Original Article

Health-Care Financing among Patients Admitted for Open-Heart Surgery in Enugu

Fortune A. Ujunwa[1], Josephat M. Chinawa[1], Ijeoma Arodiwe[1], Egbuna O. Obidike[1]

[1]Department of Paediatrics, College of Medicine, University of Nigeria Enugu Campus, Enugu, Nigeria

Abstract

Background: Cardiovascular diseases have been noted to be expensive to manage and tend to cause significant morbidity and financial burden to affected individuals and households. **Objective:** This study aimed to determine the various sources of health financing among patients admitted to UNTH Ituku/Ozalla for open-heart surgery. **Methodology:** Twenty-five patients admitted for cardiac surgery over a 6-month period were selected for the study. A structured questionnaire was administered to the patients or their caregivers. Data were analyzed using SPSS version 20. **Results:** There were 25 respondents who were admitted during the study period, this comprised 17 children and 8 adults. Among the respondents 24 (96%) paid out of pocket, 1 (4%) was by government tax. The major sources of funds were from personal savings 56% and goodwill from friend's relations, faith-based organizations (4%), while 36% of the respondents borrowed money for the surgery. Three of the respondents had a form of health insurance, while 22 (88%) had no form of health insurance. The mean monthly income of the households was 86,320 (81,384.7) Naira and the mean monthly food expenditure was 33,200 (15934.76) Naira. About 72% (18) of the subjects knew about the National Health Insurance Scheme (NHIS), 4 (16%) knew about the Voluntary Health Insurance Scheme (VHIS), while 84% did not know about the VHIS. However, about 56% of the subjects were willing to enroll under the NHIS voluntary scheme. The cardiac surgery was catastrophic for 96% of the respondents. **Conclusion:** Cardiac surgery causes a significant financial burden to individuals and households. Individuals and households should be properly counselled on the benefits of health insurance. The government should increase funding for cardiovascular health and strengthen the health insurance system.

Keywords: Cardiac surgery, cardiovascular disease, health financing

Introduction

Health financing is the mobilization of funds for health-care services.[1] It involves the mobilization of funds from different sources to fund health-care services.[1,2] Financing for health originates from the household.[2] The method by which the health system is financed contributes immensely whether the buyer of the health product gets the desired services or exposed to the unwarranted risk of financial difficulty at the point of need. The main forms include insurance, taxes, and out-of-pocket payments.[1] In Nigeria, different forms of health financing mechanism have been used in the delivery of health-care services in both public and privately-owned health institutions with out-of-pocket payment which involves payment of user fees at the point of care contributing 70% of the mode of health financing and 90% of this out-of-pocket payment originate from the individual households.[3]

Cardiovascular diseases have been noted to be expensive to manage and tend to cause significant morbidity and mortality among the affected individuals, it also causes a decreased quality of life and increased financial and psychosocial burden to affected individuals and households.[4] The cost of management of these groups of diseases not only includes the cost of treatment but other alternatives forgone which include loss of job, social activities, transportation costs, school and work absenteeism, and loss of self-esteem.[4]

Access this article online

Quick Response Code:

Website: www.njmonline.org

DOI: 10.4103/NJM.NJM_190_20

Address for correspondence: Dr. Josephat M. Chinawa, Department of Paediatrics, College of Medicine, University of Nigeria Enugu Campus, PMB 40001, Enugu, Nigeria.
E-mail: josephat.chinawa@unn.edu.ng

How to cite this article: Ujunwa FA, Chinawa JM, Arodiwe I, Obidike EO. Health-care financing among patients admitted for open-heart surgery in Enugu. Niger J Med 2021;30:167-70.

