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TEN-YEAR MORTALITY REVIEW IN A PIONEER PSYCHIATRIC HOSPITAL IN WEST AFRICA

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ABSTRACT

Objective: To determine the mortality among admitted patients in the study centre, a pioneer psychiatric facility in the West African sub-region.

Design: A detailed retrospective study of the records of all deaths among the inpatients during the ten-year period of January, 1991 to December, 2000.

Setting: Psychiatric Hospital Yaba, Lagos, Nigeria; established in 1907 with present bed status of 535 and patronage from Lagos and its environs, including the neighbouring Benin Republic.

Subjects: Ninety six patients that died while on admission in the centre during the study period.

Results: A total of 96 patients died over the ten-year period, giving an annual rate of 9.6. The age range was 14-87 years, and mean of 44.4 (SD \pm 16.8) years. The male: female ratio was 1:1.6. Schizophrenia (26%) and major depression (25%) constituted the main psychiatric diagnoses at the time of admission among the cohort. The commonest cause of death included infections/infestations, most especially malaria and septicaemia (44% of the cohort).

Conclusion: It is concluded that the major psychotic disorders, schizophrenia and depression continue to constitute the highest psychopathologies diagnosed psychiatric mortality study. Finally, infections/infestations still continue to play leading role as major causes of death in the West African sub-region.

INTRODUCTION

It is well established that the risk of premature death or excess mortality among psychiatric patients is higher than in the general population (1-3). The causes of the excess mortality arise from the mental disorder itself, and the unhealthy way in which the mentally ill patients live (4). Studies from advanced countries on patients in mental hospitals showed the relative risk of death for all psychiatric diagnoses was two to three times that of the age-matched in the general population (5,6). Schizophrenia and major depression are especially associated with high risk of death from suicide and accidents (unnatural causes); while deaths from natural causes are highest among patients suffering from organic mental disorder, mental retardation and epilepsy. Epilepsy is included because of the close link of some types with psychiatric illness (4).

In the past few years, psychiatric case registers have uniquely been used to carry out mortality studies of mentally ill patients from defined geographical areas in advanced countries with up to date demographic data and well established community, mental health services (7). The same cannot be said for developing countries such as Nigeria where there is paucity of vital statistics and lack of comprehensive death register of the communities. In essence, as it was done in this review, mortality studies

can only be carried out by periodic review of deaths in various medical institutions or their, departments (8-10).

Finally, mortality studies in psychiatry, is important from two perspectives: one, it provides information about the natural course of disorders; and, secondly, mortality data can be useful at identifying high-risk groups of psychiatric practice (11,12).

MATERIALS AND METHODS

The study was carried out at Psychiatric Hospital, Yaba, Lagos, Nigeria. It was established in 1907 as one of the pioneer psychiatric facilities in the country then, known as Yaba Lunatic Asylum (13). Over the years, the hospital has undergone a lot of expansion and modernisation to its present 535 bed status with various training programmes including post graduate psychiatric residency in place. There is a high bed occupancy rate, with a lot of pressure on the outpatient clinic facilities from the teeming population of Lagos and its environs.

This was a retrospective study of all cases of death in the hospital over a ten-year period (January 1991 to December 2000). The well-kept records on the dead patients were retrieved from the special vault of the medical records department for detailed analysis. Demographic and other necessary data such as sex, age at death; duration of stay on admission before death, psychiatric diagnosis, cause(s) of death and autopsy findings (if performed) were obtained. The seven recorded cases of brought-

in-dead (BID) during, the study period were excluded from analysis.

The data obtained was analysed using SPSS on IBM compatible PC to obtain appropriate statistical variables.

RESULTS

A total number of 96 deaths occurred during the ten-year period, giving an annual rate of 9.6; and this constituted 0.84% of the total admission for the period (Table 1 and Figure 1).

Table 1

Number of patients admitted and yearly mortality distribution

Year	Total no. of admission	No. of Deaths			Death/ Admission(%)
		Male	Female	Total	
1991	1536	1	2	3	0.20
1992	1352	3	2	5	0.37
1993	1186	1	4	5	0.42
1994	694	4	2	6	0.86
1995	345	5	4	9	2.61
1996	1185	2	7	9	0.76
1997	1270	8	10	18	1.42
1998	1238	4	13	17	1.37
1999	1249	3	7	10	0.80
2000	1310	6	8	14	1.07
Total		37	59	96	

The age range was 14-87 years, with the mean of 44.4 (SD \pm 16.8) years. There were thirty seven males (38.5%) and fifty nine females (61.5%), giving an M: F ratio of 1:1.6. Close to two-thirds (67.7%) of the cohort was young adulthood/middle age (16-55 years) (Table 2 and Figure 2).

