Effects of Perceived Image of NHIF Outpatient Facilities on Utilization of Primary Care Services by Private University Employees in Nairobi County

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Abstract

The NHIF is a mandatory health insurance fund covering public and private formal sector workers and their dependents as the main health insurer in Kenya. NHIF has embarked on an ambitious reform program intended to convert it to a Social Insurance Health Scheme with an aim of serving as workers' first pillar of social insurance. The national formal scheme members are entitled to all primary health services after selecting their preferred facilities from a list of the NHIF outpatient ones. However, there are some members of National formal scheme whose contributions are remitted to NHIF by their employer every month but do not utilize primary care services. This study sought to determine the effects of perceived image of NHIF outpatient facilities on utilization of primary care services by the national formal scheme members in Nairobi with a focus on Private University employees. This study adopted a cross-sectional descriptive design with mixed methods approach. Multistage sampling with simple random sampling was used. Quantitative techniques were used for data collection. Descriptive statistics, F-Statistics, P-values, Pearson's Rho ®, mean-scores, standard deviations, co-efficient of determination (R^2) and the coefficient of multiple determinations (Adjusted R^2) were analyzed using SPSS version 24. The rationale of this study was to inform top management of NHIF to undertake decisions in regards to utilization of primary health services by NHIF members by understanding effects of safety of healthcare services, waiting time at the health facilities, healthcare workers interpersonal skills and facilities amenities and physical outlook affect utilization of primary care services. The multiple regression results indicates that in a combined relationship only three factors on perceived image of NHIF facilities influence utilization of primary care services; safety of healthcare services (X_1; β_1 = .315, P <0.05), healthcare workers interpersonal skills (X_3; β_3 = .0.049, P <0.05), and healthcare facilities amenities and physical outlook (X_4; β_4 = .027, P <0.05). Waiting time is negative (X_2; β_2 = -.018, P <0.05) and thus does not influence utilization of primary care services. In a combined model, all four factors have no scientifically significant influence on utilization of primary health services by national formal scheme members in Nairobi County. The study recommends that NHIF should vet facilities they accredit to offer primary care services to ensure safety of healthcare services, train workers on effective interpersonal skills and improve facility amenities and physical outlook of NHIF outpatient facilities.

Introduction

The World Health Organization,[WHO] (2007) states that a good health financing system raises adequate funds for health, in ways that ensure people can use needed services and ensures that people are protected from financial catastrophe or impoverishment associated with having to pay for them. It provides incentives for providers and users to be efficient. WHO further asserts that the means of financing health care has been identified as a barrier to access health care and increases the likelihood of impoverishment of households; more so in developing countries such as Kenya where direct payments (out of pocket payments) form a greater proportion of the sources of health-care financing.

The National Hospital Insurance Fund [NHIF] (2018) website indicates it insures 15% of Kenya's total population which is about 88.4% of all persons with health insurance in Kenya. Membership to the NHIF is compulsory for all formal sector workers, and voluntary for the informal sector. NHIF finances healthcare in 3 schemes; the first category is the national scheme which covers formal employees, i.e. those in permanent and pensionable employment (private university employees fall under this category, informal sector workers (self-employed) and sponsored members (the aged, poor, retired). Civil Servants Scheme and the armed forces scheme are the other categories. Other financing options available in Kenya include out of pocket payments (OPPs), private health insurance, donor funds to the government, private not-for profit organizations and community based health insurance. The focus of this study is the National Scheme formal employees with particular interest on private University employees in Nairobi County.

NHIF is open to all Kenyans who have attained the age of 18 years. Effective April 1st 2015, the minimum salary from which contributions are made was raised to KES 5,999 contributing KES 150 each month, while the top contribution of KES 1,700 for those earning more than or equal to KES 100,000 (NHIF, 2015). Contributions from the informal sector were increased from KES 160 to KES 500 per household (NHIF, 2015). Accompanying this change in contributions is an enhanced benefit package which includes outpatient care and other services such as health promotion and disease screening, (Munge, Mulupi, & Chuma, 2015).

