ORIGINAL ARTICLE

Pattern of deaths in medical wards of a rurally situated tertiary health institution, Ido-Ekiti, Nigeria

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Abstract

Objective: To determine the basic demographic patterns and the frequency of medical causes of deaths in medical wards of a tertiary health center located in a rural community of Nigeria.

Materials and Methods: A retrospective analysis of patients' records admitted into medical wards of the Federal Medical Centre Ido-Ekiti, Ekiti State, Nigeria between January 2009 and December 2011 was carried out. Analysis of data was carried out using the simple descriptive statistics with Statistical Packaging for Social Sciences (SPSS Inc. Chicago IL) SPSS version 16 software.

Results: A total number of 1456 patients were admitted into the medical wards during the study period and 79 deaths were recorded. Male mortality was 94 (52.5%) while female mortality was 85 (47.5%) with male to female ratio 1.1:1.0. The age range was 18-100 years with the mean of 56.15 + 19.63 years. Deaths from non-communicable diseases (63.1%) were higher than those from communicable diseases (36.9%).

Conclusion: The most common cause of deaths in medical wards were non-communicable diseases, worse on the elderly especially males. Stroke and human immunodeficiency virus/acquired immunodeficiency syndrome were the principal contributors to medical mortality.

Key words: Ido-ekiti, medical admissions, mortality, pattern, rural

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Introduction

In developing countries, levels of mortality are especially high in rural areas where coverage by public health services is low. Evidence from relevant literature has shown enormous global progress in the care of medical conditions in the past few decades especially in the resource rich settings.[1,2] This progress is reflected in the considerable improvement in the survival rate and life expectancy of adults in the developed world. The most common cause of deaths in adults are medical conditions.[2] In Nigeria, recent data on adult mortality are scarce.[1] In Sub-Saharan Africa, about 80% of reports were based on the hospital records.[3] Hospital based statistics has been the second best alternative to community based study in Africa due to cost and logistics involved. Few previous available publications in Nigeria were conducted in a tertiary health centers located in the urban centers. However, Sub-Saharan Africa (Nigeria inclusive) is still predominantly rural.[4] Virtually, all our hospital based studies were generated from tertiary health centers, which almost all are located in urban centers.

In view of the need for sound planning and sector-wide approach to health-care issues, this study aimed at determining the basic demographic patterns and the frequency of medical causes of deaths in medical wards of a tertiary health center located in a rural community of Nigeria.

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Materials and Methods

This study was carried out on a 3-year retrospective record of patients admitted into male and female medical wards of the Department of Internal Medicine, Federal Medical Centre Ido-Ekiti, Ekiti State, South western Nigeria. Ido-Ekiti is a small rural community situated about 30 Km from Ado-Ekiti, the state capital. The institution (Federal Medical Centre Ido Ekiti) is one of the leading last referral centers in the state with a population of 2.4 million people apart from those from neighboring states that also access the facility. The period of study included January 2009 to December 2011 (3 years). The population under study was adults of 16 years and above. Records available on the wards (nurses report books), case notes from the medical records department of the hospital and death certificates, were all utilized. All deaths occurring within a period of the study were reviewed. Only the deaths that were certified in male and female medical wards were included in the study. Ethics and Research Committee approval from the institution was obtained. Data obtained were analyzed using the SPSS version 16 software and the results presented in descriptive and tabular forms. *P* value < 0.05 was considered significant.

Result

In this study, a total number of 1456 patients were admitted into the medical wards between January 2009 and December 2011 (3 years period). Male constituted 795 (54.6%) while 661 (45.4%) were females, with male to female ratio 1.2:1. There were more males on admission compared with females, which was consistent in the entire study period [Table 1]. In Table 2, the total deaths recorded within the study period were 179 with a crude mortality rate of 12.3%, age ranged 18-100 years with the mean of 56.15 ± 19.63. The age range for the male deaths was 18-100 years with the mean of 56.69 ± 19.19 years. The age range for the female deaths was 22-95 years with the mean of 55.54 ± 20.20 years. The male to female death ratio was 1.1:1.0 and there was no statistical significant difference between the mean ages for deaths in both gender (*P*-value = 0.70). There were 94 (52.5%) male deaths while 85 (47.5%) deaths occurred in females. The crude mortality rate for male and female were 11.8% and 12.9% respectively. Most deaths occurred in the elderly (42.5%) while higher deaths occurred in the young adults (32.4%) compared with the middle-aged (25.1%). Deaths from non-communicable diseases were the highest numbering 113 (63.1%) compared to communicable diseases numbering 66 (36.9%). Stroke topped the list of the former with 40 (22.3%) deaths while Human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) topped the latter with 30 (16.8%) deaths as shown in Table 3.

Table 1: Patients admitted in medical wards between January 2009 and December 2011

Gender	*N* (%)			
	2009	2010	2011	Total
Male	259 (54.3)	258 (54.8)	278 (54.7)	795 (54.6)
Female	218 (45.7)	213 (45.2)	230 (45.3)	661 (45.4)
Total	477 (100.0)	471 (100.0)	508 (100.0)	1456 (100.0)

Table 2: Age and sex distribution of mortality in medical wards between January 2009 and December 2011

Age group (years)	*N* (%)		
	Male	Female	Total
16-44	28 (29.8)	30 (35.3)	58 (32.4)
45-64	26 (27.7)	19 (22.4)	45 (25.1)
>65	40 (42.5)	36 (42.3)	76 (42.5)
Total	94 (100.0)	85 (100.0)	179 (100.0)

Discussion

Patients admitted into the medical wards of the hospital can be extrapolated to provide information on the pattern of adults' medical condition in the environment it sub-serves.

