

Structural Relationship between Body Dysmorphic Disorder and Satisfaction of Basic Psychological Needs: Mediating Role of Body Image and Mindfulness

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Abstract

Background: In body dysmorphic disorder (BDD), individuals become greatly distressed or disturbed due to flaws they believe exist in their physical appearance, regardless of the trivial nature or non-existence of these perceived imperfections.

Objectives: The present study aimed to explore the structural relationship between body dysmorphic disorder and satisfaction of basic psychological needs with the mediating role of body image and mindfulness.

Methods: This descriptive and correlational study is part of structural equation modeling (SEM). The statistical population of this study included all students of Islamic Azad University, Shahr-e-Qods branch, in the 2022-2023 academic year. A sample of 377 subjects was selected via the convenience sampling method. Online surveys were used to collect the necessary data from all university students in Shahr-e-Qods. The data collection tools were the Basic Psychological Needs Questionnaire (BPNQ), the Body Dysmorphia Metacognition Questionnaire, the Body Consciousness Scale (OBCS), and the Five Mindfulness Questionnaire aspect (FFMQ). Statistical procedures were performed in SPSS (version 22) and AMOS (version 22) software packages.

Results: The findings indicated a moderate negative correlation coefficient between mindfulness and body dysmorphic disorder ($r = -0.381$; $P < 0.01$). The effect of basic psychological needs for body image on body dysmorphic disorder needs through mindfulness for body dysmorphic disorder was significant ($P < 0.05$; $\beta = 0.219$).

Conclusion: As evidenced by the obtained results, the practice of "mindfulness" and a decreased focus on body image, along with respect for body and appearance, can help students avoid symptoms of body dysmorphic disorder.

Keywords: Body dysmorphic disorder, Body image, Mindfulness, Satisfaction of basic psychological needs

1. Background

Body dysmorphic disorder (BDD), which is an under-recognized condition related to body image, is associated with over-cited signs of delusions and suicidality (1). People with body dysmorphia (formerly known as ugliness obsession) are preoccupied with one or more flaws or imperfections in their appearance that they perceive as ugly, unattractive, or deformed (2). The cause of body dysmorphic disorder is unknown; nonetheless, studies have demonstrated that the cause of many psychological traumas, such as body dysmorphic disorder, is a person's inability to satisfy their basic psychological needs (3,4). Personal growth, social interaction, and psychological health are facilitated by inherent psychological needs. They are recognized as instinctive triggers that lead to the desire to interact with one's surroundings (3). Earlier research by the authors suggested an important but not entirely negative correlation between body image and basic psychological needs.

Moreover, 32% of the variance in body dysmorphic disorders was explained by basic psychological needs in the stated study (5). Furthermore, the relationship between obsessive-compulsive disorder, perfectionism, anxious attitudes toward eating, and body image is mediated by the psychological needs identified (6). According to Selvi & Bozo (2020), there is a correlation between muscle dissatisfaction (muscle

deformity) and psychological deficiencies in bodybuilders (7). A study carried out in 2021 on Spanish physical education students found that the fulfillment of basic psychological needs and autonomy motivating motivated individuals can predict positive body image in adolescents (8). The findings of a study conducted in 2018 revealed that college students' satisfaction with autonomy and competence can be linked to higher levels of physical satisfaction when they are satisfied with basic psychological needs and exposure to ideal images on Facebook (9).

Research indicates that mindfulness and body image concepts can moderate the relationship between psychological factors and psychological trauma (10). Mindfulness refers to paying attention to present-moment activities with no judgmental tendencies (11). In addition, body image as one's perception of their own body encompasses thoughts and emotions that can influence behavior, resulting in positive or negative attitudes towards the body (12). Body image is affected by various factors, including physical growth, social interactions, and physical damage (13). Dastghir & Karimi (2019) found that mindfulness is also associated with the prediction of body dysmorphic disorder. In recent years, researchers and practitioners have focused their focus on the benefits of mindfulness for psychological health (14). Mindfulness aids in cultivating a greater awareness of one's thoughts and emotions, enhanced

