NATIONAL HEALTH INSURANCE FUND FINANCING AND FINANCIAL SUSTAINABILITY OF NATIONAL REFERRAL HOSPITALS IN KENYA

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ABSTRACT

In the backdrop of the rising global burden of diseases, global economic uncertainties, demographic transitions, pandemics and dysfunctional public healthcare system; most National Referral Hospitals in Kenya are struggling to remain afloat. They are highly characterized by diminishing sources of funding coupled with declining hospitals' net margins and financial reserves. Their pre-existing financial vulnerability was exposed during the coronavirus pandemic, which almost pushed the entire public healthcare system into a near collapse. Most of them were in dire need of government emergency bailouts to meet their short-term financial needs. This was exacerbated by delays in hospital reimbursements and diminishing NHIF annual premiums; due to sporadic monthly premiums, misalliance in NHIF capitation tariffs and incessant pull-outs of key NHIF members such as the National Police Service and Kenya Prison Service. This has starved private and public healthcare organizations destabilizing their operations, healthcare financing mix and raising concerns about its impact on financial sustainability of public healthcare organizations offering secondary and tertiary healthcare. It is on this ground that this study strived to investigate the statistical relationship between National Health Insurance Fund financing and financial sustainability of National Teaching and Referral Hospitals in Kenya. The study hinged on the theory of resource dependency and demand for healthcare. It adopted an explanatory research design and a census sampling technique to sample all National Teaching and Referral Hospitals for the period 2019-2021. A generalized least square with random effects was utilized to assess the relationship between National Health Insurance Fund financing and financial sustainability of these hospitals. The panel data was analysed quantitatively using both descriptive and inferential statistics with the aid of Eviews data analysis software. The results from the inquiry indicated that National Health Insurance Fund financing had a positive and significant relationship with financial sustainability. To alleviate healthcare financing disequilibrium and its subsequent impact on financial sustainability of National Referral Hospitals, the study proposed a review and realignment of the current healthcare financing policies, laws, and reforms. The study recommends the establishment of a robust and optimal National Health Insurance Policy and the adoption of innovative sources of financing public healthcare, such as the use of social impact bonds to finance various health programs with severe social impacts like lifestyle diseases. However, more research on social impact bonds is required.

Key words: Healthcare Financing, NHIF; National Health Insurance Reform, Innovative Sources of Healthcare Financing, Social Impact Bonds, Financial Sustainability

INTRODUCTION

Public healthcare plays an essential role in the economy of any country by ensuring that we have a healthy and productive labour force essential in spurring its economy. It is one of the key pillars of Sustainable Development Goals on health and well-being that is linked to all other SDGs on work productivity and sustainable economic growth (UNDP, 2015, WHO, 2019). Despite its crucial role in the economy of any given country, healthcare is currently being imperilled by a confluence of factors, such as the rising cost of healthcare, high levels of uninsured households in most developing countries and shrinking sources of public healthcare financing (UNECA, 2018). These have provoked heated debates on whether the current healthcare financing mechanisms are sufficient in bolstering financial sustainability of public healthcare systems, especially in developing countries where the uninsured population is disproportionately high resulting in unprecedented out-of-pocket health expenditures that push them to financial distress and abject poverty.

Because of this, there has been a heightened interest in financial sustainability of national public hospitals whose healthcare financing mix has been highly susceptible to global pandemics and economic disruptions, as was in the case in 2020 when the Coronavirus pandemic disrupted and imperilled the public healthcare systems in most of developing countries; which were hard hit. According to Shrank et al. (2021), the financial vulnerability of most public hospitals was in existence even before they were imperilled by the Coronavirus pandemic; as was evident through incessant losses and declining reserves. This suggested that their financial vulnerability has been in existence for a long time, and there is a need to assess the magnitude of healthcare financing gaps and how they may impact the general financial sustainability of national public hospitals that play an essential role in providing accessible and affordable specialized public healthcare; therefore promoting healthcare equity (Fleming et al., 2021).

