*Original Research Article*

# THE SPECTRUM OF PSYCHIATRIC MORBIDITY IN SURGICAL WARDS OF A STATE GOVERNMENT HOSPITAL IN BENIN CITY, NIGERIA.


## Abstract

Aim: To determine the incidences and types of psychiatric disorders, mortality, bed stay and management challenges found in our surgical in-patients.

Methods: A three-year retrospective study in which all cases with co-morbid psychiatric disorders admitted into the surgical wards of Central Hospital Benin city, Nigeria were studied.

Results: Sixty surgical patients with psychiatric co-morbidity made up of 40 males and 20 females in a ratio of 2 to 1 were studied. 2.3% of all surgical admissions during the study period had psychiatric co-morbidity.

The patients' ages ranged from 18 to 90 years with a mean age of 44.7 years and the median age of 45 years.

Post-operative delirium cases formed the bulk of psychiatric co-morbidity (50%) while road traffic accidents involving homeless people with psychosis (31.7%) made up the majority of the surgical disorders seen in this study.

The mortality rate in this study was 40% and 87.5% of deaths occurred in cases that developed delirium after surgery.

The bed stay of the patients ranged from 11.7 to 60.9 days with a mean of 33.1 days.

Conclusion: There were management challenges, long bed stay and a high mortality in surgical patients with psychiatric comorbidity.

A greater care of road traffic accident cases and early identification of mental illness in surgical patients are important. An alternative pain drug control for sickle cell anaemia patient is imperative.

Enhanced knowledge and awareness of psychiatric illnesses in the surgical wards is needful.



**KEYWORDS:- Spectrum, Psychiatric disorder, Surgical In-patients, State Government Hospital, Nigeria.**


## BACKGROUND

The prevalence of psychiatric disorders among surgical patients is common and ranges between 23% and 50% [1-6.] It is interesting to note that a remarkable proportion of these cases remain unrecognised by the medical staff.[7,8]

These disorders may occur equally amongst both sexes[1] or more frequently in the female[2,5,6,9] depending on the location of the study. The older age groups are commonly more affected[2, 5]. It has been recognised that morbidity and mortality are higher in surgical patients with psychiatric co-morbidity.[6,7, 9,10,11,12]

Bariatric, oesophageal, plastic, orthopaedic (hip, amputation operations), major abdominal, cardiac and aortic, organ transplant and cancer operations are associated with a high incidence of psychiatric morbidity [13,14,15,16,]

Other predisposing events are severe trauma from burns, road traffic and industrial accidents, and assaults[15,17].

Some of these groups of patients present with disruptive symptoms and behaviours, poor decision-making capacity, substance abuse, problems with coping styles and strategies, preoperative anxiety and health-related phobias[5,15]. Some of the management challenges involved in the care of these patients include difficulty of obtaining informed consent, treatment adherence, and discontinuation of anti-depressants before anaesthesia [5].

Others challenges encountered are in the administration of psychiatric drugs when the patient is on nil per oral and intra- and post-operative hypotension resistant to intravenous catecholamine administration [5,18].

The most prevalent symptoms these patients present with are those of depression, anxiety, bipolar and post-traumatic stress disorders, alcohol abuse and dependence, and postoperative delirium [3,5, 8,16,19].

Some of these patients are incredibly disruptive to care, have incoherent speech, incomprehensible expression, inappropriate behaviour and thought disorders thereby causing a lot of distress to the doctors, nurses and their relations. Patient contact avoidance may occur as a result [14]. Despite all these, the provision of basic psychosocial support for these patients by the medical staff is paramount [16].

In the Surgical Unit of Central Hospital Benin City, we noticed an upsurge of patients with psychiatric disorders especially from homeless people with psychosis involved in road traffic accidents, major trauma cases and from complex surgical emergency procedures carried out on very ill patients.

The objective of this study, therefore, was to determine the types of psychiatric disorders seen in our surgical wards and their impact on management, morbidity and mortality and bed stay.

## MATERIALS AND METHOD

All patients admitted into the surgical wards of Central Hospital, Benin City, from December 2013 to December 2016 who also had co-morbid psychiatric disorders were retrospectively reviewed. The diagnosis of psychiatric morbidity was made by the consultant psychiatrist using the diagnostic criteria for research of the International Classification of Diseases-version 10 (ICD 10-DCR). Case files of the patients under review and nurses' ward records during the period were studied. Data collated included patients' demographics (age and sex), surgical and psychiatric diagnoses, a nursing and management challenges, and associated morbidities, and mortalities.

