

The Relationship between Body Dysmorphic Disorder and Emotion Regulation in Individuals Seeking Cosmetic Surgery: The Mediating Role of Self-Concept

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Article Info

Article Note:

Received: November 2023

Accepted: December 2023

Publish Online: December 2023

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Keywords:

Body dysmorphic disorder;
Body image;
Emotion regulation;
Self-concept.

Abstract

Background: Body dysmorphic disorder significantly reduces self-esteem and may be prevalent among individuals seeking cosmetic surgery.

Aim: Investigating the mediating role of self-concept in the relationship between body dysmorphic disorder and emotion regulation in individuals seeking cosmetic surgery in Ahvaz.

Methods: This descriptive-correlational study employed structural equation modeling. From individuals with body dysmorphic disorder who visited beauty clinics in Ahvaz in 2022, 180 participants were selected using a convenience sampling method. Data were collected using the Body Dysmorphic Metacognitive Questionnaire, Emotion Regulation Questionnaire, and Self-Concept Questionnaire. Pearson correlation coefficient and structural equation modeling using AMOS and SPSS version 23 were employed for data analysis.

Results: The results indicated that the model fit indices were within the acceptable range. There was a significant negative correlation between body dysmorphia and positive emotion regulation (reappraisal) ($r=-0.37$), a significant positive correlation between body dysmorphia and negative emotion regulation (suppression) ($r=0.42$), and a significant positive correlation between body dysmorphia and self-concept ($r=0.22$). Furthermore, the relationship between suppression and reappraisal with body dysmorphia was significantly mediated by self-concept.

Conclusion: Self-concept plays a significant role in the relationship between body dysmorphic disorder and emotion regulation. Individuals with higher levels of body dysmorphia may exhibit poorer emotional regulation strategies and lower self-confidence. These results highlight the importance of addressing self-concept in the treatment of body dysmorphic disorder.

Conflicts of Interest: The Authors declare no conflicts of interest.

Please cite this article as: Namadmaliani Zadeh Z, Johari Fard R, Talebzadeh Shoushtari M. The Relationship between Body Dysmorphic Disorder and Emotion Regulation in Individuals Seeking Cosmetic Surgery: The Mediating Role of Self-Concept. J Otorhinolaryngol Facial Plast Surg 2023;9(1):1-9. <https://doi.org/10.22037/orlfps.v9i1.47251>

Introduction

Some individuals, despite having a normal or nearly normal physical appearance, have a persistent preoccupation with their physical appearance, leading them to report an excessive fear of being ugly, unattractive, or deformed (1). This characteristic is referred to as body dysmorphic disorder. Body dysmorphic disorder is a serious mental disorder characterized by a disturbed perception of

physical appearance and a range of delusional beliefs about the body, such as intrusive and recurrent thoughts about perceived defects, deformities, or flaws in one's physical appearance (2). Individuals with body dysmorphic disorder exhibit an excessive focus on a perceived or minor defect in their physical appearance, resulting in reduced quality of life and daily function (3). Characteristics of these

individuals include comparing their appearance to others, excessive hiding, skin picking, and seeking reassurance, because of their presumed distorted body and physical appearance, such as their face, nose, ears, breasts, and thighs, with constant dwelling on these areas (4). This is a relatively common disorder and is associated with other disorders, such as depression and social anxiety, with several negative consequences, including reduced quality of life and decreased self-esteem (5).

Numerous individuals, biological, social, and cultural factors contribute to the development and exacerbation of body dysmorphic disorder (6, 7). Self-concept is one such factor that can play a role in the development of this condition. A significant portion of an individual's psychological and emotional well-being depends on how they feel about themselves. A person's mental attitude towards their personal and emotional dimensions is referred to as self-concept (8). Self-concept is essentially the image and perception that each individual form of themselves. People's perceptions of themselves are largely shaped by their past experiences, including successes and failures, and by what others think of them and the feedback they receive from others (9). In many cases, individuals do not have a clear and accurate perception of themselves, their abilities, or their physical appearance. However, self-awareness and correct self-perception are essential because an individual's perception of themselves influences their behavior and performance (10). In fact, an individual's self-concept affects how they feel about themselves, and this feeling is directly related to self-esteem (11). Individuals with a positive self-concept have greater satisfaction with themselves and their lives and pursue their goals with confidence. Existing evidence suggests that individuals seeking cosmetic surgery, compared to others, report higher levels of body dysmorphia and lower self-esteem and positive self-concept (12).

