

Original Article

Relationship between Physical Concern and Anxiety Sensitivity in Females with Panic Disorder: The Moderating Role of Distress Tolerance

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Abstract

Background and Aim: Panic disorder showed a higher prevalence in females than males. It is associated with physical and mental complications which leads to daily dysfunction. The present study aimed to investigate the moderating role of distress tolerance in the relationship between physical concern and anxiety sensitivity of females with panic disorder symptoms in female students.

Materials and Methods: The present study was conducted through a descriptive cross-sectional method. The statistical population of this research included all the female students at the Islamic Azad University of Ilam branch in 2022 (N=2009). Of all students, 323 cases were selected using the available sampling method. The data was collected through a standard questionnaire i.e. severity of panic disorder (SMPD-A) distress tolerance of Simons & Gaher, anxiety sensitivity of Floyd et al. and physical concern of Littleton et al. The statistical method used for data analysis was Baron and Kenny and Bootstrap.

Results: The results confirmed the model of the relationship between physical concerns and anxiety sensitivity with panic disorder symptoms with the moderating role of distress tolerance. The correlation coefficient between physical concerns with panic disorder symptoms ($r=0.468$), anxiety sensitivity with panic disorder symptoms ($r=0.425$), and distress tolerance ($r=-0.462$) with panic disorder symptoms was significant.

Conclusion: It is believed that several factors cause vulnerability to panic disorder. Many stressful situations of daily life and the inability to adapt to frequent life stress can disrupt cognitive function in people, which can trigger many psychiatric disorders in susceptible people and aggravate the severity of symptoms in people.

Keywords: Sexual dysfunction, Dysfunctional sexual beliefs, Behavioral Activation Therapy, Relationship satisfaction, Menopause

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Introduction

Anxiety disorders are one of the most common psychiatric disorders in the general population, which specifically affect the psychological, social (1) and quality of life (2) of people. Panic is one of the anxiety disorders that leads to high individual and social burdens (3). Panic attacks include at least four symptoms of racing heart, sweating, nausea, chest pain, or dizziness, or cognitive concerns such as the fear of dying, losing control, or going crazy (4). Anxiety sensitivity is known as one of the diagnostic signs of this disorder (5, 6). Previous studies also provided evidence for the relationship between anxiety sensitivity and panic disorder (7, 8). In the explanation and etiology of panic disorder, in people suffering from this disorder, the significant role of sensitivity to anxiety has been highlighted (9). The panic disorder is a multifaceted problem. It is recommended to investigate the relationships of this disorder with different dimensions and influential variables. Physical concern is one of variables that frequently seen in people with panic disorders (10). The component of physical concern refers to the tendency of people to misinterpret benign bodily sensations as harmful (11).

The results of previous research have linked the component of physical concern and anxiety sensitivity with fear of illness (7). For example, in a study on 216 students during the outbreak of Zika disease results showed a significant relationship between anxiety sensitivity and the component of physical concern about Zika (12). Despite continuous advances in health care, a large number of children and adolescents suffer from symptoms of physical concerns, which significantly interfere with daily life (13). Kay and his colleagues reported a significant relationship between the component of physical concern and anxiety sensitivity in 141 Chinese adults with mental disorders (14). In another study, Kraemer et al (10) also showed that there is a relationship between physical concerns, anxiety sensitivity with symptoms of panic.

Panic and physical concern also showed an

association with distress tolerance. Distress tolerance is defined as the perceived ability of a person to experience and tolerate negative emotional states or the ability to persist in goal-oriented behavior when experiencing emotional distress (15). Distress tolerance is considered an important construct in the development of new insight into the initiation and maintenance of psychological trauma, as well as prevention and treatment (16). People with low distress tolerance cannot accept the negative emotions. They underestimate their ability and try to avoid emotions (17, 18). So people with low distress tolerance are more likely experience stress and worry (19). Distress tolerance is associated with symptoms of panic disorders because the intolerance of distress through creating confusion and increasing mental health problems can lead to the symptoms of panic disorders (20). However, there are some studies regarding the relationship between physical concerns, anxiety sensitivity and distress tolerance with panic disorder. The indirect relations between variable dose not investigated; In particular, the moderating role of distress tolerance in the relationship between physical concerns and anxiety sensitivity with panic disorder symptoms has not been considered. Considering, the recent approaches of psychology believe that in linear relationships, the amount of relationship between variables will change when moderator variables are added to the relationship. Therefore, this study aimed to answer the question of whether distress tolerance has a moderator role in the relationship between physical concern and anxiety sensitivity of students with panic disorder symptoms.

