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## Introduction

Youth unemployment is a current issue in many countries and has always been a cause of concern about the social and political impacts of widespread and long-

lasting joblessness (Mungham, 2022). According to the International Labor Organization, youth unemployment occurs when individuals between 15 and 24 years' old who are able and willing to work cannot find a job (Musa,

# Investigating the Relationship Between Distorted Thoughts and Perceived Stress with the Mediating Role of Rumination Among Unemployed Youth

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## ABSTRACT

**Objective:** This study aims to explore how distorted thoughts and perceived stress are correlated, with rumination playing a mediating role, in unemployed youth.

**Methods and Materials:** The study was a descriptive-correlational utilizing the structural model. The statistical population for the study consisted of unemployed and jobless young individuals in Tehran from July to October 2023. A sample of 158 participants was selected through multi-stage cluster sampling. Research instruments utilized included the Ruminative Response Scale (RRS), Perceived Stress Questionnaire (PSQ), and Cognitive Distortions Questionnaire (CD-Quest). Descriptive statistics were conducted using SPSS version 27 software, while data analysis and path coefficient calculations were performed using JASP version 0.18.1 software. A p-value of 0.05 was set for the study.

**Findings:** According to the findings, Rumination was found to have a significant and positive impact on Perceived Stress ( $\beta= 0.222$ ,  $p < 0.001$ ). Similarly, Distorted thoughts were found to directly contribute to an increase in Perceived Stress ( $\beta= 0.171$ ,  $p < 0.001$ ). Additionally, Distorted thoughts were found to have a direct positive impact on Rumination ( $\beta= 0.126$ ,  $p < 0.001$ ). Furthermore, Distorted thoughts were also found to indirectly influence Perceived Stress through Rumination ( $\beta= 0.028$ ,  $p < 0.001$ ).

**Conclusion:** The research findings indicated that both rumination and distorted thoughts can lead to an increase in perceived stress. Additionally, distorted thoughts can contribute to increased rumination, which in turn exacerbates perceived stress. These results are particularly valuable for professionals in the fields of psychology and counseling and those assisting unemployed youth in improving their mental and social well-being.

**Keywords:** Rumination, Distorted Thoughts, Perceived Stress, Unemployment.

2023). Research indicates that factors such as regional economic status, population demographics, mobility, household situations, regional trade, financial freedom, labor market policies, economic growth, part-time work prevalence, active labor market interventions, and minimum wage regulations play a role in reducing overall unemployment (Ralph & Arora, 2023). Another research study discovered that long periods of being unemployed can negatively affect self-confidence, lead to higher levels of unhappiness, and reduce the overall quality of life in multiple areas (Kim, 2024).

Unemployment leads to negative thoughts and unhealthy thought patterns due to stress, hopelessness, and a feeling of lack of control over one's life. When people are unemployed, they may exhibit behaviors like catastrophizing and overgeneralization, assuming that their job loss will affect other areas of their lives (Achdut & Refaeli, 2020). These distorted ways of thinking are known as cognitive distortions and are part of the cognitive approach, leading to dysfunctional behaviors and negative thoughts about oneself and others (Şimşek et al., 2021). Cognitive distortions can manifest as impulsive behavior, anger, frustration, sadness, fear, low self-esteem, lack of self-control, and anxiety, especially among younger adults (Maheshwari, 2021). Research on the psychological impact of youth unemployment has shown that mental health, including depression and cognitive distortions, is worse in unemployed youth compared to their employed counterparts (Amissah & Nyarko, 2017). Additionally, studies have found a negative correlation between mental health and cognitive distortions Eyni et al., (2021), as well as a relationship between cognitive distortions and emotional stress (Jha et al., 2021).

Unemployment is a major contributor to personal stress and poses a significant challenge for young people, often resulting in feelings of bitterness, heightened psychological stress, and a sense of helplessness (Arnout, 2020). Perceived stress is based on an individual's own assessment of their stress levels, regardless of actual circumstances. Prolonged high levels of perceived stress can lead to the development of chronic physical and mental health conditions such as cardiovascular diseases, hypertension, depression, and anxiety disorders (Du et al., 2020). Research has shown that unemployment-induced stress has a significant impact on young individuals, leading to deteriorating health and

psychological issues (Mamun et al., 2020). Studies have also revealed that unemployed young people tend to experience elevated levels of stress (Wade-Bohleber et al., 2020).

