

# Comparison of the Effectiveness of Autogenic Training and Progressive Muscle Relaxation on Anxiety

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## Abstract

**Objective:** The present study aimed to compare the effectiveness of autogenic training and progressive muscle relaxation in improving the anxiety components of women with chest pain.

**Method:** The research method was experimental with a pre-test-post-test design, a control group, and a three-month follow-up. The statistical population included all women with chest pain in Karaj city in 2021. using a purposeful sampling method, 60 patients with chest pain in Shahid Rajaei Hospital were selected and randomly assigned into three groups autogenic training, progressive muscle relaxation training, and control group. Autogenic training was provided in twelve 90-minute sessions, and progressive muscle relaxation intervention was administered in eight 2-hour sessions. Beck's (1988) anxiety questionnaires, Tylor & Cox's (1998) revised anxiety sensitivity, and Rapee, et al. (1996) perception of anxiety control was used to collect data. Data analysis was done using covariance analysis and post hoc test methods.

**Results:** The results showed that autogenic training and progressive muscle relaxation alone have been effective in reducing anxiety symptoms, anxiety sensitivity and perception of anxiety control, and autogenic training was more effective in improving anxiety components compared to progressive muscle relaxation ( $p < 0.05$ ).

**Conclusion:** Considering the greater effectiveness of autogenic training on the anxiety components, it is suggested that relevant experts use this intervention to reduce the anxiety of patients with chest pain.

**Keywords:** Anxiety components; Autogenic Training; Chest pain; Progressive Muscle relaxation.

## Introduction

Chest pain is one of the most common reasons for referring to the emergency department (Crim, Berkowitz, Saheed, et al., 2016). According to some studies, 0.6 to 0.7 patients with heart disease suffer from chest pain (Mulder, Zarifeh, Boden, et al., 2019), and the most visits due to chest pain are reported among people aged 45 to 64 years (Harskamp, Laeven, Himmelreich, et al., 2019).

There are significant statistical differences between men and women in the perception and incidence of chest pain. Most patients with chest pain are women, and women are more sensitive to pain than men (Schroeder, Achenbach, Körber et al., 2012).

Some studies support the role of psychological factors such as anxiety, pain perception, and mood disorders in chest pain (Meresh, Piletz & Halaris, 2018), which anxiety is one of the common psychological problems of patients with chest pain (Radgoudarzi, Joudi, Salehi, et al., 2017). Pardue, White, and Gervino (2019) also concluded in their research that anxiety is one of the causes of chest pain.

Anxiety is future-oriented and general and is a

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type of emotion or mood characterized by negative emotions such as tension, restlessness, apprehension, and worry (Whitbourne & Halgin, 2012). Anxiety is usually associated with negative feelings and has physical and psychological aspects, both of which can be seen in a person during anxiety (Garayagh, Mollazadeh, Valaei, et al., 2019). Anxiety often occurs before new experiences and may be a threat to control individual actions and self-confidence (Faraji, Pashaiefar & Negarandeh, 2015).

Anxiety can have different components, such as anxiety symptoms, anxiety sensitivity, and anxiety control perception. The anxiety symptoms include mood, cognitive, physical, and motivational symptoms (Garayagh et al., 2019). One of the vulnerabilities related to anxiety is anxiety sensitivity, which is the fear of anxiety symptoms due to the perception of harmful social, cognitive, and physical consequences of a stressful situation (Taylor, 2014). People differ in their perception of anxiety control. Considering anxiety as a broad spectrum, people's anxiety can be classified as high and low (Taylor, 2019). By treating psychological problems such as anxiety and depression, the chest pain of heart patients is also treated and resolved (Alkhatatbeh, Abdul-Razzak, Amara et al., 2019). Khairandish, Jamali, and Haqbin (2017) also showed in their research that anxiety plays a major role in chest pain.

