

ISSN No: 2319-5886

International Journal of Medical Research & Health Sciences, 2017, 6(2) 91-103

Proposing a Model for Analysing Relationship between Social Anxiety and Body Dysmorphic Disorder: Mediating Role of Fear of Positive and Negative Evaluation

Nasim Damercheli^{1*}, Ali Reza Kakavand² and Mohammad Reza Jalali²

¹ Department of General Psychology, Imam Khomeini International University, Qazvin, Iran ² Psychology Department, Imam Khomeini International University, Qazvin, Iran *Corresponding e-mail: <u>nasim.damercheli.71@gmail.com</u>

ABSTRACT

This research was aimed at determining the relationship between the social anxiety and the body dysmorphic disorder with mediation of fear of positive and negative evaluation. The research method was descriptive and had correlational pattern in which the structural equation modelling was utilized. The research community included the female bachelor and master students, being studied at Imam Khomeini International University, Qazvin, Iran, in 2015-2016 academic year. In this research, 1000 students, selected based on clustering random sampling, have answered the questionnaires and then 280 students were selected as the final samples based on the purposive sampling. The research tools composed of body dysmorphic metacognitive evaluation, social phobia inventory, Leary's brief version of fear of negative evaluation, and fear of positive evaluation. The data of subjects were analyzed using path analysis, confirmatory factor analysis, measurement model test and structural model test. The results stated that the fear of positive and negative evaluation together mediates the relationship between the social anxiety and the body dysmorphic disorder. In addition, the direct effect of social anxiety on the fear of positive evaluation, on the fear of negative evaluation and on the body dysmorphic disorder was affirmed. Therefore, the interventions that target the fear of positive and negative evaluation as the central components of social anxiety can help the prevention of growth in body dysmorphic disorder

Keywords: Body dysmorphic disorder, social anxiety, fear of positive evaluation, fear of negative evaluation

INTRODUCTION

Body dysmorphic disorder is identified by mental obsession with one or some figurative defects in a person's figure and this obsession is obviously exaggerating. The features of this disorder are that a person spends much time in front of mirror, compares his/her facial characteristics with others, tries to cover the open defected parts of body and finally intends to attract one's attention on their figure. These people often avoid sincerity with others and the various social situations [1]. The body dysmorphic disorder is an obsessive-compulsive disorder that is more common, creates a serious disturbance and impairment on the psycho-social performance, and finally relates to the weak life quality and a large deal of thinking of and acting suicide [2]. Probably there are a series of complex interactions which may dysfunction in some areas of brain and which form the pathophysiology of body dysmorphic disorder. There is a combination of dysfunctions in the subcortical frontal lobe, temporal, parietal, and limbic system as well as hemispheric imbalances in information processing that can justify the diagnostic symptoms and neurological defects seen in the body dysmorphic disorder [3]. The cosmetic and beauty surgery is not recommended for the people afflicted to body dysmorphic disorder because it rarely helps development of symptoms and can even exacerbate the symptoms more chronic. The psycho-behavioural treatments and using preventives for serotonin re-absorption are recommended for the people afflicted to body dysmorphic disorder with the delusional beliefs [2]. Social anxiety disorder is one of the disorders that have high comorbidity with the body dysmorphic disorder. It is identified by means of considerable fear or anxiety of one or some social situations in which the other people can be scrutinized and the patient is focused [4]. The social anxiety disorder is one of the most common states in psychiatry. The epidemiological studies have reported the lifetime prevalence rate of social anxiety about 7% to 12% [5,6]. The social anxiety starts in 13-19 ages, but it can happen in the early childhood. During childhood, social anxiety often associated with shyness, behavioural inhibition, confusion and distress, autism, school refusal and disobedience and separation anxiety. If the problem is not cured, it continues a chronic path and leads to the major damage in the job and social performance [7].

A research investigated the outbreak of body dysmorphic disorder in the sample of outpatients afflicted to the social anxiety disorder and it is concluded that 6.7% of patients have received the diagnostic symptoms of body dysmorphic disorder [8]. In line with this finding, another research found that the prevalence rate of body dysmorphic disorder is 11% for the social anxiety patients and 8% for the obsessive-compulsive disorder patients [9]. Furthermore, another research showed that the 12% to 68.8% of body dysmorphic disorder patients have social anxiety and 4.8% to 12% of social anxiety patients have body dysmorphic disorder [10,11]. Philips and Stout [12] found that 37.3% of body dysmorphic disorder, 32.9% of them had social anxiety disorder and 26.1% of them had obsessive-compulsive disorder (Figures 1 and 2).

