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Interactional Effect of Rumination and Negative Cognitive Styles to Predict Depression

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Abstract: *Research on depressogenic cognition has already documented negative cognitive styles and rumination with reference to depressive symptoms. The present study intended to explore the gender differences and interaction effect of rumination and negative cognitive style in predicting depression. The major hypotheses tested were (1) the interaction of negative cognitive styles and SRR predicts depression and (2) gender base differences would exist with reference to RRS and NCS. Study results revealed that both the study variable were significant predictors of depression. Similarly, the interaction effect NCS x RRS significantly predicted depression in a positive direction. Exploring the gender differences, it was found that females experienced more depressed feelings accompanied by a higher magnitude of ruminative response and negative cognitive style.*

Introduction

The identification of thought patterns linked with stressors has been a center of attention in most of the studies on the causal factors of depression. Cognitive theories describe depression in two main ways, as suggested in the depression hopelessness of theory (Clark et al., 2000) and the depression theory by (Beck, 1967). Cognitive vulnerability–stress models base theories draw attention to the cognitive aspect appertaining to behavior that may result in depression. Particularly, the hopelessness theory postulates that some individuals in routine consider depressing life events to be the constant an-individual become more prone to hopelessness when facing arise as a consequence of present depressing incidents (Grahek et al., 2019). It is believed that an individual becomes more prone to hopelessness when facing negative life events than those without faulty cognitive styles.

Alloy et al. (2000) declared negative cognitive styles to significantly predict depressive symptomology. It was proved that individuals with negative cognitive styles had serious chances of major depressive disorder. In addition, Alloy et al. (2000) revealed the interrelationship between faulty thought patterns and the tendency to exhibit ruminative reactions to negative events predicts episodes of depressive symptomology.

Another study has proposed that depressive individuals who exhibit a more ruminative response style and focus on the symptoms and causes of depression are more prone to worsen momentary depressing mood states (Kovács et

al., 2020). A number of studies have supported NolenHoeksema's prediction of the severity of depression with ruminative response styles (He et al., 2021; Kovács et al., 2021; Tahtinen et al., 2021).

The ruminative tendency has been proven as a considerable predictor of depressive episodes among nonclinical depressed individuals (Bean et al., 2021; Jahanitabesh et al., 2021). Watkins and Roberts (2020) also support the function of recurring thoughts in stimulating the significant cognitive aspect as described in the hopelessness theory: hopelessness. Robinson and Alloy found that extent to which cognitive content is triggered and repeated is vital in causing depression.

The present study, based on the theoretical expansion of Nolen-Hoeksema's (1991) response styles theory of depression, hypothesized that a person with a high magnitude of negative cognitive styles is additionally susceptible to feelings of despair. Abramson et al. (1989) and Beck's (1967) theories display an inclination to ponder on these depressing thoughts in reaction to stressful life events and are expected to experience depressive symptoms. The present study employs the depression-ruminative model to examine the interrelation of negative cognitive styles and rumination in the inception of depressive symptoms (Alloy & Abramson, 1999). Based on the high-risk behavioral paradigm, students holding negative cognitive styles were selected.

This study pays focal attention to the possible moderating role of rumination and negative cognitive style in predicting depressive episodes. In the present study, the following hypotheses were tested: (1) the interrelation between negative cognitive styles and rumination would predict depression. Specifically, individuals with negative cognition tend to ruminate more and would be more depressive, (2) there would be significant gender base differences in rumination and negative cognitive styles and depression.

Method

Participants

The sample for the current study comprised 500 freshmen screened from a pool of 3,289 based on their level of experience with depression as assessed on the Center for Epidemiologic Studies Depression Scale (Radloff, 1977). Scoring highest on CES-D was considered as a high possibility of holding a negative cognitive style and ruminative response, and they were requested to take part in the second stage of the study. Of the remaining 543 participants, 43 send regret taking part in the forthcoming segment of the study. This left 500 study subjects in the final study. In Phase II, only those potential study participants who met the screening criteria of Phase I was assessed on the rumination and cognitive style questionnaire.

Depressive Rumination

The Response Styles Questionnaire comprises 21 items to evaluate reactions to depressed feelings that are fixated on probable reasons, egocentric, symptom-focused, or significances of the depressive mood. Drew on a 4-point Likert scale, participants are asked to give a description of their reaction during depressive episodes in life. Ruminative Responses have good internal consistency (α = .89) and reliability (r = .80; Nolen Hoeksema & Morrow, 1991).

