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PREVALENCE AND DETERMINANTS OF RELAPSE AMONG PATIENTS WITH SUBSTANCE USE DISORDERS AT FEDERAL NEUROPSYCHIATRIC HOSPITAL DAWANAU, KANO

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ABSTRACT

Substance use disorders (SUD) are pattern of substance use that cause damage to physical or mental health. Relapse in SUD results in high cost of treatment and decline in functionality. The study determined the prevalence and examined the determinants of relapse among patients with SUD at Federal Neuropsychiatric Hospital Dawanau, Kano (FNPHDK)**.** A convergent parallel mixed method was used. Total enumerative sampling techniques was used to select 694. The Quantitative data was collected using a checklist and analyzed, while a focused group discussion guide was used to collect the qualitative data which was analyzed thematically. The result revealed that, the prevalence of relapse among patients with SUD from July, 2023 to December, 2024 was 72.9%. The logistic regression analysis indicated that, Sadness (AOR: 1.707, CI: 1.193 – 2.443), stressful life events (AOR: 2.243, CI: 1.394 – 3.610) lack of adherence to medication (AOR: 1.459, CI: 1.030 – 2.065), failure to follow up (AOR: 1.783, CI: 1.212 – 2.625) and, family conflict (AOR: 1.641, CI: 1.092 – 2.466) were the significant triggers of relapse (P<0.05) among patients with SUD. However, sociodemographic attributes were not significant determinants of relapse (P>0.05). Findings for both quantitative and qualitative data sets converged with lack of medication adherence as the determinant of relapse The researcher concludes that there is need to consider medication adherence during treatment, therefore recommends that, new policies/ strategies such as educating the patients and the caregivers on the importance of medication to decrease the risk of relapse.

Keywords: Determinants, Relapse, Patients, Substance use disorder

INTRODUCTION

Substance Use Disorders (SUD) are pattern of substance use that cause damage to physical or mental health (World Health Organization [WHO], 2021). The common psychoactive substances implicated includes: alcohol, cannabis, synthetic cannabinoids, opioids, sedatives, hypnotics and anxiolytics, cocaine, stimulants, volatile inhalants, dissociative drugs including ketamine and phencyclidine, other specified psychoactive substance including medications, unknown or unspecified substances (Poznyak *et al*., 2018). Relapse in mental health is a condition of getting back to illness after the recovery from illness and it results in stigma, high cost of treatment and decline in functionality both for patients and their families with predictors such as adherence to medication, functional disability and having single admission (Liyew & Chalachew, 2020). While Relapse in substance use disorder refers to a breakdown in the person's attempt to change substance use behaviors or return to pretreatment levels of drinking or continue using substances after a period of sobriety or setback in a person's attempt to change or modify any target behavior (Rahman *et al*., 2016). Studies established socioeconomic and psychological determinants of relapse in substance use disorders which include Family disputes, addicted friends and relatives (Suwanchatchai, *et al*., 2024), This phenomenon has been observed globally, with Nigeria facing similar challenges.

Substance use disorder is one of the most important health problems worldwide with a high prevalence rate. Though the rate is higher in America than in Europe (Castaldell-Maia & Bhugra, 2022). The prevalence of relapse after treatment and rehabilitation was more than 50% among Iranian addicts (Kabisa *et al*., 2021) while it was 24% in rural thai population (Suwanchatchai *et al*., 2024). It was also revealed that, being age over 40 years, single, un employed and having no legal history (Suwanchatchai, *et al*., 2024), Personal factors such as young age at initiation, sex (Nagy *et al*., 2022), personal willingness and pleasure (Mousali *et al*., 2021) have been associated also with the relapse of substance use disorders.

