INTIMATE PARTNER VIOLENCE PREVALENCE AND ITS EFFECT ON MEDICATION ADHERENCE AND RELAPSES AMONG PATIENTS WITH CHRONIC MENTAL DISORDERS AT NDERA NEUROPSYCHIATRIC HOSPITAL.

Thesis submitted in partial fulfillment of the requirement for the Award of Master of Medicine in Psychiatry in the College of Medicine and Health Sciences, University of Rwanda.

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DECLARATION

I, Jeannette NYIRABAHIZI., hereby declare and certify that the work presented in this dissertation entitled **"INTIMATE PARTNER VIOLENCE PREVALENCE AND ITS EFFECT ON MEDICATION ADHERENCE AND RELAPSES AMONG PATIENTS WITH CHRONIC MENTAL DISORDERS AT NDERA NEUROPSYCHIATRIC HOSPITAL"** is entirely my original work and it has never been presented or submitted in a whole or in part to any other university.

Jeannette NYIRABAHIZI, MD Signature: ..... Date: 9./9./2022

Supervisors:

We, hereby declare that this dissertation has been submitted with our approval as supervisors.

Dr. BIZOZA RUTAKAYIRE Signature : ..... Date. 16/9/2022

Dr. Janvier YUBAHWE Signature : ..... Date. 12/09/2022

DEDICATION

To God the Almighty

To my parents, brothers and sisters

To my senior Drs and supervisors

To my colleagues and classmates

To all friends and everyone who have contributed to this achievement

This work is dedicated to you.

ACKNOWLEDGEMENT

First of all, my gratitude goes to Dr. BIZOZA RUTAKAYIRE and Dr. Janvier YUBAHWE who accepted to supervise this work. Their patience, availability and meticulous analysis and corrections made to this achievement.

Many thanks to my husband Jean de Dieu TUYISHIME and our children Yannis and Anissa for your encouragement and invaluable support which led to the completion of this dissertation.

For you all cited or forgotten, who contributed to my studies in Master of Medicine in Psychiatrics, I say thank you.

Jeannette NYIRABAHIZI

ABSTRACT

Background: The intimate partner violence (IPV) is considered a public health concern with serious human right abuse. This study evaluated the impact of IPV on medication adherence and/or relapses among patients with chronic mental disorders who consult the HNP CARAES Ndera.

Methods: This study is designed as a quantitative, descriptive and comparative study that used the HITS (HURT, INSULT, THREATEN, SCREAM) tool to screen IPV, MARS (MEDICATION ADHERENCE RATING SCALE) questionnaire to evaluate medication adherence while the number of relapses were determined using the medical file review over the last 12 months.

Results: The prevalence of IPV among patients followed for mental problems was founded to be at 28%. Patients who were found to have IPV had 3.48 odds of having relapses in the past 12 months compared to patients who did not have IPV and the difference was statistically significant (OR=3.48; 95% CI:2.14-5.65; p<0.001). Patients who were found to have IPV had 3.48 odds of having relapses in the past 12 months as those who did not have IPV (OR=3.48; 95% CI: 2.14-5.65; p<0.001). Females were 5.7 times more likely to have IPV as male patients (OR=5.75; 95% CI: 3.26-10.17; p<0.001).

Conclusion: Of our study participants, women are founded to be more concerned by IPV which showed their association with poor medication adherence and to increase the number of disease relapses.

Key wards: intimate partner violence, medication adherence, relapse, mental disorder.

LIST OF SYMBOLS AND ACRONYMS

IPV: Intimate Partner Violence

HNP: hôpital Neuropsychiatrique

CARAES: Cartate Aegrorum servi

CDC: Centre of Disease Control

WHO: Word Health Organization.

GBV: Gender-Based Violence

PTSD: Post-Traumatic Stress Disorder

MARS: Medication Adherence Rating Scale

HITS: Hurt, Insult, Threaten, and scream.

UR: University of Rwanda.

CMHS: College of medicine and health sciences.

IRB: Institutional Review Board.

CHAPTER I: INTRODUCTION

1.1. BACKGROUND

Intimate partner violence (IPV) which is considered a serious public health concern and is also a serious human right abuse (Das et al., n.d.; Lövestad, Löve, Vaez, & Krantz, 2017). The definition from the World Health Organization (WHO) describes violence as "an intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community that either results in or has a high likelihood of resulting in injury, death, psychological harm or deprivation" (Garcia-moreno et al., 2006; Kurt, Emel; Nese, Yorguner; Ekin, 2018).

IPV is declared as one of the priorities in public health which leaves no country or community untouched and requiring attention from national and international health agencies(Abramsky et al., 2011; Antai, 2011; Domenech & Sirvent, 2016; Garcia-moreno et al., 2006; Kurt, Emel; Nese, Yorguner; Ekin, 2018; Rees, Susan; Fisher, 2016). "Violence against women" is the term used to describe or define all types of harmful actions done to women due to their gender (Heise & Ellsberg, 1999). Different studies done previously showed significant association between the IPV and mental health in both low and high income countries (Chmielowska & Fuhr, 2017; Domenech & Sirvent, 2016; Hossain, Pearson, Mcalpine, et al., 2020; Hossain, Pearson, Sheru, et al., 2020; Islam, Jahan, & Hossain, 2018; Khalifeh, Oram, Trevillion, Johnson, & Howard, 2015; Rees, Susan; Fisher, 2016; Vasquez, Frenando; Torres & Otero, 2012).

Intimate partner violence like poor mental health services, low economic income, poor health status, poor quality of life and stigma are among the long-term cause of non-medication adherence (Afe, Emedoh, Ogunsemi, & Adegbohun, 2016; Hossain, Pearson, Mcalpine, et al., 2020)

1.2. PROBLEM STATEMENT

IPV is considered as an setback to human development and to the gender equality advancement (Chmielowska & Fuhr, 2017; Verduin, Engelhard, Rutayisire, Stronks, & Scholte, 2013). Patients with mental health disorders may experience different types of IPV due to the fact that they are vulnerable in the society and are sometimes neglected by their partners and other family members while they need their support by excellence in their daily life including the medication adherence (Chmielowska & Fuhr, 2017).

