Hardiness, defense mechanisms, negative self-image in applicants and non-applicants of cosmetic surgery

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Abstract

Introduction: Today the psychological factor is one of the controversial subjects in tendency to cosmetic surgery. This study has aimed to compare the hardiness, defense mechanisms and negative self-image among cosmetic surgery applicants with non-applicants.
Methods: This causal-comparative study was carried out in Tehran, Iran from April to June 2015. The samples of this study included 60 applicants and non- applicants of cosmetic surgery which were referred to private clinics for cosmetic surgery in regions one and two in Tehran and were selected by convenience sampling. The study tools included defense mechanisms questionnaires and psychological hardiness questionnaires, negative self-portrayal scale questionnaire and a demographic questionnaire. Data was analyzed by analysis of variance and multivariate tests.
Results: The results of the multivariate analysis of the variance test indicated a significant difference between the applicant and the non-applicant of cosmetic surgery in hardiness aspects (control and commitment), defensive styles (matured, immature and neurotic), and negative self-portrayal scale (anxiety signs and physical appearance).
Conclusions: Due to the differences between the hardiness, defense mechanisms and negative self-portrayal among applicants and non-applicants of cosmetic surgery, it is important to pay much attention to psychological structures before doing cosmetic surgery.

Keywords: Hardiness, Defense Mechanisms, Negative Self Image, Cosmetic Surgery

Introduction

In line with the tendency of modern societies to assess welfare person's wellbeing through physical appearance, the prevalence of cosmetic surgery has also been increased. Constant pursuit for beauty is not only an aesthetic ideal, but is also an expression of individual satisfaction [1] and the balance between the character and the external appearance [2]. While there is no doubt about volubility and usefulness of plastic surgery, this argument cannot be the same as stated in cosmetic surgery [3-5]. The negative view on cosmetic surgery has diminished with the emergence of a new concept of health. Earlier, the World Health Organization (WHO) has defined health as the absence of disease, however it has also defined health as mental, social and physical wellbeing. This change in the concept of health includes the value of a mental that a person has on his own body. Self-portrayal scale is of the most significant psychological issues studied in cosmetic surgery. From self-portrayal scale of cosmetic surgery of the applicants and the relationship between self-portrayal scale and cosmetic surgery [6, 7], to the effect of advertisements of cosmetic surgery on self-portrayal scale [8], or the effects of plastic surgery on self-portrayal scale [9, 10] have been investigated. The pursuit of beauty through surgery is a psychological withdrawal from reality that may depend on many factors including personal defense style; because the defense mechanisms- with their non-conscious and multidimensional characters- influence many of the behaviors, attitudes, emotions and feelings [11].

Defenses are considered as a model of basic emotions and people use them to compromise negative emotions in life styles [12]. Defense mechanisms in the fields of cosmetic surgery may be non- conscious feeling to escape reality or negative self-portrayal scale [13]. In addition, studies have shown that an immature defensive style is more seen in volunteers of cosmetic surgery [13, 14].

Some studies have shown that those with minor defects in their appearance which do cosmetic surgery often experience psychological distress, low self-esteem and distorted perceptions of their physical and psychological profile [15]. This state can be linked to their level of hardiness. Hardiness as a constellation of personality traits describes a general style of performance that has been identified with a strong sense of commitment (the ability to see the world in a meaningful way), control (the idea that a person's ability affects events) and the challenges (see new experiences as opportunities for personal growth) [16]. People with hardiness, tend to experience less stress and have better psychological welfare than others [17], therefore it is likely to consider hardiness as the most important psychological structures in trends to cosmetic surgery, but few studies have been conducted in this area.

Therefore, the present study sought to reduce gaps in the existing research to answer the question of whether there is any meaningful difference between hardiness, defense mechanisms and negative self-portrayal scale of applicants and non-applicants of cosmetic surgery.

