EAHRC
EAST AFRICAN HEALTH RESEARCH COMMISSION
Research for Health and Prosperity

ORIGINAL ARTICLE

Prevalence and Factors Associated With Relapse in Individuals With Psychotic Disorders Attending Psychiatric Outpatient Clinic at Muhimbili National Hospital, Tanzania

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ABSTRACT

Background: Relapse is a challenging characteristic of Psychotic Disorders for any clinician. It potentiates a decline in functioning and hinders recovery. Many factors, such as the early onset of psychosis, lack of social support, substance use, and poor adherence to medications, have been identified as enhancing relapse. This study aimed to determine the prevalence and biopsychosocial factors associated with relapse among individuals with Psychotic Disorders attending the Psychiatric Outpatient Clinic at Muhimbili National Hospital (MNH), Dar Es Salaam, Tanzania.

Methods: This is a hospital-based cross-sectional analytical study. A consecutive sampling technique was used to enroll 314 individuals with diagnoses of Psychotic Disorders at the Psychiatric Outpatient Clinic of MNH. The data was collected from October to November 2024 using a semi-structured questionnaire. Life Events Survey Modified Version (LES-MV) captured the participants' stressful life events. The OSLO Social Support Scale-3 (OSSS-3) assessed the perceived social support. Relapse was captured based on the rehospitalization criterion. Data analysis was conducted using STATA version 18, including bivariate and multivariable regression analyses. A P-value<5% was statistically significant.

Results: A total of 282 participants' questionnaires were analyzed. Their ages (in years) ranged from 18 to 86 (Mean: 39.4±13.8). One hundred thirty-eight (48.9%) had a psychosis onset before 25 years. One hundred thirty-four (47.5%) had a history of substance use. Only forty-six (16.3%) had strong social support. The proportion with at least one relapse was 74.7%. Relapse was associated with early onset psychosis (Late onset: AOR=0.28; 95%CI: 0.06-0.98; P<.05), poor social support (strong social support: AOR=0.07; 95%CI: 0.03-0.17;P<.01), and substance use (AOR=2.80; 95%CI: 2.21-6.47; P<.05).

Conclusion: The findings of this study revealed a high prevalence of relapse among persons diagnosed with Psychotic Disorders, highlighting the need for enhancement of ability to use the monitoring tools for psychosis, and advocating for social support and substance use prevention among individuals with Psychotic Disorders.

BACKGROUND

Psychotic Disorders, which are usually accompanied by patients' insight impairment or absence, occupy a unique position among mental disorders. They contribute to unfortunate health outcomes, limited life expectancy, premature deaths, violations of human rights, global economic losses, and development stagnation of societies.[1] The most challenging aspect of Psychotic Disorders for mental healthcare providers is generally the relapse. It causes frequent hospitalizations and progressive functional impairment of the individual, and thus hampers the recovery process.[2] Moreover, relapse has a strong relationship with mental health stigma, source of discrimination, social isolation, loss of employment, and even homelessness.[3]

Globally, relapse rates in individuals diagnosed with schizophrenia vary from 41% to 92%.[4] The average relapse rate of psychosis reaches 67% in only one year following the onset,[5] and up to 80% or above in five years.[6,7] Higher rates of relapse are reported in the developing countries of Africa, such as Ethiopia, 24.6% to 87.69%,[3,8] Nigeria, 54.7% to 73.3%;[13,36] South Africa, 61.8%,[20] Egypt, 50.91%;[23] and Tanzania, 68.55.[21] The socio-economic impact of relapse is monumental; it hurts the population's income due to impaired functioning of affected individuals and imposes on relatives restrictions in their daily activities, thus per capita income collapse.[3] Moreover, frequent relapses lead to excessive utilization of institutional services and psychiatric service costs; the United States of America estimated an excess economic burden of relapsing Schizophrenia at 343.2 billion US dollars in 2019,[9] and in the European countries, the costs of relapse almost double those of non-relapsing schizophrenia every three years.[10]

Among factors associated with relapse of individuals

diagnosed with Psychotic Disorders are biological constitution, psychological stressors, and environmental or social adverse factors.[12,13,15] The biological factors include age, sex, duration or chronicity of the illness, age at the onset of psychosis, extrapyramidal side-effects, poor adherence to medications, co-morbid physical or mental disorders, delayed treatment initiation, use of substances such as cannabis, alcohol and cigarette. The psychosocial factors include employment, poor premorbid adaptation, stressful experiences in life, living arrangement, place of residence, level of education, history of imprisonment. Some of the factors contributing to relapse are potentially modifiable and target of strategies for relapse prevention.

