

The effectiveness of solution-based therapy on negative meta-emotions and symptoms of body dysmorphic disorder in cosmetic surgery applicants

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ABSTRACT

Objective: This study aimed to determine the effectiveness of solution-oriented therapy on negative meta-emotions and body dysmorphic symptoms in cosmetic surgery applicants.

Method: This research was quasi-experimental, with a pre-test, post-test and control group design with a two-month follow-up phase. The statistical population included all surgical applicants who had visited beauty clinics in the city. The statistical sample included 30 of these applicants who were selected purposefully. Then, 15 people were randomly placed in the control group and 15 people in the experimental group. The intervention group received solution-oriented therapy during 8 sessions of 90 minutes once a week. The data were collected using Meta-Emotions Scale (MES) (2009) and Body Image Concern Inventory (BICI) (2005) and analyzed by variance analysis with repeated measurements.

Results: The results showed that the main effect of the group was significant for negative meta-emotions ($F=94.2$, $P>0.05$, $P>0.771$) and for body dysmorphic disorder symptoms ($F=12.9$, $P>0.05$, $315/315$). In the negative meta-emotions variable, the main effect of the three stages of pre-test, post-test and follow-up ($P<0.05$, $P<0.05$, $F=13.5$) was significant. It was also reported as significant in the variable of body dysmorphic symptoms ($P>0.05$, $P>0.05$, $F=6.37$).

Conclusion: It can be concluded that solution-oriented therapy is effective in negative meta-emotions and body dysmorphic disorder symptoms. Therefore, they can be useful for cosmetic surgery applicants.

Keywords: solution-based therapy, negative meta-emotions, body dysmorphic disorder, cosmetic surgery.

1. Introduction

Today, cosmetic surgery is one of the most common surgeries in the world, and the number of applicants is increasing daily (Ayar & Sabanciogullari, 2021). Cosmetic surgeries are elective medical procedures that shape the evaluation of fitness and a healthy appearance to approach the aesthetic ideals of society; Cosmetic surgery refers to surgeries performed without specific medical necessity and solely for cosmetic purposes (Coffman, Dean, & Zwiebel, 2022). Since cosmetic surgery is mainly done to change people's appearance and increase and improve self-confidence, it can be assumed that it results from a certain psychological pattern. In other words, the motivation to continuously search for cosmetic surgery is based on psychological, emotional, and personality factors (Sayegh et al., 2021).

In the meantime, one of the important psychological aspects in people applying for cosmetic surgery is called *negative meta-emotions* (NME) (Lowe-Calverley & Grieve, 2021). These people, who are morbidly worried about the negative evaluations of others and experience extremely NME, are likely to avoid and run away from situations in which they are exposed to these negative evaluations (Katz, Maliken, & Stettler, 2012). Ebner and Fischer (2019) introduced the concept of meta-emotions as organizing a set of thoughts and feelings about emotions (Ebner & Fischer, 2014). Goudarzi et al. (2021) defined meta-emotions as the set of feelings and thoughts of people about the emotions experienced by themselves. Meta-emotions are emotions about emotions (Goudarzi, Gholamrezaei, & Amraei, 2021). Stein et al. (2005) defined the dimensions of meta-emotions as the organization of thoughts and feelings about emotions (Stein et al., 2005).

Among other disorders mentioned in connection with cosmetic surgery applicants is *body dysmorphic disorder* (BDD). BDD is included in the category of obsessive-compulsive disorder in DSM-5; people with this disorder feel extremely worried about an imaginary or overestimated defect and suffer mental preoccupation (Ross et al., 2021). BDD is a psychological disorder characterized by a fascination with a defect in the perception of a person's physical appearance or a distorted sense of his body (Ribeiro, 2017). BDD is generally called the syndrome of ugly imagination, and it is also called disfigurement syndrome, skin self-morbidity, body deformity, and fear of body deformity (Sapkota et al., 2023). DSM-5 represents symptoms for diagnosing BDD. According to these criteria,

a person must be mentally preoccupied due to an imaginary defect in his manifest or due to a real but small defect. Also, at some stage of the disease, one continuously commits compulsive behaviors such as constantly checking themselves in the mirror, combing and taking care of their head and condition, and even mental actions such as openly comparing himself with others. This mental preoccupation causes clinically significant pain and suffering in the individual and decreases the quality of his work in important areas of life (Nooreldin, 2023).