Submitted: 21-Oct-2020 **Revised:** 18-Nov-2020
Accepted: 01-Feb-2021 **Published:** 22-Apr-2021

In children, majority of the cardiovascular diseases are structural heart diseases.[5-7] This group of diseases comprised congenital heart diseases and acquired structural heart diseases. The treatment of these diseases involves medical and surgical management. The surgical management is usually the definitive management.[6,7] The cost of treatment both medical and surgical has been noted to be catastrophic for the individuals and the household, especially the poorest of the poor who tend to have the risk factors for these group of diseases.[4,7] This tends to lead to prolonged medical treatment and other alternative management of these groups of diseases that could have benefited from the timely surgical intervention in our environment leading to increase complications and poorer outcomes.[8] These prolonged management methods tend to drive the household further into poverty. Thus, there is a need to study the health financing mechanism among patients admitted for open-heart surgery with a view of providing data for policy formulation.

Open-heart surgery in Cardiothoracic Center of Excellence, Enugu, Southeast Nigeria for children was initiated in 1974 and spanned till 2007, the program was restarted in the year 2013 after a brief break of about 6 years due to the relocation of the main hospital to a permanent site and the surgeries were being done through the help of cardiac mission with local support.[9] Surgery is highly subsidized and sometimes done free of charge at no cost to the patients. However, the sustainability of this surgery is a major problem with poor government support and funding. On occasions when there is no cost to the end-users, through various support from the donor foundations, there is still cost to the institutions that the program is domiciled upon. This study however is aimed at determining the sources of funds of patients that presented for subsidized open-heart surgery at the University of Nigeria Teaching Hospital Ituku-Ozalla Enugu.

Table 1: Frequency distribution of sources of funds for open-heart surgery

Sources of fund for surgery	Frequency (%)
Personal savings	14 (56)
Borrowed funds	9 (34)
Faith-based NGO	1 (4)
Government fund	1 (4)
Total	25 (100)

NGO: Nongovernmental organization

Methodology

This was a cross-sectional study involving all the patients who were admitted for subsidized open-heart surgery at the University of Nigeria Teaching Hospital cardiac surgery program over a 6-month period from January to June 2017 and were selected for the study. A structured questionnaire was administered to the patients. Adults were given their questionnaires directly, while caregivers were given for children. Information obtained includes sociodemographic profile, sources of funds for surgery, health insurance status, monthly income of the family, willingness to enroll in health insurance, and knowledge of Voluntary Health Insurance Scheme (VHIS). Household income was determined by the average income of the household over 3 months, average monthly expenditures of the household on food and nonfood items were determined.[4,10] The questionnaire was administered by the researcher and each of the patients was also interviewed and any area of ambiguity was explained to the respondents. Exchange Naira to Dollar rate of one hundred and ninety-seven naira only (N197) to a US dollar ($1) was used.

The database was created and was analyzed using SPSS Version 20 (IBM Cambridge Soft Corporation, USA). Frequency tables were created and percentages were obtained for the variables. Chi-square was used to assess the differences between the categorical variables. Probability value at 95% confidence interval was set at $P < 0.05$.

Results

Twenty-five respondents were admitted during the study period, this comprised 17 children and 8 adults. Among the respondents 24 (96%) paid out of pocket, 1 (4%) was paid through government tax. The major sources of funds were from personal savings and goodwill from friend's relation, faith-based organizations (64%), while 36% of the respondents borrowed [Table 1]. Three of the respondents had a form of health insurance but did not use it for the surgery, while 22 (88%) had no form of health insurance.

The mean monthly income of the households was 86,320 ± 81,384.7 Naira ($438 ± 379.97) and the mean monthly food expenditure was 33,200 ± 15,934.76 Naira ($168.5 ± 214.19). The cost of surgery ranged between $5076 and $7614.The cardiac surgery was catastrophic for 96% of the respondents. About 72% (18) of the subjects knew about the National Health Insurance Scheme (NHIS), while 28% (7) did not know about the health insurance scheme [Table 2].

