

# An Investigation of the severity levels and risk factors of Suicidal ideation among patients with major depressive disorder in Sulaimani City, Iraq/ Kurdistan

ARAZ MOHAMMED ABDULKARIM<sup>1</sup>, SALWA SHAKIR MUHSIN<sup>2</sup>

<sup>1</sup>Assistant lecture at College of Nursing/University of Sulaimani

<sup>2</sup>Professor Emeritus, College of Nursing / University of Sulaimani

Email: araz.abdulkarim@univsul.edu.iq, araz.abdulkarem@kti.edu.krd

## ABSTRACT

**Background:** People with major depressive disorder have a high mortality rate due to suicide. Suicide ideation is grounds for suicide and suicide attempt, but suicidal ideation often remains undetected.

**Aim:** This study aims to investigate prevalence rates of the severity levels of suicidal ideation and related risk factors among patients with major depressive disorder.

**Methods:** A total of 250 patients with major depressive disorder were recruited from the psychiatric clinic in Ali Kamal consultation center included in this cross-sectional study. The data were collected from September 2020 to March 2021 through the utilization of interviews guided by items of the questionnaire. Beck suicide ideation inventory, Beck depression scale, Sociodemographic and psychiatric history characteristics were included in the questionnaire. The SPSS version 25 was used for data analysis.

**Results:** The result shows that the patients with major depressive disorder experienced high rates of moderate level of suicidal ideation (64.4%). Sever level of suicidal ideation was significant ( $P < 0.001$ ) higher among patients with divorced widowed, never benefit from treatment results, history of suicidal attempt, extreme level of depression than the other subgroups of related factors.

**Conclusion:** The Current study clearly indicates high prevalence rates of moderate level of suicidal ideation among patients with major depressive disorder. The study points that the more the severity of depression, the more severity of suicidal ideation.

**Recommendation:** The Patients with a major depressive disorder require regularly monitoring and psychiatric services to ensure safety.

**Keywords:** Suicidal ideation, major depressive disorder, severity level

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## INTRODUCTION

Major depressive disorder has become one of the most common mental disorders, prevalence rate ranged from 2-21% with the estimation 350 million people suffer from depression worldwide <sup>2,15</sup>. Suicide behavior is greatly prevalent, and suicidal ideation is a relatively frequent condition in patients with major depressive disorder <sup>(14, 11, 2, 17, 7)</sup>.

Suicidal ideation defined as thoughts serving the agent of one's death, it may vary seriousness depending on the specificity of the suicide plan and degree of ideation and can be manifested from transient thoughts concerning the worthlessness of life and death wish to permanent concerts plan for killing oneself <sup>3</sup>. Suicidal ideation could be passive, non-fatal plan or active with a fatal plan. The commonly held belief that passive suicidal ideation poses less risk for suicide than active suicidal ideation is steeped in the lore of psychiatric practice. However, whether suicidal ideation is active or passive the goal is the same terminating one's life, and passive ideation can suddenly turn to active <sup>(19, 1)</sup>.

Suicide ideation is a common and most serious condition among patients with major depressive disorder, but it often remains undetected <sup>2</sup>. The interpersonal theories assumed that suicide thought emerges when levels of perceived burdensomeness and thwarted belongingness are high. Suicidal thoughts are translated into suicide attempts when the capability for suicide is also present <sup>5</sup>. Suicidal ideation is likely to represent step preceding suicidal acts and a risk factor for suicide

attempts among patients with major depressive disorder <sup>120, 4</sup>.

Previous studies reported some sociodemographic and psychiatric history of patients with a major depressive disorder associated with a severity level of suicidal ideation <sup>17, 18</sup>. In general, the prevalence of suicidal ideation ranges from 47% to 69% among patients with major depressive disorder <sup>20, 17</sup>. In many cases, suicidal ideation is grounds for having someone hospitalized involuntarily to keep a person from inflicting self-harm which makes an accurate assessment of considerable importance and protective measure <sup>15, 8</sup>. To the best of our knowledge, no previous study has investigated the prevalence severity level of suicidal ideation in patients with major depressive disorder in Sulamani city, Iraq, Kurdistan. Thus, this study aims to investigate prevalence rates of severity levels of suicidal ideation and related risk factor in non-hospitalized patients with major depressive disorder.

