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

I.O. MALOMO, O.F. AINA, H.T.O. LADAPO and A.O. OWOEYE

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 environ, 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 ±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-
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

<table>
<thead>
<tr>
<th>Year</th>
<th>Total no. of admission</th>
<th>No. of Deaths</th>
<th>Death/Admission(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
</tr>
<tr>
<td>1991</td>
<td>1536</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1992</td>
<td>1352</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>1993</td>
<td>1186</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>1994</td>
<td>694</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>1995</td>
<td>345</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>1996</td>
<td>1185</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>1997</td>
<td>1270</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>1998</td>
<td>1238</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>1999</td>
<td>1249</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>2000</td>
<td>1310</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>37</td>
<td>59</td>
<td>96</td>
</tr>
</tbody>
</table>

The age range was 14-87 years, with the mean of 44.4 (SD ± 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).

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
Table 3

Mortality by sex and psychiatric diagnosis

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schizophrenia</td>
<td>6</td>
<td>19</td>
<td>25</td>
<td>26.0</td>
</tr>
<tr>
<td>Mood Disorder</td>
<td>4</td>
<td>20</td>
<td>24</td>
<td>25.0</td>
</tr>
<tr>
<td>Other</td>
<td>11</td>
<td>7</td>
<td>18</td>
<td>18.7</td>
</tr>
<tr>
<td>Psychoses</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute Brain</td>
<td>7</td>
<td>4</td>
<td>11</td>
<td>11.5</td>
</tr>
<tr>
<td>Syndrome</td>
<td>6</td>
<td>1</td>
<td>7</td>
<td>7.3</td>
</tr>
<tr>
<td>Dementia</td>
<td>6</td>
<td>1</td>
<td>7</td>
<td>7.3</td>
</tr>
<tr>
<td>“Others”</td>
<td>3</td>
<td>8</td>
<td>11</td>
<td>11.5</td>
</tr>
<tr>
<td>Total</td>
<td>37</td>
<td>59</td>
<td>96</td>
<td>100</td>
</tr>
</tbody>
</table>

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

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

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:
males, 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 re-
inforce 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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