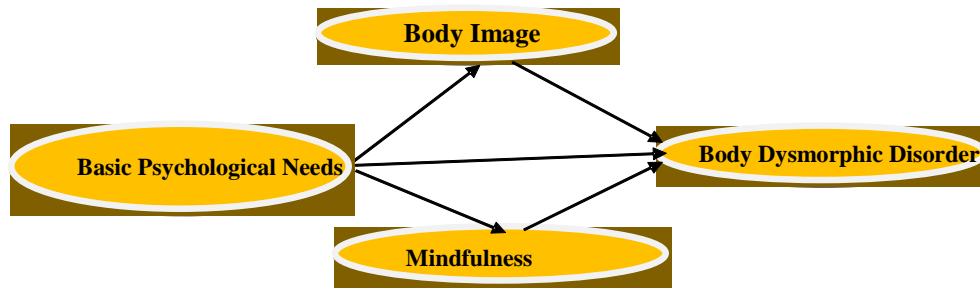


Figure 1. Proposed model

awareness regarding the body's reaction to negative experiences in life, an openness to experience or acceptance of it, and the ability to observe with curiosity and without judgment. The practice of mindfulness enables individuals to observe their thoughts and emotions more objectively, and there will be space to manage them more coherently. Mindful individuals can easily regulate their unhelpful thoughts and behaviors (for example, those associated with body dysmorphic disorder), enhancing their problem-solving abilities (15).

A study conducted in 2015 on body image concerns and beliefs related to attractiveness revealed that individuals with body dysphoric disorder tend to have negative attitudes toward their appearances and physical features (16). According to the report, mindfulness may be a predictor of body dysmorphic disorder symptoms in adolescents (17). It examines the role of basic psychological needs in predicting psychological vulnerability (3,4,18) and the mediating capacity of body image (6) and mindfulness (14). Regarding the relationship between basic psychological needs and the psychology of trauma, especially dysmorphic, the present study sought to answer the question of whether basic psychological needs are regulated and reconciled with pictures or not. Do exercise and mindfulness play a role in predicting body dysmorphic disorder? The conceptual model of the present study is displayed in [Figure 1](#).

2. Objectives

According to the literature, no study has assessed the relationship between basic psychological needs and body dysmorphic disorder with the mediating role of body image and mindfulness. Therefore, the present study is considered a new and innovative research topic. In addition, there is a dearth of studies on the causes of body dysmorphic disorder.

Therefore, this study is considered novel since it examines basic predictors of psychological vulnerability, such as basic psychological needs, to predict body dysmorphic disorder. Theoretically, this research provides valuable information about the causes of this disorder. From a practical and practical standpoint, this research can help mental health officials, psychologists, scientists, and psychiatrists find better and more thorough solutions to treat body dysmorphic disorder. Therefore, It seems necessary to conduct research to understand the structural relationship between basic psychological needs and body dysmorphic disorder with the mediating role of body image and mindfulness in college students.

3. Methods

This descriptive and correlational study is part of structural equation modeling (SEM). The statistical population for this study included all students at Islamic Azad University, Shahr-e-Qods Branch, during the 2022-2023 academic year. A sample of 377 subjects was selected via the convenience method according to the conditions of the Covid-19 pandemic.

To determine the sample size, the ratio between the sample size and the freely estimated parameters was used (19, 20). The minimum ratio is 5 to 1, the median is 10 to 1, and the maximum limit is 20 to 1. In the present study, there are 28 freely estimated parameters. Considering the average limit of Muller criteria (20), which is 10 to 1 ($28 \times 10 = 280$), a sample of 280 cases is considered suitable for this study. To increase the generalizability of the results, a sample of 400 subjects was selected. The survey was made online (WhatsApp, Telegram, Instagram, and IGP) and shared with students getting approval from the university. In this research, participants were asked to answer the Basic Psychological Needs Questioner (BPNQ), the Body Dysmorphic Metacognitive

Questionnaire, the Body Consciousness Scale (OBCS), and The Five Facet Mindfulness Questionnaire (FFMQ). Out of the 400 questionnaires gained through Internet deployment, 23 were eliminated, and data analysis was conducted on 377 questionnaires. The inclusion criteria entailed university students willing to participate in the study and an age group over 18 years old. On the other hand, the exclusion criteria were incomplete answer sheets and the absence of physical or mental illness.

To ensure ethical accountability, the subjects were initially informed that their information would not be disclosed to anyone except for research purposes. Therefore, after presenting the opening arguments, every individual took part in the study on their own terms. Nevertheless, in order to ensure ethical principles and personal information confidentiality during data collection, the subjects' names were not required, and the codes were assigned to each subject. The 5% truncated mean statistic was used to assess the normality of the data. This statistic looks at the top 5% and bottom 5% of all variables and calculates a new mean. In normal data, the mean scores at both ends of the variable will not have a marked impact on the main mean. In addition, the skewness and kurtosis of variables were also examined to verify data normality. The data was analyzed using SPSS (version 22) and AMOS (version 22) software packages in accordance with the objectives of the present study.