Kelly et al. [13] analysed the relationship between the social anxiety and the functional impairment in the body dysmorphic disorder. The results showed that only specific aspects of social anxiety especially the social fear and avoidance can cause significant functional impairment of the body dysmorphic disorder patients. Meanwhile, Fang and Hofmann [14] analyzed the relationship between the social anxiety disorder and the body dysmorphic disorder when analysed, the results showed that the social anxiety and the body dysmorphic disorder have high comorbidity; they are the same as each other based on starting age and chronic state; they also have similar cognitive orientations for interpreting the ambiguous and distorted social information with a negative style. In another research, Fang et al. [15] analyzed when mediating role of rejection sensitivity in relationship between the social anxiety and body dysmorphic concerns, the results showed that the social anxiety and the dysmorphic concerns are very relevant concepts, the rejection sensitivity plays a mediating role in relationship between the social anxiety and body dysmorphic concerns, and the rejection sensitivity can specifically be related with the cognitive aspects of body dysmorphic concerns. Pinto and Phillips [16] demonstrated that the social anxiety significantly relates to the body dysmorphic disorder.

The cognitive models of social anxiety emphasize the importance of inefficient cognitions in framing and continuing the social anxiety [17,18]. Fear of negative evaluation and fear of positive evaluation are the most effective inefficient cognitions in this psychological problem. Fear of negative evaluation has been first defined by Watson and Friend [19] as concern about others' evaluations, excessive disturbance about the negative evaluations, avoiding the evaluation-like situations, and expecting the experience of negative evaluations by others Ganesh et al. [20] and Weeks et al. [21] determined that fear of positive evaluation relates positively to the much sadness during receiving the social positive feedback and negatively to the correctness of received social feedback.

Ganesh et al. [20] concluded that there is a significant positive relationship between the anxiety and fear of negative evaluation. Craven [22] found out that there are significant positive relationships between the social anxiety, the anxiety state, the concentrated self-focused, fear of positive evaluation, fear of negative evaluation, and the weal perception of verbal performance. Bautista and Hope [23] found out that the subjects with high social anxiety in comparison to the subjects with low social anxiety have experienced high concentrated thinking, high negative thinking, and more anxiety level in response to increase in feedback and negative evaluation. Heimberg et al. [24] stated that the social anxiety patients have fear of evaluation and pay special attention to the external threatening symptoms; this attention is biased and leads to the destructive interpretations of external threatening symptoms.

Weeks et al. [25] concluded that the relationship of fear of positive evaluation with several social-anxiety measures (anxiety of social interaction and being in others' exposure) is stronger than its relationship with the epidemic anxiety disorder measures, obsessive-compulsive disorder, phobia disorder, depression, anxiety and stress. Davoudi et al. [26] concluded that fear of positive evaluation after controlling the fear of negative evaluation determines significantly the variance of social anxiety and social self-perception.

The social anxiety and the body dysmorphic concerns are very consistent concepts, the rejection sensitivity plays a

mediating role in relationship between the social anxiety and the body dysmorphic concerns; the rejection sensitivity relates specifically to the cognitive aspects of body dysmorphic concerns [14]. Menatti et al. [27] stated that the fear of positive and negative evaluation predicts a significant part of the relationship between the social anxiety and the body dissatisfaction. DeBoer et al. [26] also stated that the fear of negative evaluation predicts the body dissatisfaction. People with high social-presence anxiety experienced more body dissatisfaction [28,29]. Silgado et al. [30] reported the more body dissatisfaction for the participants among group with high social anxiety.

In Iran, the number of research in the field of body dysmorphic disorder is very limited, and on the other hand, a research has not been conducted in relating the social anxiety and the body dysmorphic disorder by considering the mediating role of fear of negative and positive evaluation. Among abroad studies, there cannot be found because of fear of positive evaluation structure in which the relationship between fear of positive and negative evaluation and the body dysmorphic disorder is measured and/or the relationship between the social anxiety and the body dysmorphic disorder by considering the mediating role of fear of positive and negative evaluation is measured. Therefore, in the present research in the modelling framework, we surveyed simultaneously the multiple components of social anxiety, that is, fear of positive and negative evaluation as the expletive structure of the relationship between the social anxiety and the body dysmorphic disorder.

The following hypotheses are intended

- 1. The proposed model possesses a significant fit in determining the relationship between the social anxiety and the body dysmorphic disorder with the mediating role of fear of positive and negative evaluation.
- 2. The social anxiety has a direct effect on the fear of positive evaluation.
- 3. The social anxiety has a direct effect on the fear of negative evaluation.
- 4. The social anxiety has a direct effect on the body dysmorphic disorder.
- 5. The social anxiety has an indirect effect on the body dysmorphic disorder by means of fear of positive and negative evaluation.

