Body Dysmorphic Disorder in Iranian Orthodontic Patients

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Abstract- Patient's preoccupations with perceived defect in appearance or excessive concern about minimal flaws are among diagnostic criteria of body dysmorphic disorder (BDD). Sufferers usually seek cosmetic procedures such as orthodontic treatment. This study was conducted to estimate the prevalence of BDD among a sample of Iranian orthodontic patients. A total of 270 orthodontic patients were evaluated with BDD-YBOCS questionnaire for the diagnosis of BDD. Fifteen patients (5.5%) were screened positive for BDD. BDD was more frequent among females, singles and in younger patients. Most of the BDD patients experienced multiple previous orthodontic evaluations. The relative high prevalence of BDD among orthodontic patients in Iran offers that orthodontists should take psychologically based problems such as BDD into account while evaluating patient's orthodontic problems.

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Introduction

Body dysmorphic disorder (BDD) has been recently added to the somatoform disorders category. It was first described by Enrico Morselli as dysmorphophobia in 1866 (1). Freud's famous "Wolf Man", a case of a patient's delusions about his nose, might have been a case of BDD.

BDD is described as a distressing preoccupation with perceived defects in appearance or excessive concern over minimal defects which cannot be better accounted for other mental disorders such as anorexia nervosa, gender identity disorder, major depressive disorder, avoidant personality disorder or social phobia (2). In the most patients the concerns about appearance focus on the head and face (3), and as the patients lack insight to the true nature of the problem they usually seek non psychiatric and cosmetic treatments (4).

Most frequently requested treatments by the BDD patients in decreasing order are dermatological, surgical (rhinoplasty, liposuction and breast augmentation) and dental (tooth whitening, jaw surgery and orthodontic treatment) treatments (5). The prevalence of BDD has been estimated to be 1-2% in the general population of United States; however BDD is more frequent among patients seeking cosmetic treatments and has been reported to be diagnosed in 6-15% of dermatologic and cosmetic surgery patients (6), and in 7.5% of an orthodontic patient sample including 40 patients in London (7).

There is no consensus on gender difference, while one study reported higher prevalence in women (8); other studies found the higher prevalence in men or equal distribution (5,9,10). BDD is a poorly studied condition among Asian populations and no data exist about the prevalence of BDD in Iranian orthodontic patients. Therefore, this study was conducted to determine the prevalence of BDD in a sample of Iranian adult orthodontic patients and to elucidate the relationship between some demographic factors and BDD in the study group.

Materials and Methods

This study was conducted from October 2011 to September 2012 at two private orthodontic clinics and one orthodontic teaching center in Yazd, Iran. The study protocol was approved by ethics committee of

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the Shahid Sadoughi University of Medical Sciences, Yazd, Iran. All patients had been referred by dental practitioners for routine orthodontic treatment. Inclusion criteria were age over 18, patient willingness for contribution in the study and filling out the questionnaire. Patients with obvious physical disabilities or craniofacial syndromes and cleft lip and/or palate patients as well as patients who needed orthognathic surgical procedures were excluded from the study. All new patients who met the criteria for including in the study received a self-report version of BDD- YBOS questionnaire. This test is a modification of the Yale- Brown obsessive compulsive scale (Y-BOCS) for BDD (11), and is a validated questionnaire for diagnosing of BDD with good repeatability and internal consistency (7). The questionnaire contains 12 questions which the first three questions are related to diagnostic criteria of BDD and the rest of the questions are designed to determine the severity of symptoms during the previous week.

Total score of a patient in the first three questions indicates the diagnosis. Score of 3 is suggestive of no BDD, while scores of 4-5 indicate mild BDD, 6-7 represent moderate BDD and 8-9 and 10-11are pertained to severe and extremely severe BDD respectively (12). Since scores on these three questions are roughly equivalent to the scores on the full 12-item version (12), to save time and encourage the patients to answer the questions carefully, we used only the first three items.

In addition to the first three questions of the BDD-YBOCS questionnaire, three questions regarding age at trial entry, gender and marital state were added to the questionnaire. Moreover, three other questions (regarding history of previous multiple evaluations concerning their orthodontic problem, history of previous cosmetic procedure and history of psychological/psychiatric evaluation) from the screening questionnaire for BDD in orthodontic patients suggested by Polo were included in our questionnaire (13).

Statistical analysis

Data were analyzed using the statistical package for social sciences (SPSS) version 18 for Windows (SPSS, Inc., Chicago, Illinois, USA). The prevalence of BDD in the study sample was determined and based on the BDD- YBOCS results patients were assigned BDD positive and BDD negative. The mean age, gender, and marital state, as well as the history of previous multiple orthodontic evaluations, the history of previous cosmetic procedure and the history of psychological/psychiatric evaluation were compared between patients screened positive and negative for BDD using the student's t-test (for comparison of age between two groups) and the chi square or fisher's exact test (for nominal variables). Statistical significance was considered to be $P \leq 0.05$.

Results

A total of 270 patients completed the questionnaire. From the 270 patients, 17 (6.2%) were screened positive for BDD. Results of the BDD- YBOCS questionnaire are presented in Table 1.

Table 1. Results of BDD-YBOCS questionnaire

Number of patients	% of total	BDD- YBOCS score	Diagnosis	Defect of concern
253	93.7	≤ 3	No BDD	-
2	0.7	8-9	Severe BDD	Teeth
9	3.3	6-7	Moderate BDD	Teeth(in 7 patients), nose (1 patient), hair (1 patient)
6	2.2	4-5	Mild BDD	Teeth (5 patients), ugly face (1 patient)

From these 17 patients, 15 (5.5%) met the BDD diagnostic criteria. Two patients who were diagnosed to suffer from mild BDD were failed the diagnosis since they had obvious malocclusions which could not be described as "minimal defects".

