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Prevalence and factors associated with relapse and long hospital stay among adult psychiatric patients with a history of childhood trauma

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ABSTRACT

This cross-sectional multicentre-based study determined the magnitude of relapse, long hospital stay and factors of mental illness associated with a history of childhood trauma. We assessed 335 adult psychiatric patients and living in conflict areas, using a questionnaire established from items of the Adverse Childhood Experience International Questionnaire, Multidimensional Scale of Perceived Social Support, Rosenberg Self-esteem Questionnaire, Relapse Assessment Tool, and Self-report of hospital stay. Logistic regression analyses were used to determine associations between predictors and relapse and long hospital stay. 298 participants (88.9%) had experienced childhood adversities, among which 44.4% reported more than five childhood traumas. Relapse occurred in 40.9% of participants, whereas long hospital stay occurred in 71.1% of cases. Predictors of long hospital stay were emotional abuse, substance use and living in rural settings. Being an employed and experiencing a childhood trauma committed by a parent increase the likelihood risk of relapse of mental illness associated with childhood trauma. Being treated by childhood trauma-focused interventions decreases the risk of relapse and shorter the length of hospital stay. Building a mental health capacity should be centered on detecting patients with childhood trauma committed by the parent, those with low-self esteem, and victims of emotional abuse.

1. Introduction

Childhood trauma is among the major contributors to the burden of mental illnesses in adulthood (Serralta, 2018). Exposure to childhood trauma or adverse childhood experience (ACE) increases the risk of relapse and long hospital stay in adults with severe mental illnesses (Moges et al., 2021). Lack of careful screening and treatment of psychological trauma that occurred in early life is linked to the magnitude of morbidity and cost related to mental healthcare services. Experiencing multiple forms of childhood trauma increases the risk of developing negative coping strategies including substance abuse (Natukunda et al., 2019), especially when childhood traumas were committed by parents, teachers, and friends (Clarke et al., 2016). The psychosocial factors associated with mental illness associated with a history of childhood trauma include substance use, self-esteem, and low level of perceived social support (Spalletta et al., 2020). Numerous studies have shown that childhood trauma contributes to occurrence of relapse among patients with severe mental illness via poor health outcomes (Spalletta et al., 2020). Although an extensive literature links low self-esteem and poor social support in adult psychiatric patients to childhood trauma exposure (Carr et al., 2013), the prevalence and predictors of relapse and long hospital stay have not been deeply explored in conflict zones among adults with a history of childhood trauma. Relapse in mental patients ranges between 6 and 75% across studies; and its predictors are poor social support, highly expressed emotions, poor adherence to treatment, and stigma (Baxter et al., 2011). The lack of trained mental healthcare providers leads to poor management of mental illness which is among the main causes of long hospital

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stay at psychiatric units (Mutume et al., 2022). In addition, Shinjo and colleagues showed that other factors influencing the length of hospital stay in mental health units are the presence of psychiatric and medical co-morbidities, older age, and higher density of psychiatric beds (Shinjo et al., 2017).

Numerous studies have shown that childhood trauma-informed therapies are suggestive interventions of good health outcomes during the management of mental illness (Spalletta et al., 2020). To date, childhood trauma-focused interventions are not fully implemented in guidelines of low income countries regarding the treatment of mental illness, especially in conflict zones characterized by a paucity of mental health professionals (Spalletta et al., 2020). Despite the awareness of the magnitude of relapse and long hospital stay associated with severe mental illness (Baxter et al., 2011), studies centered on the influence of childhood trauma-focused interventions on relapse and length of hospital stay among adult psychiatric patients are lacking, especially in conflict zones of the Democratic Republic of Congo (DRC); where our previous study revealed that majority of participants with affective and psychotic disorders were victims of adverse childhood experiences (Mutume et al., 2022). This study aimed to determine the magnitude of long hospital stay, relapse and factors of mental illness among adults with a history of childhood trauma. Moreover, this study proposed to analyze the impact of childhood trauma-informed therapy on relapse and hospital stay among adults with mental illness.