Furthermore, Africa also experienced related issue as it was reported in Ruwanda that approximately 58% of persons relapse between two weeks and three months following treatment for substance use (Kabisa et al., 2021). In Egypt, the relapse rate was less in in- patient group having 45.33% as compared to 56% in an outpatient setting (Nahla *et al*., 2022). While the determinants indicated that, living with one parent only, being hospitalized less, multi substance use, family conflicts and living with peers, (Kabisa *et al*., 2021). Relatedly, Gauteng (2016) reported interpersonal/social factors (boredom, lack of support), intra personal (dealing with emotions or pain), educational level less than secondary school, rural residency, being single or divorced, having craving lasting for 6 weeks from detoxification, legal history, presence of borderline, antisocial and multiple personality disorders to be the predictors of relapse in patients with SUD. In Nigeria, the prevalence rate of relapse in substance use disorder was reported in Lagos, southwest to be 51.3% and factors like age, level of education and family of substance use were shown to be associated with the relapse (Chinyere *et al*., 2020). Drug/substance use relapse was also moderately prevalent among clients in NDLEA rehabilitation centers in North Central Nigeria (Sanni et al., 2021). An unpublished data from Federal Neuropsychiatric Hospital Dawanau Kano (FNPHDK) 2024, shown that there has been an increase in number of patients readmitted with mental disorders, in which more than 1/3 have a diagnosis of substance use disorders.

Relapsed patients usually have social shot falls, which may include difficulty in social connection or playing social parts (husband/wife/representative. Numerous of patients don't wed or have constrained social contact (Crystina, 2024). Family function impacts relapse tendency in SUD mediated through self-esteem and resilience (Xia *et al*., 2022). Substance Use Disorders and its relapse do not only affect addict but also the quality of life of their families (Barati *et al*., 2021).

It was observed that several cases of relapse among patients with SUD are reported at regular intervals at FNPH Dawanau, however, there are no studies conducted to empirically determine the frequency as well as the determinants/ factors associated with relapse among the patients seen at the facility which leave an unfilled vacuum not only in the current body of literature but in practice as such information will guide management and prevention efforts.

MATERIALS AND METHODS

Research Design

Convergent parallel mixed method was used for the study. The approach consists of Descriptive and qualitative exploration research designs.

Participant Selection and Setting

694 cases were selected using total enumerative sampling, in which the admission register from each ward and the follow up register from the outpatient department (OPD) were used to preselect the patients with substance use disorders seen in the facility between July, 2023 to December, 2024 and then obtained the file numbers.

Purposive Sampling Technique was Employed to Obtain the Sample for the Qualitative Data Collection

The study was conducted at Federal Neuro-Psychiatric Hospital, Dawanau Kano. The hospital is located within Kano North Senatorial Zone, in Dawakin tofa local Govenment Area with latitude 12° 5' 1.738" N, 8° 26 and a Facility code of 19/10/1/3/1/0001 among the Nigerian Health institutions, Hospitals and clinics. (FNPHD Registry, 2024).

Instrument for Data Collection

The instruments used for data collection include a check list used to collect data from the records for the prevalence, determinants of relapse of substance use disorders at Federal Neuro-Psychiatric Hospital Dawanau, while the focused group discussion (FGD) guide was used to collect qualitative data.

Validity and Reliability of Instrument

The Check list prepared by the researcher after review of relevant literatures and was presented to the supervisor for face & content validity and also a team of three (3) experts in psychiatry/mental health, mental health nursing and clinical psychology fields each vetted the check list. The validity was also ensured through the content validity measurement of all the items in the instrument. The content validity Index (CVI) of 1 was obtained.

The reliability of the checklist was ensured through a test-retest reliability measurement. Therefore, Cronbach's alpha of 0.73 was obtained in this study, which was satisfactory based on the adopted Cronbach's alpha of greater than 0.7.

Qualitative Rigor

Qualitative rigor was ensured by checking the accuracy of findings. Member checking of emanating themes and major results was done with some of the study participants. Debrief of the qualitative research findings was conducted by three members of the research team. The focused group discussion guide was translated from English to Hausa language and then reverse translated to ensure consistency in its constructs.

Data Collection

Ethical approval was sought from the ethical approval committee of the Federal Neuropsychiatric Hospital, Kano. After due ethical clearance, the Admission register was used to obtain the file numbers of patients admitted with a case of substance use disorders, while the Out patients register will be used to select the out patients' cases. The Pre-selected files with substance use disorders were obtained from the medical record department, then the data check list was used to obtain the information about the prevalence, the determinants of relapse.,

The caregivers accompanying the out patients were also recruited conveniently during the follow up visit, while the caregivers of the patients on admission were recruited when they came for the compulsory weekly visit to participate in the ward round activities. An informed consent was also sought from the caregivers before participating in the focused group discussion. The FGD guide was used to obtain the data from the care givers until saturation of information was achieved. The focused group discussion involved 38 participants conducted in 7 focused group discussions consisting of (4, 3, 6, 4, 8, 5, 8 different members' groups)

The recruitment for the present study was carried out for 1 month. Data collection was performed by the researcher and three trained data collectors with background in psychiatric nursing.

