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## **Predicting Life Satisfaction Based on Demographic and Personality Characteristics and Body Dysmorphic Disorder among People Requesting For Cosmetic Surgery**

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This study aims to predict life satisfaction based on demographic, personality characteristics, and body dysmorphic disorder among people proceeding to undergo cosmetic surgery. This is a descriptive study with correlational design. The statistical population includes all of people seeking cosmetic surgery who had visited cosmetic surgical clinics in Tehran, district 3, 2015. The sample of 150 were chosen using a random multistage sampling method. The following questioners were used as measurement tools: satisfaction with life scale (SWLS), body image concern inventory (BICI), NEO five-factor inventory short form, and individual profile questionnaire. The data analysis was conducted using the hierarchical multivariate regression method; finally, the research hypotheses were tested. The results showed that, among demographic variables, marital and financial status predicted life satisfaction positively among people proceeding to undergo cosmetic surgery at .05 and .01 significance levels, respectively. The review of the regression coefficient demonstrated that the body dysmorphic disorder predicted life satisfaction negatively among people proceeding to undergo cosmetic surgery at .01 significance level. In addition, from among personality characteristics, neuroticism predicts life satisfaction among people proceeding to undergo cosmetic surgery negatively at .01 significance level while extroversion anticipates it positively at .05 significance level.

**Keywords:** life satisfaction, body dysmorphic disorder, cosmetic surgery, personality characteristics

Over the past years, life satisfaction as one of the most important indicators of wellbeing and mental health has drawn attention of psychologists to itself. In this regard, different models have been developed and tested to identify the predicting factors ([Lent, 2004](#)). Life satisfaction is associated with general individual long-term judgment and assessment of life. Therefore, one's mental wellbeing depends on positive assessment of life as a whole (Identity & Cramer, 2005). Researchers have associated life dissatisfaction with poor health conditions, personality disturbances, inappropriate health behaviors and social status. Hence, it is important to identify variables involving in life satisfaction while planning to improve it. Factors such as income, physical ([Diener & Seligman, 2002](#)) and mental health, genetics and personality ([Donovan & Halpern, 2002](#)) are known to influence on life satisfaction .

Today cosmetic surgery is one of the most popular surgery operations in medicine. Cosmetic surgery is one of the prevalent plastic surgeries in our country as well. The ever-increasing demand for cosmetic surgery both in Iran and throughout the world has brought characteristic-social variables into researchers' attention as a social health behavior and not a medical one.

Over the past decades and in order to answer numerous questions about individual differences with regard to life satisfaction, psychologists have investigated different personality aspects and divided people into various personality types and the relationship among these personality types has been assessed across different studies in order to use these findings in various economic, social, cultural and educational programs.

[Bohen et al. \(2002\)](#) found that people associate appearance attraction with pleasant personality traits including intelligence, competence and social acceptance. A quarter of the people who suffer from body dysmorphic disorder undergo plastic surgery. In body dysmorphic disorder, a patient's complaint is not proportionate to any obvious or slight physical disorder. As motives for cosmetic surgery are divided into medical and non-medical categories in general, those people who apply for cosmetic surgery due to accidents, breathing or cartilaginous problems are classified under the category of medical motives. However, evidence shows that a lot of applicants of cosmetic surgery have no approved medical reason stated in their case; and complaints after the first surgery operation have turn into an issue for cosmetic surgeons.

[Bellino et al \(2006\)](#) suggested that psychopathological reactions caused by body dysmorphic disorder and personality disorders are predating cosmetic surgery. Body dysmorphic disorder is a case observed frequently among demandants of cosmetic surgery. Body dysmorphic disorder is a mental disorder characterized by the individual's over-anxious about imaginary or exaggerated physical defects to the point that they are often preoccupied with it. Such a defect is usually imaginary; however, if it is an actual one, people suffering from body dysmorphic disorder tend to exaggerate it. In order to meet diagnosis criteria of this disorder, about the individual should be preoccupied with the imaginary physical defect to the point that lead to deficit (disability, dysfunction) in the social or professional performance or other aspects of life.