## METHODS

**Study design and setting:** The quantitative, cross-sectional study was carried out in a psychiatric clinic at Ali Kamal consultation center which is a facility of the general teaching hospital in Sulaimani City, Iraq, Kurdistan. The psychiatric clinic is the only governmental daily based outpatient clinic in Sulamani City, which provides mental health treatment services to all outpatients with different types of mental illness. The period of data collection started from September 2020 till March 2021.

**The sample of the Study:**

**Sample size estimation:** The Epi info7 computer program created by the center for disease control (CDC) was used for estimating the sample size. The information was entered the program was 2400 sample size population which is equal to the number of the patients with depressive disorder attending the psychiatric clinic in a year and the expected prevalence was set at 21.8%. The absolute precision was set at 5% and the confidence interval was set at 95%. Accordingly, to the estimated size was 236 patients. However, the sample size increased to 250 patients to improve the generalization and the power of the study.

**The study Sample:** Non- probability, purposive size of 250 patients with major depressive disorder. The sample was recruited from consecutive patients attending the psychiatric clinic.

**Inclusion and exclusion criteria:** Patients being previously diagnosed with major depressive disorder by Consultant psychiatric, males and females, ages 18 years old and above, on the regular treatment prescribed by a psychiatrist working in the clinic. Patients with psychotic episodes, and with a medical condition also pregnant mothers and non on postpartum period in the current assessment of this study were excluded. The included sample voluntarily accepted to participate in this study and verbal informed consent was obtained from each participant.

**The study tool:** A questionnaire was developed for data collection and composed of four sections. The first section related to sociodemographic characteristics included age, sex, marital status, educational level, occupation, income status, and residential area. The second section related to psychiatric history included duration of illness, type of treatment, treatment results, history of suicidal attempts. The third section measured suicide ideation levels based on Beck suicide ideation inventory. This scale contains 19 items and each item rated on a 3-point Likert scale (0-2). The total scale ranged from 0-38. The severity of ideations rates on three categories; Mild (0-12) indicate nonspecific active thoughts presents, moderate (13-25) presence of

active suicidal ideation without an intentional plan with any method, severe (26-38) presence of active ideation plan. In the fourth section, depression severity was measured based on the Beck Depression Inventory. This inventory consists of 21 multiple choice statements that evaluate key symptoms of depression with a 4-point rating scale, items receive a rating of Zero to three to reflect the intensity and are assumed linearly to create a score that ranged from 0 to 63. The guidelines scores for intensity included. Minimum depression (0-9), mild (10-18), moderate (19-29), severe (30-63). The questionnaire was translated to the Kurdish language through a forward-backward procedure.

The face validity of the questionnaire was determined through a panel of 12 experts and the reliability of the questionnaire was determined through the computation of the intraclass correlation coefficient ( $P < 0.01$ ) the data collected through face- to face interview method conducted by the researcher with each participant to answer the questionnaire. The prevention measures against COIV-19 have been applied during the field work for this research.

**Statistical Analysis:** The data were analyzed using SPSS version 25 software. The descriptive statistics include frequencies, percentage, mean, and FSD. The inferential statistics include chi-square ( $\chi^2$ ) Test, fishers exact-test and binary logistic regression were used to analyze the data, P-value of 0.05 were used as the cut-off for statistical significance and 0.001 for statistical high significance.

**Ethical Consideration:** This study was permitted by the Sulaimani general Health Directorate and Ethical committee at the College of Medicine at the University of Sulaimani.

**RESULTS**

**Distribution of the sample by severity level of suicidal ideation:** Regarding the suicidal ideation around one quarter 24% had severe suicidal ideation level and the largest proportion of patients 64.4% had moderate suicidal ideation table 1

Table 1 Distribution of the sample by severity level of suicidal ideation:

Level	Depression			Cumulative percent
	Frequency	Percentage	Valid Percentage	
Mild	29	11.6	11.6	11.6
Moderate	161	64.4	64.4	76.
Severe	60	24.0	24.0	100.0
Total	250	100.0	100.0	

**Suicidal ideation by psychiatric history factors:** Significantly high rates of severe suicidal ideation (68.4%) were detected among patients who didn't benefit from the treatment ( $p < 0.001$ ), also it was significantly high (37.4%) among those with history of suicidal attempts ( $p < 0.001$ ). No significant association was detected with the other factors like duration of current illness ( $p = 0.065$ ), type of treatment ( $p = 0.640$ ), alcohol consumption ( $p = 0.825$ ), substance abuse ( $p = 0.151$ ), and smoking ( $p = 0.933$ ) as presented in Table 2.