2. Methods

2.1. Participants

This was a cross-sectional multicentre-based study involving 335 adults with mental illness living in conflict areas. Participants were recruited at five mental health units namely Cap Salama, Cepima, Sainte Croix de Mulo, Ngandilama, and Centre de santé Muyisa; located in North-Kivu, in the eastern part of DRC. These mental hospitals were selected as study sites due to the fact that they are involved in the management of almost all mentally ill patients who reside in the Northern part of North-Kivu, where armed conflict has lasted for more than two decades (Vivalya et al., 2021). In these hospitals, trauma informed therapy is given by clinical psychologists. Inclusions were adult psychiatric patients, who reported being treated, discharged, and then readmitted at least two times for mental illness following a previous admission during which the patient had remission of symptoms or was declared recovered; and who had stay more than two weeks at psychiatric units. A written informed consent was gotten from all the potential participants; and a family member was chosen to be a substitute decision-maker to provide consent for participants who had not the capacity to consent. Exclusions were outpatients attending mental health care at the study sites, and inpatients admitted for the first time. After receiving the ethical approval, we got permissions of carrying out the study from the chairpersons of health zone of Katwa and Butembo, as well as the executive directors of the five mental health facilities. Patients were informed about the study objectives and procedures, after which they were asked to consent regarding their willingness. Written informed consent was received from patients or their caregivers able to consent. The study was carried out according to the recommendations of the declaration of Helsinki.

2.2. Procedures

Data were collected from October 2020 to January 2 2021. A consecutive sampling was performed. Data collection procedures used a comprehensive questionnaire made from some items of: (i) the demographic factors such age, sex, residence, educational level, marital status, and profession (Devi et al., 2019; Xie et al., 2018); (ii) the psychosocial factors (substance use, self-esteem, social support, adverse childhood experiences, the individuals who committed the childhood trauma) (Spalletta et al., 2020); (iii) the intervening factors which is the provision of childhood trauma-informed therapy (Feibleman, 1963), (iv) length of hospital stay and (v) number of readmissions. During data collection, we used items from the Adverse Childhood Experiences International Questionnaire (Clarke et al., 2016), the Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet et al., 1988), the Rosenberg Self-esteem Questionnaire (Rosenberg, 1965), the Relapse Assessment Tool (Tibbo et al., 2014) and the Self- report of hospital stay (Charles et al., 1994). The diagnosis of mental illness was determined using the Mini International Neuropsychiatric Interview 7.0 (Lecrubier et al., 1997), which is based on the Diagnostic Statistical Manual for the diagnosis of mental disorders, 5th edition (American Psychiatric Association, 2013). We included patients who screened positive for major depressive disorders, bipolar disorders, substance use disorder and schizophrenia.

Four trained research assistants supervised by the first author collected data. Questionnaires were pretested on 20 adult psychiatric patients with a history of childhood trauma. Each interview took about 35 to 45 minutes. The questionnaire was translated from French to Kiswahili, a local dialect spoken by the majority of study participants by a linguistic scholar. Two research assistants and the first author assessed the questionnaire used in both French and Kiswahili for accuracy.

2.3. Study measures

Childhood trauma was considered as any reported traumatic event that occurred within the early 18 years of lifespan; and includes physical, emotional, and sexual abuse (Merza et al., 2015). Childhood trauma was assessed using the Adverse childhood Experiences - International Questionnaire (ACE-IQ), developed by the World health Organization (WHO) and Centers for Disease control for use across different cultures (World Health Organization, 2018). The ACE-IQ used in this setting is comprised of 29 items to assess the exposure to childhood trauma during the first 18 years of life. Participants were asked a set of questions under 13 categories of ACEs including emotional abuse; physical abuse; sexual abuse; violence against household members; bullying; community violence; collective violence dysfunction (World Health Organization, 2018). These 29 items represented 13 domains of ACEs, with no experience in a given domain was scored as 0 and any experience in a given domain scored as 1. A cumulative ACE score was obtained by summing up the number of events classified into 13 domains and scored from 0 to 13.