The relapse prevention strategies require adequate and interdisciplinary measures targeting the underlying modifiable risk factors that constitute the source of stress to the individual.[4] The use of long-acting injectable antipsychotics with psychosocial therapies such as family interventions and psychoeducation, relapse prevention programs, cognitive behavioral therapy, integrated interventions, information-technology relapse prevention programs, or patient psychoeducation has been shown to reduce relapse.[16-18] Nevertheless, there is scarcity of published data in east African region, especially in Tanzania, on the prevalence of relapse and associated factors among people diagnosed with Psychotic Disorders. Therefore, the aim of this study is to determine the prevalence and the biopsychosocial factors associated with relapse among individuals diagnosed with Psychotic Disorders attending Psychiatric Outpatient Clinics at MNH, Dar Es Salaam, Tanzania.

METHODS

Study Design and Study Area

A hospital-based cross-sectional analytical study was carried out in the Department of Psychiatry and Mental Health of Muhimbili National Hospital (MNH), Dar-Es-Salaam, Tanzania. MNH is the National Referral Hospital in Tanzania and a teaching hospital for the Muhimbili University of Health and Allied Sciences (MUHAS). The Department of Psychiatry

and Mental Health is staffed with psychiatrists, clinical psychologists, occupational therapists, nurses, and social workers. The Department offers outpatient and inpatient mental healthcare services. The adult outpatient clinics operate on weekdays from Monday to Friday with an average attendance of 50-60 patients/clinic day. Of those, about 10-20 are diagnosed with any of the psychotic disorders as per ICD-10 diagnostic criteria. The Psychiatry Outpatient Clinic was purposively selected for the conduction of this study because MNH is one of the few centers in Tanzania with a large volume of individuals diagnosed with mental disorders with specialized staff for diagnosis of Psychotic Disorders, and also due to a previous qualitative study which pointed to relapse schizophrenia as a problem in the same area.[1]

The study included individuals who came during data collection period, aged 18 years or above with a diagnosis of Psychotic Disorders (i.e. schizophrenia, schizophrenic for disorders, delusional disorders, schizoaffective disorder, schizotypal disorder, mood with psychotic features, substance (cannabis, alcohol, etc.)-induced Psychotic Disorders, Psychotic Disorders due to medical conditions, such as epilepsy, unspecified nonorgani psychosis, and other nonorganic psychotic disorders), and at least one previous hospitalization.

The individuals with less than 6 months on antipsychotic medications after hospital discharge from first psychiatric hospitalization, and those who refused or were unable to voluntarily consent due to acute symptoms or known cognitive impairment were excluded.

Approval for the conduction of this study was obtained from the Muhimbili University of Health and Allied Sciences (MUHAS-REC-07-2024-2377), and permission to interview patients was obtained from MNH and the Department of Psychiatry and Mental Health.

The participants provided written informed consent after clarifying the information about the study. The participants' next-of-kin were also asked to consent, but without signing a consent. The examination of mental stability was performed through general observation based on items from the Brief Psychiatric Rating Scale (BPRS), mainly gross disorganization in behavior, thinking, or speech. The main researcher and two assistants executed the assessment. The information of the participants was kept confidential.

Sample Size Determination and Sampling Procedures

The estimated sample size was 314 participants using Cochran's formula for one single-proportion population and referencing a previous study conducted in Ethiopia which reported prevalence of relapse among individuals with Psychotic Disorders of 24.6%.[9] We made the adjustment for non-response rate of 10% to reach a total sample size of 314. A consecutive sampling technique was applied to recruit the participants for this study; every individual with diagnosis of Psychotic Disorder in their medical records, made by a psychiatrist based on ICD-10 diagnostic criteria, were systematically included in the study.

This non-probability sampling technique was used due to the nature of study setting (i.e. clinical setting) and heterogeneity of the patients in temporal and spatial follow-up appointments.

Data Collection Instruments and Procedures

Data was collected by the main investigator and two trained and experienced assistants, holders of certificates in medical records and Bachelor of Science in nursing management, respectively. The training lasted 5 days and covered issues related to mental stability assessment and administration of the questionnaire in Kobo box application software.

Data collection was from October to November 2024 using face-to-face interviews. Measurement tools for variables of interest are delineated below.

Socio-demographic Information

A semi-structured questionnaire, developed by the researcher based on factors associated with Relapse psychosis identified in reviewed literature, was employed to gather information on sex, age, marital status, education level, employment status, residence, living arrangement, history of imprisonment, chronic physical co-morbidities, extrapyramidal side effects (EPSE), duration of psychosis

before initiation of psychiatric treatment, age at onset of psychosis, use of substances during psychosis, and adherence to antipsychotic medications.

