

**EFFECT OF HEALTH AGENCIES FINANCE ON THE AVAILABILITY OF
HEALTH SUPPLIES IN FACILITIES: A STUDY OF KADUNA STATE
HEALTH FACILITIES**

By

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ABSTRACT

Unavailability of health supplies in facilities causes lives loss especially at the rural areas where alternative facilities cannot be found easily. Adequate financial provisions for health supplies expected to make them available at facilities which led to lives saving. This study wanted to examine the extent of financing impact (from Government, Donors, Health Insurance Scheme, Development Partners, Non-Governmental Organizations and Revolving funds) on the availability of Health Supplies at the facilities. The data were collected from 58 facilities from Kaduna Centre and the responses were analysed using PLS. The result revealed that, health supplies finances were significantly improving the availability of health supplies at facilities and the study recommended that more effort must be done by the management of facilities to secure funds in order to save more lives at facilities.

Keywords: Health Agency Finance Supplies Facilities

1. INTRODUCTION

Availability of quality and affordable medicines to patients is one of the targets set out by the Sustainable Development Goals (World Health Assembly, 2016) is a key step to achieving Universal Health Coverage which targeted lives saving and lowering death rates.

However, the availability of health supplies in developing countries is far below expectation (Mahmic-Kaknjo et al., 2018) as provided by some studies from developing countries indicate that the average availability of generic medicines included in national essential medicine lists in the public sector ranges from 27% to 44% (Cameron et al., 2009; Robertson et al., 2009). More recent research in 23 low- and middle-income countries did not find considerable progress, indicating the median availability of essential medicine is at only 40% (Bazargani et al., 2014). The availability of medicines at primary health centres was around 50% (Van der Geest, 1982).

The availability of health supplies in developing countries is influenced by a variety of complex, underlying factors such as inadequate financing, weak facility management, regulatory issues, lengthy procurement processes and poor logistics among others (Zaidi et al., 2013; Van den Ham et al., 2011; Bigdeli et al., 2014; Ewen et al., 2017).

Utilization of health financing sources have the potential to increase the availability of medicines at the facilities (Pronyk et al., 2016). These sources of funds include: Government, Donors, Health Insurance Scheme, Development Partners, Non-Governmental Organizations and Revolving funds as sample out in kaduna state facilities.

Health system financing sources are critical in ensuring health supplies availability (Babayemi, 2012). Evidence has shown that equity and access of health facilities are greater when healthcare is funded through taxation and social health insurance, than when funded from private health insurance or Out-Of-Pocket payments (WHO, 2000; Murray & Frenk, 2000).

Nigerian facilities rely on the mixture of the all sources which include government budget (from general tax revenue), health insurance (social and private), external funding (donor funding), and private out-of pocket spending to finance health care (Federal Ministry of Health, 2016).

Facilities funding in Nigeria, public accounts for about 25% of total health spending while the private sector provides 75% of the funding, with household out-of-pocket expenditure accounting for 95% of the private sector expenditure (Okoli et al., 2018). However, the sources of funding to healthcare service providers in Nigeria vary at different levels of health facilities and in different states.

2. LITERATURE REVIEW

Many studies have been conducted on healthcare financing in relation to different objective in Africa, such studies outlined the effect of financing for the betterment of healthcare services and availability of healthcare supplies.

For example, Onwujekwe, Ezumah, Mbachu, Obi, Ichoku, Uzochukwu, and Wang (2019) exploring the effectiveness of different health financing mechanism in Nigeria with emphasis on what needs to change and how can it happen. The study collected data from three areas: Federal Capital Territory Abuja, Niger and Kaduna and the method used to collect data were terror review of government documents and in dept interviews of selected respondents. The study findings showed that financing mechanisms are not optimally and allocations and use of resources are neither evidence-based nor results-driven. Resources. Resources are not allocated equitably or in a manner that minimizes wastage and improves efficiency. None of the mechanisms effectively protects individuals/households from catastrophic health expenditure.

