Original Article

MORBIDITY PATTERNS AMONG HEALTH INSURED PATIENTS SEEN IN A GENERAL OUT-PATIENT CLINIC IN BAYELSA STATE, NIGERIA.

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Abstract

Background: Hospital morbidity and mortality data are useful for estimating disease burdens. The Bayelsa Health Insurance Scheme (BHIS) was commenced a few years ago to augment existing schemes and improve access to health care and service utilization.

Objective: To determine the pattern of morbidities among BHIS-insured patients attending a clinic.

Materials and Method: A review of case records of patients enrolled with the scheme and presenting at the General Out-patient Clinic (GOPC) of the Bayelsa Specialist Hospital between April 1, 2017 and March 31, 2018 was done. A proforma was designed to collect information on patient's age, gender, diagnosis and date of consultation. Diseases were classified and categorized based on affected systems. Data was analysed using IBM [R] Statistical Package for the Social Sciences (SPSS) version 20.0.

Results: Two thousand and sixty-eight cases were used for analysis comprising 1,114 (53.9%) females and 954 (46.1%) males with those aged 5-18 years accounting for majority (40%) of cases.

CDs were diagnosed in 1,193 (57.7%) individuals while NCDs occurred in 875(42.3%). Infectious & parasitic diseases accounted for 662 (32.0%) of cases. This was followed by diseases of the respiratory system 325 (15.7%), the eyes and adnexa 192 (9.3%), and circulatory system 155 (7.5%) The commonest CDs were malaria (43.5%), upper respiratory infection (21.8%) and scabies (5.9%), Hypertension (17.7%) was the most frequent NCD followed by refractive errors (17.6%) and bones and joint diseases (9.4%), CDs decreased while NCDs increased incrementally with age with NCDs outstripping CDs during the fourth decade of life.

Conclusion: Infectious/parasitic diseases was the most common disease category. While CDs were more frequent among children and young adults, NCDs were more prevalent in the middle aged and elderly groups. There is need for a strategic approach to stem the emerging tide of NCDs without relenting on infection control.

Keywords: Bayelsa health insurance scheme, Communicable diseases, Malaria, Morbidity, Non-communicable diseases.

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INTRODUCTION

In sub-Saharan Africa, community-based data are scarce and therefore hospital-based morbidity and mortality records have become important surrogates in assessing disease burdens and evaluating health policies.[1] In Nigeria as in most African countries, there has been a paradigm shift from communicable diseases (CDs) to non-communicable diseases (NCDs) in recent years. Non-communicable diseases, particularly cerebrovascular diseases, malignancies and diabetes are the leading causes of elderly mortalities though a large proportion also rises from CDs such as sepsis,[2] while in children, malaria, diarrhea and respiratory infection are commonly reported morbidities.[3]

Information obtained from studies on morbidities and mortalities will be relevant when allocating resources to priority areas and in planning for health services, thus it will be invaluable for epidemiologists, health managers,

disease surveillance officers, and other stakeholders in the health care sector, including government at all levels.

Access to health care remains a major challenge in most African countries including Nigeria, amidst other challenges such as high disease burdens, inadequate human resource, and poor resource allocation to health, weak health care systems, lack of political will and several others.[4] There is high frequency of out of pocket payments (OOP) for health services, which often lead to catastrophic health expenditures (CHE) and impoverishment.[1] The Bayelsa Health Insurance Scheme (BHIS) was established to complement the National Health Insurance Scheme (NHIS) in improving access to health care among people living and working in Bayelsa State, Nigeria. At the BHIS, there is no OOP payment at point of access of health care for most services, including clinical consultations. The scheme generates its fund as a co-payment between government, the formal economic sector (for which it is largely mandatory) as well as voluntary contributions from the informal sector. With this in place, it is expected that all health - insured patients should be able to access the needed health services when ill.

The aim of this study was to determine the pattern of diseases among health insured patients attending a general outpatient clinic (GOPC) of a government health facility in Bayelsa State.