Moreover, the job search process can lead to negative emotions and repetitive discussions with others about job search issues, resulting in rumination (Ferreira et al., 2023). Rumination is characterized by perceived thoughts revolving around a specific topic, even in the absence of external triggers, causing a diversion from important matters (Aghel Masjedi & Kianimotlagh, 2022). A study found that rumination partially mediated the relationship between personality factors and psychological symptoms in unemployed individuals (Tuna & Balci, 2020). Additionally, rumination was correlated to higher levels of perceived stress (Kovács et al., 2021). Another study by Liu & Cao, (2022) revealed that enhancing rumination can help decrease perceived stress levels.

Unemployment can cause increased dissatisfaction and reduced quality of life among young individuals in various areas. Moreover, subsequent episodes of unemployment later in their careers can worsen the negative impact of initial unemployment on self-esteem and quality of life (Kim, 2024). Therefore, this study holds significant importance due to the wide-ranging psychological effects of unemployed youth. Apart from economic issues, unemployment in this demographic is correlated to psychological consequences like heightened stress, anxiety, and poorer mental health. By pinpointing effective psychological factors such as distorted thoughts and rumination, it is possible to gain a better understanding of the psychological state of unemployed young individuals and lay a foundation for appropriate therapeutic interventions. Despite the significance of this topic in past studies, no research directly exploring the connection between distorted thoughts and perceived stress with the mediating role of rumination among unemployed youth was found. Hence, there exists a research gap in this area, making the present study one of the initial studies to tackle this subject. The primary aim is to determine how distorted thoughts and rumination might exacerbate perceived stress, thereby enhancing comprehension of the psychological factors related to youth unemployment and mental well-being.

## Methods and Materials

The current study is a part of descriptive-correlational research and cross-sectional research method, and structural model method and path analysis were utilized to examine the impact of a mediating variable. In this study, distorted thoughts were considered as independent variables, perceived stress as dependent variables, and rumination in unemployed youth as mediating variables. The statistical population for this study consisted of all unemployed youth in Tehran from July to October 2023. A total of 158 participants were selected using a multi-stage cluster sampling method. The sample size adequacy was determined based on Cohen's formula from 2013 to calculate the sample size in the SEM method, considering the number of observed and latent variables in the model, the anticipated effect size, and the desired probability and statistical power levels (Cohen, 2013). Using this formula, with an anticipated effect size of 0.25, a desired statistical power level of 0.8, 3 latent variables, 48 observed variables, and a probability level of 0.05, the researcher arrived at a sample size of 181 individuals. To account for potential attrition in the sample group, the researcher increased the number to 200 participants. Inclusion criteria for the study required participants to have resided in Tehran for at least two years, hold a minimum diploma level of education, provide informed consent for participation, and be unemployed for a minimum of one year.

The requirement for exiting the research project was not answering more than eight questions on the surveys, resulting in withdrawal. The research was conducted by obtaining necessary permits from the researcher's university, dividing Tehran into four large areas (north, west, south, and east) for sampling, and randomly selecting an employment agency from each region to sample unemployed individuals. Each district included five municipal districts. Employees of these agencies were asked to complete questionnaires if they were willing to participate. Detailed information about the research objectives, permits, and ethical principles was provided to each participant. Participants were assured of confidentiality and the ability to withdraw from the study. Due to limited cooperation, the in-person data collection process took four months. Out of 200 questionnaires filled, 158 were used, as 42 were

excluded due to incomplete or intentionally incorrect responses. The questionnaires focused on distorted thoughts, perceived stress, and rumination for all participants in the research.

### Tools

**Ruminative Response Scale (RRS):** This survey was created in 2003 by (Treynor et al., 2003). It assesses the amount of rumination in individuals. The questionnaire consists of 22 questions, each answered on a four-point Likert scale ranging from never (1) to always (4). It is composed of three components: reflection (questions 7, 11, 12, 20, 21), brooding (questions 5, 10, 13, 15, 16), and depression (questions 1-4, 6, 8, 9, 14, 17, 18, 19, 22). The total score ranges from 22 to 88. Scores of 22-33 indicate low rumination, 33-55 moderate, and above 55 severe. In Iran, the Cronbach's alpha coefficient for this questionnaire was found to be 0.78 (Abbasibrzagh et al., 2023). In this study, the researcher discovered the Cronbach's alpha coefficient to be 0.82 for this scale.

**Perceived Stress Questionnaire (PSQ):** Cohen's Perceived Stress Questionnaire was developed by Cohen and colleagues in 1983 to assess stress levels and has been confirmed to be reliable (Cohen et al., 1983). This questionnaire consists of 16 items and uses a 5-point Likert scale ranging from always to never. The total score can range from 16 to 80. In Iran, the reliability of the questionnaire was found to be 0.72 using Cronbach's alpha (Khalili et al., 2017). In this study, the researcher calculated the Cronbach's alpha coefficient for this scale to be 0.73.