Most empirical evidence, like that of Mbau et al. (2020) has attributed the healthcare financing disequilibrium to a plethora of factors among them being low national health insurance coverage of households especially those in the informal sector and underinsurance. According to WHO (2022), most developing countries in Africa have high levels of catastrophic healthcare expenditures as a significant number of poor households are uninsured or underinsured forcing them to incur high out-of-pocket expenditures. To mitigate this problem, most governments in Africa have been trying to reform social health insurance through the enforcement of mandatory contributions and widening its coverage.

This has been evident in several countries, such as South Africa where the government have been championing a National Health Insurance fund to increase equity in access to healthcare among all citizens and legal residents. The previous healthcare system excluded the poor who could not access a plethora of healthcare services from public and private health providers and organizations. The National Health Insurance (NHI) bill that was passed by the National Assembly in June 2023, and forwarded to the National Council of Provinces has faced lots of opposition, especially from private healthcare providers (Mathew & Mash, 2019). The bone of contention is on the proposed reforms and models on coverage, implementation and autonomy (Mukwena & Manyisa, 2022). South Africa has a two-tiered healthcare system consisting of public and private healthcare systems that operate

simultaneously to each other. The public healthcare system is funded through out-of-pocket expenditure based on a uniform patient fee schedule that is used to bill patients across all public hospitals, based on their level of income and family size. It is also partly funded by the government up to 40%, a situation that has exposed most public hospitals to financial difficulties due to underfunding that subsequently triggered a mass exodus of doctors and other medical practitioners to the private healthcare sector that is lucrative worsening the situation at all levels of hospital from district, regional, tertiary, central to specialized hospitals (National Department of Health of South Africa, 2023; Christmas & Aidam, 2022).

In the quest of re-aligning the public healthcare system to mirror the universal coverage goals, countries such as Ghana have adopted a National Health Insurance scheme that promotes equity and equality in access to healthcare. Unlike in most countries in Africa, the National Health Insurance in Ghana is funded through funds collected from the registration of members and tax-based funding, where 2.5% of levied Value Added Tax is dedicated to funding health (Laar, Asare & Dalinjong, 2021). Nevertheless, despite having a robust National Health Insurance scheme covering about 54.4% of the entire population, there exist substantial gaps in the funding of preventative healthcare and challenges in timely reimbursements of medical claims impairing the ability of public hospitals to provide unmatched quality, equitable and timely healthcare. In addition, out-of-pocket healthcare expenditure is undeniably high at 36% subjecting a considerable number of households to catastrophic healthcare expenditure (World Health Organization, 2022). This has raised questions on the sustainability of these hospitals; especially in the light of erratic reimbursements and overreliance on national health insurance in funding health in developing countries in Africa.

Similar trends have been observed in Rwanda, which despite having a robust community-based health insurance scheme (CBHI) covering at most 86% of the population as of 2021; has been experiencing intermittent financial deficits. This is highly suggestive of a looming public healthcare bubble and burst that is likely to expose the national public hospitals to financial distress; which can be dire when there is a spike in public health emergencies as was the case in 2020 when the world was hit by coronavirus pandemic (Makaka, Breen, & Binagwaho, 2012; Nyandekwe, Nzayirambaho, & Kakoma, 2020).

In Kenya, the situation is even worse as of June 2021 the National Health Insurance Fund (NHIF) had only covered 27% (13 million) of the total population (47.6) as outlined in figure 1.1. This is a worrying trend since it implies that a significant majority of individuals cater for their healthcare expenditures through out-of-pocket expenditure; which is currently high at 45% exposing them to unprecedented catastrophic healthcare expenditure. This is attributed to dwindling donor healthcare funding of specific healthcare programs and relatively low government funds; which is way below the Abuja healthcare funding threshold of allocating at least 15% of the national budget to the health sector. This misalignment in healthcare financing has the potential to imperil financial sustainability of National Referral Hospitals that are under the Ministry of Health that receive funds directly from government coffers (Fenny, Yates, & Thompson, 2021; Koon, Hawkins, & Mayhew, 2020; Ouma, Nzyuko, & Nyadera, 2020; NHIF, 2022).

