DETERMINANTS OF LENGTH OF HOSPITALIZATION IN A FEDERAL PSYCHIATRIC HOSPITAL IN NIGERIA.

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ABSTRACT

Objective: The present study aims to determine the association between clinical-demographic variables and length of stay of patients admitted into Federal Psychiatric Hospital, Calabar.
Design: Retrospective review of case records.

Methods: 280 case records of patients (discharged from September 1st, 2015 to August 31st, 2016) were assembled for review, out of which twelve cases were excluded for various reasons. Clinical and demographic data collected from the remaining 268 case records were subjected to univariate and multivariate analyses to determine variables associated with prolonged length of stay.

Results: Mean length of stay was 56.2 ± 40.9 and the commonest clinical diagnosis was schizophrenia (45.9%). Although gender, age, marital status and clinical diagnoses tended to influence length of stay, gender (p =0.007) and clinical diagnosis of schizophrenia (p =0.044) were the only variables that significantly predicted prolonged length of stay.

Conclusion: We found that gender and clinical diagnoses were important determinants of length of stay. If validated in future studies, these factors may help in accurate identification of cases at risk of prolonged hospitalization and act as guide to clinicians who may need to optimize intervention strategies early enough in managing such cases.

Key words: Psychiatric hospitalization, Length of stay, Prolonged hospitalization, Psychiatric patients, Calabar

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INTRODUCTION

Psychiatric disorders affect over 450 million people world over and are among the major causes of hospitalization in different countries.[1] For some time now, length of hospitalization within psychiatric facilities has continued to generate interests among researchers from different parts of the world. Part of the reasons responsible for this is the need for proper planning, given that length of stay is perhaps a direct determinant of the number of beds to be provided.[2]Data from literature have shown that average length of stay of psychiatric patients differs among settings and countries. A range between 10 -45 days has been reported in high income countries.[3-6] In two different studies conducted in teaching hospitals in Nigeria, Adegunloye et al and Oladeji and colleague reported an average length of stay of 23 and 28.7 days respectively.[7,8] Previous studies using various methodological approaches have shown that age, gender, marital status, psychiatric diagnosis, history of hospitalization and use of electroconvulsive therapy amongst others are all associated with length of hospital stay of psychiatric patients.[5-12]

Considering that prolonged hospitalization is associated with increased treatment cost,[13] it is necessary that factors which might determine length of hospitalization are fully understood. Also, prolonged hospitalization may have a negative impact on mental health

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services by depleting the bed spaces available for inpatient treatment. Consequently, the study of length of stay is very crucial both for financial reasons and hospital planning. Currently in Nigeria, many psychiatric patients that require hospitalization are often not hospitalized due to inadequate bed spaces (Nigeria has only 0.4 psychiatric beds per 10000 population).[14]Yet, only few studies have attempted to offer insight into the factors that might influence length of stay in Nigerian psychiatric settings. Most of what is known on length of stay of psychiatric patients in Nigeria is based upon findings from studies conducted in psychiatric units of teaching hospitals. Data from specialist psychiatric facilities in Nigeria – the neuropsychiatric hospitals – are still scanty. The present study aims to take a snapshot at the clinical and demographic factors that might determine length of stay of patients in a Nigerian neuropsychiatric hospital. We hope that the present study will add data to the scanty data base on length of stay in Nigerian specialist psychiatric hospitals as well as motivate future research in this area.

METHODOLOGY

Setting: The study was conducted in Federal Psychiatric Hospital Calabar (FPHC). The hospital started initially as a mental asylum in 1903 and later became a full-fledged mental hospital in 1907. The FPHC has over 1000 staff comprising 10 consultant psychiatrists, resident doctors, psychiatric nurses, clinical psychologists, and social workers amongst other categories of staff. It receives patients from the host state, Cross River state, as well as the adjoining states and across the border from the Republic of Cameroon. The hospital has 110 bed spaces for in-patient psychiatric treatment.

