Research Article

Ruminative Thinking and Mindfulness Among Patients with Depression

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1. Abstract

1.1. Background: Depression is one most prevalent psychiatric disorder affecting 350 million individuals worldwide, it has a negative consequence on quality of life, occupational, family and social abilities. Depressive individuals tended to ruminate in order to find answers to solve their problems and prevent future mistakes and failures. In contrast, ruminative thinking increases negative mood and exacerbates depression. While, Mindfulness considered the adaptive skill that takes the individual out of rumination and prevent relapse of depression.

1.2. Aim: This study was to investigate the relationship between ruminative thinking and mindfulness among patients with depression.

1.3. Subjects and Method: A descriptive correlational research design was utilized. The study subjects were consisted of 150 depressed patients from psychiatric outpatient clinic at Port Said Psychiatric Health Hospital. The structured interview schedules were utilized to collect the necessary data: Two tools were utilized to collect data in this study; which were Ruminative Response Scale (RSS), Mindful Attention and Awareness Scale (MAAS) and personal and clinical data questionnaire.

1.4. Results: The study revealed that, there were statistically significant negative correlations between rumination and total score of mindfulness. As well as, statistically significant negative correlations between severities of depression, and total score of mindfulness. While, there were statistically significant positive correlation between total score of rumination and severity of depression.

1.5. Conclusion and Recommendation: it can be concluded that, most of depressed patients had a high level of rumination and low level of mindfulness. While, minority of them who were with low level of rumination had a high level of mindfulness. The study recommended that, health care providers should teach patients and their family's factor exacerbates depression and effective coping strategies that control ruminative thinking and decrease the intensity of depressive symptoms.

2. Keywords: Depression; Mindfulness; Rumination

3. Introduction

Depression is one of the most common psychiatric disorders in the United States. Globally, equivalent to be 4.4% of the world's population in 2015 according to World Health Organization, it is the leading cause of disability worldwide, and the global burden of depression is on rise include all ages and both sexes and affecting social and occupational function of the individuals. Additionally, it is characterized by a number of behavioural, emotional, cognitive symptoms, as well as, other hallmark symptoms include rumination [7].

Rumination is one of the most problematic cognitive symptoms associated with depression, individuals with depression often ruminate about past experiences especially those with negative content and believe that rumination helps them to find answers to solve their problems and prevent future mistakes and failures. However, the ten-

dency to ruminate does not lead to understanding of the depressive symptoms, but instead increases negative mood [1]. According to the Response Styles Theory the first potential responses to depressed or negative mood is to ruminate; which include a repetitive thinking style implicated in the onset, maintenance, severity of depression and linked to different maladaptive cognitive styles [17].

Mindfulness has been described as an adaptive skill set that takes the individual out of a ruminative mindset and allows cognitive space to facilitate effective problem solving and prevent relapse of depression [12]. Recent studies have suggested that mindfulness might be a protective factor for depression, which consider a significant element for reducing the risk of relapse of depression, promotes physical and psychological wellbeing promote insight, attention, acceptance, and help participants to feel a greater sense of calm and happiness [23].

Psychiatric nurse plays a vital role in the application of psychiatric treatment and care. One of the most important roles of psychiatric nurse for patients with depressive disorders is to obtain a better understanding of the etiological factors that predict depressive and anxious symptoms over time, better understanding of these factors may facilitate future treatment which considers a protective factor for depression and reducing the risk of relapse which is an important goal of treatment [23].

3.1. Significance of the Study

Depression has become a major public health problem, it considered to be the third cause of disability worldwide in 2030 [14]. Rumination considered one of the factors which exacerbates depression, increase onset, duration, more episodes and a slower recovery of clinical depression than non-ruminator, additionally, decrease of mindfulness ability [33]. While, mindfulness considered the adaptive skills that reduce the risk of relapse of depression and improving psychological wellbeing. Therefore, this study shed light on relationship between ruminative thinking and mindfulness among patients with depression.

4. Aim of the Study

The aim of the present study is to; investigate the relationship between ruminative thinking and mindfulness among patients with depression.

4.1. Research Objectives

a) Assess subtypes of ruminative thinking.

b) Clarify the effect of mindfulness on patients with depression.

c) Explore the relation between ruminative thinking, and mindfulness among patients with depression.

4.2. Research Questions

What is the relationship between rumination of thinking and mindfulness among patients with depression?

