Prevalence of Suicidality among Patients of Major Depressive Disorder

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Abstract: Background: Suicidality is a global health problem, with an estimated 800,000 cases per year, about after every 40 seconds one person lose life due to suicide. Major Depressive disorder accounts for 87% of completed suicidal events. This study is carried out to determine the prevalence of Suicidal Ideations, Suicidal Plans and Suicidal Attempt among patients with major depressive disorders attending neuropsychiatric unit of Nangarhar University teaching Hospital, located in Jalalabad city of Nangarhar, Afghanistan. Methods and materials: A cross-sectional study was carried out from November 1, 2023, to April 30, 2024, among patients of Major Depressive Disorder in neuropsychiatric unit of Nangarhar University teaching hospital, Jalalabad, Afghanistan. The sample size was 423, and all patients of Major Depressive Disorder aged 18 years or above were included randomly in study through Diagnostic and Statistical Manual of Mental Disorders (DSM) and International Statistical Classification of Diseases (ICD) criteria for Major Depressive Disorder. Data was collected by a well-designed questionnaire with standard questions about suicidal ideations, suicidal plan and suicidal attempts from various studies. Data were analyzed using the Statistical Package for Social Sciences (SPSS) version 28. Findings: A total number of 423 patients of Major Depressive Disorder participated in the study. Of them 267 (63.1%) were females and 156 (36.9%) were males. Among 423 patients with major Depression 195 (46.1%) had suicidal Ideations and . Conclusion: The study found a high prevalence of Suicidal Ideations, Suicidal Plan and Suicidal Attempt among patients of Major depressive disorders, highlighting the need for further studies to investigate the causes and associated factors of Suicidal Ideations, Suicidal Plan and Suicidal Attempts among patient suffering from major depressive disorders.

Keywords: major depression, suicidal ideation, suicidal plan, suicidal attempt

INTRODUCTION

Suicidality is a serious issue of health globally, an estimated 800,000 individuals commit suicide annually, with one suicide occurring every 40 seconds; Suicide also causes immense pain for the victim's family and friends and adds to the expense of

healthcare (Cai et al., 2021). Suicide is a tragic act, which has dominant bad effects on global burden of diseases responsible for around 1.4% of total burden in people aged 15-35 years (Asfaw et al., 2020). Suicidal ideation (SI), suicide plan (SP), suicide attempt (SA), and a committed suicide (CS) are all considered forms of suicidality (Zhang et al., 2022). The term SI is used to describe ideas or desires to end one's own life; planning a suicide is referred to as SP and SA stands for self-inflicted death (Posner et al., 2007). Future suicide attempts are more common in those with SI, SP, and SA than in people without them.(Burke et al., 2018).

Suicide ranked as the fourth most common cause of death worldwide in 2019 for individuals between the ages of 15 and 29, with over 58% of deaths occurring before the age of 50 (Onaemo et al., 2022). Over the past 45 years, the suicide rate has increased by 60%, and 85% of suicide deaths occur in low- and middle-income nations. (Wagenaar et al., 2012).

In developed nations, up to 90% of completed suicides were linked to mental illnesses because Suicide is a complex issue that, as most nations do not have a legal framework addressing it, makes reporting on it likely to be underreported or under ranked, making it difficult to determine the actual number of deaths (Onaemo et al., 2022). Major depressive illness and substance abuse disorders are linked to an increased risk of suicidal thoughts and acts in North America. Additionally, the lifetime risk is roughly 4% for individuals with mood disorders and 7% for those with substance use disorders, particularly alcohol dependency..(Onaemo et al., 2022)

Depression is a mental health condition that affects mood, the World Health Organization (WHO) listed unipolar depression as the fourth largest etiology of disability globally in 2002, and by 2030, it is predicted to be the second most common cause of disability (Cummins et al., 2015). Depression is a prevalent mental condition that affects approximately 280 million people worldwide and is the leading cause of disability (Hashimi et al., 2024). Major depression accounts for around 87 percent of completed suicide, which is a big risk and makes health care system to be aware and take action against these problems through preventing and controlling actions (Nordentoft et al., 2011). In addition to CS, suicidal thoughts and behaviors are frequently present in MDD. For example, a recent meta-analysis found that 31% and 53.1 percent of MDD patients had SA and SI, respectively (Dong et al., 2018; Dong et al., 2019).