MATERIALS AND METHOD

This was a one-year retrospective descriptive study of patients that attended the GOPC of the Government Specialist Hospital, Bayelsa State from April 1st, 2017 to March 31st 2018. The hospital had been accredited for provision of primary and secondary health services under the BHIS since its inception, currently, over 80% of patients attending the hospital are enrollees of the BHIS. These patients had been enrolled into the scheme at different times since 2017.

A short proforma was designed to collect information on patient's age, gender, diagnosis and date of consultation. The information was extracted from secondary data accessible at the BHIS office. The data had earlier been collated from monthly submissions made by the hospital over the relevant period. Patients consulting the clinic for simple medical checks and pregnant women receiving routine antenatal care were excluded from the study. All cases of incomplete records such as missing diagnosis and other relevant information were also excluded. The diseases diagnosed were grouped into two broad classes; Communicable diseases (CDs) and Non-communicable diseases (NCDs). The diseases were further classified on the basis of physiological systems using the 10th edition of the International Classification of Diseases (ICD-10) into various categories. For instance, hypertension, heart diseases and stroke were grouped under 'Diseases of Circulatory System' while diabetes (DM), thyroid disease and nutritional disorders were categorized under 'Endocrine, Nutritional and Metabolic Diseases.' Similarly, peptic ulcer disease, gastro- esophageal disease (GERD) and dental diseases were grouped under 'Diseases of the Digestive System.' Also, refractory errors, cataracts and glaucoma were grouped under 'Diseases of the Eye and adnexa.' For those with multiple diagnoses, the final diagnosis (supported by relevant laboratory investigations) was recorded as the definitive diagnosis.

Ethical approval for the study was obtained from the Bayelsa State Ministry of Health Ethics Research Committee while permission for the study was granted by the management of the BHIS, who were in custody of the patients' records. The identity and records of individuals obtained during data collection were kept with utmost confidentiality.

The collated data was analyzed with the IBM Statistical Package for Social Sciences (SPSS) version 20.0. Simple descriptive statistical analysis was done for both continuous variables such as age and discrete variables such as gender, and diagnoses. Mean, standard deviation and range were employed for continuous variables while frequency distribution with percentages were used for categorical variables. Data was presented in tabular and graphical forms.

RESULTS

Out of the 2,900 case notes evaluated, two thousand and sixty-eight (71.3%) were included in the study and used for the final analysis. There were 1114 (53.9%) females and 954 males (46.1%). Up to 40% of the total population were within the age bracket 5-18 years while those above

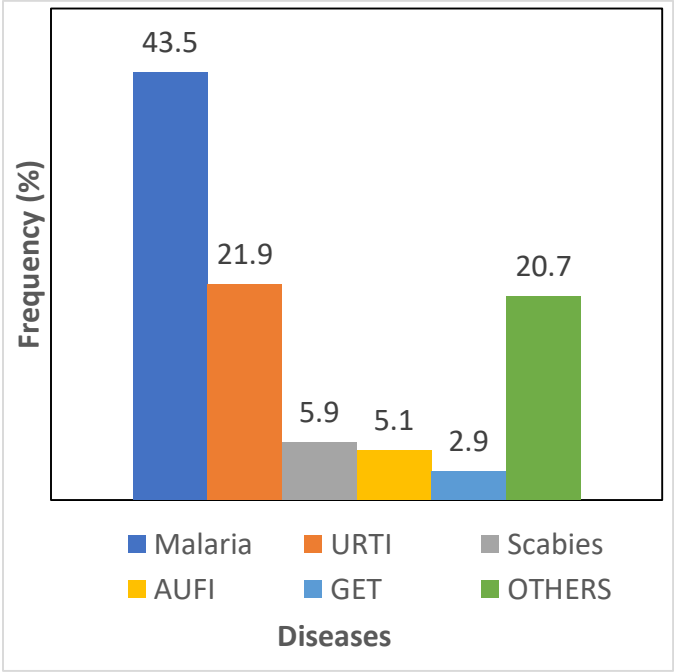
60 years accounted for only 8.8%. There was no significant difference in age groups between males and females. (p>0.05). Table 1 shows the age and sex distribution of the patients.