The stressful life events in the past twelve months were identified using the Life Events Survey modified version (LES-MV).[42] The adapted checklist contained 12 selected potential sources of life stress.[11] Those stressful events included problems in a relationship with a partner or a close friend, a family member's death, severe disease or injury of a close friend or a member of the family, stressors related to work, a new diagnosis of disease or injury, admission, traffic accident, assault or attack, robbery of valuable possessions, conflict with law, seclusion, or financial constraints.[11] Each item was dichotomized into "Yes and No" options. Finally, two categories were generated: those in the top textile (exposed to 3 or more stressful events) and those who are not (Exposed to less than 3 stressful life events).[12] Similar checklists have been used in African contexts such as Cameroon,[12] Malawi and Botswana.[11,13]

Perceived Social Support

Perceived social support was assessed using the OSLO social support scale -3 (OSSS-3). It is a standardized tool with 3 items. The maximum score is 14; from 3 to 8 is poor, 9 to 11 is moderate, and 12 to 14 is strong perceived social support. It has been validated for use in different populations and contexts, including people with mental disorders from the African continent.[14] In Nigerian clinical students, it showed good discriminant validity, significant concurrent validity, but low internal consistency (α=0.50), which could be due to its brevity.[14,15]

Relapse

Relapse is the coming back of an illness or its features similar to the previous ones after a period of remission.[4] In this study, relapse is operationally defined as an episode of psychosis that necessitates re-hospitalization,[16,17] with inter-episodic period of at least six months.[2] It was assessed using a structured questionnaire developed by the main researcher

based on re-rehospitalization in a psychiatric ward due to re-apparition or aggravation of psychotic symptoms.[5,6,41]

Data Processing and Analyses

Data were extracted from KoBobox software into computer data set and analyzed using STATA version 18. Categorical variables were summarized using frequencies and percentages, while continuous variables were described using mean and standard deviation.

The results are displayed in tables and figures. The backward stepwise selection technique was utilized in the multivariable regression analysis. The model was tested using the receiver operating characteristic (ROC) curve and showed a satisfactory performance with an area under the ROC curve of 0.81. Odds ratios, along with their corresponding 95% confidence intervals, were calculated to assess the associations between the independent and dependent variable (Relapse). The bias was controlled using Karlson-Holm-Breen method.

RESULTS

Sociodemographic Characteristics of the Study Participants

A total of 314 individuals diagnosed with Psychotic Disorders were approached for participation in this study. However, 304 participants finished the interview session after excluding 10 individuals (6 refused to consent and 4 dropped out during the interview session).

During checking for completeness, 22 questionnaires were excluded due to missing of important data. Finally, 282 (89.8% response rate) questionnaires fitted for data analysis.

The mean age of the participants was 39.4 (SD=13.8). Around half of the participants (50.4%) were males. Majority (91.8%) of participants lived in urban areas, and 87.3% lived with their family members (Table 1).

TABLE 1: Socio-demographic Characteristics of the Participants (N=282)

	Frequency	Percentages
Age (in years) (Range: 18-86, Mean=39.4±13.8)		
18-24	57	20.2
25-34	61	21.6
35-44	82	29.1
≥45	82	29.1
Sex		
Male	142	50.4
Female	140	49.6
Marital status		
Single	154	54.6
Married/cohabiting	75	26.6
Divorced/widowed	53	18.8
Residence		
Urban	259	91.8
Peri-urban	23	8.2
Living arrangement		
Alone	15	5.3
With my family	246	87.3
*With others	21	7.4
Level of education		
Informal/primary	89	31.6
Secondary	155	55
College/university	38	13.4
Employment status		
Self-employed	101	35.8
Employed	29	10.3
Unemployed/retired	152	53.9

*= refers to friends or good Samaritans, different from their family relative

Clinical Characteristics of the Study Participants

Nearly half of the participants (48.9%) had onset of psychosis before 25 years of age. Slightly above half of the participants (52.1%) had never had a psychotherapy session. More than one third (47.5%) reported using psychoactive substances during psychosis. On OSSS-3, only 16.3% of participants had strong social support (Table 2).

TABLE 2: Distribution of Clinical Characteristics, Stressful Life Events, and Social Support of Psychotic Disorders Patients (N=282)

Items	Frequency	Percentages
[a]Co-morbid chronic illnesses		
No	220	78
Yes	62	22
Age of psychosis onset (in years)		
<25	138	48.9
25-35	82	29.1
>35	62	22
[b]Duration before treatment (in years)		
<1	170	60.3
≥1	112	39.7
Current use of antipsychotics		
No	6	2.1
Yes	276	97.9
[c]Ever received psychotherapy		
No	147	52.1
Yes	135	47.9
[d]EPSE experiences		
No	90	32
Yes	191	68
[e]Adherence to medications		
No	121	42.9
Yes	161	57.1
History of imprisonment		
No	266	94.3
Yes	16	5.7
[f]History of substance use		
No	148	52.5
Yes	134	47.5
Stressful life events in the last 12 months		
<3	240	85.1
3 and above	42	14.9
Perceived social support		
Poor	53	18.8
Moderate	183	64.9
Strong	46	16.3

Key: [a]=Physical chronic diseases found were hypertension, diabetes, HIV, heart disease, and peptic ulcer. [b]=Time spent from onset of psychosis to initiation of antipsychotic medications. [c]=Ever had a psychological intervention with a psychologist, such as cognitive behavioral therapy, motivational interviewing, or psycho-education. [d]=Extrapyramidal side effects of antipsychotic medications; participants were asked about the experience of hand tremors, neck stiffness, restlessness, hypersalivation, and use of anticholinergic medications during the course of illness. [e]=For assessment of adherence to medications, the participants were asked if they sometimes change or miss oral doses and/or delay for more than 1 week the injections of antipsychotic medications. [f]=Addictive substances frequently reported were cannabis, cigarettes and alcohol.