METHODOLOGY

The present study is descriptive and has a correlational pattern in which the approach of structural equation modelling has been used. In these types of research, a researcher is to find a probable relationship between the research variables by considering the role of mediating variables to present this relationship in the form of a model. The research community includes all female bachelor and master students, being studied at Imam Khomeini international university, Qazvin, Iran, in 2015-2016 academic year. They count about 3000 students. Two types of sampling have been in this research: first, a clustering random sampling was used to select some majors and then some classes among six colleges of engineering, fundamental sciences, Islamic studies, social sciences, humanities and architecture and urbanism. 1060 students have answered the given questionnaires. 60 incomplete ones were put aside. Then, by means of purposive judgment sampling, 218 subjects were selected as the final samples who acquired higher scores in the questionnaires of social anxiety and the body dysmorphic disorder.

Research tools

Body dysmorphic metacognitive questionnaire: This questionnaire has been created by Rabiei et al. [31]. First, 64 items were prepared to evaluate metacognition of body dysmorphic disorder; only 31 items were remained with appropriate validity and reliability.

This questionnaire includes four factors about body dysmorphic:

- a) Metacognitive control strategies (about appearance),
- b) Thought-action fusion (mixing thoughts),
- c) Metacognitive positive and negative beliefs and
- d) Safety behaviour.

In this test, a participant is asked to respond to the items based on their experience, thoughts and ideas on their

appearance and fill the four-choices, in Likert's spectrum. Scoring the questionnaire is from 1 to 4. Reliability of body dysmorphic metacognitive questionnaire plus reformed scale of Yale-Brown obsessive-compulsive scale for body dysmorphic disorder is 0.74 (p=0.001). In the explanatory factor analysis, the identified factors are as follow: metacognitive control strategies, thought-action fusion (materializing thoughts related to dysmorphic), metacognitive positive and negative beliefs (in appearance) and safety behaviour; in sum, they determined 48% of questionnaire variance. The scores of body dysmorphic disorder group were significantly higher than those of healthy group. Internal consistency coefficient (Cronbach Alpha) was 0.94 for all questionnaires. The coefficients were between 0.7 and 0.94, stating high validity and high internal consistency [30].

Social phobia inventory: Connor et al. [32] have built the inventory to evaluate the extent of social phobia (social anxiety disorder). The inventory is a 17-item self-rated scale. It includes three subscales: fear (6 items), avoidance (7 items), and physiological sadness (4 items). Connor et al. [32] reported the reliability of this scale as 0.78 to 0.89 by test re-test method among groups with social anxiety disorder, the internal consistency (alpha coefficient) as 0.94 for normal people, and for subscales as 0.89 for fear, 0.91 for avoidance and 0.80 for physiological sadness. The convergent validity for all scales among social anxiety disorder in contrast to the scores in brief-version social phobia has attained 0.57 to 0.80 correlational coefficients that are considered as high and significant correlational coefficients. In Iran, Tahmasebi-Moradi as cited in Lotfi et al. [33] reported the re-test reliability as 0.82 and the internal consistency as 0.84 by Cronbach alpha.

Brief version of fear of negative evaluation scale: The brief version of the fear of negative evaluation has 12 items to measure the experienced extent of anxiety or their negative evaluation. In this scale, each item is answered on the basis of Likert's five-scale spectrum (1=Never true, 5=Always true). The higher scores show the experience of anxiety and fear. Surveying a group of bachelor students with assistance of this scale showed that this tool has a high correlation (r=0.96) with the original version of this scale. In addition, it became clear that the brief version of fear of negative evaluation scale has a high internal consistency (Cronbach Alpha=0.90). Analysing the reliability by re-test method showed 0.75 coefficient in interval of four weeks [34]. The reliability is 0.98 by re-test method and in interval of two weeks on 15 bachelor students and the internal consistency is 0.83 by Cronbach alpha and for 24 bachelor students [35].

Fear of positive evaluation scale: This scale consists of 10 items [25]. The scoring method is based on Likert's scale (0=Never true, to, 9=Totally true). The 5th and 10th items are not accounted in scoring. Therefore, the total score is 8. Cronbach alpha coefficient for fear of positive evaluation scale is 0.85 and the inter-rater reliability has been significantly reported the same as social (interaction) anxiety scale (r=0.70) [36]. This scale was extracted from [37], by translating it and receiving the complementary opinions of experts. The reliability was measured as 0.67 by half-split method and Cronbach alpha as 0.75 for whole test. The numbers confirm the acceptable reliability and internal consistency of questionnaire. In addition, Cronbach alpha coefficient for this scale was 0.95 in Lotfi et al. [33].