In health psychology, psychological factors are involved in the aggravation and successful response to treatment in many diseases, including chest pain (Motevalibashi Naini & Besharat, 2016). Fakhrmohammadi, Ebrahimian, Mir Mohammad Khani, and Ghasemi (2016) also concluded in their research that psychological factors play a significant role in cardiac chest pain. Various interventions, including psychological interventions, can be helpful for patients with chest pain (Kisely, Campbell, Yelland, et al., 2015). One of the effective

interventions in this field is autogenic training. Asbury, Kanji, Ernst, et al. (2009) showed in their research that autogenic training is effective in relieving the symptoms of female patients with chest pain.

Autogenic training has been used globally for almost 70 years, especially for chronic and stress-related disease treatment. Thousands of published studies have shown the effectiveness of this intervention in promoting the body's self-healing mechanisms (Sadigh, 2020). Autogenic training is a relaxation technique that helps our mind and body to experience more relaxation (Varvogli & Darviri, 2011). Autogenic means "self-born" and is considered under self-regulation or self-generated. With the help of autogenetic training, the mind can influence the body, through which the self-regulation systems can balance blood circulation, heart rate, breathing, and the like (Sadigh, 2020). In autogenic training, visual images and body awareness techniques create deep relaxation (Ajimsha, Majeed, Chinnavan et al., 2014). Mirzamohammad Alaeini, Abbaspour Azar, Agha Haris, and Baseri (2021) showed in their research that autogenic training is an effective treatment for women's pain intensity and Hormozi Sheikhtabaghi, Agahheris and Bagheri (2022) showed that autogenic training significantly increases psychological adjustment to the disease.

Progressive muscle relaxation is another effective treatment for treating chronic diseases such as cardiac chest pain (Dikmen & Terzioglu, 2019). Edmund Jacobson (1938) introduced progressive muscle relaxation. It is easy to learn and apply with positive effects on body balance (Khodavirdi, Eskandari, Barjali & Farrokhi, 2020). Progressive muscle relaxation leads to mental relaxation because an unpleasant emotional state will not exist in the complete relaxation of body parts. Relaxation prevents the emergence of negative thoughts and emotions like anxiety and tension and

neutralizes the effects of increased muscle tension on the body. Progressive muscle relaxation is a non-pharmacological and behavioral intervention used to treat stress caused by chronic diseases and reduce anxiety and pain (Tabarsi, Zakari, Rezapour & Ebrahimi, 2018). Kazak and Ozkaraman (2021) concluded in their research that progressive muscle relaxation effectively reduces pain intensity, and Toqan, Ayed, Joudallah, et al. (2022) showed that Progressive muscle relaxation significantly reduces anxiety symptoms.

By studying the related literature, we can state that autogenic training and progressive muscle relaxation are effective interventions for the treatment of several psychological problems (Kazak & Ozkaraman, 2021; Diekman & Tarzioqlu, 2019; Mirzamohammad Alaeini et al., 2021; Hormozi Sheikhtabaghi et al., 2022; Loh, Shih, Lin & Huang (2022), Garcia, Leclerc-Loiselle, Côté et al, 2023), but the assumptions of autogenic training and progressive muscle relaxation are different from each other.

In autogenic training, it is the mind that controls the body and balances blood circulation, heartbeat, and breathing (Sadigh, 2020), while progressive muscle relaxation is a behavioral intervention that brings a person to mental peace through the complete relaxation of body parts (Tabarsi et al., 2018). Therefore, it is necessary to conduct a study comparing the effectiveness of these two interventions. There have been limited studies on the effectiveness of autogenic training and progressive muscle relaxation in improving the anxiety components of women with chest pain in Iran. The conducted studies have only evaluated one of the interventions, and no study examined the effectiveness of these two approaches in improving the anxiety components of women with breast pain in a comparative study. Accordingly, the present study aimed to compare the effectiveness

of autogenic training and progressive muscle relaxation in improving the anxiety components of women with chest pain.