Data Analysis

Quantitative data was analyzed using statistical package for social sciences (SPSS) version 22.0. Both descriptive and inferential statistics were performed to manage the data. Multiple logistic regression was used in determining the risk factors/predictors of relapse. Non-parametric (i.e. Chi-square) test was used as an avenue to reject or fail to reject the null hypotheses through the p value generated. The confidence interval was set at 95% and alpha of 0.05.

Qualitative data on the challenges of care givers of patients with substance use disorder relapse was analyzed using thematic analysis.

Ethics Approval

Ethical approval for the study was received from the Federal Neuropsychiatric Hospital Dawanau Research Ethics Committee (REC) during its 7th meeting held on Thursday, 20th February 2025. (FNPHD/ADM/S/3/A/1)

RESULTS AND DISCUSSION

Table 1: Sociodemographic Characteristics of the Patients seen from July, 2023 to December, 2024 (N=694)

Sociodemographic Characteristic	Relapsed Frequency and percentage (n=506)	Non-relapsed Frequency and percentage (n=188)	Total (N=694)	Mean ± SD
Gender				
Male	484 (95.7)	177 (94.1)	661 (95.2)	
Female	22 (4.3)	11 (5.9)	33 (4.8)	
Age (Years)				
≤ 20 years	47 (9.3)	11 (5.9)	58 (8.4)	
21 – 30 years	374 (73.9)	136 (72.3)	510 (73.5)	
31 – 40 years	67 (13.2)	26 (13.8)	93 (13.4)	26.03 ± 6.24
41 – 50 years	13 (2.6)	14 (7.4)	27 (3.9)	
≥51 years	5 (1.0)	1 (0.5)	6 (0.9)	
Mean ± SD	25.79 ± 6.074	26.68 ± 6.667		
Marital Status				
Single	415 (82.0)	144 (76.6)	559 (80.5)	
Married	91 (18.0)	44 (23.4)	135 (19.5)	
Level of education				
No formal education	118 (23.3)	39 (20.7)	157 (22.6)	
Primary	44 (8.7)	20 (10.6)	64 (9.2)	
Secondary	129 (25.5)	42 (22.3)	171 (24.6)	
Tertiary	215 (42.5)	87 (46.3)	302 (43.5)	
Religion				
Muslims	465 (91.9)	177 (94.1)	642 (92.5)	
Christians	39 (7.7)	10 (5.3)	49 (7.1)	
Others	2 (0.4)	1 (0.5)	3 (0.4)	
Living Arrangement				
Alone	189 (37.4)	61 (32.4)	250 (36.0)	
Family	317 (62.6)	127 (67.6)	444 (64.0)	
Occupational Status				
Unemployed	324 (64.0)	115 (61.2)	439 (63.3)	
Employed (Formal)	42 (8.3)	24 (12.8)	66 (9.5)	
Students	54 (10.7)	21 (11.2)	75 (10.8)	
Business (Informal)	86 (17.0)	28 (14.9)	114 (16.4)	

SD = standard deviation

Table 2: Prevalence of Relapse among Patients with Substance Use Disorders (N = 694)

Month/Year	Relapsed status of the Respondents	
	Relapsed	**Non-relapsed**
July, 2023	35 (6.9%)	15 (8.0%)
August, 2023	35 (6.9%)	9 (4.8%)
September, 2023	31 (6.1%)	11 (5.9%)
October, 2023	24 (4.7%)	7 (3.7%)
November, 2023	36 (7.1%)	13 (6.9%)
December, 2023	35 (6.9%)	12 (6.4%)
January, 2024	40 (7.9%)	18 (9.6%)
February, 2024	25 (4.9%)	7 (3.7%)
March, 2024	21 (4.2%)	8 (4.3%)
April, 2024	26 (5.1%)	6 (3.2%)
May, 2024	24 (4.7%)	11 (5.9%)
June, 2024	19 (3.8%)	14 (7.4%)
July, 2024	24 (4.7%)	6 (3.2%)
August, 2024	28 (5.5%)	6 (3.2%)
September, 2024	28 (5.5%)	12 (6.4%)
October, 2024	27 (5.3%)	16 (8.5%)
November, 2024	32 (6.3%)	10 (5.3%)
December, 2024	16 (3.2%)	7 (3.7%)
Total	**506**	**188**
Prevalence/ Percentage of total	**72.9%**	**27.1%**

