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Structural model of health anxiety based on intolerance of uncertainty and anxiety sensitivity with mediating the role of rumination in college students

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ABSTRACT

Background and Aim: The purpose of this research was to investigate the structural model of health anxiety based on uncertainty intolerance and anxiety sensitivity with the mediation of rumination in students. **Research method:** This descriptive research project was conducted with structural equation modeling and with the presence of 454 people with the online sampling method among the students of Azad University, Science and Research Unit in the academic year of 1401-1400. To measure the research variables, Salkoskis et al.'s Short List of Health Anxiety (2002), Friston et al.'s Intolerance Scale (1994), Reiss et al.'s Anxiety Sensitivity Questionnaire (1986) and Nolen-Hoeksma and Maro's (1991) rumination response scale were used. Became. Data were analyzed with Pearson correlation coefficient and structural equations using SPSS and AMOS software version 24. **Results:** The results showed that there is a significant relationship between uncertainty intolerance, anxiety sensitivity and rumination with health anxiety (P<0.01); Also, the results showed that the direct paths of this research were significant and the indirect paths of uncertainty intolerance and anxiety sensitivity through the mediating role of rumination on health anxiety were significant. **Conclusion:** Based on the findings of this research, the modified model had a good fit (RMSEA=0.051 and P-value <0.05) and the final evaluated model has a good fit and is an important step towards understanding It is considered to be an effective factor on students' health anxiety.

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Introduction

According to the research conducted, the fear and panic of the coronavirus and its spread cause cyberchondria -frequent search for disease-related material on the Internet- increases the anxiety and distress of the individual and continues with repeated and fruitless efforts to seek reassurance. Therefore anxiety increases their health (Kurcer et al., 2022). Severe health anxiety or self-diagnosis is a common and debilitating disorder associated with extensive utilization of health care services, occupational disability, and reduced quality of life. So that it can be said that it is characterized by excessive rumination about health and fear of developing a severe illness; usually, it is seen in people who seek medical services (Reesor et al., 2022). Evidence of psychological distress related to the coronavirus pandemic, including depression and health anxiety, has been documented globally. College students, especially girls, consistently report more psychological distress related to the coronavirus pandemic and health anxiety than others (Kibbey et al., 2021).

Intolerance of uncertainty is a character trait that comes from a set of negative beliefs about uncertainty and its implied meaning. The way a person perceives information in ambiguous situations and responds to this information with a set of cognitive, emotional, and behavioral reactions. Individual differences in intolerance of uncertainty are a hypothesis that can contribute to specific problems and distress in people with psychiatric disorders (Bredemeier et al., 2019). Based on research background, intolerance of uncertainty has been likened to a type of cognitive bias in which uncertainty and ambiguity are perceived as threats, which directly lead to worry and anxiety (Dugas et al., 1998; cited in Huntley et al., 2022). It can also be said that current theories of health anxiety and a growing body of empirical literature suggest that those with high health anxiety symptoms may perceive uncertainty as threatening and experience attentional biases against uncertainty-related information (Rogers et al., 2022).

Anxiety sensitivity refers to the fear of behaviors and sensitivities associated with the experience of anxiety. In other words, anxiety sensitivity refers to the tendency of people to fear anxiety-related symptoms due to the belief that they may have destructive and harmful consequences (Biracyaza et al., 2019). Evidence shows that anxiety sensitivity plays an important role in the maintenance and development of anxiety symptoms in all anxiety disorders (Taylor, 1999; cited by Ghorani Eshtelagh Sofla et al., 2021). On the other hand, it can be said that anxiety sensitivity reflects fear of feelings related to arousal, and uncertainty intolerance reflects indirect fear of the unknown. In cognitive-behavioral models, anxiety sensitivity and uncertainty intolerance are individual difference variables considered important in the phenomenology of health anxiety (Fergus & Bardeen, 2013). However, few previous studies have investigated the role of mediating variables in the relationship between uncertainty intolerance and anxiety sensitivity with health anxiety, especially in students. Therefore, in this research, the mediating role of rumination has been tested in this relationship; because rumination is related to uncertainty intolerance (O'Bryan & McLeish, 2017) and anxiety sensitivity (Otto et al., 2022), and rumination itself is considered an important factor in predicting health anxiety (Arslan et al., 2022).