Cosmetic surgery is a specialty that uses surgical and medical techniques to repair, maintain, or enhance physical appearance (13). Iran ranks as one of the highest cosmetic surgery-performing countries in the world (14). Existing evidence suggests that cosmetic surgery is largely rooted in psychological and personality disorders, and studies have shown that individuals seeking cosmetic surgery suffer from more psychological problems than others (15). Evidence of this can be seen in the fact that cosmetic surgeries are often performed due to individuals' dissatisfaction with minor or imaginary flaws in their appearance rather than restoration of normal physical and social function, as is the case with reconstructive plastic surgery. It has been shown that these individuals focus more on their physical characteristics than others and often perceive them as undesirable (10).

On the other hand, studies have shown that there is a direct relationship between self-concept and emotional regulation, such that individuals' potential capacity to tolerate negative emotions and regulate emotional responses plays a significant role in modifying individual attitudes and promoting individual and social adaptation (16). Emotional regulation and control always accompany an individual's reaction to threatening experiences and stressful life events (17). Emotional regulation refers to the capacity to monitor, evaluate, understand, and modify emotional reactions to promote normal function (18). This process involves individuals regulating their emotions, either consciously or unconsciously, by modifying their experiences or changing the situation that evokes the emotion. Therefore these strategies are actions that indicate how individuals cope with stressful situations and adverse events. Difficulties in emotional regulation have been identified as key components in several psychopathology models for specific disorders and are associated with a range of emotional disorders, including anxiety and depression (19).

Emotion regulation strategies play a role in all life processes and, by helping to manage or regulate emotions, give individuals greater adaptability, especially in terms of negative emotional experiences. Individuals' capacity for effective emotional regulation influences psychological well-being, physical health, interpersonal relationships, and social interactions (20). Research shows that emotional regulation strategies in which individuals make effective efforts to maintain awareness, understanding, and comprehension of their emotions are associated with positive psychological adjustment (21). Additionally, those seeking cosmetic surgery have higher scores on maladaptive emotion regulation strategies compared to others, and these individuals use rumination and self-blame strategies (22).

Thus, emotion regulation strategies appear to play a role in predicting body dysmorphic disorder through their influence on self-concept. On the one hand, studies have shown that proficiency in using adaptive emotion regulation strategies plays a significant role in the level of individual and social adjustment and helps individuals cope with disturbing events (23). On the other hand, individuals seeking cosmetic surgery and those with body dysmorphic disorder experience low self-esteem and generally have an unfavorable self-image (13). Therefore, to identify the factors and mechanisms involved in body dysmorphia, the present study aimed to investigate the mediating role of self-concept in the relationship between body dysmorphic disorder and emotion regulation in individuals seeking cosmetic surgery.

Methods

The present study was a descriptive-correlational study using structural equation modeling. The population of this study consisted of all individuals with body dysmorphic disorder referred to beauty clinics in Ahvaz in 2022. A convenience sampling

method was used, and 180 individuals were selected to participate in the study. The inclusion criteria for participants were completing an informed consent form, age range of 20 to 35 years, having at least a high school diploma, having body dysmorphic disorder based on a score above the mean on the body dysmorphic disorder scale, and not having acute mental or physical disorders. The exclusion criteria included incomplete questionnaires and the participant's unwillingness to continue with the research process.

Measurement Tools

Body Dysmorphic Metacognitive Questionnaire (BDMQ)

This questionnaire was developed and validated by Rabiei et al. (24). This questionnaire consists of 31 questions and four dimensions: questions 1 to 14 relate to metacognitive control strategies, questions 15 to 22 relate to thought-action fusion, questions 23 to 27 relate to positive and negative metacognitive beliefs, and questions 28 to 31 relate to safety behaviors. The questions of the body dysmorphic disorder questionnaire are on a 5-point Likert scale, including strongly disagree, disagree, neither agree nor disagree, agree, and strongly agree, and are scored from zero to five, respectively. Therefore, the minimum score is 31 and the maximum score is 155.

A score between 31 and 62 indicates a low level of body dysmorphic disorder, and a score above 93 indicates a severe level of body dysmorphic disorder. In the study by Rabiei et al. (24), its reliability coefficient was measured as 0.90 using Cronbach's alpha.