Table 2

Mortality by age and sex distribution

Age (years)	Male	Female	Total	%
≤ 15	1	-	1	1.0
16-25	5	5	10	10.4
26-35	11	16	27	28.1
36-45	4	8	12	12.5
46-55	6	10	16	16.7
56-65	4	13	17	17.7
>65	6	7	13	13.6
Total	37	59	96	100

About 72% died within two weeks of hospitalisation, while 5.2% were chronically institutionalised patients that had spent over five years in the hospital.

Psychiatric diagnoses. The diagnoses of schizophrenia and depression (mood disorder) were made in 26% and 25% respectively; and these together constituted slightly over half of the cohort. Other forms of psychoses, mostly delusional disorder and undifferentiated type constituted 18.7%; while 11.5% were cases of acute organic brain syndrome (Table 3).

Causes of death: The highest cause of death (44%) was due to infections/infestations, especially malaria and septicaemia. This was followed by cardiovascular disorders, notably cases of sudden death, and hypertension with its attendant complications in 13.5% of the cohort. Diseases of the digestive system, mostly intestinal obstruction and gastroenteritis made up 8.4% of the mortality. Neurological and respiratory diseases that included meningitis, seizures, pulmonary tuberculosis constituted 7.3% each of these two systems for the mortality figure (Table 4).

Figure 1

Yearly and sex distribution of deaths

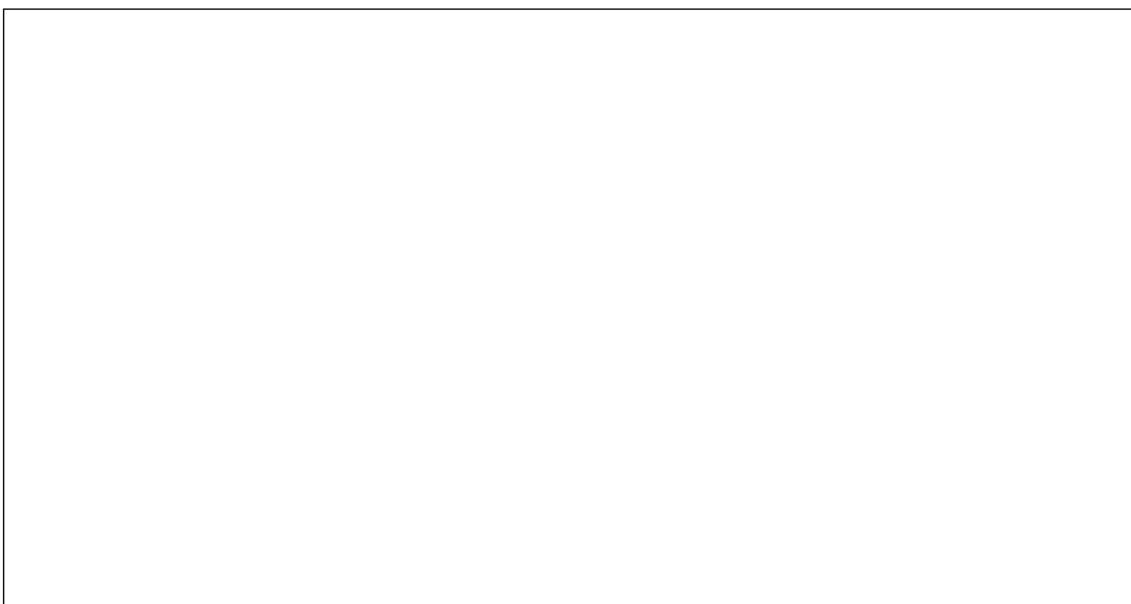


Figure 2*Age distribution of deaths***Table 3***Mortality by sex and psychiatric diagnosis*

Diagnosis	Male	Female	Total	%
Schizophrenia	6	19	25	26.0
Mood Disorder	4	20	24	25.0
Other	11	7	18	18.7
Psychoses				
Acute Brain Syndrome	7	4	11	11.5
Dementia	6	1	7	7.3
"Others"	3	8	11	11.5
Total	37	59	96	100

N.B: "Others" include Drug abuse/dependence, Seizure disorder, personality disorders etc.

There were two cases of suicide (2.1%) from self-poisoning; with the psychopathologies of severe depression and paranoid schizophrenia respectively. Consent could not be obtained to perform post-mortem of any of the cohort except the two cases of suicide.