3.1. Objectified Body Consciousness Scale (OBCS)

The Objectified Body Consciousness Scale (OBCS) consists of two subscales: body shame (8 items) and body surveillance (8 items) (21). The items are rated on a 7-point scale ranging from 1-7 (1=strongly disagree and 7=strongly agree, with higher scores signifying higher levels of self-objectification. The OBCS had good internal consistency for all subscales, with a Cronbach's alpha of $\alpha = .82$ for body shame, which was higher than body surveillance ($\alpha = .68$) and control beliefs ($\alpha = .75$). In a study by Norozi et al. (2018), the Cronbach's alpha coefficients were reported as 0.83 and 0.90 for body surveillance and body shame, respectively (22). After removing item 8, Cronbach's alpha coefficients for this questionnaire in the present study were obtained at 0.86, 0.82, and 0.82 for the total questionnaire, the body surveillance, and body shame subscales, respectively.

3.2. Basic Psychological Needs Questioner (BPNQ)

Basic Psychological Needs Satisfaction: The Basic Psychological Needs Satisfaction and Frustration Scale (BPNSFS) was used to assess trainees' satisfaction with their needs for autonomy, competence, and relatedness (23). This questionnaire consists of 24 items that measure needs, satisfaction, and frustration on a 5-point scale. The Cronbach's alpha coefficient of this questionnaire in the present

study, excluding item 12, was calculated at 0.87, 0.78, 0.73, and 0.68 for the entire questionnaire and the subscales of autonomy, competence, and communication, respectively. This scale can be used for the research population in Iran (24).

3.3. Body Dysmorphic Metacognitive Questionnaire (BDMCQ)

The BDMCQ consists of 31 items and four subscales: Metacognitive control strategies (items 1-14), thought-action fusion (items 15-22), positive and negative metacognitive beliefs (items 23-27), and safety behaviors (items 28-31) (25). This questionnaire is rated on a scale from 1 to 4. In the study by Rabiei et al. (2012), the reliability coefficient (Cronbach's alpha) of the entire questionnaire and its subscales was greater than 0.7, pointing to the reliability of the tool (25). In the present study, the internal consistency of the BDMCQ was good ($\alpha=0.81$). The Cronbach's alpha coefficient of this set of questions was 0.86 in the study by Dousti et al. (2021) (26). Cronbach's alpha coefficient of this questionnaire in the present study for the entire questionnaire and sub-sections of metacognitive control strategies, integration of thought and action, positive metacognitive beliefs, and negative and safety behavior were 0.97, 0.96, 0.94, 0.85, and 0.82, respectively.

3.4. Five Facet Mindfulness Questionnaire (FFMQ-15)

This self-report involves answering 15 questions and measuring mindfulness in daily life. The FFMQ-15 measures five scales of mindfulness: observing, describing, acting with awareness, non-judgment, and non-reaction. The results encompass the mean total score and five subscale scores. The mean score was calculated by summing responses divided by the number of items, indicating the average level of agreement with each subscale (1=rarely true, 5=always true). Higher scores indicate that someone is more attentive to their daily life. The five subscales include observation (1, 6, and 11), which examines our perception patterns in terms of sight, sensation, and perception of both the environment and external stimuli. Description (items 2, 7, 12): how we label our experiences and verbalize them to ourselves and others. Conscious action (points 3, 8, 13): the movements we choose after paying attention to the information present at that moment. It determines whether we act on quick judgment and get off "autopilot" before reacting to a situation. Non-judgment (items 4, 9, 14): the ability to not make judgments regarding our inner experiences. It measures self-acceptance and empathy towards oneself and others. Non-reactivity (items 5, 10, 15): actively detach from negative thoughts and emotions so that we can accept their existence and choose not to react to them. This scale can be used for clinical or nonclinical populations aged 16 and above. The

internal consistency reliability of the five FFMQ scales was 0.82 or higher. The five-facet scale of the FFMQ has been shown to have good internal consistency, with alpha coefficients ranging from 0.75-0.91, and the measure is found to be sensitive to changes during cognitive therapy full consciousness features (27). In the study conducted by Dezhban et al. (2020), Cronbach's coefficient was reported as 0.83(28). The questionnaire in this study had a Cronbach's alpha coefficient of 0.84.