## Method

### Participants and Procedure

The research method was experimental and of pre-test-post-test type with a control group and a three-month follow-up period. The research population included all women with chest pain in Karaj city in 2021. The samples were women with chest pain in Shahid Rajaei Karaj Hospital. Purposeful sampling, in which people are selected as samples who match the research objectives (Cozby & Bates, 2017), was used in this study. The sample size was 60 people, of which 20 were randomly assigned to the control group, 20 to the autogenic training experimental group, and 20 people to the progressive muscle relaxation experimental group. The training sessions were conducted online by Masoumeh Kazemi, and the time range of the training sessions was from May to July 1401. The inclusion criteria of the research were having chest pain diagnosed by a specialist physician, being at least 18 years old, not suffering from any severe mental disorder such as psychosis, not suffering from any chronic physical disease as diagnosed by a specialist doctor, not taking psychoactive drugs, and not taking sedatives or painkillers. The exclusion criteria of the study included the emergence of physical problems for people in the group that cause disruptions in the psychotherapy process according to the diagnosis of a specialist doctor, the severity of symptoms during treatment according to the diagnosis of a specialist doctor, absence of more than two sessions during treatment, simultaneous participation in other psychological training programs or clinical trials, and unwillingness to continue participating in the research for any reason.

## Measures

*Beck's anxiety questionnaire*: This questionnaire, which has 21 four-choice items, was developed by Beck in 1988. Beck and Clark (1988) reported the internal consistency of this scale as 0.93 and its test-retest reliability as 0.75. The reliability of this test in Iran was also reported as 0.78 with Cronbach's alpha method. In examining the validity of this scale using the experimental method of divergent validity between two anxious and ordinary groups, T was reported equal to 12.3 at  $P < 0.001$  (Farhadi, Movahedi & Movahedi, 2014). In the Iranian Population Beck's anxiety scale validity was obtained as 0.79 and its reliability was calculated using Cronbach's alpha as 0.82. (Sheybani, Dabaghi, Najafi & Rajaeinejad, 2022). In this questionnaire, each question is scored based on a four-point scale from 0 to 3. Each test item describes one of the common symptoms of anxiety. The total score of this questionnaire ranges from 0 to 63 (Beck, Steer & Brown, 1996), which is a state of increasing intensity.

*Anxiety Sensitivity Index Revised (ASIR)*: This scale was prepared by Taylor and Cox (1998), with 16 items scored based on a five-point Likert scale (0 for very little and 4 for very much). The range of scores is between 0 and 64; scores close to 64 mean that the person has high anxiety sensitivity, and getting a lower score on this test means that the person experiences low anxiety sensitivity. This questionnaire evaluates three subscales of physical anxiety (8 questions), cognitive anxiety (4 questions), and social anxiety (4 questions) (Poli, Melli, Ghisi, et al., 2017). To measure the internal consistency, Cronbach's alpha coefficient was calculated with the results obtained between 0.80 and 0.90. The test-retest reliability after two weeks was obtained as 0.75 and for three years 0.71, showing that anxiety sensitivity is a reliable personality construct (Reiss, Peterson, Gursky & McNally, 1986). This scale was implemented by Foroughi,

Mohammadpour, Khanjani, et al. (2019) in Iran. Cronbach's alpha coefficient was used to measure reliability, which was obtained for the whole scale at 78%. Also, the results of consistent validity showed that this questionnaire had a correlation of 59% with social health anxiety. *Anxiety Control Questionnaire (ACQ)*: This questionnaire was prepared by Rapee, Craske, Brown, et al. (1996) and designed with 30 questions designed based on DSM criteria. The items are arranged on a 6-point Likert scale from "completely disagree=0 to completely agree=5". The range of scores that a person gets on the anxiety control perception scale is from zero to 180. The Anxiety Control Perception Scale measures people's perception of controlling emotional reactions and external threats. This scale has been validated on outpatient populations with disorders and non-clinical patients. Exploratory factor analysis has extracted three factors emotion control, threat control, and stress control (Rapee et al., 1996). This questionnaire has good internal consistency and test-retest validity (Brown, White, Forsyth, et al., 2004). Also, Rapee et al. (1996) reported Cronbach's alpha coefficient of 87% to 89% for this questionnaire. Najimi, Asgari, and Aaghah Heris (2017), in a study with 304 non-clinical participants in Iran, reported the initial Cronbach's alpha of 0.62 with a mean of 87.81 and a standard deviation of 13.41 and assessed the validity and reliability of this questionnaire as favorable.

