Bayero Journal of Nursing and Health Care
bjnhc.nur@buk.edu.ng
Volume 2 Issue 2, November, 2020
Pages 609-618 ISSN: 2756-6501

Incidence, Determinants of Schizophrenic Relapse and Comparism with other Psychiatric Conditions Amongst Patients attending Psychiatric Unit of Jos University Teaching Hospital Jos, Nigeria

Daniel Cletus Okpe, Ajayi Dare Abraham, & Agumai Magdalene Emmanuel,
Department of Nursing Sciences, Faculty of Health Sciences and Technology,
College of Health Sciences, University of Jos Nigeria
Corresponding Author: Daniel, Cletus Okpe
Corresponding Email: onojaokpe@yahoo.com

Abstract
Background: Non-adherence to medication can lead to relapse, which is frequent during the first years of the illness and may be associated with clinical deterioration and commonly discontinuing antipsychotic drug therapy. **Aim:** The study aimed to determine the incidence of relapse, factors responsible for relapse and compare the incidence of relapse in schizophrenic with other psychiatric condition in Jos University Teaching Hospital psychiatric unit. **Methods:** This study used a retrospective design as its guide. This study targeted all psychiatric conditions admitted in the psychiatric unit between January 2014 to December 2017 in Jos University Teaching Hospital (JUTH). In which Schizophrenics patients (87) and those with other psychiatric conditions (84) were considered as the sample size for the study. Multi-stage sampling techniques was employed. Checklist and medical records were used as an instrument for data collection. Data was analysed by Statistical Package for social sciences (SPSS) version 23. and presented using Frequency distribution tables, percentages, mean and standard deviation. T-test analysis was used for hypotheses testing. **Results:** The incidence for Relapse among schizophrenic patients accounted for 50.9 % of the cases while other psychiatric conditions accounted for 49.1 %. Factors responsible for relapse among schizophrenia were; lack of follow up (16.1), refusal to take medication (15.6%), the side effect of drugs (15.6%) and cost of treatment (14.7%). The study result also revealed that there is no significant difference between the incidence of relapse among schizophrenic patients and other psychiatric conditions (169=5.416,p=.211). **Conclusion:** There is a need for establishing Community mental health centres for effective follow-up and home visits by mental health workers to ensure compliance and provide more psycho-education intervention to patients and their families.

Keywords: *Incidence, Determinants, schizophrenia, Relapse, Patients, Psychiatric Unit.*

Introduction

According to Mwaba and Molamu (1998), relapse is a worsening condition of a psychiatric patient and the major contributing factor in the relapse of psychiatric patients are non-compliance with treatment. Often, this is due to patients stopping medication on their own against the advice of a multi-disciplinary team. Thus, Haddad, Brain and Scott(2014) rightly pointed out that non-adherence to medication can lead to relapse, which can mean more visits to the emergency room, re-hospitalizations and increased need for clinician's intervention all of which lead to increased costs to healthcare systems. Relapse is frequent during the first years of the illness

and may be associated with clinical deterioration and commonly discontinuing antipsychotic drug therapy increased the risk of relapse by almost 5 times (Robinson,1999).

Schizophrenia is a mixture of positive and negative symptoms that presents for a significant portion of one month period, but with continuous sign of disturbance persisting for at least six months. Moses (2017) stated that positive symptoms reflect the distortion of normal functions, such as delusions and hallucinations. Negative symptoms include loosening of normal functions such as flattening of effect. The author further posited that schizophrenia is one of the most common of all psychiatric disorders and is prevalent in all parts of the world. It accounts for about 15% of all new admissions in psychiatric hospitals and it is equally prevalent in both males and females. The peak ages of onset are 15-20 years for males and 25-35years for females. According to the World Health Organization report (2004), research done on the global branches of disease, schizophrenia ranked fourth and as a leading cause of loss of years of healthy life at ages 15-44years.

Relapse in schizophrenia is broadly recognized as the reemergence or the worsening of psychotic symptoms. More specifically, certain criteria are used to define relapse; they include aggravation of positive or negative symptoms, hospital admission in the past 6 months, and more intensive case management and/or a change in medication (Almand, Knapp &Francois,2004). Relapse may result in hospitalization, treatment resistance, and cognitive impairment owing to progressive structural brain damage, personal distress, incarceration, and interference with rehabilitation efforts (.Piggot, Carson and Saha (2003) pointed out that relapse increases the economic burden on health care systems because of its associated morbidity and re-admissions to the hospital of relapses could have significant therapeutic and socio-economic implications. (Knapp, King, Pugner and Lapuerta(2004) stated that internationally, the factors commonly associated with relapse include: poor adherence to treatment, substance abuse, co-morbid psychiatric illness, a co-morbid medical or surgical condition, stressful life events, and the treatment setting. Consequently, Schultz, North and Shields (2007) stated that the chance of relapse in patients with schizophrenia living at home depends heavily on the emotional environment provided by the family.