**Cognitive Distortions Questionnaire (CD-Quest):** Abdullah Zadeh and Salar created a self-report questionnaire in 2010 to assess distorted thoughts (Abdullah Zadeh & Salar, 2009). The questionnaire consists of 10 items and utilizes a 5-point Likert scale. The creators achieved a Cronbach's alpha of 0.80 for the questionnaire. A study in Iran found a reliability of 0.70 for the questionnaire using Cronbach's alpha (Jafaripanji et al., 2018). In this study, the researcher calculated a Cronbach's alpha coefficient of 0.71 for the scale.

### Statistical analyses

The researchers utilized SPSS version 27 software for conducting descriptive statistics and JASP version 0.18.1 software for analyzing data and standard coefficients. The normality of the distribution of the research variables was assessed using the Shapiro-Wilk test. A p-value of 0.05 was set for the analysis.

## Findings and Results

This research was conducted on 158 unemployed young individuals, who were split into two categories based on whether they had previous job experience or not. Similarly, the participants were segregated into three groups based on their educational background: a diploma (35.4%), an undergraduate (30.4%), and a master's degree (34.2%). Additionally, the participants

were divided into three age groups: 20 to 25 years old (77.8%), 25 to 30 years old (12.7%), and 30 to 35 years old (9.5%). They were also divided into two groups based on their marital status: single (93.7%) and married (6.3%). Lastly, the participants were split into two groups based on their gender: male (31.6%) and female (68.4%). The mean and standard deviation of the research variables are presented in Table 1.

**Table 1**

*The mean and standard deviation of the research variables*

Variable	N	M	SD	Skewness	Kurtosis	Shapiro-Wilk	P-value	Min	Max
Perceived Stress	158	46.924	4.070	-0.118	-1.00	0.946	0.001	40	56
Rumination	158	38.639	3.165	-0.542	-0.14	0.953	<.001	31	45
Distorted Thoughts	158	69.475	3.178	0.026	-1.04	0.954	<.001	64	75

**Table 2**

*Pearson's Correlations*

Variable	1	2	3
1. Perceived Stress	—		
2. Rumination	0.44**	—	
3. Distorted Thoughts	0.63**	0.40**	***

Based on the information from Table 2, it was found that there is a strong and significant correlation between the Perceived Stress variable and Distorted thoughts ( $r=0.634$ ,  $p < 0.001$ ) as well as with Rumination ( $r=0.440$ ,

$p < 0.001$ ). Additionally, Distorted thoughts also exhibited a positive and significant relationship with Rumination ( $r=0.401$ ,  $p < 0.001$ ).

**Table 3**

*Path Coefficients*

		Estimate	SE	z-value	p	95% Confidence Interval	
						Lower	Upper
Rumination	→ Perceived Stress	0.222	0.065	3.426	<.001	0.095	0.349
Distorted Thoughts	→ Perceived Stress	0.171	0.020	8.401	<.001	0.131	0.211
Distorted Thoughts	→ Rumination	0.126	0.023	5.501	<.001	0.081	0.171

According to the findings presented in Table 3, it was observed that Rumination had a significant and positive impact on Perceived Stress ( $\beta = 0.222$ ,  $p < 0.001$ ). Similarly, Distorted thoughts were found to have a direct

positive influence on Perceived Stress ( $\beta = 0.171$ ,  $p < 0.001$ ). Additionally, Distorted thoughts were also seen to have a direct positive effect on Rumination ( $\beta = 0.126$ ,  $p < 0.001$ ).

**Table 4**

*Indirect and Total Effects*

		Estimate	Error	z-value	p	95% Confidence Interval	
						Lower	Upper
<b>Direct Effects</b>	Distorted Thoughts → Perceived Stress	0.171	0.020	8.401	< .001	0.131	<b>0.211</b>
<b>Indirect Effects</b>	Distorted Thoughts → Rumination → Perceived Stress	0.028	0.010	2.908	0.004	0.009	<b>0.047</b>
<b>Total Effects</b>	Perceived Stress → Distorted Thoughts	0.199	0.019	10.295	< .001	0.161	<b>0.237</b>

According to the findings presented in Table 4, Distorted thoughts due to Rumination were found to have a notable and positive impact on Perceived Stress

### Discussion and Conclusion

The primary objective of the current research was to examine the correlation between distorted thoughts and perceived stress, with a focus on the mediating role of rumination among unemployed young individuals. According to the results of the study, both rumination and distorted thoughts contribute to an increase in perceived stress among this demographic. Additionally, it was found that distorted thoughts can lead to an increase in rumination, which in turn results in heightened perceived stress.