4. Results

The mean age of participants was 28.51±7.62 years (age range: 19-60) Regarding educational level, 234 (62%), 122 (32%), and 21 (6%) cases hold bachelor's, master's, and PhD degrees, respectively. Regarding gender, 280 (74%) and 97 (26%) students

participating in the study were female and male, respectively. In addition, 261 (69%) and 116 (31%) students were single and married, respectively.

As illustrated in Table 1, according to the correlation coefficient, the variables indicate a relationship that is consistent with research area theory and in the direction of expectation. Based on this table, the mean of research variables is not significantly different from their adjusted mean (called the 5% Trimmed Mean). To better understand if the data is normal, kurtosis and skewness were also checked. The information in the table shows that the kurtosis and skewness of the research variables are within a normal and optimal range, signifying that they are smaller than +1. 96 and larger than -1. 96. Based on the information provided, it can be stated that the research data is normal.

Table 1. Descriptive statistics indicators of research variables

Variables	Mean± SD	(5%Trimmed Mean)	Kurtosis	Skewness	Min	Max
Autonomy	31.89±7.67	32.07	-0.357	-0.117	7	48
Needs for competence	29.47±6.53	29.57	-0.26	-0.276	12	42
Relatedness	34.39±6.73	34.51	-0.287	0.128	11	49
Basic Psychological Needs	95.76±17.89	95.90	-0.179	-0.143	43	137
Metacognitive control strategies	26.28±12.34	25.28	0.977	0.217	14	70
Thought-action fusion	16.65±7.84	15.16	0.671	-0.454	8	40
Positive and negative metacognitive beliefs	11.23±4.77	11.01	0.399	-0.577	5	25
Safety behaviors	7.2±3.44	6.86	1/15	02/1	4	20
Body Dysmorphic Metacognitive	60.94±25.13	59.29	0.781	0.064	31	155
Mindfulness	65.75±10.93	66.02	0.344	-0.296	34	88
Body surveillance	20.42±5.37	20.37	0.028	-0.214	9	35
Body shame	20.06±6.26	20	0.353	-0.217	8	39
Body Image	40.48±9.97	40.38	0.089	-0.142	18	70

Based on Table 2, there is a moderate negative correlation between the two variables of basic psychological needs and body dysmorphic disorder ($r=-0.38$; $P<0.01$). Moreover, all aspects of basic psychological needs and aspects of body dysmorphic disorder were significantly and negatively related to each other. The results in Table 2 demonstrate that there is a very strong positive correlation coefficient between body image and body dysmorphic disorder ($r = 0.587$; $P<0.01$). Moreover, all body image dimensions and body dysmorphic disorder dimensions were positively and significantly related to each other. The results in Table 2 display that there is a moderate negative correlation coefficient between mindfulness and body dysmorphic disorder ($r = -0.381$; $P<0.01$). Furthermore, mindfulness had negative and significant relationships with all aspects

of body dysmorphic disorder.

The results in Table 3 point to a moderate negative correlation coefficient between the two variables of basic psychological needs and body dysmorphic disorder ($r = -0.38$; $P<0.01$). Furthermore, there was a moderate positive correlation coefficient between basic psychological needs and mindfulness ($r = 0.396$; $P<0.01$). In addition, a moderate negative correlation coefficient was observed between basic psychological needs and body image ($r=-0.343$; $P<0.01$). According to Table 3, a moderate negative correlation coefficient was detected between mindfulness and body dysmorphic disorder ($r = -0.381$; $P<0.01$). Based on the results in Table 3, there was a strong positive correlation coefficient between body image and body dysmorphic disorder ($r = 0.587$; $P<0.01$).