One thousand, one hundred and ninety-three (57.7%) individuals had CDs while 875(42.3%) cases were due to NCDs. Infectious & parasitic diseases accounted for 662(32.0%) of the total burden of diseases with malaria being the commonest morbidity in 535 (43.5%) cases of CDs followed by upper respiratory infection (21.8%) and scabies (5.9%), see Figure 1. Others were acute undifferentiated febrile illness (AUFI) in 5.1% and gastroenteritis (2.9%). In children less than 5 years old, malaria and URTI accounted for up to 62.5% of cases.

The commonest NCDs among the patients were hypertension (155; 17.7%), refractive errors (154; 17.6%), bones & joint diseases (82; 9.4%), peptic ulcer disease (58; 6.6%) and diabetes (37; 4.2%), see Figure 2. With regard to the ICD-10 disease classification, infectious / parasitic diseases accounted for 662(32.0%) of the total burden of diseases. This was distantly followed by diseases of the respiratory system in 325 (15.7%) with disease of the eyes and adnexa coming third 192 (9.3%), diseases of circulatory system 155 (7.5%) next while diseases of skin and subcutaneous tissue trailed behind in 146 (7.1%). Figure 3 shows the sex distribution of these diseases. As shown in Figure 4, While CDs decreased steadily with age, there was an increasing trend of NCDs with the latter overtaking the former at about thirty-two years of age.

Table 1: Age group and sex distribution of the patients.

	Male (%)	Female (%)	Total (%)
Age-group (years)			
<5	106 (11.1)	126 (11.3)	232 (11.2)
5-18	383 (40.1)	431 (38.7)	814 (39.4)
19-32	23 (2.4)	83 (7.5)	105 (5.1)
33-46	184 (19.3)	289 (13.4)	473 (22.9)
47-60	174 (18.2)	149 (13.4)	323 (15.6)
>60	84 (8.8)	36 (3.2)	120 (5.8)



URTI = upper respiratory tract infection, AUFI = acute undifferentiated febrile illness, GET = Gastroenteritis.

Figure 1: Distribution of the communicable diseases among the patients.

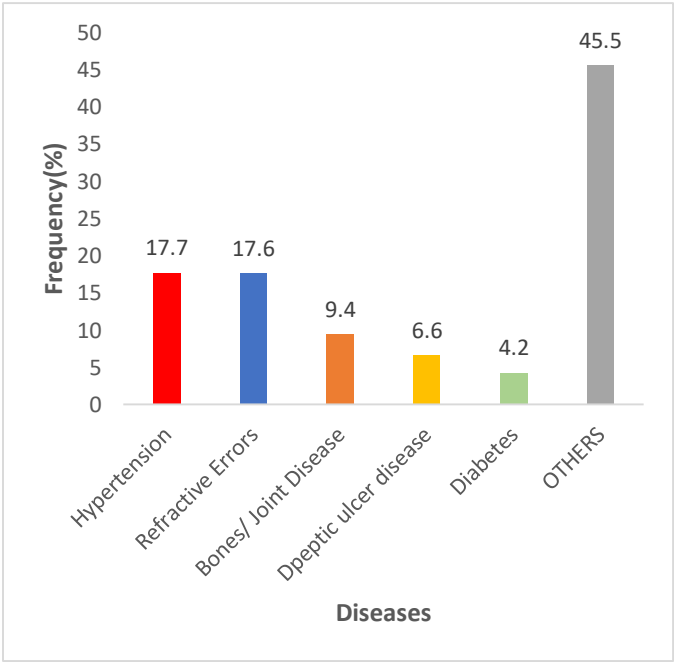


Figure 2: Distribution of the non- communicable diseases among the patients.

