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The effectiveness of mindfulness-based stress reduction training on social anxiety and negative body image of people with body dysmorphic disorder

Ali Akbar KHosravi Hampa,[1] Akbar Mohammadi[*2]

Abstract

Introduction: The first part of every person's personality is his body and appearance. The body is different from other parts of the personality, because; It is easily visible and this makes the body and appearance important in social interactions. The purpose of this research was to determine the effectiveness of mindfulness-based stress reduction training on social anxiety and negative body image of people with body dysmorphic disorder.

Research method: In terms of execution, this research was part of experimental research of the type of semi-experimental research method with a pre-test-post-test design with a control group, and also in terms of purpose, it was considered part of applied research. All the students of Islamic Azad University, Garmsar branch, who were studying in this university in the first semester of the academic year 1402-1403, constituted the statistical population of this study. Using available sampling method, 20 of these students who were suffering from body deformity disorder were selected and assigned to two experimental groups (10 people) and control group (10 people). Kabat-Zinn's mindfulness-based stress reduction treatment protocol was implemented on the experimental group, while the control group received no intervention. Subjects in both groups answered the social anxiety questionnaire of Connor et al. and the body image questionnaire of McKinley and Hyde at the beginning of the study and completed both questionnaires again after the end of the intervention. Multivariate covariance analysis was used to investigate the research hypothesis.

Findings: The results showed that mindfulness-based stress reduction training has an effect on reducing social anxiety and negative body image of people with body dysmorphic disorder.

Conclusion: Accordingly; Planning to implement mindfulness-based stress reduction workshops and treatments in people with body dysmorphic disorder seems useful to reduce their social anxiety and negative body image.

Keywords: body dysmorphic disorder, mindfulness-based stress reduction, negative body image, social anxiety

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[1] - Master of Science in Clinical Psychology, Garmsar Branch, Islamic Azad University, Garmsar, Iran Alikhosravi3344@gmail.com

[2] - (**Corresponding author**), Assistant Professor, Department of Psychology, Garmsar Branch, Islamic Azad University psyhic2006@gmail.com, Phone: 09128069781

Introduction:

People commonly have concerns about their appearance and body shape, and these concerns are heightened by a growing trait called "attention-seeking" (1). Furthermore; The media and social and cultural norms portray certain ideal physical and appearance examples, which leads to the fact that a person compares his body and appearance with ideal examples and by preventing downward social comparison, he often feels that his body and appearance are in line with the standards. Media and social media do not match when it comes to the body. Generally; If these preoccupations with defects and flaws are widespread, it is possible that the person has body dysmorphic disorder (BDD) (2).

The American Psychiatric Association (3) considers dysphagia to be a serious mental disorder characterized by symptoms related to delusional concerns about the body, such as intrusive and frequent thoughts about perception, deformity, or defects in physical appearance.It becomes (4). Body dysmorphic disorder is a psychological disorder characterized by extensive mental preoccupation with minor or often imaginary physical defects. People who suffer from this disorder are busy thinking about their appearance for many hours of the day and usually appear in society by improving or hiding the areas of the body that have perceived defects (5). Symptoms of people with this disorder include looking in the mirror too much, comparing their appearance and body with other people's appearance and body, hiding imaginary flaws with clothes, manipulating or scratching the skin. People with this disorder have a negative view of their body and their appearance and make wrong impressions about parts of the body such as the face, nose, ears, breasts, and thighs, and constantly think about imaginary defects in these parts, so much so that It becomes a rumination (6). In this stage of the disease, in order to respond to their preoccupations with their appearance and body, these people engage in repetitive obsessive behaviors, such as constantly checking themselves in the mirror, putting on extreme make-up, etc. These people also; They suffer from repetitive and obsessive thoughts such as constantly comparing their physical appearance with that of others. Distortion of the body is related to other psychological problems such as depression, anxiety and stress (7) and with many consequences such as the lowering of the quality of life and self-esteem, occurrence of risky behaviors leading to suicide and disruption of social relationships, not having a job, staying in The house is attached (8). Body deformity disorder is a complex concept that includes biological, psychological, biological, social and cultural issues, among which social issues have a direct and penetrating effect on this disorder. in social relations; A person who suffers from body dysmorphic disorder sees himself as ugly and boring and has severe anxiety when facing others and may avoid communication with others and become an anxious, depressed and extremely isolated person. For this reason, people with body dysmorphic disorder usually have symptoms of social anxiety (9).