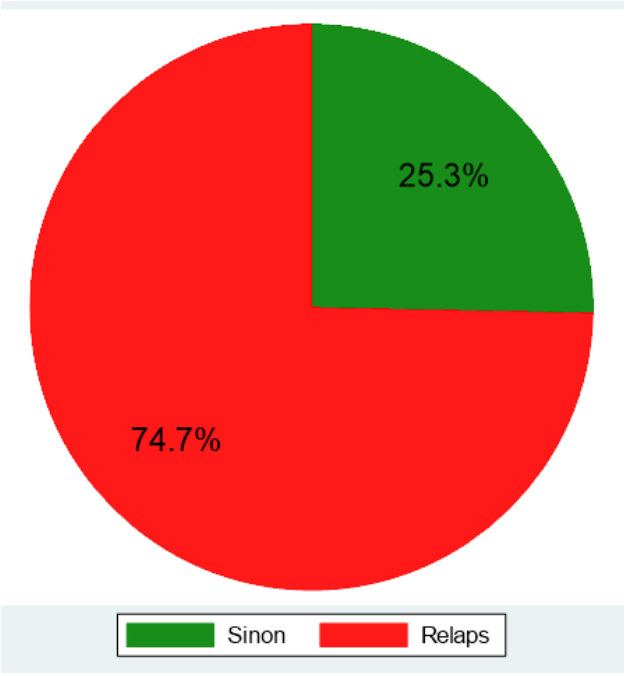
Prevalence of Psychotic Disorders' Relapse

The proportion with at least one relapse was 74.7% (Figure 1)

Bivariate Analysis For Identification of Factors Associated With Relapse

At P-value≤0.20, fifteen variables including age of participants, sex, marital status, level of education, living arrangement, employment, age at the psychosis onset, duration of psychosis before initiation of psychiatric treatment, experience of EPSE, adherence to antipsychotic medications, history of imprisonment, psychotherapy session, history of substance use, experience of stressful life events in the past twelve months and the perceived social support were statistically significant (Table 3).

FIGURE 1: Proportion of Individuals with Psychotic Disorders Experienced At Least One Relapse



Multivariable Regression Analysis and Factors Associated With Relapse

The factors significantly associated with relapse in the saturated model of multivariable backward stepwise regression analysis were age of psychosis onset, substance use, and social support. Age of psychosis onset was associated with relapse, with advanced ages of psychosis onset having gradually lower Odds of relapse; onset between 25 to 35 years (P<.05; AOR=0.35; 95%CI: 0.13-0.93) and after 35 years (P<.05; AOR=0.28; 95%CI: 0.06-0.98). Likewise, the social support showed statistical association with relapse, whereby gradually lower Odds of relapse was found in moderate (P<.01; AOR=0.14; 95%CI: 0.04-0.48) and strong (P<.001; AOR=0.07; 95%CI: 0.03-0.17) social supports, respectively. Additionally, substance use was associated with the occurrence of relapse, whereby having a positive history of substance use had almost three times the Odds of relapse compared to negative history of substance use (P value=.015; AOR=2.80; 95%CI: 2.21-6.47) (Table 4, Table 5).

TABLE 3: Bivariate Analysis of Factors Influencing Relapse in Patients with Psychotic Disorders H (N=282)

