

PERCEIVED STRESS REACTIVITY, RUMINATION, AND COGNITIVE EMOTION REGULATION AS PREDICTORS OF DEPRESSION

TEHREEM ARSHAD

Assistant Professor, MS Clinical Psychology, Centre for Clinical Psychology, University of the Punjab, Lahore, Pakistan.

Submitted: August 29, 2016

Accepted: February 01, 2017

CORRESPONDENCE: TEHREEM ARSHAD, E-mail: tehreem.cpsy@pu.edu.pk

ABSTRACT

OBJECTIVE

To empirically investigate the relationship of perceived stress reactivity, rumination, and cognitive emotion regulation strategies with depression as well as to identify the predictors of depression.

STUDY DESIGN

Correlational Research Design.

PLACE AND DURATION OF THE STUDY

Psychiatry departments of government and private teaching hospitals of Lahore from February 2015 to January 2016.

SUBJECTS AND METHODS

Through purposive sampling, sample of 72 patients diagnosed with depression (Men = 35; Women = 37) was recruited. A set of questionnaires comprised of assessment measures of Depression subscale of Symptom Checklist-Revised, Perceived Stress Reactivity Scale, Ruminative Response Scale, Cognitive Emotion Regulation Questionnaire and Demographic Questionnaire was individually – administered on the selected participants to assess the study variables.

RESULTS

Significant positive relationship was found between rumination and depression as well as between three cognitive emotion regulation strategies (acceptance, self-blame, & focus on thoughts) and depression. Regression analysis found reactivity to work overload and acceptance as predictors of depression.

CONCLUSION

Findings would be helpful for mental health professionals dealing with individuals having depression.

KEY WORDS

Stress Reactivity, Rumination, Emotion Regulation, Depression.

INTRODUCTION

Depression as per World Health Organization constitutes a substantial proportion in global burden of disease and is also estimated to become second leading cause of mortality by 2020.¹ Based on review of several studies, depressive disorders were found prevalent in 34% of general population of Pakistan. This means that on an average, every third person in Pakistan is suffering from depression.²

During the last 50-60 years there has been considerable research on stress and it has been labeled as the basic cause of psychopathology. Stress reduces the capacity of an organism to overcome life problems and ultimately takes a toll on one's physical and psychological well-being. Psychological perspectives of stress argued that, whatever the stressful situation is, the response to stress largely depends upon how that situation is perceived. This perception was termed as "appraisal". The appraisal of any given situation decides an individual's response to the situation which is in turn dependent on his/her unique cognitive processes.³ Thus the Cognitive stress theory presumes that stress surfaces in the consequences of a person-environment interface where demands are evaluated as possibly harmful and uncontrollable at individual's level. These assumptions result in person's biological and psychological responses.⁴ On this basis, perceived stress reactivity was defined as a temperament that is the reason behind individual differences in the stress responses-both physiological and psychological. The term referring to individual differences is actually the psychobiological perspective which maintains that perceived stress reactivity is comparatively stable over time, across circumstances and response systems for any individual and is associated with the subsequent development of physical and psychological illnesses.^{5,6} Alongwith stress reactivity several other factors serve as a disposition to depression and the most prominent of all is rumination.⁷ Rumination is evaluated exclusively as the propensity to center on maladaptive self-referential beliefs subsequent with stressful events. Ruminative response style refers to people's passive fixation on their negative emotions and resulting symptoms of distress ("I am worthless and feel hopeless," "I cannot focus") and further getting upset for searching meaning of their distress such as "When this misery will end?"⁸ Nolen-Hoeksema⁹ proposed a theory of depression maintaining that sad mood of depressed people get intensified when ruminative response style is manifested leading to longer duration and full-blown depressive episodes. Rumination is a comparatively frequent response to pessimistic moods and the most important cognitive characteristic of dysphoria and major depressive disorder.

