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Rumination and psychological pain in depressed patients as Risk Factors for Suicide

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Abstract

Background: Suicide rates were higher in patients with depressive illnesses, according to research. Suicidal thoughts were present in about 75 percent of depressive patients. The routes to Suicide are complicated and involve multiple risk factors. **The study aimed to** assess the likelihood of suicide behavior in depressed patients and how it relates to psychological pain and rumination. **Design:** A descriptive correlational research design. **Subjects and Methods**: A purposive sample, which included 112 patients with major depressive disorder, were enrolled in the study; also, they were chosen from the Psychiatric Outpatient Clinics at the El Ahrar and Zagazig University Hospitals in Egypt. Demographic interview sheets, the Ruminative Responses Scale, the Mee-Bunney Psychological Pain Rating Scale, and the Suicide Probability Scale were requested to be completed by the participants. **Results:** Nearly three-fifths of the sample under consideration had high levels of psychological distress, high levels of rumination were present in more than 50% of the depressive patients, and most depressive patients had moderate levels of suicidal risk. Suicidal risk was positively correlated with rumination and psychological pain. **Conclusion:** Significantly positive predictors of suicidal probability included ruminating, psychological suffering, and previous suicide attempts. **Recommendations:** Interferences that emphasize relieving rumination, such as Rumination-focused Cognitive Behavioral Therapy, learning problem-solving skills, and meditation, might be mainly helpful in diminishing suicide risk in patients with depression.

Keywords: Rumination, Psychological Pain, Suicidal Probability & Depressive Disorder.

Introduction

Depression is a frequent psychological condition featuring low mood, loss of interest and enjoyment in things, guilt or low self-esteem, disturbed sleep and eating, low energy levels, and trouble concentrating. These problems may severely hamper a person's ability to carry out daily tasks if they linger or develop into chronic conditions. Suicide, a dreadful end that causes over 850,000 fatalities each year, can be the worst outcome of depression. Depression is a brain disease. Several factors contribute to it, including genetic, environmental, psychological, and physiological factors **(Mullen, 2018).**

With over 703,000 deaths per year worldwide, Suicide is a severe issue for community health **(WHO, 2021)**. Depression is often prevalent simultaneously with Suicide, one of the leading causes of death. **(Clow et al., 2016)**. The expression "considering acting in a method intended to bring about one's death" describes suicidal ideation. Hopelessness, social isolation, anxiety, sadness, impulsivity, and substance abuse are among the many threat influences commonly connected with suicidal ideation and suicide attempts. Numerous additional factors are believed to play a role in developing suicidal ideation and the shift from considering Suicide to attempting it **(Klonsky et al., 2016)**.

Despite the usefulness of theory-driven approaches in guiding research on suicidal behavior, many suicides continue to result in fatalities, frequently occurring without sufficient warning (**Klonsky & May 2010)**. Being exposed to suicidal behavior, such as witnessing a close friend or family member engage in or attempt Suicide, is a substantial contributing factor that increases the risk of death by Suicide. **(Wetherall et al., 2018).** The development of suicidal ideation and conduct has been the subject of several proposals to focus on existing psychological components. However, there are several risk factors and complex suicide pathways **(O'Connor & Nock, 2014).**

Contemporary psychological understandings of suicide behavior incorporate the notion of psychological distress as a contributing factor. It is "an intense and uncomfortable emotionally based experience, considered a prolonged, unsustainable state resulting from a negative evaluation or insufficiency of self" **(Meerwijk & Weiss., 2014).** Researchers found that psychological pain was a more reliable indicator of suicide thoughts when matched to added hazard elements, including desperateness and misery (Troister et al., 2015). Moreover, **Verrocchio et al. (2016)** emphasized that people who feel psychological trauma have a high

likelihood of having suicidal thoughts, trying to commit Suicide, and doing so. The therapeutic techniques for dealing with suicidal crises greatly emphasize psychological suffering **(Yovell et al., 2016)**. The most frequent expression in suicide notes, according to Shneidman, is "I cannot withstand the pain anymore," which led to the conclusion that "psychache," or "the hurt, anguish, soreness, aching, psychological pain in the psyche, the mind," is the reason for Suicide **(Shneidman, 1993).**

Rumination has been identified as a valid intellectual issue connected to Suicide in recent years. Rumination is a vital feature reaction form, according to Nolen-Reaction Hoeksema's Styles Theory, in which people passively and persistently focus on the causes, effects, and signs of their suffering rather than taking steps to find solutions **(Nolen-Hoeksema et al., 2008)**.