Relapse can occur at any time, during treatment and recovery and is detrimental to the successful management of schizophrenia. Shives (2007) noted that with each relapse, there is a longer period to recover. One of the major reasons for relapse is non-compliance with drugs Videbec, (2010). Relapse can lead one to be a victim of violence and crime (especially when responding to hallucinations), substance abuse, poverty and homelessness, thus rendering the quality of life for such individuals ineffective. Stressful life events are often associated with the onset of psychotic relapse, usually in the 3 weeks prior to the relapse. Murray and Castle(2000) stated that life stressors may be both internal, that is thoughts and feelings and external which has to do with the death of a close relative. Siris (2000) observed that depression in schizophrenia has been associated with higher rates of relapse, poor outcome, impaired functioning, personal suffering and even suicide. Thus, evidence from studies has revealed that the factors responsible for the relapse among schizophrenia patients are multi-faceted. It is against this background that this study assessed the factors responsible for relapse among schizophrenia patients admitted in Jos University Teaching Hospital (JUTH) psychiatric unit from January 2014 to 2017 in order to improve the quality of care given to schizophrenic patients.

Relapse rates, vary from 50%-92% and are similar in developed and developing countries, despite the former having well established Mental Health Services. Relapse in schizophrenia predicts poor prognosis, brings about the deterioration in social, occupational and financial status and increases the burden

of care in the family (Chabungbam *et al.,* 2009). The risk for relapse after a schizophrenic episode remains increased throughout the patient's lifetime, thus causing cognitive decline and lowers the quality of life of the patient Muller, (2004). Relapse prevention is a primary focus in the treatment of schizophrenia. Among Nigerians, there are few published data regarding factors associated with relapse, while those available have provided various factors as major determinants of relapse among schizophrenia patient with non that have empirically assessed the factors in the present study area. Hence, the motivation for the assessment of factors responsible for relapse among schizophrenic patients in Jos University Teaching Hospital(JUTH), Jos in Plateau State.

Material and Method

Research design. This study used a retrospective design as its guide. This design is considered appropriate since the study used documented records of psychiatric patients. This conforms with the view of Hess (2004) who rightly stated that a retrospective research design uses existing data that have been recorded for reasons other than research. A retrospective case series is the study area.

The location of this study is Jos University Teaching Hospital, which was established in 1981 by the Federal Government of Nigeria for the purpose of providing tertiary health services to the populace, training facilities for medical students of the associated University of Jos and other medical personnel. Jos University Teaching Hospital (JUTH) has 31 departments, 22 wards, and 620 beds capacity. One of the department is psychiatry which promotes and provides Mental Health Services to the host community through psychiatric/clinical interventions, community services, teaching and research.

The department has two 51 bedded wards, a clinic and a community mental health centre at the comprehensive health centre (CHC) Gindiri in the Mangu Local Government Area of Plateau State is mannered by psychiatric nurses, psychologist, social workers, occupational therapists and record clerks and cleaner.

Study Population and Sampling Techniques

This study used all patients of schizophrenial (87) and other psychiatric conditions (84) admitted in the psychiatric unit of Jos University Teaching Hospital (JUTH) between January 2014 to December 2017.

Census sampling techniques was employed in which all schizophrenia patients and other psychiatric conditions were used for the period under review. Patients record were utilized to select participants who meet the DSM-IV-TR criteria for schizophrenia and ward admission registers and patients' folders were utilized to confirm that the initial and current diagnosis of the patient is schizophrenia and a similar approach was adopted for other psychiatric disorders. Data were collected in all the ward and out- patient record on the study population for the periods under review.

Research Instruments, Validity and Reliability

The study used a checklist to extract information from patients' folder or records available in order to meet the study objectives for the period under review. Face and content validity of the checklist were ensured by three jurors from the field of speciality.

Method for Data Analysis

Data were entered into a computer and analyzed using Statistical Package for Social Sciences (SPSS) software version 23. The data were summarized using frequency distribution tables and percentages and mean value and standard deviation. An independent t-test statistic was used to test the differences between factors responsible for relapses among schizophrenia and other psychiatric condition patients.