Social anxiety disorder (SAD), which is also known as crowd phobia or social phobia, is one of the most common psychological disorders that causes emotional problems and dysfunction of the patient. At its mild level, social anxiety disorder is a transient anxiety that occurs due to negative social evaluations. At the same time; At its severe level, social anxiety disorder leads to disability, pervasive fear and social avoidance (10). Generally; Severe levels of this disorder are associated

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with persistent anxiety or avoidance of social situations due to fear of negative evaluation (11). This disorder is characterized by psychological features such as shyness in public, fear of negative evaluation and fear of criticism. also; The behavioral characteristics of this disorder include: withdrawing from the crowd, not making eye contact, and fear of speaking in public. Furthermore; Redness of the cheeks, dry mouth and sweating are the physical characteristics of this disorder (12). These people have specific fears about doing some specific activities such as eating or speaking in front of others, or they suffer from a non-specific and vague fear about being embarrassed in front of others (2).

Negative body image is another symptom that exists in people with body dysmorphic disorder. Body image refers to a person's beliefs and feelings about his own body. These beliefs and feelings about the body are also effective on how people behave with their bodies (13; 14). In other words; What a person looks at his body and what feelings, thoughts and behaviors he takes towards his body is called body image. If this view is positive towards the body, people's feelings, thoughts and behavior will also be positive towards their body, and as a result, a positive body image will be created. upside down; If a person has a negative view of his body, this will cause him to have negative feelings and thoughts about his body and to have destructive behaviors with his body, and ultimately a negative body image will emerge. According to psychologists and psychiatrists, if dissatisfaction with body image or negative body image is much more than a concern, there is a possibility of suffering from body dysmorphic disorder (15).

Due to the severe psychological damage of social anxiety and negative body image in people with body dysmorphic disorder, many approaches have been developed to treat these symptoms, each of which has its own theoretical, practical and philosophical framework and, accordingly, a unique method. They have designed themselves to face such psychological problems. One of these approaches is mindfulness-based stress reduction (16; 17). Mindfulness "proposed by Kabat-Zinn[1] in the 1970s" can be defined as an open and receptive awareness that arises through purposeful attention and focus on the present and free of judgment (18). Mindfulness-based stress reduction training has been developed in a behavioral-medical context for patients suffering from stressful conditions "such as body dysmorphic disorder". This method is based on the intensive training of mindful meditation and discussion in the field of stress and its management training (19). A lot of mindfulness exercises are taught in mindfulness-based stress reduction training sessions. Moreover; Educational information about stress, including topics such as; The psychology of stress, response to stress, the effect of assessment on perception and stress management are expressed in most of the meetings (20). Accordingly; The problem is that mindfulness-based stress reduction training leads to a person's awareness of present-moment experiences and more efficient processing of information, and ultimately reduces preoccupations related to the body or negative body image and social anxiety symptoms. However, the effect of this therapeutic approach on those suffering from body dysmorphic disorder, especially their negative body image and social anxiety, has not been investigated. The present study seeks to answer the question of whether stress reduction training based on mindfulness has an effect on social anxiety and negative body image of people with body dysmorphic disorder.

Research method:

In terms of execution, this research is a part of experimental research of a semi-experimental research method with a pre-test-post-test design with a control group. Also, this study is part of applied research in terms of its purpose. All the students of Islamic Azad University, Garmsar branch, who were studying in this university in the first semester of the academic year 1402-1403, constituted the statistical population of this study. Among these; A number of 300 students were selected using available sampling method and each of them was evaluated using metacognitive body deformity questionnaire (21) and 20 students who received a score higher than the cut point (above 130) were included in the study. The process was studied. It should be noted that these 20 people were randomly assigned to two experimental groups (10 people) and control group (10 people). In this study, the body deformity metacognitive questionnaire (21), the social anxiety questionnaire of Conor et al. (22), the body image questionnaire (23) and Kabat-Zin's mindfulness-based stress reduction treatment protocol were used.

metacognitive questionnaire of body deformity (21): Body deformity metacognitive questionnaire (21) assesses the dimensions of body deformity metacognition. This 31-question questionnaire has 4 subscales of metacognitive control strategies (questions 1 to 14), thought-action coalition or the fusion of thoughts "objectifying thoughts related to deformity" (questions 15 to 22), positive and negative metacognitive beliefs "about appearance".