This study evaluated the impact of IPV on medication adherence and relapses among patients with chronic mental disorders who consult the HNP CARAES Ndera.

1.3. RESEARCH QUESTIONS

- What is the prevalence of IPV and gender-based difference among patients with chronic mental disorders who consult the HNP CARAES Ndera?
- Does IPV influence the medication adherence among those patients?
- Is there a relationship between IPV and relapses among patient with chronic mental disorders?

1.4. RESEARCH OBJECTIVES

1.4.1. GENERAL OBJECTIVE

To determine the prevalence of IPV and to assess its effect on medication adherence and relapses among patients with chronic mental disorders who consult the HNP CARAES Ndera.

1.4.2. SPECIFIC OBJECTIVES

i To determine the IPV prevalence and gender-based differences in patients followed for mental illness at Ndera HNP.

ii To assess the association between IPV and medication adherence on patients with mental illness who consult Ndera HNP.

iii To assess the relationship between IPV and relapses among patients with mental illness who consult Ndera HNP.

1.5. SIGNIFICANCE OF THIS STUDY

This study evaluated the prevalence of IPV, and its association on medication adherence and relapses among patients with chronic mental disorders who consult Ndera HNP. Similar studies have been done elsewhere around the world, but no study of this kind has been done in Rwanda including in the proposed study site.

Thus, the findings from this study enlighten mental health care providers on the role of IPV on medication adherence and relapses, influence the collaboration of GBV and mental health services in different hospitals and raise the awareness of different stakeholders on the impact of IPV among mental health patients.

CHAPTER II: LITERATURE REVIEW

2.0. INTRODUCTION

This chapter covered the theoretical literature, empirical literature and conceptual framework.

2.1. THEORETICAL LITERATURE

This part will mainly come back on what is known about this study topic. It will include a general overview on IPV and the types of IPV then its impact to the adherence to medications.

2.1.1 OVERVIEW ON IPV

The IPV can be as an aggression or abuse that occurs in a romantic relationship and it includes physical, sexual, and emotional abuse and behavior control by partner (World Health Organisation, 2015).

An intimate partner is defined as either current or former spouses and dating partners. The Center for Disease Control estimates that every 1 in five women and every one in twelve men experience sexual violence by their partners (CDC, 2021).

The World Health Organization states that the IPV can occur in any setting and that there is a coexistence of different form on one individual where it has been reported that 23-56% of women who reported to have faced sexual or physical violence have experienced both sexual and physical (World Health Organisation, 2015). IPV is associated with different mental health disorders like PTSD, depression, anxiety and personality disorders. (Stewart E, Donna; MacMillan, Harriet; Wathen, 2013).

Intimate partner violence is associated with important consequences to the community especially due to it morbidity and mortality among the victims (Khalifeh et al., 2015).

Different studies from different country showed difference in IPV, and there the developed countries had low prevalence of IPV. The prevalence of IPV was 3.8% in Japanese women in comparison to 53 % of Ethiopian women who experienced IPV (Stewart E, Donna; MacMillan, Harriet; Wathen, 2013).

A systematic review of 13 studies done showed that physical, sexual violence, verbal aggression and emotional violence were the most frequently identified and physical violence was most likely associated with mental health outcomes, economic violence was also mentioned (Chmielowska & Fuhr, 2017). A study done in Kenya on refugees from Somalia reported that women with history of IPV in the last year were at higher risk of developing depression, anxiety and PTSD than women without any history of IPV (Hossain, Pearson, Mcalpine, et al., 2020) and the same findings were reported from other studies (Deyessa et al., 2009; Jewkes, 2013; Roberts, Sarah; Flahert, Brian, Deya, Ruth; Nginga, 2018; Vasquez, Frenando; Torres & Otero, 2012).

The intimate partner violence exists in physical, sexual and psychological forms (Lövestad et al., 2017; Rees, Susan; Fisher, 2016; Rights, 2015; Verduin et al., 2013) and it has different effects to its survivors namely emotional and mental health outcomes like anxiety, depression and psychosomatic complaints, poor physical health and stigma (Deyessa et al., 2009; Gerald, Otim; Christine, Akumu; Isabella, 2005).

Like stigma, low economic income, poor health status,…Intimate partner violence, are among the long-term cause of poor medication adherence and relapses (Coker et al., 2002; Das et al., n.d.).

There is emerging evidence that the association between IPV and mental disorders is bidirectional, and that, patients with mental health disorders are at high risk of having IPV (Ose, Lilleeng, Pettersen, Ruud, & Van, 2017).

2.1.2. FORMS OF INTIMATE PARTNER VIOLENCE

The CDC recognizes the four types of intimate partner violence namely **physical, sexual, stalking violence** and **psychological aggression**.

Physical violence: Physical violence is defined as the use of physical force which may lead to disability, injury or any type of harm or to death, and it includes use of weapon, use of one's body or strength against another person, scratching, and so forth.

Sexual violence: It is categorized into 5 categories in all forms either completed or attempted sexual violence and they include: Rape or penetration of victim, victim was made to penetrate another person, non-physically pressured unwanted penetration, unwanted sexual contact and non-contact unwanted sexual experience.

Stalking and cyber stalking: This is a pattern of repetitive unwanted attention that may cause fear or concerns for one's own safety or the safety of someone else. These include unwanted emails, texts, phone calls, watching someone from distance, destroying someone's property and so forth.

Psychological aggression: This is defined as ant intent of harming somebody by using any of the following: verbal communication, nonverbal communication and having control over someone. It also includes: coercive control, threats of physical or sexual violence, taking advantage of victim/perpetrator's vulnerability, and/or presenting wrong information to someone in order to make them doubt about their own perception or memory.