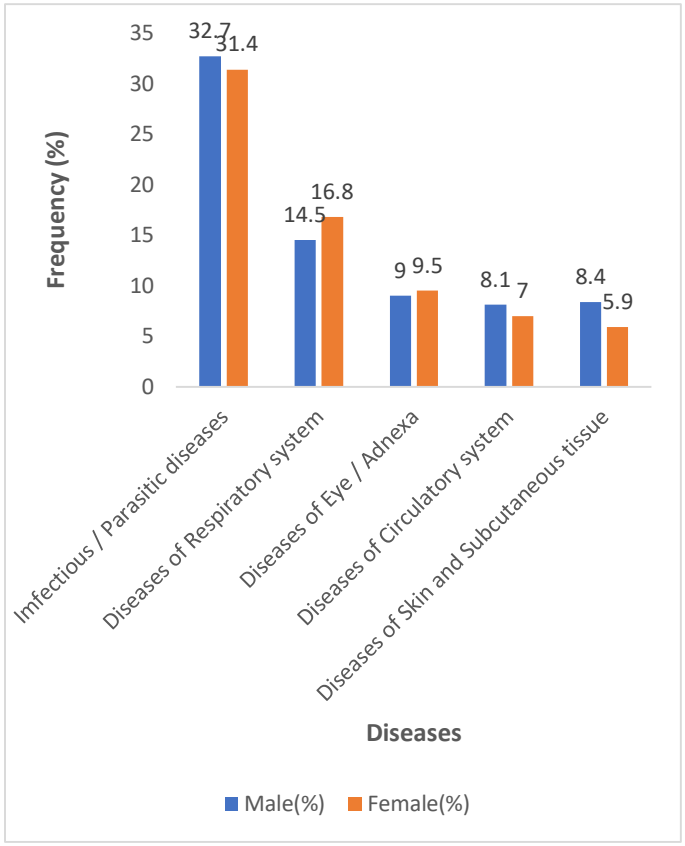


Figure 3: Gender distribution of the commonest category of diseases.

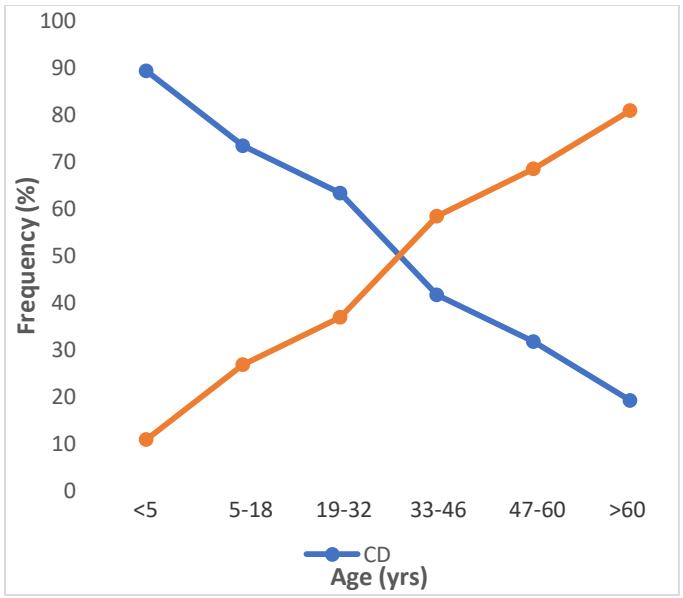


Figure 4: Prevalence of disease category matched with age group.

DISCUSSION

Malaria was the commonest morbidity in this study. This is not at all surprising as malaria is well known to be a principal cause of morbidity and mortality in SSA, where it is responsible for 90% of the world's 300 to 500 million cases and 1.5 to 2.7 million deaths annually.[5] In Africa, between 20 and 40 percent of outpatient visits and between 10 and 15 percent of hospital admissions are attributable to malaria.[6] Over the years, several efforts have been made by government, non-governmental organizations and stakeholders in the health care industry towards the control of malaria including initiatives such as 'Roll-back Malaria.[7] Although these efforts may have yielded some results, the prevalence of malaria remains at all-time high.[7] Upper respiratory infection (URI) was next to malaria as a cause of morbidity in this study. URIs range from the common cold which is typically a mild, self-limiting, catarrhal syndrome involving the nasopharynx to more serious conditions such as epiglottitis. They are no doubt among the most common infectious disease,[8] especially in the out-patient setting.

AUFI also made up a significant proportion of those with fevers. The incidence of AUFI in this study was quite high. This is quite disturbing as this largely represents the undiagnosed cases of fever. However, one is not surprised considering the inadequacy of diagnostic facilities in most of our medical centres.

