemit location, Uasin Gishu County

Socio-demographic characteristics and NHIF membership

The χ^2-squared test indicated that marital status (9.600(2); p=0.008), occupation (25.364 (4); p=0.000) and level of education (12.57 (3); p=0.006) were significantly associated with NHIF membership.

Table 3 Relationship between socio-demographic characteristics and NHIF membership in Kapyemit Location, Uasin Gishu County

Variable	NHIF membership N= 334		X^2	*df*	*p*-value
	No n (%)	Yes n (%)			
	Age ((μ=37.3, σ =10.56)				
18-35	127(38)	64(19.2)	3.412	3	0.332
36-45	41(12.3)	29(8.7)			
46-55	33(9.9)	20(6.3)			
>55	15(4.5)	5(1.2)			
	Gender				
Female	100(29.9)	56(16.8)	0.041	1	0.839
Male	216(34.7)	118(18.6)			
	Marital status				
Married	138(41.3)	94 (28.1)	9.600	2	0.008
Never Married	44(13.2)	11(3.3)			
Separated	27 (8.1)	6 (1.8)			
Widowed	7 (2.1)	7 (2.1)			
	Number dependents in the household				
Living alone	13(3.9)	7(2.1)	0.140	2	0.932
1-4 people	182 (54.5)	98(29.3)			
> 4 people	21(6.3)	13(3.9)			
	Level of education				
No education/Incomplete Primary	44(13.2)	14(4.2)	12.57	3	0.006
Completed Primary	37(11.1)	19(5.7)			
Secondary	91(27.2)	41(12.3)			
Tertiary	44(13.2)	44(13.2)			
	Occupation of respondents				
Agriculture	18(5.4)	9(2.7)	25.364	4	0.000
Profess/Technical	26(7.8)	40(12.0)			
Unskilled manual	50(15.0)	15(4.5)			
Sales & services	104(31.1)	49(14.7)			
Others	18(5.4)	5(1.5)			

Household socio-economic characteristics and NHIF membership

The study found that 30.2% of the respondents were in the income category of KSH 6000-10,000 and form the majority of the respondents with only 4% earning above KSH 50,000. All the respondents had some form of income. About 25% of the households indicated having another member in the household earning. Those who reported having required health care in the 3-months preceding the survey indicated that 39.2% of them paid for healthcare from household income, while only 10.8% paid using NHIF.

Table 4: Household socio-economic characteristics of the study sample in Kapyemit Location Uasin Gishu County, N=334

Variable	Categories	Frequency	Percent
Total household income (μ =20,012; σ=19,536)	<5000	22	6.6
	6000-10000	101	30.2
	11000-15000	86	25.7
	16000-20000	51	15.3
	21000-50000	49	14.7
	>50000	25	7.5
Frequency of earning	Daily	176	52.7
	Weekly/ Monthly	146	43.7
	Earn money irregularly	12	3.6
Other household member earning a living	No	248	74.3
	Yes	86	25.7
Source of money to pay for healthcare	Household income	131	39.2
	NHIF	36	10.8
	Sold assets/Borrowed/got waivers	43	12.9

Chi-square test showed that total household income (12.91(5); *p*=0.024) and frequency of earning (8.141 (2); *p*=0.037) were significantly associated with NHIF membership.

Table 5 Relationship between Household Socio-Economic Characteristics and NHIF membership in Kapyemit Location, Uasin Gishu County

Variable	NHIF membership N= 334		X^2	*df*	*p*-value
	No n (%)	Yes n (%)			
	Total household income (μ=20,012, σ =19,536)				
<5000	16(4.8)	6(1.8)	12.91	5	0.024
6000-10000	73(21.9)	28(8.4)			
11000-15000	61(18.3)	25(7.5)			
16000-20000	25(7.5)	26(7.8)			
21000-50000	27(8.1)	22(6.6)			
>50000	14(4.2)	11(3.3)			
	Frequency of earning				
Daily	125(37.4)	51(15.3)	6.573	2	0.037
Weekly/ Monthly	84(25.1)	62(18.6)			
Sold assets/got waivers/borrowed money	7(2.1)	5(1.5)			
	Other household members earning a living				
No	166(49.7)	82(24.6)	2.162	1	0.141
Yes	50(15.0)	36(10.8)			
	Source of income for healthcare				
Household income	101(57.4)	30(17.0)	0.009	1	0.552
Irregular earning	10(5.7)	35(19.9)			

