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FACTORS INFLUENCING THE UPTAKE OF HEALTH INSURANCE SCHEMES AMONG KIBERA INFORMAL SETTLEMENT DWELLERS, NAIROBI, KENYA.
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FACTORS INFLUENCING THE UPTAKE OF HEALTH INSURANCE SCHEMES AMONG KIBERA INFORMAL SETTLEMENT DWELLERS, NAIROBI, KENYA.

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ABSTRACT

Background. **For a country to achieve its development goals, it has to devise appropriate mechanisms that can ensure that her people are healthy enough to steer their own economic development. Kenya is a developing country and therefore, health insurance schemes are seen as a sustainable way to ensure health lives and promote well-being for all at all ages in order to attain high social economic development. This paper basically examines factors influencing the uptake of health insurance schemes among Kibera informal settlement dwellers in the capital city of Kenya.**

Objective: **To determine factors influencing the uptake of health insurance schemes among Kibera informal settlement dwellers, Nairobi County.**

Design: **Descriptive cross section study.**

Setting: **Kibera slum in Nairobi County.**

Subjects: **House holds Heads.**

Results: **The proportion of respondents who had taken up health insurance in the informal settlement were 27.1% (n=45). Significant relationships ($p<0.005$) between health insurance enrollment and measured factors (measured as odds ratios (ORs)) were obtained as follows: compared to married respondents (OR=I), single, separated/divorced and widowed respondents were 68%,86%, 62% respectively less likely to own the insurance. Respondents who had attained post-secondary, secondary and primary education were 11.3, 2.3 and 1.6 times more likely to take up insurance compared to those with no formal education. Respondents working in the informal employment sector were 96% less likely to be enrolled in the health insurance program compared to those in the formal sector. Non –members in a local informal social welfare group were 78% less likely to take up insurance compared to members who were in the welfare. Respondents who earned greater than Kes 10,000 and between Kes 5,001 and Kes 10,000 were 25 and 3 times respectively more likely to take up insurance compared to those who earned an income of less than Kes 5,000 per month.**

Conclusion: **The proportion of slum residents without any type of insurance was high. Modifiable socio-economic factors dominated possible reasons for uptake/ non-uptake of health insurance. Policies geared towards elevated human development index in the informal settlements are needed to increase coverage of health insurance.**

INTRODUCTION

There is increasing commitment by low and middle income countries (LMICs) to achieve universal health coverage (UHC) (1) the goal of which is to ensure that everyone has access to needed healthcare services without getting into financial difficulties (2).This commitment has

culminated in the inclusion of UHC in the Sustainable Development Goals (SDGs), which were adopted by world leaders in 2015 to articulate global development priorities until 2030 (3). Health systems in LMICs are still heavily dependent on people making out-of- pocket (OOP) payments to cover the costs of healthcare at the time when they use the services (4).

Over 100 million people globally are pushed into poverty annually as a result of OOP healthcare payments (5). Substantial evidence from developing countries ascertain the continued presence of inequity in health, showing that the rich receive considerably more health benefits than the poor (6). More so, in the event of illness, many low-income households obtain sub-optimal care or forgo medical care altogether (7).

The share of social health insurance is 23.9% for the world, (8). Whereas access to quality health care is a constitutional right, millions of Kenyans cannot afford to pay for health services at public or private clinics. Even with public health insurance available since 1966, only 20% of Kenyans have access to some sort of medical coverage with the population at over 44 million and rising (9). This implies that 35 million Kenyans are excluded from quality health care coverage. In addition, a quarter of total spending on health care comes from out-of-pocket expenses (10).

However, it is quite evident that in Kenya , only a small proportion of the urban poor and those from the informal sector are enrolled in the health insurance program . Only 10% participate in the NHIF program, while less than 1% (0.8) have private insurance coverage. The majority of do not have any type of insurance (11). In an effort to increase insurance coverage, there is a push to have insurance schemes for those in the informal sector through microfinance schemes (11). There have been several attempts to explore the factors that increase uptake of insurance with an attempt to leverage on those to increase the coverage of health insurance. Studies conducted in a number of Sub-Saharan African countries show that Insurance uptake increases as one advances in age. This may be due to an increase in purchasing power (12). Subsequently majority of women of child bearing age (18- 45 years) are excluded from insurance (10).Secure employment, those in formal employment are more likely to have some form of medical insurance unlike those in the informal sector and those who are unemployed (13).

The low participation of individuals in the informal sector is also attributed to low and non-regular income and insurance scheme design features (example inflexible payment schedules and lack of awareness about insurance schemes) that are not adapted to people's needs and preferences (11). Other factors like marital status, educational status and profession have significant impact on uptake of insurance (14). However, some still perceive insurance is for those in the formal sector and others do not understand how they would pay for a service that they may not use (12).