*Autogenic training protocol*: Autogenic intervention is a set of activities designed based on the book "Autogenic Education, an Approach for Mind-Body" written by Sadigh (2021), which was administered during 12 training sessions of 90 minutes and one session per week for patients with chest pain in the experimental group. The content outlines of the autogenic training sessions are shown in



**Table 1.** Content of autogenic training and progressive muscle relaxation sessions

Intervention	Sessions	Content
autogenic training	1	Teaching the theoretical aspects of pain and psychological states and mind-body connection
	2	Essentials of reaching the autogenic state
	3	First preliminary exercise
	4	Second preliminary exercise
	5	First standard exercise: heaviness
	6	Second standard exercise: heat
	7	Third standard exercise: heart
	8	Fourth standard exercise: breathing
	9	Fifth standard exercise: Abdominal heat
	10	Sixth standard exercise: forehead cooling
	11	Advanced autogenic training
	12	Autogenic and sleep training
progressive muscle relaxation	1	Explanation of the logic of treatment and breathing relaxation. The members of the group are introduced to each other and the philosophy and principles of group therapy is explained.
	2	Relaxation of 16 groups of muscles. Contraction and release are taught for 16 groups of muscles.
	3	Relaxation of 7 groups of muscles. Contraction and release for 7 groups of muscles.
	4	Contraction and release for 4 groups of muscles.
	5	Relaxation through remembrance. Eliminating muscle contraction and focusing on the enhanced ability.
	6	Relaxation through counting reminders. How to pay attention to any contraction in the muscles and remember the feeling of releasing the contraction and tension.
	7	Relaxation by counting. Counting numbers from 1 to 10 and paying attention to each muscle in harmony with breathing.
	8	3-month differential sedation homework training is done and this stage includes a series of relaxation exercises that begin with relatively quiet physical activities and continue with more active behaviors.

the table below.

*Progressive muscle relaxation protocol:* Progressive muscle relaxation intervention is a set of activities

based on Bernstein and Borkovec protocol (2017).

This protocol consists of 8 sessions, one session per week, and each session lasts for two hours. In

the following, the steps of the training sessions are introduced.

To analyze the data, covariance analysis methods was used to test research hypotheses and post hoc tests was used for pairwise comparisons between experimental groups. Spss software version 21 was used to analyze the research data.

### Ethical statements

The current clinical research has been registered with ethical code ID IR.PNU.REC.1401.056 at Payam Noor University, Dubai branch, and the respondents participated in the research with informed consent.

### Results

In this research, the data of 60 people were analyzed. Examining the demographic indicators showed that 63.33% of the participants were married, and 36.67% were single. In terms of education, 20% of participants had a diploma, 31.6% had a bachelor's degree, and 18.3% had a master's degree or higher.

Table 3 shows the mean and standard deviation of anxiety.

Table 2 shows that in autogenic intervention, the mean and standard deviation of anxiety symptoms were 41.13 and 3.56 in the pre-test and 28.19 and 3.26 in the post-test. In the progressive muscle relaxation intervention, the mean and standard deviation of anxiety symptoms in the pre-test were 43.68 and 3.65, and in the post-test were 32.59 and 4.01. In the autogenic intervention, the mean and standard deviation of anxiety sensitivity in the pre-test were 38.15 and 2.26, and in the post-test were 25.65 and 2.39. In the progressive muscle relaxation intervention, the mean and standard deviation of anxiety sensitivity were 36.98 and 3.58 in the pre-test and 27.58 and 2.51 in the post-test. In autogenic intervention, the mean and standard deviation of anxiety control perception were obtained at 90.89 and 4.59 in the pre-test and 73.65 and 4.63 in the post-test stages. In the progressive muscle relaxation intervention, the mean and standard deviation of