Health facility-related factors and NHIF membership

The supply-side factors include the availability of accredited health facilities (measured by distance to the facility and choice of the facility). Approximately 93.7% of the respondents indicated that distance is not a deterrent. Most respondents live 1-3km from accredited facilities. Quality of services at facilities was also assessed as a supply-side factor. Quality and cost were mentioned to be the major determinants of the choice of facility. Quality of healthcare was rated on a scale with questions on availability of drugs, waiting time in a hospital, staff behaviour, information available in the hospital, services in the facilities, hospital infrastructure and hygiene in the hospital. A quality index was developed using factor analysis: more than half of the respondents (51.2%) rated the quality of care in health facilities to be poor.

Table6: Health facility characteristics: distance, choice of facility and quality of care for residents of Kapyemit Location, Uasin Gishu County

Variable	Categories	Frequency	Percent
Distance to the nearest accredited facility	<1Km	46	13.8
	1-3Km	150	44.9
	4Km and more	66	19.8
	Don't know	72	21.5
Choice of health facility	Public facility	232	69.5
	Private facility	62	18.6
	Alternative/Informal services (include pharmacies/drug shops/traditional healers)	40	12.0
Quality of care	Good quality	163	48.8
	Poor quality	177	51.2

Chi-square results show that the respondents' choice of health facility (19.619(2); *p*=0.000) and the quality of care (6.997(1); p=0.008) were significantly associated with NHIF membership as indicated below.

Table 7: Relationship between health facility-related characteristics and NHIF membership in Kapyemit Location, Uasin Gishu County.

Variable	NHIF membership N= 334		X^2	*df*	*p*-value
	Yes n (%)	No n (%)			
	Distance to nearest accredited facility (n=262; μ =2.5; σ =1.77)				
<1km	18(6.9)	28(10.7)	1.534	2	0.465
1-3km	69(26.3)	81(30.9)			
4km and more	25(9.5)	41(15.6)			
	Choice of facility				
Public facility	79(23.7)	153(45.8)	19.619	2	0.000
Private facility	34(10.2)	28(8.4)			
Alternative/Informal services (include pharmacies/drug shops/traditional healers)	5(1.5)	35(10.5)			
	Quality of Care				
Good quality	70(21)	93(27.8)	6.997	1	0.008
Poor quality	48(14.4)	123(36.8)			

Scheme related factors and membership in NHIF in Kapyemit Location, Uasin Gishu County

Eighty-five percent of the respondents were aware of the premium with 45.2% saying the premium is high. Respondents were asked to name the services they know, from a listing of 8: 85% could not name a service covered and only 6% of the respondents could name more than 5 services covered by NHIF. A large proportion (78.4%) said they have no suggestion of additional services to be covered because most do not know what is covered and what is missing.

Trust of the NHIF scheme was assessed as a scale: the respondents were asked whether they feel that paying for NHIF using mobile money will reduce chances of 'lost money'; they were also asked if NHIF covers the services as promised, whether they get value for money, to rate if NHIF is a shield in times of illness, cases of drug stock-outs in NHIF facilities and also if the members with NHIF were treated the same way as those without. Factor analysis was used to make a trust index for NHIF trust which was analyzed using chi-square and multivariate regression.

