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Thirty-three cases of body dysmorphic disorder in children and adolescents.

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Body dysmorphic disorder (BDD), a distressing and impairing preoccupation with an imagined or slight defect in appearance, has been described for more than a century and reported around the world (Phillips, 1991). Available data suggest that BDD is relatively common (Phillips et al., 1996; Simeon et al., 1995) and usually begins during adolescence. Despite receiving increasing clinical and research attention, this disorder remains virtually unstudied in children and adolescents.

A growing body of evidence indicates that BDD in adults is characterized by painful and time-consuming obsessions about the perceived appearance defect as well as compulsive, time-consuming behaviors such as mirror checking, excessive grooming, and skin picking (Hollander et al., 1993; Phillips et al., 1993). Insight is generally poor, and a significant percentage of patients are delusional. BDD usually causes considerable morbidity, such as social, educational, and occupational impairment, being housebound, psychiatric hospitalization, suicide attempts, and completed suicide (Hollander et al., 1993; Phillips, 1991; Phillips et al., 1993).

BDD usually begins during adolescence (Phillips et al., 1995a). In the largest published series of subjects with BDD (n = 188), the mean age at onset was 16.0 [+ or -] 7.2 years (range = 4-43 years), with BDD beginning before age 18 in 70% of cases (Phillips and Diaz, 1997). Reported cases in children and adolescents suggest that the clinical features of the disorder in this age group are generally similar to those in adults (Braddock, 1982; Cotterill, 1981; El-Khatib and Dickey, 1995; Hay, 1970; Heimann, 1997; Phillips et al., 1995a; Sondheimer, 1988). As in adults, BDD in children and adolescents may lead to impaired functioning, such as poor grades (Phillips et al., 1995a), stopping sports and other activities (El-Khatib and Dickey, 1995), excessive school absences (Albertini et al., 1996), quitting high school (Phillips et al., 1995a), social withdrawal (El-Khatib and Dickey, 1995), and being housebound (Cotterill, 1981), any of which may adversely affect development. It may also result in psychiatric hospitalization, suicidal ideation, and suicide attempts (Cotterill, 1981; Phillips et al., 1995a). Several case reports suggest that serotonin reuptake inhibitors (SRIs) may be effective in decreasing BDD symptoms and improving functioning in children and

adolescents (Heimann, 1997; Sondheimer, 1988).

Nearly all of the literature on BDD in children and adolescents, however, consists of case reports, with the largest published series in this age group limited to 4 cases (Phillips et al., 1995a). In this study we systematically assess 33 consecutive children and adolescents with DSM-IV-defined BDD. We describe demographic characteristics, phenomenology, associated features, associated psychopathology, and treatment history and response. To our knowledge, this is the largest series of children and adolescents with BDD that has been described.

METHOD

Subjects

Thirty-three consecutively seen children and adolescents (aged 17 years or younger) who met DSM-IV criteria for BDD were included in the study. The majority of subjects were referred to a BDD clinical and research program for evaluation and/or treatment from the inpatient and outpatient services of a private psychiatric hospital, whereas others were referred by community therapists or parents or were self-referred. All subjects met DSM-IV criteria for BDD, which are as follows: (a) preoccupation with an imagined defect in appearance; if a slight physical anomaly is present, the person's concern is markedly excessive; (b) the preoccupation causes clinically significant distress or impairment in social, occupational, or other important areas of functioning; and (c) the preoccupation is not better accounted for by another mental disorder (e.g., dissatisfaction with body shape and size in anorexia nervosa). Patients with preoccupations that were delusional (delusional disorder, somatic type) were included in the study because available data suggest that delusional and nondelusional BDD are variants of the same disorder (Phillips et al., 1994), and they are double-coded in DSM-IV. All subjects and their parents/guardians signed statements of informed consent.