Ruminating is frequently seen as a maladaptive cognitive style due to its repeated and passive thinking traits. It is linked to self-referential processes that are maliciously excessive. It could exacerbate psychopathology and prevent the implementation of a dynamic strategy **(Watkins & Roberts, 2020).** In non-clinical individuals, ruminating has been linked to protracted low mood and worsened depressive symptoms **(Lyubomirsky et al., 2015)**, as well as the development of the illness and the number of episodes among those suffering from severe depression (MDD) and bipolar disorder (B.D.) **(de M Silveira & Kauer-Sant'Anna, 2015).**

Significance of the study

The most important factor contributing to disability worldwide is depression. Three hundred fifty million people around the world are suffering from depression. The WHO estimated that 2020 depression would surpass all other psychological health problems as the top concern if necessary actions were not taken. Everyone can experience depression, regardless of his\her gender, age, or origin. Depressive disorders recur with a startling regularity. As time passes, depression's potential to become a chronic illness increases **(Monroe et al., 2019)**. Research has shown that Suicide behavior is highly prevalent among patients with MDD **(Orsolini et al., 2020).**

The stages of suicidal thought and intent should be the focus of suicide prevention activities due to the difficulty in predicting when people may attempt Suicide. Understanding the factors that raise an individual's risk of Suicide is the first step in any endeavor to lower suicide rates. The goal line of the existing study was to assess the likelihood that depressive individuals will attempt Suicide and the relationship between that likelihood and psychological pain and ruminating. Psychologists have narrowed down the main factors indicating suicidal ideation to increase suicide prevention's effectiveness.

Aim of the Study:

This study set out to investigate the risk of suicide probability and its relation to psychological pain and rumination among patients with depression.

Questions of the Research:

The research inquiries to which the researchers looked for solutions were:

1. What is the level of suicidal probability, rumination, and psychological pain among patients with depression?
2. What connection exists between psychological pain, rumination, and the risk of Suicide in depressed patients?

Methodology:

Research Design:

This study used a descriptive correlational research design.

Study Setting:

The study was carried out at the university hospitals of El Ahrar and Zagazig's psychiatric outpatient clinics in Egypt.

Participants and Sample Size:

Purposive sampling was used to recruit clients. They used scientific literature data (Wahba & Haemza, 2022). G-power software version 3.1.9.7 was used to estimate the sample size using the following formula: with a threshold of significance of 5% and a power of research of 80%. In this study, the calculated sample size is 112 patients.

Sample size (n)=$[(Z\alpha+Z\beta)/C]2 + 3$

Standard deviate for $\alpha = Z\ \alpha = 1.96$

Standard deviate for $\beta = Z\ \beta = 0.8416$

$C = 0.5 * \ln[(1+r)/(1-r)]$

The criteria for inclusion comprised clients who were 1) between the ages of 18 and 60, 2) both gender, and 3) diagnosed with (MDD) by specialized professionals in the mentioned hospitals according to (DSM-V), were selected for this study. Clients were excluded if they had co-morbidities of organic brain illnesses, mental retardation, or learning difficulties and were determined by their psychiatrist to be unsuitable for research participation.

Data collection tools:

(I): Demographic and clinical data questionnaire, which the researchers developed, based on recent research to gather clinical and demographic data from depressed patients, such as age, gender, residence, marital status, educational level, occupation, income, and whom they live with. Additionally, there were questions about clinical characteristics such as duration of illness, smoking, history of suicidal thoughts, substance misuse, and recent suicide attempts.

(II): The Ruminative Response Scale (RRS) is a self-report questionnaire with 22 items describing responses to depressed mood, which is distributed across three subscales: depression, brooding, and reflection **(Treynor et al., 2003)**. Responses can be acting or thinking about the depressive symptoms and the possible causes and consequences of the sad/depressed mood. A 4-point Likert scale ranging from 1 (never) to 4 (always). The total score ranges from 22 to 88, with higher scores indicating higher degrees of ruminative symptoms. Furthermore, it has satisfactory levels of internal consistency.

