

CLINICAL REPORT

Body Dysmorphic Disorder in University Students with Skin Diseases Compared with Healthy Controls

Yeşim KAYMAK¹, Ender TANER² and Işıl ŞİMŞEK³

Departments of ¹Dermatology and ²Psychiatry, University of Gazi, Health Center; and ³Family Economics and Nutritional Education, Vocational Education Faculty, University of Gazi, Ankara, Turkey

Body dysmorphic disorder appears relatively frequently in dermatological and cosmetic surgery settings; in fact, dermatologists may be the type of practitioner most often consulted by patients with body dysmorphic disorder. The aim of this study was to evaluate body dysmorphic disorder symptoms in Turkish university students with skin diseases. A total of 107 outpatients diagnosed with any skin disease and 109 age- and sex-matched healthy subjects recruited from the students of the same university were enrolled in the study. Subjects in both the patient and the control groups completed the Beck Depression Inventory and the Body Dysmorphic Symptoms Scale (BDSS). Groups differed on the basis of BDSS scores ($t=3.74$, $p=0.001$), with higher scores in the group with skin diseases compared with those for healthy controls. Subjects with skin diseases and higher BDSS scores had higher Beck Depression Inventory scores compared with those with lower BDSS scores ($z=4.13$, $p=0.001$). This study suggests that patients with skin disease have higher body dysmorphic disorder scores compared with healthy controls. Key words: body dysmorphic disorder; somatoform disorder; university students; Beck Depression Inventory.

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Yeşim Kaymak, Hoşdere cad. Şair Baki sok. 2/5 Y. Ayrancı-Ankara TR-06540 Turkey. E-mail: yesimkaymak@yahoo.com

Body dysmorphic disorder (BDD) is characterized as a preoccupation with a slight or imagined defect in some aspect of physical appearance that leads to significant disruption in daily functioning (1). BDD is classified as a somatoform disorder in the Diagnostic and Statistical Manual of Mental Disorder-IV-TR (DSM-IV-TR) (2). When a slight physical anomaly exists in a person with BDD, their concern is markedly excessive and this preoccupation causes clinically significant distress or impairment in social, occupational, or other important areas of functioning (1). Onset of BDD usually occurs during adolescence, with equal distribution between the sexes (3). Although any body area can be the focus of concern, preoccupation with the appearance of the skin, hair, and nose are most common. Typical associated

behaviours include skin picking, mirror checking, and camouflaging (e.g. with a hat or make-up) (4). In a series of 188 individuals with DSM-defined BDD who presented to a psychiatrist, the skin and hair were the most common areas of concern (5). Skin concerns usually involve the facial skin, but may focus on other areas too (e.g. back, legs or arms). Skin complaints commonly include acne, scarring, wrinkles, colour or marks. Hair concerns focus most commonly on perceived balding or excessive facial or body hair, although patients may present with virtually any hair-related complaint. The disorder appears relatively frequently in dermatological and cosmetic surgery settings; in fact, dermatologists may be the type of practitioner most often consulted by patients with BDD. Patients with BDD are at increased risk of attempting suicide (6, 7), and they are also more likely to threaten healthcare providers both legally and physically (8). Clearly it is important for physicians to be aware of BDD, and to develop an understanding of the type of patient who might have, or be at risk of developing, this condition (3). Distress and morbidity associated with BDD in dermatology settings have been reported and include a variety of symptoms, such as severe depression and anxiety, withdrawal from relationships and social activities, stopping work, psychiatric hospitalization, suicide attempts, and even completed suicide (3). The aims of the current study were: (i) to evaluate BDD symptoms in Turkish university students with skin diseases; and (ii) to examine the symptoms of BDD and associated depressive symptoms in patients with skin diseases compared with those of age- and sex-matched healthy controls.

