

Pattern of Presentation of Patients in a Children's Outpatient Clinic of a Tertiary Healthcare Institution in Southeastern Nigeria

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Abstract

Background: Childhood morbidity and mortality have remained high in developing countries despite various control measures. To stem the trend, it would be necessary to determine the pattern of morbidities and associated factors of the common childhood diseases in our communities.

Objective: The objective of the study was to determine the disease pattern and associated factors in patients attending the children out-patient clinic of our health institution.

Materials and Methods: This was a retrospective review of medical records of children aged 1 month - 16 years attending the Children Out-patient Clinic (CHOP) of the Abia State University Teaching Hospital, Aba, from 1st January to 31st May 2014.

Results: A total of 1473 patients attended CHOP during the study period. There were 829 males and 644 females giving a male:female ratio of 1.3: 1. The morbidities with highest frequencies of occurrence were malaria, 336 (22.8%); upper respiratory tract infection 179 (12.2%); pneumonia 77 (5.2%); acute watery diarrhea 54 (3.7%) respectively. Patients aged < 5 years constituted the majority 953 (64.7%), while those aged > 5 years were 520 (35.3%) of the patient population. Greater proportion of the patients 773 (52.5%) were rural and suburb dwellers while the urban residents constituted 700 (47.5%) of the patient population

Conclusion: Malaria was the most frequent morbidity in this study with children aged less than five years being most frequently affected by childhood morbidities. The rural and suburb dwellers manifested with illnesses more than the urban residents. Efforts should be intensified at malaria control measures, with provision of facilities for prevention of childhood illnesses in the rural and suburb areas.

Keywords: Pattern; Childhood; Morbidities; Children's Out Patient Clinic; Southeastern Nigeria

Introduction

United Nations Children's Fund

Several control and management strategies on communicable and non-communicable diseases have been put in place by UNICEF (United Nations children's Fund) and WHO (World Health Organization) particularly from the middle of the 20th century [1]. Control and

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management strategies have been more effective in the developed than in developing countries [2]. Disease epidemiology varies in different regions of the world and in different countries of a region and even in different places of a particular country. For instance, most infectious and non-communicable diseases are more prevalent in sub-Saharan and Asian countries than in the developed world [3].

The vast majority of people with HIV (Human Immunodeficiency Virus) are in low and middle-income countries. There were approximately 38 million people living with HIV globally in 2019, with 20.7 million (54%) living in eastern and southern Africa, 4.9 million (13%) in western and central Africa, 5.8 million (15%) in Asia and the Pacific, and only 2.2 million (6%) in Western and Central Europe and North America [4]. It is estimated that about 3, 229, 757 people live with HIV in Nigeria and about 220, 393 new HIV infections occurred in 2013 with 210,031 HIV related deaths [5].

In 2010, the HIV epidemic in Nigeria was generalized across the country; the prevalence ranging from 1.0% - 12.7% with a median prevalence of 4.1%. During this epidemic, southern Nigerian states and the centrally located states recorded the highest rates while the northern states had the lowest rates [5]. Bayelsa, Akwa-Ibom, Anambra, Benue and Abuja had prevalence rates above 8.0%, with Benue recording the highest with a prevalence of 12.7% [6].

Global epidemiology of cholera occurred in 69 countries mostly in sub-Saharan Africa. A global estimate of 2.86 million cholera cases occurred annually in the endemic countries in the years 2008 - 2012 [7]. Among these cases, there were an estimated 95,000 deaths annually. In Nigeria, only selected states mostly in northern part of the country were affected [7].

Global malaria report by WHO indicated that most malaria cases in 2017 were in the WHO African Region (200 million or 92%), followed by the WHO South-East Asia Region (5%) and the WHO Eastern Mediterranean Region (2%) [8].

Nigeria ranks high globally in the burden of several diseases. She also ranks high globally in childhood morbidity and mortality indices [8,9]. Nigeria had the highest number of estimated childhood pneumonia deaths of 162,000 out of the 800,000 reported globally in 2018 [9-11]. Nigeria also had the highest number of malaria cases globally with 51 million cases and 207,000 deaths reported annually. Approximately 30% of total malarial burden in Africa was found in Nigeria [8].