The Rosenberg self-esteem scale is a 10-item tool assessing global self-esteem using the perceived feelings about self (Rosenberg, 1965). A 4-point Likert scale format was used for items with answers ranging from strongly agree (0) to strongly disagree (3). Self-esteem score ranged from 0 to 30, with higher scores (i.e. 15 and above) indicate higher self-esteem and less than 15 qualified as low self-esteem. The MSPSS assessed for perceived social support from three sources including family, friends and a significant person. The MSPSS is a self-administered measurement tool with 12-item measures. Higher score indicates greater the high level of perceived social support by an individual; the total possible score ranges 12∼84 (Laksmita et al., 2020). In this study, the low level of perceived social support was defined by a MSPSS score of less to 34. High level was assigned with a score or 35 or above. Relapse was defined as more than one readmissions in mental health units after a previous admission during which the patient had remission of symptoms (Buckman et al., 2018). Long hospital stay was considered as the hospitalization duration of more than 24 days (Lee & Lee, 2019), given the fact that majority of psychotropic medications showed their efficacy within the first two weeks of treatment.

2.4. Statistical analysis

Statistical analyses were performed using STATA version 13 software. We performed descriptive statistics summarized as proportions

and percentages for categorical variables; and means/standard deviation or median/interquartile range for continuous variable; chi-square and t-tests to determine differences in prevalence of relapse in length of hospital stay in relation to social demographic factors, psychological factors as well as childhood trauma. Given that other research showed that experiencing more than five ACEs increased the risk of mental disorders in adulthood (Satinsky et al., 2021), a cut off of 6 and over was used to detect probable mental disorder associated with a history of childhood trauma. Analyses were disaggregated based on relapse and length of hospital stay, given that previous studies have revealed the differences regarding the prevalence and predictors of mental illness in adults with a history of childhood trauma (Spalletta et al., 2020). Logistic regression models were used to estimate the associations between predictors and outcomes variables of relapse and length of hospital stay. The level of statistical significance was set at $P < 0.05$. Associations between outcomes and predictors were determined using Beta (ß).

3. Results

3.1. Sample characteristics

In total, 298 participants (88.9%) of 335 screened patients reported having experienced at least one ACE; among which 44.4% (n=149) reported having experienced more than five ACEs. The prevalence of relapse and long hospital stay in our sample was at 40.9% (n=59 participants) and 71.1% (n=106 participants) respectively. Having experiencing childhood trauma was statistically associated with relapse (X^2= 2.21; p=0.031) and long hospital stay (X^2= 12.7; p=0.006) (Table 1).

3.2. Psychosocial factors associated with relapse and long hospital stay

Table 2 shows that there is as statistically significant association between relapse and self-esteem (11.87, p=<0.001), social support (X^2= 2.44; p=0.002) and substance use (X^2= 5.42; p=<0.001) among adult psychiatric patients with a history of childhood trauma. Also, a statistical association was found between long hospital stay and type of abuse (X^2= 8.91; p=0.002), being treated by childhood trauma informed therapy (X^2= 7.01; p=0.002), and substance use (X^2= 18.3; p=0.017).

3.3. Predictors of relapse and hospital stay among adult psychiatric patients with a history of childhood trauma

Table 3 shows that having experienced childhood trauma committed by a parent (ß: 2.01 and p= <0.001), the substance use (ß: 0.38 and p= <0.001), and being employed (ß: 0.03 and p= 0.001), increase more likely the risk of relapse. Emotional abuse (ß: 1.25 and p= 0.002), substance use (ß: 1.34 and p= 0.001), living in rural settings (ß: 0.93 and p= 0.002), and perceiving low self-esteem (ß: 1.76 and p= 0.026) were significantly associated with a hospital stay in patients with a history of childhood trauma. There was a negative association between both relapse (ß: -1.44 and p= <0.001) and long hospital stay (ß:-0.83, and p=0.002), and the provision of childhood trauma-focused interventions. Whereas living in rural areas reduces likely the risk of relapse (ß: -2.01 and p= 0.041), it increases the risk of long hospital stay for patients with mental illness associated with childhood trauma (ß: 0.93 and p= 0.01).

