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The Evaluation of Body Dysmorphic Disorder in Adult Orthodontic Patients

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ABSTRACT

Introduction: The present study aimed to evaluate body dysmorphic disorder (BDD) in orthodontic patients. Also, the relation between demographic factors and BDD was investigated.

Materials and Methods: This descriptive-analytical cross-sectional study was performed on 320 patients referring to the dental clinic. Participants were excluded if they had craniofacial syndromes, visible physical inabilities, mental diseases such as depression and OCD, and required orthognathic surgery. The YBOCS-BDD was used to assess BDD. Fisher's exact test was applied using SPSS Version 24 at the significance level of 0.05.

Results: 47.5% of patients were normal and 34.4% had mild BDD and 17.2% had moderate BDD, and only 0.9% of the patients had severe BDD. A significant relation was found between gender and BDD, and between marital status and BDD. The relation of age and severity of BDD was not statistically significant.

Conclusion: BDD disorder in orthodontic patients was more common in women and single people. In this regard, it is recommended that cosmetic clinicians be careful in accepting patients with a history of mental and personality problems, multiple and frequent esthetic surgeries, and if necessary, persuade and refer the patient to a psychiatrist and counselor to prevent the consequences.

Keywords: Body Dysmorphic Disorder, Orthodontics, Anxiety Disorder.

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Introduction

Body Dysmorphic Disorder (BDD) is a mental disorder characterized by preoccupation with slight or imagined defects or flaws in appearance.[1-2] The prevalence of BDD is reported to vary from 0.7-2.4% in the general population and 13-15% in patients who refer to cosmetic clinics.[3-5] BDD has neurobiological, psychological, and sociocultural backgrounds.[6-7] BDD as a chronic disorder can cause social fear, anxiety, depression, and anger, and may interfere with patients' daily activities as they spend a lot of time thinking about their body defect.[2,8-10]

BDD patients are distressed about their appearance and have an unrealistic image of their bodies.[11] The patients with BDD usually seek cosmetic procedures instead of psychological help to suppress the distresses and concerns caused by their distorted body image.[12-13] Usually, as the BDD patients get a cosmetic procedure on their obsessed body part, their obsessions shift to another body part, and their unrealistic expectations are not satisfied often.[14-16] Most patients are often obsessed with skin, nose, tooth, and breast.[5,8,17] As BDD patients are obsessed with their teeth, they may consult orthodontics for dentofacial aesthetic treatments.[18-19] Therefore, orthodontists should be aware of the symptoms of BDD, recognize potential BDD patients, and refer them for psychological and psychiatric help.[11,18] This study identified the prevalence of BDD in orthodontic patients.

Materials and Methods

In this descriptive-analytic cross-sectional study the prevalence of BDD was assessed in adults undergoing orthodontic treatment. The study was approved by the ethics committee of the Guilan University of Medical Sciences (GUMS) (IR.GUMS.REC.1398.431).

320 patients older than 18 years were included in the study at the dentistry faculty of GUMS. Participants were excluded if they had craniofacial syndromes, visible physical inabilities, mental diseases such as depression and OCD, and required orthognathic surgery. After explaining the aims of the current study, the participants signed a written consent and were given an anonymous questionnaire.

Gender, age and marital status were recorded. Other data were collected using Yale-Brown Obsessive-Compulsive Scale Modified for Body Dysmorphic Disorder (YBOCS-BDD) questionnaire. Previous studies have assessed the validity of this questionnaire. In this paper, the reliability of the questionnaire was estimated

to be 74.4% using the Cronbach alpha coefficient. The questionnaire was a 10- item, semi-structured, rater-administered measure which had 5 choices for each question. According to the answer, a score of 0 to 4 was given to each question. The total score was measured by summing up each question's score and ranged from 0-40. The BDD was considered as normal if the total score was less than 10 and as mild if the total score varied from 10 to 15. The total score of 16 to 25 determined the moderate BDD. And, the total score of 26 and higher was the cut point to determine severe BDD.

All the data was analyzed using SPSS® software version 24 (IBM, Armonk and North Castle, NY, USA). Fisher's exact test was applied at the significance level of P=0.05.

Results

The data of 320 patients was analyzed. The mean age of participants was 26.87±5.91. Data distribution is presented in Table 1.

Participants' Answer to YBOCS-BDD Questionnaire is presented in table 2 in detail.