Sieleunou, Turcotte-Tremblay, De Allegri, Taptué Fotso, Azinyui Yumo, Magne Tamga and Ridde (2019) examined how does performance-based financing affect the availability of essential medicines in Cameroon. Performance-based financing is being implemented across low- and middle-income countries to improve the availability and quality of health services, including medicines. The research aimed to explore how performance-based financing in Cameroon influenced the availability of essential medicines and to understand the pathways leading to the experiential

dimension related with the observed changes. The design was an exploratory qualitative study. Data were collected through in-depth interviews, using semi structured questionnaires. Key informants were selected using purposive sampling. The respondents were health services managers, healthcare providers, health authorities, regional drugs store managers and community members. The findings suggest that the performance-based financing improved the perceived availability of essential medicines in three regions in Cameroon. The change in availability of EMs experienced by stakeholders resulted from several pathways, including the greater autonomy of facilities, the enforced regulation from the district medical team, the greater accountability of the pharmacy attendant and supply system liberalization.

Onwujekwe, Mbachu, Ezenwaka, Arize and Ezumah (2020) examined characteristics and effects of multiple and mixed funding flows to public healthcare facilities on financing outcomes in Nigeria using survey of public hospitals and the results indicated that flow of fundings to the public hospitals were multiples and of different types (federal, state and local government) based on the nature of the health facility (such as primary, secondary and tertiary) and number of population services. Furthermore, the flow of funds varies for state owned with the federal government owned facilities.

Barasa, Cholo and Oluchina (2020) examines the influence of healthcare financing on availability of medicines in public health facilities in Bungoma, Kenya. This study examined the influence of health care financing on availability of medicines. Descriptive cross sectional research design was used. All the nine sub county hospitals in Bungoma County were sampled. A total of 36 pharmacists, medical superintendents, procurement officers and health administrative officers were sampled and the data were collected using semi structured questionnaires and in-depth interview. The finding revealed that the key financing challenges identified were allocation of inadequate funds for medicines and irrational budgeting which contributed to the low medicines' availability.

Tukay, Pasape, Tani and Manzi (2021) investigated the evaluation of the direct health facility financing programme in improving maternal health services in Pangani District, Tanzania. The study aimed at examined Direct Health Facility Financing and its effects on the quality of maternal health services in Pangani, a rural district in Tanzania. The study used both qualitative and quantitative methods using 16 in-depth interviews with the council health management teams, facility in charges, maternity nurse in charge, and 5 focus group discussions with community health governing committee members. The number of deliveries that occurred in health facilities, as well as medical supplies, equipment, and reagents purchased by the facilities, were compared using descriptive statistics before and after the Direct Health Facility Financing implementation. The result indicated that direct disbursement of funds from the central government through the Ministry of Finance and Planning to the primary health facilities reduced delays in procurement, improved community outreach services, improved community leaders' engagements, and various medicines, delivery kits, and some reagents increased significantly.

Debie, Khatri and Assefa (2022) investigated the contributions and challenges of healthcare financing towards universal health coverage in Ethiopia: a narrative evidence synthesis. The Ethiopian Government aims to achieve universal health coverage (UHC) by 2030; however, the Ethiopian health system is struggling with low healthcare funding and high out-of-pocket (OOP) expenditure despite the implementation of several reforms in health care financing (HCF). The study used three healthcare financing framework (revenue generation, risk pooling and strategic purchasing) and the result indicated that generating an additional income for health facilities, promoting cost-sharing, risk-sharing/ social solidarity for the non-predicted illness, providing special assistance mechanisms for those who cannot afford to pay, and purchasing healthcare services were the successes of Ethiopia's health financing. Ethiopia's HCF initiatives have significant contributions to healthcare infrastructures,

medical supplies, diagnostic capacity, drugs, financial-risk protection, and healthcare services.

All these studies were focusing on health facilities financing in Africa, but no evidence of such studies in developing countries as no study is found in such countries. However, even in Africa studies of this nature were conducted with different motives such as health finance and performance of facilities, health finance and universal coverage, health finance and maternal health services, health finance and public health facilities, performance-based financing and the availability of essential medicines. No study that focuses on health agencies finance and availability of health supplies in Nigeria which is the focus of this study.