Emotion regulation refers to "extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions, their intensive and

temporal features in particular, to accomplish one's goals." It is vital in shaping adaptation and winning functioning of any individual.¹⁰ Cognitive emotion regulation is a broader concept of emotion regulation through which people manage emotionally charged information cognitively and consciously. Harmful effects of stress impair the intact functioning of prefrontal cortex and brain's executive operations which further impede the successful execution of cognitive emotion regulation strategies.¹¹ People consciously or unconsciously try to modify the intensity or type of emotional experience by employing cognitive emotion regulation strategies such as acceptance, blaming self and others, putting into perspective, and catastrophizing etc which are cognitive responses to emotion-eliciting events.¹² People endorsing negative cognitive emotion regulation styles such as self-blame, rumination, and catastrophizing may be more susceptible to emotional problems than others who use positive cognitive emotion regulation styles.¹⁰ Depression is one of the prevalent psychopathologies around globe and is also leading cause of other disorders as well,¹ that is why, health professionals are making dire efforts for understanding predictors and maintaining factors of depression through empirical research. The focus of mental health professionals is more on prevention rather than intervention. Research is needed to determine types of cognitive emotion regulation strategies and different responses to stressful situations utilized by patients with depression in Pakistan so that specific intervention strategies could be targeted for this part of the world population. The following are the objectives of present study

- To explore the relationship of perceived stress reactivity, rumination and cognitive emotion regulation strategies with depression.
- To examine the role of perceived stress reactivity, rumination and cognitive emotion regulation strategies as predictors of depression.

SUBJECTS AND METHODS

Participants

Correlational research design and purposive sampling was used to select a sample of 72 patients (Men = 35; Women = 37) diagnosed with Major Depressive Disorder from the both outdoor and indoor psychiatry departments of government and private teaching hospitals of Lahore including Services Hospital, Sir Ganga Ram Hospital, Punjab Institute of Mental Health, Jinnah Hospital, Surgimed Hospital and Hameed Latif Hospital. Only those participants were included in the study who had principal diagnosis of Major Depressive Disorder determined by practicing psychiatrist or consultant clinical psychologist as well as by researcher herself through administration of Depression subscale of Symptom Checklist-Revised,¹³ were within the age range of 18-60 years, and could read and understand Urdu language. Patients diagnosed with depression were excluded from the study if they had comorbid chronic psychiatric (schizophrenia, bipolar disorder, somatoform disorder) and terminal physical illnesses (AIDS, Cancer, Diabetes, Hepatitis, and Arthritis).

Measures

The current study employed a number of measures to assess

perceived stress reactivity, rumination and cognitive emotion regulation strategies in the patients of depression. In order to attain general information about the participants such as age, education, family system, occupation etc., a demographic sheet was developed by the researcher.

Symptom Checklist-Revised¹³

It is an indigenously developed tool. It was used to verify the diagnosis of depression in patients referred by practicing psychiatrists and psychologists of government and private teaching hospitals of Lahore to researcher for the purpose of data collection. It has total 148 items with six subscales: Depression, Somatoform, Anxiety, Obsessive Compulsive Disorder, Low Frustration Tolerance, and Schizophrenia. In present study, Depression scale (24 items) was used. Each item was rated on 0-3 point likert type scale. Higher scores indicated higher propensity for depression. The Cronbach's alpha coefficient for Depression subscale came out to be .69 in the present study.

Perceived Stress Reactivity Scale⁵

This 23 item scale was used to assess the participant's perceived patterns of response to stressful situations that tend to stay stable over time. Each item is composed of two parts: an item stem that describes a potentially stressful situation and three answer options representing potential stress responses. Three categories are provided for each stem, which are scored as 0, 1, & 2 respectively. It consists of five subscales: Prolonged Reactivity, Reactivity to Work Overload, Reactivity to Social Conflicts, Reactivity to Failure, and Reactivity to Social Evaluation. Overall perceived stress reactivity is calculated by aggregating the scores on each subscale. This tool was translated in Urdu language by using back translation method. In present study, the cronbach alpha reliability coefficient of the overall scale came out to be .77, whereas, it was .19, .65, .34, .48, & .53 for subscale Prolonged Reactivity, Reactivity to Work Overload, Reactivity to Social Conflict, Reactivity to Failure, and Reactivity to Social Evaluation, respectively.

Ruminative Responses Scale¹⁴

This questionnaire was employed to measure depressed patients' ruminative patterns of thought. The scale assesses thought content along the dimensions of brooding, reflection and depression. However, no discreet scores are computed for each scale, instead a cumulative score is calculated by aggregating the individual scores on 22 items. The items are scored as almost never (1), sometimes (2), often (3), and almost always (4). The internal consistency value of the questionnaire for the present study was .82. Urdu translation of this tool was used in present study.