4. Discussion

We found that 88.9% reported having experienced childhood adversities, among which 44.4% reported more than five adverse childhood experiences. A large body of studies has shown a similar prevalence rate of childhood trauma in patients with mental illness living in armed conflict settings compared to those who are not (Álvarez et al., 2011). In such a context, it is obvious that post-traumatic stress disorder is usually considered and assessed in adults facing important stress in conflict settings (Aron et al., 2019); equal attention should be provided to children below 18 years old. Emotional abuse committed during childhood trauma is commonly ignored in both family and community; especially if it is committed by a parent or a tutor. The risk of developing mental illness in adults with a history of childhood trauma increases over time, given that children exposed to armed conflict may not present trauma-like symptoms directly after being exposed to stressful events. Additionally, our findings demonstrated that 40.9% of adult psychiatric patients with a history of childhood trauma had been readmitted at least once at mental health facilities. Although it is widely

Table 1
Prevalence and baseline characteristics among adult psychiatric patients with a history of childhood trauma.

Variable		Relapse				Long hospital stay			
		No	Yes	P	X^2	Yes	No	P	X^2
Participants		90 (59.1)	59 (40.9)			106 (71.1)	43 (28.9)		
Age in years median IQR			28 (22, 36)	0.532	0.98	26 (23-38)		0.081	0.75
Gender				0.670	1.31			0.036	1.59
	Male	61 (67.7)	38 (64.4)			80 (75.5)	25 (51.0)		
	Female	29 (32.3)	21 (35.6)			26 (24.5)	18 (49.0)		
Residency				0.917	0.14			<0.001	3.28
	Rural	63 (70)	44 (74.5)			90 (84.9)	22 (51.2)		
	Urban	27(30)	25 (25.5)			16 (15.1)	21 (49.8)		
Profession				0.335	0.99			0.282	0.55
	Unemployed	54 (60)	40 (67.8)			64 (60.1)	30 (69.8)		
	Employed	36 (40)	19 (32.2)			42 (39.6)	13 (30.2)		
Educational level				0.021	2.41		0.401	0.504	0.38
	Illiterate	51(56.7)	30 (50.8)			65 (65.1)	22 (51.2)		
	Primary	24 (26.7)	11 (18.6)			18 (17.0)	13 (30.2)		
	Secondary	10 (11.1)	10 (17.0)			10 (9.4)	3 (6.8)		
	University	4 (4.5)	8 (13.6)			9 (8.4)	5 (11.8)		
Marital status				0.592	0.42	0.532		0.768	0.35
	Married	34 (37.8)	15 (25.4)			26 (24.5)	13 (30.2)		
	Single	56 (62.1)	38 (68.4)			70 (66.1)	25 (51.0)		
	Separated	10 (11.1)	5 (8.2)			10 (9.4)	5 (11.8)		
Having experiencing ACES				0.031	2.21			0.006	12.7
	Yes	85 (94.4)	53 (89.8)			98 (92.4)	34 (79.1)		
	No	5 (5.6)	6 (10.2)			8 (7.6)	9 (20.1)		
Number of ACEs (n=270)									
	≤5	54 (63.5)	7 (13.2)			55 (56.1)	5 (14.7)		
	>5	31 36.5)	46 (86.8)			43 (43.9)	29 (85.3)		

Table 2
Psychosocial factors associated with relapse and hospital stay among adult psychiatric patients with a history of childhood trauma.