(questions 23 to 27) and safety behaviors (questions 28 to 31). In this test, the participants are asked to answer in the form of a 5-point Likert scale (from completely disagree to completely agree) about the thoughts and perceptions related to the deformity of their appearance and body in the last two weeks. The scoring of the items in this questionnaire is from 1 to 5. In Rabiei et al.'s study (21), 4 mentioned factors were identified through exploratory factor analysis, which explained 48% of the variance of the questionnaire. Cronbach's alpha coefficients for subscales of metacognitive control strategies, thought-action coalition, positive and negative beliefs, safety behaviors and the whole questionnaire were obtained as 0.9, 0.91, 0.78, 0.7 and 0.94 respectively. is (21). Cronbach's alpha coefficient of this questionnaire was found to be equal to 0.86 in Dosti et al.'s study (24). also; This coefficient was equal to 0.7 in the study of Demerchali et al.

Kanwar et al.'s social anxiety questionnaire (22): The social anxiety questionnaire of Kanwar et al. (22) was prepared in order to evaluate social anxiety. This questionnaire is a self-assessment tool containing 17 items, which consists of three subscales of fear (6 items), avoidance (7 items) and physiological discomfort (4 items). Subjects respond to the items of this questionnaire based on a 5-point Likert scale (not at all = 0, little = 1, somewhat = 2, very much = 3, and infinite = 4). The creators of this tool found the reliability of the questionnaire by the retest method in groups with the diagnosis of social anxiety disorder to be 0.78 to 0.89 and its internal consistency using Cronbach's alpha coefficient in a group of normal people for the whole scale equal to 0.94 (for the subscale) Fear: 0.89 for the avoidance subscale and 0.80 for the physiological discomfort subscale (22). Hassanvand et al. confirmed the reliability of this tool. In the mentioned study, the Cronbach's alpha coefficient of the whole questionnaire was equal to 0.82 and for the subscales of avoidance

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0.75, fear 0.74 and physiological discomfort 0.75, which shows the satisfactory reliability of this tool. Moreover; This questionnaire was standardized in Iran by Masoudnia (25) among students and its reliability was also calculated. The result of Masoudnia's research (25) using factor analysis and varimax rotation led to the extraction of 3 factors, which in terms of the number of components were equal to the number of components extracted by the scale builders. Internal consistency using Cronbach's alpha coefficient was 0.90 and 0.86, 0.82 and 0.76 for the subscales.

McKinley and Hyde Body Image Questionnaire (23): The 16-question body image questionnaire was designed by McKinley and Hyde (23). This questionnaire consists of two subscales of body surveillance (questions 1 to 8) and body shame (questions 9 to 16), both of which measure the negative dimensions of body image. In this questionnaire, the subjects answer the questions using a 5-point Likert scale (from completely disagree = 1 to completely agree = 5). Those with higher scores on the body surveillance subscale are those who frequently pay attention to their bodies and are more concerned about how their bodies appear to others. People who score higher in the body shame subscale believe that they are guilty and blameworthy if they do not meet cultural expectations about their body (26). In the study of Norouzi et al. (26), the Cronbach's alpha coefficient for the dimensions of body image, i.e., body surveillance, was 0.83 and body shame was 0.90. also; The validity and reliability of this questionnaire was reported at an acceptable level in the study of Khosrovizadeh et al. Furthermore; McGulliver [1] and colleagues obtained the Cronbach's alpha coefficient of this questionnaire as 0.84. [1] – MacGulliver

Kabat-Zinn Mindfulness-Based Stress Reduction Therapy Protocol: On the experimental group, the stress reduction treatment protocol based on Kabat-Zinn mindfulness was implemented by the researcher in 8 sessions, two sessions per week. Below is the content of mindfulness-based stress reduction group sessions:

First session: In this session, stress reduction intervention based on presence of mind was started in order to create group cohesion and introduce people. Educational information about stress including topics such as psychology of stress, response to stress and the effect of assessment on stress perception were discussed. Then, the meeting continued with the introduction of 4 weeks of presence of mind and discussions about people's attitude towards mindfulness; Some misunderstandings of people regarding mindfulness were identified and resolved. Participants were encouraged to verbally commit to attending all sessions and completing homework (at least 45 minutes per day, 6 days per week).