MATERIALS AND METHODS

Subjects

A total of 107 outpatients (41 males and 66 females, mean age 21.3 years, age range 17–27 years) who had been admitted to the dermatology outpatient clinic of an university health centre and who were diagnosed with any skin disease based on clinical examination by a dermatologist (YK) were enrolled in the study. A control group of 109 age- and sex-matched healthy volunteers was recruited from the students at the social centre of the same university. The aim of the study was described to all invited participants and written informed consent was obtained for all participants. Subjects with any co-existing medical disorder, other than skin diseases, which leads to functional or visual impairment, such as facial dysmorphism, amputation, etc., were ex-

cluded from the study. Dermatological diagnoses of the patients involved in the study were as follows: acne ($n=31$); dermatitis of any kind ($n=18$); fungal diseases ($n=12$); pigment disorders ($n=12$); bacterial diseases ($n=10$); hair diseases ($n=5$); viral diseases ($n=5$); xeroderma ($n=3$); callus ($n=3$); palmoplantar hyperhidrosis ($n=2$); burns ($n=2$); aphthous stomatitis ($n=2$); acute urticaria ($n=1$); and psoriasis ($n=1$). Subjects in both the patient and control groups were requested to complete the Beck Depression Inventory (BDI) and the Body Dysmorphic Symptoms Scale (BDSS).

Body Dysmorphic Symptoms Scale (BDSS)

The BDSS is a self-rating instrument (9) consisting of the following 10 items, which estimate the presence of some important psychopathological features of BDD:

- Are you seriously concerned that one part of your body is defective?
- Do you look at yourself in the mirror carefully and repeatedly?
- Do you avoid looking at yourself in the mirror to be less worried?
- Are you concerned that others may be looking at, talking about, or making fun of your defect?
- Do you try to hide or camouflage your defect with your hands, hair, make-up, or clothing?
- Do you think that corrective surgical treatment is necessary?
- Have you neglected your usual activities because of the defect?
- Are you ever so enraged and in despair that you lose control and become insulting, aggressive, or violent toward your relatives and friends?
- At these times, do you break any object or punch and kick walls and doors?
- Are you ever so in despair that you wish yourself dead or want to harm yourself because of your despair?

The global score for this scale is obtained by the sum of the positive items. The scale was translated into Turkish by a medical translator fluent in both languages. The Turkish version was back-translated into English by another medical translator and the original and translated forms were compared in order to assess any difference. There was an exact match between the two forms.

Beck Depression Inventory (BDI)

The BDI is a self-rating Likert-type scale composed of 21 items, which evaluates the level of depression. Each question is rated

from 0 to 3 points. The sum of points shows the level of depression (10). Subjects with BDI scores greater than 13 were considered depressive (11). To evaluate the impact of BDD symptoms on psychiatric symptoms, patients with higher BDSS scores were compared with those with lower BDSS scores. Patients with BDSS scores greater than 4 ($n=19$; 18.8) were regarded as at high risk of BDD, and subjects with BDSS scores below or equal to 4 ($n=88$; 82.2%) were regarded as at low-risk of BDD.

Statistical analysis

Comparison between groups on continuous variables was conducted using an independent sample *t*-test for comparison of parametric variables and a Mann-Whitney *U* test where parametric criteria were not met. Comparison of multiple groups was made by Kruskal-Wallis test. Categorical variables were compared by χ^2 analysis; conservatively, we used 2-tail statistics. Owing to the multiple comparisons and the number of subjects, our results are prone both to type I and type II errors. However, given the exploratory nature of our study, we set the significance level to 0.05 to minimize type II error.

RESULTS

Demographic variables, mean values and standard deviations of BDI and BDSS scores of subjects with skin diseases, and healthy controls, and comparison of these variables between disease and control groups are presented in Table I. Distribution of BDSS scores according to gender in skin disease and control groups are presented in Fig. 1. Comparison of the patients and healthy controls regarding age ($t=1.65$, $p=0.1$), gender ($\chi^2=3.72$, $p=0.054$) and BDI scores ($t=0.82$, $p=0.4$) yielded no statistically significant difference. Groups differed on the basis of BDSS scores ($t=3.74$, $p=0.001$), with higher scores in the group with skin diseases compared with those in healthy controls. Also, comparison of subjects based on scores greater than 4 between healthy and skin disease groups yielded a higher number of subjects with BDS symptoms in patients with skin diseases compared with that in controls. Nineteen subjects out of 107 patients with skin disease had BDSS scores greater than 4, whereas only 3 subjects out of 109 healthy controls had BDSS scores greater than 4 ($\chi^2=13.289$, $p=0.001$).