BDD has received less attention from psychologists because many sufferers are convinced that they have a real physical defect. Therefore, instead of treatment and receiving mental health services, they turn to cosmetic treatments to fix their perceived defects; these people usually seek help from dermatologists, Botox clinics, and cosmetic surgeons (Jassi & Krebs, 2021). It is also possible that people with BDD hide their body image concerns due to shame and embarrassment (Kulp et al., 2022).

Studies and clinical experiences show that people with BDD are often dissatisfied with the results of such procedures and would like to experience more physical treatments (Chen et al., 2023). Different treatments have been proposed to improve the situation of NME and disfigurement in cosmetic surgery applicants. One of the effective therapies for these people is the short-term *solution-based therapy* (SBT) because the positive and healthy aspects of life have been neglected in the BDD (Stanely et al., 2019). Short-term SBT is a non-pathological approach that emphasizes life's positive and healthy aspects instead of a deep focus on problems and deficits (Tashvighi & Aghamiri Aliabadi, 2020).

Instead of focusing on deficiencies and problems, solution-based therapists base their work on clients' strengths, resources, and abilities (Sommers-Flanagan et al., 2015). In the meantime, various studies show the effect of SBT on reducing negative overexcitement and narcissism. Sommers-Flanagan et al. (2015) examined the effectiveness of short-term SBT on parental stress and sense of sufficiency and showed that SBT reduces negative emotions (Sommers-Flanagan et al., 2015). Pavandi et al. (2022) showed that SBT is effective in reducing BDD and improving body image (Pavandi et al., 2022).

The psychology of cosmetic surgery is still not well known, and the researches conducted on the psychiatric characteristics of patients for cosmetic surgery are very few and mostly include clinical reports. Also, considering that the number of applicants for cosmetic surgery is on the rise

every year, which can have serious psychological consequences, it is felt that more consistent studies should be done in this field. Therefore, this research aimed to determine the effectiveness of SBT on NME and symptoms of BDD in cosmetic surgery applicants.

2. Methods

2.1. Study design and Participant

The present research method was quasi-experimental with a pre-test-post-test design and a control group with a two-month follow-up period. The statistical population included all applicants referring to cosmetic clinics for cosmetic surgery in Tehran in 2022. The sample of this research included 30 cosmetic surgery applicants willing to participate in the research and were selected through purposive sampling. Then, among the research sample, 15 people were randomly placed in the control group and 15 people in the experimental group. They were homogenized in terms of age, education level, and gender. This homogeneity was confirmed through a two-sample t-test and chi-square. The inclusion criteria included being an applicant for cosmetic surgery, having a minimum of a diploma degree, not participating in other treatment programs at the same time, and declaring satisfaction. The exclusion criteria included being absent in more than two sessions, non-cooperation during treatment sessions, simultaneous participation in other psychological treatment programs, and receiving individual counseling. In order to comply with the ethical considerations of the research, all the sample people were assured that their names would not be mentioned in any part of the research and only the results of the data would be used. In order to conduct the research, an orientation meeting was held, and a consent form and a questionnaire containing demographic information were distributed among the participants. After selecting and assigning the subjects and before the implementation of the treatment sessions, the participants of both groups were evaluated through a questionnaire. Then, the experimental treatment group was subjected to eight 90-minute SBT sessions once a week. The control group did not receive any intervention. After the end of the intervention sessions, the participants of both groups were re-evaluated with research tools. Also, after two months of the intervention, both groups were again measured with research tools.