In areas where little information about the insurance companies is available, some people may be opposed to giving money to insurance companies in the fear that the money will be misappropriated and they may not get the services paid for (15). The other problem is that econometric studies do not state why people have joined an insurance scheme, and especially why people with lower incomes, in whom we are particularly interested, have not joined. Research into people's preferences (16) emphasizes the need to look beyond demographic and income factors to understand people's reasoning and decision making.

Other studies have tried to assess willingness and ability to pay for health insurance (17). The enrolment in voluntary health insurance schemes is subject to the problem of selection bias through adverse selection (the practice of more unhealthy people joining health insurance) and cream skimming (a practice by insurers enrolling only the health people) and conveniently excluding the high risk population group consisting of aged,

poor and women from the insurance program (18).Yet these groups of people face a disproportionate share of the disease burden and need financial protection. This poses a major threat on the transition towards universal health coverage in these countries.

The objective of this study was to determine the proportion of people without health insurance coverage and factors influencing the uptake of the health care insurance among Kibera informal settlement dwellers, Nairobi County. Findings will provide important evidence with regard to the transformation of the National social health insurance into a universal health insurance scheme, which aims to grant all population groups, including the poor, access to quality and affordable health care services.

The study outputs are expected to greatly assist in implementing policies and strategies that will help the Kenya government as a whole meet the requirements of the constitution, which advocates the access to quality healthcare and vision 2030 which has the goal of developing a population that is healthy, productive and able to participate in and contribute to the economy.

MATERIALS AND METHODS

Study design: This was a cross-sectional survey study.

Study setting: We conducted this study in Kibera slum which is located 5 kilometers southwest of Nairobi city center, Kenya, according to the 2009 Kenya Populations and housing census puts Kibera 's population at 170,070 people (KNBS,2009) is the largest slum both in Nairobi and Africa. Most of Kibera slum residents live in extreme poverty, earning less than $1.00 per day. Unemployment rates are high, the living conditions in the slum are harsh and profoundly pose high risk for ill health and diseases. The congestion, lack of proper drainage and sewer systems, low latrine coverage, poor waste disposal and lack of clean drinking water are just but some of main predisposing factors of infections among slum dwellers. A great majority living in the slum lack access to basic services, including electricity, running water, and medical care.

Study Subjects: The study participants were household heads above 18 years who were willing to participate and had been living in Kibera for 1 year prior to the study. We excluded those who were visitors in that village and those who did not consent to participate in the study.

Sample size and sampling: We based our sample size calculations on a study done in Kibera slum of similar setting in Kenya 2012 where the uptake rate was 11% (17). Using statistical Cochran, 1997 for exact probability test, we found a minimum sample size of 166 assuming a precision of 5% and 95% level of significance. Simple random sampling technique was implemented for the 12 villages to pick one village for logistic purposes, Makina was picked. Systematic random sampling was carried out on households to obtain a sample of 166 respondents. The village was divided into four quadrants labelled (N, E, W and S denoting the directional North, East, West and South cardinal points.

Each quadrant was to share the sample size of 166 into 42 households per quadrant). Makena village had approximately 2,400 residents (from Ministry of Health Nairobi county not published).This number was used in the sampling strategy as follows: Each quadrant was assumed to have 600 households and since we desired to include all quadrants in the study, this number was used to compute the skipping interval. The skipping interval was calculated thus by dividing 600 by 42 which yielded 14.

Data Collection: The data collection tool (questionnaire) was translated into Kiswahili dialect to accommodate respondents whose mastery of English was inadequate. Once the data were collected, the investigator went through the

questionnaires to ensure they were complete before the participant was released and for any missing fields the participant was asked for their response. The questionnaire was divided into two sections: socio-demographic characteristics and health insurance ownership.

The socio-demographic characteristics comprised the following: gender, age, sex, education, marital status, occupation, family size, local welfare, home ownership and monthly income. Health insurance ownership composed of questions on health insurance cover uptake and scheme benefits which focused on whether at the time of enrolment the scheme was beneficial; whether it helped alleviate cost of medical bills, whether it covered common health problems and the quality of services.

Data analysis: The data collected through the questionnaires were coded, entered and analyzed using the Statistical Package for the Social Sciences (SPSS) windows version 21.0. Descriptive statistics were used to describe the main variables on socio demographic features. The health insurance uptake was estimated under the binomial model as where y denotes the total number of respondents who had taken up health insurance out of the total sample size n. Factors influencing the uptake of health insurance schemes was assessed by univariable analysis using standard logistic regression models.