Methods

This study was conducted through descriptive and cross-sectional method. The statistical population of this study included all the female students of Islamic Azad University, Ilam branch during 2022 (N=2009). 323 people were selected as a sample using the available sampling method based on Cochran's sample size formula. The inclusion criteria were: female, aged 18-30, student of the university, score higher than the cut score in Severity Measure for Panic Disorder (<9). In this research, the following questionnaires were

used to collect data.

Materials

Severity Measure for Panic Disorder-A (SMPD-A)

SMPD-A was used to measure the symptoms of panic disorder. This scale includes 10 items and scored on a 5-point Likert scale from (never = 0 to always = 4). In this scale, respondents state how panic disorder has affected their personal lives during the past 7 days. The scores obtained from this scale range from 0 to 40, with a higher score indicating the severity of panic disorder symptoms. Afsin et al.(21) in a study, reported the reliability and validity of this scale as a pilot. The Cronbach's alpha method was used to measure the reliability of the scale ($\alpha = 0.79$).

Distress Tolerance Scale

Distress Tolerance Scale of Simons and Gaher(22) is a self-measurement scale with 15 items and 4 subscales i.e. regulation (regulating efforts to relieve distress), tolerance (tolerance of emotional distress), absorption (being absorbed by negative emotions), evaluation (mental assessment of distress). The statements of this questionnaire are graded on a five-point scale (1- completely agree, 2- slightly agree, 3- neither agree nor disagree, 4- slightly disagree, 5- completely disagree). High scores on this scale indicate high distress tolerance. Simons and Gaher(22) reported Cronbach's alpha coefficients for this scale between 0.70-0.82. In Iran Modares(23) checked the validity of the questionnaire. The face validity of the questionnaire has been confirmed by experts. The results of the reliability showed a high internal consistency coefficient ($\alpha = 0.71$) and the subscales have moderate reliability (tolerance 0.54, absorption 0.42, evaluation 0.56, adjustment 0.58).

Anxiety Sensitivity Inventory(ASI)

The ASI 16-item was designed by Floyd and colleagues. This questionnaire includes three factors, physical concerns (8 items), cognitive concerns (4 items) and social concerns (4 items). This questionnaire is a self-report type based on a five-point Likert scale (0=very low to 4=very high) and the range of scores is 0 to 64. Deacon and colleagues (24) reported the internal consistency coefficient of the questionnaire based on Cronbach's alpha of 0.95.

Moradimanesh et al. also found the reliability of the anxiety sensitivity scale to be 0.87 in their research (25). The Physical Concern Questionnaire was designed to assess the fear of physical and appearance images by Littleton et al. (26). This test contains 19 questions in two subscales of dissatisfaction with external concern (11 items) and dissatisfaction with internal concern (8 items), each question has five options that are scored from 1 (never) to 5 (always). Littleton et al (26) checked the reliability of this questionnaire by internal consistency method and obtained Cronbach's alpha coefficient of 0.93. Also, they reported the Cronbach's alpha coefficient of the subscales of external concern dissatisfaction and internal concern dissatisfaction of 0.92 and 0.76, respectively (26). In Iran, Basaknejad and Ghafari(27) reported the validity of this test based on internal consistency using Cronbach's alpha method ($\alpha = 0.95$).

In this research, descriptive and inferential statistics are used for data analysis. Descriptive statistics are used to describe the demographic characteristics and to test the hypotheses of the research, Baron and Kenny and bootstrap methods are used. Data analysis is done using SPSS 22 and AMOS software. First, descriptive statistics were used to categorize and organize the data, and then inferential statistics of Spearman's correlation coefficient, bootstrap test, and path analysis were used in AMOS to test the research hypotheses.