Mean age, gender, marital state, history of previous multiple orthodontic evaluations, cosmetic procedure and psychological/psychiatric evaluations are shown in Table 2.

Comparisons between BDD positive and BDD negative patients showed that BDD patients in our sample were younger than non BDD patients (P= 0.000); most of them were female (X2= 4.14, df= 1, P= 0.042) and single (X2= 7.5, df= 1, P= 0.006). There was no significant difference in history of previous cosmetic procedure (X2= 0.17, df= 1, P= 0.67) and psychological/psychiatric evaluation between the two groups (X2= 0.11, df= 1, P= 0.73), but most of BDD patients had sought orthodontic evaluations before (X2= 115.4, df= 1, P= 0.000).

Table 2. Comparison of questionnaire's items between BDD and non BDD patients

Variables	Total(270)	BDD patients(15)	Non BDD patients(255)	*P* value
Age				
Mean	22.3	19.06	24.2	0.000*[a]
Range	18-32	18-21	18- 32	
Gender				
Male	103(38%)	2(13%)	101(40%)	0.04*
Female	167(62%)	13(87%)	154(60%)	
Marital state				
Single	139(51%)	11(73%)	128(50%)	0.006*
Married	131(49%)	4(27%)	127(50%)	
Previous multiple orthodontic evaluation				
No previous orthodontic evaluation	249(92%)	3(20%)	246(96%)	0.000*
Previous multiple orthodontic evaluations	21(8%)	12(80%)	9(4%)	
Previous cosmetic procedure				
No previous cosmetic procedure	267(99%)	15(100%)	252(98%)	0.67Ns[b]
Previous cosmetic procedure	3(1%)	0(0%)	3(2%)	
Previous psychological/psychiatric evaluation				
No previous psychological/psychiatric evaluation	268(99%)	15(100%)	253(99%)	0.73Ns
previous psychological/psychiatric evaluation	2(1%)	0(0%)	2(1%)	

[a] *, *P*- value < 0.05, [b] Ns, not significant

Discussion

This study is the first one to assess the prevalence of BDD in Iranian and also Asian orthodontic patients. Fifteen patients were screened positive for BDD in this study which their diagnoses were further confirmed by a psychiatrist. In one comparable study of 40 orthodontic patients, 7.5% of the patients suffered from BDD (7). In another study, the prevalence of BDD was evaluated in maxillofacial outpatients presenting for orthognathic surgery, and it was found that 17% of the patients were diagnosed positive for BDD (14). Prevalence of BDD in dermatological and plastic surgery patients have been reported to be 8-15% (15, 16), and 3- 53% (17, 18) respectively. Based on these data the prevalence of BDD in Iranian orthodontic patients seems to be less than that of the European orthodontic patients (7). Among patients screened positive for BDD in our study the focus of concerns in 12 patients was on the teeth, and the preoccupations in the other three patients included nose, hair and ugly face. As stated earlier head and face are the common sites of concerns in BDD patients (3).

Only patients over 18 years of age were included in the study since BDD symptoms usually begin during adolescence (2). BDD patients in this study were younger than non BDD patients. This finding was in line with results of some previous studies (14, 16), but contrary to those of others (19). A gender preference toward females was seen in our study which also accords with some earlier findings (20), and is in contrast with others (14). Most of the BDD sufferers in our study were single which corroborates previous findings (7). Three questions were added to our questionnaire from the screening guide suggested by Polo (13). These questions were selected because they had the definite answer of yes or no and were not repetition of BDD-YBOCS questions. From these questions, only one regarding history of previous multiple orthodontic evaluations was significantly different between two groups. Because of young age profile of orthodontic patients in our sample, lack of significant difference in the history of previous cosmetic procedures between the groups is not surprising and asking about it would be helpful in diagnosis of BDD in older patients.

As BDD patients usually have poor insight to the psychiatric nature of their problem they mostly seek non psychiatric treatments (4); therefore they often do not report previous psychological/psychiatric consultation. It can be an explanation for insignificant difference among BDD sufferers and non BDD patients in this item. According to our findings asking about history of previous cosmetic procedures or psychological/psychiatric evaluation have little to do with screening of BDD in orthodontic patients?

The self-report version of BDD- YBOCS questionnaire was used in this study. We preferred the self-report version over an interview based one to let the patients answer the questions calmly. Since we suppose

that interviewing the patients might have make them more stressed and concerned about their problems.

As stated earlier, BDD sufferers are excessively concerned about minimal flaws in their appearance. These patients usually seek cosmetic treatment among them is orthodontic treatment. They are rarely satisfied with the results, and the clinician's attempts to reassure the patient that the dentition looks good are not helpful (4). The best solution is to explain the condition to the patients and refer them to the psychiatrists (4). Some of them accept to try psychiatric consultation while others may be reluctant. Referring these patients to accurate web sites or available books would be very helpful particularly in the latter group (4).

The orthodontist should acknowledge the patient that he or she can receive the orthodontic treatment if needed, but the best results would be possible when the underlying psychological problem is solved with the help of a psychiatrist.

The prevalence of BDD was 5.5% in our sample of 270 Iranian orthodontic patients. Most of the sufferers are female, single and younger than non BDD patients and most of them have experienced multiple previous orthodontic evaluations. Becoming familiar with the condition and the clues to screen it is necessary for all clinicians to avoid potential problems for both patients and clinicians.

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