5. Subjects and Method

Subjects and method for this study were portrayed under four main designs as follow:

5.1. Technical Design

The technical design included the study design, study setting, study subjects, sample size, and tools of data collection.

5.1.1. Study Design: A descriptive correlational research design was utilized for the current study.

5.1.2. Study Setting: The present study was carried out in psychiatric outpatient clinic at Port Said Psychiatric Health Hospital. The hospital is affiliated to the Ministry of Health. The hospital composed of six units previously during time of data collection in 1/9/2017, which are five inpatient psychiatric units as three units for male patients and two units for female patients, one unit for drug dependents, child clinic and outpatient clinic. In 1/4/2018 the hospital inpatient units were changed due to some arrangement which composed of two inpatient psychiatric units, one unit for male, other unit for female.

5.1.3. Study Subjects: A Purposive sampling was used to select the subjects for the study with total number of 150 depressed patients attending the psychiatric outpatient clinic at Port Said Psychiatric Health Hospital, any patients with depression related to substance abuse or organic disease not included.

5.1.4. Sample Size: The sample size was determined by the Epi info 7 programs using the following parameters:

1. Population size=1200 patients (The number of patients who repeatedly visit the outpatient clinic over a period of three months from the outpatient records at Port Said Psychiatric health hospital)
2. Expected frequency =50%
3. Acceptable error=10%
4. Confidence coefficient=99%

The program revealed a minimum sample size to be 146 patients with depression. Thus, it was decided in the present study to recruit a convenient sample of **150** patients diagnosed having depression recorded in the psychiatric statistical records for follow-up and treatment.

5.1.5. Tools for Data Collection

The study data were collected by using of the following tools:

Tool I: Ruminative Response Scale (RRS):

This tool was developed [16] in English language and translated into Arabic language by the researcher. It consists of 22 self-report items will be used to assess ruminative tendencies. Responses were measured on 4-point Likert scale; highest score indicates highest level of rumination range from "1" to "4" as: almost never (1) sometimes (2) often (3) and almost always (4).

The RRS consists of three dimensions, five items assessing brooding include items (5,10,13,15 and 16) and five items assessing reflection include (7,11,12,20 and 21) as well as 12 items assessing depression include (1,2,3,4,6,8,9,14,17,18,19 and 22) [29].

[16] recommend using percentile cut-offs point can be obtained from your own sample (selecting people who score more than 33% of your sample as "high" ruminators and people who score less than 33% as "low" ruminators. Total score ranges from 22 to 88; higher scores suggest higher levels of rumination.

Tool II: Mindful Attention and Awareness Scale (MAAS):

It was developed by [4] in English language and translated into Arabic language by the researcher. It is consists of a 15 items self-report questionnaire assessing dispositional mindfulness. Responses were measured on a 6-point Likert-type scale, which ranges from "1" to "6" as: almost always (1), very frequently (2), somewhat frequently (3), somewhat infrequently (4), very infrequently (5) and almost never (6). Total score ranges from 15 to 90. Scoring system of MAAS: simply compute a mean of the 15 items. Higher scores reflect higher levels of dispositional mindfulness.

In addition, personal and clinical data questionnaire was added: Personal and clinical characteristic questionnaire, which was developed by the researcher after review of literature. It included personal data such as patient's age, gender, marital status, educational level, occupation, income, number of children. As regarding clinical characteristics, these included duration of illness, number of previous hospitalizations and level of depression.

5.2. Operational Design

The operational design included preparatory phase, pilot study, validity, reliability and fieldwork.

5.2.1. Preparatory Phase: It included reviewing of related literature and theoretical knowledge of various aspects of the study using books, articles, internet periodicals and magazines to develop the tool for data collection.

5.2.2. Pilot Study: After review of the questionnaire by experts and its approval, a pilot study was conducted before starting the actual data collection. The pilot study was carried out on 10% of the total sample of the depressed patients and was conducted from 2/9/2017 to 2/10/2017. It was done on 15 depressed patients attended to psychiatric outpatient clinic at Port Said Psychiatric Health Hospital and these were excluded from total sample of the research work to ensure stability of the answers. The purpose of the pilot study was to ascertain the clarity, and applicability of the study tools, and to identify the obstacles and problems that may be encountered during data collection. It also helped to recognize the time needed to fill in the questionnaire. Based on the results of the pilot study, there is no any modification occurred.