Findings

In this research, the descriptive and inferential statistics have been used to analyse the data. The central indexes such as frequency, mean and standard deviation have been used in the descriptive statistics. In the inferential statistics, structural equation modelling has been used to propose the model of relationship between the social anxiety and the body dysmorphic disorder, by considering such two mediating variables as fear of positive and negative evaluation. Since a complete model of structural equation represents the mixture of path diagram and the confirmatory factor analysis; to test the major and minor hypotheses, the path analysis, confirmatory factor analysis, measurement model analysis and structural model analysis have been used. To analyse the collected data, SPSS version 20 and AMOS version 22 were used. Since the major assumption of structural equation modelling. Therefore, before accomplishing the confirmatory factor analysis, it is appropriate to analyse Cronbach alpha value of tools for 218 screened subjects in order to omit the subscales that reduce alpha. The social anxiety is confirmed with three factors and the body dysmorphic disorder is confirmed with three factors.

College	Frequency	Age	Frequency	Major	Frequency	Marital Status	us Frequency	
Engineering	55	18-21	139	Bachelor	178	Single	180	
Fundamental Sciences	45	22-25	66	Master	40	Married	38	
Social Sciences	35	26-29	10	-	-	-	-	
Humanities	53	30 and More	3	-	-	-	-	
Islamic Studies	18	-	-	-	-	-	-	
Architecture and Urbanism	12	-	-	-	-	-	-	
Total	218	-	218	-	218	-	218	

Table 1 Frequency of samples based on college, age, major, and marital status

Based on Table 1, the highest frequencies are for the engineering students (n=55), for the 18-21 years old (n=139), for the bachelor (n=178) and for the single students (n=180). Table 2 shows frequency, mean and standard deviation of research variables.

Standard Deviation	tandard Deviation Mean Frequency		Statistical Indexes Variables		
3.607	11.45	218	Fear		
4.338	12.3	218	Avoidance		
3.073	8.73	218	Physiological Sadness		
9.19	32.48	218	Social Anxiety		
11.241	38.85	218	Metacognitive Control Strategies		
6.143	23.59	218	Action-Thought Fusion		
3.533	16.11	218	Metacognitive Positive and Negative Beliefs		
17.684	78.43	218	Body Dysmorphic Disorder		
10.381	39.87	218	Fear of Negative Evaluation		
11.973	24.64	218	Fear of Positive Evaluation		

Table 2 Frequency, Mean and Standard Deviation of Research Variables

Table 3 Fit Indexes for Measurement Model

In Jun	Fit	Fit Indexes		
Index	Value	Limit		
V ² (OL:)	0.079	Insignificance		
X ² (Chi-square)	1.431	Less than 3		
CMIN/DF (Normed Chi-square)	-	-		
GFI (Goodness of Fit Index)	0.967	More than 0.90		
AGFI (Adjusted Goodness of Fit Index)	0.937	More than 0.80		
CFI (Comparative Fit Index)	0.98	More than 0.90		
NFI (Normed Fit Index)	0.939	More than 0.90		
(RMSEA) Root Mean Square Error of Approximation	0.045	Less than 0.05		

Based on Table 3, the values represent that the pattern possesses appropriate condition in the case of fit.



Figure 2 Standard measurement model

Item	Factor Load	t	R2	sig
Fear	0.768	7.322	0.591	0.001
Avoidance	0.906	7.085	0.82	0.001
Physiological Sadness	0.522	-	0.272	-
Metacognitive Control Strategies	0.799	7.23	0.639	0.001
Action-Though Fusion	0.81	7.224	0.656	0.001
Metacognitive Positive and Negative Beliefs	0.545	-	0.297	-

Table 4 Factor loads, variance, T-values for measurement model

Based on the results in Table 4, it is suggested that the items of physiological sadness and the metacognitive positive and beliefs have less unique share in determining their latent factors.

Table 5 Fit Indexes for Structural Model

Index	Fit Indexes			
index	Limit	Value		
X ² (Chi-square)	Insignificance	0.515		
CMIN/DF (Normed Chi-square)	Less than 3	0.948		
GFI (Goodness of Fit Index)	More than 0.90	0.982		
AGFI (Adjusted Goodness of Fit Index)	More than 0.80	0.963		
CFI (Comparative Fit Index)	More than 0.90	1		
NFI (Normed Fit Index)	More than 0.90	0.968		
(RMSEA) Root Mean Square Error of Approximation	Less than 0.005	0.001		

Based on Table 5, the values represent that the pattern possesses appropriate condition in the case of fit.



Figure 3 Model with non-standard coefficients



Based on Figure 3, the pattern in the state of non-standard coefficients is equal with the regression weighs, based on which the raw scores are calculable.

