



Occurrence of Medical Cases and Utilisation among Enrollees of Private Health Insurance Programme in Kaduna, Nigeria

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Authors' contributions

This work was carried out in collaboration among all authors. Author OOD designed the study, performed the statistical analysis and wrote the first draft of the manuscript. Author ZMM provided better insight into the practical and professional description of healthcare financing, its future and also carried out the general editing of the manuscript. Author OIC granted access to the secondary data used, edited the classification of medical cases and gave some insight into the NHIS guidelines. All authors read and approved the final manuscript.

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ABSTRACT

Aims: This study examines the occurrence of various medical cases presented by enrollees that have subscribed to access healthcare from a network of healthcare providers (HCPs) managed by a Health Maintenance Organisation (HMO) under its Private Health Insurance Programme (PHIP).

Study Design: A descriptive cross-sectional design was employed.

Methodology: Secondary data from collected or submitted medical encounters in form of bills of registered enrollees (principals and their dependants) who have visited and received treatment from their chosen healthcare providers in Kaduna State between the month of January and December 2019 were purposively compiled and analysed. Cases were classified using the National Health Insurance Scheme (NHIS) Operational Guideline. Frequency tables, charts, percentages and Chi-Square analysis were used with the aid of Statistical Package for Social Sciences (SPSS) 22 at P=.05 level of significance.

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Results: A total of 11,156 medical cases were recorded after attrition, 9,525 (85.38%) primary cases and 1,632 (14.62%) secondary cases. Malaria (41.23%) and Respiratory Tract Infection (11.98%) led the primary case table while Hypertension (3.83%) Urology related cases (2.49%) and Diabetes (0.79%) were among the leading secondary cases. Female enrollees had slightly more cases and therefore higher tendencies to seek medical treatment than their male counterpart even though there was no significant relation between gender and type of case.

Conclusion: The study concludes that the awareness and utilization of healthcare services are gradually growing among enrollees under the Private Health Insurance Programme (PHIP). In ensuring that there is an improvement in the health sector of Nigeria and achieving universal health coverage, focus should be on the primary healthcare services with high consideration for research, proper data management and periodic sharing of trends, observations and outcome of researches with the growing health community.

Keywords: Healthcare financing; out-of-pocket; private health insurance; health maintenance organisations; National Health Insurance Scheme; Universal Health Coverage.

1. INTRODUCTION

Healthcare financing is a major challenge that has plagued all levels of the healthcare system in Nigeria for several years. Besides, it is even more daunting to mobilize financial resources for the health sector at a time of global economic turmoil [1]. Most Nigerians still pay out-of-pocket (OOP) because of inadequate coverage of Health Insurance schemes in the formal and informal sectors. In a bid to improve coverage and access to health insurance in Nigeria, the HMOs with the approval of the National Health Insurance Scheme (NHIS) develop and market Private Health Insurance Programme (PHIP) in addition to the Social Health Insurance Programmes developed by the NHIS.

Under the PHIP, several primary, secondary and tertiary services are covered according to the HMO's discretions. PHIP has been in operation in Nigeria for over fourteen years with little or no studies to review its activities. In addition, there has been paucity of real-time evidence of the distributions of various medical cases observed by HMOs. Therefore, this study assesses the occurrence of various medical cases presented by enrollees that have subscribed to different Private Health Insurance Programme (PHIP) plans and managed by a Health Maintenance Organisation (HMO) through a network of healthcare providers (HCPs).

1.1 Literature Review

One major challenge faced by the Nigerian healthcare system is out-of-pocket (OOP) payment for medical services. OOP could be catastrophic and impoverishing, where a household spends more than 40% of its non-food

expenditure on healthcare and consequently pushing such households below the poverty level [2]. Therefore, the need for a sustainable means of healthcare financing to curb this preventable health influenced economic trajectory.

Health insurance as a means of healthcare financing in low- and middle income countries has three major development objectives; securing sustainable financing for health care providers that serve the health needs of vulnerable populations; providing financial protection against the impoverishing cost of illness; and reducing social exclusion from organized health financing and delivery systems [1].