**Table 2.** Mean and standard deviation of anxiety components

Components	Test stages	Autogenic		Progressive muscle relaxation		Control group	
		Mean	SD	Mean	SD	Mean	SD
Anxiety symptoms	Pre-test	41.13	3.56	43.68	3.65	40.95	2.26
	Post-test	28.19	3.26	32.59	4.01	41.88	3.36
	Three month	29.78	3.77	33.12	2.26	40.63	2.68
	Follow-uo						
Anxiety sensitivity	Pre-test	38.15	2.26	36/98	3.58	37.49	3.36
	Post-test	25.65	2.39	27.58	2.51	36.65	3.54
	Three month	26.19	3.88	28.91	3.22	37.49	2.68
	Follow-uo						
Perception of anxiety control	Pre-test	90.89	4.59	91.49	4.68	90.13	4.26
	Post-test	73.65	4.63	76/67	5.23	89.64	4.68
	Three month	73.68	5.69	77.55	4.18	90.20	5.23
	Follow-uo						

anxiety control perception in the pre-test stage were 4.68 and 91.67, and in the post-test were 76.67 and 5.23. Kolmogorov-Smirnov test was used to check the normality of data distribution in Table 3.

**Table 3.** Kolmogorov-Smirnov test to check the normality of distribution of variables

Variable	Z Statistic	Standard Error
Anxiety symptoms	0/683	0/726
Anxiety sensitivity	0/602	0/851
Anxiety control perception	1/233	0/725

The Kolmogorov-Smirnov test was used to check the normality of the data distribution, and the results showed that the significance level of the anxiety components is above 0.05 and the data distribution is normal. Levine’s test was also used to measure the equality of the error variance of the anxiety components with the significance level of the F greater than 0.05, which we can say that the variance of the errors of the groups is equal to each other and there is no difference between them.

Also, the results of the covariance analysis of the studied groups showed that the minimum effects of one of the groups are effective in reducing the general anxiety components in women with chest pain based on Wilks’s lambda root because the calculated F value is 0.385 at the level of P=0/02 is significant.

The results of Table 4 show that the group effects (including autogenic training progressive muscle relaxation group, and control group) on the anxiety symptoms of women with chest pain in the post-test stage with the value of F = 11.77 at P = 0.007 is significant in the three-month follow-up stage with the value of F=8.35 at P=0.000. In the next part, a pairwise comparison reports to which groups these significant differences are related.

The results of pairwise comparisons of research groups in the variable of anxiety symptoms show that in the post-test stage, the effectiveness of autogenic training in improving the anxiety symptoms of respondents compared to the control group is significant with a mean difference of -13.69 at the level of P=039, and autogenic training has more effect on reducing anxiety symptoms compared to progressive muscle relaxation. The results of the

**Table 4.** Multivariate covariance analysis to investigate the difference between experimental and control groups in anxiety symptoms

Variable	Stage	Source	Sum of squares	df	Mean of squares	F	P	Eta coefficient	Statistical power	
Anxiety symptoms		Pre-test	23.24	2	23.24	2.053	0.284	0.054	0/84	
		Group	133.41	2	133.31	11.77	0.007	0.905		
	Post-test	Error	16.30	57	11.32					
		Total	179.95	60						
	Follow-up		Pre-test	51.65	2	51.65	5.130	0.510		0.041
			Group	84.10	2	84.10	8.354	0.000		0.957
		Error		13.80	57	10.067				
			Total	149.55	60					

multivariate covariance analysis test to investigate the difference between the experimental and control groups in anxiety sensitivity are provided in Table 5.

The results of Table 5 show that the group effects (including autogenic training, relaxation, and the control group) on the anxiety sensitivity of women with chest pain in the post-test stage with the value

control group) on the perception of anxiety control of women with chest pain in the post-test stage with a value of  $F = 23.99$  at the level of  $P = 0.036$  is significant in the three-month follow-up stage with the value of  $F=23.68$  at the  $P=0.018$  level. In the following part, we provide a pairwise comparison result to determine to which groups these significant differences are related.