## DATA ANALYSIS

Data analyses involved the use of simple ratios, ranges, means, medians and percentages.

## RESULTS

During the three-year period under study, a total of 2,562 patients were admitted into our surgical units. There were 1,711 males and 851 females in the ratio of 2 to 1. A total of 60 surgical patients with psychiatric co-morbidity were seen, made up of 40 males and 20 females also in the ratio of 2 to 1. In this study, 2.3% of our surgical patients had psychiatric co-morbidity.

Table 1 displays the age distribution of 60 patients in the study. Age ranged from 18 to 90 years with a mean age of 44.7 years and a median age of 45 years. However, 60% of the cases were over 40years.

Table 2 shows the distribution of psychiatric disorders. There was a preponderance of post-operative delirium cases followed by psychosis (mostly in the homeless cohort).

Table 3 shows the spectrum of surgical morbidity seen. Road traffic accidents especially involving vagrant psychotics formed the bulk of the surgical disorders seen in this study.

Table 4 displays psychiatric disorder, surgical co-morbidity and plausible associations. Sepsis and pre-morbid psychosis appear to be most prominent associations.

Table 5 reveals that a majority of the mortality occurred amongst cases that developed delirium after surgery.

Table 6 displays the nature of difficulties encountered in the management of these cases which included disruptive behaviour and absconding from care amongst others.

Table 7 shows the bed stay of the patients. This ranged from 11.7 to 60.9 days with a mean of 33.1 days. The highest length of stay occurred in the drug abuse (60), homeless psychotic (60.9) and bipolar disorder (60) groups.

**TABLE 1: AGE DISTRIBUTION**

| Age | No of patients |
|---|---|
| <20 | 2 |
| 20-40 | 22 |
| 41-60 | 21 |
| 61-80 | 14 |
| 81- 100 | 1 |

| | |
|---|---|
| Total | 60 |

**TABLE 2: DISTRIBUTION OF PSYCHIATRIC DISORDERS**

| PSYCHIATRIC DISORDER | NO OF PATIENTS | PERCENTAGE |
|---|---|---|
| DELIRIUM | 33 | 55 |
| DRUG ABUSE | 5 | 8.3 |
| ATTEMPTED SUICIDE | 7 | 11.7 |
| ANXIETY/DEPRESSION | 2 | 3.3 |
| HOMELESS PEOPLE WITH PSYCHOSIS | 10 | 16.7 |
| BIPOLAR MOOD DISORDER | 2 | 3.3 |
| SCHIZOPHRENIA | 1 | 1.7 |
| TOTAL | 60 | 100 |

**TABLE 3: DISTRIBUTION OF SURGICAL DISEASE**

| SURGICAL DIAGNOSES | NO OF PATIENTS | PERCENTAGE |
|---|---|---|

| | | |
|---|---|---|
| Gastric/ Duodenal/Colonic Carcinoma | 4 | 6.7 |
| Carcinoma of the Breast | 7 | 11.7 |
| Surgical Conditions resulting from attempted Suicide | 7 | 11.7 |
| Burns | 1 | 1.7 |
| Urological Disorders | 5 | 8.3 |
| Ruptured Appendicitis | 2 | 3.3 |
| Chronic Ulcers (sickle cell disease) | 5 | 8.3 |
| Road Traffic Accident | 19 | 31.7 |
| Intestinal Obstruction | 4 | 6.7 |
| Soft Tissue Sarcomas | 2 | 3.3 |
| Decubitus Ulcer | 1 | 1.7 |
| Typhoid Perforation | 3 | 5 |
| Total | 60 | 100 |