In 1993, National Health Insurance Scheme (NHIS) emerged to improve the level of Universal Health Coverage (UHC) within the country through the Federal Government directing the Federal Ministry of Health (FMoH) to start the scheme [3]. The NHIS is a body set up by the Federal Government of Nigeria by Decree 35, of 1999 (now Act 35) operating as Public Private Partnership, directed at providing accessible, affordable and qualitative healthcare for all Nigerians and it is guided by vibrant Operational guidelines that is all encompassing and all inclusive. According to [4], the decree became operational in 2004 and in 2005 the kick-off of the scheme heralded a new healthcare financing model in Nigeria.

The key stakeholders in the scheme are the insurer (HMOs), the insured (enrollees), the healthcare providers (HCPs) and the industry regulator (NHIS) [5]. The scheme has three major categories of programmes; formal sector, informal sector and vulnerable groups. Formal

sector programmes include; Formal Sector Social Health Insurance Programme (FS-SHIP) for employees of the Federal and State public sector, organised private sector, armed forces, police and other uniformed services; and Voluntary Contributors Social Health Insurance Programme (VCSHIP), a programme paid for at the discretion of willing individuals or at the discretion of employers on behalf of employee in an organisation. Informal sector programmes include; Tertiary Institution Social Health Insurance Programme (TI-SHIP) for students at the tertiary level of education; Community Based Social Health Insurance Programme (CB-SHIP) for the residents of participating communities or occupation-based groups (including retirees); and Public Primary Pupils Social Health Insurance Programme (PPPSHIP). The last category, Vulnerable Group Social Health Insurance Programme caters for the physically challenged persons (PCPSHIP), prison inmates (PISHIP), children under the age of five (5) (CUFSHIP), pregnant women and the aged.

Despite the richness and sincerity in the scheme's intention and policy, the coverage of the scheme as at 2012 was estimated to be about 3% of the population of Nigeria, which most persons covered were on the formal sector [6]. This unfortunate occurrence has led to a huge health system gap where most active Nigerians in the informal sector are left-out without health insurance coverage.

In 2016, the Federal Ministry of Health (FMOH), NHIS and National Primary Health Care Development Agency (NPHCDA) came out with a guideline on the administration, disbursement, Monitoring and Fund Management of the Basic Healthcare Provision Fund (BHCPF), which was a robust plan enshrined in Section 11 of the National Health Act 2014 to aid UHC [7]. The fund is expected to be contributed by the Federal Government of Nigeria, grants by international donor partners and other sources like investments, to tackle the emerging causes of population mortality (maternal mortality, perinatal mortality and road traffic incidents (RTI), ensure the provision of Basic Minimum Package of Health Services (BMPHS) at the primary healthcare centres (PHCs) and to achieve the broader goal of Universal Health Coverage (UHC) [7]. All Nigerians are entitled to the BMPHS as stipulated by the act and BHCPF might eventually be a major source of health financing to reduce OOP. However, the implementation of the programme has been very slow.

Furthermore, to reduce this deficit of NHIS coverage and OOP, most HMOs developed another programme called the Private Health Insurance Programme (PHIP) with the support of NHIS, under which those who are not in the formal sector and those in the formal sector but wish to enhance their coverage under the Social Health Insurance Programme can have access to affordable healthcare services through health insurance. Different healthcare plans with medical benefits are developed and customized to meet the healthcare needs of prospective enrollees.

Private Health Insurance (PHI) like other forms of insurance can contribute to social and developmental goals such as improved access to healthcare, better financial protection against the cost of illness and reduced social exclusion [1]. However, many have referred to PHI as an evil to be avoided at all cost claiming that it leads to overconsumption of healthcare, escalating costs, shunting of scarce resources away from the poor, skimming, adverse selection and moral hazard [1]. Despite this perception, PHI contributes to the well-being of the poor and middle-class households and not just the rich [1].

2. METHODOLOGY

2.1 Study Design

The study adopted a descriptive cross-sectional design to explore the variables in the study. This design was seen to be most appropriate because it provided valid and reliable data assessment of enrollee utilization of healthcare services in Kaduna State under the Private Health Insurance Programme (PHIP).

2.2 Study Population

The study population included enrollees of a Health Maintenance Organisation (HMO) who chose HCPs in Kaduna State as their primary provider and accessing healthcare services under the Private Health Insurance Programme (PHIP).

2.3 Data Source

Secondary data were used for this study. Collected or submitted medical encounters in the form of medical bills of registered enrollees who have visited and received treatment from their chosen healthcare providers in Kaduna State between the month of January and December 2019 were purposively compiled and analysed.