The results of the study conducted by [Yousefifefat Pishkhani \(2014\)](#) indicated that there is a significant difference among the following three primary psychological needs: autonomy,

competence and relatedness in the applicant and non-applicant groups. The intensity of BDD symptoms among people visiting cosmetic clinics is higher than normal population. In his study, suggested that physical self-esteem and body image are negatively correlated to anxiety and anticipate it well while depression is only negatively related to physical self-esteem. The study performed by [Costa & McCrae \(1992\)](#) indicated a proper adjustment with the theoretical cognitive-social model and the variables of the model were good predictors for life satisfaction in the sample population. The results of the study of [Khodabakhsh Pirkalani, Kalani & Peyvastegar \(2014\)](#) suggested that life satisfaction is significantly related to two scales of the extroversion indicator of the NEO test namely positive emotions and activity. Life Satisfaction may not related to the general concept of extraoersion; however, expression of positive emotions such as joy and activity is influential on increasing the level of people's life satisfaction.

The results of the research conducted by Seyed Abbas [Fatemiyoun \(2013\)](#) showed that less than half of the applicants for rhinoplasty surgery suffer from body dysmorphic disorder and age, gender, education, marital status, financial conditions and occupation are not associated with the disorder. The results of the research by [Sohrabi, Aliloo and Rasooliazad \(2010\)](#) indicated that people who are interested in cosmetic surgery obtained higher scores in personality models on the following scales: depression, dramatic personality, narcissism, obsessive, masochist, borderline, and schizotypal. Their grades were higher than the ordinary population in terms of clinical symptoms on the following scales: anxiety disorders, somatoform disorders, alcohol abuse disorder, thought disorders, and depressive disorders.

Among the non-native studies, the research of [Swami et al \(2009\)](#) demonstrated that people obtaining lower scores on the flexibility and intellectuality scales as well as higher scores on conscience and neuroticism scales are subject to undergo cosmetic surgery for coping with environment more. Furthermore, women are more likely to undergo cosmetic surgery than men are. The body dysmorphic disorder is very common among demandants of cosmetic surgery and is often considered as associated with axis 1 clinical disorders such as major depression, obsessive-compulsive disorder, social anxiety disorder, panic disorder, and substance abuse disorder. Personality disorders or axis 2 diagnoses are also very common among these people. It has been shown in some studies that body dysmorphic disorder anticipates poor after surgery results. [Canice et al. \(2006\)](#) indicated in their study that people who suffer from body dysmorphic disorder are not satisfied with the results of cosmetic surgery operations and these kinds of treatments seemingly are not effective. some literature such as papers by James C. Rosen et al (1995) titled “Cognitive Behavioral Therapy for Body Dysmorphic Disorder”, and [Veale \(2004\)](#) titled “Advances of the Cognitive Behavioral Model for Body Dysmorphic Disorder” reflect the importance of the issue and need to more study. The findings of the present study are in line with many of previous researches.

### **General Hypothesis**

Life satisfaction may be predicted by demographic and characteristic traits and body dysmorphic disorder among people undergoing cosmetic surgery.

### **Exclusive Hypotheses**

1. Life satisfaction may be predicted by demographic characteristics among people undergoing cosmetic surgery.
2. Life satisfaction may be predicted by body dysmorphic disorder among people who undergoing cosmetic surgery.
3. Life satisfaction may be predicted based on personality characteristics among people undergoing cosmetic surgery.

### **Method**

The present study is descriptive (non-experimental) with correlational design aiming to investigate relationship of demographic and personal characteristics and body dysmorphic disorder (predictor variables) with life satisfaction (criterion variable). The statistical population of this study includes all of those referring to cosmetic surgery clinics in Tehran, district 3, in 2015 seeking cosmetic surgery. The sample size was estimated based on predictor variables using the identity formula and Cramer's rule ( $N \geq 50 + 8\sqrt{n}$ ). As five components of personality and body dysmorphic disorder are of the same level in this study, sample size was estimated as 98; thus, a sample size of 150 were considered as an over-estimation. The multi-stage random sampling method was utilized and the data collecting tool was questioners. [Diener & Seligman \(2002\)](#) satisfaction with life scale (SWLS) was developed by [Diener & Seligman, \(2002\)](#) is a 5- item scale suited for all age groups. [Diener & Seligman \(2002\)](#) evaluated the satisfaction with life scale by a sample of 176 BA.

