



Investigating the Relationship between Rumination and Negative Affect with Early Maladaptive Schemas in Students

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Abstract

Introduction: Early maladaptive schemas are one of the most important psychological characteristics, and rumination and negative affect are important variables related to primary maladaptive schemas. This present study aims to determine the relationship between rumination and negative affect and primary maladaptive schemas in students of Islamic Azad University in Zanjan.

Methods: This descriptive research is correlational. The statistical population studied in this research included all male and female students of Islamic Azad University, Zanjan branch, who are studying in different fields and levels in the academic year of 2021-2022, which includes 14,000 people, which is a multi-stage random sampling method. They were selected. In the current research, Yang's schema questionnaire, Watson's negative affect effects, and Hoeksma and Maro's rumination were used to collecting data. The method of data analysis was Kolmogorov-Smirnov tests, Pearson's correlation coefficient, and stepwise regression, using SPSS 24 software.

Results: To predict rumination based on early maladaptive schemas in students, those who selected only vulnerability, deprivation, isolation, and rejection schemas from among the early maladaptive schemas were able to explain 13.0% of the variance in rumination in four steps. To predict negative affect based on early maladaptive schemas in students, those who selected only vulnerability, entitlement, and attention-seeking schemata from among the early maladaptive schemas were able to explain 17.0% of the variance in negative affect in three steps. Pearson's correlation results are significant at the 0.001 level to investigate the relationship between rumination and negative affect with primary maladaptive schemas in students.

Conclusions: Based on the results of the research, it can be concluded that rumination and negative affect are related to primary maladaptive schemas. This is because primary maladaptive schemas predict rumination and negative affect.

INTRODUCTION

Rumination is a class of conscious thoughts that revolve around one axis and are repeated without regard to environmental influences. Rumination is passive and repetitive thinking about depression symptoms, their consequences, and possible causes [1]. Among the main features related to rumination are negative affects and symptoms of depression, negative-oriented thinking, poor problem-solving, damaged motivation and inhibition of beneficial behaviors, damaged

concentration, increased stress, damaged social relationships, and disturbed emotional adjustment [2]. Emotions are significant for human beings because they direct their activities towards a goal and force people to do things that are beneficial for their survival [3]. In the field of psychological structure, negative and positive affects are considered [4]. Positive affect shows the amount of pleasant emotional states such as happiness, hope, enthusiasm, and vigilance. Alternatively, negative

affect shows several unpleasant emotions, including anger, hatred, disgust, guilt, and anger [5]. In general, the importance of negative affects is due to the inability to go back, lack of recovery, or successful adaptation in the face of injuries. The role of protective factors, as well as structural blocks in empowering a person to overcome stressful life circumstances, is critical for studying [6].

It is important to understand that initially incompatible schemas affect the way a person thinks, feels, and acts in the next intimate relationship as well as other emotional, cognitive, and behavioral aspects, and can affect a person's performance in interpersonal relationships when they are activated in different situations [7]. Undesirable childhood experiences with primary caregivers and repeated failures in meeting early emotional needs lead to the formation of early maladaptive schemas [8]. Schemas at the deepest level of cognition usually act outside the level of awareness and make a person psychologically vulnerable to creating disturbances such as depression, anxiety, and ineffective social communication. In addition, mental disorders make the body vulnerable [9]. Yang's scheme divides unsatisfied emotional needs into five categories: disconnection and rejection, impaired autonomy and performance, over-vigilance/inhibition, other-directedness, and impaired limits. There are two categories: disorders and abnormal limitations [7]. Young describes, in more detail, the schemas of emotional deprivation, abandonment, mistrust, social isolation or alienation, defectiveness or shame, failure, dependence or incompetence, vulnerability to harm or illness, enmeshment or an undeveloped self, subjugation, self-sacrifice, emotional inhibition, unrelenting standards, entitlement or grandiosity, and insufficient self-control or self-discipline.

The results of a study entitled "Negative emotions in siblings of individuals with developmental disabilities: The roles of early maladaptive schemas and system justification," demonstrate a significant relationship between early maladaptive schemas and negative emotion [10].

Based on the findings of the The intended research it can be concluded that there is a significant and positive relationship between early maladaptive schemas and rumination [11]. Another relevant finding comes from the research indicating that early maladaptive schemas predict rumination [12]. The research findings showed that early maladaptive schemas predict a high percentage of anger rumination changes [13]. Also, the results of the studies show that rumination is related to early maladaptive schemas, and these two can predict symptoms of depression and anxiety [13, 14].

