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Intimate partner violence prevalence and its effect on medication adherence and relapses among patients with chronic mental disorders at Ndera Neuropsychiatric Hospital, Kigali, Rwanda

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ABSTRACT

INTRODUCTION: Intimate Partner Violence (IPV) is a global public health issue with severe consequences, particularly for individuals with chronic mental disorders. This study aimed to assess the prevalence of IPV among patients with chronic mental disorders at Ndera Neuropsychiatric Hospital in Rwanda and examine its impact on medication adherence and relapse rates.

METHODS: A cross-sectional study was conducted with 384 adult patients diagnosed with chronic mental disorders. Participants were screened for IPV using the Hurt, Insult, Threaten, Scream (HITS) tool, while medication adherence was assessed using the Medication Adherence Rating Scale (MARS). Relapse rates were determined through a retrospective review of medical records. Descriptive and inferential statistics, including logistic regression, were used for data analysis.

RESULTS: The prevalence of IPV among participants was 28%, with women more affected than men (40.6% vs. 10.6%). Poor medication adherence was reported by 32% of participants, and 51% had at least one relapse in the past 12 months. Patients experiencing IPV were 2.8 times more likely to be non-adherent to medications (OR=2.85; 95% CI: 1.74-4.65; p<0.001) and 3.48 times more likely to relapse (OR=3.48; 95% CI: 2.14-5.65; p<0.001).

CONCLUSION: The study highlights the high prevalence of IPV among individuals with chronic mental disorders, particularly women, and its detrimental effects on treatment outcomes. Integrated interventions addressing IPV and mental health, alongside gender-sensitive policies and community support programs, are urgently needed to improve medication adherence and reduce relapse rates in this vulnerable population.

INTRODUCTION

Intimate Partner Violence (IPV) is a significant global public health concern and a serious violation of human rights [1]. It encompasses physical, sexual, psychological, and economic abuse perpetrated by a current or former intimate partner. IPV affects individuals across all demographics, with women disproportionately affected, leading to severe health consequences, including mental

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health disorders, poor medication adherence, and increased risk of disease relapses [1,2].

The World Health Organization (WHO) defines violence as "the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community that results in or has a high likelihood of resulting in injury, death, psychological harm, or deprivation" [2]. IPV, as a subset of interpersonal violence, has been recognized as a critical public health issue requiring urgent intervention from national and international health agencies [3]. Research indicates that IPV is highly prevalent across both high-income and low-income countries, contributing to a broad range of adverse mental health outcomes, including depression, anxiety disorders, post-traumatic stress disorder (PTSD), substance abuse, and suicidal ideation [4].

Among individuals with chronic mental disorders, IPV is particularly detrimental as it exacerbates symptoms, disrupts treatment adherence, and increases the likelihood of relapse [5]. Medication adherence is a cornerstone of effective psychiatric treatment, yet many individuals experiencing IPV face barriers to maintaining their treatment regimen [5]. These barriers include coercion by an abusive partner, psychological distress, financial constraints, and stigma. Consequently, poor medication adherence leads to worsening symptoms, increased hospitalization rates, and higher healthcare costs [5,6].

Several studies have established a strong association between IPV and negative mental health outcomes. For example, evidence suggests that individuals who experience IPV have higher rates of non-adherence to psychiatric medications and are more likely to suffer relapses due to inadequate treatment management [5,7]. The effects of IPV on mental health are compounded by socioeconomic factors such as poverty, unemployment, and limited access to healthcare, which further hinder adherence to treatment and overall well-being [8].

This study aimed to assess the prevalence of IPV among patients with chronic mental disorders receiving care at Ndera Neuropsychiatric Hospital. It also sought to examine the impact of IPV on medication adherence and the frequency of relapses within this population. By identifying these associations, the study intends to inform interventions that improve the management of mental health conditions in IPV-affected individuals and advocate for policies that enhance protection and support for this vulnerable population.

METHODS

Study Design

This study employed a cross-sectional design to assess the prevalence of IPV and its effects on medication adherence and relapse rates among patients with chronic mental disorders at Ndera Neuropsychiatric Hospital.

Study Setting

The research was conducted at Ndera Neuropsychiatric Teaching Hospital, Kigali, Rwanda, a leading neuropsychiatric hospital in Kigali, Rwanda. Founded by the Congregation of the Brothers of Charity in 1951, the hospital serves as a referral center for patients with mental health disorders in Rwanda.

Study Population

Participants included adult patients (aged 18 and above) with diagnosed chronic mental disorders who had been on psychiatric medication for at least 12 months. Eligible participants had to have a current or former intimate partner and the cognitive ability to understand the study procedures and provide informed consent. We excluded participants with cognitive impairments or severe mental health conditions, those on medication for less than 12 months, and those aged under 18.