Figure 1. 1: NHIF Coverage in Kenya

Members by Category	Number of Individuals Covered by NHIF
Formal Sector	4.7 million
Informal Sector	6.6 million
Sponsored Programs by Employers	1.7 million
Total	13 million

(Source: NHIF, 2021)

The empirical review of NHIF trends in Kenya indicated that for the financial year ending June 2022, default on monthly contributions among its members increased exponentially from 5 million (2021) to 9 million (2022). This meant that about 3.8 million NHIF members were unable to get healthcare services using NHIF and had to dig deep into their pockets impairing their future abilities to pay for healthcare, as they lose quality collateral such as property that they use as security for settlement of their bills. The NHIF policyholders that defaulted on their contributions are often denied access to healthcare services resulting in inequity in health access that is associated with undesirable healthcare outcomes. In view of this, the current study calls for increased attention to NHIF financing (NHIF, 2021).

The amendment of the NHIF system in Kenya has elicited mixed reactions among Kenyans, as it does not mirror the realities on the ground. This has been attributed to a broad spectrum of challenges such as fraud in the use of NHIF kitty by private healthcare organizations, as well as global and regional economic downturns that have severely impacted most poor households that are informal sector and are unable to remit periodic contributions impairing the ability to utilize this kitty *in liu* of out-of-pocket healthcare financing. Currently, the number of Kenyans subscribed to NHIF is 12.92 million, which constitutes 27% of the total population. This is way below the WHO threshold of 40% and emphasizes the need for proactive policies on widening the NHIF coverage among Kenyans (NHIF, 2022; MOH, 2020).

These healthcare financing misalliances elicit concerns about financial sustainability of National Referral Hospitals that are highly characterized by declining revenues, cash flows and overreliance on indeterminate donor and government funding options. Their pre-existing financial and cash flow vulnerabilities almost led to their collapse when the world was hit by the global pandemic in 2020. For instance, Kenyatta National Hospital suffered a sharp increase in revenue deficit from 900 million to 1 billion in 2017 and 2018 respectively, a trend that has continued to date; widening the healthcare financing gap (Kenyatta National Hospital, 2020; Kenyatta National Hospital, 2021).

Similarly, Moi Teaching and Referral Hospital have been registering accumulated losses from one period to another, in 2017 and 2018 it incurred an accumulated loss of 200 and 165 million respectively, a trend that has been witnessed up to date. This is coupled with overreliance on

uncertain government and donor funding that has been declining (Moi Teaching and Referral Hospital, 2020; Moi Teaching and Referral Hospital, 2021). This has been also the trend in Mathari and National Spinal Injury and Kenyatta University Teaching Research and Referral Hospital, whose sources of funding have been erratic and declining (KUTRRH, 2021; MNTRH, 2020; MNTRH, 2021; NSINTRH, 2020; NSINTRH, 2021). Their pre-existing financial vulnerability was revealed during the COVID-19 pandemic in 2020 which almost led to a near collapse of the public healthcare system in Kenya and across the globe (Brundtland, 2022). Though there have been concerted efforts by the Kenyan government to increase the amount of funds allocated to health through the Ministry of Health (MOH); it is still below Abuja's pronouncement of 2001 of allocating not less than 15% of its national budget to the health sector. The amount allocated to health by the government has ranged between 4% and 7% of the national budget. This compounded with the low uptake of National Health Insurance is currently at 27% (12.9 Million) of the total population (47.6 million) (KNBS, 2020; NHIF, 2022); resulting in a healthcare financing disequilibrium in National Teaching and Referral Hospitals in Kenya under the Ministry of Health that receives funds directly from the public coffers.

The inquiry's general objective was to find out the relationship between National Health Insurance Fund financing and financial sustainability of National Teaching and Referral Hospitals. It was anchored on the following hypothesis:
H_0: There is no relationship between National Health Insurance Fund financing and financial sustainability of National Teaching and Referral Hospitals.

LITERATURE REVIEW

Theoretical Review

The study hinged on the theory of resource dependency and demand for healthcare.