Table I. Comparison of demographic variables and test scores of subjects with skin diseases and healthy controls

| | Subjects with skin diseases | Healthy controls | Statistics (<i>p</i> -value) |
|--|-----------------------------|------------------|-------------------------------|
| Gender, <i>n</i> (%) | | | |
| Male | 41 (38.3) | 56 (51.4) | 3.72 (0.054) |
| Female | 66 (61.7) | 53 (48.6) | |
| Age (years), mean \pm SD | 21.3 \pm 2.2 | 21.8 \pm 2.4 | 1.65 (0.1) |
| Disease duration (months), mean \pm SD | 32.6 \pm 39.3 | – | |
| BDSS score mean \pm SD | 2.37 \pm 1.97 | 1.52 \pm 1.30 | 3.74 (0.001) |
| Men | 2.02 \pm 2.01 | 1.57 \pm 1.37 | 1.32 (0.19) |
| Women | 2.59 \pm 1.93 | 1.47 \pm 1.24 | 3.64 (0.001) |
| BDI score mean \pm SD | 8.88 \pm 6.84 | 9.61 \pm 6.07 | 0.82 (0.41) |
| Men | 7.8 \pm 7.53 | 8.32 \pm 5.12 | 0.4 (0.687) |
| Women | 9.56 \pm 6.34 | 10.94 \pm 6.71 | 1.15 (0.25) |

BDI: Beck Depression Inventory; BDSS: Body Dysmorphic Symptoms Scale; SD: standard deviation.

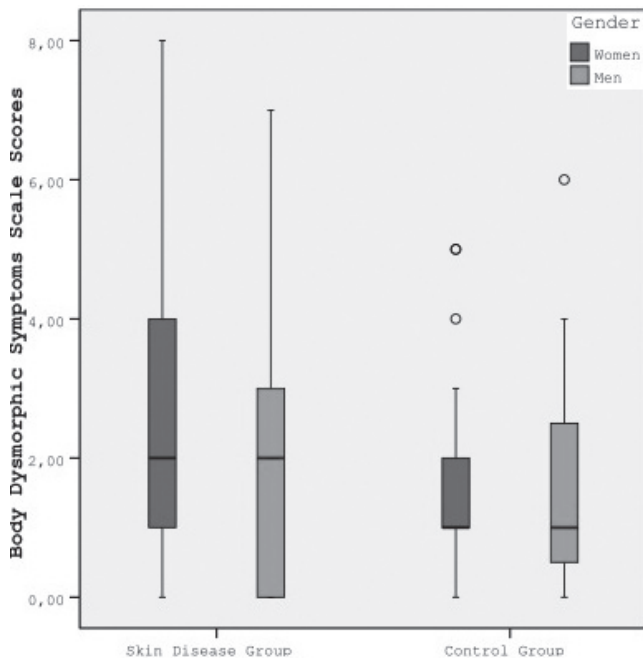


Fig. 1. Distribution of Body Dysmorphic Symptoms Scale Scores according to gender in skin disease and control groups.

Subjects with skin diseases were grouped according to disease duration, as patients with disease duration less than one month ($n=25$), between one month and 2 years ($n=23$), or over 2 years ($n=59$). Groups did not differ from each other either in terms of BDI ($\chi^2=1.067$, $p=0.587$) or BDSS ($\chi^2=0.589$, $p=0.745$) scores. Subjects with skin diseases were grouped according to age, as ≤ 20 years ($n=47$) or over 20 years ($n=60$). Groups did not differ from each other either in terms of BDI ($t=0.121$, $p=0.904$) or BDSS ($t=1.63$, $p=0.69$) scores. Subjects with skin diseases were grouped into those with BDSS scores greater than 4 ($n=19$; 17.8%) or those with BDSS scores less than or equal to 4 ($n=88$; 82.2%). Subjects with skin diseases with BDSS scores greater than 4 had higher BDI scores compared with those with BDSS scores less than or equal to 4 ($z=4.13$, $p=0.001$). Similarly, in healthy controls, subjects with higher BDSS scores also had higher BDI scores. Mean values, standard deviations and statistics are shown in Table II.