Sample Size and Sampling: The required sample size was calculated using the standard formula for prevalence studies, with an estimated IPV prevalence of 50%, a 95% confidence interval, and a margin of error of 5%, yielding a sample size of 384 participants. Convenience sampling was used to recruit participants from outpatient and inpatient settings at Ndera Neuropsychiatric Hospital.

Data Collection

A structured questionnaire was used to collect data on IPV, medication adherence, and relapse history. IPV was screened using the Hurt, Insult, Threaten, Scream (HITS) tool [9], while medication adherence was assessed using the Medication Adherence Rating Scale (MARS) [10]. Relapse rates were determined through a retrospective review of medical records covering the previous 12 months.

Data Analysis

Data were entered into EpiData 3.1 and analyzed using Stata version 13. Descriptive statistics were used to calculate prevalence rates, while inferential statistics, including Chi-square tests and logistic regression, were employed to determine associations between IPV, medication adherence, and relapse rates. A p-value of <0.05 was considered statistically significant.

Ethical Considerations

Ethical approval for this study was obtained from the Institutional Review Board (IRB) of the College of Medicine and Health Sciences, University of Rwanda (Ref: 266/CMHS IRB/2022), and the Ethics Committee of Ndera Neuropsychiatric Hospital (Ref: 031/CNEC/2022).

The study adhered to the ethical principles outlined in the Declaration of Helsinki, ensuring the protection of participants' rights, dignity, and well-being. Prior to participation, all participants were provided with detailed information about the study's purpose, procedures, potential risks, and benefits. Informed consent was obtained in writing from each participant. Participants were informed that they could withdraw from the study at any time without any negative consequences to their ongoing care or treatment. To protect participants' privacy, all data were de-identified before analysis. Unique codes were assigned to each participant, and no personally identifiable information (e.g., names, addresses, or hospital identification numbers) was collected or stored.

Given the sensitive nature of IPV and the vulnerability of participants with chronic mental disorders, special care was taken to ensure that the study did not cause additional harm or distress. Trained mental health professionals were available throughout the study to provide immediate support to participants who experienced emotional distress or disclosed ongoing abuse. Participants who disclosed experiencing IPV were provided with information about available resources, including hotlines, counseling services, and legal support.

RESULTS

A total of 384 patients diagnosed with mental disorders and followed at Ndera Neuro-Psychiatric Hospital were included. Among the participants, fifty-eight percent (58%) were females, and 42% were males. About 19% of the study participants reported having ever been physically hit by their partners, 56% of all study participants reported to have ever been insulted or talked down by their partners, 36% reported to have ever been threatened with harm by their partners, 40% of the participants reported that their partners screamed or cursed at them and 30% reported to have been forced to do sexual acts that they were not comfortable with (Table 1).

Table 1: *Results of the screening of IPV using the HITS tool in patients with mental disorders*

Component	Number	Percentage
Physically hit		
Never	311	80.99
Rarely	30	7.81
Sometimes	31	8.07
Fairly	12	3.13
Frequently	0	0.0
Insulted or talked down		
Never	169	44.01
Rarely	73	19.01
Sometimes	110	28.65
Fairly	26	6.77
Frequently	6	1.56
Threatened with harm		
Never	246	64.06
Rarely	67	17.45
Sometimes	55	14.32
Fairly	15	3.91
Frequently	1	0.26
Screamed or cursed		
Never	229	59.64
Rarely	67	17.45
Sometimes	75	19.53
Fairly	13	3.39
Frequently	0	0.0
Forced to do sexual acts that they were not comfortable with		
Never	268	69.79
Rarely	33	8.59
Sometimes	66	17.19
Fairly	15	3.91
Frequently	2	0.52

Table 2. *The prevalence of IPV among study participants*

HITS score results	n	%
Total score		
Median (Q1-Q3)	6 (5-11)	
Prevalence of IPV		
IPV (Score >10)	108	28.12
No IPV (Score ≤10)	276	71.88

n: Frequency; %: Percentage; IPV: Intimate partner violence; HITS: Hurt, Insult, Threaten, Scream

Table 3. *Prevalence of IPV per gender category*

Gender	Presence of IPV		Total
	Yes	No	
Male	17 (10.63%)	143 (89.38%)	160 (41.67%)
Female	91 (40.63%)	133 (59.38%)	224 (58.33%)

IPV: Intimate partner violance

Considering the results of the screening done using the HITS tool, where patients who scored greater than 10 were considered to have IPV, the prevalence of IPV among patients diagnosed with mental illness was found to be 28% (Table 2). Considering the prevalence of IPV across genders, 10.6% of male participants were found to have IPV, while 40.6% of female participants were found to have IPV (Table 3).