Cognitive Emotion Regulation Questionnaire (CERQ)¹⁵

Urdu translated version of this questionnaire was employed to investigate the cognitive strategies both adaptive and maladaptive used by the patients with depression to interpret and regulate their emotions. It is a 36 item questionnaire with nine subscales (self-blame; blaming others; acceptance; focus on thoughts; refocus on planning; positive refocusing; positive reappraisal; putting into perspective; and catastrophizing) representing nine cognitive emotion regulation strategies-4 items each. Present study has reported mild to good psychometric properties of CERQ subscales with alpha-coefficients ranging from .44 to .71. The items are scored on five point likert type scale of almost never (1) to almost always (5).

Procedure

After the grant of approval for the present research project from Punjab University Research Evaluation Committee, permissions from the authors of the study questionnaires were sought. Meanwhile, written permissions were sought from the concerned authorities of hospitals. It was ensured that the information related to patients diagnosed with depression will be kept highly confidential and the ethical considerations will be followed. In the next step, pilot study was carried out on 6 patients and after that main study was conducted. Consultant psychiatrists and psychologists of different government and private hospitals of Lahore referred patients with depression to researcher for data collection. Moreover, researcher also administered Depression subscale of Symptom Checklist-Revised to verify the diagnosis. Patients, once identified, were briefed about the nature of study and were requested to sign the written informed consent form. Afterwards, set of questionnaires in Urdu were individually self-administered to the patients in hospital premises.

RESULTS

Results were analyzed through software named as Statistical Package for Social Sciences (SPSS: Version 21). First, demographic characteristics of patients with depression were estimated through descriptive statistics such as means, standard deviations, frequencies, and percentages. Second, relationship of stress, rumination, and cognitive emotion regulation strategies was determined with depression through Pearson Product Moment

Correlation Coefficient. Results are displayed in table 2.

Table 1
Demographic Characteristics of Sample

Variables	Patients with Depression	
	f(%)	M(SD)
Gender		
Men	37(51.4)	
Women	35(48.6)	
Age		35.94(9.59)
Education in years		13.85(4.09)
Marital Status		
Single	26(36.1)	
Married	39(54.2)	
Widowed	5(6.9)	
Divorced	2(2.8)	
Religion		
Islam	70(97.2)	
Christianity	1(1.4)	
Occupation		
None	37(51.4)	
Private Job	24(33.3)	
Government Job	7(9.7)	
Businessman	4(5.55)	
Family System		
Nuclear	54(75.0)	
Joint	17(23.6)	

Table 2
Intercorrelations among the Study Variables for depression patients (N=72)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.PR	-	.38**	.25*	1.00***	.33**	.17	.14	.13	.21	.12	.00	.25*	.15	-.13	.29*	.17
2.RWO		-	.56***	.38**	.59***	.19	-.15	-.09	.15	-.04	-.10	.01	.13	.18	.23	.22
3.RSC			-	.25*	.49***	.15	-.13	-.09	-.02	-.02	-.06	.07	.14	.13	.22	-.01
4.RF				-	.33**	.17	.14	.13	.21	.12	.00	.25*	.15	-.13	.29*	.17
5.RSE					-	.06	-.25*	-.20	-.23	-.26	-.21	-.10	.03	-.05	.10	-.03
6.RRS						-	.22	.32**	-.02	-.02	-.06	.04	.45***	.23	.36**	.36**
7.Acc							-	.73***	.01	.32**	.29*	.53**	.52**	.19	.55***	.53***
8.FOT								-	.04	.27*	.12	.34**	.51***	.24*	.54***	.47***
9.PRF									-	.43***	.39**	.23	-.08	.25*	.03	-.03
10.RFP										-	.81***	.66***	.21	.04	.31**	.15
11.PRA											-	.75* **	.00	-.03	.14	.05
12.PIP												-	.22	-.03	.33**	.23
13.CAT													-	.50***	.66***	.33**
14.OB														-	.17	.08
15.SB															-	.48***
16.Dep																-
M	1.36	1.39	1.36	1.37	1.41	64.52	3.52	3.49	3.08	3.09	2.99	3.03	3.28	3.02	3.53	69.93
SD	.28	.42	.34	.28	.38	10.01	.71	.67	.63	.62	.65	.75	.76	.81	.71	8.38