Rumination is defined as persistent and recurrent thoughts that revolve around a common topic. These thoughts enter the consciousness unusually and divert the attention from the desired subject and current goals. The characteristics of rumination thoughts include being related to events or the nature of depressed mood, they are not purposeful, and they do not guide people to a specific plan and action. When a person is engaged in rumination, he is not socially compatible with the environment and does not participate (Papa Georgiou & Wells, 2001). Moreover, rumination is a repetitive and often unavoidable process of thinking about past experiences, which is often related to negative thoughts and prevents adaptive problem-solving methods (Khoramnia et al., 2020). These problem-solving methods inconsistently cause people to experience more anxiety in different situations. Considering that anxiety, especially health anxiety, can weaken the body's immune system and make students vulnerable to diseases, including corona and other diseases, the current research seeks to answer the question of whether the structural model of health anxiety is based on uncertainty intolerance. Moreover, is anxiety sensitivity mediated by rumination in college students with favorable fit?

Method

The current research is applied in terms of purpose and quantitative research in terms of method. The statistical population was the all Islamic Azad University of Science and Research students in the academic year 2021-2022. Cohen's online formula was used to determine the sample size, which estimated the minimum sample size to be 420 people according to the number of research variables. Research data was collected using the library and field method. Due to the spread of the coronavirus, the online method was used to implement the questionnaires. In this way, the questionnaire link was designed and provided to the students to answer the questions virtually. Therefore, the sampling method in this research was available (online).

Tools

1. Short Health Anxiety Inventory (SHAI) Salkovskis et al. (2002): This inventory contains 18 questions, and three components include general health concerns with questions 1, 2, 3, 4, 7, 10, and 14; Getting sick with questions 5, 6, 8, 9, 11 and 12; It measures disease outcomes with questions 13, 15, 16, 17, and 18. When scoring, the options raised for each statement are given a score between 0 and 3. The creators have checked its reliability and reported Cronbach's alpha coefficient of 0.95, retest coefficient of 0.76, and significance at the 0.01 level (Salkovskis et al., 2013). This inventory has been translated and standardized in Iran, and Cronbach's alpha was used to check its reliability, and the coefficients for general health concern were 0.59, for disease 0.60, for disease consequences 0.70, and for all questions were 0.75. In addition, the validity of the scale was investigated by the factor analysis method, and the values of the chi-square ratio to the degree of freedom X2/d, the adjusted or adaptive goodness of fit index, the comparative fit index, and the root mean square error of approximation were 2.035, 0.930, 0, 0.980 and 0.028, respectively (Nargesi et al., 2017). In the present study, Cronbach's alpha was used to check the reliability, and the coefficient was 0.90.

2. Intolerance of Uncertainty Scale (IUS-27) by Friston et al. (1994): The scale includes indecisiveness implies self-referentiality and negative behavior, and indecisiveness is unfair and spoils everything (Sexton & Dugas, 2009). The scoring of the scale is in the spectrum of 5 entries, such that it is never 1 point, a little 2 points, to some extent 3 points, a lot 4 points, and completely 5 points. The range of scores is between 27 and 135, with a higher score indicating more difficulties in managing uncertainty (Wells-DiGregory et al., 2019). In the research of Sexton and Dugas (2009), whose two-factor version is introduced, Cronbach's alpha was used to check the reliability, and the coefficient was 0.95. The correlation coefficient between the questions was 0.40 and significant at the 0.01 level. It was found that it indicates the internal consistency of the scale. In Iran, its two-factor version has been used, Cronbach's alpha has been used to check its reliability, and the total coefficient of the questions has been reported as 0.94 (Fahimi et al., 2013).

3. Rees et al.'s (1986) Anxiety Sensitivity Index: this questionnaire contains 16 items, three components of physical concerns with questions 3, 4, 6, 8, 9, 10, 11 and 15; cognitive concerns with questions 2, 5, 12 and 16; It measures social concerns with questions 1, 7, 13 and 14 (Froozanfar et al., 2018). The questionnaire is scored on a 5-point Likert scale (Sherman et al., 2019). In this way, zero marks are given for very low, 1 mark for low, 2 marks for some, 3 marks for high and 4 marks for very high (Mashhadi et al., 2017). In a study in Iran, Cronbach's alpha was used to check the reliability of the questionnaire, and the coefficient was 0.70 (Mahmoudpour et al., 2018). Creators used the test-retest method to check the reliability of the questionnaire, and they reported a coefficient of 0.75 after 2 weeks and a coefficient of 0.71 after 3 years (Rees et al., 1986). Abroad, Cronbach's alpha has been used to check the internal consistency of the questionnaire, and a coefficient of 0.83 has been obtained (Biracyaza et al., 2019). In the present study, Cronbach's alpha was used to check the reliability, and the coefficient was 0.94.