2.4 Classification of Medical Cases

Classification of medical cases was done based on the items listed under the Section 1.1.3 of the National Health Insurance Scheme (NHIS) Operation Guideline [8], which divided the observed diagnoses into Primary and Secondary medical cases.

2.5 Data Analysis

Data were analysed using descriptive statistics like frequency table, charts, percentages and inferential statistics (Chi-square) to determine the level of relationship between some variables and to draw conclusions. Statistical Package for Social Sciences (SPSS) version 22 was used with $P=0.05$ level of significance.

3. RESULTS AND DISCUSSION

3.1 The Utilisation of Enrollees in Kaduna State

Number of Registered Enrollees in Kaduna State HCPs = 6689

Number of Registered Enrollees who accessed care in Kaduna State = 4482

Utilization = (Number of Registered Enrollees who accessed care in Kaduna State / Number of Registered Enrollees in Kaduna State) * 100 = 67.01%

3.2 Classification of Medical Cases among Enrollees

0.79% of medical cases were lost to attrition due to data omission. 11,156 complete medical cases were however observed from 27 healthcare providers (HCPs) after attrition, which was differentiated by gender; male (49.08%) and female (50.92%). Likewise, medical cases were collectively classified into 65 categories or types due to mixed diagnoses. There were 9,525 (85.38%) medical cases classified under 45 categories, which constituted primary cases while 1,632 (14.62%) medical cases were classified under 20 categories that constituted secondary cases.

Among primary medical cases (Table 1), the prevalence of Malaria and Respiratory Tract Infection (RTI) were 41.23% and 11.98% respectively, while that of Peptic Ulcer Disease (PUD), Cyesis and Antenatal Care (ANC), other

Gastrointestinal Tract (GIT) cases, Other Dermal cases and Typhoid were 5.61%, 4.78%, 3.87%, 2.46% and 2.46% respectively. Female enrollees (50.19%) had more primary cases than male enrollees (49.81%). In addition, the prevalence (Table 1) of secondary cases like Hypertension (HTN), Ear-Nose-Throat (ENT), Urology, Optical, Dental and Diabetes were 3.83%, 2.62%, 2.49%, 2.02%, 0.85% and 0.79% respectively. Secondary cases were also observed more in female enrollees (52.76%) than male enrollees (47.24%).

Among the top five primary cases (Fig. 1), female enrollees had more prevalence rate of PUD and obviously in cyesis and ANC. Male enrollees led the top five secondary case chart (Fig. 2) in hypertension, urology cases, dental and diabetes. In Table 2, there was no significant relationship ($P=0.08$) between the gender of the enrollees and the resulting class of medical cases (primary and secondary).

3.3 Discussion

The result of healthcare service utilisation among enrollees who used Kaduna-based healthcare facilities was considerably high and it might be an indication of an increase in the awareness and growing knowledge of health insurance in the state. Besides, it might also be a pointer to the need for healthcare services for the enrollees and residence of Kaduna State. Despite the complaints of researchers regarding unavailability and inaccessibility of enrollee utilisation data, which might be available to various HMOs, it is obvious that the level of trust and accountability would have to increase to make research findings like this available so that the full benefits can be reaped as corroborated by [5].

The observed utilisation rate may also suggested that there might be little or nothing left for HMOs to run daily operations and fulfill their corporate obligations, which was also observed by [5].

Both genders were almost equally represented; however, females had more primary and secondary cases than male enrollees, which indicated that female enrollees had more tendencies to seek medical treatment than their male counterpart, especially preventive and diagnostic services compared to males that usually make greater use of emergency services [9,10].

Among the top five primary cases observed were malaria and respiratory tract infection, which were reported to be among the top ten causes of death in Nigeria [11]. Most of the medical cases observed were also primary in classification,

which is an indication that the need for primary healthcare services is higher than secondary and if these services are provided, the rate of mortality might reduce, especially among mothers and children under 5 [12].