Method

The research method of this study was descriptive and cross-sectional comparative. The sampling began in April 24, 2015 and lasted for 1 month. To determine the sample size, the Cochran's sample size formula was used. The subjects of this research were 30 applicants of cosmetic surgery in the medical private centers related to cosmetic surgery in the areas 1 and 2 of Tehran. They were collected by convenience sampling. They were selected based on structured and demographic interviews for cosmetic surgery (absence of medical reasons and certainty of cosmetic surgery). The comparison group included 30 non- applicants of relatives of the applicants that had no history or interest in cosmetic surgery. Then the selected applicants of cosmetic surgery and non- applicant responded to the survey questionnaire. The inclusion criteria were the age range between 18 to 48 years and the lack of medical necessity reasons for taking cosmetic surgery actions.

Three scales were used in the study:

***Kobasa* psychological hardiness questionnaire (HS):** was designed by *Kobasa* in 1997. *Maddi* believes that the 50 materials used in this test is the third generation of hardiness tests. 5-point Likert-type scale (from very strongly disagree to very strongly agree) as follows: respondents are required to circle, 1- very strongly disagree, 2- strongly disagree, 3- neutral, 4- strongly agree 5- very strongly agree. Three components of commitment, control and challenge of this test enjoys the satisfactory validity and internal consistency and factors analysis has shown that these three factors are related to each other [18]. *Maddi* analyzed these three mentioned factors and reported an acceptable validity and reliability for hardiness scale. Studies show that the components of hardiness- commitment, control and challenge- respectively have reliability factor of 0.70, 0.52 and 0.52 and these factors have been reported 0.75 for hardiness trait as a whole. To determine the validity of the questionnaire, *Maddi* et al. studied the relationship between the questionnaire and sub-scales Minnesota pathological multidimensional questionnaire [19]. The correlation coefficient between hardiness and scales of the sub-pathological questionnaire was 0.11 to 0.53 [20]. The reliability of this test using the Cronbach's alpha coefficient in total questionnaire was 0.83, and in components of challenge, commitment and control was 0.70, 0.75 and 0.72, respectively.

The defense styles questionnaire (DSQ): was designed for the first time in 1983 by Bond and colleagues. After several appeals, finally in 1993, Andrews et al. compiled a new version of the questionnaire (DSQ-40) including 40 items to evaluate 20 defensive mechanisms in three styles; mature (4 mechanisms), neurotic (4 mechanisms) and immature (12 mechanism). Items are rated on a 9-point Likert-type scale ranging from 1 (strongly disagree) to 9 (strongly agree). The participants in each of the defensive mechanisms achieved a score of 2 to 18. In order to score any defensive styles, the average of the achieved scores for that style were calculated. Internal consistency, test-retest reliability, and convergent and divergent validity of the scale have been reported adequate [21]. In Iran, *Besharat* found this questionnaire as reliable as the original version. The reliability of the defense style questionnaire was performed through test and retest and also Cronbach's alpha calculation. The Cronbach's alpha coefficients for each of the developed and neuroticism and undeveloped styles was respectively 0.75, 0.73 and 0.74. Test-retest coefficient was reported 0.82 with a 4-week interval [22]. The level of reliability of the questionnaire in this study was calculated using Cronbach's alpha coefficient 0.68 for the whole questionnaire,0.76, 0.64 and 0.66 for mature defensive styles, immature and neurotic, respectively.

The Negative self-portrayal scale (NSPS): was designed by *Moscovitch* and *Huyder* in 2011 in Iran in order to measure one's view of his/her own body [23]. NSPS is a new scale that measures the worries of a person.. *Moscovitch* and *Huyder* suggested the three sub-scales (1) concern about the disclosure of the defects associated with physical appearance, (2) concern about the disclosure of the defects associated with social competence, and (3) concern about the disclosure of the defects associated with control of the symptoms of anxiety. The reliability of this scale within a week was r = 0.75 [24]. Reliability and standardization of this tool was examined by *Atrifard* and colleagues in 2013 that the three core elements of the questionnaire were confirmed in Iranian society [23]. The results of the reliability of this scale by internal consistency coefficients and test-retest coefficients in whole questionnaire and its subscales are more than the minimum recommended amount (0.70) by