In line with the NHIF Act of 1998, NHIF is mandated to provide social health insurance coverage to all registered members, including their dependents. Those employed in the formal sector are required by law to enroll with the NHIF. Payments are made on a capitation based on the number of persons registered at a particular facility. Capitation is between KES 1000 and KES 1400 per beneficiary. The fund accredits all levels of health facilities which include: national referral hospitals; county hospitals; health centers; dispensaries; specialized clinics; diagnostics centers (imaging and laboratories); pharmacies, and accredited drugs dispensing outlets (ADDOs).(NHIF, 2018)The objective of the study was to find out how safety of healthcare service, waiting time, healthcare workers interpersonal skills and facility amenities and physical outlook influence utilization of primary care services (PHC) by private university employees in Nairobi County. The purpose is to inform NHIF management and policy makers while undertaking decisions regarding primary health care.

Materials and methods

This was a descriptive cross-sectional study with mixed methods approach. Quantitative data was collected using a questionnaire which employed five point likert based psychometric containing closed ended questions. Likert scale ranged between 1 and 5; 1 being Strongly disagree, 2 Disagree, 3 not sure, 4 Agree and 5 Strongly agree. The mean score was calculated for each statement with 3.4 being the border line for agree and disagree. The correlational design was able to correlate each independent variable against the dependent variable while the quantitative design was used to obtain inferential information required for the purposes of the study.

The study was done in private universities in Nairobi County in Kenya. Based on information from human resource staff in 14 out of 20 selected universities, the researcher found universities in Nairobi have approximately 1000 employees who remit their monthly NHIF contributions through their employers. The target population for the study was private university employees in Nairobi County enrolled into the NHIF national formal scheme and their contributions are remitted directly to NHIF by their employer. The target population was twenty private universities with campuses in Nairobi County.

The assumption was each university has an average of 50 employees (HRM data from various universities) thus a total of 1000 employees. The study response rate was 263/284 (92.6%). A pre-test was done and a reliability coefficient of 0.818 was achieved. A quantitative approach to data analysis was used. Data was coded and entered into the computer for computation of descriptive statistics. The Statistical Package for Social Sciences (SPSS version 24) and excel was used to run descriptive statistics such as frequency and percentages so as to present the quantitative data in form of tables based on the major research questions.

The test statistics used were the F-Statistics, P-values, Pearson's Rho ®, mean-scores, standard deviations, co-efficient of determination (R^2) and the coefficient of multiple determinations (Adjusted R^2). The research questions in this study were tested using the Pearson's Rho (r) and its corresponding p-value. The study used the following functional model $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$. The researcher sought approval from Kenya Methodist University (KeMU)- Scientific Ethic Review Committee (SERC), National Commission for Science, Technology and Innovation (NACOSTI/P/18/10620/26280), target University's authorities and informed consent from the respondents.

Results

A total of 284 questionnaires were administered, however 263 (92.6%) were fully filled and included in the analysis. Table 1 shows respondents who had registered their dependents under NHIF were 185 (70.3%), 156 (66.1%) had a private health insurance, 74 (28.1%) often used private health insurance to pay for their primary healthcare services, 73 (27.8%) use NHIF card to pay for their primary healthcare services while 33(12.5%) pay out of pocket. Majority of the respondents often pay cash for healthcare services and often buy medicine from the chemist without prescription.

Table 1: Demographic Characteristics of the respondents (n=263)