2.2. EMPIRICAL LITERATURE

The empirical literature will highlight what other researchers have published on topics similar to this one.

2.2.1 PREVALENCE OF IPV

Mazeda et al reported a prevalence of disability at 44% among women who experienced gender based violence (GBV) and it was associated with poor mental health status (Hossain, Pearson, Sheru, et al., 2020).

An European Union survey reported that at least one in ten women has experiencing sexual violence at the age of 15 and one in twenty has experiencing rape (Rights, 2015). A study done to assess the relationship between GBV and mental disorders reported that 15% of the college women reported to be lifetime victims of gender based violence (Vasquez, Frenando; Torres & Otero, 2012) while another study done in Turkey reported a prevalence of lifetime violence ranging between 34% and 58.7% (Deyessa et al., 2009).

Ann et al in their study have shown a percentage of 28.9% and 22.9% of women and men who respectively experienced IPV in their life and being a woman was associated with experiencing violence compared to men (Coker et al., 2002)

2.2.2. IPV AND MEDICATION ADHERENCE AMONG PATIENTS WITH MENTAL DISORDERS

IPV has an impact on the mediation adherence in people with mental disorders where the severity or level of the violence is proportional to the adherence behavior as reported by different researchers (Al Maqbali et al., 2022; Rani et al., 2020). People with intimate partner violence present dependent and borderline personality disorders, and high level of impulsivity, anger, depression and drugs abuse. All these make them not feeling good and therefor refuse to take well their medications (Lingwooda & Bullb, 2013). But the study done by Ram et al reported that the scores of domestic abuse and level of medication adherence have no statistically significant relationship (Sehgal, apoorva., Jhanwar bharat., Gilhotra.K, 2018).

2.2.3. IPV AND RELAPSES IN PATIENTS WITH MENTAL DISORDERS

There is a documented negative effect of IPV on the rate of relapses among patients followed for schizophrenia and other mental health disorders where the increases the number of relapses among these patients (afe et al., 2016; stewart e, donna; macmillan, harriet; wathen, 2013; world health organisation, 2015).

2.3. CRITICAL REVIEW AND RESEARCH GAP

Different studies done explored the factors associated with adherence and non-adherence to medications or relapse in mental disorder. Regarding medication adherence and non-adherence, factors such as financial problems, long distance to facilities, no improvement in symptoms, side-effect from medication, lack of caregiver, lack of insight about the disease, and nature of job were identified (Eticha, Teklu, Ali, Solomon, & Alemayehu, 2015; Girma, Abdisa, & Fikadu, 2017; Kabanda, 2016; Lin, Sklar, Oh, & Li, 2008; Martin, Feig, Maksoudian, Wysong, & Faasse, 2018), while factors associate with relapse were associated with no adherence to medication, social and economic problems.

However, no study has been conducted yet in Rwanda and at proposed study site to determine the prevalence of IPV and its effect medication adherence and relapse among patients with mental disorders.

2.5. THEORETICAL FRAMEWORKS

Different frameworks have been used in the past to explore the factors associated with adherence or poor adherence and relapse in patients living with chronic mental disorders. For this study, we were use the one developed by the CDC which explores the relationship between IPV and poor medication adherence and relapse.

