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TANNING IN BODY DYSMORPHIC DISORDER

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Abstract

Tanning in body dysmorphic disorder (BDD) has not previously been studied. In this study, 200 subjects with BDD were evaluated with measures to examine the prevalence of BDD-related tanning—i.e., darkening one's skin color by direct exposure to sunlight or artificial light which is motivated by a desire to improve a perceived appearance defect (i.e., a BDD concern). We also examined clinical characteristics of individuals who engaged in BDD-related tanning. 25% (95% CI, 19.0%–31.0%) of subjects reported BDD-related tanning. Among tanners, the skin was the most common body area of concern (84.0%). All tanners experienced functional impairment due to BDD, 26% had attempted suicide, and quality of life was markedly poor. 52% of tanners had received dermatologic treatment, which was usually ineffective for BDD symptoms. Tanners were more likely than non-tanners to compulsively pick their skin. In conclusion, tanning—a behavior with well-known health risks—is a relatively frequent BDD-related behavior.

Keywords

body dysmorphic disorder; dysmorphophobia; tanning; somatoform disorder

Body dysmorphic disorder (BDD) is a relatively common and severe disorder that consists of a distressing and/or impairing preoccupation with an imagined or slight defect in appearance (1). These individuals believe that they look ugly, deformed, or disfigured, when in reality they look normal (1,2). The appearance preoccupations most often focus on perceived defects of the skin (e.g., acne or scarring), hair (e.g., hair loss), and nose (1-5). Although BDD has been described for more than a century (1,2), it has been systematically researched for little more than a decade, and some of its clinical features are still being identified. Tanning is a BDD-related behavior that has only recently been identified as a feature of this disorder. To our knowledge, no previous reports have focused on this important clinical feature of BDD.

In this study, we assessed the prevalence of BDD-related tanning in 200 individuals with BDD, as well as BDD's clinical features in tanning subjects. BDD-related tanning was defined as any behavior that involved darkening one's skin color by direct exposure to sunlight or artificial light (e.g., in a tanning salon); this behavior must have been motivated by a desire to alter and improve a perceived appearance defect (i.e., a BDD concern). We hypothesized that BDD-related tanning would be relatively common and that tanners would be more likely than non-tanners to be preoccupied with pale skin and acne, and more likely to compulsively pick their skin. These hypotheses were based on clinical observations that patients often tan to darken "pale" skin color, or to improve the appearance of nonexistent or slight acne or lesions caused by skin picking. We were also interested in whether tanners would have more severe BDD and had received more dermatologic treatment than non-tanners.

METHODS

Subjects

200 individuals with DSM-IV BDD participated in a study of the course of BDD. This report includes only data from the intake (baseline) assessment. Study inclusion criteria were current or past BDD, age 12 or older, the ability to be interviewed in person, and the absence of a condition (e.g., mental retardation) that would interfere with the collection of valid interview data. 52% of subjects were self-referred, and 48% were referred by professionals. 89.0% ($n=178$) of the sample currently met full DSM-IV criteria for BDD; 11.0% had met full BDD criteria in the past. 67.0% ($n=134$) were currently receiving mental health treatment. The hospital Institutional Review Board approved the study, and all subjects signed statements of informed consent (assent plus parental consent for adolescents) after the study was fully explained.

Assessments

The *BDD Form*, a semi-structured rater-administered measure (Phillips KA, unpublished) used in previous studies (e.g., 5,6) obtained data on demographic characteristics and BDD's clinical features, including body areas of concern, BDD-related behaviors, suicidality, lifetime functional impairment due to BDD, and dermatologic treatment history. The *Yale-Brown Obsessive Compulsive Scale Modified for Body Dysmorphic Disorder (BDD-YBOCS)* (7), a reliable and valid semi-structured interview, assessed current BDD severity. The proportion of subjects not currently working or in school due to psychopathology was assessed with the reliable and valid *LIFE-RIFT (Range of Impaired Functioning Tool)* (8). Current mental health-related quality of life was assessed with the *Medical Outcomes Study 36-Item Short-Form Health Survey (SF-36)* (9), a reliable, valid, and widely used self-report measure of mental dimensions of health status and health-related quality of life. The *Structured Clinical Interview for DSM-IV—Non-Patient Version (SCID-I/NP)* (10) assessed lifetime co-occurring psychiatric disorders. The *Clinical Global Impressions Scale* (11) retrospectively determined improvement following dermatologic treatment in terms of: 1) decreased preoccupation with

the *treated body area*, and 2) improvement in *overall BDD severity* (considering all body areas, not just the treated area).