4. Rumination Response Scale (RRS) by Nolen-Hoeksema and Morrow (1991): This scale contains 22 questions and three subscales of emergence with questions 7, 11, 12, 20 and 21; Thinking about going through questions 5, 10, 13, 15 and 16; It measures depression with questions 1, 2, 3, 4, 6, 8, 9, 14, 17, 18, 19, and 22 (Asadi et al., 2021). It is graded on a 4-point Likert scale in such a way that it is never awarded = 1, rarely = 2, sometimes = 3 and always = 4. Its scores range from 22 to 88, and higher scores are associated with higher rumination. This scale has been translated and standardized for the first time in Iran by Yousefi (1383; quoted by Asadi et al., 2021), and its content validity has been

confirmed, and Cronbach's alpha coefficient to check its reliability is in the range of 0.77 to 0.90. It is calculated. In other studies, Cronbach's alpha was used to check its reliability, and the coefficient of rumination responses was 0.77 and distraction responses were 0.68 (Mohammed Khani et al., 2017) abroad to check its reliability from alpha. Cronbach's coefficients are calculated and reported in the range of 0.78 to 0.86 (Eisma et al., 2022).

Results

Result shows the correlation matrix between research variables. There is a positive and meaningful relationship between health and: uncertainty intolerance (β=0.576, P=0.01), anxiety sensitivity (β=0.574, P=0.01), and rumination (β=0.506, P=0.01) anxiety. As shown in Table 2, the correlation between the variables is significant. Therefore, it was possible to check the research model .

As the results show, the direct path coefficient of uncertainty intolerance (β=0.189, P=0.008), anxiety sensitivity (β=0.414, P=0.001), and rumination (β=0.190) β, P=0.010) was significant on health anxiety. Also, the direct path coefficient of uncertainty intolerance (β=0.694, P=0.001) and anxiety sensitivity (β=0.261, P=0.001) on rumination was significant; In the following, to check the indirect relationship of the proposed model, the bootstrap method was used in the computer instruction of Preacher and Hayes (2004).

Conclusion

This research aimed to examine the structural model of health anxiety based on uncertainty intolerance and anxiety sensitivity with the mediation of rumination in students. The results showed that uncertainty intolerance, anxiety sensitivity, and rumination directly and significantly affect health anxiety. Also, the results showed that rumination is mediating in the relationship between uncertainty intolerance and anxiety sensitivity with health anxiety. These results can be aligned with the research results of Rashid et al. (2022), Qarani Ashtlaq Sefli et al. (1400), O'Bryan and McLeish (2017), and Otto et al. (2022). In explaining the direct effect of uncertainty intolerance on health anxiety, it can be said that uncertainty intolerance is a meta-diagnosis and cognitive vulnerability factor that leads to the development and maintenance of anxiety disorders in people. According to cognitive models, people with an intolerance of uncertainty are dominated by negative beliefs about uncertainty and experience biased information processing in an unknown context (Wells & Capobianco, 2020). This intolerance of uncertainty plays an essential role in the emergence and development of anxiety (Hebert & Dugas, 2019).

In explaining the direct effect of anxiety sensitivity on health anxiety, it can be said that anxiety sensitivity is referred to as a meta-diagnostic and personality component and consists of the belief that the experience of anxiety/fear leads to illness, shame, and double anxiety (Hillman et al., 2022). Higher anxiety sensitivity in a person causes people to experience depressive symptoms (Kauffman et al., 2022), greater uncertainty intolerance (Çelik et al., 2022), more stress, and less distress tolerance. It causes people to experience more obsessive thoughts and actions, aggravating the individual's problems in critical situations (Zarean et al., 2021). Moreover, anxiety sensitivity causes people to evaluate anxiety-related symptoms as a sign of impending harm. Therefore, they interpret feelings such as rapid heartbeat, confusion, and sweating as signs of a heart attack, mental instability, and social embarrassment. Also, anxiety sensitivity is a multi-dimensional structure that, in addition to the fear of physical disaster, also includes the fear of psychological or cognitive lack of control, and this concern is noticeable in the symptoms of anxiety (Rees & McNally, 1985; quoted by Ghorani Eshtelagh Sofla et al., 2020). When students feel that they cannot control their psyche or thoughts, this feeling of lack of control increases their anxiety intensity, and they experience more health anxiety. Therefore, it is reasonable to say that anxiety sensitivity has a direct and significant effect on health anxiety.

Conflict of Interest

According to the authors, this article has no financial sponsor or conflict of interest.

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