Characteristic	Respondents N (%)
Age of respondents in years	
21-30	55(22.7)
31-40	106(43.8)
41-50	65(26.9)
51-60	14(5.8)
61-70	2 (0.8)
Total	**242(100)**
Gender	
Female	132 (50.2)
Male	131 (49.8)
Total	**263 (100)**
Marital Status	
Married	176 (66.9)
Never married	69 (26.2)
Divorced	13 (4.9)
Widowed	5 (1.9)
Total	**263 (100)**
Highest Education Level	
Certificate	5 (1.9)
Diploma	40 (15.2)
Bachelor Degree	89 (33.8)
Masters' Degree	105 (39.9)
PhD	24 (9.1)
Total	**263 (100)**
Occupation	
Academic staff	86 (32.7)
Administration staff	177 (67.3)
Total	**263 (100)**
Registered dependents under NHIF	
Yes	185 (70.3)
No	27 (10.3)
Not applicable	51 (19.4)
Total	**263 (100)**
Spouse have a separate NHIF Card	
Yes	151 (57.4)
No	54 (20.5
Not applicable	58 (22.1)
Total	**263 (100)**
Have a private health insurance	
Yes	156 (66.1)
No	107 (33.9)
Total	**263 (100)**
Payment for healthcare services	
Out of Pocket	33 (12.5)
NHIF Card	73 (27.8)
Private Health Insurance	74 (28.1)
Out of Pocket &NHIF card	27 (10.3)
Out of pocket and private health insurance	8 (3.0)
NHIF & Private health insurance	48 (18.3)
Total	**263 (100)**

Perceived Image of NHIF Outpatient Facilities

Table 2 shows respondents have used NHIF card to receive primary healthcare services and will use NHIF card to receive healthcare services when need arises (mean score 4.11). They have used NHIF card to receive primary healthcare (mean score 3.42) and will use the NHIF card to receive primary healthcare when need arises (mean score 3.98). This result shows optimism in improvement of NHIF outpatient services in the future and therefore plans for future utilization.

Majority of respondents are in agreement that medical records confidentiality was maintained for future reference (mean score 3.5), cleanliness was maintained in the facilities (mean score 3.49) and staff handling patients were clean (mean score 3.74). They disagree the healthcare services in these facilities are safe (mean score 3.36), services in the facilities are satisfactory (mean score 3.2) and that health facility amenities are clean (3.32).

Respondents disagreed the number of health workers is enough (mean score 2.95), waiting time is sufficient (mean score 2.85) and clinicians are available in the consultation rooms all the time (mean score 2.97). They agreed customers are served on a first in first out basis (mean score 3.41). They disagreed health workers show compassion to patients and that there is no discrimination in the facility between NHIF card holders and others with other insurance covers.

Respondents had issues with all aspects of physical outlook and facility amenities. They disagreed the physical outlook of the facilities is appealing (mean score 3.37), there is a comfortable waiting bay in the facilities, a well-stocked pharmacy, an operational laboratory and drugs are available all the time.

Table 2: Descriptive Statistics of Perceived Image and Utilization of PHC services