Regarding the results of screening of medication adherence using the MARS, 51% of the patients reported that they forget to take their medications, 27.6% reported being careless at the time of taking medications, 30% of the participants reported to stop medications when they are feeling better, 46.6% stop medications when they are not feeling well and 16.9% take medications only when they are sick. Eighty-five percent of the participants reported that their thoughts are clear when they are on mediations, while 77% reported that staying on their medications can prevent them from getting sick (Table 4).

The median Medication Adherence Rating Scale score among our study participants was 8, and 32.0% of patients had poor adherence to their medications, and 67.9% were adherent to their medications. Fifty-one percent of the study participants reported a positive history of relapse in the past 12 months, where 33.8% of them had more than one relapse in those 12 months (Table 5).

Table 4. *Screening of medication adherence and reasons*

Attitude	Number	%
Forget to take medications		
Yes	196	51.04
No	188	48.96
Careless at times of taking medications		
Yes	106	27.60
No	278	72.40
Stop medications when feeling better		
Yes	115	29.95
No	269	70.05
Sometimes stop medication when not feeling well		
Yes	179	46.61
No	205	53.39
Only take medications when sick		
Yes	65	16.93
No	319	83.07
It is not natural for my body and my mind to be controlled by medications		
Yes	43	11.20
No	341	88.80
My thoughts are clear on medications		
Yes	327	85.38
No	56	14.62
By staying on medications, I can prevent from getting sick		
Yes	296	77.08
No	88	22.92
I feel weird, like a zombie on medications		
Yes	16	4.17
No	368	95.83
Medications make me feel tired and sluggish		
Yes	157	40.89
No	227	59.11

Table 6 shows that there are significant associations ($p<0.05$) between IPV, Adherence, Relapses, and Gender. Patients with IPV were 2.8 times more likely to be non-adherent to medications and 3.5

Table 5: *Medication adherence and disease relapses*

Variable	Number (n=384)	Percentage (%)
Non-adherent	123	32.03
Adherent	261	67.97
Total MARS Score (Median, IQR)	9 (7–10)	–
Relapses in Past 12 Months		
Yes	196	51.05
No	188	48.96
Number of Relapses (n=196)		
One relapse	129	66.15
More than one relapse	66	33.85

IQR: Interquartile range; MARS: Medication Adherence Rating Scale

Table 6: *Associations Between IPV, adherence, relapses, and gender*

Adherence to medications	Non-adherent	Adherent	OR (95% CI)	p-value
Patients with IPV	43 (39.81%)	65 (60.19%)	2.85 (1.74-4.65)	<0.001
Patients without IPV	52 (18.84%)	224 (81.16%)	Ref	
Relapses in the past 12 months	Yes	No		
Patients with IPV	78 (72.22%)	30 (27.78%)	3.48 (2.14-5.65)	<0.001
Patients without IPV	118 (42.75%)	158(57.25%)	Ref	
Experienced IPV	Yes	No		
Female	91 (40.63%)	133 (59.38%)	5.75 (3.26-10.17)	<0.001
Male	17 (10.63%)	143 (89.38%)	Ref	

MARS: CI: Confidence interval; Medication Adherence Rating Scale; OR: Odd ratio; p<0.05: Statistically significant

times more likely to relapse compared to those without IPV. Female patients were 5.7 times more likely to experience IPV than males.

DISCUSSION

The findings revealed a high prevalence of IPV among people with chronic mental health diseases, with women being significantly more affected than men. Furthermore, IPV was strongly associated with poor medication adherence and increased relapse rates. These results align with previous research but also offer new perspectives on the interplay between IPV, mental health, and treatment outcomes.

The study found that 28% of participants experienced IPV, which is consistent with global estimates but varies significantly across different regions and populations. For instance, the World Health Organization (WHO) reports that 23-56% of women worldwide experience either physical or sexual violence from an intimate partner [11]. However, the prevalence in this study is lower than the 53% reported in Ethiopia and higher than the rates found in Japan [12]. This variation can be attributed to cultural, socioeconomic, and legal differences across countries. In Rwanda, the relatively high prevalence of IPV may be influenced by traditional gender norms and the aftermath of the 1994 genocide, which has left lasting scars on the social fabric, including gender relations [3].

The study also highlights a significant gender disparity, with women being 5.75 times more likely to experience IPV than men. This finding is consistent with global trends, where women are disproportionately affected by IPV due to entrenched gender inequalities and power imbalances [1-4]. However, the study's focus on a psychiatric population adds a layer of complexity, as mental health disorders can exacerbate vulnerability to IPV. For example, individuals

with chronic mental illnesses may have impaired judgment, reduced social support, and limited ability to advocate for themselves, making them more susceptible to abuse [5].