Statistical Analysis

The proportion (and 95% confidence interval) of subjects who reported tanning in response to BDD appearance concerns was determined. BDD-related tanning was defined as any behavior that involved darkening one's skin color by direct exposure to sunlight or artificial light (e.g., in a tanning salon); this behavior must have been motivated by a desire to alter and improve a perceived appearance defect (i.e., a BDD concern). We did not assess the prevalence of "normal" tanning (i.e., tanning that was motivated by reasons unrelated to BDD). The clinical characteristics of subjects who met the above definition were examined with means, standard deviations, and frequencies. Chi-square analysis, Fisher's exact test, or *t*-tests were used to compare subjects who reported BDD-related tanning to those who did not in terms of the frequency of skin concerns and skin picking, BDD severity, and history of dermatologic treatment. Analyses of current BDD severity, current functioning, and current quality of life included only those subjects who currently met full DSM-IV criteria for BDD. Tests were two tailed; the alpha level was .05. SF-36 scores were descriptively compared, using standard deviation units, to published norms for the general U.S. population ($n=2,474$) (9).

RESULTS

25.0% (95% CI, 19.0%–31.0%) of the 200 subjects reported BDD-related tanning. A majority of the 50 tanners were female and single (see Table 1). Most were white; however, 10.2% were members of a minority race, and 12.8% were Hispanic. As shown in Table 1, the skin was the most common body area of excessive concern (in 84.0%), most often perceived acne, scarring, or "marks." The eight tanners who were not preoccupied with their skin were excessively concerned with a wide array of body areas, most commonly their weight (75.0%), nose (62.5%), stomach (50.0%), and overall face (50.0%). 76% of subjects had experienced suicidal ideation, and 26% had attempted suicide. All subjects had experienced impairment in functioning due to BDD, and approximately one third were not currently working or in school due to psychopathology. Quality of life was markedly poor; mean SF-36 scores were 1.7–2.1 standard deviation units poorer than norms for the U.S. population. A high proportion of tanners had a comorbid lifetime psychiatric disorder, most commonly a mood, anxiety, or substance use disorder. As shown in Table 1, more than half of tanners had sought and received dermatologic treatment for BDD concerns. Only 7.6% of dermatologic treatments led to decreased preoccupation with the treated body area, and only 5.1% improved overall BDD symptoms. There were no significant differences between tanners and non-tanners on any of the dermatologic treatment variables in Table 1.

Contrary to our hypothesis, tanners were not significantly more likely than non-tanners to be preoccupied with skin color or with acne/scarring/marks; nor were they significantly more likely to have any type of skin concern. There was a trend for tanners to have more severe BDD symptoms (BDD-YBOCS score) (32.0 ± 6.6 for tanners vs 29.9 ± 6.6 for non-tanners, $t=-1.85$, $df=174$, $p=.066$). As hypothesized, tanners were more likely than non-tanners to compulsively pick their skin (58.0% vs 39.3%, chi square = 5.30, $df=1$, $p=.021$).

DISCUSSION

This study found that 25.0% of BDD subjects reported BDD-related tanning. We did not determine whether subjects engaged in "normal" tanning (i.e., tanning for reasons unrelated to BDD appearance concerns); therefore, the prevalence of tanning for any reason in our sample is likely to be higher than 25%. The fact that 25% of subjects tanned specifically to improve BDD-related appearance "defects" is concerning, given the well-known risks of tanning (12).

These risks include the development of melanoma, basal and squamous cell carcinomas, as well as histological findings of solar elastosis and dermatoheliosis (13).