Variable	Relapse Yes, n (%)	COR (95%CI)	*P value*
Age (in years)			
18-24	34 (16.2)	1	
25-34	40 (19.0)	0.75 (0.35-1.58)	.447
35-44	64 (30.5)	0.55 (0.20-1.85)	.255
≥45	72 (34.3)	0.23 (0.09-0.51)	.000*
Sex			
Male	100 (47.6)	1.56 (0.83-2.95)	.168*
Female	110 (52.4)	1	
Marital status			
Single	109 (51.9)	1	
Married/Cohabiting	60 (28.6)	0.32 (0.09-1.11)	.073*
Divorced/widowed	41 (19.5)	1.65 (0.71-3.84)	.241
Residence			
Urban	194 (92.4)	1	
Peri-urban	16 (7.6)	1	
Living arrangement			
Alone	8 (3.9)	1	
With my family	191 (90.8)	0.41 (0.15-1.13)	.087*
With others	11 (5.3)	1.32 (1.06-5.02)	.608
Level of education			
Informal/Primary	60 (28.6)	1	
Secondary	118 (56.2)	0.30 (0.15-0.58)	.000*
College/University	32 (15.2)	0.13 (0.03-0.57)	.007*
Employment status			
Self-employed	78 (37.1)	1	
Employed	21 (10.1)	0.46 (0.09-2.15)	.324
Unemployed/retired	111 (52.8)	1.59 (0.79-3.16)	.186*
Co-morbid chronic illnesses			
No	167 (79.5)	1	
Yes	43 (20.5)	0.81 (0.36-1.78)	.607
Age at psychosis onset (in years)			
≤25	93 (44.3)	1	
25-35	68 (32.4)	0.25 (0.11-0.60)	.002*
>35	49 (23.3)	0.14 (0.04-0.46)	.002*
Duration before treatment (in years)			
<1	111 (52.9)	1	
≥1	99 (47.1)	3.28 (1.22-8.77)	.018*
EPSE experience			
No	76 (36.2)	1	
Yes	134 (63.8)	2.23 (1.02-4.85)	.042*
Adherence to medications			
No	79 (37.6)	5.05 (2.49-10.25)	.000*
Yes	131 (62.4)	1	
History of imprisonment			
No	203 (96,7)	1	
Yes	7 (3.3)	4.39 (1.54-12.47)	.005*
Ever received psychotherapy			
No	104 (49.5)	1	
Yes	106 (50.5)	0.39 (0.20-0.78)	.008*
History of substance use			
No	121 (57.6)	1	
Yes	89 (42.4)	4.57 (2.21-9.43)	.000*
Stressful life events in last 12 months			
<3	187 (89.0)	1	
≥3	23 (11.0)	3.13 (1.49-6.56)	.002*
Social support			
Poor	21 (10.0)	1	
Moderate	150 (71.4)	0.09 (0.03-0.27)	.000*
Strong	39 (18.6)	0.05 (0.02-0.12)	.000*

*P value<.20

TABLE 4: Complete Model of the Multivariable Regression Analysis and Factors Influencing Relapse in Patients with Psychotic Disorders (N=282)

Variable	Adjusted OR (95%CI)	*P-value*
Age (in years)		
18-24	1	
25-34	1.94 (0.56-6.75)	.297
35-44	0.58 (0.09-3.63)	
≥45	0.46 (0.06-2.62)	
Sex		
Female	1	
Male	1.06 (0.38-2.98)	.903
Marital status		
Single 1		
Married/Cohabiting	0.32 (0.04-2.19)	.064
Divorced/widowed	1.35 (0.05-2.35)	.282
Living arrangement		
Alone	1	
With my family	0.69 (0.13-3.51)	.661
With others	2.34 (0.91-4.81)	
History of imprisonment		
Yes	1	
No	0.17(0.03-0.93)	.041
Level of education		
Informal/Primary	1	
Secondary	0.98 (0.51-4.22)	.467
College/University	0.62 (0.07-4.99)	.284
Employment status		
Self-employed	1	
Employed	0.81 (0.29-3.58)	.225
Unemployed/retired	2.19 (0.61-7.84)	.482
Age at psychosis Onset (in years)		
≤25	1	
25-35	0.46 (0.11-0.97)	.033
>35	0.43 (0.05-0.52)	.024
Duration before treatment (in years)		
<1	1	
≥1	3.18 (0.85-11.88)	.084
EPSE experience		
No	1	
Yes	1.46 (0.47-4.57)	.507
Adherence to medications		
No	1	
Yes	0.64 (0.02-0.80)	.045
Ever received psychotherapy		
No	1	
Yes	0.58 (0.22-1.56)	.289
History of substance use		
No	1	
Yes	2.15 (0.74-6.24)	.156
Stressful life events in last 12 months		
<3	1	
≥3	1.08 (0.31-3.77)	.902
Social support		
Poor	1	
Moderate	0.42 (0.09-0.9)	.038
Strong	0.05 (0.01-0.17)	.000

TABLE 5: Saturated Model of the Multivariable Regression Analysis and Factors Associated with Relapse in Patients With Psychotic Disorders (N=282)

Variable	Adjusted OR (95%CI)	*P-value*
Age at onset of psychosis (in years)		
<25	1	
25-35	0.35 (0.13-0.93)	.042
>35	0.28 (0.06-0.98)	.035
History of substance use		
No	1	
Yes	2.80 (2.21-6.47)	.015
Social support		
Poor	1	
Moderate	0.14 (0.04-0.48)	.001
Strong	0.07 (0.03-0.17)	.000

DISCUSSION

Relapse is one of the prevalent aspects of Psychotic Disorders, and it has been linked to frequent hospitalizations, progressive functional impairment of the affected individual, and poor treatment outcome. This study is one of the few studies aiming at determining the prevalence and the biopsychosocial factors associated with relapse among the individuals diagnosed with Psychotic Disorders attending psychiatric Outpatient Clinics at MNH, Dar Es Salaam, Tanzania. The study findings show a high prevalence of relapse among individuals diagnosed with Psychotic Disorders, with significant associations identified for early psychosis onset, substance use and poor perceived social support.