Ethical Approval: The proposal for the study was submitted to and approved by the Scientific Steering Committee Kenyatta National/University of Nairobi Ethical Review (P718/10/2016). Written informed consent was obtained from all the study participants before participating in the study. The consent was available in English and in Swahili for those who did not understand English, eligible participants were assisted to complete the research questionnaire.

RESULTS

Socio-demographics of study subjects

A total of 166 subjects were selected for the study. This comprised of 57 (34.34%) males and 109 (65.7%) females. The subjects were aged between 19 and 85 years. The mean age of the 166 was 41.8 years, the largest proportion being within the age of category of 31- 40 years. About 60% (n=98) of the respondents were aged 40 years or younger. A total of 131 (78.9%) had various levels of education while 35 (21.1%) of the respondents had no formal education.

Eighty (48.2%) of the 166 respondents were living with their partners while 48 (28.9%) were singles, 26 (15.7%) were widowed and 12 (7.2 %) were divorced. The informal sector (n=156) 94.6%) was the largest proportion for the form of employment by most of the respondents-, this constituted activities and positions such as dressmaking, carpentry, running a kiosk or small grocery shop, house-help, drivers, public service vehicle conductors, construction workers, hair dressing, shoemaking among others. The largest proportion of family size (n=71) 42.8 % had three to four and above members. Only 38 respondents (22.9%) were members of a local social welfare. The study revealed that, the income level of most of the respondents was up to Kes. 10,000 a month (n=145) 87.4%.

Table1
Social demographics of the various respondents in the study (n=166)

Description of variable	Frequency	Percentage
Gender		
Male	57	34.34
Female	109	65.66
Age		
19—30	45	27.1
31—40	53	31.9
41—50	24	14.5
>50	44	26.5
Education level		
None	35	21.1
Primary	90	54.2
Secondary	31	18.7
Post-Secondary	10	6
Marital statues		
Married	80	48.2
Single	48	28.9
Separated/Divorced	12	7.2
Widow/Widower	26	15.7
Family size		
One to two	34	20.5
Three to four	71	42.5
Four to five	37	22.3
Five and above	24	14.5
Occupation		
House wife	48	28.9
Civil servant	11	6.62
Small scale business	87	52.4
Casual workers	20	12.04
Employment		
Formal	9	5.5
Informal	156	94.6
Income		
Ksh.0—5,000	105	63.3
Ksh.5001-10,000	40	24.1
>10,000	21	12.7
Chama		
Yes	38	22.9
No	128	77.1

Registration with National Health Insurance Scheme (NHIS)

The descriptive analysis demonstrated that a majority of the slum residents (n=121,) 72.9%) did not have any type of health insurance coverage, while only (45) (27.1%) who had ever had enrolled in the health insurance program. The results shown in (Table 2).

Benefits of health insurance cover

With respect to benefits of the health insurance cover, the larger number of respondents who had taken up the cover, (n=24,) 53.3%) were aware of its benefits stating that it helped alleviate cost of medical bills-; covered common health problems and; offered good services when they were admitted. 46.7% stated not to

have experienced any benefits due to the fact that claim process is usually too long and thus prefer paying cash being indebted due to defaulting and also some hospitals which they preferred are not included in the insurance cover. The results shown in the (Table 2

Table 2
Health insurance ownership by study participants

Variable		Frequency	Percentage
Health insurance cover	Yes	45	27.1
Benefit of the scheme/cover	Yes	24	53.3
	NO	21	46.7

Inferential analysis

The factors that were significantly related to insurance uptake were -; employment, education level, marital status, occupation, those who were in local social welfare groups and monthly income. There was a significant relationship between enrolment in health insurance and employment, participants who did not have formal employment were 96% less likely to enroll for health insurance compared to those formally employed (Table 3).

Those with primary, secondary and post-secondary education were 1.5,2.3 and 11.3 times more likely to take up insurance compared to those without formal education. There was a significant relationship between insurance uptake and marital status-, respondents who were unmarried (single, separated/divorced, widow /widower) were 68%, 86%, 62% respectively less likely to have enrolled for health insurance compared to those who were married (Table 3).

There was a significant association between health insurance uptake and those who were members of a local social welfare group/ merry go round (locally called chama) participants who were not in local social welfare were 78% less likely to enroll for health insurance compared to those who were in local social welfare (Table 3).

Income was move interdem to each other, respondents who were earning Ksh.5,001-10,000 and above Ksh.10,000 were 2.89 and 25.5 times respectively more likely to enroll with health insurance than those who were earning below Ksh.5,000 (Table 3)There was also a significant association between occupation and enrollment of health insurance, study participants who were civil servants and casual laborers(Retired, rentals) were respectively 17.1, and 4.6 times more likely to have enrolled with health insurance while those with small scale business were 21% less likely to enroll as compared to those who remained in homes as housewives (Table3).