The Emotion Regulation Questionnaire (ERQ)

The Emotion Regulation Questionnaire (ERQ), a 10-item self-report measurement developed by Gross and John (25), was employed to assess participants' utilization of emotion regulation strategies. The instrument comprises two subscales: cognitive reappraisal and expressive suppression, each consisting of five items.

Responses were captured on a 7-point Likert scale. The reliability of the Persian adaptation of the ERQ was established through Cronbach's alpha, yielding a coefficient of 0.91 (26).

Self-Concept Questionnaire (SCQ)

Developed by Carl Rogers in 1961, this instrument is designed to measure an individual's self-concept. The questionnaire consists of two forms, each presenting the same set of 25 pairs of contrasting personality traits. Respondents describe how they see themselves in the first form, and in the second form, they describe how they would ideally like to be.

In this test, a high self-concept score indicates a discrepancy between the real self and the ideal self, suggesting a weak and negative self-concept in the individual. Test scores are categorized as follows: 0-7 is considered normal, 7-10 is considered average, and 10 and above is considered negative (27). The internal consistency of the Persian version of the SCQ was assessed using Cronbach's alpha, demonstrating a reliability coefficient of 0.91 (28).

Statistical analyses

Statistical analyses involved descriptive and inferential techniques. Descriptive statistics, such as means and standard deviations,

characterized the research variables. Pearson's correlation coefficient assessed relationships between variables, while structural equation modeling (SEM) explored hypothesized relationships. SPSS-23 was used for initial data exploration, and AMOS-23 for SEM analysis.

Results

A total of 180 individuals participated in the study. Regarding the types of surgeries performed, 55 (29.26%) underwent rhinoplasty, 45 (23.94%) underwent blepharoplasty, 29 (15.43%) underwent brow lift, 42 (22.34%) underwent a facelift, and 17 (9.03%) underwent lip lift. The mean age of the participants was 27.89 years (SD=6.12).

Of the 180 participants, 133 (73.9%) were female and 47 (26.1%) were male. Additionally, 122 (67.8%) were single and 58 (32.2%) were married. Regarding education, 58 participants (32.2%) had a high school education, 88 (48.9%) had a bachelor's degree, 30 (16.7%) had a master's degree, and 4 (2.2%) had a doctorate degree.

The means, standard deviations (SD), skewness, kurtosis, and correlations between the study variables are presented in Table 1.

Table 1. Mean, standard deviation (SD), skewness, kurtosis, and Pearson correlation coefficients of the research variables

Variables	Mean	SD	Skewness	Kurtosis	1	2	3	4
Body dysmorphia	124.74	17.39	1.02	2.18	1			
Reappraisal	22.92	5.16	-1.13	-1.82	-0.37**	1		
Suppression	2.89	3.27	0.16	1.24	0.42**	-0.28**	1	
Self-concept	14.52	2.29	0.34	1.44	0.22*	-0.31**	0.29**	1

** $P < 0.01$; * $P < 0.05$

As shown in Table 1, the correlation coefficient between body dysmorphia and reappraisal ($r = -0.37$), suppression ($r = 0.42$), and self-concept ($r = 0.22$) was significant. The skewness and kurtosis values of the variables in Table 1 indicate that the assumption of normality of the distribution of the variables was met. The model fit indices are shown in

Table 2. The results showed that all indices were within the range of good fit. Figure 1 shows the proposed model pathways of the mediating role of self-concept in the relationship between body dysmorphic disorder and emotion regulation.

Table 2. Fit indicators in the proposed model

Fit indicators	Value	Acceptable criteria
χ^2	77.43	-
df	30	-
(χ^2 /df)	2.58	<3.0
GFI	0.92	>0.90
AGFI	0.91	>0.85
CFI	0.93	>0.90
NFI	0.96	>0.90
TLI	0.91	>0.90
RMSEA	0.009	<0.080