Efforts geared towards curbing the prevalence of diseases in Nigeria begins with determination of the prevalence rates and associated factors of the different diseases in the community. This study was therefore conducted to determine the disease pattern in patients attending the children out-patient clinic of the Abia State University Teaching Hospital (ABSUTH) Aba, southeastern Nigeria.

It is anticipated that the results obtained could help to highlight the magnitude of the problem, the pattern of presentation and the associated factors. They will also contribute to available data, as well as help in the formulation of health policies for the prevention and effective management of childhood illnesses.

Materials and Methods

This was a retrospective review of medical records of children who presented at Children's Out Patient Clinic (CHOP) of the Department of Pediatrics of the Abia State University Teaching Hospital, Aba, from January 1, to May 31, 2014.

This hospital serves as a tertiary health care institution and referral center for peripheral hospitals in the state and its environs.

The Department of Pediatrics is manned by 6 consultants, 12 registrars, and 10 house officers (who do 3 monthly rotations before proceeding to other departments). All patients presenting at the CHOP are attended to by the registrar or more senior doctors. The CHOP runs from 8am to about 3 pm daily from Monday to Friday. After 3 pm of week days, and on weekends, out patients are attended to at the Children Emergency Room (CHER). An average of about 5,000 patients are attended to at the CHOP annually.

Diagnosis was made on patients based on clinical features and laboratory results.

Ethical clearance was obtained from the Ethics Committee of the hospital before commencing the study.

All the case records of children aged 1month -16 years seen within the study period, at the CHOP, were retrieved from the attendance register. Information retrieved included month of presentation, address, age, gender and diagnosis.

Exclusion criteria were neonates, those aged more than 16 years and patients with inadequate data.

The results were presented in prose and frequency tables. Data were analyzed using SPSS Version 24. Statistical significance was set at $p \leq 0.05$.

Results

In this study, 1720 children attended CHOP over the study period. Two hundred and forty-seven (247) had inadequate data; therefore, only 1473 were used for further analysis. There were 829 males and 644 females giving a male: female ratio of 1.3:1 (Table 1).

Gender	Frequency (n)	Percentage (%)
Male	829	56.3
Female	644	43.7
Total	1473	100

Table 1: Gender distribution of patients.

The leading conditions for which the patients were brought to the hospital were malaria, 336 (22.8%), upper respiratory tract infection, 179 (12.2%), Pneumonia, 77 (5.2%), acute watery diarrhea, 54 (3.7%) and skin sepsis 54 (3.7%). Others are also shown in table 2.

Diagnoses	Frequency	Percentage
Malaria	336	22.8
URTI	179	12.2
Pneumonia	77	5.2
AWD	54	3.7
Skin sepsis	54	3.7
Conjunctivitis	53	3.6
Urinary tract infection	35	2.4
Hearing Impairment	30	2.0
Sepsis	29	2.0
Eye Refractive Errors	26	1.8
Foreign body in ear	26	1.8
Cerebral palsy	26	1.8
COPD	19	1.3
Tonsillitis	19	1.3
Pulmonary tuberculosis	16	1.1
Sickle cell disease	14	1.0

Inguinal hernia	13	0.9
Inguinal Hydrocoele	13	0.9
Allergy	13	0.9
Birth injury	12	0.8
Seizure disorders	10	0.7
Cellulitis	8	0.5
Foreign body in nose	8	0.5
Peptic ulcer disease	7	0.5
Abscess	5	0.3
Others	391	26.5
Total	1473	100.0

Table 2: Distribution of diseases among the patients.

URTI: Upper Respiratory Tract Infection; AWD: Acute Watery Diarrhea; COPD: Chronic Obstructive Airway Disease.

Patients aged below 5 years constituted the great majority 953 (64.7%) of all patients that came to CHOP while those aged 5-16 were 520 (35.2%). Other details are in table 3.