**TABLE 4: PSYCHIATRIC/SURGICAL CO-MORBIDITY**

| PSYCHIATRIC DISORDER | SURGICAL DISEASE | NUMBER | PERCENTAGE |
|---|---|---|---|
| Delirium | | 30 | 50 |
| | Intestinal Obstruction | 4 | 6.7 |
| | Carcinomas/Sarcomas | 14 | 23.3 |
| | Burns | 1 | 1.7 |
| | Urological conditions | 5 | 8.3 |
| | Ruptured Appendicitis | 2 | 3.3 |

| | | | | |
|---|---|---|---|---|
| | | Decubitus Ulcer | 1 | 1.7 |
| | | Typhoid Enteritis | 3 | 5 |
| | Psychosis | Road Traffic Accidents | 16 | 26.7 |
| | Drug Abuse | Chronic Ulcers | 5 | 8.3 |
| | Attempted Suicide | | 7 | 11.7 |
| | | Cut Throat | 1 | 1.7 |
| | | Lacerated Wrist | 1 | 1.7 |
| | | Oesophagitis/Oesophageal Stricture | 5 | 8.3 |
| | Anxiety/Depression | Road Traffic Accidents | 2 | 3.3 |
| | **Total** | | **60** | **100** |

**TABLE 5: MORTALITY**

| | PSYCHIATRIC DISORDER | NO OF DEATHS | PERCENTAGE |
|---|---|---|---|
| | Delirium | 22 | 91.7 |
| | Drug Abuse | -- | -- |
| | Attempted suicide | 1 | 4.1 |
| | Anxiety | 1 | 4.1 |
| | Homeless people with psychosis | -- | -- |
| | Bipolar Disorder | -- | -- |
| | Schizophrenia | -- | -- |

| | | |
|---|---|---|
| Total | 24 | 100 |

**TABLE 6: CHALLENGE OF MANAGEMENT**

| SYMPTOMS | NO OF PATIENTS | PERCENTAGE OF TOTAL |
|---|---|---|
| DISRUPTIVE BEHAVIOUR | 4 | 6.7 |
| AGGRESSIVE BEHAVIOUR | 2 | 3.3 |
| ABSCONDERS | 5 | 8.3 |
| ODDITY OF BEHAVIOUR | 1 | 1.7 |
| TOTAL | 12 | 20.0 |

**TABLE 7: AVERAGE BED STAY**

| Psychiatric Co-morbidity | Average Bed Stay (Days) |
|---|---|
| Delirium | 17 |
| Drug Abuse | 60 |
| Attempted suicide | 11.7 |
| Anxiety | 21 |
| Homeless people with psychosis | 60.9 |
| Bipolar Disorder | 60 |
| Schizophrenia | 18 |

## DISCUSSION

In this study, the prevalence of psychiatric disorders in our surgical in-patients was low (2.3%), compared to 23 to 50% in other studies[1-4]. Perhaps, many of our cases were either overlooked or unrecognised by our surgical staff, because they were non- destructive [5,8,16,20,19] or were from the beginning taken to other centres within the metropolis recognised for the care of the mentally ill patients. If the period of study were longer, perhaps, more of these cases would have been unearthed. Most of the reported incidences in other studies reviewed were from prospective studies done by psychiatrists using varied screening instruments for psychiatric disorders. Moreover, some of these studies included in-patients in the surgical, and medical wards and sometimes gynaecological wards.[19,20].

We had a preponderance of males (67%) compared to females (33%) in this study in contrast to other studies in which there were either equal numbers of both genders or commonly more females than males[1,2,8,9,19]. During the period of study, the male admissions (1,711) in our hospital were double that of the female (851). This may have accounted for the higher number of male patients in this study. Again, close to a third (33%) of the cases under review were victims of road traffic and burn accidents and a majority of them were males (60%).

Trauma from road traffic accidents (32%) topped the list of surgical conditions with co-morbid psychiatric illnesses in this study. 50% of the trauma cases were homeless people with psychotic illness rushed to our hospital either by good Samaritans, the Police, and the Road Safety Corps or by the staff of the Ministry of Women Affairs. Being the only Government Hospital in the centre of town, many of these cases were wont to be brought to our hospital. As homeless psychotics, they wander from place to place along busy roads, may have poor judgment, are commonly under- fed and under-nourished, weak and perhaps have poor eye sights, and might have become targets of careless drivers on the roads.