Nunnally and *Bernstein* [25]. It can be said that the internal consistency coefficient in whole questionnaire and its subscales is at an acceptable level. In the present study, the ratio of the content validity was calculated by summing up the comments of 14 experts from discipline Psychology from the Kharazmi University. The average CVR for the constructs of the questionnaire were 0.72 to 0.84. Also, the mean content validity index of the structures was 0.66 to 0.74. The Cronbach's alpha coefficients for the reliability of the test components of social competence, physical appearance and overall anxiety questionnaire were 0.82, 0.70, 0.84, and 0.72, respectively.

Data were analyzed with SPSS version 16 (SPSS Inc., Chicago, IL, USA) at the end of study. The individual's mean score of the HS, DSQ- 40 and NSPS for the missing items of these scales were substituted. Results were shown in a descriptive manner (as different tables) and were compared with each other. The kolmogorov-smirnov (KS) test approved the normality of the sample sizes and after this approval; the differences were examined in multivariate analysis of variance (ANOVA) and multivariate (MANOVA) for quantitative variables.

Results

Results show that 80% of the subjects in the applicants of the surgery group were women and 20% were men. Among them, 70% of the women and 30% of the male were on non-applicants group. Volunteers of cosmetic surgery aged from18 to 43 with an average of 28.6 and non-volunteers aged from 20 to 48 with an average age of 33.06 years. It can be said that 56.7% of the subjects in the surgical candidates were single, 36.7% were married and in non- applicants group, 60% were single and 36.7% were married. Descriptive statistics components of psychological hardiness, defense styles and NSPS are shown in Table (1).

The results of multivariate variance analysis of applicant and non-applicant groups on hardiness components showed statistically significant differences between the two groups (Table 2).

Univariate variance analysis was used to examine the different patterns. According to table 3, both applicant and non-applicant's hardiness components- commitment factors (F=8.35, P=0.005) and control component (F=7.85, P=0.007) - had a statistically significant difference.

Table 1.M and SD of variables components in applicants and non-applicants of cosmetic surgery (N=60)

	applicants		non-applicants	
	M	SD	M	SD
commitment	15.62	6.28	19.90	5.15
control	27.09	8.71	28.38	5.77
challenge	15.82	6.09	19.90	5.15
mature	413.73	38.79	443.96	54.13
immature	622.96	105.51	566.72	74.12
neurotic	402.70	64.44	371.78	44.13
physical appearance	16.01	5.55	12.78	4.72
social competence	30.17	10.48	26.09	10.26
anxiety	13.32	5.76	10.41	3.62

Table 2. Results of analysis of MANOVA on hardiness of applicants and non-applicants

Test name	Value	F	P
Pillais	0.154	3.40	0.024
Hotelling	0.182	3.40	0.024
Wilks	0.846	3.40	0.024
Roy's	0.182	3.40	0.024

Table 3. Results of analysis of ANOVA on hardiness of applicants and non-applicants

	Total squares	df	Mean squares	F	Boot strap P value
commitment	275.824	1	275.824	8.35	0.005
control	24.999	1	24.999	0.45	0.501
Challenge	250.650	1	250.650	7.85	0.007

The results of the multivariate variance analysis of the applicant and non- applicant groups regarding their defensive style proved a significant difference between the two groups (Table 4).

Univariate variance analysis was used to examine different patterns. According to table 5, both applicant and non-applicant's defense style - mature (F=5.70, P=0.020) and immature (F=6.18, P=0.016) neurotic (F=7.17, P=0.010) – had a statistically significant difference.

The results of multivariate variance analysis of applicant group and non- applicant group about their negative self-portrayal scale proved a significant difference between the two groups (Table 6).