Table 2: Distribution of respondents according to health insurance statues

Health insurance variables	Positive (%)	Negative (%)	*P*	Total (%)
Availability of health insurance	3 (12)	22 (88)	0.01*	25 (100)
Awareness of NHIS	18 (72)	7 (28)	0.02*	25 (100)
Knowledge of voluntary health insurance	4 (16)	21 (84)	0.01*	25 (100)
Willingness to enroll in the Voluntary Health Insurance Scheme	14 (56)	11 (44)	0.55	25 (100)

*Level of significance is taken as $P<0.05$. NHIS: National Health Insurance Scheme

Among the respondents, 4 (16%) knew about the VHIS, while 84% (21) did not know about the VHIS scheme. However, about 56% of the subjects were willing to enroll under the NHIS voluntary Scheme.

Discussion

The study shows that the major source of health financing among patients presenting for cardiac surgery is out-of-pocket payment. This constituted more than 90% of the mode of payment among the patients. This form of payment does not provide financial risk protection for the individuals and households and usually limit access to health-care utilization, especially in resource-poor countries. This differs from the documented out-of-pocket payment mode of health financing in Nigeria which is about 70%, the difference may be due to small sample size; however, it still agrees with the report of Onwujekwe *et al*.[10] that out-of-pocket payment as the most common mode of health financing in Nigeria; thus, there is a need for scaling up the health insurance scheme in our country to curb this trend and help improve access to cardiovascular services.

The major source of funding for the household was personal saving, while 34% of the patients borrowed money to be able to undergo surgery, a state government paid for one patient. This is unacceptable especially in an economy where majority of the individuals live below one dollar a day; thus, there is a need to introduce an efficient health financing mechanism that will enable individuals to have access to cardiovascular services in Nigeria. The impact of household out-of-pocket payment has been noted by previous authors.[10,11] Furthermore, the cost of cardiac surgery was catastrophic for more than 90% of the patients. This was similar to a study documented by Falase *et al*., in Lagos, who noted that the cost of surgery tends to make the individuals forgo other essential non-food items.[11,12] The cost of cardiac surgery was high because it was a highly specialized surgery and required huge resources and highly skilled workforce in almost all the aspect of medicine; thus, there is a need for adequate government support in both material and human capital development for the institutions to sustain the cardiac program, thereby reducing the attendant cost to the patients. Similar findings have been documented by earlier authors.[6,13]

The study showed that there was no utilization of health insurance among patients for cardiac surgery despite being enrolled under the NHIS. This study also showed that three patients were not able to use the insurance scheme to pay for their surgery, this was probably due to non coverage of cardiac surgery by the scheme and also poor awareness of the mode of operations of the scheme. Similar reports was documented by Ujunwa *et al*.[14] This calls for the improvement in the benefit package of the NHIS to cover specialized cardiovascular services in Nigeria and also improved enrollee and provider education by the operators of the scheme. It was shown in the study that patients and caregivers also had poor knowledge of voluntary health insurance and possible benefits of the scheme. Only about 16% of the patients had knowledge of the scheme, this was quite significant especially in a scheme that has been in existence for more than 10 years.[14,15] This may also be the reason why a good percentage of the respondents were not willing to enroll in the NHIS despite its advantage of offering financial risk protection. This buttresses the need for more aggressive health education and public enlightenment on the different benefit packages being provided by the NHIS in Nigeria.

Our study was limited by the small sample size, this was probably due to the number of patients that were able to afford subsidized open heart surgery in our centre. In addition, we only assessed patients who had actual open-heart surgery.

However, we were able to identify that the most common mode of health financing for open-heart surgery was out-of-pocket payment and the health insurance coverage for patients who required cardiac surgery was unacceptable; thus, there is a need to scale the health insurance scheme and its benefit packages to offer financial risk protection for patients who required highly specialized services such as cardiovascular surgery in Nigeria.

Conclusion

Cardiac surgery caused significant financial burden to individuals and households. Individuals and households should be properly counselled on the benefits of health insurance. The government should increase funding of cardiovascular health and strengthen the health insurance system.

Limitation

This study was a single regional center study and may not represent the whole country with diverse culture, ethnic, religious, and more importantly educational class.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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