A prevalence rate of psychiatric illnesses in traumatically injured surgical in-patients as high as 29% was found in another study[17]. Brandt and his colleagues equally identified a greater incidence of psychiatric symptoms in injured veterans of the Persian Gulf War compared to those veterans who were not injured.[10]

In this series, 30% of the cases had abdominal and urologic procedures. Abdominal operations have been recognised to be associated with psychiatric morbidity. George Boras and co-workers analyzed the linked Hospital and Primary Care Data Base in England and found a prevalence rate of 10.1% of post-operative psychiatric morbidity in patients who had abdominal cancer surgery[14]. In bariatric surgery, the overall prevalence of current psychiatric disorder was found to be as high as 49 %[21]. M Lo, on the other hand, found a prevalence rate of 5.1% of mental disorders in adult appendicectomy patients in Florida[5].

In our centre, most of the abdominal surgical cases presented as acute emergencies in advanced stages of electrolyte derangement and often times with sepsis. Some of the procedures required long operating times under anaesthesia, because of the complexities of the procedures. These operations sometimes involved bowel or gastric resections and anastomosis or appendicectomy and drainage of peritoneal abscesses.

Some of these cases developed complications like septic shock, anastomotic leaks, and extravasations of urine into the peritoneum, abdominal sepsis, wound break down, multiple organ failure and delirium. One can confidently argue that the burden of prolonged anaesthesia and complex surgery and adverse post-operation complications, favour the development of acute psychiatric illness.

25% of our cases developed psychiatric illness after surgery for malignancies of the stomach, small bowel and colon, breast and soft tissues. Rate as high as 59.6% was found among cancer patients in General Hospital facilities in

Kenya[20]. In Uganda, cancer was also found to be the most prevalent physical illness with psychiatric co-morbidity[19].

Most of the cancer cases in this study presented at advanced stages. The breast cases already had metastases to the lungs with pleural effusion, to the bones with fractures and to the pericardium with effusion. One of the breast cases had Human Immune Deficiency Virus/Acquired Immune Deficiency and bilateral pleural effusion. The sigmoid colon carcinoma cases presented with intestinal obstruction. The prostate carcinoma case had secondaries to the left orbit, left clavicle as well as to the lumbar spine with associated proptosis, fracture of the clavicle and paraplegia respectively. The burden of cancer on the physical and well as the mental well being of these patients was undoubtedly overwhelming, and therefore the development of psychiatric illness is perhaps understandable.

In our study, 12% (7) of the cases were attempted suicide cases with one fatality (cut-throat). Five (71.4%) cases ingested corrosive (car battery acid), and the remaining two (28.6%) cases had self-inflicted injuries (wrist slashing and cut-throat). There were four males (57%) and three females (43%) in a ratio of 1.3 to 1. The mean age for all the attempted suicide cases was 28.9 years while that for the male and female cases were 24.3 and 34.3 years respectively. In a similar study by Jesus Alberdi-Sudupe and others, the incidence of suicide attempts in patients admitted to hospital was 6.9% [22]. In their study, they found more females (58.4%) than males (41.6 %) cases, a reversal of the gender incidence in our study. In Ibadan, the incidence of deliberate self-harm in a six-month study in three main hospitals was 0.16% and 76.9% of the cases were under the age of 30 years with a male to female ratio of 1.4 to 1. In the Ibadan study, 61.5% of the cases ingested chemicals

while 28.2% took psychotropic drugs [23]. In Trinidad, the incidence of deliberate self-harm in a General Hospital was 7.2%. There were more females than male, in the ratio of 2.04 to 1. The mean age of the females was 22.3(SD 5.2) and the mean age of the males was 43.1(SD 3.9) and 47%, 25%, 16% ingested tablets, herbicide and bleach respectively while 8% of cases had self-inflicted injuries .[24]. Luis Jimenez-Trevino and others in Spain observed that the incidence of attempted suicide in males and females was 2.4% and 1.1% respectively with the peak age at 35 to 44 years. 90% of the cases had the drug overdose.[25] In doing a comparative study; the incidence of attempted suicide in our series which stood at 12% was higher than the findings in Trinidad (7.2%), Spain (6.9%) and Ibadan (0.16). These differences may be attributable to geography, duration of the study and the types of cohorts in the different studies. The downturn in our economy, family pressures, unemployment, peer group influences, progressive loss of extended family support and failure of Government social services might have in no small measures contributed to the high rate of attempted suicide in our study. In our study there were more males than females like in Ibadan but unlike in Spain and Trinidad where there were more females. This difference in the gender incidence could be ascribed to the number of male admissions compared to the female admissions during the period of study. Anecdotally, in our environment, the female appears to be more resilient to psychosocial pressures. The mean age of 28.9 years is similar to the finding in Trinidad (28.2).[24] A higher mean age was found in the study done by Jesus et al which stood at 42.5±17.8. This was, however, a 10-year cross-sectional study.[22]