The study found that patients who experienced IPV were 2.8 times more likely to be non-adherent to their medications compared to those who did not experience IPV. This finding is consistent with previous research that has established a strong link between IPV and poor medication adherence [6], [13]. The mechanisms underlying this association are multifaceted. IPV can lead to psychological distress, which may impair a patient's ability to adhere to their treatment regimen. Additionally, abusive partners may actively interfere with medication adherence by withholding medications or discouraging their use as a form of control [7]. A previous study conducted at Ndera Neuropsychiatric Hospital aligns with our findings and showed that among individuals with mental illnesses, there is a significant correlation between IPV and medication adherence; those who experienced IPV were 2.8 times more likely than those who did not take their prescriptions as prescribed (OR=2.85; 95% CI: 1.74-4.65; p<0.001) [14]. However, the study's results differ from those of Sehgal et al. [15], who found no significant difference in medication adherence between women with and without IPV. This discrepancy may be due to differences in study populations and methodologies. Sehgal et al. [15] focused on women with mental illness in South India, where cultural factors and healthcare access may play a more significant role in medication adherence than IPV. In contrast, the Rwandan study [14] included both men and women, suggesting that the impact of IPV on medication adherence may be more pronounced in certain populations or contexts.

Our study also found that patients who experienced IPV were 3.48 times more likely to have relapses in the past 12 months compared to those who did not experience IPV. This finding is consistent with previous research that has linked IPV to increased relapse rates in patients with mental health disorders [1,12]. In Rwanda, a previous study showed that the odds of relapses in the previous 12 months were 3.48 for patients with IPV and 2.14-5.65 for those without IPV (OR=3.48; 95% CI: 2.14-5.65; p<0.001) [14].

IPV can exacerbate symptoms of mental illness, leading to a vicious cycle of abuse and worsening mental health. For example, the chronic stress associated with IPV can trigger episodes of depression, anxiety, or psychosis, which may result in hospitalization or other forms of acute care [5]. Our findings suggest that IPV may also indirectly contribute to relapse by undermining medication adherence. Poor adherence to psychiatric medications is a well-established risk factor for relapse, and the study's results indicate that IPV is a significant barrier to adherence. This dual impact of IPV—directly exacerbating symptoms and indirectly undermining treatment—underscores the need for integrated interventions that address both IPV and mental health.

We found that women are 5.75 times more likely to experience IPV than men, which is consistent with a previous study in Rwanda and global trends [3,14,16], but it also raises important questions about the intersection of gender, mental health, and IPV. Women with mental health disorders may be particularly vulnerable to IPV due to societal stigma, economic dependence, and limited access to resources [4]. Additionally, our findings suggest that IPV may have a more pronounced impact on women's mental health, as evidenced by the higher rates of relapse and poor medication adherence among female participants. This gender disparity highlights the need for gender-sensitive interventions that address the unique challenges faced by women with mental health disorders. For example, interventions could include economic empowerment programs, legal support, and counseling services tailored to the needs of women experiencing IPV [17,18]. Additionally, healthcare providers should be trained to recognize the signs of IPV and provide appropriate referrals and support. Social support interventions are also needed as patients with strong social support networks may be better able to adhere to their medications despite experiencing IPV. Community-based programs that promote gender equality and provide support for victims of IPV may help reduce the prevalence of IPV and its associated mental health consequences [17,19]. Future research could evaluate the effectiveness of such interventions in improving medication adherence and reducing relapse rates among patients with chronic mental disorders.

This study has some limitations to consider. First, its cross-sectional design limits the ability to establish causal relationships between IPV, medication adherence, and relapses. Second, reliance on self-reported data may introduce

recall bias, particularly for sensitive topics like IPV. Third, the use of convenience sampling may limit the generalizability of findings to other populations or settings. Fourth, the study did not explore the role of socioeconomic factors, such as income or education, which could influence IPV and medication adherence. Finally, the focus on a single psychiatric hospital in Rwanda may not reflect the experiences of individuals in other regions or healthcare systems. Therefore, further extensive longitudinal studies addressing these limitations would help better inform strategies to ease the IPV burden among this population.

CONCLUSION

This study provides valuable insights into the prevalence of IPV among patients with chronic mental disorders and its impact on medication adherence and relapse rates. The findings highlight a high prevalence of IPV among individuals with chronic mental health disorders, disproportionally affecting more women and associated with poor medication adherence and high relapses. The findings suggest the need for integrated interventions that address both IPV and mental health, particularly for women who are disproportionately affected by IPV. Health providers have to consider regular screening of IPV in patients with mental disorders during their routine psychiatric consultations for holistic care. Families of affected individuals should help them take medication at home. Local authorities may also contribute by enhancing the awareness of gender equity and equality in the general population to reduce the burden of IPV on women, particularly those with mental disorders in their families. Finally, policymakers have to elaborate and reinforce policies on protecting patients with mental disorders against IPV by enacting targeted policies and strategies to eliminate IPV among the affected populations.

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