(III): Mee-Bunney Psychological Pain Scale (MBP):

The scale is a self-report measure created by **(Mee et al., 2011)**, using a 5-point Likert scale of ten items. The scale assesses various aspects related to psychological pain, including its frequency and severity over the past three months and at present. Higher scores on the scale indicate more significant levels of psychological pain. High psychological pain is characterized as exceeding a predetermined threshold, in this case, MBP≥32, which is 0.5 SD above the Mean for patients with severe depression. The scale's reliability, as measured by the Cronbach coefficient, is 0.83 for individuals with depression and 0.94 for healthy controls.

IV: Suicide Probability Scale (SPS)

This scale was developed by **Cull & Gill (1982)**, to assess the behaviors and attitudes of people at risk of Suicide. It was made up of 36 points classified into four subscales: hopelessness (12 points), suicide ideation (8 points), negative self-evaluation (9 points), and hostility (7 points). The scale has a maximum score of 144 and a minimum score of 36. A higher score on the scale indicates a greater likelihood of Suicide, indicating a higher risk of Suicide. The alpha coefficient for the overall scale is 0.85, and for the subscales, it ranges from 0.74 to 0.79. The test-retest reliability of the scale is 0.98. Additionally, the total scores are divided into four categories to assess suicide risk: Severe when the overall score is (75-100), moderate when the overall score is (50-70), mild when the overall score is (25-49), and the score of (0-24) presents in an average person with no suicidal risk.

Pilot study:

Before commencing the main study, the researchers conducted a preliminary investigation involving 10% of the patients under examination. The purpose of this pilot study was to assess the clarity, simplicity, and workability of the study questionnaire, as well as to determine the approximate time required to complete it. Based on the pilot study findings, specific corrections were made to the questionnaire, primarily involving rephrasing and utilizing more straightforward language in the statements. Notably, the pilot study was excluded from the primary study sample.

Content validity reliability

Five specialists in statistics, psychiatric medicine, and psychiatric and mental health nursing worked together to determine the content validity of the instruments utilized in this investigation. These professionals evaluated the tools to determine their applicability, simplicity of use, comprehensiveness, clarity, and relevance. The researchers used the translation-back technique to translate the instruments into Arabic while ensuring their original validity. The statistical software for social sciences (SPSS), version 20.0, Cronbach's alpha test, was used to evaluate the reliability of the instruments. The results revealed a high degree of reliability.

Reliability of the tools:

Scale	Cronbach's Alpha
Psychological pain	0.915
Rumination score	0.73
Suicide probability	0.72

Procedure:

After receiving the necessary authorization to carry out the investigation, the researchers met with the hospital manager and head nurses to explain the research objectives, seek their approval, and secure their cooperation for data collection. Subsequently, the researchers conducted interviews with the chosen patients, informing them about the purpose of the study and obtaining their verbal consent to participate.

The researchers worked to build a trustworthy rapport with the patients they had selected before beginning data collection. Every patient was interviewed one-on-one, and each assertion was thoroughly clarified. The researchers then noted the chosen responses that the patients had given. Each sheet took anywhere from twenty to thirty minutes to complete, depending on how well the patient understood and could answer each question. The approximate duration of the four-month data collection operation was two days a week, from the beginning of October 2022 to the end of January 2023.

Ethical considerations:

The IRB of Zagazig University's Faculty of Nursing authorized the study (ID/Zu.Nur.REC#:0051). The researchers requested permission to conduct their study by sending a formal letter from the Dean of the Faculty of Nursing at Zagazig University to the Director of the chosen hospital. The patient's involvement in the trial was voluntary, and they were informed of their ability to withdraw without explanation. The researchers also guaranteed the

anonymity of the collected data and informed the patients that it would be used only for research purposes.

Statistical Analysis:

The statistical package for social sciences (SPSS) version 20.0 for Windows (SPSS Inc., Chicago, IL, USA 2011) was used to gather, tabulate, and analyze the data. Mean ± S.D. was used to show quantitative data, and absolute frequencies (number) and relative frequencies (%) were used to convey qualitative data. The ANOVA (one-way ANOVA) test was used to compare more than two distinct groups of normally distributed quantitative data. The t-test was used to compare the means of two independent, usually distributed quantitative data sets. To compare the percentage of categorical variables, the Chi-square test was used. The Pearson correlation coefficient was calculated to assess the association between the research variables; positive correlation values indicate a direct relationship, whereas negative values imply the existence of a converse correlation.