Ethical Consideration

Ethical clearance was obtained from the research ethical committee of the Jos University Teaching Hospital…….(reference number). Permission to have access to the folders and other relevant information were obtained from the officers in charge. The ethics of secrecy, confidentiality, voluntary consent were ensured such that no name of patients was mentioned.

Results

Socio-Demographic Data of Respondents.

Table 1: *Socio-Demographic Variables of Schizophrenic and other Psychiatric Patients*

Variable		Frequency (n=171)	Percentage (%=100)
Age Categories	15-20 years	2	1.2
	21-25 years	53	31.0
	26-30 years	72	42.1
	31-35 years	17	9.9
	36 years & above	27	15.8
	Total	**171**	**100.0**
Gender	Male	100	58.5
	Female	71	41.5
	Total	**171**	**100.0**
Marital Status	Single	29	17.0
	Married	53	31.0
	Separated/Divorce	24	14.0
	Widowed	65	38.0
	Total	**171**	**100.0**
Religion	Christianity	103	60.2
	Islam	68	39.8
	Total	**171**	**100.0**
Education	Formal Education	53	31.0
	No formal Education	118	69.0
	Total	**171**	**100.0**
Employment Status	Employed	18	10.5
	Unemployed	153	89.5
	Total	**171**	**100.0**

From Table 1, the results of the analysis revealed that the majority of the respondents 42.1% were within the age category of 26-30 years with 58.5 % were male. The results also showed that the majority also 38.0% were widowed, had no formal education (69.0%) and were unemployed (89.5%).

Table 2: *Results of Socio-Demographic Data of only Schizophrenic Patients*

Variable		Frequency (n=87)	Percentages (%=100)
Age Categories	15-20 years	3	3.4
	21-25 years	23	26.4
	26-30 years	35	40.2
	31-35 years	14	16.1
	36 years& above	12	13.8
	Total	**87**	100.0
Gender	Male	55	63.2
	Female	32	36.8
	Total	**87**	**100.0**
Marital Status	Single	41	47.1
	Married	11	12.6
	Separated/Divorce	10	11.5
	Widowed	25	28.7
	Total	**87**	**100.0**
Religion	Christianity	52	59.8
	Islam	35	40.2
	Total	**87**	**100.0**
Education	Formal Education	34	39.1
	No formal Education	53	60.9
	Total	**87**	**100.0**
Employment Status	Employed	13	14.9
	Unemployed	74	85.1
	Total	**87**	**100.0**

Table 2 revealed that the majority of patients were aged between 26-30 years, with 63.2% were recorded to be male, single (47.1%). It was also found that Christians (59.8%) represented the majority of patients, with the majority of patients having no formal education (60.9%) and were unemployed (85.1%).

Incidence of Relapse

Table 3: *Frequency Count of incidences of Schizophrenic and other Psychiatric Conditions*

Variables	Frequency(n=100)	Percentages (%=100)
Schizophrenia	87	50.9
Depression	30	17.5
Mania	1	0.6
Psychotic disorder	20	11.7
Bipolar affective	26	15.2
Mental and behavioral disorder	7	4.1
Total	**171**	**100.0**

Table 3 above, established that relapse among schizophrenic patients accounted for 50.9 % of the cases while other psychiatric conditions accounted for 49.1 % of relapse incidences. Depression had 17.5%, mania had 0.6%, psychotic disorder had 11.7 %, bipolar affective 15.2 % and mental and behavioural disorder had 4.1 %.