DISCUSSION

In this study patients with skin diseases had higher BDSS scores compared with healthy controls. The

most common skin diseases were acne, dermatitis, fungal diseases and pigmentary disorders in the patient group. Only a few studies have systematically screened patients presenting to a dermatologist for BDD (12, 13). One such study found that 11.9% of 268 patients screened positive for BDD. The most common diagnoses in this group were: acne; rosacea; benign vascular lesions, such as haemangiomas and telangiectasias; and scarring (13). Studies investigating BDD in patients with acne revealed that BDD symptoms ranged from 8.8% to 21.1% depending on the severity of acne, with higher scores in the most severely affected patients (3, 14). Although there is no accepted cut-off point for BDSS for the diagnosis of BDD, subjects with scores greater than 4 constituted 17.8% of the patients with skin diseases, which is in the range of BDD symptoms reported in other studies, highly favouring a diagnosis of BDD. One of the limitations of the present study is the lack of structured psychiatric examination of the patients. The present study also indicates that BDD was as common in men as in women and there are no gender differences regarding BDSS scores.

Since all patients and control groups in our study presented to university-affiliated dermatology clinics, the findings cannot be generalized to all dermatology patients. It is possible that the patients in the current study might be more concerned with their appearance than patients presenting to a non-university-affiliated dermatology clinics. In addition, the location and visibility of lesions might have some impact on BDD symptoms (15); this requires further research.

Another limitation of the present study is the use of a self-report instrument to evaluate symptoms of BDD. Psychiatric symptoms in patient and control groups were not different from each other, and this result might be interpreted as an increase in BDSS scores in patients with skin diseases compared with controls, stemming mostly from disturbance in body perception. Subjects with BDSS scores greater than 4 constituted 17.8% of the patient group which is a very similar to the BDD proportions reported in patients with skin diseases (3, 14). Depressive symptoms assessed by BDI, both in the patient group and in healthy controls revealed higher BDI scores in patients with higher BDSS scores compared with those with low BDSS scores.

The rate of BDD in dermatology settings and the nature of presenting complaints are unknown. The level of cosmetic demands of patients applying to dermatology

Table II. Comparison of Beck Depression Inventory (BDI) scores of subjects grouped according to Body Dysmorphic Symptoms Scale (BDSS) scores in skin disease and healthy controls

| | Subjects with skin disease | | | Healthy controls | | |
|---------------|----------------------------|---------------------|--------------|------------------|---------------------|--------------|
| | n | BDI (mean \pm SD) | z (p) | n | BDI (mean \pm SD) | z (p) |
| BDSS \leq 4 | 88 | 7.37 \pm 5.25 | 4.13 (0.001) | 106 | 9.32 \pm 5.85 | 2.42 (0.015) |
| BDSS > 4 | 19 | 15.89 \pm 8.90 | | 3 | 19.66 \pm 5.77 | |

SD: standard deviation.

clinics is increasing, and dermatologists are consulted to evaluate and treat various cosmetic defects. While many such problems are easily treated and have a good treatment outcome, practitioners need to be alert for patients with BDD. Individuals with this under-recognized and severe psychiatric disorder often present to cosmetic dermatologists (16). Even if the treatment outcome is objectively acceptable, it appears that most patients with BDD are dissatisfied and continue to obsess about their perceived flaws. BDD is associated with marked impairment in functioning, notably poor quality of life, and a high rate of suicide attempts (4). Proper recognition and counselling of patients with BDD can have a significant positive impact, not only on their care, but also on the patient–physician relationship. Failure to recognize BDD can, and often does, lead to patient dissatisfaction, as well as difficult future interactions with patients with BDD (17). Therefore, recognition of the symptoms of BDD, using easily applicable self-rating scales, enables proper treatment of these patients, either through avoiding cosmetic procedures in patients with BDD or by postponing dermatological treatment until psychiatric evaluation or treatment has been completed. A multidisciplinary approach, which integrates psychiatric consultation with assessment in dermatology clinics, may improve the recognition of BDD. Further research, including larger prevalence studies that incorporate interviews to confirm the diagnosis, systematic comparison of patients with or without BDD, and treatment outcome studies, may improve our understanding of BDD in dermatology settings.

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