Results

Examining the demographic findings showed that 203 people, equivalent to 62.8% of the sample, were between the ages of 20 and 25, which are the most frequent, 23.8% under the age of 20, 8.7% were 26 to 30 years old. More than 80% of the participants were single and studying at the undergraduate level. Normality of the variables confirmed with Skewness and kurtosis of the variables and the Kolmogorov Smirnov test. The results of Table 1 show the mean and standard deviation of the main variables of the research and the components of the variables, physical anxiety (10.097 ± 38.03), anxiety sensitivity (23.96 ± 13.83), distress tolerance (73.49 ± 11.43), fear or panic symptoms (151.8 ± 8.9). The correlation coefficients were significant for all variables

($P < 0.001$); There is a direct and significant relationship between the components of physical concern (0.46, $P < 0.001$), anxiety sensitivity ($r = 0.42$, $P < 0.001$), and distress tolerance ($r = 0.46$, $P < 0.001$) with the symptoms

relationship between physical concern and anxiety sensitivity with panic disorder symptoms in females the proposed research model was tested by AMOS software through the maximum likelihood method. As seen in the

Table 1. Descriptive index of variables and correlations with panic disorder symptoms.

variable	Subscale	Min	Max	Mean	SD	r	P
Physical concern	External satisfaction	11	47	23.87	6.78	0.37	0.001
	Internal satisfaction	8	34	14.15	4.50	0.48	0.001
	Physical concern	19	80	38.03	10.09	0.46	0.001
	Body worry	0	23	12.51	7.32	0.41	0.001
	Cognitive concern	0	16	5.40	3.95	0.42	0.001
	Social concern	0	16	6.40	3.81	0.32	0.001
Anxiety sensitivity	Regulation	4	20	10.96	3.26	0.42	0.001
	Anxiety sensitivity	0	64.00	23.96	13.83	0.42	0.001
	Tolerance	4	20	11.83	4.48	0.45	0.001
	Absorb	4	20	13.01	4.07	0.14	0.001
Distress tolerance	Evaluation	3	15	8.02	2.61	0.40	0.001
	Distress tolerance	15.00	75.00	43.49	11.73	0.46	0.001