Table 8: Scheme factors in NHIF membership in Kapyemit location, Uasin Gishu County

Variable	Categories (N=334)	Frequency	Percent
Perception of NHIF premium	Affordable	76	22.8
	Moderate	107	32.0
	High	151	45.2
Awareness of NHIF benefit package	Do not know	85	25.4
	Know few (1-4 services)	229	68.6
	Well known (5-8 services)	20	6.0
Satisfaction with NHIF benefit package	No	50	15.0
	Yes	262	78.4
	Refuse to answer	22	6.6
NHIF Trust	Yes	166	49.7
	No	168	50.3

Table 9: Relationship between scheme related factors and NHIF membership in Kapyemit Location, Uasin Gishu County

Variable	NHIF membership N= 334		χ^2	*df*	*p*-value
	Yes n (%)	No n (%)			
Perception of premium					
Affordable	30(9.0)	46(13.8)	**1.598**	**2**	**0.450**
Moderate	40(12.0)	67(20.1)			
High	48(14.4)	103(30.8)			
Awareness of NHIF benefit package(μ =1.84,; **σ**=1.645)					
None	5(1.5)	80(24.0)	**46.935**	**2**	**0.000**
Know 1-4 services	100(29.9)	129(38.6)			
Know more than 4	13(3.90	7(2.1)			
Satisfaction with NHIF benefit package					
No	29 (9.3)	21(6.7)	**10.31**	**1**	**0.001**
Yes	89(28.5)	173(55.4)			
NHIF Trust					
Yes	80(24)	86(25.7)	**6.697**	**1**	**0.000**
No	38(11.4)	130(38.9)			

The χ^2 test indicated that awareness of NHIF premium (30.623(1); *p*=0.000), knowledge of NHIF benefit package (46.9359(2); *p*=0.000), satisfaction with NHIF benefit package (10.31(1); *p*=0.001), and NHIF trust (22.478(1); p=0.000) were significantly associated with NHIF membership.

Multivariate logistic regression of determinants of NHIF membership in Uasin Gishu County

Variables that were significantly associated with NHIF membership were included in the logistic regression. The people who were married were 1.133 times more likely to join NHIF (OR 1.133; CI =0.227; 5.648; std. Err. 0.820; *p*=0.879) compared to those who were never married. The likelihood of NHIF membership is increases with increase in the level of education as those with tertiary education were 3.862 times (OR 3.862; CI = 1.347,11.074; std. Err. 0.537; *p*=0.012*)* more likely to take up NHIF compared to the group of those who have never attended school or did not complete their primary education. Completion of basic primary course was associated with higher levels of uptake of NHIF compared with those who have no education or did not complete primary education. Professionals and technical people were close to 2 times more likely (OR 1.978; CI = 0.679, 5.766; std. Err. = 0.546; *p*=0.211) to take-up NHIF compared to those in unskilled manual work.

Table 10 Multivariate logistic regression of variables significantly associated with NHIF membership in Kapyemit, Uasin Gishu County

Variable	OR (CI)	Std Err	*p*-value
Marital status (ref: never married)			
Married	1.133 (0.227, 5.648)	0.820	0.879
Divorced	0.418 (0.071, 2.457)	0.904	0.334
Separated	0.851(0.134,5.399)	0.943	0.864
Level of education (ref: not attended/incomplete primary)			
Complete primary education	1.838 (0.740, 4.563)	0.530	0.080
Secondary education	2.529 (0.895, 7.144)	0.464	0.190
Tertiary	3.862 (1.347, 11.074)	0.537	0.012
Occupation (Ref: unskilled manual)			
Agriculture	1.562 (0.429, 5.685)	0.659	0.499
Professional/technical	1.978 (0.679, 5.766)	0.546	0.211
Sales and services	1.263(0.508, 3.138)	0.464	0.615
Others	0.497 (0.113, 2.192)	0.757	0.356
Household income (ref: <5000)			
6000-10000	0.524 (0.122, 2.244)	0.742	0.384
11000-15000	0.421 (0.097, 1.816)	0.746	0.246
16000-20000	1.515 (0.340, 6.749)	0.762	0.586
21000-50000	1.358 (0.300, 6.139)	0.770	0.691
>50000	2.190 (0.409, 11.725)	0.856	0.360
Frequency of earning (ref: daily)			
Monthly	1.524 (0.087, 3.142)	0.914	0.480
Others	0.358 (0.058, 2.224)	0.932	0.270
Other sources of income (ref: No)			
Yes	3.776 (1.656, 8.611)	0.421	0.002
Choice of health facility (ref: alternative options)			
Private facility	6.657 (1.790, 24.758)	0.670	0.005
Public health facility	4.498 (1.362, 14.858)	0.610	0.114
Quality of Health care (ref: poor quality)			
Good quality	1.630 (0.890,2.985)	0.309	0.013
Awareness of NHIF benefit package (ref: don't know any)			
Know few services 1-4	9.245 (3.043, 28.085)	0.567	0.000
Know NHIF services 5 or more	18.560 (3.583, 96.129)	0.839	0.000
NHIF trust (ref: no trust)			
Trust	3.418 (1.866, 6.261)	0.309	0.000