Variable	Statement	Strongly Disagree N (%)	Disagree N (%)	Not Sure N (%)	Agree N (%)	Strongly Agree N (%)	Mean	SD
Utilization of Primary care services (y)	I have ever used my NHIF card to receive healthcare services	25 (9.5)	41 (15.6)	8(3.0)	103(39.2)	86 (32.7)	3.7	1.32
	I will use the NHIF card to receive healthcare services when need arises	8 (3.0)	13 (4.9)	22(8.4)	118(44.9)	102(38.8)	4.11	0.96
	My dependents have ever used NHIF card to receive healthcare	39 (14.8)	38 (14.4)	23(8.7)	100(38.0)	63 (24.0)	3.42	1.38
	My dependents will use the NHIF card to receive healthcare when need arises	10 (3.8)	20 (7.6)	24(9.1)	119(45.2)	90 (34.2)	3.98	1.04
Safety of primary care Services (X1)	I consider the healthcare services in these facilities to be safe	17 (6.5)	30 (11.4)	76 (28.9)	122 (46.4)	18 (6.8)	3.36	0.993
	Services in the facilities are satisfactory	14 (5.3)	63 (24.0)	56 (21.3)	117 (44.5)	13 (4.9)	3.2	1.03
	Medical records confidentiality is maintained for future reference	3 (1.1)	21 (8.0)	107(40.7)	105 (39.9)	27 (10.3)	3.5	0.83
	Cleanliness is maintained in the facilities	9 (3.4)	41 (15.6)	54 (20.5)	130 (49.4)	29 (11.0)	3.49	0.99
	The health facilities amenities are clean	12 (4.6)	58 (22.1)	52 (19.8)	116 (44.1)	25 (9.5)	3.32	1.06
	Staff handling patients are clean	5 (1.9)	24 (9.1)	44 (16.7)	152 (57.8)	38 (14.4)	3.74	0.88
Waiting Time (X2)	The number of health workers is enough	20 (7.6)	69 (26.2)	95 (36.1)	61 (23.2)	18 (6.8)	2.95	1.04
	Waiting time is sufficient	30 (11.4)	78 (29.7)	62 (23.6)	87(33.1)	6 (2.3)	2.85	1.08
	Clinicians are available in the consultation rooms all the time	20 (7.6)	78 (29.7)	65 (24.7)	89 (33.8)	11 (4.2)	2.97	1.05
	Customers are served on a first in first out basis	16 (6.1)	38 (14.4)	66 (25.1)	107(40.7)	36 (13.7)	3.41	1.08
Healthcare workers interpersonal skills (X3)	There is no discrimination in the facility between NHIF card holders and others with other insurance covers	30 (11.4)	50 (19.0)	78 (29.7)	78 (29.7)	27 (10.3)	3.08	1.16
	Health workers show compassion to patients	14 (5.3)	51 (19.4)	67 (25.5)	111(42.2)	20 (7.6)	3.27	1.03
	The physical outlook of the facilities is appealing	12 (94.6)	48 (18.3)	61 (23.2)	115 (43.7)	27 (10.3)	3.37	1.04
NHIF health facility amenities and physical outlook (X4)	There is a comfortable waiting bay in the facilities	24 (9.1)	63 (24.0)	50 (19.0)	94 (35.7)	32 (12.2)	3.18	1.19
	There is a well-stocked pharmacy	42 (16.0)	55 (20.9)	76 (28.9)	75 (28.5)	15 (5.7)	2.87	1.16
	There is an operational laboratory	15 (5.7)	53 (20.2)	73 (27.8)	96 (36.5)	26 (9.9)	3.25	1.06
	Drugs are available for me all the time	33 (12.5)	88 (33.5)	62 (23.6)	63 (24.0)	17 (6.5)	2.78	1.14

Relationships between Perceived Image and Utilization of PHC services

This analysis set to determine whether each of the independent variables in this study that is, safety of primary healthcare services in NHIF facilities (X_1), waiting time at NHIF health facilities (X_2), healthcare workers interpersonal skills (X_3) and facility amenities and physical outlook (X_4) had an effect on utilization of primary care services The results for each variable are given by the Pearson's Rho (r) and its corresponding *p-value* as indicated in Table 3.

Table 3: Bivariate Linear Correlation: All variables

		Y	X_1	X_2	X_3	X_4
Y	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	263				
X1	Pearson Correlation	.292**	1			
	Sig. (2-tailed)	.000				
	N	263	263			
X2	Pearson Correlation	.191**	.645**	1		
	Sig. (2-tailed)	.002	.000			
	N	263	263	263		
X3	Pearson Correlation	.222**	.664**	.600**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	263	263	263		
X4	Pearson Correlation	.220**	.686**	.581**	.600**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	263	263	263	263	263

**. Correlation is significant at the 0.01 level (2-tailed).

The bivariate linear correlations revealed that safety of healthcare services (X_1) had a positive and significant influence on utilization of primary care services $(r=.292**, P<0.05)$. The study also found a strong positive and significant relationship between waiting time (X_2) and utilization of primary healthcare services (Y) $(r=.191**, P<0.05)$. Factors related to services being satisfactory, number of health workers, waiting time, availability of drugs and clinicians are major factors affecting utilization. The bivariate linear correlation analysis revealed that there is a positive and significant influence of healthcare workers interpersonal skills (X_3) on utilization of primary care services $(r=.222**P<0.05)$. The study also found a strong positive influence of facility amenity and physical outlook on utilization of primary care services by the university employees r= .220**P<0.05).