Table 3: Causes of patients' death in medical Wards between January 2009 and December 2011

Causes	Number	%
Stroke	40	22.3
HIV/AIDS	30	16.8
Heart failure	16	8.9
Sepsis	14	7.8
Hyperglycemic emergencies	13	7.3
Chronic liver disease	11	6.1
Tuberculosis	9	5.0
Diabetic foot	8	4.5
Chronic kidney disease	5	2.8
Central nervous system infections	5	2.8
Hematologic malignancies	4	2.2
Upper gastrointestinal hemorrhage	3	1.7
Hypertension	3	1.7
Community acquired pneumonia	3	1.7
Chronic obstructive pulmonary disease	2	1.1
Tetanus	2	1.1
Severe anemia	2	1.1
Acute renal failure	1	0.6
Acid on chronic kidney disease	1	0.6
Urinary tract infection	1	0.6
Gastroenteritis	1	0.6
Rabies	1	0.6
Stroke-like syndrome	1	0.6
Bullous eruption	1	0.6
Connective tissue diseases	1	0.6
Hemoglobinopathies	1	0.6
Total	179	100.0

HIV = Human immunodeficiency virus; AIDS = Acquired immunodeficiency syndrome

This study revealed more male hospital attendance when compared to females. This was consistent throughout the entire period of study. This finding may be related to gender population distribution in the state. In the population, census figure of both 1991 and 2006, males predominate.[5] In addition, similar reports in the past showed that most women attend hospital when complications have set in.[6] Furthermore, unpublished observation has shown that more females were found in religious houses in Nigeria for spiritual interventions and healing compared to males and hence less tendency to patronize orthodox care.

The crude mortality rate in this study was 12.3%. This high crude mortality rate may be due to factors such as delayed presentation due to poverty (majority in the rural settings were peasant farmers and petty traders), lack of access to quality treatment, self-medication, seeking non-orthodox treatment before presentation, ignorance, lack of health education, unavailable modern investigative and treatment facilities. The crude mortality rate recorded in this study was lower than previous studies carried out in urban centers (17.91% to 25.0%).[6,7] The high crude mortality rate in urban centers may be related to overstretched hospital facility and personnel required to attend to the huge population in the cities.

Mortality was highest in the elderly (42.5%) compared to middle-aged (25.1%) and the young (32.4%). This observation in relation to the elderly was not unexpected since the most common cause of deaths in the elderly is cardiovascular disease,[8,9] which topped the list in this study accounting for over 30% of deaths. Greater mortality in the young aged compared to the middle-aged may be related to deaths from HIV/AIDS and chronic liver diseases (totaling 20% in this study) both of which affect more of the young age group.[10,11]

There were more male deaths compared to female in both elderly and middle-aged groups. This is similar to earlier reports, which long recognized early deaths in men than women.[8,12]

However, more female deaths were seen in the young age group. Deaths from HIV/AIDS (second highest on the list) may account for this since higher deaths in female has been reported.[13]

The most common causes of deaths in this study were non-communicable diseases (63.1%). This is in line with the World Health Organization recent report.[2] This finding may result from fall in prevalence of communicable diseases as a result of better immunity in adults because of repeated exposure to infection and infestations, improved personal hygiene and environmental sanitation, which has been a monthly wake-up calls in most states in South Western Nigeria, widespread immunization programs and the attitude of the community members seeking treatment in pharmacy store for infections, which may therefore reduce the number of serious cases presenting in the hospital.

Cardiovascular diseases were the most common causes of deaths of which stroke topped the list in this study. Lack of access to early computed tomography scan, unavailable fibrinolytic agents, late presentation and lack of early recognition may all contribute to high mortality in stroke. Poor state of hypertension control, which has been known to be the most common etiological factor in stroke may also contribute.[14,15] Heart failure ranked 3rd among causes of medical admission mortality and ranked 2nd among non-communicable disease causes of deaths in this study. This may result from increase in prevalence of cardiovascular diseases.[16,17] In addition, hypertension being the most common cause of heart failure[18] and cardiovascular risk factor[19] may therefore suggest poor control. Late presentation or referral may also be responsible.[20,21]

Among deaths from communicable diseases, HIV/AIDS topped the list. This may be due to late presentation of patients as well as local beliefs of possible cure from the use of local herbs and prayer. Stigma and discrimination remain high and continue to be a barrier for accessing services.[22] People living with HIV are also frequently co-infected with other diseases such as tuberculosis, sexually transmitted diseases, hepatitis, malaria and others, which complicate diagnostic and treatment interventions. Sepsis ranked second cause of deaths among communicable diseases, in which poor access to quality health due to poverty and delay presentation may account for it.

In conclusion, this study showed that medical causes of deaths on the wards occurred predominantly in the elderly, though with higher deaths in the young compared to middle-aged. Higher deaths occurred in the males compared to the females except in the young age group where the reverse was true. Non-communicable diseases were responsible for higher deaths than communicable diseases. Stroke and HIV/AIDS topped the lists of both respectively. The high crude mortality rate in this study will reduce by about 40% if modern health-care strategy is employed to salvage the deaths from stroke and HIV/AIDS.

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