3. METHODOLOGY

This study investigated the effect of health agencies finance on the availability of health supplies in facilities: a study of Kaduna state health facilities using a smart PLS software to analysed the data from respondents.

3.1 Conceptual Framework

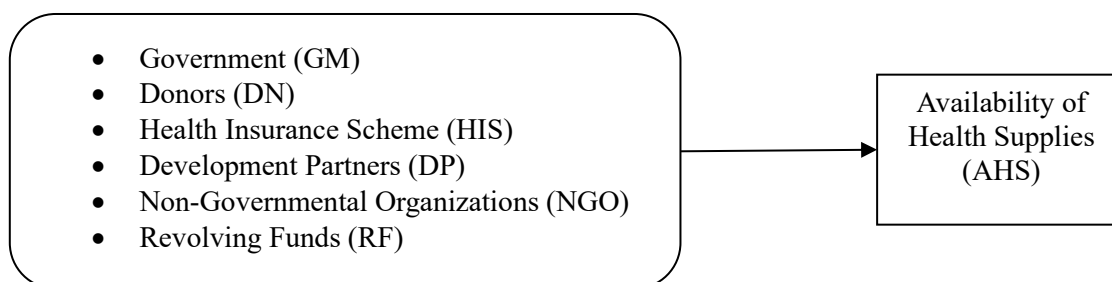


Figure 4: Study Framework

3.2 Population and Sample Size of the Study

The population of the current study consists of all 215 facilities under the 2017 reforms and the sample size is 58 facilities located at the central Kaduna. The data were collected using questionnaires from the most top four senior officials of each of the facilities.

3.3 Measurement for Independent Variables

The Health Agencies Finances were measured using six dimensions which include: Government, Donors, Health Insurance Scheme, Development Partners, Non-Governmental Organizations and Revolving funds. Each variable of the six dimension was measured with varying number of items. Health Government has measured with six items, Donors has measured using four, Health Insurance Scheme has measured with four, Development Partners has measured with the four items, Non-governmental Organisation has been measured with four items and finally, last dimension (Resolving Funds) has measured with five items.

3.4 Measurement of the Dependent Variable

Availability of Health Supplies served as the dependent variable of the current study. The Availability of Health Supplies is measured using five items.

4. RESULT AND DISCUSSIONS

The study collected 218 responses from 232 that were distributed. The completed questionnaires were filled up as set example by Porter (2004). The responses from the questionnaires rate is 94 percent and the fail rate is 6 percent as it is presented in Table 1.

Table 1: Analysis of Questionnaires Response

Questionnaires	No.	Percentage
Number of Questionnaires Distributed	232	100
Responded Questionnaires	218	94
Un Responded Questionnaires	14	6

The responses from respondents were scrutinized using the Smart PLS Software which are converted to meaningful figures for better interpretations. The estimation was done using PLS-SEM method. Structural Equation Model (SEM) has two steps method of estimation (Chin, 1998), the first step is estimation of measurement model

for validity and reliability of the data, and the second estimation is hypothesis testing which guide the research decisions.

4.1 Measurement Model of the Study

Validity and the reliability of the research variables is the key factors examined under this section which gives the present conditions of the study variables. This is done through the exploration of content, convergent and discriminate validity.

The measurement model result which is hereby presented in the Table 2.

Table 2: Measurement of the outer Model

Constructs	Cronbach's Alpha	Composite Reliability	Average Variance Extracted
AHS	0.766	0.803	0.751
GM	0.895	0.813	0.669
DN	0.801	0.831	0.671
HIS	0.781	0.845	0.611
DP	0.868	0.857	0.768
NGO	0.811	0.825	0.831
RF	0.873	0.822	0.899

4.1.1 Content Validity

Content validity was used to measure the weight of a construct based on the items weight contributed to it. Items that measure the construct contain high loading on that particular construct ahead of the other construct in the model. Hair JR et al. (2010) report that, the factor loadings indicate the analysis and weight of the content validity. It is reported that loading standard of 0.70 or more is the best and accepted, but others agreed that lording of 0.40 is accepted (Hulland, 1999). All lording of the constructs were higher than 5.0. So, this indicated the validity of the measurement model.