Univariate variance analysis was used to examine the different patterns. According to table 7, both applicant and non-applicant's NSPS have no meaningful difference in social competence (F=3.57, P=0.064). On the other hand, they have significant statistical difference in two other NSPS dimensions; anxiety (F= 4.796, P=0.033) and physical appearance (F=8.76, P=0.004).

Table 4: Results of analysis of MANOVA on defensive style of applicants and non-applicants

Test name	Value	F	P
Pillais	0.233	5.68	0.002
Hotelling	0.304	5.68	0.002
Wilks	0.767	5.68	0.002
Roy's	0.304	5.68	0.002

Table 5. Results of analysis of ANOVA on defensive style of applicants and non-applicants

	Total squares	df	Mean squares	F	Boot strap P value
mature	47450.230	1	47450.230	5.70	0.020
immature	13710.817	1	13710.817	6.18	0.016
neurotic	21377.721	1	21377.721	7.17	0.010

Table 6. Results of analysis of MANOVA on NSPS of applicants and non-applicants

Test name	Value	F	P
Pillais	0.137	2.96	0.04
Hotelling	0.159	2.96	0.04
Wilks	0.863	2.96	0.04
Roy's	0.159	2.96	0.04

Table 7. Results of analysis of ANOVA on NSPS of applicants and non-applicants

	Total squares	df	Mean squares	F	Boot strap P value
physical appearance	159.781	1	159.781	8.76	0.004
social competence	330.609	1	330.609	3.57	0.064
anxiety	82.421	1	82.421	4.79	0.033

Discussion

The results of this research showed that the level of commitment and control in hardiness structure of cosmetic surgery volunteers is significantly lower than the non-applicants. It can be concluded that hardened people use supportive resources to deal with stressful situations. In addition, these people think more realistic in their evaluation of cognitive events, they evaluate themselves more competent in dealing with stress factors and use active coping strategies such as problem solving and seeking social support. People with high hardiness tend to have meaningful experiences, consider changes as natural matters that cause enhancement. The most important characteristic of these individuals is assertiveness and self-confidence and the ability of resistance. Based on the research results, the main aspect of psychological hardiness is influencing this structure on the person's attitude towards themselves and others and a belief in their ability to carry out social activities in social situations [26]. As a result, it can be said that a psychological problem like scrimpy hardiness in life will result in negative consequents such as low self-esteem and social anxiety [27, 28]. So, low hardiness can probably lead people towards cosmetic surgery. The results of studies on the relationship between hardiness and self-portrayal scale in women showed that increasing the levels of hardiness leads to an improved self-portrayal scale [29, 30]. In fact, the lack of appropriate hardiness is the root of dissatisfaction with oneself. Consequently, people try to solve this problem by doing things such as plastic surgeries. Hardiness along with enhanced cognitive and personality factors can promote positive self-image and lead to satisfaction. If hardiness doesn't grow adequately in an individual, she/he may behave anomalously, especially cosmetic surgery. People with hardiness feature, may confront stress or pressure from negative self-portrayal scale [31]. Therefore, we can say that hardened people can use effective strategies and approaches to achieve compromise and balance, prevent and eliminate stress. Due to the stress of self-portrayal scale and reduction of tension in people with high hardiness, it can be argued that the applicants for cosmetic surgery probably have less hardiness than usual people. The results of this study indicate that immature and neurotic defense styles are higher among applicants of cosmetic surgery than non-volunteers. These results correspond the findings of *Mohammadpanah et al.* and Cramer *et al.'s* study[13, 32]. The most important use of defense styles is that when people cannot use logical methods to control their anxiety and problems, they invoke the indirect methods- the defense styles. Defense styles help people deal with anxiety [33]. Defenses that are used depend on the level of growth and the level of anxiety. These styles can be used as a shield against fear and anxiety and negative notion of physical appearance. Cramer *et al.* [32], investigated the predictive nature of defense styles of self-acceptance and self-portrayal scale. The results show that people who aren't satisfied with their appearance make more use of immature defense styles such as denial, and those who show self- control, assertiveness and more positive emotions use the mature defense styles such as simulation.