5.2.3. Validity: It was ascertained by a jury consisting of seven expertise's from psychiatric nursing and psychiatric medicine staff. They were requested to express their opinions and comments on the translated tool. They reviewed the tools for clarity, relevance and comprehensiveness. The tools were modified according to jury opinions such as change translation of some words and sentences. This phase was carried out in a period (two month).

The validity of the research tools was preserved following a translation and back-translation procedure by bilingual experts in English and Arabic languages.

5.2.4. Reliability: Tools were tested for reliability using Cronbach's Alpha test which Arabic version of rumination response scale was = 0.984 which indicate that the Arabic version demonstrated excellent scale reliability. In addition to, tool of Arabic version of mindful attention awareness scale was tested for reliability using Cronbach's Alpha test was = 0.828 which indicate that the Arabic version demonstrated excellent scale reliability.

5.2.5. Field Work

- The 150 depressed patients were obtained from outpatient clinic at Port Said Psychiatric Health Hospital.
- A written formal consent was obtained from Ministry of Health &Population; General Secretariat of Mental Health and Addiction treatment in order to carry out the study at Port Said Psychiatric Health Hospital.
- A written formal consent was obtained from each selected patient to participate in the study after explaining the aim of the study, establishing rapport, and trusting relationship with the studied patient.
- The study tools were then explained to patients and they

were reassured that all information will be confidential and used only for the purpose of the study and they were interviewed individually for keeping their privacy.

- The tools were filled by the researcher using the individual interview method.
- Each interview lasted for about from 30-45 minutes according to the patient's attention, concentration, and willing to cooperate or talk.
- A number of 4-8 patients were interviewed per day.
- Clinical data Patients were checked from their medical charts to be implemented in the tools.
- Data were collected from first of October 2017 and ending June 2018. Two days per week; Saturday and Tuesday from 10 a.m. to 2 p.m.
- Data were then categorized by the researcher, checked, and revised.

5.3. Administrative Design

Before the study conducted, an official letter was addressed from the Dean of the Faculty of Nursing to the Director of the identified study setting, requesting his cooperation and permission to carry out the study after explaining the aim of the study. Also, permission was obtained from the General Secretariat of Mental Health and Addiction Treatment to conduct the study at the Port Said Psychiatric Health Hospital.

Ethical Considerations:

A written consent was obtained from the patients, after explaining the purpose and the importance of the research study. Patients assured about the confidentiality of the information gathered and that it will be used only for the purpose of the study. All participants had the right to withdraw from study at any time.

5.4. Statistical Design

Data were collected, organized, tabulated and statistically analysed with SPSS 18.0 software computer statistical. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, means and standard deviations for quantitative variables. Qualitative categorical variables were compared using chi-square test. Whenever the expected values in one or more cells in a 2x2 tables was less than 5, Fisher exact test was used instead. In more than 2x2 cross-tables, no test could be applied whenever the expected value in 10% or more of the cells was less than 5. Person correlation analysis was used for assessment of the inter-relationships among quantities variables. Statistical significance was considered at P-value <0.05.

6. Results

Results reveals that two third of the depressed patients (66.7%) were female. While patients' age ranges between 20-59 years with a mean age ± SD of 37.29± 9.25 years, 42.0% of them their age ranges between (30-40) years old. It is also observed that, more than one third of patients (34.7%) were single. Looking to their level of education, it is found that, more than one third of the patients (34.7%) had secondary level of education, while those patients who had preparatory education constituted (6.7%) of the sample.

In relation to patients' current employment status, more than half of the depressed patient (54.7%) was not working. Also, regarding family income, 62.0% of the studied patients stated that, they didn't have enough monthly income, while the rest of them (38.0%) stated their family income had been enough.

Clinical characteristics of the study patients are illustrated that the duration of depression ranges from one year to 15 years with mean ±SD= 5.41±3.08 and more than half of the patients (54.7%) were depressed for one year to less than five years. For number previous psychiatric hospitalization, more than half of patient with depression (54.7%) were hospitalized from five times to ten times with mean of number for hospitalization 6.53±3.07. Less than half of studied patients (48.0%) had severe level of depression, whereas only, 14.7% had mild level of depression.

(Figure 1) represents that; approximately half of the studied patients (48.7%) of depressed patients had high level of rumination, while minority of them (6.7%) had low level of rumination.