Furthermore, strong and weak correlations are indicated by values close to 1 and 0, respectively. The variables influencing the total suicide probability score were also predicted by step-by-step multiple linear regression. The internal consistency of the scales was thought to be measured by the Cronbach alpha coefficient. If the P value is less than 0.001, significance can be identified and considered high; if the P value is more significant than or equal to 0.05, the differences are considered insignificant.

Results

Table (1): Percentage distribution of patients' Socio-Demographic characteristics (n=112).

Socio-demographic traits	No	%
Age (years)		
25-<35	56	50.0
35≤45	51	45.5
>45	5	4.5
Mean ± SD	36.33±5.55	
Gender		
Male	60	53.6
Female	52	46.4
Residence		
Rural	70	62.5
Urban	42	37.5
Marital status		
Married	53	47.3
Divorced	29	25.9
Widowed	3	2.7
Single	27	24.1
Educational level		
Illiterate	13	11.6
Read and write	27	24.1
Intermediate	41	36.6
University education	31	27.7
Occupation		
Working	61	54.5
Not working	51	45.5
Pension	0	0.0
Student	0	0.0
Who living with		
With family members	100	89.3
Alone	12	10.7
Income		
Sufficient	35	31.3
Insufficient	77	68.8

Table (2): The percentage distribution of clinical traits in depressed patients and their frequency (n=112).

Clinical characteristics	No	%
Duration of disease		
5 years or less	73	65.2
5-10 years	34	30.4
10 years or more	5	4.4
Smoking		
Yes	66	58.9
No	46	41.1
Past history of suicidal attempts		
Yes	67	59.8
No	45	40.2
Making Suicide in the past month (n=67)		
Yes	45	67.2
No	22	32.8

Table (3): Levels of Psychological Pain Rating and Rumination Score as Reported by Participant Depressed Patients (n=112).

Item	Low		High		Mean ± SD
	No	%	No	%	
Total psychological pain score	48	42.9	64	57.1	31.99±6.61
Total rumination score	54	48.2	58	51.8	55.39±12.64

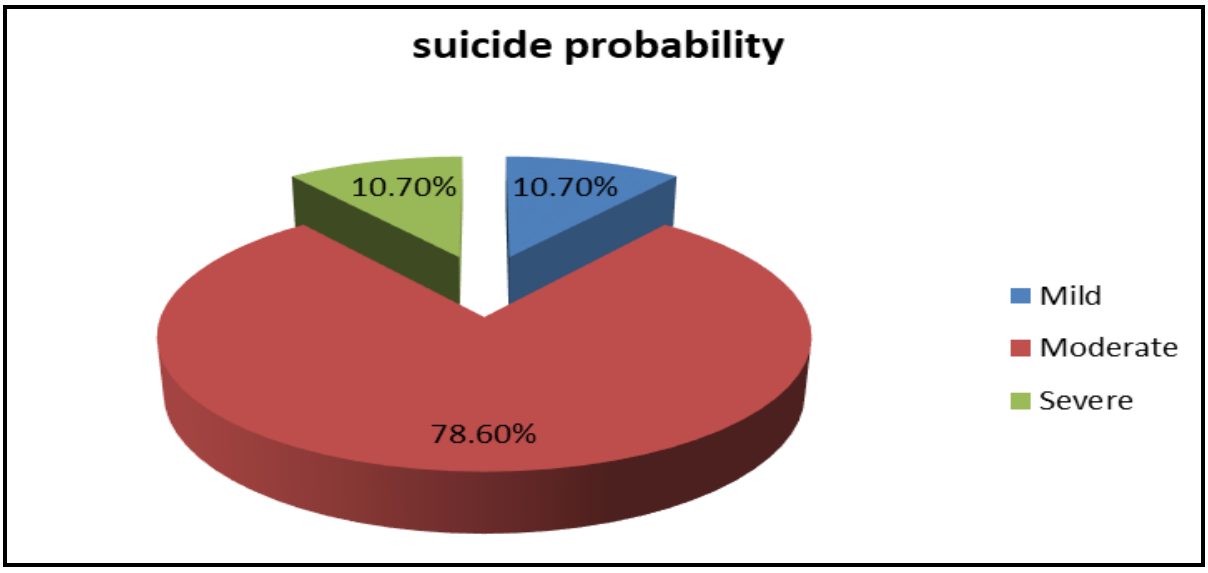

Figure (1): Pie Chart Showing Total Score of Suicide Probability.