students. The mean and standard deviation of normative data were 23.5% and 6.43%, respectively; the correlation coefficient obtained by normative data based on two months of conducting was 82%. In Iran, [Bayani et al \(2008\)](#) investigated the validity and reliability of SWLS. The reliability was estimated equal to 83% with Cronbach's alpha and 69% using test-retest method. The Body Image Concern Inventory developed by [Littleton et al \(2005\)](#) demonstrated that this tool is of high validity and reliability. The validity of this questioner was assessed using the internal consistency method and Cronbach's alpha was derived as 93%. The correlation factor of each question with the total score of the questioner varied from 32% to 73%.

In a study by [Basaknejad and Ghaffari \(2007\)](#) on a sample of Iranian students in Iran, the reliability of the questioner of body dysmorphic disorder using Cronbach's alpha method was reported as 93%, 95%, and 95% for female, male, and total students, respectively. In order to measure the reliability of the body image questioner, Cronbach's alpha and split -half reliability method were used and the total results were equal to 90% and 86% respectively, indicating desirable coefficient of the scale. The NEO five factor inventory; regarding the validity of NEO-FFI, the results of several studies show that NEO-FFI subscales are of proper internal consistency. For instance, [Costa & McCrae \(1992\)](#) reported Cronbach's alpha between .68 (for agreement) and .86 (for neuroticism). Holden (1998) reported the alpha coefficient of these five factors within the range between .76 (for openness) and .87 (for neuroticism). The results of the study done by Moradiyan and Nazlack (1995) show Cronbach's alpha as .84, .75, .80, .79, and .79, for neuroticism, extroversion, openness, agreement and conscience, respectively.

Garoosi Farshi (1998) in Iran standardized this survey. The validity of this survey was obtained using the test-retest method with a sample of 208 students within three months as .83, .75, .80, and .79 for N, E, O, A, and C factors, respectively. Furthermore, in the research conducted by Mollazadeh (2002), the validity coefficients of test-retest reported within 37 days for a sample size of 76 martyrs' offspring as .83, .78, .73, .79, and .85 for neuroticism, extroversion, openness, agreement, and conscience, respectively. Cronbach's alpha was derived as .86 for neuroticism, .83 for extroversion, .74 for openness, .76 for agreement, and .87 for conscience. The total alpha was derived as .83.

In the context of concurrent validity among this questioner and the Myers-Briggs Type Indicator Personality Inventory, Minnesota Multiphasic Personality Inventory, the California Psychological Inventory-Revised, Gilford and Zimmerman Temperament Survey, list of streaks, and interpersonal streak scale a strong relationship was reported. There are reports with respect to validity of NEO-FFI factors as well. Costa & McCrae (1992) report that based on correlation with peers ratings the validity of five NEO-FFI factors is within a range of .44 for conscience to .65 for openness.

The research inquiry was conducted individually. After specifying clinics, the researcher visited each of them and provide them with the questioners and their responding guidelines after gaining agreement clinic director and clients. Statistical approaches of Frequency Distribution Chart, Central Tendency such as mean and Indices of Dispersion such as Standard Deviation, Internal Consistency and Inferential Methods such as the Hierarchical Multivariate Regression Analysis were



performed regarding the assumptions of the application of parametric tests.

### Results

A) Mean, standard deviation, and Cronbach's alpha of variables

**Table 1**  
**Mean, Standard Deviation and Cronbach's Alpha of Variables Including Personality, Body Dysmorphic Disorder, Age, and Life Satisfaction**

Variable	Mean	Standard Deviation	Cronbach's Alpha
Personality neuroticism	– 28.27	8.85	.915
Personality extraversion	– 38.82	9.02	.922
Personality openness to experience	– 31.10	4.89	.675
Personality agreement	– 36.93	6.72	.786
Personality– sense of responsibility	46.55	7.59	.893
Body dysmorphic disorder	26.98	11.95	.937
Age	26.96	6.55	-
Satisfaction with life	20.66	6.65	.913

As well as the mean and standard deviation of the variables, Table 1 shows their Cronbach's alpha. As it is obvious, Cronbach's

alpha for all variables except for personality openness is greater than .7, indicating desirable internal consistency for the measuring tool. And although Cronbach's alpha for the openness factor is slightly less than .7, one should bear in mind that the aforementioned index is not far from the criterion which Sharifi (2011) considered.