The modes of attempted suicide in our study were by ingestion of car battery acid (71.4%) and by self-inflicted injuries (28.6%). Methods in other studies mentioned above were by ingestion of chemicals (61.5%); drugs overdose

(28.2%), (47%), and (90%); herbicide (25%), bleach (16%) and deliberate self-inflicted injuries (8%) [23,24,26]. In our environment, we observed that battery acid was the substance of choice for this act perhaps due to its easy availability and affordability from car battery chargers, petrol stations and retail outlets whereas psychotropic drugs are not easily bought across the counter without a doctor's prescription. The act of slicing one's throat or wrist is not a common finding in our culture. Herbicides are not commonly used in the city and the knowledge of the use of bleach and other substances as vehicles to commit suicide in our environment is perhaps lacking.

Pentazocine is commonly used in the management of bone pain crisis of sickle cell anaemia and it is potentially addictive [27,28]. In this study, five (8.3%) of the patients were sickle cell anaemia patients who became dependent on pentazocine, abused its use chronically and developed ulcers at the injections sites on the upper thighs (80%), and right buttock (20%) regions. There were four males and one female with a mean age of 26.7 years. These ulcers can be described as large, poorly healing, and extending to the muscles and surrounded by woody sclerotic skin and cutaneous tissues[28]. In the study by Iheanacho and others, 90.9% of sickle cell disease patients with a mean age of 34±6 years, who abused pentazocine, were found to have scars and ulcers[25]. These ulcers are usually indolent, difficult to treat and generally unsightly. The mean age for our patients was lower than theirs probably because most of our cases come from a single centre, the Sickle cell Centre in the City. Axiomatically, the treatment of these ulcers is prolonged, frustrating and requires phased debridement and antibiotic treatment and even with these aggressive measures, they remain quite indolent.

In our study, the commonest psychiatric co-morbidity was delirium which constituted 50% of all the cases seen compared to the average incidence of fever of 40% seen in the intensive care unit in a study done by Brian Maguire et al[29]. In the study by Arott V and others, organic brain syndrome (delirium), depressive disorders and alcoholism were the most prevalent psychiatric co-morbidities in their study[4]. In another study by Clark et al, major depressive illness (34.8%) was the commonest psychiatric disorder in surgical inpatients[1]. 14% of psychiatric morbidity in elderly surgical patients was due to post-confusional state, while affective disorder constituted 5% in the study done by Millar[3].

In different general medical facilities in Kenya, 42% of these cases were found to have mild and severe depression while 41% had a bipolar mood disorder, schizophrenia, and psychosis[20]. In Uganda, depressive disorders which stood at 25.2% were the commonest psychiatric co-morbidity found in elderly patients on non-psychiatric wards while depression was the commonest disorder followed by organic disorders (delirium and dementia), adjustment and generalised anxiety disorders in elderly patients admitted to non-psychiatric wards in a general and teaching hospitals in Nigeria[8,19].

Delirium (organic brain syndrome or post-Confusional state) as the commonest psychiatric co-morbidity in surgical in-patients was also the findings in other studies [1,3,4]. In this study, 41.7% of the cases developed complications like sepsis, severe electrolyte imbalance, bone and perhaps cerebral metastases contributing to the high incidence of delirium in our study. It is important to note that in big hospitals; very ill surgical patients are managed in intensive care units rather than in the wards as it is done in low resource centres like ours.

In our study, we also observed untold nursing challenges from behavioural problems in 12(20%) of the cases. Out of this number, four (33.3%) had disruptive behaviour, two (16.7%) aggressive behaviour, one (8.3%) oddity of behaviour while five (41.7%) absconded from the hospital. In the study by Christos Christodoulou and others, a similar incidence of behavioural abnormalities of 12% was found in patients admitted into the medical and surgical wards[30]

These behavioural disturbances could be demanding, hostile, manipulating and disturbing the ordered harmony of the ward. About 38% of doctors avoid them while others have negative feelings towards them while others still may just be tolerant, indifferent, and ambivalent or show overt or covert hostility[14,31].