Assessments

Thirty-one subjects, those aged 12 through 17 years, were administered the Structured Clinical Interview for DSM-III-R (SCID) (Spitzer et al., 1992; Williams et al., 1992) to obtain information on demographic characteristics and associated psychopathology. Two subjects, aged 6 through 11 years, were administered the Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime version (K-SADS-PL) (Kaufman et al., 1997). Because neither the DSM-III-R SCID nor the K-SADS-PL include BDD, this disorder was diagnosed with a brief, reliable, semistructured diagnostic module based on the SCID that diagnoses BDD according to DSM-IV criteria (Phillips et al., 1995b) and has adequate inter-rater reliability in adolescents (Albertini and Phillips, unpublished data, 1997). Subjects were also given a semistructured instrument, the BDD Data Form (Phillips, unpublished, 1991), which has been used in studies in adults (Phillips et al., 1993, 1994), to obtain additional demographic and clinical information on BDD such as data on course of illness, body areas of concern, associated behaviors, history of suicide attempts and hospitalization, and psychiatric and nonpsychiatric treatment history. Subjects aged 16 and younger were assessed using the Children's Global Assessment

Scale (Shaffer et al., 1983).

Severity of BDD symptoms during the previous week was assessed with the Yale-Brown Obsessive Compulsive Scale Modified for Body Dysmorphic Disorder (BDD-YBOCS) (Phillips et al., 1997). This scale is a clinician-administered, semistructured, 12-item adaptation of the Yale-Brown Obsessive Compulsive Scale (Goodman et al., 1989). The BDD-YBOCS assesses BDD-related obsessional preoccupation (5 items), compulsive behavior (5 items), insight (1 item), and avoidance (1 item) during the preceding week. Scores range from 0 through 48. The adult version is reliable and valid (Phillips et al., 1997), and the adolescent version has excellent interrater reliability (Phillips and Albertini, unpublished data, 1997). Twenty-four consecutive subjects were assessed with the Brown Assessment of Beliefs Scale (Eisen et al., 1998), which was added later in the study. This is a reliable and valid 7-item, semistructured, clinician-administered scale that assesses degree of delusionality (insight) during the previous week and also classifies subjects as delusional or nondelusional. Scores range from 0 through 24. The adolescent version has preliminary evidence of excellent interrater reliability (Phillips and Albertini, unpublished data, 1997). For some variables, data were not obtained for all 33 subjects because the variable was added later in the study.

Information on treatment history (psychiatric and nonpsychiatric treatments, such as surgical and dermatological treatment) was obtained from subjects and parents with the previously described BDD Data Form, and treatment response was assessed with the Clinical Global Improvement Scale (CGI) (Guy, 1976). Medication doses that we considered adequate were based on clinical experience with adults, although what constitutes an adequate medication dose for treating BDD in adults or in children and adolescents has yet to be empirically determined. The daily SRI doses that we considered adequate for the purpose of this study were the following: fluvoxamine 150 mg, fluoxetine 40 mg, paroxetine 40 mg, sertraline 150 mg, and domipramine 150 mg. We required a trial duration of at least 10 weeks, based on clinical experience as well as available research data in adults (Phillips et al., 1998). Seventeen (57%) of the 30 medication trials considered adequate were conducted by other clinicians, for which treatment response was assessed retrospectively and corroborated when possible by chart review and clinician interview. We conducted the remaining trials and assessed them prospectively with the CGI.

RESULTS

Of the 33 children and adolescents, 3 (9%) were male and 30 (91%) were female. They had a mean age of 14.9 [+ or -] 2.2 years (range = 6-17 years). Thirty-two (97%) were white and 1 (3%) was African-American. Twenty-five (76%) were psychiatric outpatients, 4 (12%) were inpatients, and 4 (12%) were not in treatment at the time of evaluation.

BDD symptoms consisted of excessive concerns with a wide variety of body parts. The most common body areas of concern were skin (61%, $n = 20$); hair (55%, $n = 18$); weight (48%, $n = 16$); ugly face (39%, $n = 13$); teeth (30%, $n = 10$); and legs and nose (27%, $n = 9$ each). Additional areas of concern were the stomach (24%, $n = 8$); breasts/pectoral muscles (21%, $n = 7$); hips (18%, $n = 6$);