**Suicidal ideation by severity of depression:** It is evident in Table 3 that the more the severity of depression, the more the severity of suicidal ideation. None of those with minimum depression had severe suicidal ideation, while 80.4% of those with extreme depression had severe suicidal ideation ( $p < 0.001$ ).

**The Binary regression analysis between suicidal ideation as a dependent variable and covariates of severity level of depression.**

Table 4 shows that moderate and extreme depression was a significant predictor of suicidal ideation ( $B = 3.215$ ,  $P, 0.001$ ,  $OR = 24.899$ ,  $95\% CI$ : lower = 7.491, upper = 82.765) among patients with major depressive disorder.

Table 2. Suicidal ideation by psychiatric history.

	Suicidal ideation				Total		p
	Mild-moderate		Severe		No.	(%)	
	No.	(%)	No.	(%)			
Duration of current illness							
<10	182	(76.8)	55	(23.2)	237	(100.0)	
10-20	0	(0.0)	2	(100.0)	2	(100.0)	
>20	8	(72.7)	3	(27.3)	11	(100.0)	0.065*
Type of treatment							
Drugs	133	(73.9)	47	(26.1)	180	(100.0)	
Drugs + ECT + psychotherapy	6	(100.0)	0	(0.0)	6	(100.0)	
Drugs+ psychotherapy	24	(77.4)	7	(22.6)	31	(100.0)	
Drugs + ECT	26	(81.3)	6	(18.8)	32	(100.0)	
ECT + psychotherapy	1	(100.0)	0	(0.0)	1	(100.0)	0.640*
Treatment results							
Benefited a lot	101	(83.5)	20	(16.5)	121	(100.0)	
Benefited somewhat	83	(75.5)	27	(24.5)	110	(100.0)	
Never benefited	6	(31.6)	13	(68.4)	19	(100.0)	<0.001
Suicidal attempt							
Yes	62	(62.6)	37	(37.4)	99	(100.0)	
No	128	(84.8)	23	(15.2)	151	(100.0)	<0.001
Alcohol consumption							
Yes	47	(77.0)	14	(23.0)	61	(100.0)	
No	143	(75.7)	46	(24.3)	189	(100.0)	0.825
Substance abuse							
Yes	11	(61.1)	7	(38.9)	18	(100.0)	
No	179	(77.2)	53	(22.8)	232	(100.0)	0.151*
Smoking							
Yes	78	(75.7)	25	(24.3)	103	(100.0)	
No	112	(76.2)	35	(23.8)	147	(100.0)	0.933
Total	190	(76.0)	60	(24.0)	250	(100.0)	

\*By Fisher's exact test.

Table 3. Suicidal ideation by severity of depression.

	Suicidal ideation				Total		p
	Mild-moderate		Severe		No.	(%)	
	No.	(%)	No.	(%)			
Severity of Depression							
Minimum	37	(100.0)	0	(0.0)	37	(100.0)	
Mild	104	(96.3)	4	(3.7)	108	(100.0)	
Moderate	40	(67.8)	19	(32.2)	59	(100.0)	
Extreme	9	(19.6)	37	(80.4)	46	(100.0)	< 0.001
Total	190	(76.0)	60	(24.0)	250	(100.0)	

Table 4: The Binary regression analysis between suicidal ideation as dependent variable and covariates of the severity level of depression.

Covariates	B	P	Or	Lower	Upper
Minimum-Mild	3.215	< 0.001	24.894	7.491	82.765
Moderate- Extreme	3.215	>0.009	24.894	7.491	82.765

95% C.I. for OR

## DISCUSSION

High prevalence rate of suicidal ideation on a moderate level was determined as 64.4% in patients with major depressive disorder. This result was higher than those in the general population-based upon the world health organization conducted community surveys in 21 countries (n> 100.000 individuals) found that the lifetime prevalence was 9%<sup>5</sup>. Another cross-sectional study found that among individuals with a lifetime history of suicidal ideation the probability of ever making a plan is approximately 33%<sup>13</sup>. From a clinical psychiatric viewpoint, suicidal ideation in the current study is similar in degree to other studies conducted in Helsinki/ Finland which found that 60% among 806 adults depressed in-out patients reported moderate suicidal ideation<sup>20</sup> and another result also consistent with the result of the study carried out in Erbil/City, Iraqi Kurdistan which showed that suicidal presents in 64% among 100 depressed outpatients aged 18-85 years old<sup>17</sup>.