4.1.2 Convergent Validity

Composite reliability was used to determine the internal consistency as it was reported as less bias compared with Cronbatch Alpha Coefficients. The study set of composite reliability of 0.7 as thresh hall for the study as suggested by Hair JR et al.(2010). The result of the study reveals that composite reliability of higher than 0.8 was reported as presented in Table 2 of the study.

4.1.3 Discriminate Validity

The correlation matrix or discriminate validity Table indicates the relationship between the variables of the study. Excessive relationship that is higher than 0.8 is a signal of multicollinearity in the variables. The outcomes of this study as indicated in the Table 3 that there is no excessive relationship between the variables that is up to 0.8. This indicates that there is no signal of multicillinearity in the study. However, VIF was used to test multicollinearity for confirmation, the result indicated that no variable that is correlated with another at more than 3.0. This confirms that no existence of multicollinearity in the study.

Table 3: Correlations Discriminate Validity

Constructs	AHS	GM	DN	HIS	DP	NGO	RF
AHS	0.788						
GM	-0.050	0.784					
DN	0.104	0.503	0.644				
HIS	0.027	0.435	0.693	0.694			
DP	0.24	0.145	0.255	0.280	0.644		
NGO	0.249	0.218	0.411	0.291	0.232	0.734	
RF	0.038	0.440	0.300	0.302	0.214	0.050	0.691

4.2 Structural Model for Hypothesis Testing

The validity and reliability of the process was established in the measurement model as presented in Table 2 which shows that the requirements for estimation were made. The analysis of estimation which answer hypothesis is presented in the Table 4.

Table 4: Path Coefficients

Constructs	Coefficients	SD	T Statistics	P Value	Decision
GM	0.608	0.080	7.629	0.000***	Supported
DN	0.010	0.208	3.683	0.000***	Supported
HIS	0.081	0.215	4.640	0.000***	Supported
DP	0.062	0.074	5.602	0.000***	Supported
NGO	0.064	0.172	4.456	0.000***	Supported
RF	0.113	0.162	1.960	0.041**	Supported

Note: ***' **' '*' significant at 1, 5 and 10 percent level respectively

The findings of the study as in Table 4, reveal that the Government (GM) has the coefficient of 0.608, t value 7.629 which is positively significant at 1 percent. This result shows that the finance from Government is significantly making available of health supplies to the facilities. The result also shows that Donors (DN) has a coefficient of 0.010, t value 3.683 which is positive and significant at 1 percent. This shows that Donors finances is significantly making health supplies available at facilities. The result shows that Health Insurance Scheme (HIS) has a coefficient of 0.081, and t value 4.640 which is significant at 1 percent. This testifies that, Health insurance Scheme is significantly making health supplies available at facilities. Similarly, the result of Development Partners (DP) indicates the coefficient of 0.062, t value 5.602 that is significant at 1 percent level. This indicate that Development Partners are significantly making effort in making health supplies available at facilities. The outcomes of the Non-Governmental Organizations (NGO) shows that coefficient of 0.064, t value 4.456 which is significant at 1 percent. This shows that

NGOs are putting effort to make health supplies available at facilities. The result of the Revolving Funds (RF) shows that coefficient of 0.113, t value 1.960 which is significant at 5 percent. This shows that Revolving Funds make effort to avail health supplies at the facilities.

5. CONCLUSION AND RECOMMENDATION

The present study investigated the effect of health agencies finance on the availability of health supplies in facilities with evidence from Kaduna state health facilities and the results of the study adequately show that health agencies finances have strong impact on the availability of health supplies as the study concluded.

5.1 Theoretical Implications

The findings of this study have extended the theory intervention that underpinned the health agencies finances by showing the extent to which finance will aid availability of health supplies at the government facilities.

5.2 Practical Implications

The findings of the study have demonstrated some practical implications to the management of the facilities. The findings show that facilities will succeed in making health supplies available in all the times when they utilized these (Government, Donors, Health Insurance Scheme, Development Partners, Non-Governmental Organizations and Revolving funds) sources of finance effectively.

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