People with another source of income were 3.776 times more likely to take-up NHIF compared to those without (OR =3.776; CI =1.656, 8.611; std. Err. =0.0421; *p*= 0.002). Respondents on a monthly income were 1.5 times more likely

to take-up NHIF (OR=1.524 CI= 0.087, 3.142; std. Err. =0.0.914, *p*=0.480) compared to those who get daily earnings. The study found out that people who prefer private facilities were 6.6 times more likely to take up NHIF (OR=6.657 CI=1.790, 24.758; std Err. = 0.670; *p*=0.005) compared to those who use informal healthcare. People who were more aware of the NHIF benefit package were more likely to enrol in NHIF; those who knew more than 5 services were 18 times more likely to enrol compared to those who could not mention any service and those who knew some services (1-4 services) were 9 times more likely to enrol in NHIF. Quality of health services influences uptake of NHF in that those who perceive the quality of care in NHIF accredited facilities to be good are 1.63 times more likely to enrol in NHIF (OR=1.630; CI=0.890, 2.985; std Err.= 0.309; p=0.113) compared to those who perceive the quality of healthcare in NHIF accredited facilities as poor. Likelihood of NHIF membership increased with respondents' trust in NHIF. The people who trust NHIF were 3.418 times more likely to enrol in NHIF (OR=3.418; CI=1.866, 6.261; std Err.= 0.309; p=0.000) compared to those who have no trust in NHIF.

Key informant interview findings largely concurred with the above findings of trust in NHIF and quality of services in NHIF accredited services.

"This issue of keeping people for long to confirm if the card is active seems like a plot to me to keep me waiting so that next time I come with cash and get services faster, you can never know if they get something for their pockets from the cash payments so they are treated better". Member who sought treatment with card

"I know my neighbours who have the card but they are told to pay cash for some laboratory checks, I do not see the need to get the card". Non-member

"I do not believe that the NHIF is really important in emergency situations. When they say you have to register in one health facility that means they do not treat emergency cases because like now my wife got very sick when we were far, I paid a lot of money in cash and she died and NHIF did not help because my card was at home and we were far in Mombasa. They want you to go to the hospital when you have planned so you can be where you registered." Former NHIF member

DISCUSSION

Kenya aims to achieve universal health coverage by expanding enrolment in NHIF so as to reduce out of pocket payments. Research has shown that out-of-pocket payments push households to poverty and cause failure to seek healthcare when in need and can push households into poverty. [7, 2]

The study established that 35% of the respondents were enrolled in NHIF. A study with a similar population of people in the informal sector showed enrolment of 32%, [8] while another study of NHIF in the informal sector in Nairobi reported uptake at 33%. [9] The findings of this study in Kapyemit reported findings close to those of the studies mentioned above. They were done in different locations but to populations with similar socio-economic characteristics. The reported lack of understanding of how risk pooling works in NHIF. Enrolment in NHIF among the informal sector population was reported to be affected by lack of regular income, lack of awareness of benefits and low education as the major deterrent factors which results to low uptake compared to the formal sector where uptake is close to 84%. [8]

The national average enrolment is 19%. [10] Findings from Kapyemit Location indicate a higher enrolment rate, this resulted from spirited efforts by the government to increase NHIF uptake with a view to achieving UHC by 2022, this was one of the agenda set by the government from 2018.