Table 3: Documented Triggers of Relapse among Patients with Substance Use Disorders (n = 506)

Factors	Multivariate analysis			
	AOR / Exp (B)	Wald	95% CI for Exp (B)	P – value
Psychological Triggers				
Sadness	1.707	8.546	1.193 – 2.443	0.003*
Disappointment	1.224	1.061	0.833 – 1.800	0.303
Lack of effective coping skills	0.818	0.964	0.547 – 1.222	0.326
Feeling less committed	0.587	1.431	0.245 – 1.406	0.232
Stigma	1.137	0.299	0.718 1.798	0.584
Emotional problems	0.999	0.000	0.699 – 1.428	0.995
Stressful life events	2.243	11.076	1.394 – 3.610	0.001*
Individual / Physical Triggers				
Lack of Adherence to medication	1.459	4.527	1.030 – 2.065	0.033*
Failure to follow up	1.783	8.613	1.212 – 2.625	0.003*
Interpersonal/ Social Triggers				
Use of drugs by close relatives	1.557	1.467	0.760 – 3.189	0.226
Peer influence	1.397	3.625	0.990 – 1.971	0.057*
Environmental Triggers				
Having easy access to the substance	1.390	2.348	0.912 – 2.118	0.125
Family Conflict	1.641	5.672	1.092 – 2.466	0.017*

AOR = Adjusted Odd Ratio 95% CI = 95% Confidence Intervals * = Indicate the significant P-values

Table 4: Thematic Analysis Exploring the Caregivers' Experiences on Reasons/ Factors Associated with Relapse of Patients with Substance use Disorders

Theme	Subtheme	Excerpts of the responses
Reasons / factors associated with relapse	Lack of adherence to medication	"My relative is always hiding the medication somewhere in his mouth and later through it" (P027)
		" Whenever he was admitted, you will see him very okay, but refuses to take his therapeutic regimen when given trial home visit, that is why he always relapse " (P020)
	Patients' lack of interest to take the medications	"Hmm, the patient always refuse medication from us, and we couldn't control him. He usually says, nobody will prevent him from going back to substance use, we should stop wasting our time" (P005)
		" My relative always makes promise when treated, but by the time he is discharge, he use to relapse on that very day and you can see I cannot prevent him from going outside, he is stronger than me" (P0025)
	Peer group influence	"On my own part, I believed it was the influence of peer group. He listens to them more than me as his father. I did everything for him but he shows no respect"(P008)
	Unemployment	"Regarding my relative; he relapsed because he is unemployed, he has nothing to keep him busy, he graduated 5 years back" (P030)
	Easy access to the substances	"My major concern and challenge in the care is the patient's husband. She is my sister; she was influenced by her boyfriend during her first marriage which led to her divorce. Unfortunately, she is married to him now, so she always relapses because he kept on supplying to her, he didn't care" (P012)

Discussion

Prevalence of Relapse among Patients with SUD

In this study, the overall prevalence rate of relapse among patients with SUD for the period of 18 months was 72.9%. This finding was slightly related with that of Kabisa et al. (2021) and Chinyere et al. (2020) where high prevalence rate of 59.9% and 51.3% were reported respectively. The finding also expressed much higher relapse rate as compared to Umoh et al. (2021) that reported a prevalence rate of relapse among patients with substance use disorders as 23%. Differences in the relapse rate was probably due to the differences in the geographical location of the study setting with the other research settings.

Determinants of Relapse among Patients with SUD

The quantitative findings from this study highlighted the psychological triggers; sadness and passing through stressful life events after treatment to significantly increased the risk of relapse. This could be explained by the fact that, sadness, disappointment and stress were part of internal triggers of substance use. This result was in agreement with that of Ize et al. (2016) who found out that negative emotional state experience, dealing with emotions and stressful life events were among the factors that predisposed both male and female relapse.