The results of this study, which demonstrated that rumination and distorted thoughts are associated with higher levels of perceived stress in unemployed youth, are in line with previous research studies (Eyni et al., 2021; Harrison et al., 2023; Jha et al., 2021; Kovács et al., 2021; Tuna & Balci, 2020). Previous research has indicated that cognitive distortion has a negative and significant impact on individuals' mental health Eyni et al., (2021), as well as a correlation with emotional stress (Jha et al., 2021). Additionally, findings from a study revealed that symptoms of anxiety and cognitive distortions are strong predictors of stress (Harrison et al., 2023). Another study focused on psychological symptoms among unemployed adults found that rumination plays a partial mediating role in the relationship between personality traits and psychological symptoms (Tuna & Balci, 2020). Furthermore, research results have shown that rumination is correlated to increased levels of perceived stress (Kovács et al., 2021).

When explaining this discovery, it is important to note that distorted thoughts are unrealistic and exaggerated thoughts that individuals tend to have when encountering difficulties. For instance, someone might struggle with thoughts like "I'm always unlucky" or "I'll

( $\beta = 0.028$ ,  $p < 0.001$ ). Nevertheless, the indirect path coefficient related to this relationship was deemed to be minimal.

never make it." These thoughts cause individuals to perceive their situation as direr than it is, leading them to feel worthless and despondent. Such ways of thinking can lead to increased stress levels because people are not able to deal with the situation rationally and positively (Şimşek et al., 2021). Unemployed individuals who ruminate tend to fixate on negative thoughts about their job situation and financial future, amplifying their perceived stress levels. When individuals concentrate on problems ineffectively instead of seeking viable solutions, their worries and negative emotions like anxiety and hopelessness intensify, leading to an unconscious exaggeration of threats and a depreciation of chances for success. In addition, rumination triggers heightened activation of the nervous system and the release of stress hormones like cortisol, culminating in an escalation of stress levels (Watkins & Roberts, 2020).

The present research discovered that distorted thought can elevate rumination, which can ultimately result in higher levels of stress. Although there was no direct investigation into this issue in the current research, this finding is consistent with previous studies (Basha, 2015; Liu & Cao, 2022; VeisiM & Soleimani, 2023). Previous research has shown a positive correlation between rumination, cognitive distortion, and symptoms of anxiety and depression (Basha, 2015). It has also been suggested that addressing cognitive distortions and rumination can help change negative automatic thoughts (VeisiM & Soleimani, 2023)[30]. Liu & Cao, research in (2022) demonstrated that improving rumination can reduce perceived stress as it acts as a mediator.

Distorted thoughts are thoughts that exaggerate reality in an unrealistic manner, such as negative generalization, all-or-nothing thinking, exaggerating problems, and underestimating achievements. These thoughts, when persistent in the mind of an unemployed individual, can lead to rumination. People with distorted

thoughts often struggle to overcome negative issues and tend to focus on negativity and endless worries about their future instead of seeking solutions or taking constructive actions. This continuous cycle of negative thoughts intensifies rumination, which involves the constant repetition of anxiety-provoking thoughts (Aghel Masjedi & Kianimotagh, 2022). Distorted thoughts in unemployed individuals can exacerbate their situation, as they fail to see opportunities or engage in positive activities while being consumed by negativity. This negative cycle increases perceived stress, as individuals stop problem-solving and instead become engulfed by feelings of powerlessness and helplessness. Furthermore, individuals with distorted thoughts may have brains that are more sensitive to threats, anxieties, and challenges, leading to frequent activation of stress-related brain areas (Saleh Kazem et al., 2024).

The current study encountered limitations, including difficulties in collecting a large and representative sample of unemployed young people. While the sample size was deemed appropriate, future studies are advised to use more diverse and extensive samples to enhance the generalizability of the findings. Some participants may have embellished the truth to portray a favorable image of themselves, thus, it is recommended to conduct interviews to minimize this bias. Additionally, the samples may not fully represent the unemployed youth population, suggesting the need for broader geographic coverage in future studies.

### Conclusion

The findings of this study indicate that excessive rumination and distorted thought can lead to increased perceived stress. Furthermore, distorted thoughts contribute to increased rumination, which in turn heightens perceived stress due to rumination. These results have practical implications for psychologists, counselors, and those working with unemployed youth to enhance their mental and social well-being.

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### Declaration of Interest

The authors of this article declared no conflict of interest.

### Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Ethical considerations in this study were that participation was entirely optional.

### Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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### Authors' Contributions

All authors equally contribute to this study.

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