COVID-19 pandemic is also associated with increased cases of Major Depression which leads to higher risk of Suicidal Ideations, Suicidal Plans and Suicidal Attempts (Zhang et al., 2022).

Asia bears for 60% of all suicide globally and around 60 million. In Pakistan the chance of getting depression disorder is 10-25% in females and 5-12% in men with is increasing in patients with chronic disorders. (Qamar et al., 2021). In a multi-country,

cross-sectional, study of six Asian countries (China, South Korea, Malaysia, Singapore, Thailand, and Taiwan reported that 22.9% of Major depression patients had high suicidality and 77.1% of major depression patients had low suicidality (Lim et al., 2014). Another Chinese study reveals that among patients with Major depression, the pooled lifetime prevalence of SI, SP, and SA was 53.1%, 17.5%, and 23.7%, respectively. The prevalence of SA and SI at one month was 20.3% and 27.7%, respectively. Following the commencement of MDD and during hospitalization, the pooled prevalence of SA was 42.1% and 17.3%, respectively. (Dong et al., 2018).

Afghanistan has experienced nearly 40 years of warfare, political unrest, and extreme poverty. As a result, the country has a higher than average rate of mental health patients (Shin et al., 2009). According to an Afghan study, the population's prevalence of severe depressive episodes was 11.1%, suicidal thoughts were 2.26%, and lifetime suicidal attempts were 3.50%, with women being more likely to have these symptoms (Kovess-Masfety et al., 2021). The lack of research in Afghanistan on suicidality and the correlation between major depressive disorder and other mental health issues necessitates the description and examination of pertinent data.

This study aims to characterize the Suicidality Prevalence among Major Depressive Disorder Patients Visiting the Nangarhar University Teaching Hospital.

Materials and methods

A Hospital Based cross sectional study was conducted from November 1, 2023, to April 30, 2024 in Neuropsychiatric unit of Nangarhar university teaching hospital Jalalabad, Afghanistan.

The study population was patients attended neuropsychiatric unit of Nangarhar university teaching hospital. The sample size were calculated by $n = \frac{Z^2P(1-p)}{d^2} = 384.16$ formula (Pourhoseingholi et al., 2013); where n is sample size, Z = 1.96 is statistic corresponding to 95% of level of confidence, P = 0.5 is expected prevalence, and d = 0.05 is precision. Ten percent of non-respondent rate was added to the sample size and a total of 423 Patients were included in the study (Pourhoseingholi et al., 2013). All patients aged above 18 years, with sign and symptoms of major depressive disorders and clinically stable, attended outpatient and inpatient services in neuropsychiatric ward during the study period were consecutively invited to participate in this study. Based on previous studies (Lobana et al., 2001; Ma et al., 2020), Determining what constitutes "clinically stable" means comparing the greatest and lowest antidepressant doses over the course of the previous three months and changing the dose by less than 50%. Patient who did not fulfil criteria of Major depressive disorders or have other mental disorders were excluded from the study.

Data was collected through a pre-designed questionnaire, which comprise Sociodemographic data, questions related to depressive disorder from which we confirm MDD, and in last part questions about suicidality was asked from patient.

Patients were requested to fill out a sociodemographic section containing information pertaining to their age, gender, height, weight, marital status, their type of occupation (professional or not), monthly income, place of residence, presence of chronic illnesses, and educational attainment. By compiling this data, we hoped to gain a comprehensive picture of the patient's lifestyle choices, socioeconomic situation, and mental health status - all of which may have an impact on their vulnerability to depression. Body mass index (BMI) was determined by dividing weight in kilograms by height in meters squared (kg/m2) (Nihiser et al., 2007), and was then categorized into underweight, normal weight, overweight, and obesity grades I, II, and III based on World Health Organization (WHO) guidelines (Weisell, 2002).