Variables		Relapse				Hospital stay			
		No	Yes	P	X^2	Yes	No	P	
Participants		90 (59.1)	59 (40.9)			106 (71.1)	43 (28.9)		
Who committed the abuse/trauma				0.130	0.53			0.555	0.86
	Parent	56 (62.1)	25 (25.5)			40 (67.8)	22 (51.2)		
	Siblings	24 (26.7)	15 (25.4)			26 (24.5)	13 (30.2)		
	Teacher	0	5 (8.2)			40 (67.8)	4 (9.3)		
	Friends	10 (11.1)	14 (23.9)			0	4 (9.3)		
Type of abuse				0.423	0.71			0.002	8.91
	Physical	51(56.7)	21 (35.6)			70 (66.1)	25 (51.0)		
	Sexual	24 (26.7)	21 (35.6)			18 (17.0)	13 (30.2)		
	Emotional	15 (16.6)	17 (18.8)			18 (17.0)	5 (11.8)		
Low self-esteem				<0.001	11.87			0.801	0.59
	Yes	61 (67.7)	19 (32.2)			64 (60.1)	25 (51.0)		
	No	29 (32.3)	40 (67.8)			42 (39.6)	18 (49.0)		
Age during which the ACE was committed				0.235	0.21			0.872	1.46
	0-5 years	34 (37.8)	11 (18.6)			9 (8.4)	13 (30.2)		
	6-10 years	29 (32.3)	25 (25.5)			80 (75.5)	25 (51.0)		
	11-16	24 (26.7)	15 (25.4)			16 (15.1)	5 (11.8)		
	16-18	3 (3.3)	5 (8.2)			1 (1)	0		
Being treating with childhood trauma informed therapy				0.351	0.56			0.002	7.01
	Yes	56 (62.2)	31 (52.5)			80 (75.5)	21 (49.8)		
	No	37 (37.8)	28 (47.5)			26 (24.5)	22 (51.2)		
Substance use				<0.001	5.42			0.017	18.3
	Yes	27 (30)	38 (64.4)			71 (66.9)	25 (51.0)		
	No	63 (70)	21 (35.6)			35 (33.1)	18 (49.0)		
Social support				0.002	2.44			0.801	0.75
	Yes	30 (33.3)	35 (59)			42 (39.6)	18 (49.0)		
	No	60 (66.7)	24 (41)			64 (60.1)	25 (51.0)		

Table 3
Predictors of relapse and long hospital stay among adult psychiatric patients with a history of childhood trauma.

Variables		Relapse		Hospital stay	
		ß	P-value	ß	p-value
Age in years					
	<30	0.44	0.701	-	-
	≥30	Reference			
Gender					
	Male	-0.10	0.243	-	-
	Female	Reference	-	-	-
Residency					
	Rural	-0.19	0.081	0.93	0.002
	Urban	Reference			
Profession					
	Unemployed	Reference	-	-	-
	Employed	0.03	0.001	0.84	0.028
Who committed the childhood trauma					
	Parent	2.01	<0.001	-	-
	Siblings	0.21	0.087	-	-
	Teacher	Reference	-	-	-
	Friends	-1.60	0.992	-	-
Type of childhood trauma					
	Physical	Reference		Reference	
	Sexual	-	-	0.79	0.061
	Emotional	-	-	1.25	0.002
Low self-esteem					
	Yes	-	-	1.76	0.026
	No	Reference	-	Reference	
Treating with childhood trauma informed therapy					
	Yes	-1.42	<0.001	-0.83	0.002
	No	Reference	-	Reference	-
Substance use					
	Yes	0.38	<0.001	1.34	0.001
	No	Reference			

accepted that childhood trauma is one of the major predictors of relapse among patients with mental illness (Belete et al., 2020); our study highlights the need for the implementation of childhood trauma-focused interventions into mental healthcare services (Han et al., 2021) as well as child abuse prevention programs to improve the quality of life of psychiatric patients with a history of childhood trauma exposure (Spalletta et al., 2020). Furthermore, we found that 71.1% of adult psychiatric patients stayed more than two weeks at mental health units. This finding emphasizes the role of poor management of psychiatric disorders and the lack of skilled mental health professionals on the length of stay in mental health units among patients with a history of childhood trauma (Spalletta et al., 2020). This study was carried out in a developing setting where there is a paucity of trained mental healthcare providers. In these settings, patients are fully treated by psycho-clinicians, given that psychiatrists and psychologists are rare (Mutume et al., 2022).

We found that childhood trauma committed by parents increases the risk of relapse among psychiatric patients. In most cases, childhood trauma committed by the parent is hidden and leads to internalized disorders which are commonly expressed in adulthood (Peris & Miklowitz, 2015). Consistent with previous studies, adult psychiatric patients with a history of childhood trauma who had reported having experienced emotional abuse have an increased risk of hospital stay. In conflict zones, emotional abuse is commonly underdiagnosed in both children and adults. Our findings highlight the need to systematically screen for emotional abuse that occurred in primary care and specialized facilities. We found that substance use is correlated to both relapse and hospital stay among adults with mental illness associated with a history of childhood trauma. Evidence has shown that, the greater the childhood trauma and the early the initiation of substance use (Khoury et al., 2010). Childhood trauma is associated with life-risk behaviors such a sexual behavior and substance abuse. Similar to the findings of Thompson and associates, we found that male patients were more likely affected than females. In armed conflict settings, physical abuse is common in men (Thompson et al., 2004), compared to sexual abuse which is seen in females. We found that most of the participants were unemployed and single. Numerous studies evidenced that having a lack of occupation is common in single individuals who experienced poor social support (Adamczyk & Segrin, 2015). Conversely to existing literature, our findings reveal that being employed increases the risk of relapse and hospital stay in adult psychiatric patients with a history of