In this study, the proportion with at least one relapse among individuals diagnosed with Psychotic Disorders, using the rehospitalization in psychiatric unit criterion, was 74.7%. This is consistent with findings from previous studies; one systematic review revealed that the prevalence of Relapse in individuals with schizophrenia ranges from 50% to 92%.[4]

Similarly, one descriptive study conducted in Kenya reported a prevalence range of 58%-97%. Relapse schizophrenia despite the former having well established Mental health services. This was a cross-sectional descriptive study of 209 family members or significant others accompanying patients to Mathari Hospital. Patients were selected by random sampling and the study was carried out between June and July 2011. Schizophrenia was diagnosed using Diagnostic and statistical manual of mental disorder, 4th edition text revision (DSM-IV-TR.[18] The findings of this study are also closer to the findings of a study done on individuals diagnosed with schizophrenia in Dodoma, Tanzania, 68.5%.[19]

However, the prevalence of relapse in the current study was lower than the findings of a cross-sectional study done among schizophrenic patients in Ethiopia, 87.69%,[8] and a 5-year longitudinal study conducted in Glen Oaks, New York, 81.9%cognition, social functioning, and biological variables and treated according to a standardized algorithm. The sample for the relapse analyses consisted of 104 patients who responded to treatment of their index episode and were at risk for

relapse. Results: Five years after initial recovery, the cumulative first relapse rate was 81.9% (95% confidence interval [CI], 70.6%-93.2%.[7] The differences could be attributed to the measurements used for assessing relapse. Those studies conducted in Ethiopia and New York assessed relapse using the criteria from DSM-IV-TR and the SANS, respectively, while this study used a rehospitalization criterion for relapse. The tools used in those two studies can pick relapse based on the severity of the psychotic symptoms, even in individuals who do not meet the criteria for admission to a psychiatric ward. On the other hand, the prevalence of relapse in this study was higher than the findings of studies done in South Africa, 61.8%,[20] in Ethiopia, 57.4%family, and society. It interrupts the process of recovery and may increase the risk of resistance to treatment. Relapse detection and taking preventive measures against its possible factors are crucial for a better prognosis. Objective: To assess lifetime relapse and its associated factors among people with schizophrenia spectrum disorders who are on follow-up at Comprehensive Specialized Hospitals in Amhara region, Ethiopia. Method: An institution-based cross-sectional study was conducted from July 13-August 13, at Comprehensive Specialized Hospitals in Amhara region, Ethiopia, 2020. Data were collected from 415 randomly selected participants using an interviewer administered questionnaire. Relapse was determined using participants' medical records and a semi-structured questionnaire. Data were analyzed using Statistical Package for Social Sciences (SPSS,[2,3] in Thailand, 53.8%,[16] in the U.S., 39.0%,[17] and in the U.K., 36%.[21] These differences could mainly be due to variations in diagnoses of studied individuals and timeframe of relapse assessment. All those studies limited their population to individuals diagnosed with schizophrenia among the group of Psychotic Disorders. In contrast, the current study considered the whole schizophrenia spectrum and other Psychotic Disorders. Moreover, though the studies done in the U.S., the U.K., and Thailand assessed relapse based on rehospitalization criterion, they assessed relapse in one, two, and five years, respectively, while the current study captured relapse at one moment in life.

In this study, early age of psychosis onset and use of substances were biological factors identified to increase likelihood of relapse among individuals with Psychotic Disorders. These findings echo various studies conducted both in high income countries and developing countries of African continent.[8,13,14,28,51] Johanna and colleagues observed that the

earlier the age of onset, the more relapses and negative symptoms, and the poorer the social-occupational functioning and global outcome.[22] A plausible explanation for that might be the poor premorbid functioning and longer duration of psychosis frequently attached to early onset, which both have been found to increase the risk of relapse.[23] Regarding substance use, Nathan and Lewis concluded that substance use and Psychotic Disorders have a bidirectional relationship. The effects of substances on neurotransmitters can trigger, exacerbate, or prolong psychosis, while psychotic symptoms promote the use of substances to counteract psychosis-induced anxiety feelings.[24]

Additionally, perceived social support was psychosocial factor associated with relapse in this study. Individuals good perceived social support were less likely to relapse. These findings are in agreement with other studies conducted across the globe .[3] This could be mediated by the inhibitory effect of a supportive milieu through mitigating psychosocial stress and reducing anxiety and depression, as observed by Almuqrin and Evelyn.[5,25]