Resource Dependency Theory

This theory was brought to the limelight by Pfeffer and Salancik (1978) and holds that organizations may transact with other stakeholders within their business environment to get the resources they require to carry on with their daily operations. The resources it gets from other stakeholders may be scarce or not in the control of the organization; therefore resulting in reduced leverage to persuade the other parties to provide favourable terms. A situation that often results in unprecedented dependencies syndrome, as the organization has limited abilities to do away without such parties with power and authority over the resources under their disposal. To alleviate such dependencies organizations or entities often come up with tactics and strategies to bolster their bargaining leverage in their quest to acquire the resources from the other parties or stakeholders within their business environment. The strategies may include resource optimization, product diversification and shrewd management of their relationship with powerful through strategic partnership. These strategies are geared towards curtailing the erratic behaviours of the powerful actors in their business environment and lessening an organization's resource dependency Yeager et al., 2014).

The theory of resource dependency assumes that the actions and decisions of an organization are largely influenced by an organization's level of dependence; implying that as dependence escalates, uncertainty sets in and the organization have to come up with a strategy to lessen the level of dependence. It also means that as the level of dependence rises the organization's need for strategic partnership also arises. The theory of resource dependency is useful in explaining how the decisions and actions of an organization are influenced by external resources; and how they change and align themselves in ways that not only enhance their bargaining leverage but also their competitiveness both in the short-run and long run (Ozturk, 2021).

The theory of resource dependency is fundamental in explaining how a public hospital's dependency on one form of healthcare financing can predispose it to a healthcare financing disequilibrium that may subsequently impact its financial sustainability. The traditional model of funding public health has created a dependency syndrome among most National Teaching and Referral Hospitals that rely on insufficient government funding, declining donor funding and high out-of-pocket funding that has resulted in catastrophic healthcare expenditure; putting their financial sustainability in an indeterminate state (Jiang et al., 2023).

Theory of Demand of Healthcare

The theory of demand for healthcare is deduced from the general theory of demand professed by Alfred Marshall and Adam Smith; and argues that the demand for healthcare is dependent on the level of consumption of a person based on their demographic characteristics such as age, gender, level of income, level of education, social status, and culture. In conformation with the theory of demand as the cost or price of public health increases the consumption of healthcare will decline as few people will afford it resulting in negative health outcomes and inequity in access to healthcare. In the same way, as the price or cost of healthcare decreases the amount of healthcare consumed increases as more people can afford it (Mhlanga & Garidzirai, 2020).

This is well encapsulated in Grossman's healthcare model of demand which argues that health is often influenced by a string of factors such as lifestyle, social status, diet, type of job, level of income and housing conditions. This model was useful in determining how people allocate financial resources to optimize their health outcomes. It views people as producers of health and not just as consumers by artificially distinguishing the production and consumption of healthcare. Grossman acknowledges the importance of investing in human capital which is a cornerstone towards building a productive labour force necessary for the economic development of any given country. It is aimed at improving the health outcomes of the labour force and the welfare of households (Schneider, 2021; Tang et al., 2022). The model asserts that people are active producers of healthcare as opposed to just being consumers. These people have some level of control over their health as they can indeed influence what they consume, where they live and their general level of health utilization. Grossman's theory of demand assumes that though people value their health they do not value it over everything else like eating. It also assumes that people have constrained levels of income to fund health (Gerfin, 2019; Jones, Laporte, Rice, & Zuccheli, 2019).

This theory is essential in explaining ways through which health can be funded through out-of-pocket and National Health Insurance funding in ways that do not impose a financial burden on people either through the amount of money they pay from their pocket or how much money they pay as premiums to the National Health Insurance kitty, as it can result to indirect catastrophic healthcare expenditure that may subsequently impact on the financial sustainability of National Teaching and Referral Hospitals.

Empirical Review

National Health Insurance Fund financing is one of the potent healthcare financing mechanisms commonly used to finance public healthcare in most developing and developed countries. Empirical pieces of evidence have shown that there is an association between National Health Insurance Fund financing as evident in many cross-sectional and longitudinal studies like that of Odeyemi and Nixon (2013) study on national health insurance in Nigeria and Ghana; which found that national health insurance is a fundamental component of healthcare financing that if well optimized can enhance health equity and promote in the achievement of universal health coverage goals. Nonetheless, this study did not show the association that exists between National Health Insurance Fund financing and the future of national public healthcare organizations; as was with the present study that investigated the relationship between national healthcare insurance financing and financial sustainability of National Teaching and Referral Hospitals in Kenya. The study mostly assessed National Health Insurance Fund financing from the perspective of universal health coverage and healthcare equity.