The analysis of data using Fisher's Exact Test showed that the relation of gender and marriage status with the severity of BDD was significant. (P value=0.018 and P value= 0.017, respectively) So that, BDD was more severe in females and single patients. While the relation of age and severity of BDD was not statistically significant. (P value= 0.086) (Table 3)

Using t-test, a significant relation was found between gender and the mean BDD score of participants. (P value= 0.004) So that, the mean score of BDD was higher in females. The same significant relation was reported between marriage status and the mean BDD score. (P Value= 0.001) So that, BDD had a higher mean score in single participants compared to married participants. Also, the relation of age and the mean BDD score of participants was significant statistically. (P= 0.001) So that, as participants were older, the mean BDD score was lower (Table 4).

Discussion

In this study, the frequency of BDD was assessed in 320 participants referring to the dental clinic of the University of Medical Sciences.

According to the results of the current study, most participants were normal in terms of BDD. 34.4% and 17.2% of participants had mild and moderate BDD respectively. And, 0.9% of participants were diagnosed with severe BDD.

In the study of Esmaeili *et al.*[21], the prevalence of BDD in orthodontic patients was 19.3%. In another study, it was claimed that one out of four patients, had at least one mental distress disorder and the annual prevalence of this disorder was 17.7%.[22] Yassaei *et al.*[23] stated that the prevalence of BDD was 5.5% among orthodontic patients. In 2006, Hepburn *et al.*[24] reported the prevalence of BDD among orthodontic patients to be 7.5%.

In accordance with the previous studies, the prevalence of BDD was significantly more in females compared to males in the current study. Veale et al reported the prevalence of BDD to be 3 times more in females compared to males.[25] Esmaeili *et al.*[21] also found the prevalence of BDD to be 30 times more in females. Yassaei *et al.*[23] found the same results.

In the current study, as the patients were older the prevalence of BDD was lower. Yassaei *et al.*[23] stated that as patients are younger the prevalence of BDD and the possibility of undergoing orthodontic evaluation increases. while Sathyanarayana *et al.*[26] found no significant relation between BDD and age. The difference in demographic features of patients in these studies may explain the divergence results.

BDD was more frequent in single patients in the current study. In contrary to the study, the results of Esmaeili *et al.*[21] showed a significant relation between married patients and BDD. As Gasemnejad *et al.*[27] had previously stated that BDD was significantly influenced by stress and stress was significantly higher in married participants. This finding explains why BDD was more frequent in married patients in the studies of Esmaeili and Gasemnejad.[21,28] Abramowitz *et al.*[29] found that the prevalence of BDD was more in single participants for having a higher level of stress, as married patients get more mental and social support compared to single participants. Phillips *et al.* and Yassaei *et al.*[23,29] reported the same findings.

Patients with BDD are usually not aware of the psychological origins of this disorder and seek cosmetic treatments. Orthodontics, oral maxillofacial surgeons and plastic surgeons face these patients first. So, these specialists should be educated about BDD and should refer the potential BDD patients to a psychiatrist so that the disorder is diagnosed and treated professionally by medication and behavior therapy. Awareness on BDD and its consequences is necessary for orthodontists, refer the patient to a psychiatrist to prevent them from seeking unnecessary and repeated treatments that are usually not satisfying to them. History of previous unnecessary cosmetic treatments can guide orthodontics toward the diagnosis of a potential BDD patient.

Table 1. Data distribution of participants

Variables		Percent (Number)
Gender	Female	50% (160)
	Male	50% (160)
Marriage status	Single	72.2% (231)
	Married	27.8% (89)
Age	18-30 years old	78.4% (251)
	>30 years old	21.6% (69)