Table 2. Correlation coefficient of research variables

Variables	Metacognitive control strategies	Thought-action fusion	Positive and negative metacognitive beliefs	Safety behaviors	Body Dysmorphic Metacognitive
Autonomy	**0.373	**-.0259	**-.0271	**-.0284	**0.341
Needs for competence	**0.404	**0.309	**-.0203	**0.314	**-.0359
Relatedness	**-.0299	**0.219	**-.0197	**0.177	**-.0273
Basic Psychological Needs	**-.0420	**0.306	**-.0264	**0.303	**-.038
Body surveillance	**0.456	**0.402	**0.478	**0.425	**0.472
Body shame	**0.539	**0.486	**0.483	**0.426	**0.530
Body Image	**0.584	**0.522	**0.561	**0.497	**0.587
Mindfulness	**0.376	**0.331	**0.317	**0.334	**0.381

** $P<0.01$

Table 3. Correlation matrix of research variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12
Autonomy	0	-	-	-	-	-	-	-	-	-	-	-
Needs for competence	**0.611	0	-	-	-	-	-	-	-	-	-	-
Relatedness	**0.619	**0.457	0	-	-	-	-	-	-	-	-	-
Basic Psychological Needs	**0.885	**0.833	**0.841	0	-	-	-	-	-	-	-	-
Metacognitive control strategies	**0.373	**0/404	**_ 0.299	**_ 0.420	0	-	-	-	-	-	-	-
Thought-action fusion	**_ 0.259	**0.309	**0.219	**0.306	**0.792	0	-	-	-	-	-	-
Positive and negative metacognitive beliefs	**_ 0.271	**_ 0.203	**_ 0.197	**_ 0.264	**0.731	**0.724	0	-	-	-	-	-
Safety behaviors	**_ 0.284	**0.314	**0.177	**0.303	**0.67	**0.599	**0.639	0	-	-	-	-
Body Dysmorphic Metacognitive	**0.341	**_ 0.359	**_ 0.273	**_-0.38	**0.939	**0.902	**0.842	**0.728	0	-	-	-
Mindfulness	**0.411	**0.340	**0.254	**0.396	**_ 0.376	**_ 0.331	**_ 0.317	**_-0.334	**_ 0.381	0	-	-
Body surveillance	**_ 0.275	**0.318	*0.13-	**_ 0.283	**0.456	**0.402	**0.478	**0.425	**0.472	**_ 0.235	0	-
Body shame	**0.323	**_ 0.271	**0.176	**0.303	**0.539	**0.486	**0.483	**0.426	**0.530	**_ 0.333	**0.465	0
Body Image	**0.351	**0.342	**0.181	**0.343	**0.584	**0.522	**0.561	**0.497	**0.587	**_ 0.336	**0.831	**0.879

Considering the indirect effects of the basic psychological needs on body dysmorphic disorder through body image and mindfulness, it is obvious that the influence of the basic psychological needs of body image on body dysmorphic disorder ($P < 0.01$; $\beta = 0.288$) and the influence of basic psychological needs for a body image on body dysmorphic disorder through mindfulness for body dysmorphic disorder body type ($P < 0.05$; $\beta = 0.219$) is favorable and significant. In general, the results indicate that basic psychological needs related to body image and

mindfulness influence body dysmorphic disorder. On that basis, the presented model, the structural relationship between body dysmorphic disorder and the satisfaction of basic psychological needs with the mediating role of body image and mindfulness, is suitable enough.

As displayed in Table 4, X^2/DF is equal to 1.27 (less than 3), and RMSEA is equal to 0.048 (less than 0.06). In addition, the values of the CFI, GFI, and IFI indexes are all at a favorable level (i.e., greater than 0.9). Finally, the value of the PNFI index, which

Table 4. Direct and indirect coefficients of the research model

Paths	Coefficients	Sig.
Basic Psychological Needs → Body Dysmorphic Disorder	-0.231	0.01
Body Image → Basic Psychological Needs	-0.197	0.05
Mindfulness → Basic Psychological Needs	0.308	0.001
Body Dysmorphic Disorder → Mindfulness	-0.226	0.01
Body Image → Body Dysmorphic Disorder	0.396	0.001
Body Dysmorphic Disorder → Body Image → Basic Psychological Needs	0.288	0.01
Basic Psychological Needs → Mindfulness → Body Dysmorphic Disorder	0.219	0.05

Table 5. Model fit indices

X^2/DF	GFI	IFI	PNFI	CFI	RMSEA
1.27	0.95	0.94	0.71	0.92	0.048
Less than 3	Above 0.9	Above 0.9	Above 0.6	Above 0.9	Less than 0.06
confirmation	confirmation	confirmation	confirmation	confirmation	confirmation