Center for Epidemiologic Studies Depression Scale (CES-D)

For the assessment of depression, 20 item Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) was used. With a 4-point Likert scale, the response category ranges from (0) = for rarely or none of the time to 3 = for most or all the time (5–7 days). The score range is 0–60, and scores more than 16 are typically taken as an indicator of clinical depression. The higher scores indicated greater symptoms of depression.

Cognitive Style Questionnaire (CSQ-SF)

The Cognitive Style Questionnaire Short Form, with 72-item and five-point response categories,

has four subscales naming negative consequences, globality, stability, and self-worth) (Meins et al., 2012). It consists of eight hypothetical (four negatives and four positive) states of affairs to which subjects re-write down the explanation and then determine the cause on a continuum ranging from 1 to 7 with reference to internal-external, global-specific, and stable-unstable appreciation dimensions.

The Procedure of the Study

Data for the current study were gathered through the survey method. For the present study researcher personally approached. In phase I, after getting the informed consent screening test was administered to get the final pool of study participants. Only those subjects scoring more than 16 on CES-D were asked to respond to all three remaining questionnaires with honesty without leaving any item unchecked.

Results

Hierarchical regression analyses were used to test Hypotheses 1 and to predict depression. In Step I, the CSQ-SF score was entered in the regression equation to ensure that any noteworthy results in predicting depression and the main effects of RRS and on preceding steps of the regression analyses interactions term were entered hierarchically. In an additional follow-up analysis, the correlations were computed to explore the relationship between depression, rumination, and negative cognitive style. T-test analysis was also applied to investigate the gender differences in the study samples.

Hypothesis 1 was that negative cognitive styles interacting with rumination response would predict depressive symptomology. Results in Table I show the results of hierarchical regression analyses supporting Hypothesis 1. The NCS × Rumination interaction predicted significant depression, accounting for 30% of the variance. Hypothesis II was that gender base differences would exist in rumination, negative cognitive style, and depression. Table II depicts that female participants were also high in rumination and had higher depressive symptomology than male participants.

Table 1

Hierarchical Multiple Regression Analyses Depression from CSQ and Rumination (N = 500)

Predictor		ΔR^2	*B*
Step I		.21*	
	CSQ		.51*
Step II		.05*	
	CSQ		.43*
	Rumination		.42*
Step III		.04*	
	CSQ		.44*
	Rumination		.42*
	CSQ* Rumination		.25*
Total R^2		.30*	

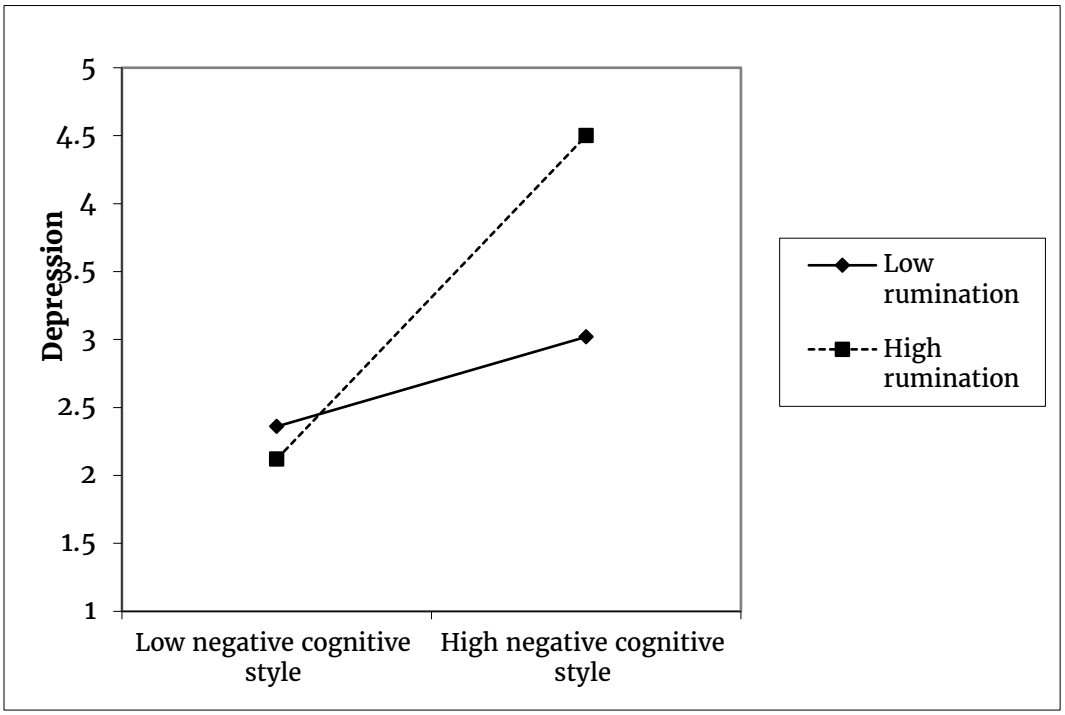
*$p < .001$.