Age (years)	Frequency (n)	Percentage (%)
< 5	953	64.7
5 - 10	313	21.2
> 10	207	14.1
Total	1473	100.0

Table 3: Distribution of patients by age.

Greater proportion, 773 (52.5%), of the patients were from the suburb and rural areas while those from the urban area 700, constituted 47.5%. Other details are in table 4.

Locality of origin	Frequency (n)	Percentage (%)
Urban	700	47.5
Suburb	668	45.3
Rural	105	7.2
Total	1473	100

Table 4: Distribution of patients by locality of origin.

Vast proportion 953 (64.7%) of the morbidity occurred in the under-5 year age group, while 520 (35.3%) occurred in the above 5 year age group though the difference is not statistically significant P = 0.859 (Table 5).

Age (years)	Frequency (n)	Percentage (%)
< 5	953	64.7
> 5	520	35.3

Table 5: Relative occurrence of diseases in the under-5s and those above 5 year age groups.

Discussion

More males were recorded in this study than females. This is similar to the reports in several previous studies [10-12]. This may be attributable to the fact that males are more vulnerable biologically to diseases than females [13]. Also, it may be explained by gender preference of the parents for male offspring for the reason of greater cultural values placed on the male over the female child [14], and health care-seeking behaviors or practices in favor of the males over the females making them being more often presented to health care facilities for medical attention than their female counterparts [15]. Also, it has been proposed that during childhood, the extra X-chromosome or absence of Y-chromosome confers inherent survival advantage in females predisposing them less to infections than males [13]. Similarly, cultural practice of keeping girls indoors to do house chores even at tender ages and allowing the male child unfettered outdoor explorative and other activities, with their attendant exposure to disease may also be an additional reason.

Malaria was noted in our study to have the highest prevalence over other diagnoses. Similarly, previous reports had malaria as the most prevalent childhood morbidity [10,16,17].

Studies conducted a few decades ago noted pneumonia and diarrhea as the most common causes of childhood morbidities [18-20]. This is contrarily to the index study and other previous works where malaria is the leading cause of childhood morbidity [17,21]. The possible explanation for this observation may be the fact that there has been an increase in the prevalence of malaria parasites resistant to various anti-malarial drugs in recent years [22]. Also, the introduction of pneumococcal and rotavirus vaccines in developing countries, which are gaining universal application rapidly, have contributed in curbing the prevalence of childhood pneumonia and diarrhea respectively [23].

More patients were recorded from the rural areas and suburbs than the urban area in this study. This most probably could be because the rural/suburb areas had worse sanitation and water scarcity problems [24]. Again, the caregivers from these areas are less socio-economically endowed, with prevailing non availability of disease preventive facilities such as immunization centers [25]. All the aforementioned, in addition to lack of health education programs via electronic and print media, contribute to higher frequency of childhood morbidity in children from rural areas compared to those from the urban centre.

Our study recorded that vast proportion of childhood morbidity was in children aged below 5 years. Similar reports have been noted previously [17,20,26]. This could be attributed to the fact that immunity in this category of children is relatively immature compared to their older counterparts, making them more vulnerable to diseases [27]. Also, in this age group, children explore their environment more, contaminating their bodies in the process, with greater tendency to transport environmental pathogen to their mouth. These predisposes them more to disease than their older counterparts [28]. Again, in this age group, there is greater dependence on caregiver protection and supervision, which are often lacking, thereby predisposing them more to exposure to pathogens and diseases than in the older children [28].

Conclusion

In this study, malaria followed by infections were the most frequent morbidities. Under-5 year aged children were the most vulnerable to the presenting illnesses. Children from the suburb and the rural areas have more frequency of diseases than those from the urban area.

Measures aimed at controlling malaria prevalence, including environmental cleanliness, utilization of insecticide treated bed nets, indoor insecticide spraying, should all be communicated to the populace via regular health education. Also, government at all levels should be encouraged to provide facilities for prevention of diseases in young children, including young child welfare clinics. The later should be in proximity to where people live, in order to curb disease prevalence among them.

Conflict of Interest

The authors declare that they have no competing interests.

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