Second session: At the beginning of the session, the participants were asked to do a body check exercise (see the description of the first session). They were then prompted to discuss their experiences of the previous week, especially those related to homework. After discussing the experience of the previous week and answering the questions created for the participants, as well as discussing the issues related to stress, they were encouraged to sit in meditation and to be aware of breathing as the first point of attention in order to expand concentration. The participants sat on their chairs in an alert and relaxed posture. They were asked to keep their back straight and in line with their head and neck, and they were free to keep their eyes closed or staring down. Then they were asked to focus their attention on their feelings and the movement of their breathing. When

their mind wanders, which can happen a lot, try to gently bring their attention back to their breathing. After several minutes, the focus shifted to the physical sensations. They were taught to be non-judgmental or accepting. Have an attractive and curious attitude regarding unpleasant feelings. Do not try to move your body to avoid discomfort.

third session: Calm and conscious yoga movements are proposed as a way of calming the physical symptoms of stress and becoming aware of the subtle movements of the body. In this meeting, the discussion about the ability to be in the present moment and mentally observe thoughts as just thoughts instead of facts and events took place. The participants were encouraged to observe their bodies carefully and to be aware of their physical limitations and to avoid putting pressure on themselves to exceed these limitations. Avoid trying to progress and reach a goal other than moment-to-moment awareness of the body and breathing. The purpose of closely observing the body during yoga practice is to show that physical limitations can change over time. They were told to think of yoga as a movement awareness rather than a physical exercise. Homework at this stage includes body inspection, yoga, sitting meditation focusing on breathing, awareness of unpleasant events and awareness of a different usual event.

Fourth Session: A sitting meditation practice began with an emphasis on understanding bodily sensations as simply feelings (as opposed to interpretations and thoughts about feelings, such as catastrophizing), then participants engaged in a walking meditation practice. In this type of meditation, the attention is deliberately focused on the sensations in the body while walking, the gaze is directed forward to the feet instead of down. Attention is given to weight shifting movements and balance and sensations in the legs and thighs while walking. As with other meditation exercises, the participants were encouraged to gently direct their mind back to the feeling of walking if their mind wandered during the exercise. This method was often practiced in slow steps. Participants typically practiced walking back and forth across a room to emphasize a goal toward a destination. The goal was simply to be aware of walking as it happens. In the early stages, they were encouraged to focus their attention on sensations in their legs and thighs. Eventually, they expanded their attention to sensations throughout their bodies.

fifth meeting: In this meeting, it was discussed about passing half of the route and exchanging opinions. Participants raised issues that were discussed regarding the homework requirement and the impact of the program thus far. Sitting meditation expanded to awareness of thoughts entering and leaving the mind, followed by a discussion of the role of mindfulness in responding to stress in daily life. For homework, participants were encouraged to begin experiencing a combination of pre-introduced exercises tailored to their needs, including bodywork, yoga, walking meditation, and seated meditation. Home practice also includes a communication exercise and awareness of the difference between habitually reacting (without choice) and responding (with choice).

Sixth session: First, there was a discussion about homework. Then sitting meditation was practiced deeply for a long time in this session. The content of the session included conscious attention to the sounds of the environment. The participants were asked to pay attention to the sounds they hear in the surrounding environment. They were told to pay attention to the tone quality of sounds, their slowness and loudness, their duration, as well as notice the silence between sounds, without

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judging or analyzing them. Then they were asked to redirect their attention on the thoughts that appear in their consciousness. Observe their thoughts as they flow, come and go in the context of their awareness. briefly pay attention to the content of their thoughts without getting absorbed in it or pay attention to the emotions that may appear in their consciousness, observe these emotions; In short, pay attention to the type of emotion they experience (anger, sadness, desire) and the thoughts and feelings associated with this emotion.

Half-day seclusion: In this session (i.e. the sixth session), which lasted for 5 hours, most of the day was spent in silence and successive periods of sitting meditation, walking meditation, yoga, and body inspection. Apart from the instructions given by the therapist if necessary, the participants were encouraged not to talk or make eye contact. It was explained to the participants that the purpose of the meeting is to attend and accept everything that happens during the day. During the exercise, they may experience pleasant and unpleasant feelings, thoughts and emotions. The goal is just to be aware of everything that is happening. Many participants report a mixture of pleasant and unpleasant experiences throughout the day. They are encouraged to let go of their expectations of how the day should feel or what should happen and remain mindful of whatever is happening. At the end of the day, the participants discuss their experiences in a group.