Data Collection: Data for this study were collected from the case notes of patients discharged from FPHC between 1st September 2015 and 31st August 2016. Permission to examine the case notes was obtained from the Health Research Ethics Committee of the hospital. Excluded were case notes of patients who left the hospital against medical advice and those that absconded from the wards. Also excluded were case notes of patients that were referred to other hospitals. Data on clinical and socio-demographic variables were recorded using a proforma designed by the authors. The clinical variables recorded were: length of stay in the hospital before discharge, previous episode of psychiatric illness, family history of psychiatric illness, presence of comorbid physical illness and clinical diagnosis made by the attending consultant. The socio-demographic variables were categorized and recorded as follows: gender (male and female), age (<50 years and ≥50 years), marital status (living with a spouse and others) and employment status (employed and unemployed). Data were analyzed using the Statistical Package for Social Sciences version 17 (SPSS 17). Frequency statistics were used where necessary. The means of the variables of categorical data were calculated. Independent samples t-test and one way ANOVA were used to analyze the differences within groups and significance level accepted was 0.05.

RESULTS

Of all the patients admitted into the hospital wards during the period in review (n=280), 3(1.1%) left against medical advice, 7(2.5%) escaped from the wards and 2(0.7%) were referred to the University of Calabar Teaching Hospital. The case notes of these patients were excluded from the study leaving a total of 268 case notes from which data were retrieved and analyzed.

Socio-demographic variables: The majority of patients were males (57.5%) and less than 50 years of age (91.4%). Their ages ranged from 14 to 78 years with mean (±SD) of 33.9 (±10.3) years. Most of the patients (62.3%) were not earning any income prior to being hospitalized.

Clinical variables: The most common clinical diagnosis was schizophrenia (45.9%). This was followed by bipolar affective disorder (19.8%) and psychoactive substance use disorder (19.4%). Majority of the patients (78.4%) had no family history of mental illness and for about two-fifth (40.3%) of the patients, the admission was their first episode of mental illness.

Length of stay (LOS):
The mean length of stay in the hospital for all the patients was 56.2 days. Table 1 shows the length of stay in the hospital according to patients' background characteristics.

Table 1: Length of stay (LOS) on admission according to patients' socio-demographic and clinical characteristics

Variable	n	%	Mean LOS (days)	SD	Statistics
Gender					
Male	154	57.5	62.9	45.8	t = 3.364
Female	114	42.5	47.1	31.0	p = 0.001*
Age group (years)					
<50	245	91.4	57.3	41.9	t = 2.163
≥50	23	8.6	44.7	24.7	p = 0.037*
Marital status					
Living with a spouse	57	21.3	44.8	29.0	t = 2.985
Others	211	78.7	59.3	43.1	p = 0.003*
Employment status					
Employed	101	37.7	55.5	41.6	t = 0.216
Unemployed	167	62.3	56.6	40.5	p = 0.829
Clinical diagnosis					
Organic Mental Disorder	9	3.4	25.3	14.7	
Acute Psychotic Disorder	9	3.4	27.2	8.2	
Major Depressive Disorder	7	2.6	45.0	32.8	
Bipolar Affective Disorder	53	19.8	51.6	33.9	
Disorders due to psychoactive substance use	52	19.4	61.5	46.0	
Schizophrenia	123	45.9	63.3	43.4	F = 12.956
Others	15	5.6	36.9	24.5	p = 0.004*
Family history of mental illness					
Yes	58	21.6	60.3	40.13	t = 0.871
No	210	78.4	55.1	41.08	p = 0.385
Previous episode of mental illness					
Yes	160	59.7	58.6	39.7	t = 1.197
No	108	40.3	52.6	42.5	p = 0.232
Comorbid physical illness					
Yes	50	18.7	57.2	37.61	t = 0.186
No	218	81.3	60.0	41.65	p = 0.853

*= statistically significant

As shown in the table, being male (p = 0.001), age <50 years (p =0.037) and not living with a spouse (p =0.003) are all significantly associated with increased chances of prolonged length of stay.

A significant variation was also observed in the length of stay (LOS) for different diagnostic categories. The mean length of stay increases from organic mental disorder (25.3± 14.7) to the rest of clinical diagnostic categories; Welch's F = 12.956, p<0.005.Gamel-Howell post hoc analysis revealed that the increase in mean LOS from organic mental disorder to bipolar affective disorder [26.25, 95% CI (4.64 TO 47.86)] was

statistically significant (p =0.010). The increase from organic mental disorder to disorders due to psychoactive substance use [36.15, 95% CI (11.17 to 61.12)] was also statistically significant (p = 0.001); so was the increase from organic mental disorder to Schizophrenia [37.98, 95% CI(17.54 to 58.41)], p< 0.0005.