In our cases, some of the patients forcefully removed inserted nasogastric tubes, intravenous cannulae and wound dressings. One of the cases was in constant disagreement with co-patients, nurses and doctors and often times engagement in shouting confrontations. A few were double incontinent making nursing care difficult.

In our study, the length of bed stay of the patients ranged from 11.7 to 60.9 days with a mean of 33.1 days. The highest length of stay occurred in the drug abuse (60), homeless psychotic (60.9) and bipolar disorder (60) groups. In a study, done in medical and surgical wards, the length of bed stay of surgical patients with psychiatric co-morbidity was 19.8±33.3 compared to 8.3±13.2 of surgical patients without psychiatric illness[32]. Other studies agreed that psychiatric illness delays recovery, increase morbidity and lengthens hospital stay [19,33]

Many of our patients especially in the homeless group were abandoned in the hospital as no relations were forthcoming to discharge them. Road traffic accident victims also had a long stay because of the fractures they sustained needed time to heal. The chronicity and the indolent nature of the ulcers of

sickle cell anaemia cases who abused pentazocine injection made management difficult, frustrating, prolonged and time-consuming.

We found a high inpatient mortality rate of 40% in this study. In the study done by Thod E. Abrams and others, the unadjusted 30-day mortality rate was 3.8% in patients with psychiatric co-morbidity and 4.0% in patients without mental illness in intensive care patients of All Veteran Health Administration Hospital. In the adjusted 30-day mortality rate, however, a moderate increase in mortality was found in the patients who had psychiatric co-morbidity when compared to patients without. These workers found the highest in-patient mortality in depression, post-traumatic stress syndrome, schizophrenia and bipolar disorders [10].

The highest mortality in our study occurred in the post-operation delirium cases. Other studies identified higher mortality rates in patients with chronic psychiatric illness with surgical co-morbidity than those surgical patients without psychiatric disorder[7,11]. Our patients were very ill patients in advanced stages of sepsis, electrolyte derangement or overwhelming cancer burden, in addition to the stress of anaesthesia and surgery they underwent. From this scenario, the high fatality rate in our study is easy to comprehend when compared to the lower mortality rates in other studies[7]. It has been argued that severe mental illnesses fare poorly after surgery because of late presentation of surgical diseases in these patients, lifestyle factors and multiple chronic medical conditions [34]. This argument is not tenable in our study because most of our mortalities arose in patients who hitherto were not diagnosed mentally ill patients but developed acute organic factors after surgery. Others claim that psychiatric complications undermine physical and functional recovery and even affect survival, and cause a modest increase in the mortality for these patients[19]. High mortality has also been associated with

patients with carcinoma of the gastrointestinal tract and co-morbid psychiatric illness who had surgery[14].

## Conclusion

We acknowledge the limitations of our study; its retrospective design, and the few numbers of cases studied. Subtle psychiatric morbidity like mild depressive disorder being that they were not disruptive perhaps would have been missed. Hopefully, future research will focus on a prospective study.

This study unravelled the problems in the care of homeless psychotics, who abscond from hospital care and the sickle cell anaemia patient who abuse drugs and develop indolent ulcers that are difficult to treat.

Our study showed a high mortality in surgical patients with psychiatric morbidity especially in those with postoperative delirium.

Various types of psychiatric morbidity were seen in surgical admissions in Central Hospital, Benin City. There were more males than females in this study unlike in similar studies of this category. The highest number of these cases came from homeless psychotics who were involved in road traffic accidents. These patients are wont to stay longer in the hospital.

A greater care of road traffic accident cases is needed and early identification of mental illness in surgical patients and prompt treatment is essential. An alternative route of pain control with the non-addictive drug of sickle cell anaemia patient is imperative. The management of delirium needs a concerted effort and involves aggressive control of sepsis, electrolyte imbalance,

dehydration, hypoproteinaemia and avitaminosis. The management of these cases in intensive care unit is also imperative.

A greater cooperation between the psychiatric and surgical department should be encouraged. Enhanced knowledge and awareness of psychiatric illnesses in the surgical wards is needful.

CONSENT

NA

ETHICAL APPROVAL

Necessary ethical approval was obtained by the authors from the Edo State Hospital Management Board ethical committee.

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