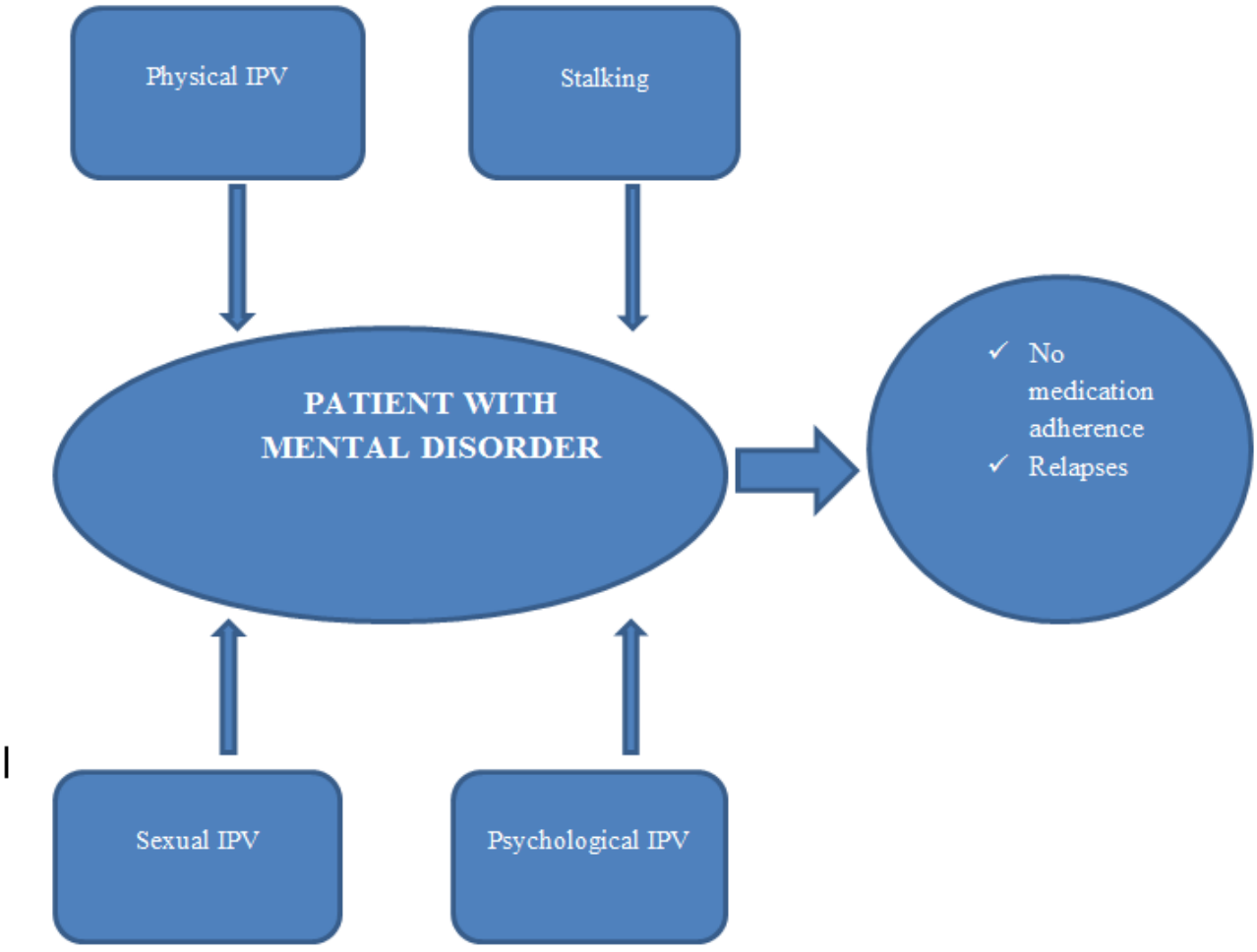

Figure 1: Framework on the relationship between IPV and non-adherence and relapses

2.6. CONCEPTUAL FRAMEWORK

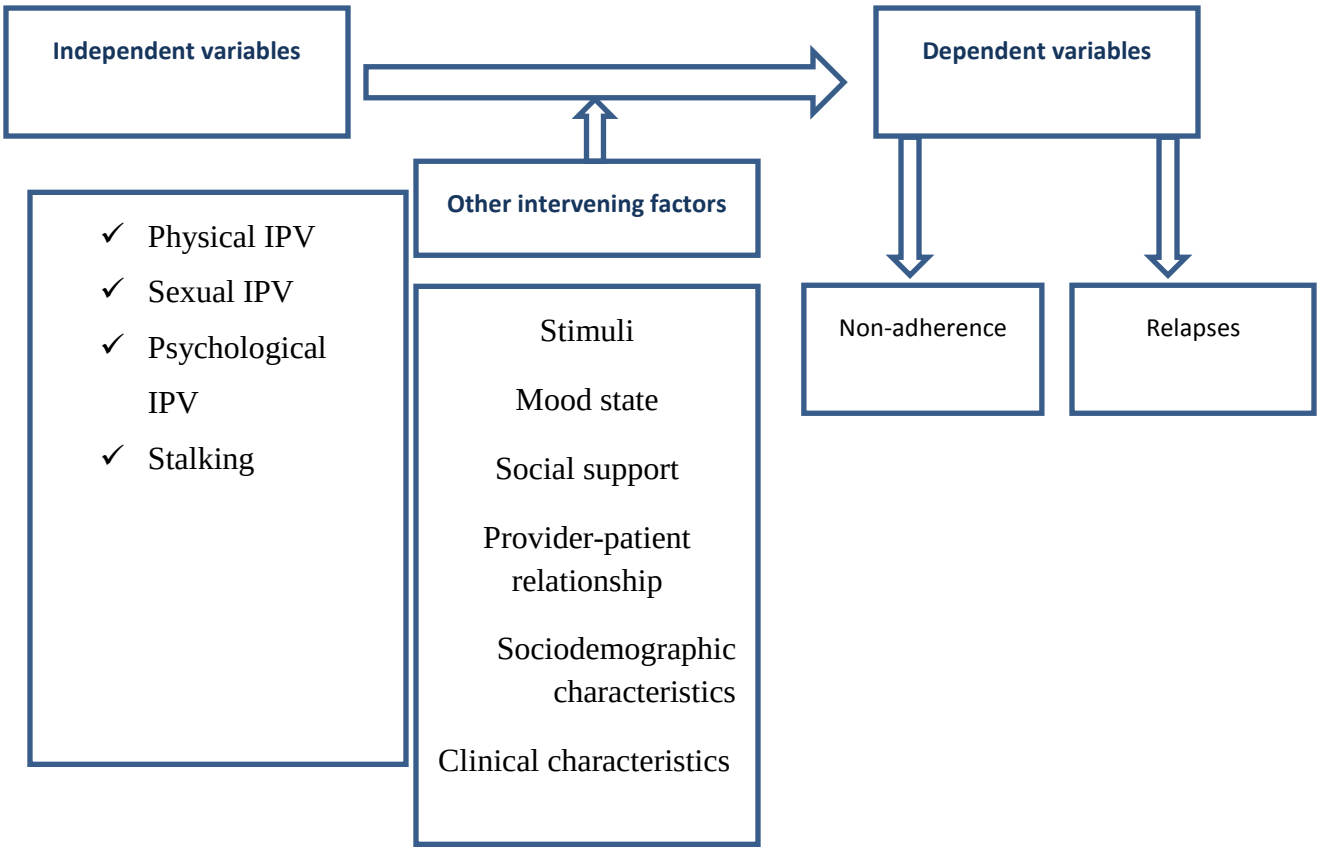

Figure 2: Conceptual framework for the relation between the independent factors, dependent factors and no adherence to medications and mental disease relapses

CHAPTER III. METHODOLOGY

3.1. STUDY DESCRIPTION

This is aims to de determine the prevalence of IPV and its association on medication adherence and relapses among patients with chronic mental disorders at Ndera Neuropsychiatric hospital. A quantitative approach was used to collect data where a questionnaire-based on interview was administered to the users of the central level mental health settings meeting the eligibility criteria.