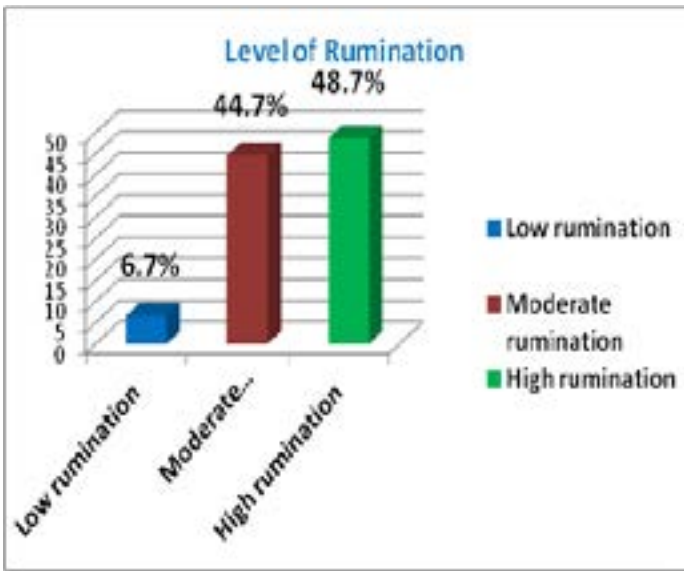

Figure 1: Distribution levels of rumination among studied patients (150 patients)

Mindfulness level among studied patients clarifies in (Figure 2); a majority of depressed patients (86.7%) had low mindfulness level, while rest of patients (13.3%) had high level of mindfulness.

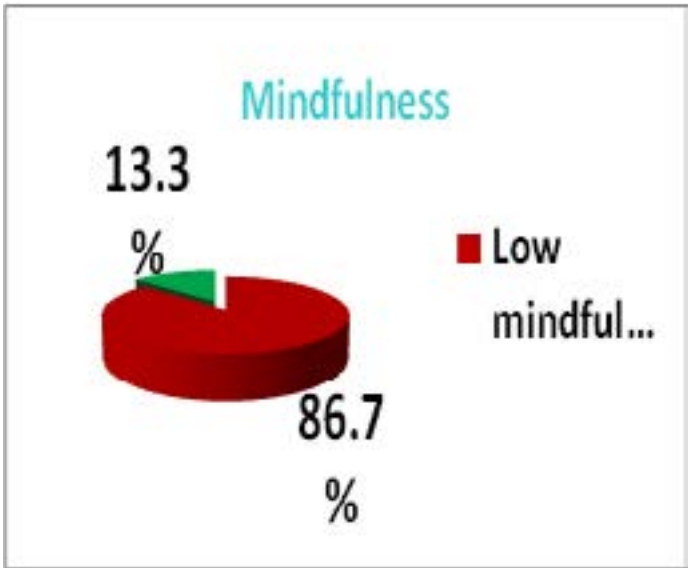

Figure 2: Distribution of mindfulness level among studied patients (150 patients)

(Table 1) describes statistically significant positive correlation between level of depression and dimensions of rumination (brooding, depression related items) (r=0.349, 0.645 respectively) except reflection had statistically significant negative correlation to level of depression (r= -0.440).

Table 1: Correlation between dimensions of rumination and level of depression among studied patients.

Dimensions of rumination	Level of depression	
	r	P
Brooding	0.349	0.000**
Reflection	-0.44	0.000**
Depression related items	0.645	0.000**

r=Pearson correlation, **Significant at P≤0.01

(Table 2) shows statistically significant positive correlation between total score of rumination and level of depression (r=0.431). While, there were statistically significant negative correlation between level of depression and total score of mindfulness (r= - 0.499 respectively).

Table 2: Correlation between total score of rumination and total score of mindfulness with level of depression among studied patients

Items	Level of depression	
	r	P
Total score of rumination	0.431	0.000**
Total score of mindfulness	-0.499	0.000**

r=Pearson correlation, **Significant at P≤0.01

(Table 3) indicates statistically significant negative correlation between total score of rumination, total score of mindfulness as (r= - 0.515)

Table 3: Correlation between total score of rumination and total score of mindfulness among studied patients

Items	Total score of mindfulness	
	r	P- value
Total score of rumination	-0.515	0.000**

r=Pearson correlation, **Significant at P≤0.01

(Table 4) displays the best fitting enter regression analysis model of the score of depression (dependent variable), personal, clinical characteristics, score of rumination and score of mindfulness (independent variables) among studied patients.it was founded that the best predictor factor of depression are the gender, education, income, number of hospitalization and rumination [p= 0.012, 0.045, 0.000, 0.000, 0.063 respectively). It was clear from the table that, depression was more among female, while it decreases with increase income and increases when number of previous psychiatric hospitalization and rumination increased. In addition, it was founded that, mindfulness not considered a predictive factor for depression. The model explains 69% of the variation in level of depression as indicated by the value of r-square (0.69).