Although we did not determine the specific reasons for tanning, the skin was the most common area of concern (in 84%), primarily perceived acne/scarring/marks and skin color (these concerns, however, were not more common in tanners than in non-tanners). In our clinical experience, many individuals with BDD tan to diminish the appearance of nonexistent or slight acne and blemishes, to darken “pale” skin, and to make “uneven” or “blotchy” skin a more homogeneous color (2). Ironically, some patients tan to diminish the appearance of wrinkles, as did one study subject who reported tanning two to three hours a day to “cover up facial lines.” It is interesting that 16% of tanners did not have any skin preoccupations. While we did not systematically determine why these subjects tanned, some reported that they used tanning as a type of “camouflage.” For example, one man tanned the top of his head to minimize “baldness,” whereas others tanned to mask body hair that they perceived as being excessive. In our clinical experience, patients may also tan to minimize the appearance of perceived cellulite, to make body areas (e.g., body size or stomach) appear smaller, or to distract people from looking at “ugly” body areas (2).

Our clinical experience also indicates that some individuals with BDD tan to diminish the appearance of lesions and scars caused by compulsive skin picking (also known as “neurotic excoriation”) (14). In this regard, it is interesting that subjects who picked their skin were significantly more likely to tan than those who did not pick. Individuals with BDD pick their skin to try to improve its appearance (e.g., “smooth out” or remove blemishes). However, because this behavior can occur for hours a day, and may involve sharp implements such as pins, needles, razor blades, or knives, it can cause considerable skin damage and may even be life-threatening (for example, when major blood vessels are ruptured) (2,15,16). Thus, some individuals with BDD who pick their skin are an exception to the rule that people with BDD look normal.

Our study results highlight the very poor functioning and quality of life of individuals with BDD, consistent with findings from other studies (17,18). Of note, subjects' quality of life on the SF-36 was markedly poorer than for the U.S population. A very high proportion of subjects had experienced suicidal ideation or attempted suicide. This result, too, is consistent with studies which have found that 22%–24% of individuals with BDD have attempted suicide (4, 17).

Consistent with a previous report (6), approximately half of the subjects received dermatologic treatment for BDD concerns. Dermatologists may be particularly attentive to tanning behavior and may educate patients about its risks; however, it is unclear to what extent dermatologists are familiar with BDD or aware that BDD patients may tan in response to BDD appearance concerns. In the present study, only 7.6% of dermatologic treatments diminished preoccupation with the treated body area, and even fewer treatments (5.1%) improved BDD overall. (The latter number is lower than the former because some patients became less concerned with the treated body area but then focused more on other areas.) Although prospective studies of dermatologic treatment outcome are lacking, these findings are consistent with previous reports (4,6) and with clinical observations from the dermatology literature (19) indicating that BDD patients usually respond poorly to such treatment.

This study has a number of limitations. Although we did establish that subjects tanned to diminish BDD concerns, we did not systematically document the specific body areas at which tanning was directed or the frequency or type of tanning (e.g., sunlight versus a tanning bed), and history of dermatologic treatment was not confirmed by chart review. In addition, we did not assess the effect of tanning on appearance preoccupations and did not determine possible

negative consequences of tanning. In our clinical experience, many BDD patients tan to an extreme degree, some burning themselves to the point of causing severe skin damage. Occasional tanners abuse drugs or alcohol in order to tan; for example, one study subject felt so self-conscious about his “pale” skin that he left his house to tan only after first becoming intoxicated. We also did not systematically assess the extent to which tanning is a compulsive behavior—that is, driven by a strong urge which is difficult to resist or control. However, our clinical experience suggests that individuals with BDD usually experience tanning as compulsive, and some study subjects spontaneously described tanning as something they felt “compelled” to do or were “addicted to.” These observations may explain why it is difficult for BDD patients to stop tanning when simply encouraged to do so. This study also has a number of strengths. To our knowledge, it is the first to systematically examine tanning in BDD, it used a number of reliable and valid measures, and it contained a broader sample than most previous samples ascertained for BDD.