2.2. Measurements

The data were collected using *Meta-Emotions Scale* (MES) (2009) and *Body Image Concern Inventory* (BICI) (2005)

2.2.1. Meta-Emotions

MES is a self-report scale that measures negative and positive meta-emotions was created by Mitmansgruber et al. in 2009 and has 28 items. The subject answers it on a 6-point Likert scale. This scale consists of six components: anger, humiliation/shame, intense inhibition and suppression (NME) and compassion and love (positive meta-emotions); The creators obtained the alpha coefficients in the following order: 0.76, 0.77, 0.83, 0.82 and 0.85 and for the whole scale 0.87. Mitmansgruber et al. (2009) used exploratory and confirmatory factor analysis to check the scale's validity. The results of their research showed that this test consists of two dimensions and the factor loading of each question on the relevant factor is higher than 0.40 (Mitmansgruber et al., 2009). Banisi (2019) reported the Cronbach's alpha coefficient of the whole scale in Iran as 0.78. The results of the factor analysis of this research confirmed the two main dimensions of positive and NME. Also, the convergence validity of positive meta-emotions in this tool with the emotional intelligence components of the emotional intelligence streak questionnaire was reported 0.51 (Banisi, 2019). It should be noted that the NME dimension of the present questionnaire was used in the current research. Cronbach's alpha reported in the present study was 0.890.

2.2.2. Body dysmorphic disorder

BICI is a 19-item psychological inventory designed by Littleton et al. (2005) and scored based on a Likert scale from 1 to 5. Littleton et al. (2005) identified two subscales of dissatisfaction with appearance and concern about appearance and reported the validity of this questionnaire using Cronbach's alpha method of 0.93 and item-total correlation between 32 and 73%. Also, the validity coefficient of this questionnaire has been reported as 83% through correlation with the body dysmorphic disorder self-report scale (Littleton, Axsom, & Pury, 2005). Cronbach's alpha reported in the present study was 0.797.

2.3. *Intervention*

The experimental treatment group was subjected to eight 90-minute SBT sessions once a week.

2.3.1. *Solution-based Therapy*

The short-term SBT protocol is based on the protocol of Tashvighi & Aghamiri (2019) (Tashvighi & Aghamiri Aliabadi, 2020). The content of SBT sessions is presented in the Table 1.

Table 1

The content SBT sessions

Session	Content
1	After introducing the members to each other and establishing a good relationship, and stating some rules of the group, the problem was defined from the point of view of the clients; Then, the references were invited to say the problem in one word and turn that word into a sentence. Transforming the problem into achievable goals and discussing and debating about the problem took place in the rest of the meeting. At the end, the assignments for the next meeting were presented.
2	In the second session, the previous week's assignments were reviewed; Then, the goal was set for each group member with their own help, and the solutions to solve the complaints and reach the goals were discussed. Finally, the meeting ended with the formulation of problem-solving circles. For the assignment, the group members were asked to write down their goals for participating in counseling sessions and bring them to the next session.
3	A summary of the previous meeting and the examination of the problems up to the present moment was presented; Then there was a discussion about the future. The use of exceptions and miraculous questions was discussed in the rest of the meeting, and finally, it was emphasized on finding a positive story in the client's life and related to their problem. For the task, the group members were asked to think about the situations in which they had no or fewer behavior problems in the next week.
4	In the fourth session, a summary of the previous session was presented, and the assignments given were reviewed; in the rest of the session, the key techniques and scale questions were explained, and the group members were asked to apply these techniques to their problems.
5	In the fifth session, the previous week's assignments were reviewed, and then pretend techniques, solution-based questions, posterior argument, and contradictory betting were explained. For the assignment, the group members were asked to think about being different from the current behaviors and present their answers to the group in the next meeting.
6	In the sixth session, the entire treatment program was reviewed, the group members' questions were answered, and the group members' achievement of the treatment goals was discussed. For the assignment, the group members were asked to think about consolidating and consolidating changes for the next meeting and presenting them to the group.
7	Helping people review sessions and what they have changed. The consultant showed these changes and encouraged them. In an assignment, the members were asked to bring to the meetings in writing next week about the achievements and learnings related to the group meetings and their application in life.
8	In this session, the group members, with the help of the consultant, summarized the previous session and, in the end, celebrated their success, and the success of each group member was reviewed, and the post-test was also conducted.