Demographic characteristics associated with enrolment in NHIF

The findings of this study indicated that married people were more likely to enrol in health insurance compared to those who were never married. These findings were supported by other studies which reported that the marital status was a factor which affected enrolment in health insurance, with married people more likely to enrol in health insurance. [11-13] This may be because the married are more likely to pool their income, and therefore increase their ability to pay for premiums. [14] The NHIF needed to be flexible in documents required to ensure the large pool of people who are married are not excluded due to lack of documents or even recognize letters from chiefs for customary marriages.

The study found that the likelihood of getting enrolled in NHIF increased with a progressive increase in the level of education. Respondents who reported to have a tertiary level of education were close to 4 times more likely to enrol compared to those who had never attended school or failed to complete their primary course, while those with secondary education were 2.5 times more likely to enrol. Majority of the respondents who reported to have health insurance had education up to tertiary level while other studies in Ghana and Kenya showed that an increase in education indicated a progressive trend in the likelihood of getting enrolled in health insurance. [15,16,8] Education level was associated with increased awareness and the educated were found to be more exposed to information and news on scheme options available and the value of being in the scheme. [17,18] Kenya has a policy on compulsory primary and secondary education for all children and currently the 100% transition to secondary school policy, these policies will increase education level and enable informed decisions. [19]

The study found that people in professional and technical fields were close to 2 times more likely to enrol in NHIF compared to people who worked in unskilled manual labour. A study in Bangladesh found that the type of occupation was associated with health insurance enrolment as some occupations mobilize workers to enrol in health insurance. [20] The type of occupation influences the level of income and the frequency of earning, hence it is understandable that those in skilled employment were more likely to enrol in NHIF. Considering the disparities in enrolment between the different occupation sectors, the government needs to make NHIF compulsory for everyone. Linking NHIF membership to some of the key government services is a workable means with which to enrol and track members from the informal sector. Another strategy that could be employed is linking NHIF membership to the provision of drivers' licences, especially for those in the informal sector. The NHIF scheme had different premium-amounts for the formal sector depending on the level of income yet the premium was standardized to KSH 500 per month in the informal sector regardless of the income or job security. Kenya should adopt subsidies for the poor who are not able to pay for NHIF. This model has been implemented in countries which have achieved UHC. Thailand, which achieved 74% universal health coverage in 2002, has segmented the health insurance into 3 different schemes with different premium amounts: for civil servants, for the private sector and one for the poor. [21] Rwanda, which is the most progressed country in Africa in its course to achieve UHC has segmented its insurance schemes like the community-based health insurance is stratified according to the poverty level, where the lowest group is paid for by the government, there is a second group paying about Ksh. 435 per person per year and a group which is doing well paying about a thousand per person per year making the people at least fit in one of the groups. [22]

Household socio-economic factors associated with enrolment in NHIF

This study found out that people with monthly or weekly incomes were 1.5 times more likely to enrol compared to people with daily earnings. People with reliable income were more likely to enrol than those who depended on irregular incomes like rain-fed agriculture. [23] Respondents' frequency of earning determined the availability of funds to pay for the NHIF and ability to save the money earned and pay the premium lump sum every month. NHIF was paid on a monthly basis and for respondents who had daily earnings like the casual labourers, it was difficult for them to keep the money and pay in lumpsum. Studies in Kenya indicated that inflexible payment models did not consider that the informal sector workers get their earnings irregularly, instead the NHIF has set hefty penalties for failing to pay in time, and this was a deterrent to enrolling in NHIF [24,8,25] A report by the World Health Organization, [26] suggested that for healthcare to cover the most vulnerable populations there was a need to increase the flexibility of payments to insurance companies to assist subsistence farmers and informal workers. This was seen to be inconsistent with the NHIF plan to make the scheme more considerate and acceptable to the informal sector which would increase enrolment in the informal sector.