Table 4*Causes of death and sex distribution*

Cause of Death	ICD-9 Code No.	Male	Female	Total	(%)
Infection	000-136	12	30	42	43.8
Cardiovascular disease	390-429	6	7	13	13.5
Digestive disease	520-577	2	6	8	8.3
Neurological disease	320-389	6	1	7	7.3
Diabetes Mellitus	250	2	2	4	4.2
Cerebrovascular disease	430-438	1	2	3	3.1
Genitourinary disease	580-629	1	2	3	3.1
Respiratory disease	460-519	6	1	7	7.3
Malignant Neoplasm	140-209	-	1	1	1.0
Suicide	E950-959	1	1	2	2.1
Others		-	6	6	6.3
Total		37	59	96	100

N.B: Others include Neuroleptic Malignant Syndrome (NMS), malnutrition with anaemia etc.

DISCUSSION

As part of the multi-faceted efforts to improve quality health care, the hospital authority has taken the bold step to allow this maiden mortality review in a large psychiatric facility in Nigeria. Mortality studies constitute one of the important audit tools aimed at improving health care delivery services (5,10-12). Although the total admission during the 10 year study period was 1:1.35 for female: male ratio, yet the female: male mortality ratio for the same period was 1.6:1. Our finding was contrary to that of some previous similar studies where greater mortality was found for men (6,7). This can possibly be explained by the fact that in the study, excess females (13) compared to males (10) suffered from schizophrenia or depression as the underlying psychopathology. These two mental illnesses when compared to others are associated with unduly increased risk of premature death from both natural and unnatural causes (5,6,12).

Furthermore, studies have shown that the greater risk of mortality associated with major depression can be attributed to the poor level of physical functioning of the depressed patients (14). It has also been hypothesized that psychiatric conditions most especially schizophrenia and depression are precursors to organic pathologies (11,12), probably due to the poor healthy way such patients elect to live(4) but; the final biological pathways are poorly understood (15,16). More recent studies tend to further reinforce our finding, as women are now known to experience worse physical and mental health than men (16), and especially in developing countries, women's timely access to health care is limited (17), thus, raising the risk of greater mortality in women.

Infections/infestations especially malaria and typhoid constituted the highest cause of death in the cohort (52.1%). Inadequate sanitation and poor socio-economic conditions among other factors make infections /infestations to be highly endemic in Africa and retain a leading role at causing death (10, 18-20). Cardiovascular disorders take a distant trail (13.5%, after infections/infestations as the cause of mortality in the study. Eight of the thirteen deaths from cardiovascular problems were cases of sudden, unexpected deaths. There have been lots of reports of sudden, unexplained death among patients on antipsychotic drugs (21,22), and this is attributed to drug-induced arrhythmia caused by the antipsychotics, similar to the cardiac electrophysiological effects of quinidine (23). Torsade de pointes (a polymorphic ventricular arrhythmia), recorded on patients with antipsychotic overdose (24), provide a clue to the mechanism of sudden, unexplained death among patients on antipsychotic therapy (25). Systemic hypertension and its complications constituted the rest cardiovascular deaths in the cohort. Hypertension, with its complications is one of the leading causes of cardiovascular morbidity and mortality in Nigeria (26).

Diabetes mellitus, cerebrovascular accident (CVA), gastroenteritis and pulmonary tuberculosis were the other

common causes of death in the cohort. CVA or stroke as a complication of hypertension and/or diabetes is a common neurological problem in Africa(27), and accounts for about 4.5% of all deaths in hospital based studies in Nigeria (28). Gastroenteritis and pulmonary tuberculosis are leading causes of gastrointestinal and respiratory deaths in developing countries; and their increased incidences is attributed to poor sanitation, overcrowding, malnutrition and due to the recent upsurge in the endemicity of HIV/AIDS complex (8,29).

The finding of only two cases of suicide in the cohort over the ten year period is, contrary to that in developed countries where there are increased reports of suicide by, in-patients in psychiatric hospitals(30). However, generally, in Nigeria there are low rates for suicide(31). Except for medico-legal cases such as suicide as in this study where it is mandatory, post-mortem is greatly resented in Africa due to religious and cultural practices(10).

Finally, it is highly commendable that some steps have been taken to improve quality patient care in the study centre following the regular in-house mortality reviews and the preliminary analysis of this data. Such steps include regular seminars for health care workers in the hospital on the management of patients with co-existing physical pathology, appropriate referral services to transfer patients with complicated organic pathologies to neighbouring teaching/general hospitals and the employment of part time consultant physicians (a neurologist and a cardiologist). All these are aimed at further reduction in the mortality figure to the barest minimum in the study centre.

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