2.4. *Data Analysis*

The data were analyzed using SPSS version 26 and analysis of variance with repeated measurements.

3. Findings and Results

The mean age for the experimental group was 36.9±3.03, and in the control group, it was 38.3±3.9. The minimum age of the participants in this research was 28 and the maximum age was 40. Also, according to the significance level greater than 0.05, there was no significant difference between the two groups and the two groups were homogeneous in terms of age. Also, the degree of the experimental group is as follows: 13.3% of diploma, 40.3% of bachelor's degree, and 46.4% master's degree. In the control group, 10% of diplomas; 53.3% of bachelor's degrees; 36.7% of master's degrees. Also, according to the significance level greater than 0.05, there was no significant difference between the

two groups in terms of age, education level, and duration of marriage. The results of the descriptive findings of the research are presented in Table 2.

Table 2

Descriptive findings

Var.	Group	Pre-test		Post-test		Follow-up	
		Mean	SD	Mean	SD	Mean	SD
NME	Exp.	70.30	5.21	61.90	4.49	62.00	5.83
	Control	71.06	6.19	70.70	6.29	71.30	6.38
BDD	Exp.	50.30	6.29	39.80	6.53	41.10	7.42
	Control	49.40	6.19	48.80	7.05	49.60	7.35

Table 2 shows the average variables of NME and BDD in two groups, as can be seen; These variables do not show much difference between the two studied groups in the pre-test; But after the intervention, the intervention group shows a significant difference compared to the control group compared to before the intervention; Also, this difference can be seen in the follow-up phase.

The results of the Shapiro-Wilk test to check the normality of the data distribution showed that at the significance level ($p < 0.05$), the collected data were normal in all the variables of the experimental and control groups. Therefore, the assumption of normality or parametric data has been observed. The results of that M-box test in NME variable (M-box statistic = 191.6, $F = 2.69$, $P < 0.01$) and in

BDD variable (M-box statistic = 216.7, $F = 3.16$, $P > 0.01$). The significance level of F-value was less than 0.05. This result means that the assumption of homogeneity of the covariance matrix is not confirmed, but this assumption can be ignored due to the equality of the number of groups. Also, Mauchly's sphericity test for the NME variable ($W = 0.001$, $\chi^2 = 347.3$, $P < 0.01$) and the BDD variable ($W = 0.001$, $\chi^2 = 404.5$, $P < 0.01$). Because Mauchly's sphericity test is not higher than 0.05, Greenhouse-Geisser correction was used for repeated measurement variance analysis; Also, the homogeneity of the variance of the groups were reported for the variable of NME ($F = 0.146$, $P < 0.05$) and ostracism ($F = 0.444$, $P < 0.05$); It approves the homogeneity of variances.

Table 3

The results of analysis of variance with repeated measurement

Variable	Effect	Test	Value	F	Df1	Df2	p	Partial Eta ²
NME & BDD	Group*Factor	Pillai's trace	0.890	21.2	5	24	0.001	0.890
		Wilks' Lambda	0.110	21.2	5	24	0.001	0.890
		Hotteling's trace	8.11	21.2	5	24	0.001	0.890
		Roy's largest root	8.11	21.2	5	24	0.001	0.890

As the information in Table 3 shows, the research variables in the intervention group, by controlling the effect of the pre-test, the Wilks' Lambda test is significant at the level of 0.01. (Wilks Lambda=0.110, $F=2.21$, $P=0.001$, 890/). The parametric square of eta supports that 89% of the simultaneous changes of the dependent variables (NME and deviance) are related to the group (experiment). Therefore, the detailed results report in simple and interactive effects is presented as described in Table 4.

Table 4

The results of 3x2 analysis of variance repeated measures in order to investigate the effectiveness of SBT on NME and BDD in cosmetic surgery applicants.