Seventh session: In this session, the practice of non-selective awareness or sitting meditation was discussed. Non-selective awareness is different from focusing on a particular subject in which one focuses on a mental or physical subject or image. In this exercise, the participants were encouraged to pay attention to everything that may come into their awareness (bodily sensations, thoughts, emotions) as they occur naturally. They were asked to just pay attention to what was going on in their mind without clinging to it or going along with it; try to distance themselves from the things that enter their mind and observe

them. Also, in this meeting, like the previous meetings, discussions were discussed about stress and the effect of mindfulness exercises on stress. There were also discussions about issues such as ensuring the correct performance of exercises and the results of mindfulness, awareness of food and eating when eating mindfully, and experiences in daily life following a half-day retreat. The relevance of mindfulness in daily life was discussed in order to prepare patients for the application of this method in daily life. Homework included body inspection, yoga, walking meditation, sitting meditation, and mindfulness in daily life.

Eighth session: This session started with body inspection and continued with sitting meditation. Discussion focused on a brief overview of the course, participants were encouraged to discuss their experiences throughout the course. Then they were given strategies to continue mindfulness exercises after the end of the course.

Entry criteria: Suffering from body deformity disorder based on the cut point of 130 and above in metacognitive bod, deformity questionnaire (21), Declaration of readiness to cooperate to participate in treatment sessions and complete questionnaires

Exit criteria: Absence of body deformity disorder based on the cut point of 130 and below in the metacognitive body, deformity questionnaire (21), Unwillingness to participate in meetings,

Absence of two or more sessions, Receiving psychotherapy or drug therapy simultaneously or drug last to years.

To determine the normal distribution, Shapiro and Wilke test [1] and Kolmogorov Smirnov test [2] were used. After checking the normality of the research data, data analysis was done at two descriptive and inferential levels. At the descriptive level, descriptive statistical indicators such as frequency, minimum score, maximum score, mean, standard deviation, skewness and kurtosis were used. At the inferential level, multivariate covariance analysis was used to investigate the research hypothesis. According to the objectives of the current research; Data were analyzed using SPSS version 28 software. [1] - Shapiro-Wilk test [2] - Kolmogorov–Smirnov test

Findings:

Table 1. Descriptive statistics indicators of research variables

Groups	Variable	Tallness	Dishonesty	The standard deviation	Average	Maximum Score	Minimum Score
Examination Group	Social anxiety	0/367	0/117	6/55	3/41.	59	2
Control Group	(pre-exam)	-0/289	0/201	6/98	29/98	60	1
Examination Group	Social anxiety	0/099	0/696	6/12	23/39	50	0
Control Group	(After the test)	0/252	0/321	7/09	30/99	58	2
Examination Group	fear	0/112	0/215	1/51	11/96	22	1
Control Group	(pre-exam)	-0/329	0/216	1/22	11/02	23	2
Examination Group	fear	0/525	0/189	1/01	8/99	17	1
Control Group	(After the test)	-0/197	0/459	1/39	11/88	22	1
Examination Group	avoid	-0/387	0/277	1/47	14/91	26	3
Control Group	(pre-exam)	0/154	0/311	1/56	14/38	25	3

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Examination Group	avoid	0/298	0/129	1/18	11/01	20	3
Control Group	(After the test)	0/211	0/287	1/29	14/81	24	3
Examination Group	Physiological discomfort	-0/019	0/115	0/88	8/59	15	1
Control Group	(pre-exam)	-0/141	0/272	1/04	8/64	15	2
Examination Group	Physiological discomfort	٠0/083	0/111	0/67	6/38	12	0
Control Group	(After the test)	0/215	0/187	0/9	8/24	14	1
Examination Group	Negative body image	0/222	0/295	7/21	46/25	75	18
Control Group	(pre-exam)	-0/198	0/201	7/01	47/68	74	19
Examination Group	Negative body image	-0/394	0/121	6/19	37/84	63	16
Control Group	(After the test)	0/317	0/281	7/16	46/49	74	18
Examination Group	Body surveillance	0/624	0/185	3/76	24/5	40	9
Control Group	(pre-exam)	-0/315	0/211	3/11	24/02	39	9
Examination Group	Body surveillance	-0/257	0/423	3/25	20/21	32	8
Control Group	(After the test)	0/221	0/179	3/85	24/41	40	8
Examination Group	Body shame	-0/115	0/142	3/22	27/89	40	10
Control Group	(pre-exam)	-0/107	0/160	3/19	27/17	39	9
Examination Group	Body surveillance	0/113	0/259	2/12	21/91	33	8

Control Group	(After the test)	-0/091	0/163	3/99	27/99	40	8

As can be seen in Table No. 1, the average scores of social anxiety and its dimensions and negative body image and its dimensions in the members of the experimental group have significantly decreased in the post-test phase compared to the pre-test. This change is not observed in the control group. The results of the Shapiro and Wilk test and the Kolmogorov-Smirnov test to determine the normal distribution for each of the research variables in the pre-test and post-test separately for the experimental and control groups are listed in Table No. 2.