Tables 2. Participants' Answer to YBOCS-BDD Questionnaire

Questions	Choices	Percent (Number)
Question 1: Time spent thinking about the body defect	None	36.6% (117)
	Mild (less than 1 hr/day)	37.5% (120)
	Moderate (1-3 hrs/day)	16.9% (54)
	Severe (greater than 3 and up to 8 hrs/day)	4.7% (15)
	Extreme (greater than 8 hrs/day)	4.4% (14)
Question 2: Interference due to thoughts about the body defect	None	27.8% (89)
	Mild: slight interference with social, occupational, or role activities, but performance not impaired.	50% (160)
	Moderate: definite interference with social, occupational, or role performance, but still manageable	19.7% (63)
	Severe: causes substantial impairment in social, occupational, or role performance	2.2% (7)
	Extreme: incapacitating.	0.3% (1)
Question 3: Distress associated with thoughts about the body defect	None	23.4% (75)
	Mild: not too disturbing.	45.6% (146)
	Moderate: disturbing.	25.9% (83)
	Severe: very disturbing.	2.8% (9)
	Extreme, disabling distress.	2.2% (7)
Question 4: Resistance against thoughts about the body defect	Makes an effort to always resist, or symptoms so minimal doesn't need to actively resist.	51.2% (164)
	Tries to resist most of the time	25.3 (81)
	Makes some effort to resist.	19.4% (62)
	Yields to all such thoughts without attention away from these thoughts attempting to control them but yields with some reluctance.	3.1% (10)
	Completely and willingly yields to all such thoughts.	0.9% (3)
Question 5: Degree of control over thoughts related to the body defect	Complete control, or no need for control because thoughts are so minimal.	22.2% (71)
	Much control, usually able to stop or divert these thoughts with some effort and concentration.	38.4% (123)
	Moderate control, sometimes able to stop or divert these thoughts.	32.5% (104)
	Little control, rarely successful in stopping thoughts, can only divert attention with difficulty.	6.6% (21)
	No control, experienced as completely involuntary, rarely able to even momentarily divert attention.	0.3% (1)
Question 6: Time spent in activities related to the body defect	None	35.6% (114)
	Mild (spends less than 1 hr/day)	38.8% (124)
	Moderate (1-3 hrs/day)	19.1% (61)
	Severe (spends more than 3 and up to 8 hours/day)	5.3% (17)
	Extreme (spends more than 8 hrs/day in these activities)	1.2% (4)
Question 7: Interference due to activities related to the body defect	None	36.2% (116)
	Mild: slight interference with social, occupational, or role activities, but performance not impaired.	43.4% (139)
	Moderate: definite interference with social, occupational, or role but still manageable.	16.9% (54)
	Severe: causes substantial impairment in social, occupational, or role performance.	2.5% (8)
	Extreme: incapacitating.	0.9% (3)
Question 8: Distress associated with activities related to the body defect	None	32.2% (103)
	Mild: only slightly anxious if the behavior prevented.	41.2% (132)
	Moderate: reports that anxiety would mount but remain manageable if the behavior is prevented.	21.2% (68)
	Severe: prominent and very disturbing increase in anxiety if the behavior is interrupted.	4.1% (13)
	Extreme: incapacitating anxiety from any intervention aimed at modifying activity	1.2% (4)
Question 9: Resistance to compulsion	Makes an effort to always resist, or symptoms so minimal doesn't need to actively resist.	40.6% (130)
	Tries to resist most of the time.	27.8% (89)
	Makes some effort to resist.	27.5% (88)
	Yields to almost all of these behaviors without attempting to control them, but does so with some reluctance.	2.2% (7)
	Completely and willingly yields to all behaviors related to body defects.	1.9% (6)
Question 10: Degree of control over a compulsive behavior	Complete control or control is unnecessary because symptoms are mild.	24.7% (79)
	Much control, experiences pressure to perform the behavior, but usually able to exercise voluntary control over it.	45.9% (147)
	Moderate control, strong pressure to perform the behavior, can control it only with difficulty.	23.1% (74)
	Little control, very strong drive to perform the behavior, must be carried to completion, can delay only with difficulty.	5.3% (17)
	No control, drive to perform the behavior experienced as completely involuntary and overpowering, rarely able to even momentarily delay activity.	0.9% (3)

Table 3. Severity of body dysmorphic disorder based on gender, marriage status, and age by YBOCS-BDD Questionnaire in percent (number)

Severity of BDD*	Based on gender		Based on marriage status		Based on age		Total
	Female	Male	Single	Married	18-30 years old	> 30 years old	
Normal	40.6% (65)	54.4% (87)	42.4% (98)	60.7% (54)	44.6% (112)	58% (40)	47.5% (152)
Mild	36.3% (58)	32.5% (52)	36.4% (84)	29.2% (26)	34.7% (87)	33.3% (23)	34.4% (110)
Moderate	21.2% (34)	13.1% (21)	19.9% (46)	10.1% (9)	19.5% (49)	8.7% (6)	17.2% (55)
Severe	1.9% (3)	0% (0)	1.3% (3)	0% (0)	1.2% (3)	0% (0)	0.9% (3)

*Body Dysmorphic Disorder

Table 4. The mean Body Dysmorphic Disorder score of participants according to gender, marital status, and age

Variables		Mean score ±SD	P value
Gender	Female	11.03±5.82	0.004
	Male	9.21±5.32	
Marriage status	Single	10.87±5.75	0.001
	Married	8.17±4.84	
Age	18-30 years old	10.5±6.68	0.001
	>30 years old	8.5%±17.08	

Conclusions

The results of the current study showed that BDD was more frequent in females, single participants, and at younger ages. Increasing awareness about psychological symptoms of BDD and assuring of patient's mental health, seems to be essential for surgeons. Orthodontists and surgeons should be careful about patients with a history of frequently repeated surgeries and should refer the patients to a psychiatrist if needed.

Conflict of Interest

None

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