Severity of Depressive disorder was assessed by neuropsychiatrist according to Diagnostic and Statistical Manual of Mental Disorders (DSM) (Mendelson, 1995) and International Statistical Classification of Diseases (ICD) (Organization, 1992) criteria and only patients with Major Depressive disorder was included in the study.

Following previous studies (Li et al., 2017) A standard question with a binary response choice (yes/no) was used to assess SI. It asked, "Over the past year, have you thought that you would be better off dead?" The usual assessment question for SP was, "Have you made a plan for suicide over the past year?" with a yes/no binary response option. "Have you attempted suicide over the past year?" was a regular evaluation question for SA, with a yes/no-binary response choice. A patient was deemed to be "having suicidality" if they gave a "yes" response to any of the three questions above.

The Nangarhar Medical Faculty's Research and Ethics Board granted ethical permission for this study's conduct, guaranteeing compliance with moral norms and principles. Patients received comprehensive information regarding the procedures, probable risks, and research objectives prior to their participation in the study. Prior to any patient answering the questionnaire, informed consent was acquired, with an emphasis on the patients' voluntary involvement and the confidentiality of their answers.

Statistical Package for the Social Sciences (SPSS) version 27.0 was used for data analysis, and distributions of all required variables are provided in well-crafted written statements and tables.

Results: A total number of 423 Patient with Major Depressive Disorder (MDD) were included in this study. The mean age was 36.20 ± 12.221 standard deviation (SD), with the majority of patients were females accounting for 267 (63.1%) and 156 (36.9%) were males. Most of patients with MDD was married comprises 322 (76.1%). Additionally, 225 (53.2%) of patients were residents of Rural and 198 (46.8%) of patients were from urban area. Most of the patients 300 (70.9%) reported having lower household economic status, with 88(20.8%) indicating a middle economic state. Conversely, only 35 (8.3%) of Patients reported good household economic status. Most

296 (70%) was jobless, with 80 (18.9%) and 48 (11.1%) of patients were Non-Professional workers and Professional workers respectively. Furthermore, most 186(43.9%) of the patients had a normal body weight. 206 (48.7%) of patients had chronic Disease and 145 (34.2%) of patients had smoked for at least one year. Most of the patients 312 (73.7%) were illiterate (Table 1)

Table 1

Sociodemographic Characteristics

Sociodemographic Characteristics	n (%)
Gender	
Male	156 (36.9%)
Female	267 (63.1%)
Age, years (±SD)	36.20 ± 12.221
Marital status	
Single	97 (22.9%)
Married	322 (76.1%)
Divorced/Widowed	4 (0.9%)
Residence	
Urban	198 (46.8%)
Rural	225 (53.2%)
Monthly income (Af)	
Low (<15000)	300 (70.9%)
Middle (15000 – 30000)	88 (20.8%)
Good (>30000)	35 (8.3%)
Occupation	
Professional worker	47 (11.1%)
Non-Professional worker	80 (18.9%)
Jobless	296 (70.0%)
Chronic disease	
Yes	206 (48.7%)
No	217 (51.3%)
Smoking	
Yes	145 (34.2%)
No	278 (65.8%)
Educational Level	
Master/PhD	2 (0.4%)
Bachelor	53 (12.5%)
Baccalaureate	56 (13.2%)
Illiterate	312 (73.7%)
Body Mass Index (BMI))	
Underweight	5 (1.2%)
Normal Weight	186 (43.9%)
Overweight	178 (42.1%)
Obesity Grade I	39 (9.3%)
Obesity Grade II	14 (3.3%)
Obesity Grade III	1 (0.2%)

Suicidal ideations in patients with Major Depressive Disorder

Among 423 patients with major Depression 195 (46.1%) had suicidal Ideation and 228 (53.9%) of patients with major depression had not experienced Suicidal ideations. The prevalence of suicidal ideations among males and females was 49.3% and 44.1% respectively. Rate of suicidal ideations among single patients was 49.4%, among

married patients was 44.7% and among Divorced/Widowed patient was 75%. Suicidal Ideations among patients with Chronic Diseases was 47.0% and among patients without chronic Diseases was 45.1%. Prevalence of suicidal ideations was 43.2%, 58.9 and 50.9 among illiterate, baccalaureate and bachelor patients.