childhood trauma. Childhood trauma is usually associated with low self-esteem that might be impaired by the occupation (Abigail et al., 2018; Jansen et al., 2016; Myer et al., 2009).

A childhood trauma committed by a parent increases the likelihood risk of having a relapse in adult patients with mental illness. Negative highly expressed emotions are commonly expressed by the abusers of children, which are parents in most cases (Saunders & Adams, 2014). Additionally, emotional abuse during childhood was significantly associated with a hospital stay in patients with psychiatric disorders. Emotional abuse is correlated to negative coping mechanisms surrounding low self-esteem (Spalletta et al., 2020). Our findings suggest the implementation of specific screening measures for assessing emotional abuse in patients with mental illness to reduce both the relapse and hospital stay rates. Moreover, we found that perceiving low self-esteem is associated with a long hospital stay in patients with a history of childhood trauma exposure. Low self-esteem has been recognized over time to cause poor health outcomes, after child abuse (Świtaj et al., 2017).

Our results demonstrate that childhood trauma-focused intervention decreases the risk of relapse and long hospital stay in adult psychiatric patients with history of childhood trauma. Trauma-informed therapies are an efficient treatment for patients with trauma-related disorders (Mueser et al., 2002). Early treatment focused on childhood trauma in adult psychiatric patients might strengthen their self-esteem and ameliorate the quality of life as well as the health outcomes. Our findings suggested that childhood trauma should be assessed for and treated by specific therapies to reduce the relapse rates and length of hospital stay in mental patients. We found also that living in rural settings is more likely associated with a hospital stay. Poor access to healthcare quality of care affects commonly found in rural settings, where poverty and low economic status are normal. In the context of a conflict zone, rural regions are more likely concerned by armed conflict than urban settings. This may explain the discrepancy of our findings with existing evidence (Teckle et al., 2012).

Our results can not underestimate the power of the following limitations. First, this cross-sectional study could not establish a clear relationship between childhood trauma and adult mental illness. The chronological gap between childhood trauma and the occurrence of mental illness in adulthood compounds this limitation, given that our purpose was to look for cross-sectional links than infer causality. A cohort study should be useful to elucidate the causality between childhood trauma and mental illness as well as its relationship with relapse and hospital stay. Second, the limited sample size highlights the need to conduct a study involving a large sample size to allow the generalization of findings for the entire community. Thirdly, community-related factors such as highly expressed emotions were not assessed given their complexity and the poor influence in a hospital stay (Afilalo et al., 2015).

In conclusion, this study revealed that childhood trauma-informed therapy reduces the likelihood risk of relapse and long hospital stay. The findings showed that the length of hospital stay is higher among psychiatric patients who experienced childhood trauma. This finding implicates that childhood trauma-informed therapy should be provided to all adult patients with mental illness associated with childhood trauma. The clinical implication is the need to develop a systematic screening tool for childhood trauma among adult psychiatric patients receiving care at menatl hospitals located in conflict zones. Building a mental health capacity should be centered on detecting adult patients with childhood trauma committed by the parent, those with low-self esteem, and victims of emotional abuse.

Author contributions

BMNV and MMV conceived and designed the study. RKM and BMNV collected data and carried out the literature searching. BMNV analyzed and interpreted data; and drafted the manuscript. GMBK, ALP, ANM, ANO, and DOLA reviewed the manuscript for technical and intellectual content. All authors contributed to the editing and have approved the final version.

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Availability of data

The data used to support the findings of this study are available from the corresponding author upon request

Consent to participate

We obtained a written informed consent from the participants and their witnesses/caregivers.

Declaration of Competing Interest

The authors declare no competing interest.

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