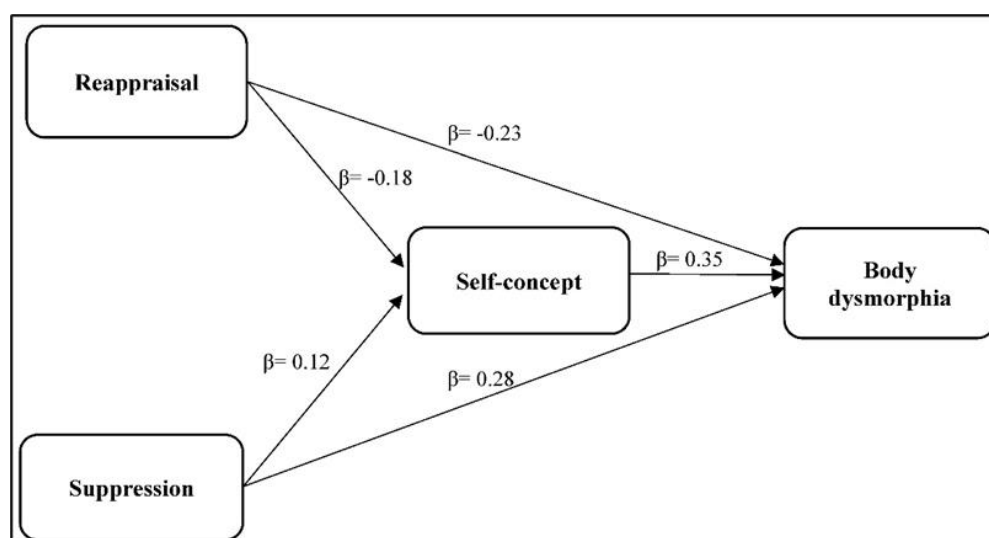
**Figure 1.** The proposed model.

Table 3 presents the path coefficient estimates for the proposed model. The direct effects of suppression and reappraisal on body dysmorphia were significant ($\beta=0.28$, $P=0.010$; $\beta=-0.23$, $P=0.001$, respectively). Additionally, both suppression ($\beta=0.12$, $P=0.032$) and reappraisal ($\beta=-0.18$, $P=0.010$) were significantly associated with self-concept.

Self-concept was also found to significantly predict body dysmorphia ($\beta=0.31$, $P=0.008$). Regarding indirect effects, both suppression ($\beta=0.13$, $P=0.010$) and reappraisal ($\beta=-0.11$, $P=0.010$) significantly influenced body dysmorphia through the mediating role of self-concept.

Table 3. Path coefficient estimates for direct and indirect relationships

Path	Proposed model	
	β	P
Suppression → Body dysmorphia	0.28	0.010
Reappraisal → Body dysmorphia	-0.23	0.001
Suppression → Self-concept	0.12	0.032
Reappraisal → Self-concept	-0.18	0.010
Self-concept → Body dysmorphia	0.31	0.008
Suppression → Body dysmorphia through the mediating role of self-concept	0.13	0.010
Reappraisal → Body dysmorphia through the mediating role of self-concept	-0.11	0.010

Discussion

The present study aimed to investigate the mediating role of self-concept in the relationship between body dysmorphic disorder and emotion regulation among individuals with body dysmorphic disorder who sought treatment at beauty clinics. The results of this study indicate that body dysmorphic disorder is negatively correlated with the reappraisal dimension of emotion regulation and positively correlated with the suppression dimension of emotion regulation. These findings are consistent with previous research that highlighted the role of adaptive emotion regulation strategies in individuals with social adjustment, positive attitudes, and coping with distressing events (23, 29, 30).

Di Giunta et al. (23) found that adolescents with higher levels of adaptive emotion regulation strategies, such as reappraisal, were more likely to report higher self-efficacy, better skills in effective communication, and better psychosocial and academic adjustment. Horn and Maercker (29) demonstrated that married individuals with higher scores in adaptive emotion regulation strategies had better marital adjustment, self-esteem, and marital satisfaction. Metsala et al. (30) also found that individuals' ability to be aware of their emotions and regulate them appropriately in challenging situations play a crucial role in their positive attitudes towards themselves and others, as well as their overall life satisfaction. However, it is important to note that while previous studies have generally supported the positive associations between adaptive emotion regulation strategies and various outcomes, the specific associations may vary depending on the population studied, the specific emotion regulation strategies assessed, and the outcome measures used.

Some studies have found that suppression can be effective in certain contexts, such as when immediate action is required to reduce conflict, while others have deemed it maladaptive (28).

In conclusion, our findings align with previous research.

Cognitive emotion regulation strategies are instrumental in navigating life's stressors and significantly influence emotional outcomes. Maladaptive strategies, such as suppression, can intensify negative effects by avoiding emotional experiences, leading to rumination and catastrophic thinking. This passive approach can hinder problem-solving and perpetuate emotional and social difficulties (29). Conversely, reappraisal, a constructive strategy, involves cognitively reframing situations to reduce negative emotions and enhance well-being. Effective emotion regulation, characterized by the use of adaptive strategies like reappraisal and the avoidance of maladaptive ones like suppression, is vital for preventing self-blame, fostering resilience, and improving overall mental health (25).