3.2. STUDY DESIGN

This study is designed as a quantitative, descriptive and comparative study that used:

- HITS (HURT, INSULT, THREATEN, SCREAM) tool to screen IPV, where a 1 point is given to patient who respond never, 2 points to one who respond, rarely, 3 points to one who respond sometimes, 4 points to one who respond fairly and 5 point to one who respond frequently. Is considered positive, a score greater than 10.
- MARS (MEDICATION ADHERENCE RATING SCALE) questionnaire to evaluate medication adherence, where 1 point is given to patient who respond positively for good adherence. A score of 1-5: nonadherence and a score of 6-10: good adherence.
- The number of relapses were determined using the medical file review over the last 12 months.
- The prevalence of IPV was determined using descriptive statistics, while its effect on medication adherence and relapse was obtained by comparing the results of those who were screened negative and positive to HITS questionnaire.

3.3. STUDY SITE

This study was conducted at HNP Ndera located in Kigali city, Gasabo district, Ndera sector. The Ndera neuropsychiatric hospital was founded by the Congregation of the Brothers of Charity. Before the independence (1962), Rwanda and Burundi formed a single administrative entity (Rwanda-Urundi) where mentally-ill patients were sent to Burundi at Prince Regent Charles Hospital which was operational since 1951. After Rwanda independence, a convention was signed in 1968 and in the same year the construction activities of Ndera HNP started. Currently, it offers different services such as OPD consultations, admissions, occupational therapy, physiotherapy, clinical psychology and neurology.

3.4. STUDY POPULATION

The participants of this study were patients with chronic mental disorders and who consulted the HNP Ndera.

3.5. SELECTION OF STUDY POPULATION

3.5.1. INCLUSION CRITERIA

In this study, the participants fulfilling the following criteria were recruited:

- Patient followed at HNP CARAES Ndera for mental disorders,
- Being on psychotropic medication for at least 12 months
- Patient with mental disorder aged of 18 years or above,
- Patient followed for mental disorder and have a partner or an ex-partner,
- Able to understand the relevant information and to give the informed consent

3.5.2. EXCLUSION CRITERIA

- Patient who consult HNP CARAES Ndera for other reason than mental disorder,
- Patient with mental disorder, but bellow 18 years of age
- Patient with mental disorder, but single and with no history of a partner
- Patients with mental disorder followed less than12 months,

- Patient with mental disorder and inability to understand the relevant information will be excluded on the study.

3.6. SAMPLING METHOD AND SAMPLE SIZE

The Fischer's formula was used to estimate a proportion from the population and the sample size was calculated as this:

$$n = Z^2 \frac{p(1-p)}{e2}$$

n= the minimum required sample size.

Z^2= the standard normal value corresponding to 95% confidence interval equaling to 1.96.

p= the estimated proportion or prevalence of IPV which is estimated to 50% (no reported proportion of IPV in Rwanda).

e= level of precision set at 5%.

Thus,

$$n= 3.84\frac{0.5(1-0.5)}{0.0025}= 384$$

And the convenience sampling was used as the sampling method.

3.7. PROCEDURE AT ENROLMENT.

Enrolled participants were selected from our study population. They were only approached after getting the services they requested for. Patients who meet the participation criteria and accept to participate in this study were given a consent form to sign and be considered for the study.

3.8. DATA COLLECTION AND MANAGEMENT

A questionnaire was used to collect data. Every day, data collectors collected all data and submitted them to the study coordinator (the principal investigator). Thereafter, data on hard copies were entered by trained research assistant in software (epidata 3.1) to produce soft data and these soft data were kept by the principal investigator.

3.9. DATA ANALYSIS

Stata version 13 was used to analyze the data. The prevalence was calculated using descriptive statistic, while the groups' comparison was done using Chi-square test and logistic regression.

Tables and charts were used to present the results using frequencies. The statistical significance for associations was taken at the level $p < 0.05$.

3.10. ETHICAL CONSIDERATIONS

3.10.1. CONFIDENTIALITY

The principal investigator assured the confidentiality and anonymity of the study participants where participants were assigned the unique code numbers. Any information was de-identified before data entry and no individual respondents' information were presented.

3.10.2. INFORMED CONSENT

Participants were individually given a consent form by the data enumerators after clearly explaining to them the nature of the research project. The content of the consent was loudly read to each participant by the data enumerator in the language that the participant understands well between Kinyarwanda and English. After satisfactory explanations by the data enumerator, consented participants affixed their signatures or fingerprints on the consent form.

3.10.3. ETHICAL APPROVAL

Ethical approval was secured from the Institutional Review Board of College of Medicine and Health Sciences, University of Rwanda and from the Ethics committee of HNP Ndera prior to data collection period

3.11. DISTRIBUTION OF RESPONSIBILITY

The principal investigator had the responsibility to conduct and coordinate all the steps of the study under the supervision of the thesis supervisors. Data collection was done by data enumerators under her supervision while the analysis was done by a statistician.

CHAPTER IV: RESULTS

A total of 384 patients diagnosed with mental disorders and followed at NDERA Neuro-Psychiatric Hospital. Among the participants, fifty eight percent (58%) of them were females and 42% were males.

About 19% of the study participants reported to have 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 (Table1).

Table 1: Results of the screening of IPV using 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

The prevalence of IPV among study participants

Considering the results of the screening done using 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).

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

Considering the prevalence of IPV across gender, 10.6% of male participants were found to have IPV while 40.6% of women participants were found to have IPV (Table 3).

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%)

Regarding the results of screening of medication adherence using Medication Adherence Scale (MARS), 51% of the patients reported that they forget to take their medications, 27.6% reported to be careless at 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 they thoughts are clear when they are on mediations while 77% reported that staying on their medications can prevent them from getting sick (More details are in table 4)

Table 4: Results of the screening of Medication adherence using Medical adherence scale (MARS) tool among patients with mental disorders

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

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 (Table 5). Fifty one percent of the study participants reported a positive history relapses in the past 12 months where 33.8% of them had more than one relapse in those 12 months (Table 5).