Combined Influence of perceived Image on Utilization of PHC services

Table 4 shows a multiple regression analysis done on the four factors to test their combined influence on utilization of primary care services by private university employees. The regression output containing the four variables was found to be valid (F $_{(4,258)}$ = 6.147, $P < .001$) meaning the four factors in this study are good predictors explaining utilization of primary care services by private University employees in Nairobi County

Table 4: Model Validity: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	16.263	4	4.066	6.147	.000[b]
1	Residual	170.652	258	.661		
	Total	186.915	262			

a. Dependent Variable: Y
b. Predictors: (Constant), X_4, X_2, X_3, X_1

The results of regression analysis in Table 5 below indicates significant effect of safety of healthcare services (X_1), waiting time (X_2), healthcare workers interpersonal skills (X_3) and healthcare facilities amenities and physical outlook (X_4) on utilization of primary care services. The coefficient of determination (R-squared) of .073 shows that 7.3% of utilization of primary care services can be explained by the perceived image of NHIF outpatient facilities. The adjusted R-squared of .073 indicates that these factors, in exclusion of the constant variable explained the change in utilization of primary care services by 7.3%. Other factors not included in the multiple regression models under investigation explain the remaining 92.7%. The standard error of estimate (.81329) shows the average deviation of the independent variables from the line of best fit.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.295[a]	.087	.073	.81329

a. Predictors: (Constant), X_4, X_2, X_3, X_1

The multiple regression results in Table 6 indicates that in a combined relationship only three factors on perceived image of NHIF outpatient facilities influence utilization of primary care services i.e safety of healthcare services (X_1; $\beta_1 = .315$, $P < 0.05$), healthcare workers interpersonal skills (X_3; $\beta_3 = .0049$, $P < 0.05$), and healthcare facilities amenities and physical outlook (X_4; $\beta_4 = .027$, $P < 0.05$). Waiting time is negative (X_2; $\beta_2 = -.018$, P
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<0.05) and thus does not influence utilization of primary care services. In a combined model, all four factors have no scientifically significant influence on utilization of primary health services. The constant (β_0) is positive and significant ($\beta_0 = 2.537$, $P < 0.05$). It indicates that utilization of primary care services will always exist even without the four factors under investigation in this study

Table 6: Utilization of Primary Care Services Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.537	.269		9.417	.000
	X_1	.315	.120	.251	2.636	.009
	X_2	-.018	.092	-.016	-.198	.843
	X_3	.049	.088	.047	.554	.580
	X_4	.027	.079	.030	.345	.730

a. Dependent Variable: Y

Discussions

This study found that majority of the respondents had a private health insurance and often used private health insurance to pay for their primary care services. An equally big proportion used NHIF card to pay for their primary care services. At the same time, majority of the respondents often pay cash for healthcare services and often buy medicine from the chemist without prescription. This raises the issue of a fragmented pool demanding answers to why one insurance provider is not sufficient for users. This finding confirms information by NHIF that the benefit package recognizes that NHIF membership is diverse and that some members with high incomes may require more expensive services than those it covers. The findings shows members are able to supplement the NHIF benefit package by either private insurance or direct co-payment. (NHIF, 2018)

The study found that waiting time at the health facilities was long. This is similar to studies by Steinwachs & Hughes, (2008) that found increased waiting time in emergency rooms and doctors offices and delays in obtaining appointment is associated with seeking and receiving healthcare behavior. The study found that people are denied critically needed services and outcomes worsen as a result of failure to provide timely care. Similar findings in Ghana as reported by Mulupi et al. (2013) showed the insured population reported waiting longer at health facilities than the non-insured. This researcher found it interesting that despite respondents indicating long waiting times at the NHIF outpatient facilities, they still utilize the services, probably because of lack of alternative healthcare provider, low cost of service provided, proximity of the facilities to them or due to other factors.

Although customers were served on a first in first out basis, there was discrimination in the facilities between NHIF card holders and those with other insurance covers and the health workers do not show compassion to patients. This study is similar to findings of Fotso & Mukiira, (2012) that reported public providers of maternal health services in urban Kenya are not only frequently unfriendly to women, but also tend to display behaviors of harassment and mistreatment of women, regularly fail to answer their questions and fail to ask them for important routine information. By contrast, the study also found that other informal provider's foster strong relationship with women who seek maternity, build trust and confidence, which ultimately contribute a positive influence on women's utilization of these facilities for delivery. Similar findings in Ghana by Mulupi et al. (2013) showed the insured population reported being discriminated by providers than the non-insured and received

low quality drugs, are asked to buy them at private pharmacies, thereby incurring additional costs.