This study showed that having another source of income was significantly associated with the decision to enrol in NHIF; respondents with other sources of income were close to 4 times more likely to enrol in NHIF compared to those without another source of income. While there was no published evidence linking multiple sources of income to insurance uptake, the researcher hypothesized that having multiple sources of income is likely to give stability to the household income and the household would not suffer deficits when one business is down. A household relying on only one source of income is likely to suffer when there was an economic shock, such as thieves or destruction of the business or absence of the business staff. Having diverse sources of income gives the household some option and shield and has positive attributes to the livelihood wellbeing of a household. [27,28] This was especially so for households that relied on agriculture and would require to wait until a farming season (mostly one year) is over to get some income. An additional source of income increased the total household income. [29]

The study found that respondents who had an income of KSH. 50,000 and above were twice as likely to enrol in NHIF as respondents who earned KSH. 5000 or less. The findings of the study were comparable to studies in other places which linked high incomes to enrolment in health insurance while people with low incomes used their money on food before they considered health premiums. [8,30,31] A study in Chile also linked high income with a high likelihood of enrolling in health insurance because the household could pay premiums without straining to provide basic needs. [32] For the extremely poor, universal health coverage is a need yet they cannot afford to pay the premiums; they need subsidization as these are households that used 80% of their income on food. [33] In 2014the government launched a health insurance subsidy programme for the poor and the elderly, [24] this could have supported coverage of the extremely poor but the policy lacked a framework to implement it, there were no clear guidelines on poverty mapping and details of its progress are hazy. The government should benchmark with other countries like Rwanda, which has achieved universal health coverage by making it compulsory and used different health insurance schemes for the different population sized by their income amounts.

Healthcare-related factors associated with NHIF enrolment

The results of this study indicated that people who use private health facilities were 6.6 times more likely to enrol in NHIF considering they will spend less time and get the services they want. [34,35] Other

reports indicate that people preferred to pay more for quality services in private facilities than to be insured and access delayed services in government health facilities. [36,37] NHIF would need to communicate to make it clear to the general public of the private health facilities available under the NHIF cover.

Quality of healthcare was significantly associated with uptake of NHIF; those who rated the quality of healthcare as being good were 1.6 times more likely to enrol than those who found the quality to be poor. The findings correspond to other findings, [38] which indicate that complaints about the quality of care affected the decision of workers to enrol in health insurance. Quality of health facilities has been associated with utilization of healthcare and a decision to enrol in health insurance. [39,40] In Congo, poor quality of primary health care was seen as the largest impeding factor to achieving universal healthcare, where people declined to enrol when they considered that facilities covered lacked essential drugs, and equipment was not working. [41] The respondents were not comfortable with the waiting time, hygiene, staff attitudes, equipment available, availability of drugs. Lack of drugs was persistently mentioned as a deterrent to enrolling due to a long process of procurement between the national government, the county governments and Kenya Medical Supplies Agencies. Technological innovations to streamline procurement, contracting and payments for drugs would make the lack of drugs a thing of the past. The government needs to put up frameworks for public-private partnerships where public health facilities could use the facilities in private health facilities which seem to be well-stocked to treat their patients and then split the rebates. Primary health facilities have rampant cases of lack of drugs or not finding the doctor. [42] Public participation through giving feedback on services received can help NHIF assess the quality of care. These efforts to improve quality of care will go a long way in making the system responsive and attractive to the general public thus increase enrolment.