Table 5: Status of medication adherence among study participants

Variables	Number	%
Total MARS score/10		
Median (Q1-Q3)		8 (7-10)
Adherence category		
Non-adherent	123	32.03
Adherent	261	67.97

Table 6: Status of disease relapses among study participants

Variables	Number	%
Relapses in past 12 months		
Yes	196	51.05
No	188	48.96
Number of relapses (n=196)		
One	129	66.15
More than one	66	33.85

The effect of IPV on adherence to medications

There is significant association between IPV and adherence to medications among patients with mental disorders where patients who experienced IPV were 2.8 times more likely to be non-adherent to their medications compared to patients who experience IPV (OR=2.85; 95% CI: 1.74-4.65; $p<0.001$) [Table 7].

Table 7: Effect of Intimate Partner Violence on adherence to medications

IPV	Adherence to medications		OR (95% CI)	P
	Non-adherent	Adherent		
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	

The relationship between IPV and having relapses

There was a strong association between IPV and having relapses of the disease where patients who were found to have IPV were 3.48 times more likely to have relapses in the past 12 months compared to those who did not have IPV and the difference was significant (OR=3.48; 95% CI:2.14-5.65; p<0.001) [Table 8].

Table 8: The relationship between IPV and having relapses

IPV	Relapses in past 12 months		OR (95% CI)	p
	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	

The association between gender and Intimate partner violence

Among patients with mental health disorders, female patients were more likely to experience IPV where they were 5.7 times more likely to have IPV as male patients with a significant difference (OR=5.75; 95% CI:3.26-10.17; p<0.001) [Table 9].

Table 9: The association between gender and IPV

Gender	Presence of IPV		OR (95% CI)	P
	Yes	No		
Male	17 (10.63%)	143 (89.38%)	Ref	
Female	91 (40.63%)	133 (59.38%)	5.75 (3.26-10.17)	<0.001

CHAPTER V: DISCUSSION

Our findings indicate that the prevalence of IPV was 28% among our study participants where 19% of the participants physical violence, 30% reported sexual violence and 36% reported to have ever been threatened with harm, 40% of the participants reported that their partners screamed or cursed at them and 56% reported that they were insulted by their partners. Our findings are in accordance with the 2015 report by the WHO where it was estimated that 23-56% of women face either sexual or physical violence. The prevalence of IPV in our study participants was higher compared to the prevalence of IPV reported in Japan by Stewart et al (Stewart E, Donna; MacMillan, Harriet; Wathen, 2013) and lower compared to the prevalence reported in Ethiopia of 53% (Stewart E, Donna; MacMillan, Harriet; Wathen, 2013). The prevalence of IPV from our study participants was also low compared to the findings from Emel et al. who reported that 73.8% of their participants reported to have subjected to either physical or verbal violence or specifically 70.1% of their study subjects had verbal violence while 49% had physical violence (Kurt, Emel; Nese, Yorguner; Ekin, 2018). Vasquez et al. found that the lifetime prevalence of violence in Turkey was ranging between 34% and 58.7% which is high compared to our finding. Our findings on prevalence of IPV was found to be in accordance with the findings from the study by Coker et al. who found that 28.9% and 22.9% of women and men respectively experienced IPV in their life (Coker et al., 2002). The prevalence of IPV in our study participants was low when relating that of Mazeda et al. who reported that 44% of women who experience gender based violence had poor mental status (Hossain, Pearson, Mcalpine, et al., 2020).

Our findings showed that the IPV is related with non-adherence to medication where patients with IPV were found to be 2.8 times more likely to have poor adherence to their medications ($p<0.001$). Our results are in accordance with the results from the studies of other researchers who reported that the severity of violence (IPV) is directly proportional to the adherence behavior (Racin et al, 2020; Al Magbali, 2022). Our findings are supported by the findings from the study by Lingwooda & Bullbwho reported that people who experience Intimate Partner

Violence suffer from different mental health disorders namely personality disorder, depression, substance abuse and so forth which predispose them to poor adherence (Lingwooda & Bullb, 2013).

Our results are different from the results of the study done by Sehgal et al who reported that there was no difference in having IPV according to the level of medication adherence (Sehgal, apoorva., Jhanwar bharat., Gilhotra.K, 2018).

Our findings also indicated that the intimate partner violence is associated with relapse episodes where patients with IPV were 3.5 times more likely to have relapses in the previous 12 months compared to those did not have IPV. Our results are in accordance with the results from the previously done studies which reported a negative impact of IPV on the rate of relapses among patients with mental health disorders where they reported that IPV increases the number of relapses (Afe et al., 2016; Stewart E, Donna; MacMillan, Harriet; Wathen, 2013; World Health Organisation, 2015).

Our findings also showed that female participants were affected by IPV than male participants where female participants in our study were 5.75 times more likely to have intimate partner violence as male participants ($p<0.001$) which is supported by the findings from the other studies (Afe et al., 2016; Chmielowska & Fuhr, 2017; Rees, Susan; Fisher, 2016; Roberts, Sarah; Flahert, Brian, Deya, Ruth; Nginga, 2018; Stewart E, Donna; MacMillan, Harriet; Wathen, 2013; World Health Organisation, 2015).

CHAPTER VI: CONCLUSION AND RECOMMENDATIONS

6.1. CONCLUSION

Of our study participants, the prevalence of intimate partner violence was 28% which is relatively high and women are more likely to experience IPV. IPV was associated with poor medications adherence and also associated with an increase in the number of relapses.

6.2. RECOMMENDATIONS

- **To the health providers:**

To consider regular screening of the IPV in patients with mental disorders during their routine psychiatric consultations for holistic care.

- **To the family:**

To help patient with mental disorder on taking medication at home and to respect the appointment given, also take consideration on their complaint, particularly when issue of IPV.

- **To Local authorities:**

To enhance the awareness of gender equity and equality in the general population to reduce the burden of IPV on women, particularly those with mental disorder in their families.

- **To the policy makers:**

To elaborate and reinforce policies on protecting of patient with mental disorders against IPV.