In the vast majority of study like that of Okungu (2018), a lot of emphasis has been on the National Health Insurance Fund whose ultimate sustainability have been put to test due to reduced NHIF coverage and the existence of a vast untapped informal sector. This was also echoed in another study by Mumenya (2018) who while assessing the impact of the National Health Insurance Fund on the sustainability of sub-counties hospitals, found that a rise in National Health Insurance Fund capitation resulted in reduced financial sustainability of those hospitals as it resulted to a higher default rate especially those drawn from the informal sector. However, the two studies only focused on the National Health Insurance Fund as a healthcare financing mechanism and barely assessed it in relation to the financial sustainability of National Teaching and Referral Hospitals that receive funds from the Ministry of Health. For instance, Mumenya (2018) study only focused on the sub-county hospital in Nakuru; and did not substantially demonstrate how the NHIF outpatient system impacts financial sustainability; as such its results should be interpreted with caution.

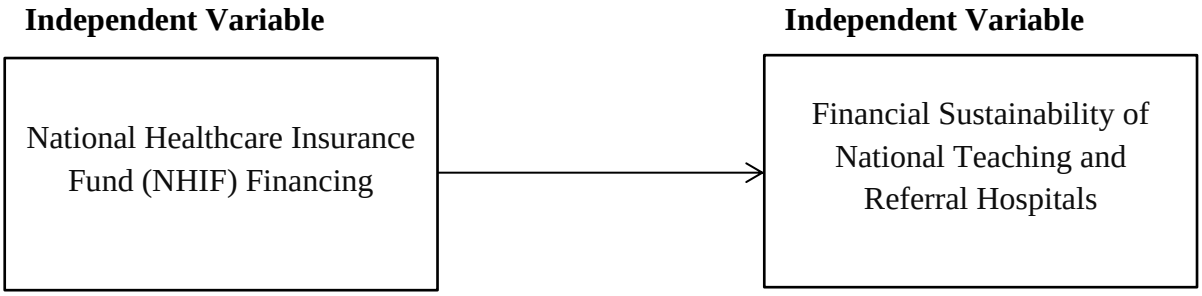
A study by Barasa et al (2017) also revealed that there exists an association between the National Health Insurance Fund and a household's financial ability to meet their healthcare expenditures. This implies that NHIF is a form of healthcare financing with the potential to not only influence households' ability to pay but also their overall health outcome. The study also observed that those households with NHIF coverage had more affinity to meet their future medical care as opposed to those who lacked it. This strongly suggests that there is an association between NHIF funding and a household's ability to pay which subsequently may influence their future abilities. Nevertheless, the study did not assess how that may influence the financial sustainability of hospitals as was the

case in this study that sought to show the association that exists between NHIF funding and financial sustainability of National Teaching and Referral Hospitals.

The present inquiry offset these conceptual, contextual and methodological goals by examining the relationship between National Health Insurance Fund financing and financial sustainability of National Teaching and Referral Hospitals using a more robust research design and empirical model. More specifically, it utilized explanatory research design and a panel data set for the period 2019 to 2021.

Conceptual Framework

The visual representation of the relationship between National Health Insurance Fund financing and financial sustainability of National Teaching and Referral Hospitals is as follows:



RESEARCH METHODOLOGY

The research adopted an explanatory research design that is commonly used when the subject under inquiry is not sufficiently queried by previous studies. Therefore, this research design was appropriate to investigate the statistical association between NHIF financing and financial sustainability. The target population constituted five National Teaching and Referral Hospitals (NTRH) under the Ministry of Health (MOH) for the period 2019-2021and they include Kenyatta Teaching and Referral Hospital; Mathari Teaching and Referral Hospital, National Spinal Injury Teaching and Referral Hospital; Moi Teaching, Research and Referral Hospital; and Kenyatta University Teaching and Referral Hospital. The study employed census sampling techniques to sample all five NTRHs and used a secondary data abstraction tool to collect data from audited financial reports from the National Teaching and Referral Hospitals, Ministry of Health and Treasury. The assembled data was analysed using both descriptive and inferential statistics. More precisely, mean and standard deviations were the descriptive statics used. A generalized least square (GLS) with random effects was utilized to estimate coefficients of the independent variable (NHIF financing) that were fundamental in predicting the outcome of the dependent variable. The GLS estimator was used as it is more robust than ordinary least squares (OLS) and ideal when fitting a linear model in a panel data set that may be characterized by heteroscedasticity (Wrench et al., 2018; Jones et al., 2019). The estimation model utilized is exemplified as follows:

$$\textbf{Financial Sustainability} = \propto + \beta_1 (\text{National Health Insurance Fund financing}) + \mu_1 + \varepsilon_1$$

Where: $\propto$ = intercept; μ_1 , ε_1 = disturbance term

The study using the Hausman test determined the model with random effects as the most desirable panel model. The assembled data was analysed Eviews and presented on frequency tables using mean and standard deviation.

RESULTS AND DISCUSSIONS

The results from the descriptive analysis showed that National Health Insurance Fund financing and financial sustainability of National Teaching and Referral Hospital (NTRH) had a mean of 0.19 and a standard deviation of 0.03 with a minimum and maximum value of 0.1 and 0.2 respectively.

Table 1: Descriptive Analysis

	N	Minimum	Maximum	Mean	Standard Deviation
Financial Sustainability	15	-0.70	5.80	0.63	1.84
National Health Insurance Fund financing	15	0.13	0.25	0.19	0.03

The results in Table 1 indicate that National Health Insurance Fund financing had a small standard deviation an indication that the data was huddled close to the mean hence increased reliability.

Inferential Statistics

Correlation Analysis

The study used Pearson Correlation (r) to assess whether there is a significant relationship between National Health Insurance Fund financing and financial sustainability of National Teaching and Referral Hospital. Pearson Correlation was used as it is parametric and fundamental in the estimation of linear relationships. According to Creswell and Creswell (2018), Pearson Correlation is quite useful in assessing whether there is a significant association among variables under consideration; by measuring the magnitude of the linear relationship that exists. The results from the correlational analysis in Table 2 indicate that National Health Insurance Fund financing had a strong positive and significant impact on financial sustainability with a Pearson correlation of 0.64 with a probability value of 0.01. This was in line with Barasa (2018) study that observed that the National Health Insurance Fund (NHIF) is an equitable and efficient healthcare financing mechanism that strongly influences the sustainability of UHC. Though the study did not examine the impact of NHIF on the sustainability of National Hospitals, it examined the influence of NHIF as a healthcare funding mechanism on the sustainability of universal health coverage. The study also corroborated Mumenya (2018) research that observed that NHIF capitation and extent of utilization impacted on financial sustainability of sub-county hospitals in Nakuru County. This implied that NHIF financing is a key component of public healthcare financing that should be optimized to alleviate incessant public healthcare financing disequilibrium that characterizes most National and Teaching Hospitals.

It is in disagreement with Onyando, et al. (2023) study who while examining the effectiveness of NHIF in the provision of financial protection among patients with lifestyle diseases found that there was no strong evidence suggesting that NHIF is an effective form of healthcare financing providing effective financial protection. The study attributed the situation to low NHIF coverage and attrition rate. To bolster the NHIF scheme there is a need for revisions of NHIF to include lifestyle or non-communicable diseases in their coverage. Though the study did not assess the impact of NHIF on financial sustainability of National and Teaching Hospitals, it extensively noted that there is a need for an effective NHIF effectiveness; which will ultimately impact on sustainability of hospitals relying on it as a major component for financing healthcare.