Table 4: Regression analysis for score of depression (dependent variable), personal, clinical characteristics, rumination and mindfulness (independent variables) among studied patients.

Items	Beta coefficient	Standard error	t-test	P- value
(constant)	0.549	0.274	2.01	0.047*
Gender (female)	-0.143	0.046	2.55	0.012*
Education (secondary)	0.105	0.024	2.02	0.045*
Income (not enough)	0.571	0.09	9.37	0.000*
Number of hospitalization (6:10 times)	0.312	0.079	4.5	0.000*
Rumination level (score)	0.162	0.183	1.88	0.063*
Mindfulness level (score)	-0.019	0.078	0.28	0.78

*Significant at P≤0.05; R-square 0.69; Model ANOVA: F=25.48 P≤0.01

7. Discussion

Depression are considered major public health problem that affect every aspect of life which have a negative-consequences for quality of life, occupational, social ability, decrease productivity as well as, reduce well-being, and responsible for high costs of treatment. So, it is important to identify causal mechanisms and factors that exacerbate depression to provide appropriate treatment [22]. Rumination considers one of these factors which described as a maladaptive coping style that prolongs and exacerbates depression, that it is involved in the onset, maintenance, and recurrence of clinical depression. While, mindfulness plays a key role in preventing relapse of depression and

improve recovery of recurrently depressed individuals [20].

Therefore, this study is conducted to evaluate the relationship between ruminative thinking and mindfulness among patients with depression that's through assessing subtypes of ruminative thinking, clarify the effect of mindfulness on patients with depression and explore the relation between ruminative thinking and mindfulness among patients with depression.

7.1. From this study it was found that:

The finding of the present study denoted that, level of depression was positively correlated with total rumination. This may be due to when depressed individuals ruminate; they retrieve only negative memories that involve feelings of failures or insufficient abilities which lead to increase alteration of their mood and exacerbate depression. This result is consistent with [9], who study the relationship between rumination, depression, and aggression in children in United States, additionally [28], who study depressive rumination and experiential avoidance in United Arab Emirates, as well as [18], who did his study on distinguishing between level and impact of rumination as predictors of depressive symptoms in Belgium by [8], who study the relationship between rumination, worry and negative problem orientation: trans-diagnostic processes of anxiety, eating behaviour and mood disorders in Spain and noted that rumination and depression are positively correlated and rumination considered predictive and vulnerable factor to depression.

Whereas, the foregoing study results disagreed with the finding of [10], who conduct his study on prospective associations of depressive rumination and social problem solving with depression in Japan and reported that, there is no statistically significant correlation between rumination and depression. Furthermore, the result not congruent with [26], who carried out his study on diurnal variation in rumination in Japan and stated that rumination no statistically correlated and affected on depression. As well as, the result is not consistent with [2], who study the form and function of depressive rumination in Canada and concluded that rumination is an adaptive operation in which individuals ruminate in order to solve their troubles.

The result of the current study represented dimensions of rumination including: brooding, reflection and its correlation to level of depression. The current study showed a statistically significant positive correlation between level of depression and brooding. This may be related to content of rumination is mainly negative and the persistent of these negative thoughts exacerbates depression. This is in agreement with [24], who conduct his study on brooding and reflection as subtypes of rumination: evidence from confirmatory factor analysis in nonclinical samples using the ruminative response scale in Belgium and reported that brooding is considered a maladaptive strategy in which individuals compare recent status with unachieved goals which lead to increase depression. As well as [19], who carried out his study on submissive interpersonal style mediates the effect of brooding on future depressive symptoms in United Kingdom and showed that, brooding was positively associated with depression, in addition to [11], who conduct study on how do rumination and social problem solving intensify depression? In Japan and mentioned that, brooding was associated with severe level of depression.

According to level of depression and its correlation to reflection, the current study revealed that a statistically significant negative correlation between reflection and level of depression. This may be attributed to reflective rumination may enhance the accessibility of current negative thoughts to the attention of the individuals, which in turn exacerbates depressed mood and interfere with the individual's ability to formulate effective alternative solutions to their problems.