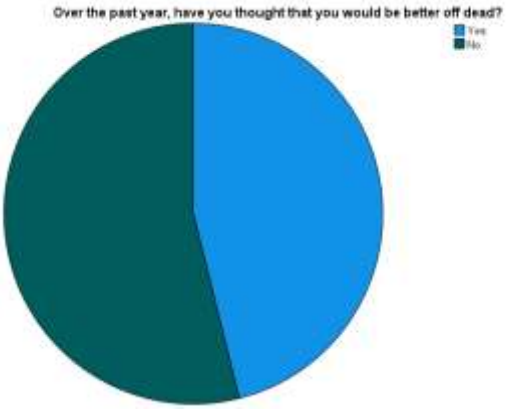

Figure 1 Prevalence of SI among patients with MDD

Table 2

Distribution of Suicidal Ideation

Variable	Categories	No of patients	Frequency of SI	Percentage (%)
Gender	Male	156	77	49.3
	Female	267	118	44.1
Marital Status	Single	97	48	49.4
	Married	322	144	44.7
	Divorce/Widowed	4	3	75.0
Chronic Disease	Yes	206	97	47.0
	No	217	98	45.1
Educational level	Illiterate	312	135	43.2
	Baccalaureate	56	33	58.9
	Bachelor	53	27	50.9
	Master/PhD	2	0	0
Residence	Urban	198	89	44.9
	Rural	225	106	47.1
Occupation	Professional worker	47	21	44.6
	Non-Professional worker	80	32	40.0
	Jobless	296	142	47.9

Suicidal Plans in patients with Major Depressive Disorder

Among 423 patients with major Depression 94 (22.2%) had suicidal Plan and 329 (77.8%) of patients with major depression had not experienced Suicidal ideations. The prevalence of suicidal ideations among females and males was 49.6% and 44.4% respectively. Rate of suicidal ideations among single patients was 48.9%, among married patients was 45.2 and among Divorced/Widowed patient was 75%.

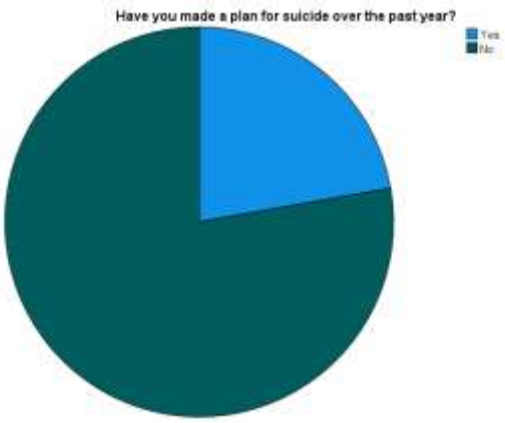

Figure 2 Prevalence of SP among patients with MDD

Table 3

Distribution of Suicidal Plan

Variable	Categories	No of Patients	Frequency of SP	Percentage (%)
Gender	Male	156	77	49.3
	Female	267	118	44.1
Marital Status	Single	97	48	49.4
	Married	322	144	44.7
	Divorce/Widowed	4	3	75.0
Chronic Disease	Yes	206	97	47.0
	No	217	98	45.1
Educational level	Illiterate	312	135	43.2
	Baccalaureate	56	33	58.9
	Bachelor	53	27	50.9
	Master/PhD	2	0	0
Residence	Urban	198	89	44.9
	Rural	225	106	47.1
Occupation	Professional worker	47	21	44.6
	Non-Professional worker	80	32	40.0
	Jobless	296	142	47.9

Suicidal attempts in patients with Major Depressive Disorder

Among 423 patients with major Depression 52 (12.3%) had suicidal Attempt and 371 (87.7%) of patients with major depression had not experienced Suicidal ideations.