Table 2: Correlation Analysis

		FS	**NHIF**
Financial Sustainability (FS)	r	1	
	Sig (2-tail)	0.00	
National Health Insurance Fund financing (NHIF)	r	0.64	1
	Sig (2-tail)	0.01	

* Correlation performed at 0.05 significance level (two-tailed test)

Hypothesis Testing

The study carried out a hypothesis testing to assess the plausibility of the null hypothesis stated below:

H_0: There is no relationship between National Health Insurance Fund financing and financial sustainability of National Teaching and Referral Hospitals.

Table 3: Regression Analysis

Variable	**Beta coefficient**	**Std. error**	**t**	**p> t**
National Health Insurance Fund financing	4.02	1.01	3.99	0.003
Constant	-0.64	0.58	-1.10	0.03
Number of observations = 15				
R – squared = 0.687				
F – statistics = 5.39, $p < 0.01$				
* At 5% significance level				

The hypothesis testing was conducted using a t-test to assess its significance at 95% confidence. The result from the GLS regression analysis conducted at a 0.05 significance level; revealed that National Health Insurance Fund financing had a beta coefficient of 4.02 and a probability value of 0.003; which was less than 0.05 leading to the rejection of the null hypothesis. This suggested that Health Insurance financing had a strong positive and significant relationship with the financial sustainability of National Teaching and Referral Hospitals. This also means that as the NHIF coverage increases the financial sustainability of National Teaching and Referral Hospitals increases, equally as the NHIF coverage decreases due to high NHIF tariffs it decreases financial sustainability.

The result upholds Okungu (2018) study that observed that the National Health Insurance Scheme impacts the sustainability of contributory and non-contributory forms of health financing. Similarly, it acknowledges Odeyemi and Nixon (2013) study that had earlier observed that national health insurance has a strong influence on Universal Health Coverage; which is anchored on the ability of public healthcare organizations such as national hospitals; to provide universal health to all by getting rid of barriers to access of public healthcare. This was also noted in Kamau and Kimutai (2022) who while assessing the impact of the NHIF health scheme on the financial performance of public hospitals in Nairobi observed that health insurance subsidies had a strong influence on the financial performance of public hospitals

CONCLUSION AND RECOMMENDATIONS

The main conclusion that can be drawn from this study is that National Health Insurance Fund financing has a strong positive and significant impact on financial sustainability of National Teaching and Referral Hospitals. This was based on the null hypothesis (H_0) that there is no relationship between National Health Insurance Fund financing and financial sustainability of National Teaching and Referral Hospitals; which was rejected, as the National Health Insurance Fund financing was found to be a significant component of public health financing with capabilities to influence financial sustainability of National Teaching and Referral Hospitals. This implies that there is a need to bolster National Health Insurance Fund financing to widen the coverage and overcome the incessant attrition of key schemes.

The study through its empirical review has discovered that the current NHIF tariffs and framework are unsustainable in addressing financial sustainability of NRHs and the public health system in general. There has been an incessant pullout of key NHIF members like the National Police Service and Kenya Prison Service who ended 9 billion medical insurance cover with NHIF in 2020 citing high costs associated with the coverage that had mounted immense pressure on their budgets. This trend was also witnessed among the private hospitals that are on the verge of pulling out from NHIF due to misalliance in NHIF capitation tariffs as well as delays in reimbursements. This has starved private and public healthcare organizations destabilizing their operations and healthcare financing mix. The future of national hospitals is dependent on NHIF optimization to lessen overreliance on a retrogressive form of healthcare funding such as out-of-pocket expenditure that impairs

households' future financial abilities to settle their healthcare expenditure in national hospitals threatening their sustainability.

The research therefore recommends the creation of a policy that expedites NHIF reimbursements to National Teaching and Referral Hospitals; as delays in NHIF reimbursements are likely to result in a healthcare financing mix disequilibrium. To alleviate healthcare financing disequilibrium and its subsequent impact on financial sustainability of National Referral Hospitals, the study proposed a review and realignment of the current healthcare financing policies, laws, and reforms. The study recommends the establishment of a robust and optimal National Health Insurance Policy and the adoption of innovative sources of financing public healthcare, such as the use of social impact bonds to finance various health programs with severe social impacts like lifestyle diseases. However, more research on social impact bonds is required.

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