Table (4): Relation between Psychological Pain rating, Rumination Score, and Suicide Probability (n=112).

Items	Suicide probability						χ^2 (p-value)
	Mild (n=12)		Moderate (n=88)		Severe (n=12)		
	No	%	No	%	No	%	
Total psychological pain rating							
Low	10	83.3	35	39.8	3	25.0	9.932
High	2	16.7	53	60.2	9	75.0	(0.001**)
Total rumination score							
Low	10	83.3	40	45.5	4	33.3	7.260
High	2	16.7	48	54.5	8	66.7	(0.027*)

*χ^2: Chi square test, * Significant (p<0.05). ** Highly significant (p<0.001).*

Table (5): Correlation Matrix between Suicide probability, Psychological pain rating, and Rumination score (n=112).

Items	Suicide probability	
	r	p-value
Total psychological pain rating	0.312	0.001**
Total rumination score	0.232	0.014*

** Significant (p<0.05), ** Highly significant (p<0.001), r = Correlation coefficient*

Table (6): Stepwise Multiple Linear Regression for Predicting Suicide Probability Influencing Factors.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Confidence Interval for β	
	β	S		.E. β S.E.		Lower bound	Upper bound
(Constant)	89.300	7.869		11.348	.000	73.698	104.902
Past history of Suicide	13.098	1.764	0.488	7.423	0.001**	9.600	16.596
Psychological pain	.437	.146	0.231	2.999	0.001**	.148	.727
who living with	-12.573	2.964	-0.296	-4.242	0.001**	-18.449	-6.697
Rumination score	.191	.067	.183	2.853	0.001**	0.058	0.323

*Confidence Interval for β tested at 95%. ** Highly significant (p<0.001)*
r-square=0.661, ANOVA: f=41.416, p<0.001

Table (1): Shows that half of the depressive patients (50.0 %) were in the average age between 25-<35 years. More than half of the patients (53.6%) were males. More than three-fifths (62.5%) of the sample were from rural areas, and fewer than half (47.3%) were married. In terms of educational level, more than one-third of the sample (36.6%) had intermediate education, more than half (54.5%) of the patients under study were working, and the majority (89.3 %) were living with family. Regarding income, more than two-thirds of the patients (68.8%) have insufficient income.

Table (2): Showed that about two-thirds (65.2%) of patients had a disease that lasted less than 5 years. More than half of the patients (58.9%) were smoking, (59.8%) had a history of Suicide, and in addition, more than two-thirds (67.2%) of patients made Suicide in the past month.

Table (3): Demonstrates that less than three-fifths of patients (57.1%) had high total psychological pain scores with a mean ± S.D. of 31.99±6.61. A little over half of the patients (51.8%) also had high total rumination scores, with a mean ± S.D. of 55.39±12.64.

Figure (1): Illustrates that most patients (78.6%) had moderate suicide probability. On the other hand, minorities representing an equal percentage of only (10.7%) had either mild suicide probability or severe level.

Table (4): Explains a statistically significant difference (p = 0.001) between patients' Suicide and their assessment of their overall psychological pain. Additionally, there was a statistically significant relation between patients' suicide probability and total rumination score (p = 0.027).

Table (5): Identifies a highly statistically significant positive correlation (r = 0.312 at p=0.001) between the relation of Suicide and the overall psychological pain assessment. Additionally, there was a statistically significant positive correlation between the total rumination score and the correlation with Suicide (r = 0.232 at p = 0.014).

Table (6): Demonstrates that history of Suicide, psychological pain, and rumination scores were significantly positive predictors of suicide probability. At the same time, there was a statistically significantly negative predictor of suicidal probability and family members living with patients (P<0.001).

Discussion

Using data from a sample of outpatients with major depressive episodes, the present study aims to simplify the association between rumination, psychological pain, and suicide probability among patients with major depression. Regarding the study sample's personal characteristics, the results showed that half of depressive patients were young, between 25 and < 35 years. More than half were males, and over three-fifths resided in the countryside. Nearly half of them were wedded, whereas more than one-third of them had intermediate learning. More than half of the studied patients worked, and more than two-thirds of the sample said their income was insufficient. These study results have shown a connection between rising rates of depression in

young adults and negative marital and familial relationships, as well as increased life pressures, which may help to explain the results. Young adults nowadays have everyday accountabilities to their families and jobs, making life more difficult. Egypt is also going through a severe era that makes people's lives unpleasant.