Research done inside and outside of Iran has separately dealt with the relationship between primary maladaptive schemas and cognitive emotion regulation strategies in different aspects of mental health. Because schemas

form the cognitive foundation of a person and can affect their behavior, it is possible to distinguish between the underlying and difficult components of cognitive processes. Therefore, a relationship can be established between early maladaptive schemas as the underlying and rigid cognitive structures of individuals, and adaptive or maladaptive behaviors in subsequent stages of personal growth [15]. Therefore, according to the importance raised regarding primary maladaptive schemas, it is necessary to know as many primary maladaptive schemas as possible and to identify factors and variables related to them, especially rumination and negative affect. It is also felt necessary to mention that the material discussed the initially incompatible schemas increases the possibility of rumination and negative affect in people, so identifying this psychological structure in people can be beneficial. It was considered the first step in preventing the adverse consequences of rumination and negative affects in people. The preparation of educational and therapeutic programs to reduce and control initially incompatible schemas is another solution to reduce rumination and negative affects at the community level. Therefore, the aim of the current research was to investigate the relationship between rumination and negative affect with early maladaptive schemas in students.

METHODS

The research method is applied in terms of purpose and descriptive in terms of methodology, specifically correlational. In terms of purpose and methodology, the current study uses a correlational approach. The statistical population studied in this research included all male and female students of Islamic Azad University, Zanjan branch, who are studying in different fields and levels of study in the academic year 2020-2021, which includes 14,000 people. The participants were selected using the Morgan table. First of all, the size of the statistical population was determined, and permission was obtained from the Islamic Azad University of Zanjan to publish the present questionnaire. The method used was multi-stage random sampling. Among the three faculties of the Islamic Azad University, Zanjan branch, two faculties of medical sciences and humanities were randomly selected. In the next step, several classes were randomly selected from these two faculties. The questionnaires were administered in an environment of full disclosure regarding the confidentiality of the questionnaire information. Initially, 384 people were included in the sample, but the number of 388 people has been taken into account to ensure the results and validate them. In this research, after collecting the questionnaires, the obtained data were analyzed using SPSS 24 statistical software at two descriptive and inferential levels. Frequency tables and their graphs were used in descriptive statistics, and Kolmogorov-

Smirnov tests, Pearson's correlation coefficient, and stepwise regression were used in inferential statistics. Ruminative Responses Scale (RRS) This questionnaire has 22 items and measures rumination based on a four-point Likert scale, which is rated on a Likert scale from (almost never = 1 to almost always = 4). The total score of the questionnaire ranges from 22 to 88. found a Cronbach's alpha coefficient of 0.89 for the whole scale. They reported adequate validity. Cronbach's alpha coefficient of 0.88 was calculated as an index of internal consistency for the scale of rumination responses [16]. In this research, after confirming the validity of the content, the reliability of the tool was calculated with a Cronbach's alpha coefficient of 0.93.

The negative affect scale is a 20-item measurement tool designed to measure negative affect. Each subscale has 10 items. The items are rated on a 5-point scale (1 = very little, not at all, to 5 = very much). The questionnaire uses a Likert scale. In each of the subscales of the list, the minimum and maximum scores will be 50 and 10, respectively. In terms of psychometric indicators, i.e., the reliability and validity of the negative affect scale, it has desirable characteristics. Coefficients Internal consistency (alpha coefficient) is 0.87. Test-retest reliability with an interval of 8 weeks is 0.71. The test-retest correlation was calculated. The alpha coefficient was 0.84, and the test-retest coefficients were 0.82. Each subscale has 10 items, which are answered by the subject based on a five-point Likert scale (1 = very little to 5 = very much). (Positive Affect Negative Affect Scale)PANAS is a self-assessment tool that, by changing the instructions, you can use to examine both the state and the trait parts. If the time frame is the current mood and week, then the emotional state is calculated. However, if the time is too long, then it should be considered that the trait part is measured. The validity and reliability of this scale have been reported as favorable by its authors. In the research [17], experts verified the validity of the questionnaire. Cronbach's alpha method of 0.83 was used in the study to determine the reliability of the questionnaire. In this research, after confirming the validity of the content, the reliability of the tool was calculated with a Cronbach's alpha coefficient of 0.78 [17].