Table 1. Top 10 primary and secondary medical cases among enrollees

S/N	Primary cases	Frequency (%)	Secondary	Frequency (%)
1.	Malaria	4600 (41.23)	Hypertension (HTN)	427 (3.83)
2.	Respiratory Tract Infection (RTI)	1337 (11.98)	Ear-Nose-Throat (ENT)	292 (2.62)
3.	Peptic Ulcer Disease (PUD)	626 (5.61)	Urology Cases	278 (2.49)
4.	Cyesis-Antenatal Care (ANC)	533 (4.78)	Dental Cases	95 (0.85)
5.	Other Gastrointestinal (GIT) Cases	432 (3.87)	Diabetes	88 (0.79)
6.	Other Dermal Cases	274 (2.46)	Secondary Optical Cases	84 (0.75)
7.	Typhoid	274 (2.46)	Threatened/ Incomplete Abortion	60 (0.54)
8.	Body Pains	177 (1.59)	Lumbargo/Lumber Spondylitis	53 (0.48)
9.	Pelvic Inflammatory Disease (PID)	151 (1.35)	Neurology Cases	51 (0.46)
10.	Primary Optical Cases	141 (1.26)	Hormonal Cases	49 (0.44)

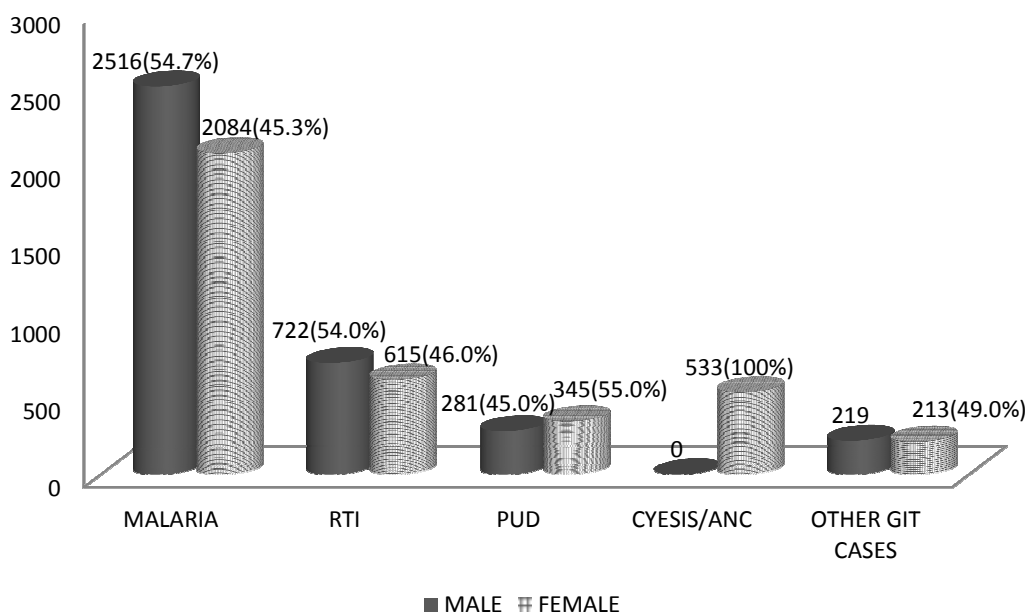


Fig. 1. Prevalence of top 5 primary cases by gender

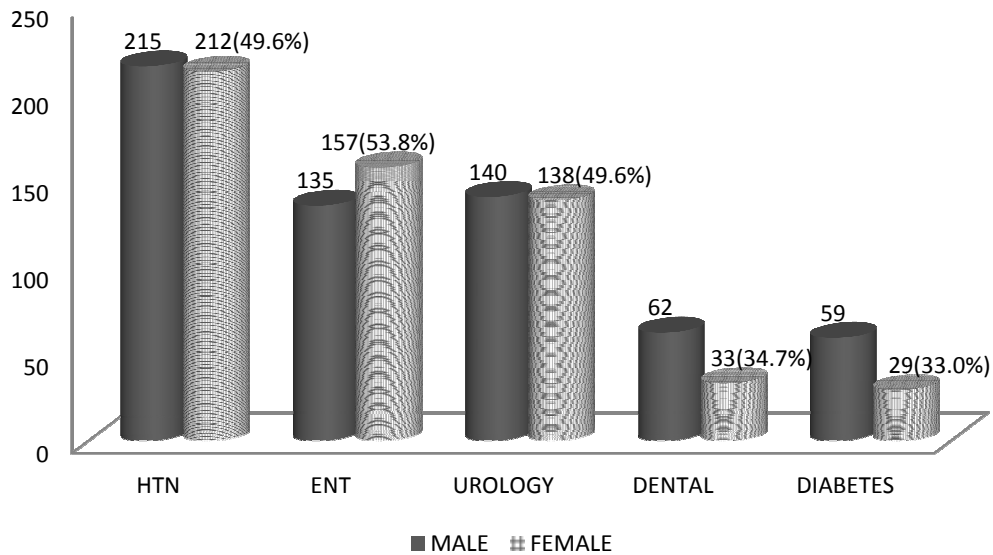


Fig. 2. Prevalence of top 5 secondary cases by gender

Table 2. Chi-square test of relationship

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.024 ^a	1	.082 ^a		
Continuity Correction ^b	2.932	1	.087		
Likelihood Ratio	3.026	1	.082		
Fisher's Exact Test				.086	.043
Linear-by-Linear Association	3.024	1	.082		
N of Valid Cases	11156				

^aNo significant relationship (Table 2) between the gender of enrollees and class of diagnosis (primary or secondary) $\chi^2(1, N = 11156) = 3.024, P = .08$

Secondary medical cases were less observed among enrollees as also reported by [5]. Less frequently reported cases like ear-nose-throat (ENT) and dental were seated at the top of the chart. Non-communicable conditions like hypertension, kidney related cases and diabetes are also among the top five secondary cases. These chronic conditions are closely related, which clearly show that enrollees in this location might need to consider adjusting their nutritional and physical habits to reduce prevalence and live a healthy lifestyle.

Furthermore, these chronic diseases share two major characteristics that have significant implications for the payment and delivery of health care [13]. First, they have a strong behavioural component. While genetics and environmental factors play a role in the incidence

of such ailments, behaviours – diet, exercise, smoking, stress levels and even sleep patterns – are the most significant components [13]. Secondly, as the name suggests, chronic diseases play out over the long-term – they are caused by the cumulative effect of years of behavioural patterns and, once diagnosed, most patients have to live with these conditions for the rest of their lives [13].