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APPENDICES

APPENDIX 1: CONSENT FORM

Title**: "Intimate Partner Violence prevalence and its effect on medication adherence and relapses among patients with chronic mental disorders who Consult Outpatient Department of Ndera Neuropsychiatric Hospital"**

This informed consent form is for patient or caretakers who will be recruited for participating in the study, entitled **"Intimate Partner Violence prevalence and its effect on medication adherence and relapsess among patients with chronic mental disorders who Consult Outpatient Department of Ndera Neuropsychiatric Hospital"**

The main investigator is Jeannette NYIRABAHIZI, a resident in psychiatry at the University of Rwanda.

Part I: Information Sheet

Introduction

Jeannette NYIRABAHIZI, a postgraduate student at the University of Rwanda, is doing a research on **"Intimate Partner Violence prevalence and its effect on medication adherence and relapses among patients with mental disorders who Consulting Outpatient Department of Ndera Neuropsychiatric Hospital"**. We are going to give you information and invite you to be part of this research. Before you decide, you can talk to anyone you feel comfortable with about the research. This consent form may contain words that you do not understand. Please ask me to stop as we go through the information and I will take time to explain. If you have questions later, you can freely ask them.

Purpose of the research

Patients with mental health disorders can be subjected to any types of violence from their partners, family members and other members of the community due to their vulnerability constraints in the society and sometimes from segregation. This study was generating the data, and then we have formulated the recommendations for improving the quality services that we are giving to our patients. We request you to be a part of this research.

Before agreeing to participate in this study, it was important that you know the purpose of this study and knowing the nature of the questions. Don't hesitate to request for clarification for unclear information.

Intimate Partner Violence prevalence and its effect on medication adherence and relapses among patients with chronic mental disorders who Consult Outpatient Department of Ndera Neuropsychiatric Hospital.

Questions are about?

Questions are addressed to patients who consult the outpatient department of Neuropsychiatric hospital of Ndera for different mental health issues. Those questions are related to the types of violence against patient, medication adherence and relapses of the respondent herself and there are questions about physical and verbal violence. The time required to respond on the planed questions was around 10 minutes.

Who do we want to talk to?

We want to talk to patients who consult out patients department of HNP Ndera for various mental health problems in 12 months ago and over. It is voluntary participation; there is no push and no law. If you don't want to participate, you don't explain why.

When you agree to participate:

- ✓ You sign/ write you names that prove that you have accepted to participate in this study.

If there are questions that you don't feel comfortable to answer, you free to skip.

Right to refuse or withdraw

You are allowed to stop the participation at any time

Incentives

There are no any incentives for your time, your participation is voluntary.

Confidentiality

Your names, and other information shared will not be shared with anybody rather than the research team unless you provide your permission.

Dissemination of results

The outcome from this research will be used to improve quality of care in hospitals. There is no personal interest or direct benefits are intended soon for researchers.

Who are conducting this research?

This research is led by a student from University of Rwanda, doing her master in science in epidemiology.

Who to contact?

If you want more information about project, you can contact the researcher on the following contacts:

Jeannette Nyirabahizi: Phone number: + (250) 783376534 or at email: bizijanet@gmail.com

The Direction of Institutional Board of CMHS, at phone number 0788563311or email: sundayfrax@gmail.com

Part II: Certificate of consent

1. I prove that I have read or been informed on this research **"Intimate Partner Violence prevalence and its effect on medication adherence and relapses among patients with chronic mental disorders who Consult Outpatient Department of Ndera Neuro psychiatric Hospital"**, I was given time to ask questions and they are well answered.
2. I understand that to participate in this research is voluntary and I can quit any time without providing any reasons.
3. I agree to have part in **Intimate Partner Violence prevalence and its effect on medication adherence and relapses among patients with mental disorders who Consulting Outpatient Department of Ndera Neuro psychiatric Hospital.**

Participant

Name of participant: ……..…Signature Date …. /…. /20…

Interviewer

Name of the researcher: ……Signature Date: …/……/20…

APPENDICE 2: QUESTIONNAIRE.

1. **Demographic informations**

Record ID	……
Age in years	……years
Gender	Male Female

2. **HURT, INSULT, THREATEN, and SCREAM (HITS) Tool** [for Intimate Partner Violence Screening]

How often does your partner?	NEVER	RARELY	SOMETIMES	FAIRLY OFTEN	FREQUENTLY
	(1)	(2)	(3)	(4)	(5)
1. Physically hurt you?					
2. Insult or talk down to you?					
3. Threaten you with harm?					
4. Scream or curse at you?					
5. (+) Force you to do sexual acts that you are not comfortable with?					
TOTAL SCORE:					

HITS:

Each item is scored 1-5.

Range between 4-20.

A score greater than 10 is considered positive

3.**MARS (MEDICATION ADHERENCE RATING SCALE) QUESTIONNAIRE** [to evaluate medication adherence]

	Question	Answer
1	Do you ever forget to take your medication?	Yes / No
2	Are you careless at times about taking your medication?	Yes / No
3	When you feel better, do you sometimes stop taking your medication?	Yes / No
4	Sometimes if you feel worse when you take the medication, do you stop taking it?	Yes / No
5	I take my medication only when I am sick	Yes / No
6	It is unnatural for my mind and body to be controlled by medication	Yes / No
7	My thoughts are clearer on medication	Yes / No
8	By staying on medication, I can prevent getting sick.	Yes / No
9	I feel weird, like a 'zombie' on medication	Yes / No
10	Medication makes me feel tired and sluggish	Yes / No

MARS: *A score between 1 to 5: nonadherence on medication,*

A score between 6 to 10: good adherence on medication

UNIVERSITY of RWANDA

COLLEGE OF MEDICINE AND HEALTH SCIENCES

DIRECTORATE OF RESEARCH & INNOVATION

CMHS INSTITUTIONAL REVIEW BOARD (IRB)

Kigali, 19th /April /2022

Dr Nyirabahizi Janet
School of Medicine and Pharmacy, CMHS, UR

Approval Notice: No 266/CMHS IRB/2022

Your Project Title ***"Intimate Partner Violence Prevalence And Its Effect On Medication Adherence And Relapses Among Patients With Chronic Mental Disorders At Ndera Neuropsychiatric Hospital"*** has been evaluated by CMHS Institutional Review Board.