Additional research is needed to examine the prevalence of tanning in individuals with BDD and to address this study's limitations. Studies that investigate tanning in BDD are needed in a variety of settings—psychiatric, dermatologic, and community settings. The consequences of tanning in individuals with BDD also need further investigation. In the meantime, this study suggests that tanning is a relatively common feature of BDD. It is important to be aware that a relatively high proportion of individuals with BDD engage in this risky behavior in an attempt to improve their appearance.

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TABLE 1
Demographic and Clinical Characteristics of 50 Tanning Subjects with Body Dysmorphic Disorder

<i>Variable</i>	<i>N(%) or Mean ± SD</i>
Demographic characteristics	
Gender (female)	39 (78)
Age	34.5 ± 10.7
Race ^a	
White	44 (89.8)
American Indian	4 (8.0)
Asian	1 (2.0)
Alaskan native	1 (2.0)
Ethnicity (Hispanic) ^b	6 (12.8)
Marital status	
Single	27 (54)
Married	13 (26)
Divorced/separated	10 (20)
Education level	
High school education or less	11 (22)
At least "some college" or beyond	39 (78)
Most common body areas of concern (lifetime) ^c	
Skin ^d	42 (84.0)
Acne/scarring/"marks"	32 (64.0)
Color ^e	11 (22.0)
Wrinkles	6 (12.0)
Oily skin	3 (6.0)
Hair	32 (64.0)
Nose	23 (46.0)
Stomach	23 (46.0)
Most common BDD behaviors ^c	
Comparing with other people	49 (98.0)
Mirror checking	47 (94.0)
Camouflaging	47 (94.0)
Excessive grooming	40 (80.0)
BDD Severity (current BDD-YBOCS score) ^f	32.0 ± 6.6
Suicidality (lifetime)	
Suicidal ideation	38 (76.0)
Attempted suicide	13 (26.0)
Psychosocial functioning and quality of life (current)	
Social interference due to BDD (lifetime)	50 (100.0)
Job/academic interference due to BDD (lifetime)	49 (98.0)
Not working due to psychopathology	17 (34.0)
Not in school due to psychopathology	16 (32.0)
SF-36 Mental health ^g	37.1 ± 18.9
SF-36 Role emotional ^g	19.8 ± 30.9
SF-36 Social functioning ^g	44.7 ± 27.1
Comorbid disorders (lifetime)	
Mood disorder	42 (84.0)
Anxiety disorder	37 (74.0)
Substance use disorder	35 (70.0)
Eating disorder	27 (54.0)
Somatoform disorder	1 (2.0)
Dermatologic treatment for BDD concerns (lifetime)	
Sought dermatologic treatment	28 (56.0)
Received dermatologic treatment	26 (52.0)
Treatment types ^h	
Topical agents	20 (40.0)
Oral antibiotics	19 (38.0)
Isotretinoin	7 (14.0)
Skin peel	5 (10.0)
Treatment response (% of all treatments) ⁱ	
Decreased preoccupation with the treated body area	6 (7.6)
Improvement in overall BDD severity	4 (5.1)

^aTotal *n* = 49. %'s do not total 100%, as subjects could endorse more than one race.

^b*n* = 6 of 47.

^cBody areas were rated as present only if the concern was clearly excessive; lifetime = past and current concerns; most subjects had concern with more than one area.

^d Less common skin concerns were dark circles under the eyes ($n = 2$), pores ($n = 2$), sagging ($n = 2$), stretch marks ($n = 1$), “odd looking” skin ($n = 1$), dryness ($n = 1$), “bad” skin ($n = 1$), rough texture ($n = 1$), and “bumps” ($n = 1$).

^e 63.6 % of those with skin color concerns were concerned with pale skin.

^f BDD symptom severity was currently moderate-severe.

^g Scores on each subscale range from 0 to 100; lower scores indicate poorer quality of life.

^h Additional treatments were wart removal ($n = 2$), spider vein removal ($n = 1$), skin spot removal ($n = 1$), acne injection ($n = 1$), and microdermabrasion ($n = 1$).

ⁱ % “much improved” or “very much improved” as the CGI.