Table 1 shows a positive association between rumination and cognitive style {β = .51, t = 27.22, p = .000} with previously elucidated about 21% alteration in the later {ΔR^2 = .21, ΔF (1, 498) = 10.63, p = .001}. Rumination likewise prophesied depression {β = .42, t = 23.81, p = .000} and explicated of 5% an supplementary variance in it {ΔR^2 = .05, ΔF (1, 497) = 6.51, p = .000}. In the third base step, the interaction term of study variables predicted depression in a positive course {β = .25,

t = 13.53, p = .000} and explicated of 4% an additional variance {ΔR^2 = .04, ΔF (1, 496) = 5.05, p = .000}. This demonstrates the moderating role of rumination between depression and cognitive style (see Figure 1). On the whole, rumination, cognitive style, and their interaction explain a 30% variance in depression.

Figure 1

Interaction effect rumination and cognitive style in relation to depression



This figure illustrates the positive correlation between cognitive style and rumination among individuals high in depression. On the whole, rumination, cognitive style, and their interface represent a substantial model that elucidated the 30% variance in depression.

Table 2

Mean, Standard Deviation, and t-values of male and female University Students on Subscales of Cognitive style questionnaire Short Form (CSQ-SF; N=500)

Subscales	Men (n = 268)		Women (n = 232)				CI 95%		Cohen's d
	M	SD	M	SD	$t(498)$	p	LL	UL	
CSQ	236.8	100.8	289.7	37.46	7.76	.000	-13.1	3.95	0.70
Rumination	68.91	10.30	71.87	8.16	3.56	.000	-1.59	0.70	0.31
Depression	452.28	43.51	473.6	42.63	3.82	.000	-5.89	4.79	0.50

Note. CI = Confidence Interval; CSQ = Cognitive Style Questionnaire

Table 2 reflects significant gender base variances on negative cognitive style, rumination, and depression scales. Results display that women hold a higher intensity of negative cognitive style, ruminative response, and depression than men. Study results exhibit a relatively large effect size for cognitive style (Cohen's *d* = .70). Relatively moderate effect size is exhibited in depression (Cohen's *d* = .50), whereas small significance is shown in rumination (Cohen's *d* = .31).

Discussion

The current study inquired about the predictive role of Negative Cognitive Styles and Rumination in Depressive symptomology. It was hypothesized that negative cognitive style interacting with rumination would significantly predict depression. The results support this hypothesis and demonstrate that negative cognitive style and rumination in interaction significantly predict depression (see Table 1). This result is in accordance with earlier conducted research which has highlighted that negative cognition and rumination significantly predict depression (Taylor & Snyder, 2021; Ehring, 2021). The current result presented supplementary support stating that rumination is not only a preserving element of depression but also a predictor of who is vulnerable to depression (Tozzi, 2021; Dell'Osso et al., 2019).

Exploring gender differences with reference to rumination negative cognitive style and depression level study, results revealed that women exhibited a more ruminative response to negative cognitive style and depressive symptomology than men (see Table 2). The finding of the present study is supported by previous research signifying that women are more vulnerable to depression (Singh & Mishra, 2022; Gozuyesil et al., 2022). Generally, higher intensity of depression among females is positively associated with gender roles (Yuan et al., 2021).

Conclusion

Based on the current study results, it is safe to conclude that individuals high in making negative inferences about stressful events persistently trigger these depressing explanations, i.e., rumination and negative cognitive style strengthen the probability of developing episodes of depression. Similarly, it was found that female exhibits a more negative cognitive style which in turn leads to ruminative response and a higher level of depression than male.

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