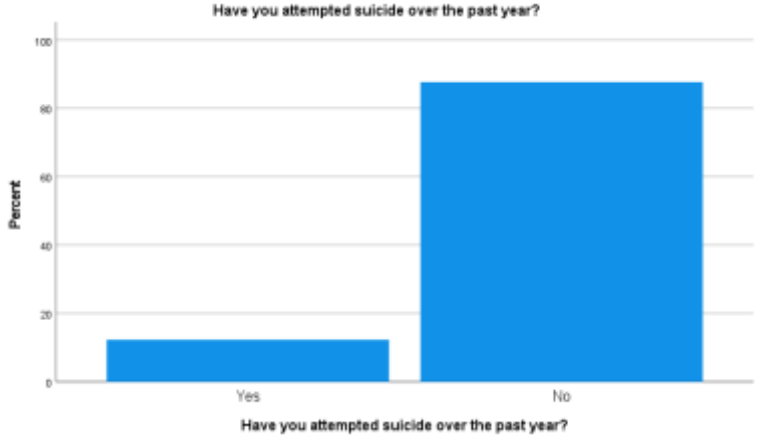

Figure 3 Prevalence of SA among patients with MD

Table 4

Distribution of Suicidal Attempt

Variable	Categories	No of Patients	Frequency of SA	Percentage (%)
Gender	Male	156	77	49.3
	Female	267	118	44.1
Marital Status	Single	97	48	49.4
	Married	322	144	44.7
	Divorce/Widowed	4	3	75.0
Chronic Disease	Yes	206	97	47.0
	No	217	98	45.1
Educational level	Illiterate	312	135	43.2
	Baccalaureate	56	33	58.9
	Bachelor	53	27	50.9
	Master/PhD	2	0	0
Residence	Urban	198	89	44.9
	Rural	225	106	47.1
Occupation	Professional worker	47	21	44.6
	Non-Professional worker	80	32	40.0
	Jobless	296	142	47.9

Discussion (24)(Al Habeeb et al., 2013; Basha et al., 2021; Fu et al., 2020; LI et al., 2019; Subramaniam et al., 2014)'(Zhang et al., 2022)(Fang et al., 2018)(Cai et al., 2021; Rachchaiya & Phanasathit, 2023)patients with (Zhang et al., 2022)(Cai et al., 2021; Subramaniam et al., 2014)(Kang et al., 2014)(Innamorati et al., 2015)(Cai et al., 2021)(Moreno-Küstner et al., 2016)(Zhu et al., 2013)(Cai et al., 2021)patients having (Gonçalves Peter et al., 2020; Subramaniam et al., 2014)(Fu et al., 2020; Li et al., 2022; Rachchaiya & Phanasathit, 2023; Srivastava & Kumar, 2005) These differences may be attributed to many Economical, cultural, social and other factors, which need further investigations. In addition, association and relationship of suicidality with Major Depressive Disorder is not calculated here because of the descriptive design of the study. CONCLUSION

This study's main goal was to explain the prevalence of suicide ideation, plans, and attempts among major depressive disorder patients, as well as how these behaviors are distributed according to sociodemographic characteristics. We found that patients with major depressive disorder attending the neuropsychiatric unit of Nangarhar University Teaching Hospital in Jalalabad city had a high rate of suicidal ideation, plan, and attempt, indicating the need for further research into the underlying causes of these patients' major depression.

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Conflict of Interest: All authors made a promising and significant contribution to the reported research work. Whether it was in selecting the research topic and title, designing the study and methods, conducting the research, collecting data, analyzing

and interpreting the results, or contributing across all these areas, each author played a crucial role. They took part in drafting, critically reviewing, and revising the article; gave final approval of the version to be published; agreed on the journal to which the article has been submitted; and accepted accountability for all aspects of the work and have no conflict of interest.

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