The current study's findings are somewhat consistent with **Mohamed & Ahmed (2020)**, which conducted their research in Egypt and found that approximately half of the depressed patients were young, between the ages of 20-<40. One of the most important findings of the present research is that more than half of the patients tested had a high level of rumination with Mean ± S.D. 55.39±12.64. The fact that rumination has been extensively explored as a cognitive sensitivity factor for negative emotions may help to explain this. Depression is characterized by persistent, difficult-to-control bad sensations that lead to a cycle of melancholy and negative thoughts. A ruminative reaction style is known as the continual focus on emotional symptoms, including potential causes and the associated effects of choices and beliefs. Reactions that are ruminative make depression symptoms and moods worse and last longer. (**Suslow et al., 2019).**

The findings of this study were consistent with a previous study by **Wang et al. (2022)** titled " Maladaptive rumination in major depressive disorders," which documented that there was a high level of rumination among depressive patients with a Mean ± SD52.67 ±2.160. **Wahba & Hamza., (2022),** who carried out a similar Egyptian study, cited that the total mean rumination score was 55.11± 8.07. Moreover, **Chiang et al. (2022),** in a Taiwan study that investigated the relationship between depressive symptoms, rumination, and suicidal thoughts in depressed patients" clarified that the average total Mean ± S.D. score for ruminating in depressed patients was 36.71 ± 12.74.

The present study finding showed that, nearly three-fifths of the studied sample had a high level of total psychological pain with a Mean ± S.D. 31.99±6.61. This outcome could be connected to the fact that one of the most frequent symptoms of severe depression is psychological pain, which can cause Suicide because major depression involves disinhibition of the central pain regulatory system and inhibition of the central pleasure system and the psychomotor facilitatory system. Non-aversive stimuli become aversive during the depressive phase, and essential pain dysregulation is linked to poor self-esteem and a sense of depreciation, which intensifies mental pain.

This study result was congruent with **Ji et al. (2022),** who found in their Chinese study entitled "psychological pain as predictor of suicide attempt in major depressive disorder" that about two-thirds of their studied sample had a high level of psychological pain with a Mean ± S.D. 66.91±10.60. Similarly, **Sun et al. (2020)** studied psychological pain and suicide attempts among patients with major depressive disorder in China, which concluded that a high level of psychological pain was present in more than half of depressive individuals with a Mean ± SD 55.9 ±13.6. Furthermore, a Chinese study conducted by **Song et al. (2019)** on the "Relationship between Psychological Pain and Suicide Risk among Patients with Major Depressive Disorder" found that over three-fifths (61.9%) of the analyzed sample had high levels of psychological pain.

According to the results of the current study, the majority of depressive patients exhibited a moderate level of suicide risk. This finding was interpreted in light of the notion that Suicide is fundamentally a mental act, with each suicidal play taking place in a unique person's mind. Suicidal behavior is only displayed in depressed people when suicidal thoughts are kept in the person's depressed brain and when unwanted sentiments are so painful that there is no other option. Such people conclude that rumination, which raises the danger of Suicide and horrible mental pain and suffering, cannot be recognized as living. This study's findings complied with **Xu et al. (202**2), who studied "Identification of suicidality among depressed patients," which detected that nearly three-quarters of depressed patients had a high mean score of suicidal probability. **Balldessarini et al. (2019),** also previously clarified in a study in the USA that most of the studied patients had high mean scores of suicidal probability. Additionally, three-fifths of the analyzed sample had a suicidal probability, according to **Tang et al. (2021),** who published their findings in a paper titled "Global and reflective rumination are Related to suicide attempts among patients experiencing major depressive episode. Incongruent with the previous study, **Teismann & Brailovskaia (2020),** who examined "Entrapment, psychological functioning, and suicide ideation among patients with serious depression," concluded that approximately three-quarters of the examined sample had no suicidal likelihood.