Table 2. Determining the normal

Groups	Variable	conclusion	Shapiro wilk Significance level	Test statistics	conclusion	Kolmogorov smirnov Significance level	Test statistics
Examination Group	Social anxiety	Normal	0/547	0/782	Normal	0/547	0/782
Control Group	(pre-exam)	Normal	0/457	0/684	Normal	0/317	0/512
Examination Group	Social anxiety	Normal	0/128	0/422	Normal	0/092	0/378
Control Group	(After the test)	Normal	0/319	0/548	Normal	0/231	0/452
Examination Group	fear	Normal	0/401	0/612	Normal	0/298	0/389
Control Group	(pre-exam)	Normal	0/398	0/599	Normal	0/117	0/349
Examination Group	fear	Normal	0/328	0/512	Almost normal	0/059	0/299
Control Group	(After the test)	Normal	0/749	0/721	Normal	0/628	0/512
Examination Group	avoid	Normal	0/453	0/687	Normal	0/412	0/612
Control Group	(pre-exam)	Normal	0/112	0/458	Normal	0/322	0/568

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Examination Group	avoid	Almost normal	0/071	0/419	Almost normal	0/056	0/272
Control Group	(After the test)	Normal	0/267	0/518	Normal	0/365	0/559
Examination Group	Physiological discomfort	Normal	0/463	0/452	Normal	0/225	0/437
Control Group	(pre-exam)	Normal	0/418	0/396	Normal	0/211	0/365
Examination Group	Physiological discomfort	Normal	0/228	0/369	Almost normal	0/052	0/211
Control Group	(After the test)	Normal	0/511	0/549	Normal	0/418	0/555
Examination Group	Negative body image	Normal	0/547	0/782	Normal	0/568	0/784
Control Group	(pre-exam)	Normal	0/568	0/619	Normal	0/538	0/757
Examination Group	Negative body image	Normal	0/561	0/612	Normal	0/401	0/547
Control Group	(After the test)	Normal	0/555	0/785	Normal	0/571	0/794
Examination Group	Body surveillance	Normal	0/517	0/781	Normal	0/309	0/591
Control Group	(pre-exam)	Normal	0/538	0/817	Normal	0/437	0/689
Examination Group	Body surveillance	Normal	0/509	0/711	Normal	0/267	0/515
Control Group	(After the test)	Normal	0/563	0/894	Normal	0/514	0/783
Examination Group	Body surveillance	Normal	0/393	0/729	Normal	0/457	0/611
Control Group	(pre-exam)	Normal	0/317	0/549	Normal	0/211	0/469

Examination Group	Body surveillance	Normal	0/197	0/441	Normal	0/198	0/443
Control Group	(After the test)	Normal	0/355	0/561	Normal	0/315	0/559

According to the results of Table No. 2, the significance levels of the Shapiro and Wilk test and the Kolmogorov-Smirnov test for all research variables in the pre-test and post-test and in both experimental and control groups are higher than 0.05. This issue shows that the research data have sufficient normality. Research hypothesis: Mindfulness-based stress reduction training has an effect on social anxiety and negative body image of people with body dysmorphic disorder. Since both groups were measured twice in the pre-test and post-test stages, the mean and standard deviation of the variables of social anxiety and negative body image in the pre-test and post-test were analyzed separately between the experimental and control groups. These results are shown in Tables 3 and 4

Table-3. Mean and standard deviation of social anxiety variable

Groups	Variable	The standard deviation	Average
Examination Group	Social anxiety	6/55	30/41
Control Group	(pre-exam)	6/98	29/98
Examination Group	Social anxiety	6/12	23/39
Control Group	(After the test)	7/09	30/99

The results of table NO.3 show that the average scores of social anxiety in the experimental group have decreased in the post-test phase compared to the pre-test phase . this is despite the fact that the average scores of this variable did not decrease in the control group.