The results showed that almost all the socio-demographic characteristics were non-significant association to suicide ideation level (P> 0.05) except marital status (P> 0.001) high prevalence rates of severe suicidal ideation level present among divorced (45.5%) and widowed (45.2%) than other subgroups of marital status. This is in agreement with the study carried in Australia which found that widows are associated with a higher severity level of suicidal ideation<sup>12</sup>. In contrast,<sup>21</sup> found that gender one of the risk factors among sociodemographic characteristics associated with suicidal ideation study in Jordan. The result of the current study also supported by other studies and reported that marriage and family community increase social integration and meaning within one's life and could be a major protective factor for suicidal ideation or the result of the current study may be attributed to the severity level of depression<sup>18, 14</sup>.

A significant association was found between suicidal ideation and treatment results (P>0.001). The majority of patients with somewhat and never benefit from their

treatment results reported a severe level of suicidal ideation. The result implies that suicidal ideation among participants maybe underdiagnosis and undertreated, suicide assessment should be a target for nursing intervention<sup>19, 3</sup>. Mental health clinician may worry that asking about suicide will be initiated suicide thoughts or actions, but there are no data to support this concern<sup>18</sup>. A review of 13 studies reported that non found a significant increase in suicidal ideation among participants asked about suicidal thought<sup>6</sup>.

Furthermore, the result of the current study showing a significant association between suicidal ideation with suicide attempts ( $P > 0.001$ ). The results revealed high occurrence rates of severe suicidal ideation level among participants with a history of suicide attempt (37.4%) than other patients with no history of suicidal attempt (15.2%), these results are aligned with those found in previous studies<sup>20, 4, 2</sup> which reported that severities of suicidal ideation are major risk factor associated with suicide attempt which is often used as a way of coping painful feeling. People who have used this coping style in the past are greater for using again, ongoing assessments are necessary to determine whether the person continues to be at high risk<sup>8</sup>.

In this study, the results showing that the majority of participants with an extreme level of depression reported significantly higher prevalence rates of severe suicidal ideation (80.4%) than another subgroup of participants with moderate (32.2%), Mild (3.7%), and minimum (0%) levels of depression. These findings agreed with the results of<sup>20</sup> study in Finland, which reported that the decline of suicidal ideation is strongly correlated with the decline of depressive symptoms.

In addition, the findings of the present study consistent with the results of<sup>2</sup>. This is an initial review, a total of 10 articles published in nursing journals and in psychiatry journals related to suicidal ideation among patients suffering depression, which showed that severity of depression a risk factor affecting suicidal ideation among patients suffering depression. Furthermore, other studies found that the severity of depression is more strongly linked with the presence of suicidal ideation compared with the absence of suicidal ideation<sup>6, 13</sup>.

## CONCLUSION

The results of the current study detected unexpected high prevalence rates of moderate levels of suicidal ideation among patients with major depressive disorder. The findings confirm that most of the patients are prone to suicidal ideation regardless of their socio-demographic characteristics and their psychiatric history. However divorced, widowed, never benefit of treatment results. Suicide attempted and extreme level of depression are significant strong factors related to severe suicidal ideation. Furthermore, this study points that the more the severity of depression, the more the severity of suicidal ideation.

**Recommendation:** Patients with major depressive disorder require regularly monitoring and psychiatric services to ensure safety, in addition those patients with severe suicidal ideation are in urgent needs for mental health counseling and suicide prevention educational intervention.

**Financial Disclosure:** There is no financial disclosure.

**Conflict of Interest:** None to declare.

**Ethical Clearance:** This study permitted by Sulaimani General Health Director and ethical committee at college of Medicine in the University of Suliamani. The patients who met all criteria were included as participant in this study. Informed was given to each patient about the study and the right to withdraw at any time form participating in this study, also informed them the data will be kept confidential and used just for the purpose of this research and verbal informed consent was granted.

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