The core objective of the existing study was to identify the correlation between suicidal probability, rumination, and psychological pain among patients with major depression. The results from the current study indicated a statistically significant positive correlation between suicidal probability, rumination, and psychological pain. These could be explained by the fact that failure to self-regulate and control discomfort ultimately results in emotions of obviousness and desperation and unbearable psychological pain. Intellectual liabilities such as

rumination may weaken a person's capability to problem-solve or take action to combat suffering. Suicide is an attempt to get away from painful feelings. The researchers view that, during a major depressive episode, susceptible individuals may experience severe psychological pain, which increases suicide risk. This study result was in agreement with that of an Egyptian study carried out by **Wahba & Hamza (2022),** which concluded that, among the studied major depressive patients who had suicidal thoughts, there were statistically significant positive correlations between mean scores of psychological pain and overall anger rumination and its sub-dimensions at $p \leq 0.05$.

Moreover, **Sharaf et al. (2018)**, in an Egyptian study, and **Ghamarigivi et al. (2022)**, in an Iranian study, stated that there was a statistically significant positive correlation between rumination and suicidal ideation among depressive patients. Additionally, a research carried out by **Ballard et al. (2022)**, entitled "Prospective association of psychological pain and hopelessness with suicidal thoughts," revealed no connection between psychological pain and suicidal thoughts in major depressive disorder patients.

The existing study findings showed that rumination and psychological pain were independent positive predictors of the suicidal probability score among the studied sample; as theoretically, there may be a robust pathological link between thoughts of Suicide, psychological pain, and rumination. Repetitive negative thought patterns can lead to feelings of hopelessness and seduction, exacerbating psychological discomfort and increasing the risk of developing suicidal thoughts. As a result, the patients may attempt Suicide to relieve their unbearable suffering.

In this respect, **Tang et al. (2021),** proved in their study in China that the likelihood of suicidal ideation is predicted by rumination. Additionally, **Li et al. (2014), Holdaway et al. (2018), Sun et al. (2020), Ugur & Polat, (2021), & Ji et al. (2022),** which concluded in their studies that psychological pain and rumination were a significant positive predictor of suicidal ideation among patients with major depression, as the more severe psychological pain and rumination, the more vital suicidal ideation. On the contrary, **Tang et al. (2021)** documented in their study that regression analysis revealed that rumination did not significantly increase the chance of Suicide.

The current study findings of the multiple linear regression model verified that the history of Suicide was an independent positive predictor of the suicidal probability. The interpretation of this result was that the experience of Suicide might diminish intellectual and practical barriers to acting on one's suicidal thoughts and subsequently increase the risk for suicidal acts. This finding was in agreement with that of **Reutfors et al. (2021)**, who investigated" Risk Factors for Suicide and Suicide Attempts Among Patients With Treatment-Resistant Depression" in Sweden, which concluded that a significant independent risk factor for Suicide was a history of suicide attempts. Besides, **Hill et al. (2020)** clarified that previous experience of suicide attempts among patients with major depression is associated with increased probabilities of consequent suicidal behavior.

Moreover, **Chiu et al. (2023**), clarified in a recent study entitled "Incidence, risk and protective factors for suicide mortality among patients with major depressive disorder" that suicide risk is elevated in people with major depression who have a history of suicide attempts.

Finally, the findings of the existing study documented that being alive with family members was a significant independent negative predictor of Suicide among patients with major depression. This could be explained as warmth, understanding, kindness, and support for the patient from family members, which could help to alleviate psychological pain and reduce suicidal probability. In this respect, **Wang et al. (2022**), in a Chinese study, stated that living alone is a significant risk factor for Suicide. **McClelland et al. (2023**) also concluded that Family loneliness was linked to poorer mental health in terms of depression and suicidal ideation, and it was a highly significant long-term predictor of suicidal behavior and thoughts.

Conclusion

The majority of depressive patients had a moderate degree of suicide risk, more than half of the depressive patients had high levels of rumination, and nearly three-fifths of the analyzed sample had high levels of psychological pain. Rumination and psychological pain are positively correlated with suicidal risk. Significantly positive predictors of risk of Suicide include ruminating, psychological pain, and past suicide attempts.

Recommendations

1. In particular, rumination-focused Cognitive Behavior Therapy, problem-solving techniques, and meditation may all be very helpful in reducing the risk of Suicide in depressed individuals.
2. Further longitudinal research, including concurrent individual interviews are needed to more fully understand the cognitive process of psychological pain concerning Suicide among depressive patients.
3. Design and implement psycho- educational programs to teach patients how to release

psychological hurt and rumination and help them build adapting mechanisms, stress management approaches, intellectual retraining, and problem-solving capabilities under pressure.

4. Future research with a large sample size is necessary since the small sample size prevented results from being generalized.

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