A binomial logistic regression was performed to ascertain the effect of gender, marital status, occupational status and clinical diagnoses on the likelihood of patients to have prolonged hospital stay. Table 2 shows that of the predictor variables, only gender and clinical diagnosis of schizophrenia were statistically significant. Males had 2.101 times higher odds of prolonged hospital stay than females. Schizophrenia was also associated with an increase likelihood of prolonged hospitalization.

Table 2: Predictors of prolonged hospital stay

Variable	B	S.E	Wald	df	sig	Exp (B)	95% CI	
							lower	upper
Gender (1)	.742	.275	7.268	1	.007*	2.101	1.225	3.604
Marital status (1)	.643	.357	3.253	1	.071	1.903	.946	3.829
Occupation (1)	-.006	.279	.000	1	.984	.994	.575	1.720
Clinical diagnoses (1)	.518	.275	4.063	1	.044*	1.678	1.014	2.776
Constant	-.482	232	4.335	1	.037	.617		

** denotes statistically significant; Gender is for female compared to males; Clinical diagnoses is for all other diagnostic categories compared to Schizophrenia*

DISCUSSION

This was a retrospective study that examined the case notes of inpatients discharged from a psychiatric hospital in Nigeria over a 12 month period. The aim was to determine the length of hospital stay and establish its association with patients' background characteristics.

In the case notes examined, a slight male preponderance was noted. This is in agreement with some previous reports.[15-17] Ndet al and colleagues[17] found that about two-third of the patients admitted into a psychiatric hospital in Nairobi were males.

The present study observed that most of the patients were young (<50 years of age) and were not living with their spouses. When compared to older ones, young adults are more exposed to psychosocial stressors as they strive to meet up with the demands placed on them by work, academics, family and relationship among others. The absence of a close confidant (such as a spouse) to provide support in times of need might have contributed to the higher number of admissions of patients who do not live with their spouses.

Schizophrenia was the commonest clinical diagnosis made on admission. This agrees with previous reports from outside and within Nigeria1.[17,18] Nd et al[17] observed that schizophrenia, bipolar affective disorder and substance use disorder were the most common diagnoses among their subjects. In our study, next to schizophrenia were bipolar affective disorder and psychoactive substance use disorder.

We found that the mean length of stay for all the patients was 56 days. This figure is comparable to the mean length of stay reported in some psychiatric hospitals outside Nigeria.[19,20]It however differs markedly from the figures previously reported within Nigeria which ranged from 21-30 days.[7,8,18] The differences in study settings might have contributed to this. While the previous Nigerian studies were

conducted in the psychiatric units of teaching/general hospitals, the present study was in a psychiatric hospital which is more likely than other hospitals to admit chronic cases. A report from Ethiopia (a country in sub-Saharan Africa) found the mean length of stay in a psychiatric hospital to be 63 days.[19] A study conducted in a psychiatric hospital in Japan showed that the mean length of stay was 75 days.[20]

In the present study, we observed that there is a significant association between mean length of stay and gender, age, marital status and clinical diagnoses. Male patients tended to stay longer than the females. Likewise, young patients (< 50 years) significantly stayed longer than the older patients (≥50 years). With regards to the marital status, patients who live with their spouses had a shorter length of stay when compared to others. It is obvious that presence of a spouse would provide more support for the patient and this could quicken recovery and forestall prolonged hospital stay.

Like previously reported by other researchers,[6,19] our study observed that clinical diagnosis of schizophrenia is associated with prolonged hospital stay. This is not surprising given that schizophrenia is a chronic psychiatric disorder requiring a lengthy period of treatment to resolve.

In contrast to the findings from other studies,[9,10,18] we did not find any significant association between length of stay and comorbid physical illness. This could be due to the fact that the present study was conducted in a psychiatric hospital where cases of comorbid physical illness could be under-recognized and under-diagnosed.

Following a multivariate analysis, gender and clinical diagnosis of schizophrenia were found as the most important predictors of prolonged hospital stay. Ukpong and colleague in their study[18] showed that schizophrenia was among the most important predictor of prolonged length of stay in psychiatric wards.

LIMITATIONS

This study was based on retrospective review of patients' case notes. This limited the information available for use in the study of factors influencing length of stay. Had more information been available, our findings may have been different.

Our study covered only a year period of psychiatric inpatient admission, as such, generalization of findings should be with caution.

CONCLUSION

The study highlighted some factors which influence length of stay in psychiatric hospital Calabar, Nigeria. Awareness of these factors will enhance the physicians' ability at the point of admission to predict patients whose lengths of stay are likely to be prolonged. This will help in ensuring adequate planning for patients' management.

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