Note: PR = prolonged reactivity; RWO = reactivity to work overload; RSC = reactivity to social conflict; RF = reactivity to failure; RSE = reactivity to social evaluation; RRS = ruminative response scale; Acc = acceptance; FOT = focus on thoughts; PRF = positive refocusing; RFP = refocus on planning; PRA = positive reappraisal; PIP = putting into perspective; CAT = catastrophizing; OB = other blame; SB = self-blame; Dep = depression
p* < .05, *p* < .01, ****p* < .001.

Results from table 2 indicated that none of the subscales from Prolonged Reactivity Stress Scale had significant relationship with depression. However, ruminative response scale had significant positive relationship with depression suggesting that patients who had higher tendency to ruminate were more likely to have severe depression. On the other hand, only three subscales of CERQ i.e., acceptance, focus on thoughts and self-blame had significant positive relationship with depression. This reflected that patients with depression who accepted their condition, focused on their thoughts excessively, and blamed themselves for their condition were more likely to have severe depression.

Table 3 displayed multiple hierarchal linear regression analysis to determine the predictors of depression. Depression scores were entered as dependent variable while subscales of Prolonged Reactivity Stress Scale, Ruminative Response Scale, and CERQ were entered as independent variables. The value of Durbin-Watson Index (1.62) and Tolerance index (>.2) were within acceptable range for almost all study variables suggesting that assumption of independent errors and no perfect multi collinearity was fulfilled and results of linear regression analysis could be reliably interpreted.

Table 3
Hierarchal Linear Regression Analyses Predicting Depression from Stress, Rumination, and Cognitive Emotion Regulation Strategies

Variables	Depression	
	ΔR^2	β
Step 1	.12	
Reactivity to Work-Overload		.43**
Reactivity to Social Comparison		-.16
Reactivity to Failure		-.06
Reactivity to Social Evaluation		-.11
Step 2	.10*	
Ruminative Response Scale		.23
Step 3	.28**	
Acceptance		.49**
Focus on Thoughts		.05
Positive Refocusing		-.12
Refocus on Planning		.16
Positive Reappraisal		-.18
Putting into Perspective		-.01
Catastrophizing		-.21
Self-blame		-.06
Other-blame		.19
Total R 2	.49***	

Note: N = 72 (one subscale from Prolonged Reactivity Stress Scale i.e., Prolonged Reactivity was eliminated from the analysis due to low tolerance value)
* $p < .05$. ** $p < .01$. *** $p < .001$

Results in table 3 showed that model 1 ($R^2 = .12$, $F(4, 67) = 2.18$, $p = .08$) was not significant indicating that subscales of Prolonged Reactivity Stress Scale (PRSS) overall did not predict for depression. In model 2, all subscales of PRSS and ruminative response scale scores were added simultaneously to see their effect on depression and the overall effect came out significant, ($R^2 = .21$, $F(5, 66) = 3.59$, $p = .01$). When the effect of subscales of PRSS was subtracted from model 2, it was observed that rumination alone significantly predicted for depression, ($R^2 = .10$, $F(1, 66) = 8.28$, $p = .01$). This suggested that 10% of the variance in the model was explained by rumination. In the next step, subscales of PRSS, ruminative response scale and subscales of CERQ were entered simultaneously in model 3 and the model turned out significant, ($R^2 = .49$, $F(14, 57) = 3.94$, $p < .001$). This implied that 49% of the variance in the model was predicted by PRSS subscales, Ruminative Response Scale, and CERQ subscales together. However, when the effect of PRSS subscale and Ruminative Response Scale was deleted from model 3, CERQ subscales still significantly predicted for depression, ($R^2 = .28$, $F(9, 57) = 3.46$, $p = .002$). This implied that 28% of the variance in the model was significantly predicted by CERQ subscales overall. As far as the role of individual predictors were concerned, two predictors of depression emerged significant i.e., reactivity to work-overload and acceptance.