According to research reports, people who have low self-acceptance and are not satisfied with their appearance, often use immature defense styles. Cramer *et al.* [32], reported that people with negative body image make more use of immature defense styles and tend to use immature defense styles to solve conflicts. Falling in lower levels of ego development and using immature defense styles will result in negative functions in people

suffering from them. These women/men internalize others' judgments about goodness and put their own judgments aside, even the correct ones. Relying on the judgment of others is the main obstacle in the development of autonomy and individuality, which are the basic pillars for mature defense styles. Therefore, defense styles change the persons' opinion about themselves. Dissatisfaction and shame of physical appearance confirms their defense styles and consequently they try to change their appearance. The results show that the defense style of cosmetic surgery applicants is of neurotic kind. In other words, these people seek irrational ways to confront tensions and failures including cosmetic surgery [13]. In order to explain this phenomenon, we can say that cosmetic surgery applicants may use defense styles unconsciously to escape reality or negative self-portrayal scales. Consistently the use of neurotic defense style by people to deal with life issues, often leads to long- term problems in relationships and work. In other words, neurotic defense styles are a series of non-adaptive strategies to deal with anxiety caused by hidden and repressed desires, and consist of a mixture of dependence on others and personal desires [12]. Hence, people who make much use of these styles usually seek irrational solutions to confront oppressed tensions and their negative self-concept leads them to measures like cosmetic surgery. Finally, the results showed that cosmetic surgery applicants suffer more NSPS that is consistent with the studies of *Van-Suest et al.* [10], *Mohammadpanah et al.* [13], *Hosseini* [30], *Zare et al.* [34], *Zeighami et al.* [35], *Khanjani et al.* [36]. Body- as a psychological phenomenon- is understood through a series of multi-dimensional cognitive structures. Visual imaginations are probably the first tools to think and process information. According to research, it was found that generally there is a strong and positive relationship between self- portrayal scale and self-esteem, as well as a reverse relationship between self- esteem and depressive symptoms [37]. Changes in self-portrayal scale disturbance correlate meaningfully with changes in a person's self-esteem and negative feelings about self-portrayal scale. Meanwhile, social and cultural values and too much emphasis on attractive appearance, comparing people in terms of appearance and valuing beautiful people and facilitating things for them, negative feelings due to appearances or experiencing being ridiculed by others can make people sensitive to self-portrayal scale. As a result, people with negative self-concept use cosmetic surgery to reduce the NSPS and boost self-esteem. In confirmation of the results of this research, *Masheb et al.* [38] determined that change in mental image consternation, meaningfully correlates with the changes of a person's self-esteem and negative feelings about body self-portrayal scale. The results of *Ivorson et al.'s*[39]research showed that the difference between one's self-assessment standards of his physical appearance and the low score in self-portrayal scale significantly correlates with the positive attitude towards weight loss, negative mood and physical symptoms of stress and social fears. *Crerand et al.* [40] studied Body Dimorphic Disorder and the cosmetic surgery. The results showed that Body Dimorphic Disorder is often a severe debilitating disorder. Based on the results of this study, experts and psychologists should play a more active role in the field of cosmetic surgery and counseling to applicants. They should also consider the possibility of personal failure factors such as lack of hardiness, immature defense styles and NSPS among cosmetic surgery applicants, and provide special therapeutic/educational packages to give to the cosmetic surgery applicants.

One limitation of this study is its cross-sectional nature. This is why, we cannot deduce causal relationships from the findings. More extensive research and adopting proportional appropriate sampling methods and also considering factors which can influence variants of this study (demographic, learning and cognitive factors) can eliminate this limitation. .

Conclusions

Due to the differences between the hardiness, defense mechanisms and negative self-portrayal among applicants and non-applicants of cosmetic surgery, it is important to pay much attention to psychological structures before doing cosmetic surgery.

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