Table 4. Mean and standard deviation of negative body image variable

Groups	Variable	The standard deviation	Average
Examination Group	Negative body image	7/22	46/25
Control Group	(pre-exam)	7/01	47/68
Examination Group	Negative body image	6/19	37/84
Control Group	(After the test)	7/16	46/49

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The results of Table No. 4 show that the average scores of negative body image in the experimental group have decreased in the post-test phase compared to the pre-test phase. This is despite the fact that the average scores of this variable did not decrease in the control group. To use multivariate covariance analysis, basic assumptions were first examined. The results of the Kalmogorov-Smirnov, Shapiro, and Wilk tests (refer to Table No. 2) to check the normality of the distribution for the variables of social anxiety and negative body image indicated that these variables have sufficient normality (P>0.05). Another issue that should be investigated is the assumption of homogeneity of variance-covariance matrices. For this purpose, the box test was used. The box statistic is equal to 4.27 and the significance level of this test is equal to 0.872, so the box test is not significant at the level (P>0.05), in other words, the variance-covariance matrix is homogeneous and this assumption is not violated. Is. Also, in order to check the regression slope, the analysis of covariance test was used and the value of the F statistic of this test for the variable of social anxiety was 0.89 and its significance level was 0.57 (P>0.05), which as a result of this assumption It has been observed for the social anxiety variable. Regarding the variable of negative body image, the value of F statistic was equal to 0.51 and its significance level was 0.66 (P>0.05), as a result of which this assumption has been met for the variable of negative body image. According to the mentioned contents, the use of multivariate covariance test is allowed. Standard multivariate covariance analysis was used to compare the mean scores of post-test social anxiety and negative body image after pre-test control, and the results of this analysis can be seen in Table No. 5. In this table, the results of Wilks's lambda statistic are reported.

Table 5. The results of multivariate covariance analysis to compare the average scores of the community of dependent variables

	References	Effect size	Significance level	Eror Degress of freedom	Degress of freedom	F	Value
Wilks Lambda	Group	0/741	0/001	27	2	9/225	0/437

As can be seen in the above table, Wilks's lambda statistic is significant F (2, 27)=225.99, P<0.001. in other words; There is a significant difference between the experimental and control groups in the post-test stage, in terms of the dependent variables of social anxiety and negative body image. These results and taking into account the decrease in average social anxiety and negative body image in the post-test of the experimental group compared to the post-test of the control group, indicate the social anxiety score and negative body image of the people who participated in the experimental group and in the stress reduction training sessions based on participated in mindfulness, compared to those who were in the control group, during two periods of time i.e. pre-test and post-test, there was a significant decrease. The effect of the intervention on each of the variables of the research was done using the single-variable analysis of covariance test, and the results of this test are reported in table NO.6 and 7

Table 6. The results of univariate analysis of covariance after the social anxiety test

Source of changes	Variable	squares	Meaningful	F	Average squares	Degress of freedom	Sum of squares
pre-exam	Social anxiety	598/0	0001/0	207/40	259/322	1	322/259
Group		370/0	0001/0	896/13	948/126	1	126/948
Eror					015/15	27	216/407
Total						30	50950/000

As can be seen in Table No. 6, the difference between the two experimental and control groups in the level of social anxiety in the post-test phase is significant. F (1, 27) = 13.896, P < 0.0001.

Table 7. Results of univariate analysis of covariance after negative body image test

Source of changes	Variable	squares	F	Average squares	Degress of freedom	Sum of squares
pre-exam	Negative body image	298/0	441/11	635/20	1	635/20
Group		360/0	212/15	436/27	1	436/27
Eror				804/1	27	698/48
Total					30	000/6279

As can be seen in Table No. 7, the difference between the two experimental and control groups in the amount of negative body image in the post-test stage is significant. F (1, 27) = 212.15, P < 0.001. According to the results obtained from tables No. 5, 6 and 7; The hypothesis of the present study, which emphasized the effect of mindfulness-based stress reduction training on social anxiety and negative body image of people with body dysmorphic disorder, is confirmed.

Discussion and conclusion:

The present study was conducted with the aim of teaching stress reduction based on mindfulness on social anxiety and negative body image of people with body dysmorphic disorder. The results

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showed that mindfulness-based stress reduction training has a reducing effect on social anxiety and negative body image of people with body dysmorphic disorder.