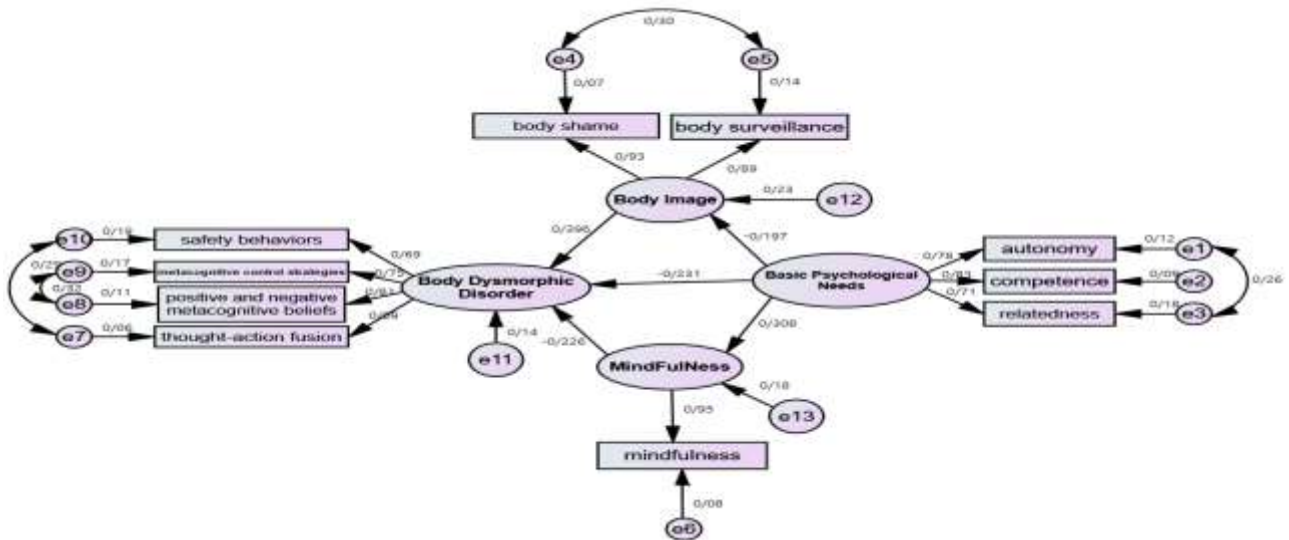


Figure 2. Structural model of research

should be greater than 0.6, was obtained at 0.71 in the present model. In general, the model fit indices demonstrate that the current research model fits the collected data well.

5. Discussion

The present research aimed to establish the structural link between body dysmorphic disorder and the satisfaction of basic psychological needs with the mediating role of body image and mindfulness. The findings indicated that body dysmorphic disorder is affected by psychological needs related to body image and mindfulness, and the presented model aligns with the empirical data pattern in this study. The results suggest that satisfying basic psychological needs is effective in reducing body dysmorphic disorder by mitigating negative body image. This finding is consistent with the results of studies conducted in Iran, such as the studies by Ahmadi Gholsfidi et al. (6), Besharat et al. (18), and Braghi Irani & Bakhtiyari (5). Moreover, the results of the current research are in agreement with the findings of studies by Vermote et al. (4), Valero-Valenzuela et al. (8), and Šakan et al. (3), which were conducted outside Iran. Conducted studies point to the associations between basic psychological needs, body image, and psychological traumas. The significance of the relationship among these factors is well-established and backed by current research (3-6). In addition, body image plays a role in moderating the connection between basic psychological needs and psychological harm (8,18).

Previous findings suggested that satisfying basic psychological needs is crucial for individuals, particularly students, to feel valued and respected (9). Individuals with greater self-control display higher levels of self-regulation, autonomy, independence, and creativity. People with higher skill levels have higher psychological abilities, problem-solving skills, and

coping skills, and people with higher communication levels have higher social support, social skills, and abilities to maintain close relationships, empathy skills, and cooperation with others (4). These factors can improve people's self-esteem and feelings of self-worth, leading to positive body image and increased respect for people's appearance. It seems that people who respect their appearance and body more do not consider their body image as imaginary flaws and take a realistic and often positive approach to evaluating their appearance and body. In fact, satisfying basic psychological needs by creating self-esteem and positive body concepts in humans causes positive body image and prevents negative body image (8). Nonetheless, if basic psychological needs are not met, and a negative body image is formed in a person, their self-consciousness and focus of attention on their own image (i.e., distortion of the image) lead to the emergence of physical disorders. Looking in the mirror too much will cause this distorted body image to become active in people's minds, and through selective attention, they will notice specific features of that image. In this way, a person is more likely than average to evaluate their own image negatively, and therefore, the distortion of the image will increase, and defects will appear more significant. Accordingly, a person's fears and anxieties increase, thoughts and images remain in their mind, and with this activation, intense mental concerns about appearance simultaneously create many imagined defects, the distortion of their body image is further formed, and body dysmorphic disorder emerges (6).