The SLE experiences did not show an association with relapse in this study, though other studies have demonstrated a direct association between relapse of psychosis and SLEs[2,19,21] The impact of SLEs on psychotic symptoms has been established.[26]

However, the outcome will depend not only on experiencing stressful events but also on other factors such as the socio-cultural context, the individual appraisal of the stressful events, social network, and the frequencies and severity of exposition to stressful events.[21]

Recommendations

These findings underscore the need to improve the ability for monitoring of psychotic symptoms and their severity during clinical follow-ups at the Psychiatric Outpatient Clinic using standardized assessment tools like the Brief Psychiatric Rating Scale (BPRS) or Positive and Negative Syndrome Scale (PANSS), to detect the pending relapse experiences and intervene early. Furthermore, there is a need to reinforce active and integrated multidisciplinary approach, involving psychiatrists, psychologists, occupational therapists, and social workers during clinic follow-ups at psychiatric outpatient clinics, encourage Family and social support for individuals with Psychotic Disorders and intentionally focus biological and psychological interventions on substance use in individuals with Psychotic Disorders.

Limitations

The findings of this study should be interpreted with awareness of some limitations. The recall bias could have occurred due to employment of an interview questionnaire with questions requiring to recall past events in individuals with a tendency to cognitive impairments. This could have inflated the study results. To mitigate this bias, we evaluated mental stability using items from the Brief Psychiatric Rating Scale before consenting to participate in the study and the patients' next-of-kin were involved. However, there was no formal tool applied for evaluation of capacity to consent. Lastly, the cutoff of six months as Inter-episodic period and a small sample size could have underestimated the prevalence of relapse.

CONCLUSION

The findings of this study unveil nearly three in four individuals with Psychotic Disorders have experience of relapse during their illness. Moreover, the age of psychosis onset, psychoactive substance use and social support are important factors associated with relapse among individuals diagnosed with Psychotic Disorders. These results highlight the necessity for use of standardized monitoring tools for psychotic symptoms, advocate for social support and substance use prevention among individuals with Psychotic Disorders.