NHIF needs to revise the accreditation policy of health facilities to ensure only those which meet a minimum set of standards for accreditation including equipment, medical staff and essential drugs are accredited. Government facilities are automatically accredited without prior assessment for the standard of care, which happens in private health facilities before they are accredited. With automatic accreditation government facilities do not put any effort to ensure they have enough staff, facilities and working equipment, and drugs to be accredited. This has led to people shying away from enrolling in NHIF especially those who do not know that private health facilities are also covered by NHIF. They result in seeking healthcare where they perceive to be higher quality even when it means paying from their pockets. There are different committees with mandates in inspecting health facilities to ensure quality care, yet there are numerous reports of people failing to seek health care and stay at home citing delays in receiving treatment, lack of drugs and even for some they end up contracting other infections while in the hospitals where health care workers are not interested in their plight. [43] In Kenya, the committees and boards involved in hospital inspection include the board of medical practitioners and dentists, pharmacy and poisons board, public health officials and infection control committee. [2] A multi-stakeholder committee with representatives from each of these groups would be more effective in ensuring quality health care to patients in both public and private health facilities. This will set a path for the development of a policy on the provision of quality healthcare in Kenya. NHIF should play a more significant role and enforce cancellation of accreditation certificates of the facilities until services are improved and can include patient feedback in their facility inspections to increase patient confidence in NHIF resulting in higher enrolment.

Scheme related factors associated with enrolment

The respondent's awareness of NHIF benefits influences their decision to enrol in NHIF. Respondents who were aware of more NHIF benefits were more likely to enrol compared to those who do not know what NHIF covers. There is evidence that knowledge of benefits is a pull factor towards enrolling in NHIF. [9] A quarter of the study respondents could not mention any service covered by NHIF. NHIF has not put a lot of emphasis on creating awareness around its services. Most respondents explained that they know NHIF benefits on a need basis when they need certain service that is when they enquire from the health facility if it is covered. One study in Ghana revealed that an increase in knowledge of benefits increased uptake. [30] The lack of information on health insurance benefits affected enrolment not just in Kenya but also in other countries, an example being South Africa, [44] while poor understanding of benefits package derailed enrolment in health insurance. [45,46] NHIF would need to come up with an innovative communication strategy including social media awareness to inform people of every change and improvement of their services and benefits. This will make the scheme more attractive. Focused advocacy efforts need to be expanded and this may necessitate partnership with the primary healthcare workers and the community health workers to extend information sharing especially in the urban areas.

People who trust the NHIF were 3.4 times likely to enrol compared to those who do not trust NHIF. The indicators of trust used in this study were developed from one researcher who linked trust to satisfaction with an insurance scheme. [47] Trust in was linked to household's willingness to pay more for health insurance, [46] while in Ghana, it was reported that households refused to enrol in national health insurance because they did not trust the scheme. [48] The respondents reported that the scheme was keen on collecting money but was not keen on offering services when one was sick which led to them not trusting the scheme. There are numerous co-payments despite having NHIF which are not clearly communicated, this causes mistrust in NHIF and deters enrolment. NHIF needs to make its benefits clear to the public to ensure the public does not view co-payments as an underground scheme to defraud them. One study reported that members preferred a comprehensive scheme without co-payments, [40] and this could be linked to drop-outs and deterrence to enrol. A clear communication strategy including a call centre to answer all client queries may be necessary to make their operations open and accessible to the public; this will restore trust in NHIF and increase enrolment.

CONCLUSION

The study found that NHIF enrolment was 35%. The factors associated with enrolment included being married, having a tertiary level of education, being in a professional or technical occupation, having another source of income, having a regular monthly income, preference for private health facilities, quality of care and trust in the NHIF scheme. Lack of NHIF or health insurance leads to out-of-pocket payments which lead households to poverty and deterrence to seek health care or seek healthcare in time. The government was focusing on achieving universal health coverage by having 75% of the population enrolled in NHIF thus eliminating financial barriers of access to healthcare facilities.

Increasing enrolment needs to be a multi-pronged approach which will involve the NHIF scheme as well as county and national governments working in synergy. This will require the government to support in improving quality of healthcare, advocacy, implementing education policies and subsidization for the poor while the NHIF scheme needs a redesign to increase flexibility in payments and documents for registration, improve the scheme services technologically and to create targeted messages to create awareness on NHIF

benefits and services, covered in totality.

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