**Table 5.** Multivariate covariance analysis to investigate the difference between experimental and control groups in anxiety sensitivity

Variable	Stage	Source	Sum of squares	df	Mean of squares	F	P	Eta coefficient	Statistical power
Anxiety sensitivity	Post-test	Pre-test	32.11	2	32.11	2.371	0.311	0.064	0/73
		Group	254.03	2	254.03	18.76	0.024	0.811	
		Error	15.11	57	13.54				
		Total	301.25	60					
	Follow-up	Pre-test	47.14	2	47.14	5.16	0.351	0.017	0/84
		Group	147.22	2	147.22	16.14	0.011	0.457	
		Error	8,68	57	9.12				
		Total	203.04	60					

of  $F = 18.76$  at the level of  $P = 0.024$  is significant in the follow-up stage with  $F=16.14$  at  $P=0.011$  level. In the following, a pairwise comparison result used to determine which groups these differences are related to is presented.

The results of pairwise comparisons of research groups in anxiety sensitivity show the greater effectiveness of autogenic training compared to progressive muscle relaxation intervention because the mean difference is  $-1.93$  and is significant at the level of  $P=0.005$ . In Table 8, the results of the multivariate covariance analysis test are provided to show the difference between the experimental and control groups in the perception of anxiety control.

The results of Table 6 show that the group effects (including autogenic training, relaxation, and the

The results of pairwise comparisons of research groups in the perception of anxiety control show the greater effectiveness of autogenic training compared to the intervention of progressive muscle relaxation because the mean difference is  $-16.02$  at the level of  $P=0.002$ .

## Discussion and Conclusion

This study aimed to compare the effectiveness of autogenic training and progressive muscle relaxation in decreasing the anxiety components of women with chest pain. The results of the research showed that autogenic training is more effective in reducing the anxiety symptoms of patients with chest pain compared to progressive muscle relaxation. The results of this research are in line with the results



of Novita (2022), Aliyazdi, Agah Heris & Nouhi (2020), Nani and Setyani (2021), Liu, Chen, Wu, et al., (2020), Atkins and Hayes (2019), and Aivazian and Zaitsou (2018).

caused by people’s cognition and beliefs, and by changing people’s awareness, the roots of anxiety can be identified and reduced. Likely, due to the greater emphasis of autogenic training on mentality

**Table 6.** Multivariate covariance analysis to investigate the difference between experimental and control groups in anxiety control perceptions

Variable	Stage	Source	Sum of squares	df	Mean of squares	F	P	Eta coefficient	Statistical power
Anxiety control perception	Post-test	Pre-test	40.04	2	40.04	2.935	0.428	0.091	
		Group	327.28	2	327.28	23.99	0.036	0.674	0/79
		Error	15.93	57	13.64				
		Total	383.25	60					
	Follow-up	Pre-test	35.81	2	35.81	2.96	0.422	0.027	
		Group	286.13	2	286.13	23.686	0.018	0.431	
		Error	14.33	57	12.08				0/62
		Total	149.55	60					

According to the definition of autogenic training, in addition to the mental aspects, it also pays attention to the individual’s body and influences it, thereby increasing the individual’s relaxation (Varvogli & Darviri, 2011). With the help of autogenetic training, the mind can affect the body, and with this intervention, the self-regulation systems responsible for controlling blood circulation, heart rate, breathing, etc., can be balanced (Sadigh, 2021). In autogenic training, visual images and body awareness techniques are used to create a deep relaxation state (Ajimsha et al., 2014). Because different dimensions of the mind and body are taken into account in autogenic training, in this way, the physical and cognitive components of anxiety are also reduced by relaxation techniques and active concentration.