Figure 4 Standard measurement model

In Figure 4, the pattern is limited between (+1, -1) in the state of standard coefficients and it is used to show the power and direction of that relation.

Output Variable	Input Variable	Effect	B Non- Standard Coefficients	Standard Coefficients	t	sig	R2
Social Anxiety	Fear of Positive Evaluation	Direct	1.819	0.246	3.213	0.012	0.061
Social Anxiety	Fear of Negative Evaluation	Direct	2.493	0.389	4.758	0.004	0.151
Social Anxiety	Body Dysmorphic Disorder	Direct	1.231	0.212	2.548	0.036	0.335
Social Anxiety	Body Dysmorphic Disorder	Indirect	-	0.175	-	0.002	-
Social Anxiety	Metacognitive Control Strategies	Indirect	-	0.324	-	0.006	-
Social Anxiety	Action-Thought Fusion	Indirect	-	0.301	-	0.007	-
Social Anxiety	Metacognitive Positive and Negative Beliefs	Indirect	-	0.207	-	0.005	-

Table 6 Coefficients and significance of direct and indirect effects of social anxiety

Based on the results in Table 6, the direct effect of social anxiety on the fear of positive evaluation is significant with B coefficient (0.246) at 0.012 significance level; the direct effect of social anxiety on the fear of negative evaluation is significant with B coefficient (0.389) at 0.004 significance level; the direct effect of social anxiety on the body dysmorphic disorder is significant with B coefficient (0.212) at 0.036 significance level. In addition, the indirect effect of social anxiety on the fear of positive and negative evaluation is significant with B coefficient (0.175) at 0.002 significant levels.

DISCUSSION AND CONCLUSION

The present research was conducted to propose a model for relationship between the social anxiety and the body dysmorphic disorder by considering the mediating role of negative and positive evaluation. The testing results of fit

indexes for the structural model showed that the proposed model possesses an appropriate fit; it means that the model with the primary model (assumed or those data) has consistence and there is no difference in between. In the proposed model, the social anxiety, fear of positive and negative evaluation in a single pattern can predict the body dysmorphic disorder. As the mediating variables, two variables of negative and positive evaluation were confirmed in relating the social anxiety and the body dysmorphic disorder.

The results of present research showed that there is a relationship between the social anxiety and the fear of positive evaluation. The direct effect of social anxiety was affirmed on the fear of positive evaluation. In other words, the social anxiety predicts positively the fear of positive evaluation. These results are in harmony with the results of Craven [22], Weeks and Howell [38], Weeks, et al. [25] and Davoudi, et al. [26]. It can be pointed that, according to Wallace and Alden [39,40], the social-anxiety people are worry in the case that others' positive evaluation on their performance elevates their social standards so that they cannot afford these expectations in the future because their current performance will not change significantly in the future. Thus, they predict that positive evaluation by others will eventuate to the distress and disability for them. The social-anxious people are worry that others set high criteria for their performances in the social conditions; thus, this anxiety may influence their behaviour and excitement.

Meanwhile, the results supported the relationship between the social anxiety and the fear of negative evaluation. These results are in tune with Ganesh et al. [20], Craven [22], Bautista and Hope [23], and Heimberg, et al. [24]. The subjects afflicted to high social anxiety due to inability in discerning the various emotional states of people, tend to have a negative bias in favour of discerning the emotional reactions. Therefore, a person with high anxiety repetitively interprets others' excitement generally with a negative style [41]. According to the model of [18], the social-anxious people set very high importance to affect the others; so, such a standpoint causes that they scrutinize others very much. When these people predict the social situations, or are put in such situations, they draw a mental picture that they were watched by others. All these factors, in sum, exacerbate the social anxiety and finally cause the drop-in functionality in the social and performance conditions.