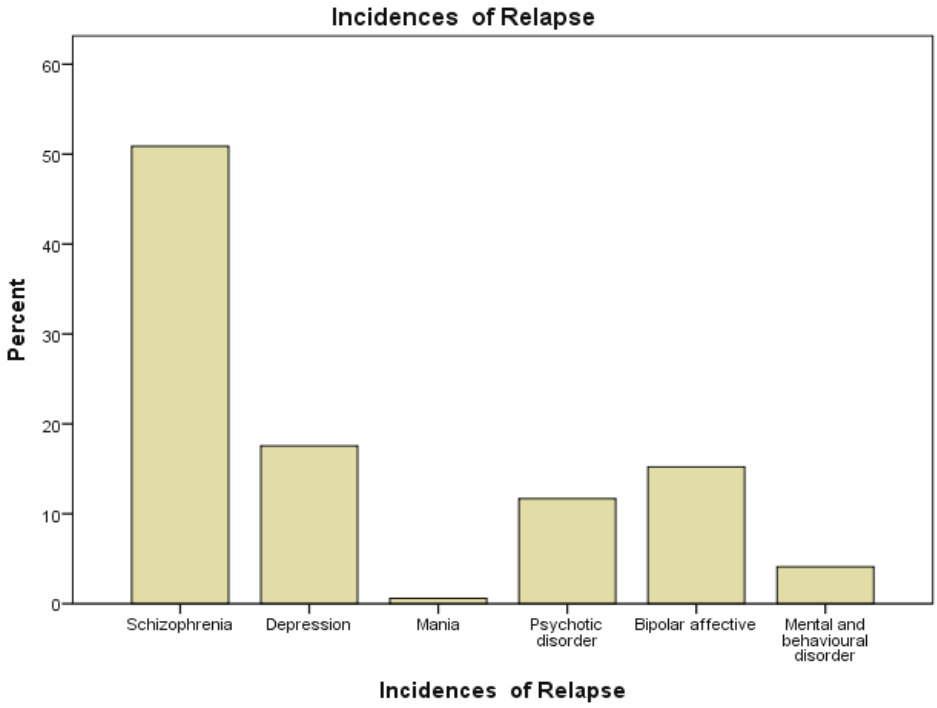

Figure 2: Bar chart showing the incidence of relapse among schizophrenic patients and those with other psychiatric conditions

Table 4: *Results of Analysis of Factors Responsible for Relapse among Schizophrenic among Patient*

Variables	Frequency	Percentages
Lack of follow-up	35	16.1
refused to take medication	34	15.6
Lack of family support	18	8.3
Substance abuse	25	11.5
Cost of treatment	32	14.7
Distance	10	4.6
Stigmatization by family members	1	0.5
Stigmatization by community members	29	13.3
Side effects of drugs	34	15.6

Table 4 shows factors responsible for relapse of schizophrenia as lack of follow up (16.1), refusal to take medication (15.6%), the side effect of drugs (15.6%) and cost of treatment (14.7%).

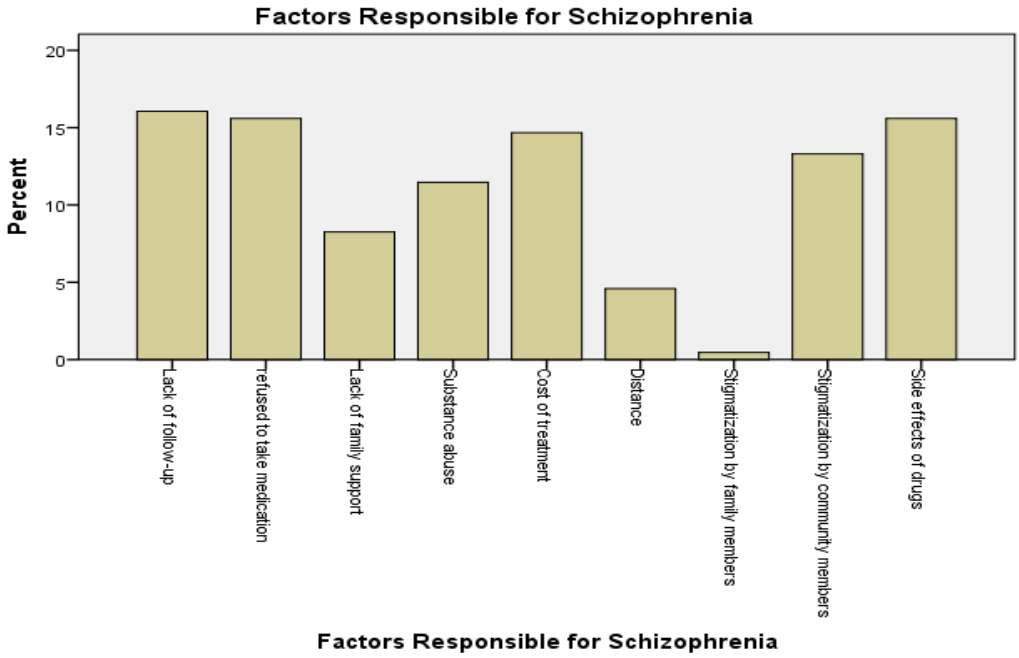

Figure 3: *Bar chart showing factors responsible for relapse in schizophrenic patients*

The Extent of Difference in Incidence of Relapse among schizophrenia Patients and other Psychiatric conditions.