Table 2 shows correlation coefficients of variables.

**Table 2**  
**Correlation Coefficients of Variables**

Variables	1	2	3	4	5	6	7	8
1.personality–neuroticism	-							
2.personality–extraversion	-.775	-						
3.personality–openness to Experience	-.588	.753	-					
4. Personality–agreement	-.570	.511	.513	-				
5. Personality–sense of Responsibility	-.629	.771	.689	.507	-			
6.Body dysmorphic disorder	.296	-.155	.107	.099	.115	-		
7. Age	-.076	.067	-.051	-.065	.127	-.064	-	
8. Satisfaction with life	-.574	.506	.341	.381	.370	-.205	.186	-

P<.01; and P<.05

As Table 2 displays, there is a negative and significant relationship between the personality neuroticism factor and life satisfaction at significance level .01. The correlation among other personality factors (extroversion, openness, agreement, and sense of responsibility) and life satisfaction was positive at a significance level of .01. There was also negative correlation

between body dysmorphic disorder and life satisfaction. This relationship was strong at a significance level of .05.

### Testing Hypotheses

The hierarchical multivariate regression analysis method was used to answer the questions of the study. The results of the analysis are shown in Table 3.

**Table 3**  
**Hierarchical Multivariate Regression Analysis Predicting Life Satisfaction based on Personality Traits, Demographic Variables and Body Dysmorphic Disorder**

	B	SE	β	T	Significance Level
<b>First Step</b>					
(demographic variables)					
Gender	1.115	1.025	.066	1.122	.264
Marital status	1.892	.888	.134	2.130	.035
Age	-.008	.065	-	-.124	.901
			.008		
Assessment of financial status	1.861	.552	.365	5.180	.001
F(4,143)=25.350, P<.001	adj R <sup>2</sup> =.299; and R <sup>2</sup> =.315				
<b>Second Step</b>					
(body dysmorphic disorder)	-.151	.034	-.265	-4.382	.001
Body dysmorphic disorder					

$F(5,142)=21.636, P<.001$        $\text{adj}R^2=.312;$        $\Delta R^2=.017$   
 and  
 $\Delta F=4.382, P<.05$        $R^2=.332$

### Third Step

(personality traits)

Neuroticism	-.284	.074	-.380	-.818	.001
Extraversion	.171	.079	.235	2.150	.033
Openness to experience	-.201	.120	-.148	-1.666	.098
Agreement	.129	.078	.130	1.707	.090
Sense of responsibility					
F	$F(10,137)=21.648,$	$\text{adj}R^2=.484;$		$\Delta R^2=.180$	
P<.01		and			
$\Delta F=12.727, P<.001$		$R^2=.512$			

Based on the results provided in Table 3, the hypotheses were tested as follows:

### Hypothesis 1: demographic variables (age, gender, education, and marital status) anticipate life satisfaction among people requesting for cosmetic surgery.

As Table 3 shows, demographic variables (age, gender, marital status, and financial status) which were entered into the equation of satisfaction with life at the first step significantly anticipated life satisfaction at a significance level of .01 ( $F(143,4)=25.350, p<.01$ ). reviewing the acquired squared multiple correlations showed that the value of the multiple correlation coefficients ( $R^2$ ) was equal to .315. This indicates that demographic variables by themselves represent 31.5% of the variance of life satisfaction. The review of regression coefficients showed that both variables of marital status and financial status anticipate positively the life satisfaction among people requesting for cosmetic surgery

( $\beta=.134$ ,  $p<.005$ ) at a significance level of .05 and .01 ( $\beta=.365$ ,  $p<.01$ ), respectively. On the other hand, regression coefficients related to age and gender were not significant in predicting life satisfaction at a significance level .05. In general, it was concluded in the first hypothesis that, among demographic variables, marital status and assessment of financial status positively predict life satisfaction among people requesting for cosmetic surgery at significance levels .05 and .01, respectively.