The results of research supported the direct effect of social anxiety on the body dysmorphic disorder. In other words, the social anxiety predicts positively the body dysmorphic disorder. These results are in harmony with Kelly, et al. [13] Fang and Hoffman [14], Fang, et al. [15] Pinto and Phillips [16] and Philips, et al. [42]. Delving these relationships, it can be stated that the similarities between the social anxiety disorder and the body dysmorphic disorder, based on the phenomenology, comorbidity, starting age and being chronic, intercultural demonstrations, reaction to interventions and the cognitive bias, show that these two disorders have a mutual share based on the pathological aspects. In fact, the studies in relationship between the social anxiety and the body dysmorphic disorder bring about this probability that various etymological mechanisms and factors can influence their growth and sustainability. The research evidence has proved that the generalized social-anxiety-disorder and body-dysmorphic-disorder people tend to express negative interpretive bias in favour of the ambiguous social information. Amin, et al. [43] have selected 32 people afflicted to the generalized social anxiety disorder and who request to receive psychological intervention. They were measured by means of a questionnaire and their interpretations about 32 social and non-social scenarios. The people afflicted to the generalized social anxiety disorder tended to select the negative interpretations about the ambiguous social situations. Buhlman, et al. [44] stated that the people afflicted to the body-dysmorphic-disorder in the social scenarios and relevant to the body dysmorphic disorder have more negative thoughts in contrast to the control group and the groups afflicted to the obsessive-compulsive disorder. Stopa and McClark [45] found out that social anxiety people show two biases in interpretation: first, tendency to interpret ambiguously the social conditions by a negative style, and second, tendency to interpret unambiguously but disesteeming the social happenings by a little negative style. These findings show that the people afflicted to the body dysmorphic disorder and social anxiety have similar cognitive biases. The component of self-focused attention is mutual between two disorders. The cognitive model posits that when the people come across a social threat, the social anxiety people take out their attention to the centre and start to process the information based on their observation [46]. The central core of body dysmorphic disorder is the extreme self-focused attention to the confused body picture; such a negative evaluation of body picture leads to using safety behaviour, changing morals and ruminating [1].

Body dysmorphic disorder is diagnosed with mental obsession about one or several imaginative defects with the appearance. This anxiety is in relation with the fear of negative evaluation by others which is a central feature in the social anxiety. Therefore, the body dysmorphic disorder and social anxiety disorder can be under influence of

dangerous factors such as high rejection sensitivity. In fact, it can be said that body dysmorphic disorder is a form of anxiety disorder that is in relation with the social anxiety and the obsessive-compulsive disorder. The people afflicted to body dysmorphic disorder and to the generalized social anxiety are common to the negative interpretive biases in favour of social information [14].

One of the results also showed that the social anxiety by mean of fear of positive and negative evaluations simultaneously affect indirectly the body dysmorphic disorder. Since far, no domestic or abroad research has been conducted in the case of relationship between the social anxiety and the body dysmorphic disorder by taking into account the mediating variables of fear of positive and negative evaluations; by as mentioned above, Kelly, et al. [13], Fang and Hofmann [14], Pinto and Phillips [16], and Phillips, et al. [42] realized the relationship between the social anxiety and the body dysmorphic disorder. Since the fear of positive and negative evaluations are the central components for the social anxiety, the studies, investigating the relationship between the social anxiety and the body dysmorphic disorder, implicitly confirm that the interaction of social anxiety with its central components, i.e. fear of positive and negative evaluations, in predicating the body dysmorphic disorder.

The implication of evolutionary psychology of Gilbert [47] about the body dysmorphic disorder can assist the researchers and therapists to better and logically understand the overlap between the social anxiety disorder and the body dysmorphic disorder. For instance, the people take body dysmorphic disorder, as the same as people take the eating disorder, grade the social universe as an organization with hierarchy. The people afflicted to body dysmorphic disorder put the attractive and beautiful people at the high of hierarchy and the unattractive and ugly people at the bottom of hierarchy. Therefore, descending position in this hierarchy leads to the negative and rejecting evaluations and the ascending position in this hierarchy leads to the positive evaluations so that the high level of expectations and the social outlooks as well as competition and the struggle with people become effective. Fear of negative evaluation can be the adjusting behaviour because it prevents the people form struggling with others for more power. As a result, a person to avoid the negative evaluation attempts to mentally get busy about the figurative defects and the obsessive behaviour about the appearance and temporarily achieves balance and promotes its condition. But, after a while, s/he resorts to behaviour such as covering body, wearing loose clothes, wearing and making-up conservatively.

Therefore, the results of the present research can lead to propose strategies for intervening the body dysmorphic disorder due to Iran's innovativeness position in the field of beauty and cosmetic surgeries, prevalence of body dysmorphic disorder as well as its adverse consequences [48]. The interventions that target fear of positive and negative evaluations as the central components of social disorder can assist to stop the growth of symptoms in the body dysmorphic disorder. It is recommended that the future studies investigate the mediating role of fear of positive and negative evaluations in relationship between the social anxiety and other disorders that have high comorbidity with the social anxiety such as avoidance personality disorder, major depressive disorder, bipolar disorder, and autistic disorder with appropriate function [49].

REFERENCES

[1] Veale, David. "Advances in a cognitive behavioural model of body dysmorphic disorder." *Body image* 1.1 (2004): 113-125.

[2] Phillips, Katharine A. "Body dysmorphic disorder: Clinical aspects and relationship to obsessive-compulsive disorder." *Focus* 13.2 (2015): 162-174.