Respondents disagreed with all aspects of facility amenities and physical outlook. This study concurs with that of Okech & Lelegwe, (2015) that concluded limited appropriate equipment and dilapidated health infrastructure have a negative impact on care as well as the ability to retain some key health personnel especially, specialized health workers in the public service as a result of the available infrastructure. This study confirms studies by Okech, (2016) that most medical equipment used in public health facilities is old and characterized by frequent breakdowns despite availability and functionality of diagnostic and medical equipment being critical in treatment.

Modern equipment such as dialysis machines, radiology equipment, laundry machines and theatre equipment lack in most public facilities while the available equipment falls far short of the required numbers. The findings are also similar to that of Fotso & Mukiira, (2012) where women seemed to worry about the conditions of the waiting bay, examination and delivery rooms, number of nurses and midwives, the effectiveness of equipment, doctors' and midwives' competence and suitability to perform deliveries and access to drugs; and to a lesser degree, about the time devoted to patients. This study however disagreed with Okech & Lelegwe, (2015) in that patients are still seeking services in these facilities.

The bivariate linear correlations revealed that all factors under study have a positive and significant influence on utilization of primary care services by private university employees. This finding agrees with Mulupi et al. (2013) who found perceived poor quality of services at NHIF accredited facilities as a major factor hindering people from joining health insurance schemes and/or contributing to drop out rates hence influencing utilization of primary care services.

The coefficient of X_1 $\beta_1 = .315$, P <0.05 indicates that a unit increase in NHIF outpatient facilities safety index leads to an increase in utilization of primary care services index by 31.5% which is statistically significant. The coefficient (X_3; $\beta_3 = .0.049$, P <0.05), shows that a unit increase in healthcare workers interpersonal skills index leads to an increase in utilization of primary care services index by 4.9% which is not statistically significant. The coefficient (X_4; $\beta_4 = .027$, P <0.05) indicates that a unit increase in facilities amenities and physical outlook index leads to an increase in utilization of primary care services index by 2.7% which is not statistically significant. Finally, the coefficient of (X_2; $\beta_2 = -.018$, P <0.05) indicates that a unit improvement in waiting time index does not lead to an increase in utilization of primary care services index.

Conclusions

From the findings, it is evident that safety of healthcare services, waiting time, health workers interpersonal skills and facility amenity and physical outlook influence utilization of primary care services. The study has established that although respondents did not agree services at the health facilities were safe, they agreed that confidentiality of medical records and cleanliness of both facilities and staff was maintained.

The study also established that respondents felt the number of healthcare workers was not enough, the waiting time was long and that

clinicians were not available in the facility when needed. Interestingly, the respondents still utilized these facilities and therefore dire need to improve the stated areas for better health outcomes.

In regards to healthcare workers interpersonal skills, respondents indicated that although customers are served ion first come first served; there was discrimination between NHIF card holders and other private health insurance holders. This may be in terms of quality of drugs issued, complete diagnostic services or being denied certain health services like laboratory examinations among others.

The study found that the physical outlook of the facilities was not appealing, there was no comfortable waiting bay, no stocked pharmacy, no operational laboratory and drugs were not available at all times.

The study found perceived image of NHIF outpatient facilities has an effect on utilization of primary care services. Respondents still utilized care in these facilities indicating great need to improve them. NHIF should also vet facilities they accredit to offer outpatient services to ensure safety, improved health amenities, appealing physical outlook and reduced waiting time. They should also facilitate training of healthcare workers on effective interpersonal skills.

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New knowledge: Health services safety, health workers interpersonal skill and health facilities amenities and physical outlook are seen to influence utilization of primary care services than the waiting time at the facilities.

Competing interest: The researcher had no any competing interest.

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