Diseases of the skin and subcutaneous tissue was among the five commonest morbidities among our patients with scabies being the most common skin disease. Scabies is a highly contagious parasitic skin disease of public health importance with a relatively higher burden in children living in poor overcrowded, tropical or subtropical countries.[9] It is linked to pyoderma and other long-term complications including post-streptococcal glomerulonephritis with a significant impact on the quality of life of affected individuals. Up to 300 million people are believed to be suffering from the disease in impoverished urban and rural communities globally,[10] but its epidemiology remains largely unknown and scantily reported in Nigeria.[11] However, in a recent study by Ugbomoiko, et al in the middle belt of Nigeria, up to 65% of participants in a community-based study had scabies.[12]

In our study, gastroenteritis was also a leading cause of morbidity. Although most episodes of gastroenteritis are generally mild and self-limiting, they may be a source of substantial morbidity in the community and could result in serious dehydration or in long-term sequelae such as reactive arthritis and hemolytic uremic syndrome.

Hypertension was the most common NCD in our study occurring in 17.7% of all respondents. The proportion will definitely be higher than this if only adults are considered. This finding is in keeping with high prevalence rates reported among adult Nigerians in recent times.[13] Diabetes mellitus (DM), often presenting as a co-morbid state with hypertension was also prevalent in this study, as it was observed to be among the five leading NCDs. DM may be associated with several complications such as heart, kidney, and eye diseases as well as diseases of blood vessels and nerves. According to the WHO 2018 report, NCDs accounted for approximately 29% of all deaths in Nigeria with diseases of the circulatory system (or cardiovascular diseases), cancers, chronic respiratory diseases and diabetes accounting for the major causes of mortality in that order.[14] However, this study only focused on morbidity and did not include data on mortality.

Diseases of the eyes and adnexa (of which refractive errors made a large chunk) were the third commonest category of morbidities among the patients. Over a third of children less than 15 years old, attending a tertiary eye clinic in Ibadan, Nigeria were diagnosed with refractory errors.[15] RE has been reported to be among the commonest ocular problems in some Nigerian settings.[16,17] Worldwide, uncorrected RE is the main cause of moderate and severe visual impairment and the second leading cause of blindness, accounting for an estimated 153 million and 8 million affected persons, respectively.[18] This is rather unfortunate considering that the condition could readily be corrected with appropriate spectacles if detected early.

A striking observation in this study is the relative trend of CDs and NCDs. CDs were more predominant among the younger age group but NCDs gradually gained predominance until during the fourth decade when they became more prevalent than CDs. This finding is in agreement with recent reports that suggest an increasing burden of NCDs in Africa occurring on a background of persistent infectious diseases, an observation that has been described as 'a double burden of diseases.[19] Non-communicable diseases are now projected to account for more than half of all mortalities in SSA by 2030.[20] Cardiovascular diseases are fast becoming the lead NCDs in this region.[21] This increasing trend may be related to changes from traditional African lifestyle and dietary pattern to increased urbanization, sedentary lifestyle, consumption of refined foods and increasing obesity characteristic of western society.[22]

However, our study had some limitations. The method for diagnosis of malaria used in some occasions was clinical impression, which may amount to treating some 'non-malaria cases' as 'malaria'. Hence, there is a potential bias for overestimating the burden of the disease. Secondly, there was no uniform definition to the diagnosis of AUFI. Diagnosis seemed to have been made where no other cause was found for fever after limited investigations according to the attending physician's judgement without recuse to the duration of fever. Ideally, AUFI typically connotes fever of <14 days without any evidence of organ or system specific etiology.[23] Lastly, it is also important to note that there are other factors that could determine the pattern of diseases in a particular Centre. For example, the availability of specialists in a facility may influence the cases presenting to that facility.

CONCLUSION

Despite the limitations above, this study has revealed the pattern of diseases among enrollees of a health insurance scheme attending an out-patient clinic in Bayelsa State, Nigeria. While CDs were most prevalent for children and young adults, NCDs were more common in the middle aged and elderly individuals. Efforts should be intensified to ensure CDs are totally brought under control while rising to the emerging challenges posed by the increasing burden of NCDs. Good health practices must be taught in communities to help check the spread of infectious diseases such as malaria and scabies. The importance of lifestyle modification in control NCDs of diseases needs continuous emphasis.

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