Table 5: *Results of Analysis of Difference Between Incidences of Relapse Among Schizophrenic Patient And those with other Psychiatric Conditions*

Patients	N	Mean	Standard Deviation
Schizophrenia	87	21.500	6.557
Other Psychiatric Conditions	84	21.250	5.909

Table 5 revealed schizophrenia has a mean of 21.500 and a mean of 21.250 for other psychiatric conditions of patients in the hospital respectively. This means that there is the mild difference.

Test of hypotheses

H_{O1}: There is no significant difference between the incidence of relapse among schizophrenic patients and those with other psychiatric conditions.

Table 6: *Independent t-test of differences between Factors responsible for Relapse among Schizophrenic and other Psychiatric Condition Patients*

Variable	$\bar{X}$	SD	Df.	t-cal.	p	Decision
Schizophrenia	21.500	6.557				
			169	5.416	.211	Rejected
Psychiatric Conditions	21.250	5.909				

$p>0.05$.

Table 6 indicated that there is no significant difference between the incidence of relapse among schizophrenic patients and those of other psychiatric conditions (169=5.416,p = .211).

Discussion

The study findings established that majority of the respondents were within the age category of 26-30 years and male by gender. Also majority were widowed/widowers with no formal education and unemployed .This finding indicated that psychiatric morbidity is maximal in young adults who make up the most reproductive section of the population. National Bureau of Statistics (2012) stated that this could be due to the comparatively young age structure of the Nigerian population as reported. This agreed with the findings of Pichioni and Murray (2007) that schizophrenia occurs 1:4 times more in males than in females.

The results of analysis of the socio-demographic data of schizophrenia patients also revealed that the majority of the patients were single. This fact has supported the findings of Townsend (2011) and Gathaiya (2011) who asserted that the earlier the age of onset the more the relapse and prolonged hospitalization period that leads to wasted years and deterioration in cognitive functions. This causes the patient to lose chances for; educational career, social interactions and employment, from the study it was evident that the majority of the patients had no formal education and were unemployed. This conforms with the view of Townsend (2011) as cited by Gathaiya (2011) that the chronic nature of schizophrenia causes patients to lose their independence and tend to depend on others. This finding is similar to the WHO (2004) report that schizophrenic increases the burden of caring for such patients both in the family and in hospitals due to its chronic nature.

The study results also revealed that there is the prevalence of relapse among schizophrenic patients in JUTH than in other psychiatric condition patients admitted in the hospital within the study period. This result is in consonance with the report of the South African Journal of Psychiatry (2008) which asserted that incidences of relapse in schizophrenia vary from 50%-92% and are similar in both developed and developing countries.

The findings found that the factors responsible for relapse were: lack of follow up, refusal to take medication, lack of family support, substance abuse, costs of treatment, distance to health facilities, stigmatization and side effects of drugs. The findings is in line with Patel (2007) in a study who found that non-adherence rate in chronic psychiatric disorder was 40% -60%. Similarly, Kazadi (2008) in his study affirmed that poor adherence and medication side effects increase the risk of relapses among schizophrenia patients.

The finding from the study also revealed that there was no significant difference between the factors responsible for relapse among schizophrenia patients and that of other psychiatric conditions. This result agreed with the view of Moses (2017) who noted that schizophrenia is one of the most common of all psychiatric disorders and is prevalent in all parts of the world.

Conclusion

For the period under review, It was found out from analysis that there is a high incidence of relapse among schizophrenic patients than in other psychiatric disorders admitted in the Hospital. With factors responsible for relapse to include lack of follow up, patients' refusal to take medication, side effects of drugs and cost of treatment among others. However, no significant difference was observed between the factors responsible for relapse among schizophrenic and other patients with psychiatric conditions. This is an immense task to mental health workers of the institution in ensuring adequate and proper psycho-educational programs for patients and families. It also indicated that a lower level of education exposes patients to non-compliance to treatment as poverty poses more danger and hamper follow up care availability of drugs.

Recommendations

Based on the findings of this study, the following recommendations have been made.

i. Community mental health centres should be established and made functional for effective follow-up and home visits by the health workers to ensure compliance and minimize the incidence of relapse.
ii. Mental health personnel should adequately and efficiently provide psycho-education programs to both patients and their families on the need to adhere strictly to medications, recognize early signs of side effects and relapse and report promptly for action.
iii. Government should subsidize or possibly provide free treatment to patients suffering from schizophrenia and other mental disorder to reduce the burden on the patients, family, health facilities and society.

Conflict of Interest: There is no conflict of interest among the authors

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