This result agreed with [32], who conduct study on brooding and reflection as components of rumination in late childhood in Belgium and found that individuals who have higher levels of reflection have little susceptibility to develop depression and those with less reflection are more vulnerable to develop depression. However, [19, 24] not consistent with the current study result and mentioned that, reflection was not prospectively or negatively correlated to depression. Also, [35] who carried his study in US on assessing brooding and reflection as explanatory of depressive symptoms in adolescents experiencing stressful life events, additionally [27], who Assessing rumination response style among undergraduate nursing students in Thailand and reported that, reflection markedly aggregated and positively correlated to depressive symptoms and emotional distress.

The present study also displayed that, level of depression and its correlation to total mindfulness a statistically significant negative correlation was founded. This may be attributed that depressed individual focus their awareness on past negative thoughts which lead to a little ability focus their attention in present moment and be mindful. The result in accordance with [20], who study the relationship between mindfulness and uncontrollability of ruminative thinking in [21], who did a study in Iran on assessing a comparison of the facets of mindfulness among patients with major depression, social anxiety disorder and healthy individuals and founded that negative correlation between mindfulness and level of depression. In addition, [6], who conduct his study on assessing the relationship between mindfulness and depression in Adolescents in Indonesia and reported that, there was a statistically significant negative correlation between mindfulness and depression which is implied that individual with

more mindfulness will be associated with lower level of depression.

The current study showed that a statistically negative correlation between total rumination and total level of mindfulness was revealed. This may be explained by fact that rumination is a repetitively and passively indwelling in past negative thoughts rather than focus in present moment. This was confirmed by [5], who carried his study in Germany on assessing the healthy quality of mindful breathing associations with rumination and depression, as well as, (2012), who conduct the study of cognitive predictors of change in cognitive behaviour therapy and mindfulness-based cognitive therapy for depression in Australia, by [31], who study the efficacy of mindfulness-based cognitive therapy in recurrent depressed patients with and without a current depressive episode in Netherlands, as well as, the study was supported by [20], who founded that mindfulness was significantly negatively correlated with rumination.

Whereas, the result of present study not supported by [3], who carried his study on assessing treatment-specific changes in decentring following mindfulness-based cognitive therapy versus antidepressant medication for prevention of depressive relapse mentioned that, no significant association observed between rumination and dispositional mindfulness.

The present study reported that, rumination is predictive factor to depression. This may be explained by Response Style Theory (RST), which defined rumination as a maladaptive pattern of responding to distress by repetitively and passively focusing on the meanings, causes, and consequences of one's depressive symptoms, also founded to maintain and intensify negative moods and increase the risk of occurrence of future depression. The result congruent with [13, 25], who did his study on different effects of rumination on depression in China and reported that, that rumination is a cognitive predisposing factor of depression, as well as [15], who study mediating role of decentring in the associations between self-reflection, self-rumination, and depressive symptoms in Japan, in addition [23], who carried out the effect of mindfulness facets and depression in adolescents: rumination as a mediator by [22], who study the relationship between rumination, positive future goals and cognitive aspects of future goals as predictors of depression stated that rumination was a significant independent predictor factor to depression in Netherlands.

In contrast, the study not harmonious with [30], who study relationship between age and gender differences in emotion regulation strategies: autobiographical memory, rumination, problem solving and distraction in Spain and stated that rumination and gender was not a significant predictor factor of depression.

The current study additionally indicated that, mindfulness not considered a predictive factor to depression; the study is supported by [33], who carried out his study in United States on examination of the relationships between rumination, social problem-solving, mindfulness and depressive symptomology and reported that mindfulness was not found to be predictive factor to depression.

Finally, the current study focused on ruminative thinking and its relationship mindfulness among patients with depression. Based on assessment it was found that, most of depressed patients had a high level of rumination and low level of mindfulness, while minority of them were with low level of rumination and had a high level of mindfulness. Also, in the light of the study findings, there were statistically significant positive correlation between level of depression and total score of rumination. While, there were statistically significant negative correlations between levels of depression and total score of mindfulness. As well as, there were statistically significant negative correlation between total score of rumination and total score of mindfulness.

8. Conclusion

Based on the findings of the present study, it can be concluded that: Most of depressed patients had a high level of rumination and lower level of mindfulness. While minorities of them who were with low level of rumination had a high level of mindfulness.

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