The Yang Schematic Questionnaire-Short Form,3 (YSQ-s3), consists of 67 items and 12 subscales of failure and dependence (10 questions) and avoidant isolation and emotional inhibition (6 questions). , emotional deprivation (4 questions), defects (3 questions), attracting attention (6 questions), clutter (7 questions), abandonment (3 questions), vulnerability to harm and illness (6 questions), self-sacrifice (8 questions), punishment/unfair criteria (5 questions), entitlement (5 questions), and mistrust (4 questions) are formed, which are used to evaluate incompatible cognitive schemas. The scoring of the questionnaire is in the form of a 6-point Likert scale, which is used for the options "completely false in my case", "almost false in my

case", "more true than false in my case", "in my case, it is slightly correct", "it is almost correct in my case", and "it is completely correct in my case"; scores 1, 2, 3, 4, 5, and 6 are considered respectively. The reliability of this questionnaire has been reported by calculating Cronbach's alpha coefficient of 0.94 [18]. Was evaluated the reliability of Yang's schema questionnaire with 75 items on a scale ranging from 0.94 to 0.96 and in the subscales on a scale ranging from 0.62 to It has been up to 0.93. In this research, after confirming the validity of the content, the reliability of the tool was calculated with a Cronbach's alpha coefficient of 0.95 [18].

RESULTS

Table 1. Frequency and demographic characteristics of students studied in the current research

Demographic Characteristics	Frequency	Percentage
Gender		
Female	241	62.11
Male	147	37.88
Age		
18-25 years	250	64.43
26-35 years	82	21.13
36-50 years	56	14.43
Marital Statu		
Married	109	28.09
Single	279	71.90
Educational Status		
Bachelor	268	69.07
Master	114	29.38
Doctoral	6	1.54
Field of study		
Humanities	251	64.69
Medical sciences	66	17.01
Engineering	71	18.29

As shown in Table 1, 62.11% of the studied students were female and 37.88% were male.

As shown in Table 1, 64.43 percent of the studied students were 25–18 years old, 21.134 percent of the students were 35–26 years old, and 14.433 percent of the students were 36–50 years old.

As shown in Table 1, 28.09% of the studied students were married, and 71.90% were single.

As shown in Table 1, 69.07% of the studied students were undergraduates, 29.38% were master's students, and 1.54 were doctoral students.

According to Table 1, 64.69% of the students studied were majoring in the humanities, 17.01% in the medical sciences, and 18.29 in technical and engineering fields.

As it is clear in Table 2, based on the values of skewness and kurtosis, the research variables have a normal distribution The statistical characteristics of the step-by-step regression for predicting rumination from the students' primary maladaptive schemas in Table 3 show that among the students' primary maladaptive schemas, only vulnerability, deprivation, isolation, and rejection schemas were able to reach 13/13 in the four steps. 0 to explain the variance of rumination. The correlation table between negative affect and early maladaptive schemas is provided.

Table 2. Minimum, maximum, average, standard deviation, skewness and elongation of research variables

Variable	Frequency	Minimum	Maximum	Mean	Standard Deviation	Skewed		Kurtosis	
						Statistics	Standard Error	Statistics	Standard Error
Failure/Dependency	388	10	55	25.12	7.229	0.712	0.124	0.692	0.247
Social isolation/Emotional inhibition	388	6	36	16.04	6.199	0.658	0.124	0.187	0.247
Emotional deprivation	388	4	24	10.103	6.241	0.809	0.124	-0.573	0.247
Defect	388	3	18	5.99	2.812	1.303	0.124	2.196	0.247
Draw attention	388	6	36	20.915	6.686	-0.08	0.124	-0.524	0.247
Mess	388	7	42	15.17	6.302	0.915	0.124	0.804	0.247
Abandonment	388	3	18	6.776	3.788	0.988	0.124	0.225	0.247
Vulnerability about loss and illness	388	6	36	15.103	7.194	0.736	0.124	-0.116	0.247
self-sacrifice	388	8	48	19.82	7.327	0.452	0.124	-0.197	0.247
Unfair punishment/standards	388	5	30	16.928	5.638	0.055	0.124	-0.331	0.247
Entitlement	388	5	30	18.894	5.992	-0.263	0.124	-0.59	0.247
Distrust	388	4	24	12.962	4.092	0.13	0.124	-0.015	0.247
Rumination	388	22	88	46.32	12.962	0.547	0.124	0.003	0.247
Negative affect	388	20	98	57/631	10.55	0.128	0.124	0.609	0.247

Table 3. Statistical characteristics of stepwise regression for predicting rumination from students' early maladaptive schemas.