Also, the current study shows that, lack of medication adherence and failure to follow up after treatment were significant individual/physical triggers associated with increased risk of relapse and this concur with the study of Tabea et al. (2017) which stated that poor medication adherence is associated with continued cannabis use in patients with first episode psychosis. Failure of follow up after treatment could be a trigger for relapse because without follow up, the patients may not get access to some of the treatment (drugs) and other therapeutic plans, hence the relapse. Findings of this study also agreed with those of Suwanchatchai et al. (2024), Mousali et al. (2021) and Kabisa et al. (2021) who reported that addicted friends/peer influence, addicted close relatives were important predictors of substance use relapse. This could be interpreted by the fact

that, close friends and addicted relatives may assist the individual in getting the abused drugs because of their close and intimate relationship.

The study also showed that, family conflict was a significant environmental trigger which increased relapsed risk. The result is in line with some of the previous findings which highlighted that family disputes resulted in a major significant increase in substance use relapse (Suwanchatchai et al., 2024) and those engaged in family conflicts were more likely to relapse in to substance use (Kabisa et al., 2021; Mousali et al., 2021). This could be highlighted and explained by the fact that family conflict may result in contradiction between patients' caregivers and inadequate monitoring and follow up care, thereby contributing to the relapse of the patients.

The finding of the study also reported that, the sociodemographic factors; age range 41 – 50 years, primary educational level attainment and being occupied as student were not significant determinants of relapse. This is not in line with some findings of Suwanchatchai et al. (2024) which stated that being over 40 years was associated with relapse and by Chinyere et al. (2020) which reported that there was a significant association between age, level of education and substance use relapse

In this study, the mean age of the cases was 25.79 years and also the age sociodemographic attribute of the relapse cases seen between July, 2023 to December, 2024 was a significant determinant of relapse. This result was nearly in support of the study findings from Ilze et al. (2016) which reported that, the mean age of the respondents as 26 years and also in line with Chinyere et al. (2020) result that there was significant association between age and relapse of SUD. This could be related with the fact that, adolescence age was associated with so many risky behaviors and can also be easily influenced by peers and addicted relative, hence the frequent relapse risk.

However, the qualitative data provided more nuanced insights. The caregivers often mentioned lack of adherence to medication as a reason for relapse, They also described the patients lack of interest to take the medication as a factor which is attributed to the failure of the caregivers to control the patients (e.g. "Hmm, the patient always refuse medication from us, and we couldn't control him. He usually says, nobody will prevent him from going back to substance use, we should stop wasting our time" (P005). My relative always makes promise when treated, but by the time he is discharged, he use to relapse on that very day and you can see I cannot prevent him from going outside, he is stronger than me" (P0025). Unemployment and easy access to drugs were also added to the reasons/determinants responsible for the patients relapse in substance use disorder. This could be related to the fact that unemployment, antisocial activities and availability of the substance increase the chance of using it.

Integration of Quantitative and Qualitative Findings from the Determinants of Relapse

Findings from both the quantitative and qualitative data sets converge with lack of medication adherence as a significant determinant in both data sets. It has a universal impact across the methods. An important insight for the qualitative findings was the emergence of new themes which were not covered in the quantitative data sets. These themes are patients' lack of interest to take the medication, peer group influence and easy access to the substances. This also clearly shows the significance of mixed method research in addressing the research problem. The point of divergence between the quantitative and qualitative data sets in that the quantitative data provided generalized pattern but lacked depth explanation, whereas the qualitative data revealed when the lack of adherence is more pronounced (e.g when given trial home visit) and some processes/ means used by the patient (e.g hiding it in his mouth and throwing it later) to avoid the treatment.

Strength

the mixed methods approach provided a wide coverage of the findings ensuring that the conclusions drawn involved both the patients and the caregivers.

Limitation

The study was limited to cover records/patients with a case relapse in substance use disorders seen at Federal Neuropsychiatric Hospital Dawanau, Kano state from July 2023 to December, 2024. The period of the records used were limited to 18 months, because most of the information needed to answer the research questions were not available in the records of patients seen before the take up of the setting as a Federal Institution in May, 2023.

CONCLUSION

The study concludes the prevalence of relapse after treatment of Substance used disorder at FNPHD Kano was approximately 73% and the risk factors/determinants identified which included Psychological triggers individual/physical triggers and environmental trigger (family conflict). However, the sociodemographic factors 41 – 50years, primary educational level attainment, being employed and being student were not significant determinants of relapse

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