		Involved in the decision		
		Yes	No (Reason)	
Name of Members	**Institute**		**Absent**	**Withdrawn from the proceeding**
Prof Kato J. Njunwa	UR-CMHS	X		
Prof Stefan Jansen	UR-CMHS	X		
Dr Brenda Asiimwe-Kateera	UR-CMHS	X		
Prof Ntaganira Joseph	UR-CMHS	X		
Dr Tumusiime K. David	UR-CMHS	X		
Dr Kayonga N. Egide	UR-CMHS	X		
Mr Kanyoni Maurice	UR-CMHS		X	
Prof Munyanshongore Cyprien	UR-CMHS	X		
Mrs Ruzindana Landrine	Kicukiro district		X	
Prof Gishoma Darius	UR-CMHS	X		
Prof Donatilla Mukamana	UR-CMHS	X		
Prof Kyamanywa Patrick	UR-CMHS		X	
Prof Condo Umutesi Jeannine	UR-CMHS		X	
Dr Nyirazinyoye Laetitia	UR-CMHS	X		
Dr Nkeramihigo Emmanuel	UR-CMHS		X	
Sr Maliboli Marie Josee	CHUK	X		
Dr Mudenge Charles	Centre Psycho-Social	X		

After reviewing your protocol during the IRB meeting of where quorum was met and revisions made on the advice of the CMHS IRB submitted on 14th April 2022, **Approval has been granted to your study.**
Please note that approval of the protocol and consent form is valid for **12 months**.

You are responsible for fulfilling the following requirements:

1. Changes, amendments, and addenda to the protocol or consent form must be submitted to the committee for review and approval, prior to activation of the changes.
2. Only approved consent forms are to be used in the enrolment of participants.
3. All consent forms signed by subjects should be retained on file. The IRB may conduct audits of all study records, and consent documentation may be part of such audits.
4. A continuing review application must be submitted to the IRB in a timely fashion and before expiry of this approval
5. Failure to submit a continuing review application will result in termination of the study
6. Notify the IRB committee once the study is finished

Sincerely,

Date of Approval: The 19th April 2022

Expiration date: The 19th April 2023

Prof Stefan JANSEN
Ag. Chairperson Institutional Review Board,
College of Medicine and Health Sciences, UR

Cc:

- Principal College of Medicine and Health Sciences, UR
- University Director of Research and Postgraduate Studies, UR

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CARAES NDERA HOSPITAL ETHICS COMMITTEE

Ndera, May 30, 2022
N° 031/CNEC/2022

Principal Investigator: Jeannette NYIRABAHIZI
Master's of Medicine in Psychiatry
University of Rwanda (UR)

Your research Project **"Intimate partner violence prevalence and its effect on medication adherence and relapses among patients with chronic mental disorders at Ndera Neuropsychiatric Hospital"** has been evaluated by CARAES NDERA Hospital Ethics Committee.

Members of Ethics Committee - CARAES Ndera Hospital			Involved in the decision		
N°	Names	Position	Yes	Absent	Withdrawn from the proceeding
1.	Dr. Fidele SEBERA	Director of Medical & Allied Health Sciences Services / Neurologist – *CNEC Chairperson*	x		
2.	Josiane UMWIRINGIRWA	Research assistant – *CNEC Secretary*	x		
3.	Alain NYAMWASA	Data Manager	x		
4.	Israel IRAZIRIKANA	Legal Advisor	x		
5.	Emmanuel KAGABO	Centre Icyizere-Mental health nurse	x		
6.	Jeanne d'Arc MUTETERI	Mental health nurse –Neurology Representative	x		
7.	Clemence UWAMAHORO	Centre ICYIZERE – Representative	x		
8.	Dr Charles MUDENGE	Psychiatrist		x	

After reviewing your protocol and related documents, presented during the CARAES NDERA Ethics committee (CNEC) meeting of May 26, 2022 where quorum was met, **we hereby provide approval for the above-mentioned protocol.**

Please note that the approval of protocol is valid for **12 months.**

You are responsible for fulfilling the following requirements:

1. Changes, amendments and addenda to the protocol or consent form must be submitted to the committee for review and approval, prior to activation of changes.
2. Only approved consent form to be used in the enrollment of participants.
3. All consent forms signed by subjects should be retained on file, the CNEC may conduct audits of all study records, and consent documentation may be part of such audits.
4. A continuing review application must be submitted to CNEC in a timely fashion and before expiry of this approval.
5. Failure to submit a continuing review application will result in termination of the study.
6. Notify CARAES NDERA Hospital Ethics Committee once the study is finished.
7. Submission of **a final copy of research findings** to the hospital is **mandatory**.

Date of Approval: May 30, 2022
Expiration date: May 29, 2023

Sincerely,

Dr.Fidele SEBERA

Chairperson, CARAES NDERA ethics committee

C.C:

- Director General of CARAES NDERA Neuropsychiatric Hospital
- Director of Education, Research, CPD and Quality Improvement

Date :13/01/2023

Note

The Study Entitled "INTIMATE PARTNER VIOLENCE PREVALENCE AND ITS EFFECT ON MEDICATION ADHERENCE AND RELAPSES AMONG PATIENTS WITH CHRONIC MENTAL DISORDERS AT NDERA NEUROPSYCHIATRIC HOSPITAL", is approved by the Directorate of Research and Innovation for submission in UR_CMHS Library . The plagiarism report is 11% with the following parametters:

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Sincerely

Emile Nisingizwe

Research and Innovation Officer,CMHS