Step / Initial Inconsistent Schema	B	Standard Error	Beta	T	P
1					
Fixed coefficient	30.293	1.24	-	24.438	0.0001
Vulnerability ($R^2\Delta = 0.12$)	1.061	0.074	0.589	14.317	0.0001
2					
Fixed coefficient	27.573	1.225	-	22.5	0.0001
Vulnerability	0.809	0.078	0.449	10.367	0.0001
Deprivation ($R^2\Delta = 0.12$)	0.646	0.09	0.311	7.184	0.0001
3					
Fixed coefficient	24.63	1.39	-	17.716	0.0001
Vulnerability	0.612	0.09	0.34	6.82	0.0001
Deprivation	0.468	0.098	0.225	4.783	0.0001
Isolation ($R^2\Delta = 0.12$)	0.481	0.115	0.23	4.192	0.0001
4					
Fixed coefficient	23.425	1.415	-	16.557	0.0001
Vulnerability	0.471	0.098	0.261	4.826	0.0001
Deprivation	0.476	0.096	0.229	4.936	0.0001
Isolation ($R^2\Delta = 0.12$)	0.463	0.113	0.222	4.088	0.0001
Rejection	0.523	0.152	0.153	3.445	0.001
5					
Fixed coefficient	21.738	1.553	-	13.997	0.0001
Vulnerability	0.38	0.103	0.211	3.687	0.0001
Deprivation	0.437	0.097	0.211	4.508	0.0001
Isolation	0.436	0.113	0.209	3.858	0.0001
Rejection	0.423	0.156	0.124	2.72	0.007
Self-immolation ($R^2\Delta = 0.12$)	0.23	0.09	0.13	2.548	0.011

Table 4. Statistical characteristics of step-by-step regression for predicting negative affect from students' primary maladaptive schemas.

Step / Initial Inconsistent Schema	B	Standard error	Beta	T	P
1					
Fixed coefficient	49.791	1.168	-	42.647	0.0001
Vulnerability ($R^2\Delta = 0.12$)	0.519	0.07	0.354	7.436	0.0001
2					
Fixed coefficient	46.172	1.761	-	26.216	0.0001
Vulnerability	0.463	0.072	0.316	6.406	0.0001
Entitlement ($R^2\Delta = 0.13$)	0.237	0.087	0.134	2.727	0.007
3					
Fixed coefficient	44.352	1.965	-	22.571	0.0001
Vulnerability	0.4	0.078	0.272	5.106	0.0001
Entitlement	0.195	0.089	0.11	2.192	0.029
Draw attention ($R^2\Delta = 0.15$)	0.171	0.083	0.111	2.054	0.041

Table 5. Most of the variables have a significant relationship

1	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	Research Variables
6																1- Failure
														1	.711	2- Isolation
													1	.587	.440	3- Deprivation
												1	.482	.537	.551	4- Deficiency
											1	.351	.280	.413	.413	5- Attention-Seeking
										1	.463	.551	.446	.580	.570	6- Integration
									1	.571	.394	.329	.237	.371	.405	7- Abandonment
								1	.538	.601	.450	.441	.450	.643	.563	8- Vulnerability
							1	.636	.503	.536	.360	.450	.430	.516	.463	9- Self-Victimization
						1	.546	.534	.389	.452	.478	.348	.332	.398	.370	10- Punishment
					1	.476	.277	.286	.103	.115	.326	.142	.244	.218	.129	11- Deservingness
				1	.520	.426	.382	.428	.257	.343	.396	.316	.313	.394	.298	12- Distrust
			1	.246	.225	.237	.279	.354	.186	.211	.270	.223	.206	.290	.164	13- Negative affect
		1	.314	.248	.246	.238	.312	.306	.263	.251	.209	.215	.293	.323	.187	14- Reflection
	1	.548	.352	.351	.164	.378	.513	.585	.402	.516	.360	.402	.450	.532	.495	15- Regression in Thought
1	.849	.578	.351	.342	.160	.377	.519	.596	.431	.539	.354	.388	.536	.600	.487	16- Depression

The statistical characteristics of the step-by-step regression for predicting negative affect from the students' early maladaptive schemas in Table 3 show that among the students' primary maladaptive schemas, only the schemas of vulnerability, entitlement, and attracting attention were able to reach 0.17 in the three steps. Explain the variance of negative affect.