Table 3

Factors affecting insurance uptake

Variable	**Level**	**Odd Ratio**	95% Odd Ratio	**P-Value**
Employment	Formal	1		0.0001
	Informal	0.04	[0.00 , 0.32]	
Education	None	1		0.0140
	Primary	1.56	[0.57 , 4.26]	
	Secondary	2.30	[0.72 , 7.3]	
	Post- secondary	11.28	[2.25 , 56.59]	
Marital status	Married	1		0.0089
	Single	0.32	[0.13 , 0.76]	
	Separated/Divorced	0.14	[0.02 , 1.17]	
	Widow/Widower	0.38	[0.13 , 1.10]	
Occupation	House wife	1		0.0000
	Civil servant	17.1	[3.18 , 92.03]	
	Small scale business	0.79	[0.32 , 1.93]	
	Others	4.6	[1.51 , 14.28]	
Chama	Yes	1		0.0001
	No	0.22	[0.10 , 0.47]	
Income	Ksh.0—5,000	1		0.0000
	Ksh.5,001-10,000	2.89	[1.22 , 6.81]	
	Ksh. > 10,000	25.5	[7.54 , 86.26]	

DISCUSSION

This study aimed to determine the factors influencing the uptake of the health insurance schemes among Kibera informal settlement, Nairobi County. In addition, the study aimed at assessing the proportion of people without health insurance coverage. The findings show that a high proportion of slum residents (121)72.9% have no access to any type of health insurance as (compared to the health financing strategy scheme which it's coverage is 60-80%).

With regard to participation in the health insurance, the data also indicates that fewer numbers of slum people and those from the informal sector are enrolled in the program (21; 23).This finding corroborates evidence from previous studies, which demonstrated that health insurance cover has not been effective in reaching out to the majority of Kenyans, especially the poor slum and those in the informal sector (13).

The logistic regression results showed that a number of factors are significant associated with participation in the health insurance program, including employment in the formal sector, participation in the local welfare (chama), being married, having secondary and post-secondary education, occupation and having high income, were associated with an increase in enrollment. The study participants who had higher earnings were more likely to enroll as compared to those who were earning less, this is consistent with several studies in Africa reporting that households with higher income were more likely to take up insurance (19).

Education is a factor that also improves the health seeking behaviour and hence increases insurance uptake (20) from our results those who were primary, secondary and post-secondary were more likely to enroll with health insurance compared to those without formal education. This could be attributed to having knowledge about the advantage of making regular small insurance payments to avoid the risk of catastrophic medical expenditure. Our findings demonstrated that employment in the formal sector is an important factor in the uptake of health insurance program thus, this indicates that more efforts are needed to integrate informal sector workers into health insurance. A study by Mathauer et al. to explore how to increase the participation of informal sector workers in the health insurance and NHIF found that some of the design features of the program acted as critical barriers (21).

These included absence of flexible payment mechanisms, differentiated contribution amounts and punitive penalties for those who do not pay their contributions on time. These factors fail to take into account the low and non-regular incomes, which are a common phenomenon among workers employed in the informal sector. Marital status was also an important predictor of participation in the health insurance ownership. A possible explanation for this finding is that when individuals get divorced, widowed or separated, they may become financially vulnerable hence impacting their ability to make payments to the health insurance program.

This finding is consistent with the result obtained by (11). This results suggest that being married is beneficial possibly because of the financial support derived from combined income, they see the need to protect their children and also they are more advanced to the risk of catastrophic health expenditures.

Our findings provide evidence on the potential participation in the local welfare (merry go round or chama) as mechanism through which funds can be pooled to assure access to health care for the poor segments of the population this is due to the fact that those participants who were not in the local welfare were 78% less likely to enroll for health insurance. These findings corroborate those of previous research, which found that membership in savings and credit associations and community –based savings groups provided individuals with a means of paying for health

insurance contributions contributions (21), hence increasing their access to health insurance and assisting in emergency situations. Although family size, age and gender were not significant factors that affect uptake, family size in previous studies has been attributed as a major factor that affects uptake of insurance (22).Once a household has many children, the resources are strained and thus find it hard to put money aside to pay for medical insurance.

CONCLUSIONS

This study highlights some key issues with regard to access to health insurance schemes among urban poor where coverage is still very low. We conclude that in this area, being married, white collar job, post-secondary education, income, well -paying job, and being in a local social welfare are associated with uptake of health insurance.

As the country strive towards provision of universal care, we note that insurance coverage is still low as we compare the health financing strategy scheme which its coverage is at 60-80%, there is need to put more efforts aimed at increasing the enrollment of financially challenged people in the program as outlined in the Kenya Vision 2030 policy framework.

This can be either by making the premium more affordable to low-income earners and also the government can control dropout by contributing part payment of premiums for eligible populations.

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