[3] Feusner, Jamie D., Jose Yaryura-Tobias, and Sanjaya Saxena. "The pathophysiology of body dysmorphic disorder." *Body Image* 5.1 (2008): 3-12.

[4] American Psychiatric Association. *Diagnostic and statistical manual of mental disorders (DSM-5*®). American Psychiatric Pub, 2013.

[5] Furmark, Tomas. "Social phobia: Overview of community surveys." *Acta Psychiatrica Scandinavica* 105.2 (2002): 84-93.

[6] Kessler, Ronald C., et al. "Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the national comorbidity survey replication." *Archives of general psychiatry* 62.6 (2005): 617-627.

Nasim Damercheli et al.

[7] Stein, Murray B., and Yin M. Kean. "Disability and quality of life in social phobia: Epidemiologic findings." *American Journal of Psychiatry* 157.10 (2000): 1606-1613.

[8] Wilhelm, Sabine, et al. "Prevalence of body dysmorphic disorder in patients with anxiety disorders." *Journal of Anxiety Disorders* 11.5 (1997): 499-502.

[9] Mintzer, Jacobo E., and Olga Brawman-Mintzer. "Agitation as a possible expression of generalized anxiety disorder in demented elderly patients: Towards treatment approach." *The Journal of clinical psychiatry* 57 (1995): 55-63.

[10] Coles, Meredith E., et al. "Body dysmorphic disorder and social phobia: Cross-sectional and prospective data." *Depression and anxiety* 23.1 (2006): 26-33.

[11] Gunstad, John, and Katharine A. Phillips. "Axis I comorbidity in body dysmorphic disorder." *Comprehensive psychiatry* 44.4 (2003): 270-276.

[12] Phillips, Katharine A., and Robert L. Stout. "Associations in the longitudinal course of body dysmorphic disorder with major depression, obsessive-compulsive disorder, and social phobia." *Journal of psychiatric research* 40.4 (2006): 360-369.

[13] Kelly, Megan M., Chris Walters, and Katharine A. Phillips. "Social anxiety and its relationship to functional impairment in body dysmorphic disorder." *Behavior Therapy* 41.2 (2010): 143-153.

[14] Fang, Angela, and Stefan G. Hofmann. "Relationship between social anxiety disorder and body dysmorphic disorder." *Clinical psychology review* 30.8 (2010): 1040-1048.

[15] Fang, Angela, et al. "Rejection sensitivity mediates the relationship between social anxiety and body dysmorphic concerns." *Journal of anxiety disorders* 25.7 (2011): 946-949.

[16] Pinto, Anthony, and Katharine A. Phillips. "Social anxiety in body dysmorphic disorder." *Body Image* 2.4 (2005): 401-405.

[17] Clark, David M., and Adrian Wells. "A cognitive model of social phobia." *Social phobia: Diagnosis, assessment, and treatment* 41.68 (1995): 00022-3.

[18] Rapee, Ronald M., and Richard G. Heimberg "A cognitive-behavioral model of anxiety in social phobia." *Behaviour research and therapy* 35.8 (1997): 741-756.

[19] Watson, David, and Ronald Friend. "Measurement of social-evaluative anxiety." *Journal of consulting and clinical psychology* 33.4 (1969): 448.

[20] Kumar, Ganesh, et al. "Relationship between fear of negative evaluation and anxiety." (2015).

[21] Weeks, Justin W., et al. "Exploring the relationship between fear of positive evaluation and social anxiety." *Journal of Anxiety Disorders* 22.3 (2008): 386-400.

[22] Craven, Michael. *Effects of self-focused attention and fear of evaluation on anxiety and perception of speech performance*. Diss. Ohio University, 2015.

[23] Bautista, Chandra L., and Debra A. Hope. "Fear of negative evaluation, social anxiety and response to positive and negative online social cues." *Cognitive Therapy and Research* 39.5 (2015): 658-668.

[24] Heimberg, Richard G., Faith A. Brozovich, and Ronald M. Rapee. "A cognitive-behavioral model of social anxiety disorder: Update and extension." *Social anxiety: Clinical, developmental, and social perspectives* 2 (2010): 395-422.

[25] Weeks, Justin W., Richard G. Heimberg, and Thomas L. Rodebaugh. "The fear of positive evaluation scale: Assessing a proposed cognitive component of social anxiety." *Journal of anxiety disorders* 22.1 (2008): 44-55.

[26] Davoudi, Iran, Afshin Salahian, and Fatemeh Veisy. "Fear of positive evaluation and social anxiety." *Journal of Mazandaran University of Medical Sciences* 22.96 (2013): 79-87.