The results of the present study revealed a significant positive correlation between body dysmorphic disorder and low self-concept, indicating that low self-concept is a predictor of body dysmorphic disorder. Furthermore, it was demonstrated that self-concept has a mediating role in the relationship between emotion regulation and body dysmorphic disorder. This finding is consistent with the results of previous studies (13, 31).

For example, Milothridis et al. (13) found that individuals seeking cosmetic surgery often have negative experiences about their overall situation, including their appearance, and usually do not have a favorable self-image. Kasmaei et al. (31) also showed that attitude towards oneself can be a strong predictor of self-concept and body image in individuals, and those who suffer from negative feelings about their self-worth generally do not have a positive self-image. However, it is important to note that while previous studies have generally supported the association between low self-concept and body dysmorphic disorder, the specific associations may vary depending on the population studied and the specific

measures used to assess self-concept and body dysmorphic disorder. Additionally, some studies have found that body dysmorphic disorder can also be a predictor of low self-concept, suggesting a bidirectional relationship between these two variables (14, 15).

To elaborate, an individual with a positive self-concept knows that their abilities and weaknesses shape their life which they may base on their core values, thus, mitigating the influence of material and physical possession on their attitude towards themselves and their life. An individual with a weak and negative self-concept, compared to someone with a positive self-concept, does not accept their abilities and talents as they are, thus suffer from low self-esteem, more easily conforms to the crowd and is more easily influenced by others. This is especially true in the modern world, which places great importance on physical appearance, exacerbating body dysmorphic disorder (32). Conversely, those with a positive and high self-concept feel valuable from within and are not easily influenced by social pressures, and are therefore, less susceptible to the influence of new harmful deceptions (25). An individual who bases their self-worth on their physical appearance may find the smallest physical flaw very irritating, exacerbating their perception of themselves as deformed (2). Therefore, negative self-concept leads to inferiority complex, incompetence, distress, and dissatisfaction with oneself, and such individual may be more likely to choose cosmetic surgery to improve their disturbed psychological state. On the other hand, individuals' ability to identify their negative emotions and the causes of those emotions, which are often related to early painful experiences, can lead to an improvement in their internal self-image and, as a result, create a positive sense of self, one of the ultimate consequences of which is having a sense of satisfaction with one's physical appearance.

On the limitations of this study, our reliance on convenience sampling, may limit the

generalizability of our findings to the broader population. Additionally, the use of self-report measures can be subject to biases such as social desirability bias or recall bias, as participants may report their experiences in a socially acceptable manner or have difficulty accurately recalling their thoughts and emotions. Confounding factors that could have influenced the relationship between body dysmorphic disorder, self-concept, and emotion regulation include age, gender, severity of body dysmorphic disorder, and comorbid mental health conditions. Mediating factors that may explain the relationship between these variables include body image dissatisfaction, social support, and self-esteem. Future studies should consider controlling for confounding factors and examining the mediating role of these variables. The cross-sectional design of the study does not allow for establishing causality between the variables. It is possible that changes in self-concept may lead to changes in emotion regulation strategies, or vice versa, rather than one causing the other. Furthermore, our focus on cosmetic surgery seeking people may limit the generalizability of its findings to individuals with body dysmorphic disorder who do not seek such interventions. Finally, the study was conducted in Ahvaz, Iran, which may limit the generalizability of the findings to individuals from different cultural contexts, as cultural factors can influence body image, self-concept, and emotion regulation strategies.

Conclusion

The findings of the present study support the intricate relationship between body dysmorphic disorder, emotion regulation strategies, and self-concept. Individuals with body dysmorphic disorder exhibit difficulties in regulating their emotions, characterized by a tendency toward suppression and an avoidance of reappraisal. Furthermore, the study highlights the significant role of self-concept as a mediator in the relationship between body dysmorphic disorder and emotion regulation strategies.

These findings underscore the importance of targeting self-concept in interventions aimed at addressing body dysmorphic disorder and its associated emotional difficulties.

Acknowledgements

Not declared.

Conflicts of Interest

The authors declare no conflicts of interest.

Financial Support

The authors declared that there was no funding support for this study.

Ethics

IR.IAU.AHVAZ.REC.1400.157.

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