DISCUSSION

The purpose of the present study was to examine the relationship of stress, rumination, and cognitive emotion regulation strategies with depression as well as to identify the predictors of depression. As per the results of first objective, it was found that rumination and three cognitive emotion regulation strategies i.e., acceptance, focus on thoughts, and self-blame related positively with scores of depression. Previous research^{16,17} has also tried to establish the link between rumination and depression. Rumination encompasses recurrent negative thinking style focused on past, present, or future reducing ones capacity for conflict resolution which is the outcome most likely to result in depression. Nolen-Hoeksema⁹ proposed that rumination is reported more in depressed patients as compared with non-depressed patients and that rumination worsened depressed mood. One possible reason for why rumination contributed to depression may underlie in the perception of dysphoric ruminators who find their rumination helpful and beneficial for problem solving and understanding depression.¹⁸ Besides rumination, several other maladaptive cognitive emotion regulation strategies such as self-blame and acceptance may interfere with psychological flexibility of people and were shown to be positively related with depression.¹⁹ Research^{15,20} has demonstrated that people's tendency to take the blame for what they have experienced, persistent and recurrent thinking about the negative event, and ultimate acceptance of the situation and doing nothing to change it may predispose people to depression and other emotional and behavioral problems. By keeping in view of current results, it can be suggested that people may become more vulnerable to depression if they are likely to use cognitive emotion regulation strategies of self-blame, focus on thoughts, and acceptance. However, it should be borne in mind that two way relationship analyses are insufficient in predicting direct influence of one variable on another. Previous literature may justify that rumination and maladaptive cognitive emotion regulation strategies enhanced the risk of depression but reverse can be equally true. Therefore, conclusions cannot be drawn about the direction of influence.

In the regression analysis, when the role of all study variables was taken into account independently in the etiology of depression, reactivity to work overload and acceptance as cognitive emotion regulation strategy strongly and positively predicted for depression. There is a large body of evidence⁵²¹signifying that stress and unhealthy cognitive emotion regulation strategies increased the risk for depression. Consistent with present finding, Ahola and his colleague²² also surmised that work stress has positive relationship with depression and excessive work stress may induce feelings of frustration, anger, and irritability in people which if prolonged can make them promising candidates for psychological distress. The present finding can be explained in the context of Pakistani culture. Mental health treatment is expensive in Pakistan and it has huge economic consequences for the family and patient itself.²³ Moreover, psychiatric patients are stigmatized by society²⁴and even if they recover, their sanity always remains questionable for their family members, friends, and work colleagues. Such circumstances may prone psychiatric patients to accept their condition and do nothing to change it as changing it is also associated with adverse consequences.

LIMITATIONS AND SUGGESTIONS

No indigenous tool for the assessment of independent variables was available. Furthermore, some subscales of PSRS (prolonged reactivity, reactivity to social conflict, and reactivity to failure) and CERQ (Refocus on planning) had less than sufficient internal consistency values i.e., less than .50. Results related to these subscales should be interpreted cautiously or in future studies different questionnaires assessing same constructs can be used to determine the reliability of present study's findings.

CONCLUSION

Findings of the study depicted that rumination and three cognitive emotion regulation strategies such as self-blame, focus on thoughts, and acceptance had significant positive relationship with depression; while reactivity to work overload and acceptance emerged as significant predictors of depression.

Future research may explore the mediating role of cognitive emotion regulation strategies between perceived stress reactivity and depression. Present findings carry important implications for mental health practitioners who can help patients with depression modify the content of their unhealthy cognitive emotion regulation strategies and their responses to stressful situations.

REFERENCES

1. Murray C, Lopez A. The global burden of diseases: A comprehensive assessment of mortality and disability from diseases, injuries and risk factors in 1990 and projected to 2020. Boston: Harvard School of Public Health, WHO and World Bank, 1996.
2. Mirza I, Jenkins R. Risk factors, prevalence, and treatment of anxiety and depressive disorders in Pakistan: Systematic review. *BMJ* 2004; 328(7443):794-797.
3. Cohen S, Kessler RC, Underwood-Gordon L. Strategies for measuring stress in studies of psychiatric and physical disorders.

In: Cohen S, Kessler RC, Underwood- Gordon, Leeds 1995 Measuring stress: A guide for health and social scientists (pp. 3-26). New York: Oxford University Press.