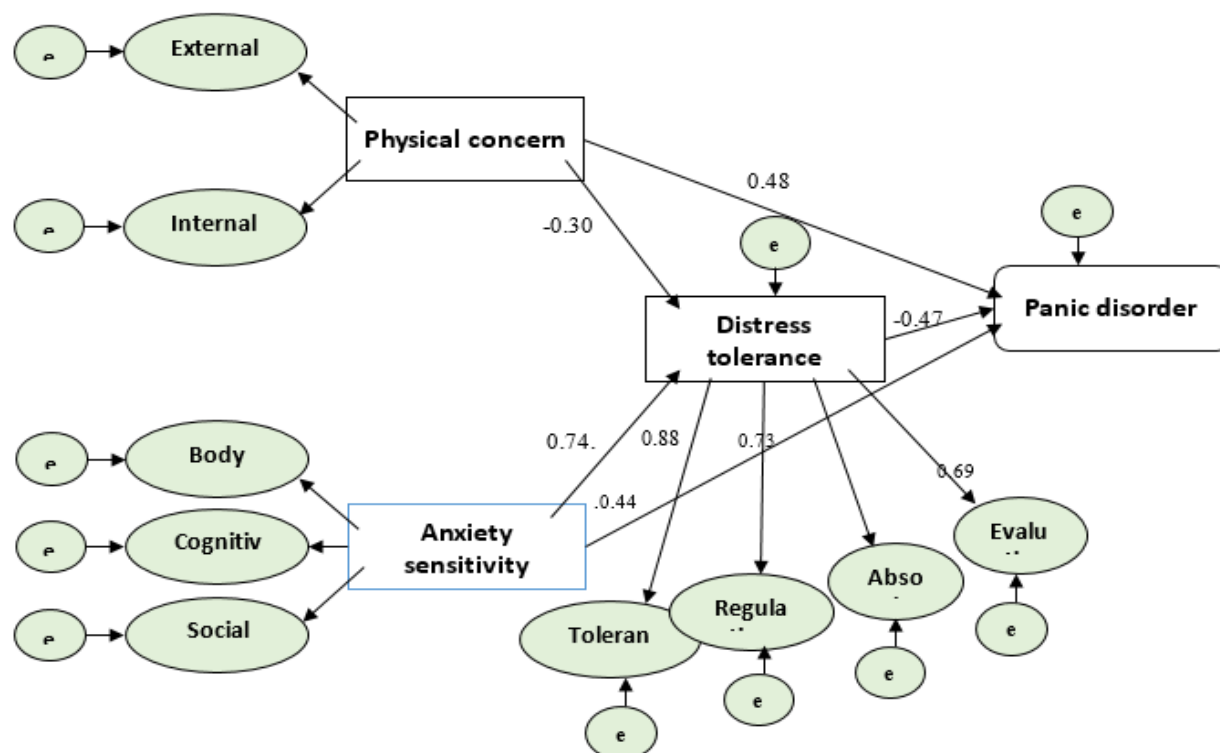


Figure 1. Standardized model coefficients of relationships between physical concern and anxiety sensitivity with panic symptoms: the moderating role of distress tolerance

of panic disorder.

To test the moderating role of distress tolerance in the

figure 1, in this figure, the numbers on the paths are the weights or beta. Among these coefficients, the highest

coefficient (0.74) is assigned to the path of anxiety sensitivity to distress tolerance, and the weakest coefficient is related to the path of physical concern to distress tolerance (0.30).

As reported in Table 2, the model has a good fit, which means that the researcher's intended model was appropriate.

the indirect relationship between physical concern and panic symptoms from distress tolerance does not include zero, which means that this indirect path is significant in the entire sample. Distress tolerance plays a moderating role in the relationship between physical worry and panic symptoms and reduces the effect of physical worry on the occurrence of panic symptoms. As well as the high

Table 2. Measurement parameters of direct relationships of variables in the whole sample.

Path	Standard coefficient	Non-standard	Error	Crisis index	P
Physical concern>panic	0.48	0.45	0.2	10.44	0.001
Physical concern>distress tolerance	-0.30	-0.29	0.31	-8.06	0.007
Anxiety sensitivity>panic	-0.44	-0.45	0.40	-14.23	0.001
Anxiety sensitivity>distress tolerance	0.74	0.71	0.51	20.24	0.001
Distress tolerance>panic	-0.47	-0.45	0.26	-11.34	0.001

Table 3. Model fit indices.

Index	K square	df	GFI	AGFI	NFI	CFI	RAMSEA	P
Mode	457.31	150	0.97	0.90	0.91	0.69	0.037	<0.001

Table 4. Moderation test of indirect relationships for the whole sample using the bootstrap method.

Path	Index					
	data	boot	Bias	Error	Low bond	Higher bond
Distress tolerance>Physical concern>panic	0.055	0.076	0.021	0.01	0.04	0.08
Distress tolerance>Anxiety sensitivity>panic	0.054	0.085	0.0313	0.016	0.03	0.09

To determine the adequacy of the proposed model's fit with the data, a combination of fit indices obtained from AMOS outputs was used (Table 3). If the GFI, CFI, NFI, and AGFI indices are greater than 0.90, they indicate the appropriate and optimal fit of the model. As it turned out, these indices are all greater than 0.90. Also, the RMSEA index shows that the main model has a relatively good fit.

The results of the direct relationships of the research variables in the proposed model show that all the path coefficients between the variables are significant. In this model, the relationship between physical concern and panic symptoms, anxiety sensitivity and distress tolerance was positive and significant. The relationship between physical concern and distress tolerance; anxiety sensitivity to panic symptoms; distress tolerance to panic symptoms were negative and significant.

According to the findings of Table 4, the results showed that the upper limit (0.0555) and lower limit (0.0766) of

(0.0546) and low (0.0859) limits of the indirect relationship between anxiety sensitivity and panic symptoms does not include zero, which means that this indirect path is significant in the entire sample, therefore, distress tolerance plays a moderating role in the relationship between anxiety sensitivity and panic symptoms and reduces the effect of physical concern on panic symptoms.