Var.	Effect	F	p	Effect size	Power
NME	Group	94.2	0.001	0.771	1
	Stages	13.5	0.001	0.327	1
BDD	Group	12.9	0.001	0.315	1
	Stages	6.37	0.001	0.185	1

The results of Table 4 show that the main effect of the group for NME ($F=94.2$, $P>0.05$, 771) and for ostracism ($F=12.9$, $P>0.05$, 315/315) are meaningful; That is, there is a significant difference between the two groups in terms of

the mean of NME and ostracism. The results of Table 4 show that in the variable of NME, the main effect of the three stages of pre-test, post-test and follow-up ($P < 0.05$, $P < 0.05$, $F = 13.5$) is significant. Also, the main effect of three phases of pre-test, post-test and follow-up ($P < 0.05$, $P < 0.05$, $F = 6.37$) is significant. In other words, there is a significant difference between the scores of NME and disorientation in the three stages of pre-test, post-test and follow-up, taking into account the different test and evidence groups. In the continuation of examining the observed differences in the main effect of time (three execution stages), the Bonferroni post-hoc test was used, the results of which are presented in Table 5.

Table 5

The results of Bonferroni's post-hoc test to compare NME and BDD in three stages

Variable	I	J	Mean diff (I-J)	p
NME	Pre-test	Post-test	-9.98	0.001
		Follow-up	-12.40	0.001
BDD	Pre-test	Post-test	-9.67	0.001
		Follow-up	-14.30	0.001

According to Table 5, it can be seen that, in general, the NME scores of cosmetic surgery applicants have decreased from the pre-exam to the post-exam and follow-up stage, indicating the effect of SBT on the experimental group members. The difference between the pre-test and post-test stage ($p > 0.05$, $d = 9.98$) and follow-up pre-test ($p > 0.05$, $d = 12.4$) is significant; represents the influence of SBT on NME. Also, in the BDD variable, the difference between pre-test and post-test stage ($p < 0.05$, $d = -9.67$) and follow-up pre-test ($p < 0.05$, $d = -14.3$) is significant, which shows the effect of SBT on BDD.

4. Discussion and Conclusion

The present study was conducted to investigate the effectiveness of SBT on NME and BDD symptoms in cosmetic surgery applicants. The result of the present study showed that SBT is effective in reducing NME and BDD symptoms of people applying for cosmetic surgery. The result is consistent with the results of previous studies (Ayar & Sabanciogullari, 2021; Banisi, 2019; Katz, Maliken, & Stettler, 2012; Kulp et al., 2022; Pavandi et al., 2022; Stanely et al., 2019; Stein et al., 2005; Tashvighi & Aghamiri Aliabadi, 2020). In the explanation of the findings, it can be said that short-term SBT is based on the important belief that change is possible. Therefore, in this treatment method, instead of the disease, emphasis is placed on recovery and progress in recovery (Tashvighi & Aghamiri Aliabadi, 2020). In other words, instead of this treatment looking for where the problem is and how to fix it; It seeks what is right and how it can be applied (Ayar & Sabanciogullari, 2021). When the problem is difficult to understand and decipher, tolerance for chaos is minimized. SBT reduces NME by creating understanding and reframing the problem (Stanely et al., 2019). Due to the exceptional questioning technique, people can remember the times when they did not have the

current problem or if they did, the severity of these problems was very low. Extracting these moments without problems allows people to understand how life was in those situations and what they did to behave the same way now (Ayar & Sabanciogullari, 2021). SBT techniques make people find different solutions to solve their problems. As a result of improving and reducing the severity of their problems, their indecisiveness will be reduced (Sommers-Flanagan et al., 2015). Besides, their self-esteem will increase and their pessimism will decrease.

In general, it can be said that SBT has a non-pathological view toward clients and helps clients to focus on current problems and provide solutions for their problems by emphasizing the here and now. In particular, in this approach, finding solutions is emphasized (Tashvighi & Aghamiri Aliabadi, 2020). SBT affects various aspects of body dysmorphic pathology, such as pathological attitudes, comorbidities and risky behaviors, and emotion dysregulation (Pavandi et al., 2022), and for this reason, SBT have reduced NME and BDD symptoms in the experimental group sample.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethics principles

In this research, ethical standards including obtaining informed consent, ensuring privacy and confidentiality were observed.

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