DISCUSSION

The present study was conducted to determine the relationship between rumination and negative affect with primary maladaptive schemas in students of the Islamic Azad University of Zanjan, 1400. According to the research findings, rumination and early maladaptive schemas are directly linked. As the research findings indicate, there is a direct and increasing relationship between rumination and early maladaptive schemas. Based on the findings of the research [11, 12] it can be concluded that there is a significant and positive relationship between early maladaptive schemas and

rumination. The results of this study are consistent with the findings of the mentioned research and are congruent. it was concluded that there is a positive and significant relationship between early maladaptive schemas and rumination. The results of this study overlap with the findings of the present study and in other words, they are aligned. In the explanation of the results, it can be said that Nolen-Hoeksma also considers the roots of rumination in relation to the type of parent-child relationship to parents who are controllers or the type of parent-child relationship, especially parents who are controlling, or the child has disturbing experiences of sexual, physical and emotional injuries [19]. Negative thinking patterns based on automatic, old, and ingrained cognitive habits are often ineffectively invoked as rumination to avoid depression or problematic life situations [20]. On the other hand, the findings of the second hypothesis of the research showed; the relationship between negative affect and students' early maladaptive schemas is directly and

incrementally significant. As a result, it is concluded that; with the increase of early maladaptive schemas, the level of negative affects of students intensifies. The results of the study showed that the primary maladaptive schemas have a significant relationship with negative affect. In explaining the results, it can be stated that maladaptive schemas, as cognitive, emotional, and behavioral elements, play a crucial role in shaping an individual's personality and how they interpret events. Since they persist throughout life, they can influence the individual's relationship with themselves and others, determining the type and intensity of emotions [10].

According to the findings of the third hypothesis, firstly, the contribution of the self-control component to predicting rumination is greater than all other components, followed by disconnection and rejection, and over vigilance. Secondly, the effect of all three components is positively predictive of rumination. Therefore, the prediction of rumination by early maladaptive schemas in students is confirmed. Thus, the results of the current hypothesis analysis coincide with the results of the intended research [21]. According to the fourth hypothesis, firstly, the contribution of the self-control component to predicting negative affect is greater than all other components, followed by the Impaired Limits. Secondly, the effect of both components is positively predictive of negative affect. The results of the research [22] align with the results of the mentioned hypothesis. Therefore, the prediction of negative affect by early maladaptive schemas in students is confirmed. In explaining these findings, it can be said that early maladaptive schemas are very important and significant, as they form in childhood and significantly influence an individual's behaviors, especially when the individual encounters challenging situations. These schemata take shape, particularly when the self-control schema is activated, leading to an increase in negative affect. In other words, individuals with early maladaptive schemas (especially the component of self-control, Impaired Limits component) are more prone to negative affect.

Also, on the other hand, the findings of the second research hypothesis showed that the relationship between negative emotions and students' initially incompatible schemas is directly and incrementally significant. As a result, it is assumed that as the number of initially incompatible schemas increases, so does the level of negative emotions in students, and vice versa. So Hypothesis H1 is confirmed with 99% validity. The research results of Mirza-Hosseini, Satayshi Azhari, Vahidi Monfard (2018), Mohebi, (2014).

CONCLUSION

The present research confirmed the relationship between rumination and negative affect with early maladaptive schemas in students. Based on the provided

explanations, it was established that early maladaptive schemas contribute to an increase in rumination and negative affect in individuals, making them a considered risk factor. The findings of this study highlight the importance and necessity of addressing early maladaptive schemas as a significant and influential factor on rumination and negative affect in individuals. Therefore, identifying this psychological construct in individuals can be considered the first step in preventing undesirable outcomes of rumination and negative affect. Developing therapeutic and educational programs to reduce early maladaptive schemas is another practical step in reducing rumination and negative affect. Thus, it is recommended that future researchers, building upon the components of the present study, investigate students from other cities and individuals with psychological and behavioral problems who seek counseling services. The results of such studies could further contribute to the understanding of the relationship between early maladaptive schemas, rumination, and negative affect.

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AUTHORS CONTRIBUTION

Mahtab Moraveji: Critical revision of the manuscript for important intellectual content. Maedeh Bazargani: Study concept and design, acquisition of data, analysis and interpretation of data. Masoud Asadi: Administrative, technical, and material support, study supervision and statistical analysis.

ETHICAL CONSIDERATIONS

In the current research, the researcher has observed the following ethical principles: The code of ethics was obtained to conduct the research, and permission was obtained from the officials of the Islamic Azad University of Zanjan after submitting the introduction letter to conduct the research. In the present study, examples of research on confidentiality were presented, and the availability of the information in the questionnaire was assured. It was emphasized that there is no need to mention the name and surname.

The study was approved by the Ethical Committee of Islamic Azad University-Zanjan Branch (IR.IAU. Z.REC.1401.014).

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CONFLICT OF INTEREST

Here are no conflicts of interest regarding the publication of the current research.

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