body build (15%, $n = 5$); lips, feet, and buttocks (12%, $n = 4$ each); height, arm/wrist, and forehead (9%, $n = 3$ each); eyes, eyebrows, knees, fingers, and hands (6%, $n = 2$ each); and face size/shape, chin, jaw, head size/shape, neck, shoulders, cheeks, and toes (3%, $n = 1$ each). Examples of complaints were looking "ugly," acne, scarring, hair "not being right," "big lips," "short legs," "gaps" between teeth, or asymmetric jaw muscles. Although weight concerns were common, no subject was concerned with body weight alone. Some individuals (25%, $n = 8$) focused on perceived asymmetry as a problem (e.g., "uneven" hair, one breast larger than the other). The mean number of body parts of concern was 4.8 [$+ or -$] 2.2 (range = 1-8). There were statistically significant correlations between hips and legs ($r = 0.40$, $p = .02$) and weight and hair ($r = 0.42$, $p = .02$). All body parts of concern appeared to the interviewers to be normal or to have only minimal anomalies.

All subjects reported significant distress over their perceived defect, with 7 (25%) reporting moderate distress, 17 (61%) severe distress, and 3 (11%) extreme and disabling distress on the BDD-YBOCS. As several subjects stated, "I'm tormented by my looks," "My life is like hell on earth," and "I wish the whole world was bald so I wouldn't have to worry about my hair." Most subjects (68%, $n = 19$) spent more than 3 hours a day thinking about their defect; some said it was virtually all they thought about.

Twelve (50%) of the 24 subjects assessed with the Brown Assessment of Beliefs Scale had beliefs that were delusional (that is, they were 100% convinced that their perception of the defect was accurate and undistorted). Twenty-six (79%) subjects expressed ideas or delusions of reference solely attributable to BDD for example, thinking that people were laughing at them because of how they looked.

All subjects performed BDD-related behaviors (mean number of behaviors = 4.5 [$+ or -$] 2.2; range = 1-9) (Table 1). The most common behavior (94%, $n = 30$) was camouflaging—for example, covering the perceived defect with clothes, makeup, or a hat. Eighty-seven percent ($n = 27$) frequently compared themselves with others, and 85% ($n = 28$) excessively checked their appearance in mirrors or other reflecting surfaces (e.g., checking their teeth in the chrome on chairs or using small mirrors during school lectures). A majority (73%, $n = 24$) repeatedly questioned others about their appearance, one patient asking, "Mom, do you think the gap between my front teeth has gotten any wider?" up to 30 times a day. Fifty-nine percent ($n = 19$) excessively groomed, and nearly half dieted, usually in an attempt to change the size or shape of a particular body part (e.g., "sunken" cheeks or a "big stomach") rather than to change their weight. Thirteen (39%) compulsively picked their skin in an attempt to improve its appearance. Twenty-five percent of patients performed these behaviors for more than 8 hours a day. The mean BDD-YBOCS score for the 5 items assessing BDD behaviors was 13.5 [$+ or -$] 2.6, whereas mean score for the 5 items assessing BDD preoccupations was 12.1 [$+ or -$] 3.4.

TABLE 1

Clinical Features of 33 Children and Adolescents With BDD

BDD-related behaviors

No. of body parts of concern	4.8 [$+ or -$] 2.2
Camouflaging	30 (94)

Clothes	22 (79)
Posture/body position	20 (65)
Makeup	20 (65)
Hand	15 (52)
Hair	11 (44)
Hat	4 (13)
Comparing with others	27 (87)
Mirror checking	28 (85)
Reassurance seeking	24 (73)
Grooming	19 (59)
Dieting	13 (46)
Skin picking	13 (39)
Mirror avoidance	10 (32)
Course	
Age at onset (yr)	11.8 [+ or -] 2.6
Range	5-17
Duration of illness (yr)	3.2 [+ or -] 2.5
Continuous	32 (97)
Episodic	1 (3)
Improving	0 (0)
Steady	4 (13)
Worsening	27 (87)
Impairment	
Social interference	31 (94)
Academic/job interference	28 (85)
History of hospitalization	13 (39)
History of violence due to BDD	11 (38)
History of suicidal ideation	22 (67)
History of suicide attempts	7 (21)
Housebound due to BDD(a)	5 (16)
Severity	
BDD-YBOCS score(b)	30.6 [+ or -] 6.2
GAF score	44.9 [+ or -] 11.9
C-GAS score	40.3 [+ or -] 9.6
Insight	
Brown Assessment of Beliefs Scale score(c)	18.7 [+ or -] 4.0
Ideas/delusions of reference	26 (79)

Note: Values are expressed as n (%) or mean [+ or -] SD. Includes subjects with delusional BDD. BDD = body dysmorphic disorder; BDD-YBOCS = Yale-Brown Obsessive Compulsive Scale Modified for BDD; GAF = Global Assessment of Functioning; C-GAS = Children's Global Assessment Scale.

a Completely housebound for at least 1 week.

b Score on the first 10 items = 25.6 [+ or -] 5.3.

c Most subjects had poor or absent insight.