[27] Menatti, Andrew R., et al. "Social anxiety and associations with eating psychopathology: Mediating effects of

fears of evaluation." Body image 14 (2015): 20-28.

[28] DeBoer, Lindsey B., et al. "Associations between fear of negative evaluation and eating pathology during intervention and 12-month follow-up." *Cognitive Therapy and Research* 37.5 (2013): 941-952.

[29] Levinson, Cheri A. "Manipulation of negative social evaluative fears on body dissatisfaction and eating behaviors: Does fear of social evaluation lead to disordered eating?" (2015).

[30] Silgado, Jose, et al. "Social anxiety and bulimic behaviours: The moderating role of perfectionism." *Cognitive Therapy and Research* 34.5 (2010): 487-492.

[31] Rabiei, Mehdi, et al. "Construction and standardization of the body dysmorphic metacognition questionnaire." *Journal of Mazandaran University of Medical Sciences* 21.83 (2011): 43-52.

[32] Connor, Kathryn M., et al. "Psychometric properties of the social phobia inventory (SPIN)." *The British Journal of Psychiatry* 176.4 (2000): 379-386.

[33] Lotfi, Sedigheh Abbas Abolghasemi, and Mohammad Narimani. "A comparison of emotional processing and fear of positive/negative evaluations in women with social phobia and normal women." *JSR* 14.53 (2014): 101-111.

[34] Miller, Rowland S. "On the nature of embarrassability: Shyness, social evaluation, and social skill." *Journal of personality* 63.2 (1995): 315-339.

[35] Dadashzadeh, Hosein, Rokhsare Yazdandoost, and Banafsheh Gharraee. "Effectiveness of cognitive-behavioral group therapy and exposure therapy on interpretation bias and fear of negative evaluation in social anxiety disorder." *Iranian Journal of Psychiatry and Clinical Psychology* 18.1 (2012): 40-51.

[36] Fergus, Thomas A., et al. "The fear of positive evaluation scale: Psychometric properties in a clinical sample." *Journal of Anxiety Disorders* 23.8 (2009): 1177-1183.

[37] Rezaei, Dogaheh Ebrahim, Parvaneh Mohammadkhani, and Brhrooz Dolatshahi. "The comparison of Group versus individual format of cognitive-behavior therapy on fear of positive evaluation." *Journal of Rehabilitation* 13.1 (2012): 58-65.

[38] Weeks, Justin W., and Ashley N. Howell. "The bivalent fear of evaluation model of social anxiety: Further integrating findings on fears of positive and negative evaluation." *Cognitive Behaviour Therapy* 41.2 (2012): 83-95.

[39] Wallace, Scott T., and Lynn E. Alden. "Social phobia and positive social events: The price of success." *Journal of Abnormal Psychology* 106.3 (1997): 416.

[40] Wallace, Scott T., and Lynn E. Alden. "Social anxiety and standard setting following social success or failure." *Cognitive Therapy and Research* 19.6 (1995): 613-631.

[41] Winton, Emma C., David M. Clark, and Robert J. Edelmann. "Social anxiety, fear of negative evaluation and the detection of negative emotion in others." *Behaviour research and therapy* 33.2 (1995): 193-196.

[42] Phillips, Katharine A., Jason M. Siniscalchi, and Susan L. McElroy. "Depression, anxiety, anger, and somatic symptoms in patients with body dysmorphic disorder." *Psychiatric Quarterly* 75.4 (2004): 309-320.

[43] Amin, Nader, Edna B. Foa, and Meredith E. Coles. "Negative interpretation bias in social phobia." *Behaviour research and therapy* 36.10 (1998): 945-957.

[44] Buhlmann, Ulrike, et al. "Interpretive biases for ambiguous information in body dysmorphic disorder." *CNS spectrums* 7.06 (2002): 435-443.

[45] Stopa, Lusia, and David M. Clark. "Social phobia and interpretation of social events." *Behaviour Research and Therapy* 38.3 (2000): 273-283.

[46] Heinrichs, Nina, and Stefan G. Hofmann. "Information processing in social phobia: A critical review." *Clinical psychology review* 21.5 (2001): 751-770.

[47] Gilbert, Paul. "Evolution and social anxiety: The role of attraction, social competition, and social hierarchies." *Psychiatric Clinics of North America* 24.4 (2001): 723-751.

[48] Villareal, Gerardo, Mike Johnson, and James C. Ballenger. "Body dysmorphic disorder in patients with anxiety disorders and major depression: a comorbidity study." *Am J Psychiatry* 152.1 (1995): 1665-1667.

[49] Leary, Mark R. "A brief version of the fear of negative evaluation scale." *Personality and Social Psychology Bulletin* 9.3 (1983): 371-375.