4. Lazarus RS. From psychological stress to the emotions: A history of changing outlooks. *Ann Rev Psychol* 1993; 44: 1-21.
5. Scholtz W, Yim IS, Zoccola PM, Jansen L, Schulz P. The perceived stress reactivity scale: Measurement invariance, stability, and validity in three countries. *Psychol Assessment* 2011; 23(1): 80-94.
6. Limm H, Angerer P, Heinmueller M, Marten-Mittag B., Nater UM, Guendel H. Self-perceived stress reactivity is an indicator of psychosocial impairment at the workplace. *BMC Public Health* 2010; 10(1):252-262.
7. Lo CSL, Ho SMY, Hollon SD. The effects of rumination and depressive symptoms on the prediction of negative attributional style among college students. *Cognitive Ther Res* 2010; 34(2):116-123.
8. Robinson MS, Alloy LB. Negative cognitive styles and stress-reactive rumination interact to predict depression. *Cognitive Ther Res* 2003; 27(3):275-292.
9. Nolen-Hoeksema S. The role of rumination in depressive disorders and mixed anxiety/depressive symptoms. *J Abnorm Psychol* 2000; 109(3):504-511.
10. Min JA, Yu JJ, Lee CU, Chae JH. Cognitive emotion regulation strategies contributing to resilience in patients with depression and/or anxiety disorders. *Compr Psychiat* 2013; 54(8): 1190-1197.
11. Garnefski N, Kraaij V, Spinhoven P. Negative life events, cognitive emotion regulation and emotional problems. *Pers Indiv Differ* 2001; 30(8):1311-1327.
12. Aldao A, Nolen-Hoeksema S. Specificity of cognitive emotion regulation strategies: A transdiagnostic examination. *Behav Res Ther* 2010; 48(10):974-983.
13. Rahman NK, Jagir S, Dawood S, Mansoor W, Rehman N. Standardization and validation of Symptom Checklist-R. 2000: Paper Presented at the 6th National Conference of Pakistan Association of Clinical Psychologists on Developing Pakistan: Challenges for Professionals, Lahore, Pakistan.
14. Treynor W, Gonzalez R, Nolen-Hoeksema S. Rumination reconsidered: A psychometric analysis. *Cognitive ther res* 2003; 27(3):247-259.
15. Garnefski N, Kraaij V. The cognitive emotion regulation questionnaire-Psychometric features and prospective relationships with depression and anxiety in adults. *Eur J Psychol Assess* 2007; 23(3): 141-149.
16. Koval P, Kuppens P, Allen NB, Sheebar L. Getting stuck in depression: The roles of rumination and emotional inertia. *Cognition Emotion* 2012; 26(8): 1412-1427.
17. Pearson M, Brewin CR, Rhodes JS, McCarron G. Frequency and nature of rumination in chronic depression: A preliminary study. *Cogn Behav Ther* 2008; 37(3): 160-168.
18. Watkins E, Baracaia S. Why do people ruminate in dysphoric moods? *Pers Indiv Differ* 2001; 30(5):723-734.
19. Erk S, Mikschl A, Stier S, Ciaramidaro A, Gapp V, Weber B, Walter H. Acute and sustained effects of cognitive emotion regulation in major depression. *J neurosci* 2010; 30(47): 15726-15734.
20. Martin RC, Dahlen ER. Cognitive emotion regulation in the prediction of depression, anxiety, stress, and anger. *Pers Indiv Differ* 2005; 39(7), 1249-1260.
21. Garnefski N, Kraaij V. Relationships between cognitive emotion

- regulation strategies and depressive symptoms: A comparative study of five specific samples. *PersIndiv Differ* 2006; 40(8): 1659–1669.
22. Ahola K, Hakanen J. Job strain, burnout, and depressive symptoms: A prospective study among dentists. *J Affect Disorders* 2007;104(1): 103-110.
 23. Malik MA, Khan MM. Economic burden of mental health in Pakistan *J Ment Health Policy Econ.* 2016; 19(3): 155-66.
 24. Yousafzai AW, Siddiqi MN, Bhutto N, Ahmer S, Zaman M. The medical students stigmatizing attitude towards psychiatric label. *J Pak Psych Soc* 2011; 8(2): 90-93.