**Hypothesis 2: body dysmorphic disorder predicts life satisfaction among people requesting for cosmetic surgery significantly.**

Based on the results shown in table 3, after body dysmorphic disorder was entered into the equation for anticipating life satisfaction at the second step, the value of  $R^2$  rised to .332. This finding means that the entry of body dysmorphic disorder into the equation for anticipating life satisfaction brought about the display of 33.2% of its variance. The value of the changes in ( $\Delta R^2$ )  $R^2$  was equal to .017. This finding means that the entry of body dysmorphic disorder into the equation for anticipation and controlling the effect of demographic variables only led to an increase of 1.7% in the value of the variance displayed for life satisfaction , which is statistically significant at a significance level of .05 ( $\Delta F=4.382$ ,  $p<.05$ ). Reviewing regression coefficient showed that body dysmorphic disorder negatively predicts life satisfaction among people requesting for cosmetic surgery at a significance level of .01 ( $\beta=.265$ ,  $p<.01$ ).

**Third Hypothesis: personality traits (neuroticism, extroversion, openness, agreement and sense of responsibility) predict life satisfaction among people requesting for cosmetic surgery.**

As Table 3 shows, as personality traits entered the equation of life satisfaction at the third step, the value of  $R^2$  reached .512. This finding means that the entry of personality traits into the equation for anticipating life satisfaction brought about the display of 51.2% of its variance. The value of the changes in ( $\Delta R^2$ )  $R^2$  was equal to .18. This finding means that the entry of personality traits into the equation for anticipation and controlling the effect of demographic variables and body dysmorphic disorder led to an increase of 18% in the value of the variance displayed for life satisfaction, which is statistically significant at a significance level of .01 ( $\Delta F=12.727$ ,  $p<.01$ ). Reviewing regression coefficient showed that neuroticism negatively ( $\beta=0.380$ ,  $p<0.01$ ) predicts life satisfaction among people requesting for cosmetic surgery at a significance level of 0.01 and extroversion positively ( $\beta=.235$ ,  $p<.05$ ) predicts life satisfaction among people requesting for cosmetic surgery at a significance level of .05. It is noteworthy that even though regression coefficient of openness and agreement were not significant at .05, the aforementioned coefficients were significant at .098 and .09, respectively, which is a valuable finding. In general, it was concluded in the third hypothesis that, among personality traits, neuroticism negatively predicts life satisfaction among people requesting for cosmetic surgery at a significance level of .01 while extroversion positively predicts life satisfaction among such people at a significance level of .05.

### Discussion

The findings of the study support the hypothesis concerning the prediction of life satisfaction based on demographic variables (age, gender, marital status, and financial status) among people requesting for cosmetic surgery.

In general, it was concluded in the first hypothesis that, among demographic variables, marital status and assessment of financial status positively predict life satisfaction among people requesting for cosmetic surgery at significance levels of .05 and .01, respectively.

The results of the study indicate that, among people requesting for cosmetic surgery, the number of women was significantly greater than men, as 123 (82.6%) of respondents were women. The highest number of people was presented in the age group of 22 to 25 years old (51 people). The number of singles was greater than married ones. 101 participants (67.8% of all) were single. BA. degree holders were of majority, 69 people (46.3%). In the present study, the financial status of 64 people (43%) were assessed medium. Rhinoplasty surgery was the most frequent one, as 122 of the participants (81.9%) underwent nose surgery. One may concluded that women are more likely than men to undergo cosmetic surgery (Swami, 2009).

The study carried out by Tavasoli & Modiri (2012) indicated that the most frequent motive for women to undergo plastic surgery was to look more beautiful.

The study carried out by Mirsardo et al. (2010) concluded that women are more interested in cosmetic surgery than men and the mean age was 30; in addition family's average income played an important role in proceeding to undergo surgery.