Another finding of this study suggests that the satisfaction of basic psychological needs through mindfulness influences the reduction of symptoms of somatic disorders. This finding is consistent with the results of studies conducted in Iran, such as those by Abedin et al. (29), Besharat et al. (18), and Barghi Irani & Bakhtiyari (5). In addition, these

results are aligned with research findings from foreign studies, such as Renault et al. (30), Vermote et al. (4), Šakan et al. (3), Selvi & Bozo (7), Lavell et al. (17), and Chang et al. (31). These studies, consistent with current research findings, suggest that basic psychological needs, mindfulness, and trauma are closely related, and mindfulness may mediate the relationship between basic psychological needs and psychological trauma (3-5, 7,8,17,18,29,31).

According to self-determination theory, the satisfaction of basic psychological needs causes a person to become more aware of their internal and environmental cues, desires, and preferences and adopt an attitude of non-self-determination, judgment, and non-defensiveness with greater attention and acceptance of these experiences (30). This awareness of experiences, thoughts, and behaviors makes it easier for people to manage their unhelpful thoughts and behaviors (such as those associated with body dysmorphic disorder) and improve how they solve problems. This mindfulness helps people correct negative behavior patterns and automatic negative thoughts and adopt new patterns of thinking and behavior, thereby increasing vitality and mental health (29).

By increasing self-compassion, mindfulness can work to reduce all the behaviors and symptoms associated with body dysmorphic disorder. Conscious people accept painful and unhappy emotional experiences and thoughts related to physical deformities and do not hide their physical appearance defects through behavioral efforts. These people strive to kindly accept all the emotions, thoughts, and experiences related to their ugliness and change these negative emotions and thoughts into positive ones. In other words, conscious people accept all their physical and appearance characteristics without judgment and do not change them. Furthermore, these individuals attempt to use new constructive coping strategies to deal with this disorder and overcome the symptoms of this disorder by questioning the content of thoughts, feelings, and emotions related to body dysmorphic disorder or by redirecting the mind to more positive questions (24).

One way to explain this is by referring to the presuppositions of the theory about the right to self-determination, in which basic psychological needs are linked with somatization disorders mediating body image and mindfulness. This theory views human development and mental health as dependent on the satisfaction of three basic psychological needs: autonomy, competence, and relatedness. Furthermore, it denotes that if human efforts to meet these basic needs are unsuccessful, mental health-threatening situations "such as body dysmorphic disorder" are caused by a negative impact on personal characteristics. People with low

levels of self-control have poor self-control and independence in action, and people with lower levels of competence have a low ability to solve and cope with problems. People who desire a reduced level of attachment exhibit lower levels of social support, less ability to maintain intimate relationships, and weaker empathy skills. These problems can lead to the emergence of psychological disorders through adverse effects on people's personalities, emotional characteristics, and behavior (32). In other words, the failure of basic psychological needs through depressed mood, incompatible cognitive and behavioral patterns, such as thoughts and behaviors related to negative body image, impulse control problems, lack of goal-directed behavior, lack of emotional awareness, and lack of emotional awareness, personal thoughts, environmental stimuli, or in other words, poor cognition, can cause psychological disorders, such as somatoform disorders (33).

This study encountered shortcomings and limitations during its implementation, such as the use of easy sampling methods and online questionnaires. Modulating and influencing variables in the research model, such as age, marital status, and educational level of students, were not taken into account. The lack of full cooperation of some students in completing the questionnaires led to the rejection of some study questionnaires. Failing to conduct a clinical interview to measure disorientation disorder and the use of self-report questionnaires to compare people's responses may account for social desirability bias, consciously or unconsciously. Therefore, given the limitations mentioned, generalizations of study results should be made with great caution.

6. Conclusion

As evidenced by the obtained results, it can be concluded that such traits as satisfying the basic psychological needs of autonomy, competence, and communication by influencing increased awareness of the present moment and attention, the practice of "mindfulness," and a decreased focus on body image, along with respect for body and appearance, can help students avoid symptoms of body dysmorphic disorder.

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Conflicts of interest

The authors confirm that the research was carried out without any commercial or financial conflicts of interest.

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