Research hypothesis: Mindfulness-based stress reduction training has an effect on social anxiety and negative body image of people with body dysmorphic disorder. According to the obtained results, the present research hypothesis is confirmed. The findings showed that mindfulness-based stress reduction training leads to a reduction in social anxiety of people with body dysmorphic disorder. This finding is with the results of studies conducted inside Iran such as; Pasiyar et al. (27), Raeesi et al. (19), Mojarabi and Rasouli Saravi (28), Mapourfaraj and Milady (29), Mahjoub and Timuri (30), Bahraini and Thanagowi Mohrhar (31), Iqbali et al. (32). , Faizizadeh et al. (33) is aligned. Moreover; The findings of this study with the results of foreign research such as; Aydin and Budak (34), Hjiltnis et al. (16), Goldin et al. (35), Hay et al. (36) and Horton-Deutsch and Horton (37) are the same. These studies, in line with the results of the current research, found that stress reduction based on mindfulness and approaches based on mindfulness can have a reducing effect on the symptoms of anxiety disorders such as social anxiety disorder. In order to analyze and explain this research finding, it can be stated that; The main mechanism of mindfulness is self-control of attention, because focusing attention on a neutral stimulus such as breathing leads to the creation of a suitable attention environment and the mental occupation of people with body dysmorphic disorder during stressful social situations as well as situations that these people are exposed to. social evaluation will be reduced and as a result the level of social anxiety in these people will decrease (38). Insights and skills learned through mindfulness practice enable a person with body dysmorphic disorder to use them to deal with stressors and complaints they often raise (such as physical complaints and fear of social interactions) and in Take steps to reduce these symptoms. Mindfulness-based stress reduction training by encouraging people who suffer from body dysmorphic disorder to repeatedly practice paying attention to neutral stimuli and purposeful awareness of the body and mind, makes these people less anxious and preoccupied with threatening thoughts. And let go of worrying about performance in the crowd. In other words, this treatment method reduces the worries and physiological arousals in social anxiety disorder by increasing the individual's awareness of present experiences and returning attention to the cognitive system and more efficient processing of information (39).People with body dysmorphic disorder show attention and reactivity to situational factors due to their concern about the judgment of others, and this feeling of worry, along with physical complaints and imaginary problems, leads to a weakening of their self-esteem to participate in daily activities and presence. in social situations and leads to their isolation in society. But mindfulness-based stress reduction training helps to deal with a wide range of thoughts, feelings and inner experiences through four basic stages. The first step in this treatment is to pay attention and focus on the present time and pay attention to awareness, during which a person with body dysmorphic disorder can be fully aware of the experiences of the external and psychological world in the present moment with an open attitude and without defense. be freed from focusing on the past and the future. In the next stage, the therapist becomes aware of his thoughts and emotions and physical sensations through behavioral, cognitive, and metacognitive strategies in sync with the process of attention during

treatment sessions. Then, with the development of these awarenesses, the therapist is encouraged to use non-judgmental acceptance strategies to experience the feelings and thoughts related to social anxiety and fear of society that he has faced in his life as a feeling as they are and the desire Have to accept the fears he has about being in the community and other psychological events he has encountered. In parallel with this process, elements of cognitive therapy that are involved in reducing stress based on mindfulness, inform the patient with body dysphoria about the factors that cause thoughts and feelings that cause social anxiety, and give patients another choice. . In this way, a person suffering from body dysmorphic disorder is able to get rid of his own thoughts and unhealthy habits and behavior patterns in social anxiety disorder and finally increase the ability to regulate his behaviors and emotions in social assessment situations. Based on this, instead of an anxious response to daily social events, a patient with body dysmorphia develops a new relationship with the environment during the process of changing awareness, acceptance and recognition, and the amount of social anxiety is reduced (33).

Ethical considerations: in this research, in order to comply with the ethical standards, the subjects were first told that this project will be done only for research work, so their information will not be provided to any center. The participants participated in the research completely voluntarily, and after providing the initial explanations, the written consent of each participant was obtained for voluntary participation in the research. also; The participants were told that they could leave the study at any time. On the other hand, a code was assigned to each subject in order to comply with ethical standards and preserve personal information during the data collection process.

Limitations of the research: Like other researches, this research had limitations, and one of these limitations was the psychological and emotional state of the participants when answering the questions, which may affect the accuracy and accuracy of their answers, and this limitation was uncontrollable. .

Conflict of interest: The authors hereby declare that this work is the result of an independent research and does not have any conflict of interest with other organizations and individuals.

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