Nearly all subjects experienced significant impairment in functioning as a result of their BDD symptoms (Table 1). Ninety-four percent (n = 31) experienced social interference because of embarrassment and shame over their appearance. One attractive high school senior had never been to a single athletic or social event - even avoiding her own birthday celebration - because she believed that people would laugh at her "ugliness." Many avoided making friends and dating. Eighty-five percent (n = 28) reported that their appearance obsessions and related behaviors (e.g., frequently checking their hair in a compact mirror during class) interfered significantly with their academic performance. Others avoided (and failed) gym class, often because they were too embarrassed to be seen in gym clothes. Some avoided working after school or attending school. In addition to the 39% (n = 13) who temporarily missed school because of hospitalization, an additional 18% (n = 6) dropped out of school (3% [n = 1] dropped out temporarily and 15% [n = 5] dropped out permanently) because of BDD symptoms. One middle school student had missed more than 100 days of the previous school year because of BDD. As shown in Table 1, subjects had a notably high rate of

suicidal ideation and suicide attempts, as well as physical violence due to BDD symptoms (e.g., hitting themselves or destroying furniture out of frustration because "I can't get my hair right").

As shown in Table 2, the most common comorbid disorder was major depression, followed by obsessive-compulsive disorder (OCD) and social phobia. In most cases, the onset of social phobia preceded that of BDD by at least 1 year (80%, $n = 8$), whereas OCD preceded onset of BDD by at least 1 year in 40% ($n = 4$) of cases, and major depression preceded onset of BDD by at least 1 year in only 17% ($n = 4$) of cases.

TABLE 2

Associated Psychopathology of 33 Children and Adolescents With BDD

Lifetime DSM-III-R Diagnosis	Current		Lifetime	
	n	(%)	n	(%)
Mood disorders (a)	28	(85)	30	(91)
Major depression	23	(70)	24	(73)
Bipolar disorder I	3	(9)	3	(9)
Bipolar disorder II	2	(6)	3	(9)
Dysthymia	1	(3)	1	(3)
Psychotic disorders (b)	12	(36)	12	(36)
Delusional disorder, somatic type	5	(15)	5	(15)
Schizophrenia	0	(0)	0	(0)
Schizoaffective disorder	0	(0)	0	(0)
Psychotic disorder NOS	7	(21)	7	(21)
Anxiety disorders	20	(61)	21	(64)
Panic disorder	3	(9)	5	(15)
Agoraphobia	0	(0)	0	(0)
Social phobia	10	(30)	10	(30)
Simple phobia	4	(12)	5	(15)
Obsessive-compulsive disorder	12	(36)	13	(39)
Substance abuse/dependence	1	(3)	2	(6)
Alcohol	1	(3)	1	(3)
Other drug	0	(0)	1	(3)
Eating disorders (a)	1	(3)	2	(6)
Anorexia nervosa	0	(0)	2	(6)
Bulimia nervosa	1	(3)	1	(3)

Note: Includes the delusional variant of BDD. BDD = body dysmorphic disorder; NOS = not otherwise specified.

a The total is less than the sum of the individual disorders because some subjects had more than one disorder in a given category.

b Psychotic symptoms were in all cases entirely attributable to BDD.