REFERENCES

1. Sariah AE, Outwater AH, Malima KIY. Risk and protective factors for relapse among Individuals with Schizophrenia: A Qualitative Study in Dar es Salaam, Tanzania. BMC Psychiatry. 2014;14(1):1–12.
2. Moges S, Belete T, Mekonen T, Menberu M. Lifetime relapse and its associated factors among people with schizophrenia spectrum disorders who are on follow up at Comprehensive Specialized Hospitals in Amhara region, Ethiopia: a cross-sectional study. Int J Ment Health Syst. 2021 Dec 1;15(1).
3. Fikreyesus M, Soboka M, Feyissa GT. Psychotic relapse and associated factors among patients attending health services in Southwest Ethiopia: A cross-sectional study. BMC Psychiatry. 2016 Oct 20;16(1).
4. Mudakavi I, Rentala S. Relapse Prevention in Mental Illnesses: Concepts, Issues and Strategies with Perspectives of Psychiatric Nursing- Review Article. Indian J Forensic Med Toxicol. 2021;15(4):134–46.
5. Almuqrin A, Georgiades A, Mouhitzadeh K, Rubinic P, Mechelli A, Tognin S. The association between psychosocial stress, interpersonal sensitivity, social withdrawal and psychosis relapse: a systematic review. Schizophrenia. 2023;9(1):27–9.
6. Bergé D, Mané A, Salgado P, Cortizo R, Garnier C, Gomez L, et al. Predictors of relapse and functioning in first-episode psychosis: A two-year follow-up study. Psychiatr Serv. 2016;67(2):227–33.
7. Robinson D, Woerner MG, Alvir JMJ, Bilder R, Goldman R, Geisler S, et al. Predictors of relapse following response from a first episode of schizophrenia or schizoaffective disorder. Arch Gen Psychiatry. 1999;56(3):241–7.
8. Ayano G, Duko B. Relapse and hospitalization in patients with schizophrenia and bipolar disorder at the St Amanuel Mental Specialized Hospital, Addis Ababa, Ethiopia: A comparative quantitative cross-sectional study. Neuropsychiatr Dis Treat. 2017 Jun 15;13:1527–31.
9. Kotzeva A, Mittal D, Desai S, Judge D, Samanta K. Socioeconomic burden of schizophrenia: a targeted literature review of types of costs and associated drivers across 10 countries.JMedEcon[Internet].2023;26(1):70–83. Available from:https://doi.org/10.1080/13696998.2022.2157596
10. Hong J, Windmeijer F, Novick D, Haro JM, Brown J. The cost of relapse in patients with schizophrenia in the European SOHO (Schizophrenia Outpatient Health Outcomes) study. Prog Neuro-Psychopharmacology Biol Psychiatry. 2009;33(5):835–41.
11. Id KRL, Pence BW, Gaynes BN, Id MCH, Kulisewa K, Malava JK, et al. PLOS ONE The cross-sectional association of stressful life events with depression severity among patients with hypertension and diabetes in. 2022;1–17.
12. Filiatreau LM, Ebasone PV, Dzudie A, Ajeh R, Pence BW, Wainberg M, et al. Prevalence of stressful life events and associations with symptoms of depression, anxiety, and post-traumatic stress disorder among people entering care for HIV in Cameroon. J Affect Disord. 2022;308:421–31.
13. Hetolang LT, Olak KA p. The associations between stressful life events and depression among students in a university in Botswana. 2020;(July).
14. Abiola T, Udofia O, Zakari M. Psychometric Properties of the 3-Item Oslo Social Support Scale among Clinical Students of Bayero University Kano, Nigeria.
15. Malaysian J. Psychiatry[Internet].2013;22:32–41.Availablefrom: http://www.mjpsychiatry.org/index.php/mjp/article/view/264/194
16. Kocalevent RD, Berg L, Beutel ME, Hinz A, Zenger M, Härter M, et al. Social support in the general population: Standardization of the Oslo social support scale (OSSS-3). BMC Psychol. 2018;6(1):4–11.
17. Pitanupong J, Ratanaapiromyakij P, Teetharatkul T, Article R. Factors Associated With Low Relapse Rates of Schizophrenia In Southern Thailand: A University Hospital-Based Study. 2021;
18. Lin D, Joshi K, Keenan A, Shepherd J, Bailey H, Berry M, et al. Associations Between Relapses and Psychosocial Outcomes in Patients With Schizophrenia in Real-World Settings in the United States. Front Psychiatry. 2021;12(October):1–12.
19. NW G, J M, MCA W. A Cross-Sectional Study on Factors Associated with Relapse in Patients with Schizophrenia at Mathari Hospital, Nairobi Kenya. Ann Clin Lab Res. 2018;06(01):1–5.
20. Prevalence and factors associated with Relapse among patients treated for Schizophrenia Spectrum at Mirembe National Mental Hospital-Dodoma : A Mixed-Method Study Master Of Science In Mental Health Nursing The University Of DODOMA. 2023;
21. Kazadi NJB, Moosa MYH JF. 34432-17406-1-Pb. Factors Assoc with relapse Schizophr. 2008;14 No. 2 J(2):7.
22. Bhattacharyya S, Schoeler T, Forti M Di, Murray R, Cullen AE, Colizzi M. Stressful life events and relapse of psychosis : analysis of causal association in a 2-year prospective observational cohort of individuals with first-episode psychosis in the UK. The Lancet Psychiatry[Internet]. 2023;10(6):414–25. Available from: http://dx.doi.org/10.1016/S2215-0366(23)00110-4
23. Immonen J, Jääskeläinen E, Korpela H, Miettunen J. Age at onset and the outcomes of schizophrenia: A systematic review and meta-analysis. Early Interv Psychiatry. 2017;11(6):453–60.
24. Alvarez-Jimenez M, Priede A, Hetrick SE, Bendall S, Killackey E, Parker AG, et al. Risk factors for relapse following treatment for first episode psychosis: A systematic review and meta-analysis of longitudinal studies. Schizophr Res [Internet]. 2012;139(1–3):116–28. Available from: http://dx.doi.org/10.1016/j.schres.2012.05.007
25. Nathan R, Lewis E. Assessment of coexisting psychosis and substance misuse: complexities, challenges and causality. BJPsych Adv. 2021;27(1):38–48.
26. Acoba EF. Social support and mental health: the mediating role of perceived stress. Front Psychol. 2024;15(February):1–12.
27. Beyer M, Brick TR, Kühn S. Urbanicity and psychotic

experiences: Social adversities, isolation and exposure to natural environments predict psychosis. J Environ Psychol [Internet]. 2024;96(April):102293. Available from: https://doi.org/10.1016/j.jenvp.2024.102293

Peer Reviewed

Acknowledgements: We acknowledge and thank all the study participants who took part in this study. We extend our gratitude to the research assistants who helped in data collection. In addition, we sincerely acknowledge the support from the teaching staff in the Department of Psychiatry and Mental Health at Muhimbili University of Health and Allied Sciences, and Muhimbili National Hospital.

Competing Interests: Authors declare no competing interest.

Funding: The study did not receive any funding.

Received: 02 December 2025; **Accepted:** 02 July 2026

Cite this article as Sindayihebura Z; Likindikoki S; Furia F; Nkurunziza DJ; Nkya HI. Prevalence and Factors Associated with Relapse in Individuals With Psychotic Disorders Attending Psychiatric Outpatient Clinic at Muhimbili National Hospital, Tanzania. *East Afr Health Res J.* 2026;10(2):284-292. https://doi.org/10.24248/eahrj.v10i2.341

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