According to Beck’s (2020) point of view, anxiety is

and the role of mentality in anxiety, compared to progressive muscle relaxation, autogenic has a greater role in reducing the anxiety components of women with chest pain. We can also conclude that one of the causes of anxiety is that many messages are exchanged between the mind and the body that there is a danger ahead. In autogenic training, the mind can interrupt this cycle of message exchange by relaxing the body and thus reducing anxiety.

Also, the results of the research showed that autogenic training is more effective in reducing the anxiety sensitivity of patients with chest pain compared to progressive muscle relaxation. This result is consistent with the results of Altinok Ersoy, Akyar, Yıldırım, et al., (2022), Litwic-Kaminska, Kotyško, Pracki, et al. (2022), Nani and Setyani (2021) and Atkins and Hayes (2020). Anxiety has a cycle that has a cognitive dimension on one

side and a physical dimension on the other. An anxious person has a psychological concern, and we can see this anxiety in the person's physiology and physical performance. Autogenic training also directly controls the sympathetic-parasympathetic system and affects the anxiety cycle and the mind-body control axis (Sarafino & Smith, 2014). Autogenic training by controlling the mind-body axis breaks the anxiety cycle and thus reduces a person's anxiety sensitivity. In addition, it can be said that tension is caused by the contraction of muscle tissues. Tension is created when a person feels anxious, and this anxiety can be resolved by reducing tension, in autogenic training, through advanced breathing and relaxation, muscle tension can be reduced and anxiety sensitivity can be reduced.

Also, the results showed that autogenic training is more effective in reducing the anxiety control perception in patients with chest pain compared to progressive muscle relaxation. This result is in line with the findings of Al-Jawady Hasso (2022), Wulandari and Retno, (2022), and Aliyazdi et al. (2020). People who perceive anxiety to a great extent and are vulnerable to life's stresses experience feelings of helplessness, powerlessness, and apathy in life. In this situation, the person becomes extremely inactive and incapacitated cannot adapt to the change in living conditions, and becomes distant from the flow of life day by day. Usually, people who perceive a lot of anxiety spend much time analyzing issues and negatively perceive them; therefore, gradually the content of these thoughts and concepts turns into reality. Then, they lose their awareness of time and always live in worry and anxiety (Qurbani, 2019). In the concept of anxiety control perception, we understand the role of a person's cognition against stressful events. In autogenic training, people are taught the attitude of being indifferent to any output that may occur due to the repetition of mentions related

to the mind. This state of "passive focus" is vital because it allows the self-regulatory mechanisms of the brain to function optimally, thereby reducing the intensity of perceived anxiety in people. Referring to the perception of anxiety control, it can be said that anxiety is rooted in people's minds and cognition, and by changing people's cognition, the roots of anxiety can be identified and reduced. In autogenic training, the focus is on the mindset, and it is the mind that controls the body in this way the mind can balance blood circulation, heartbeat, and breathing and thereby reduce the perception of anxiety.

The purpose of the present study was to compare the effectiveness of autogenic training and progressive muscle relaxation in reducing the anxiety components of women with chest pain. According to the results of the research, it can be said that autogenic training and progressive muscle relaxation alone have been effective in reducing anxiety symptoms, anxiety sensitivity, and perception of anxiety control. Compared to progressive muscle relaxation, autogenic training was more effective. Thus, it can be concluded that psychologists should use autogenic training to reduce anxiety symptoms, anxiety sensitivity, and perception of anxiety control. Regarding the limitations of the current research, we can point to the limitation of using one therapist in both treatment methods, which logically should have used an independent therapist for each treatment method. Another limitation in the implementation of therapeutic interventions was the COVID-19 pandemic and the holding of meetings online. It is suggested that autogenic training and progressive muscle relaxation treatments be implemented jointly in a separate experimental group in future research, and its effects be compared with each of the aforementioned treatments. It is also suggested that this research be replicated in different cities with different cultures.

**Conflict of interest and acknowledgments**

The authors claim that there is no conflict of interest in the extant study. In the end, all the participants who gave their time to the research are appreciated and thanked.

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