Most subjects (82%, $n = 27$) had received psychiatric treatment. Twenty-two (67%) had received pharmacotherapy (a total of 30 trials that we considered probably adequate), 18 (55%) had received individual psychotherapy, 2 (6%) had received group therapy, and 1 (3%) had received cognitive-behavioral therapy. However, subjects did not receive treatment for an average of more than 2 years (2.7 [+ or -] 3.0 years) after BDD onset, which was 11.8 [+ or -] 2.6 years. Even then, many did not divulge their BDD to their treater. Ten (53%) of 19 subjects treated with an SRI had much or very much improvement in BDD symptoms, and 10 (45%) of 22 SRI trials led to much or very much improvement in BDD symptoms (Table 3). Of the 13 SRI trials conducted by the authors, 8 (62%) resulted in much or very much improvement in BDD symptoms. Six (43%) of 14

SRI trials in delusional patients led to much or very much improvement. One delusional patient responded to an SRI after an unsuccessful trial with an antipsychotic. Mean time to response was 8.0 [+ or -] 3.9 weeks (range = 4-16 weeks). Despite the relatively high SRI doses often used, the SRIs were generally very well tolerated. Only 2 patients discontinued an SRI because of side effects.

SRI responders usually experienced a decrease in preoccupation, distress, and compulsive behaviors, as well as improved functioning. Many were able to resume normal activities with peers and improve school attendance and performance. Several who had dropped out of school because of BDD symptoms returned to school. Subjects who responded to an SRI usually had a sustained response, for periods up to several years. Two of 3 responders who discontinued the SRI relapsed.

Patients without current major depression were as likely to have response of BDD symptoms to an SRI as those with current major depression ($n = 3$ of 5 [60%] and $n = 7$ of 14 [50%], respectively). Patients without current comorbid OCD were also as likely to have response of BDD symptoms as those with current OCD ($n = 6$ of 13 [46%] and $n = 4$ of 6 [67%], respectively).

No non-SRI medication was effective in decreasing BDD symptoms, although comorbid conditions improved in 2 instances (ADHD improved with clonidine and stimulants in one patient, and depression and panic disorder improved with imipramine in another).

Although 18 (55%) subjects received other psychiatric treatments, they were generally ineffective. Only 1 of 20 psychotherapy (insight-oriented or supportive) treatments, 0 of 1 cognitive-behavioral therapies, and 0 of 2 group therapies resulted in significant improvement in BDD. Forty-five percent ($n = 15$) of the subjects sought [TABULAR DATA FOR TABLE 3 OMITTED] surgical or medical treatment for their BDD, and 36% ($n = 12$) received such treatment. Of 9 dermatological treatments, 2 dental treatments, and 1 surgical procedure received, none improved BDD symptoms.

DISCUSSION

These results indicate that BDD in children and adolescents is characterized by painful and time-consuming preoccupations and compulsive behaviors that are associated with significant distress and impairment in functioning. Social impairment is nearly universal and often consists of extreme self-consciousness, embarrassment, and avoidance of social interactions. A majority experience academic difficulties, and some drop out of school. A notably high percentage have suicidal ideation or attempt suicide. Our treatment data, while preliminary and uncontrolled, suggest that SRIs are often effective in decreasing BDD symptoms in children and adolescents. In contrast, nonpsychiatric treatment such as surgery and dermatological treatment, which was obtained by a substantial number of patients, was in all cases ineffective.

Although we did not formally compare this series with a series of adults with BDD, it is our impression that the clinical features of BDD are generally similar in these age groups. Similarities include most body areas of concern, associated behaviors, comorbidity, and

degree of preoccupation, distress, and impairment in functioning. The relatively high percentage of children and adolescents who were delusional, and the high rate of associated ideas and delusions of reference, is also similar to that reported for adults. Treatment data in adults suggest that SRIs are often effective for BDD (Hollander et al., 1989; Perugi et al., 1996; Phillips et al., 1998), similar to findings in this study. One apparent difference, however, is the relatively high percentage of children and adolescents concerned with their weight. Another apparent difference is that nearly all of the subjects in this study were female, in contrast to studies in adults. While some adult series contain more women than men (Rosen and Reiter, 1996; Veale et al., 1996), others contain more men (Hollander et al., 1993) or an approximately equal number of women and men (Phillips and Diaz, 1997). In the Phillips and Diaz series, which is the largest published adult series ($n = 188$), the equal sex ratio and similar age at onset of BDD in males and females suggests that the very high percentage of females in our adolescent series may reflect more treatment-seeking among adolescent females, rather than more frequent occurrence of BDD in adolescent females. The reason for the preponderance of white subjects is unclear, but findings are similar in adults (Phillips et al., 1993); it is unclear whether this finding is a characteristic of BDD or reflects referral bias due to the fact that patients in this series were evaluated at a private psychiatric hospital.