The research by Mikaeeli Mani et al (2014) indicated that environmental resources and support were the strongest predictors and the highest coefficient belonged to life satisfaction.

Reviewing the second finding of the study indicated that body dysmorphic disorder negatively anticipates life satisfaction among people requesting for cosmetic surgery at a significance level of .01.

The study by Kazemi (2010) showed that body dysmorphic disorder was related to rhinoplasty request.

The study by Yousefi Sefat (2014) showed that the intensity of BDD symptoms was higher in people visiting cosmetic clinics compared to other people.

The study by Fatemiyoona (2013) indicated that less than half of the people requesting for cosmetic surgery suffer from body dysmorphic disorder.

The research by Mohammadi et al. (2007) showed that the results of the study and the desirable reliability and validity of the Persian version questionnaire confirmed the concern about body image and demonstrated that this tool could be easily used on clinical and research situations to review an individual's view toward one's own appearance.

The results of the study of Canice et al. (2006) indicated that body dysmorphic disorder is a mental disorder which is common among people requesting for cosmetic surgery and aesthetic prosthetics.

The results of the study carried out by Phillips et al. (2007) showed that the relationship between Obsessive-Compulsive Disorder (OCD) and body dysmorphic disorder (BDD) is not clear yet.

Researches conducted by James C. Rosen et al (1995) titled "Cognitive Behavioral Therapy of Body Dysmorphic Disorder",



and [Veale \(2004\)](#) titled “Advances of the Cognitive Behavioral Model for Body Dysmorphic Disorder” as well as other similar studies emphasize on the significance and need to such researches.

The third finding of the study indicates that, among personality traits, neuroticism negatively predicts life satisfaction among people requesting for cosmetic surgery at .01 while extroversion positively predicts it at a significance level of .05.

The results of the study carried out by [Khodabakhsh Pirkalani et al \(2014\)](#) suggested that life satisfaction is significantly related to extroversion at level  $\alpha=1$  in NEO test. However, the relationship between life satisfaction and extroversion was not significant in Eysenck personality test.

The results of the study carried out by [Alamdarsaravi et al. \(2004\)](#) showed that the personality pattern of most of people requesting for cosmetic surgery is narcissism. This finding shows the effect of psychological factors on demand for cosmetic surgery.

The study carried out by [Swami et al. \(2008\)](#) showed that people who obtain lower scores on flexibility and intellectuality and higher scores on conscience and neuroticism are more likely to be interested in cosmetic surgery to get more coping with their environment.

Psychological disturbances and disorders are common among people requesting for cosmetic surgery. A sense of being malformed –particularly face appearance—even if defects are imaginary or very slight (the main diagnostic criteria of body dysmorphic disorder (BDD)) is evident in most of demandants of such surgery operations. This feeling often causes anxiety and has negative effects on an individual’s functions in interpersonal, family, social and professional levels. Body dysmorphic disorder

is highly common among people requesting for plastic surgery and is usually associated with axis -1 clinical disorders such as major depression, obsessive-compulsive disorder, social phobia, panic disorders, and substance abuse disorder. Personality disorders or axis- 2 diagnosis is also very common among such people. Findings show that 48-57 percent of people suffering from BDD demonstrate symptoms of at least two types of personality disorders. 26% of them suffer from comorbidity of three disorders and 4% of them suffer from Comorbidity of four personality disorders. Moreover, the findings of the study conducted by Grassbart and Saro demonstrated that 71 percent of demandants of cosmetic surgery had a diagnosis of personality disorder. The most common one is the narcissist personality disorder (25%). Given high rate of cosmetic surgeries and associated mental disorders, what are their results and consequences? Honigman et al answered that question in their review study. In general, patients are satisfied with surgery results although some of them have transient disorders and conditions or persisting and long-term ones. Factors related to poor psychological results include youth, male gender, unrealistic expectations of surgery, dissatisfaction with previous surgery, slight deformity, communicative motivations and history of depression, anxiety and personality disorders. It has been indicated in some studies that body dysmorphic disorder predicts poor results after surgery as well.

The results of the hypotheses of the present study are consistent with the findings of similar studies.

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