# Body dysmorphic disorder symptoms among patients with acne vulgaris

Whitney P. Bowe, BS,[a] James J. Leyden, MD,[a] Canice E. Crerand, PhD,[b]
David B. Sarwer, PhD,[c] and David J. Margolis, MD, PhD[a,d]
*Philadelphia, Pennsylvania*

***Background:*** Acne is one of the most common concerns of patients with body dysmorphic disorder (BDD), a psychiatric condition defined as a preoccupation with a slight or imagined defect in appearance that causes significant disruption in daily functioning.

***Objective:*** We sought to screen for BDD symptoms among patients with acne across a spectrum of acne severity.

***Methods:*** We used a validated self-report questionnaire and an objective assessment of acne severity by a single observer.

***Results:*** Rates of BDD ranged from 14.1% using more stringent criteria to assess acne severity to 21.1% using less stringent criteria. Two-fold increased odds of having BDD was seen in patients requiring systemic isotretinoin therapy.

***Limitations:*** Cross-sectional study design is a limitation.

***Conclusion:*** A significant proportion of patients, regardless of their acne severity at the time of examination, have substantial distress and preoccupation related to their facial appearance. (J Am Acad Dermatol 2007;57:222-30.)

Acne is a very common illness that rarely is associated with systemic medical problems, but the morbidity of acne should not be underestimated. It is disfiguring and can be psychologically devastating, as manifested by diminished self-esteem, social embarrassment, social withdrawal, and depression.[1-4] Interestingly, the impact that acne has on an individual's quality of life may have very little to do with the severity of his or her disease as measured by a physician.[1] The patient who is covered with inflammatory pustules may report less psychosocial hardship than another individual who, although having mild acne as judged by her dermatologist, refuses to leave her home until her lesions resolve.

*Abbreviations used:*

| | |
|---|---|
| BDD: | body dysmorphic disorder |
| BDDQ: | body dysmorphic disorder questionnaire |
| CI: | confidence interval |
| DSM-IV: | *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* |
| DV: | dermatology version |
| OR: | odds ratio |

An extreme example of this discrepancy between what the public sees and what the individual experiences is captured by the psychiatric diagnosis body dysmorphic disorder (BDD). The condition is characterized by an extreme level of dissatisfaction or preoccupation with a normal appearance that causes disruption in daily functioning.[5] Onset of BDD is usually during adolescence, with equal distribution between the sexes. Patients often engage in characteristic behaviors, including skin picking, mirror checking, and camouflaging (eg, wearing a hat or

From the Department of Dermatology,[a] Departments of Psychiatry and Surgery and the Edwin and Fannie Gray Hall Center for Human Appearance,[c] and Department of Biostatistics and Epidemiology,[d] University of Pennsylvania School of Medicine; and Department of Psychology and the Division of Plastic and Reconstructive Surgery, The Children's Hospital of Philadelphia.[b]
Supported by a Doris Duke Clinical Research Fellowship Award (Dr Bowe) and K24-AR02212 (Dr Margolis).
Conflicts of interest: None declared.
Accepted for publication March 17, 2007.
Reprint requests: David J. Margolis, MD, PhD, University of Pennsylvania School of Medicine, 815 Blockley Hall, 423 Guardian Dr, Philadelphia PA 19104. E-mail: dmargoli@cceb.med.upenn.edu.
Published online May 11, 2007.
0190-9622/$32.00

doi:10.1016/j.jaad.2007.03.030

makeup).[6] Reassurance is frequently sought by patients (eg, "Can you see this pimple?" "Does my skin look okay?") and some patients have a tendency to doctor shop, going from one specialist to another in search of a physician willing to perform a desired procedure or dispense a certain drug.[7]

As formally defined in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV-TR), BDD is characterized by 3 criteria. The first criterion involves a preoccupation with an imagined physical defect; if a slight physical anomaly is present, the person's concern is markedly excessive. Second, the preoccupation results in significant emotional distress or impairment in social, occupational, or other important areas of functioning. Third, the preoccupation is not caused by another mental disorder (ie, anorexia nervosa).

BDD is a relatively common, yet underdiagnosed psychiatric disorder, estimated to affect 0.7% to 3% of the general population.[8,9] The most common areas of concern are the skin, hair, and nose, with acne being one of the most prevalent concerns plaguing patients with BDD.[10-12] Patients with BDD have been described by dermatologists as the most difficult patients to treat.[7] Those who meet criteria for the diagnosis commonly have comorbid psychiatric conditions including major depression, anxiety (eg, social anxiety), and obsessive-compulsive disorder.[13] They are more likely to report poor outcomes from nonpsychiatric medical treatment, report dissatisfaction with dermatologic treatment, have unreasonable expectations for their provider, and demand laser abrasions, dermabrasions, and isotretinoin treatments that are not medically or cosmetically warranted.[7,14,15] Patients with BDD are at an increased risk not only for attempting to take their own lives,[10-12,16,17] but they are also more likely to threaten health care providers both legally and physically.[7,18] There has been at least one reported murder of a dermatologist by an unsatisfied patient with BDD.[7] Clearly, it is critical 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.

By definition, an individual cannot be given the diagnosis of BDD if he or she actually has a disfiguring physical defect. Therefore, a diagnosis is rendered only if a patient meets both objective criteria (ie, a clinician's assessment that that patient's defect is slight or imagined) and subjective criteria (ie, reports of preoccupation, impairment, and distress related to skin concerns). Of importance with respect to acne, and other conditions, is how a clinician defines "a slight physical anomaly." In most BDD prevalence studies to date, patients with moderate or severe acne by definition have been excluded from investigation.[19,20] It is, however, possible that patients with acne who do have more than a slight physical anomaly may have levels of preoccupation and distress that fulfill the subjective criteria for BDD, but their evident facial lesions preclude them from meeting the objective criteria for this diagnosis. We hypothesized that a large proportion of patients with acne have psychologic affliction severe enough to result in levels of preoccupation, distress, and impairment similar to patients who have BDD. Although these patients do not have BDD as it is currently defined, they indeed may have the same debilitating symptoms afflicting patients with BDD. In fact, two studies have found that 7% to 16% of individuals with observable disfigurements and who were seeking reconstructive plastic surgical procedures reported appearance concerns and distress consistent with the diagnosis.[21,22] Furthermore, we hypothesized that the psychologic disturbances associated with acne may persist after treatment-induced remission of acne. We suspect the persistence of these psychologic sequelae might be most evident among patients with a history of severe acne who have cleared rapidly with agents such as isotretinoin. To that end, we studied patients across a spectrum of acne severity to better quantify the psychosocial burden of this disease and to measure the prevalence of BDD among patients with acne seeking dermatologic care.

## METHODS

### Population and setting

In all, 128 male and female patients were recruited to participate in this cross-sectional study. This convenience sample was comprised of consecutive patients, aged 16 to 35 years, presenting at an outpatient dermatology clinic for the treatment of acne vulgaris in the winter and spring of 2006. Patients were recruited from one of 3 settings: general dermatology clinics of a university department of dermatology; a specialty acne clinic of a university department of dermatology; and a cosmetic outpatient practice in a community setting. Patient participation was voluntary, and no inducements were offered. Patients were excluded if they were not fluent in English or were unable to read. This study was approved by our institutional review board.

### Measures

**Study-specific questionnaire.** For the purposes of this study, we created a questionnaire that inquired about demographic variables, and current and prior acne therapies. With regard to acne therapies, patients were asked to select "never used," "used in past," or "currently using," for each of 4