Our finding that rates of comorbid major depression, OCD, and social phobia were relatively high and similar to rates in adults with BDD raises the question of whether BDD might be related to, or a form of, these other disorders. Indeed, BDD is widely conceptualized as an OCD spectrum disorder (Hollander and Phillips, 1992; Phillips et al., 1995c). Available data suggest, however, that while BDD and OCD have many similarities, they also have some differences, including for BDD a higher rate of comorbid major depression and social phobia, poorer insight, and a higher rate of suicide attempts due to the disorder (Phillips et al., 1998). BDD's prominent obsessions and compulsions, as well as preliminary data indicating that SRIs but not other antidepressants may be effective for BDD, suggest that BDD is not simply a form of depression. Our finding in this study that onset of BDD usually preceded that of major depression is consistent with this view. It is possible, nonetheless, that BDD is related to depression and OCD as well as social phobia (Phillips et al., 1995c).

Because our treatment data are uncontrolled and were obtained by self-report, they should be considered preliminary. However, the apparent response to SRIs in a sizable percentage of subjects is notable and consistent with results from studies in adults. Nonetheless, a sizable proportion of the subjects did not respond to SRIs, and many responders had only a partial response, also similar to findings in adults (Phillips et al., 1998). That SRI treatment was not significantly helpful to more subjects may perhaps reflect their severity of illness and underscores the need for more treatment research. It is worth noting that delusional patients (who would receive a DSM-IV diagnosis of delusional disorder as well as BDD) were as likely to respond to an SRI as nondelusional patients, consistent with reports in adults (Phillips et al., 1998) and adolescents (El-Khatib and Dickey, 1995; Sondheimer, 1988). It is also interesting that one patient with delusional BDD responded to an SRI after failing to respond to an antipsychotic. Whereas relatively high SRI doses were used in this study, it remains to be

empirically determined whether higher SRI doses are required for BDD than for depression and other disorders. The lengthy time to response, which is consistent with data in adults (Phillips et al., 1998), suggests that relatively long SRI trials (at least 3 months) should be conducted before concluding that the medication is ineffective. Although other treatments were generally ineffective, it is our clinical impression that while psychotherapy alone tends to be ineffective for BDD, it may be useful when combined with medication (for example, when treating the social skills deficits that can result from BDD symptoms). This impression, however, requires empirical confirmation. Although preliminary data in adults suggest that cognitive-behavioral therapy may be effective for BDD (Veale et al., 1996), the efficacy of this treatment, too, remains to be studied in children and adolescents.

This study's conclusions are affected by several methodological limitations. First, patients were recruited from a psychiatric population, which may have led to elevated rates of associated psychopathology and may have selected for a particularly distressed and impaired series of subjects. A community sample might be expected to have not only lower comorbidity rates and less functional impairment, but also a more equal sex ratio and less past treatment. In addition, interviews were done by unblinded investigators and without a control group, and the treatment data were also uncontrolled. Larger studies of children and adolescents with BDD, including treatment studies, with control groups are needed.

Clinical Implications

Although appearance concerns are common during adolescence and may contribute to the timing of BDD's onset, BDD does not simply consist of normal appearance concerns, as documented in this study by the degree of preoccupation, distress, and impairment in functioning, as well as the high rate of suicidal ideation and suicide attempts experienced by our subjects. To diagnose BDD in children and adolescents, it is often necessary to inquire specifically about BDD symptoms (asking, for example, "Is there some aspect/part of your appearance that you're really unhappy about?"), as they typically are not divulged because of embarrassment and shame. Adolescents may be particularly reluctant to divulge BDD symptoms because of self-consciousness and difficulties with confiding in adults.

In conclusion, BDD in children and adolescents appears to be associated with significant morbidity, which could adversely affect psychosocial development. Although surgical, dermatological, and dental procedures appear ineffective, SRIs appear to often be effective, even if the symptoms are delusional. While much remains to be learned about BDD in children and adolescents, it is important that it be recognized and treated in this age group, who may be particularly vulnerable to the development of this distressing, often secret, and underrecognized disorder.

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