Discussion

The purpose of this study was to investigate the moderating role of distress tolerance in the relationship between physical concern and anxiety sensitivity with panic disorder symptoms in female students of Islamic Azad University, Ilam branch. The results showed that there is a significant relationship between physical concern and panic disorder symptoms in female students. This finding is

consistent with the research results of Kraemer et al. (10) and Pfaltz et al. (28).

A panic attack is sudden and fearful when there is no real danger or apparent cause, and it leads to severe physical reactions. When panic attacks occur, patients may feel losing control, having a heart attack, or even dying. Many people only have one or two panic attacks in their lifetime and the problem goes away. If this disorder is not treated, in addition to worsening the disease, the person is also at risk of developing physical diseases. Panic is a nervous and immediate reaction to external conditioned stimuli. Accordingly, in most cases, a combination of cognitive and drug therapy is needed to treat this type of disorder. Also, based on the findings, there is a significant relationship between anxiety sensitivity and panic disorder symptoms in female students and this finding is in line with other results which reported there is a significant relationship between anxiety sensitivity and panic attacks so that patients with high anxiety sensitivity have more worry and anxiety symptoms (10, 29, 30). High sensitivity increases thoughts about the possibility of panic attacks in the future. Anxiety sensitivity changes in situations accompanied by stress and also in response to the treatment process. Higher anxiety sensitivity decreases the effectiveness of therapeutic interventions (9). A person who have anxiety sensitivity perceives relatively normal events as catastrophic, while a person with low anxiety sensitivity considers these events as undesirable. The results showed that there is a significant relationship between distress tolerance and panic disorder symptoms in female students. Cha et al. (30); Behenck et al. (9) reported the same results.

In explaining the obtained results, it can be stated that many stressful situations of daily life and the inability to adapt to frequent life stress can disrupt cognitive performance in people, which can trigger many psychiatric disorders in susceptible people and aggravate them in people involved in the disorder. People with panic disorder act more slowly in response to various stimuli. In other words, it can be said that maybe this issue is due to the problem in the cognitive factors in these people, which causes the disease to increase and they don't have the right answer. The results of Gallego et al. (17) research

indicated that distress tolerance is related to the psychological vulnerability of panic disorder. Poor distress tolerance may be associated with maladaptive avoidance behaviors, such as agoraphobic avoidance in patients with panic disorder. Also, low levels of distress tolerance in the field of emotional and physical stress and low ability to deal with acute periods of emotional stress are significantly related to an increase in anxiety symptoms and panic disorder attacks (30). Also, the decrease in the level of anxiety tolerance causes these people to not be able to properly tolerate the anxiety resulting from the attacks and finally show a higher reaction to the existing conditions, which can contribute to the increase in the severity of the disorder. People suffering from panic disorder, who have low cognitive flexibility, cannot transform their catastrophic thoughts into thoughts that are more appropriate to the current situation, and they usually use their previous learning, which increases fear and anxiety in these people, which ultimately causes the severity of the disorder increases. The severity of this disorder can be reduced to some extent by training to balance the mentioned psychological factors so that the people involved can experience a better quality of life. Panic disorder is one of the mental disorders and the role of psychological treatments in its treatment is as important as medication treatments; therefore, any research that can clarify some aspects of the psychological aspects of this disorder can probably open the way for more effective psychotherapy methods.

Conclusion

Based on the findings of the present research, at the theoretical level, it confirms the relationship between distress tolerance with physical worries and anxiety sensitivity with the causes of panic disorder, adding these achievements to previous research. At the practical level, the relationship between distress tolerance with physical concern and anxiety sensitivity with symptoms of panic disorder highlights the necessity of teaching distress tolerance skills in the general population as well as the clinical population. In the clinical population, considering the role of anxiety sensitivity and physical concerns in many mental disorders. It is recommended to include distress

tolerance skills in the context of treatment. This results to increase the efficiency of treatment and improving symptoms. Due to the lack of domestic research in this field, the results of the current research can be important and can be considered as one of the strengths of this research. However, in terms of the limitations of this research, it has not considered the role of social, economic, family and cultural factors. Limiting the current research to the group of female students of Islamic Azad University, Ilam branch makes it difficult to generalize it to other groups. It is suggested that the same topic be done in another statistical population and compare the results with each other, and in the next research, the severity of panic disorder and the duration of the disease should be controlled.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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