The greatest need, therefore, is to focus on changing long-term behaviours and managing chronic diseases over the long run in more efficient ways. Yet, most HMOs do not have the incentive to focus on the long-term needs of patients [13]. Therefore, HMOs might need to consider developing an offering that align incentives around long-term behavioural change and transform insurance from a short-term

contractual relationship to a longer-term collaborative one by laying the foundation for ongoing engagement with enrollees.

4. CONCLUSION

The awareness and utilization of healthcare services are gradually growing among enrollees under the Private Health Insurance Programme (PHIP) than those under the core NHIS programmes. Besides, more primary cases are recorded than secondary cases, which was also the case for the Formal Sector Social Health Insurance Programme (FS-SHIP). Conclusively, in ensuring that there is an improvement in the health sector of Nigeria and meeting the universal health coverage (UHC) goal, the focus should be on the primary healthcare services. Furthermore, the following recommendations are critical to the survival and sustainability of healthcare financing in Nigeria.

- a. There is a critical need for further enlightenment and sensitization of people on the benefits of health insurance, especially in rural communities. Perhaps, it will aid the health financing of primary healthcare centres and its sustainability.
- b. HMOs should encourage research, proper data management and periodic sharing of trends, observations and outcome of researches with growing health community.
- c. Health insurance should be backed by genuine political will for it to thrive in Nigeria.
- d. There should be a robust provision of Information Management System that will foster real-time availability and accessibility of data for national planning, development and universal health coverage (UHC).
- e. Provision of quality, affordable and accessible healthcare services, especially drugs is non-negotiable to avoid out of stock syndrome, medical tourism and to ultimately encourage more participation in PHIP.
- f. With the percentage of healthcare utilization at the primary level, putting in a place a functional and efficient infrastructure at all Primary Healthcare Centres cannot be overemphasised.
- g. HMOs need to consider an offering that align incentives around long-term behavioral change and transform insurance from a short-term contractual relationship to a longer-term collaborative

one by laying the foundation for ongoing engagement with enrollees in view of the growing middle classes and sedentary lifestyles in emerging markets that portend the trends of the chronic diseases.

CONSENT

It is not applicable.

ETHICAL APPROVAL

It is not applicable.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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