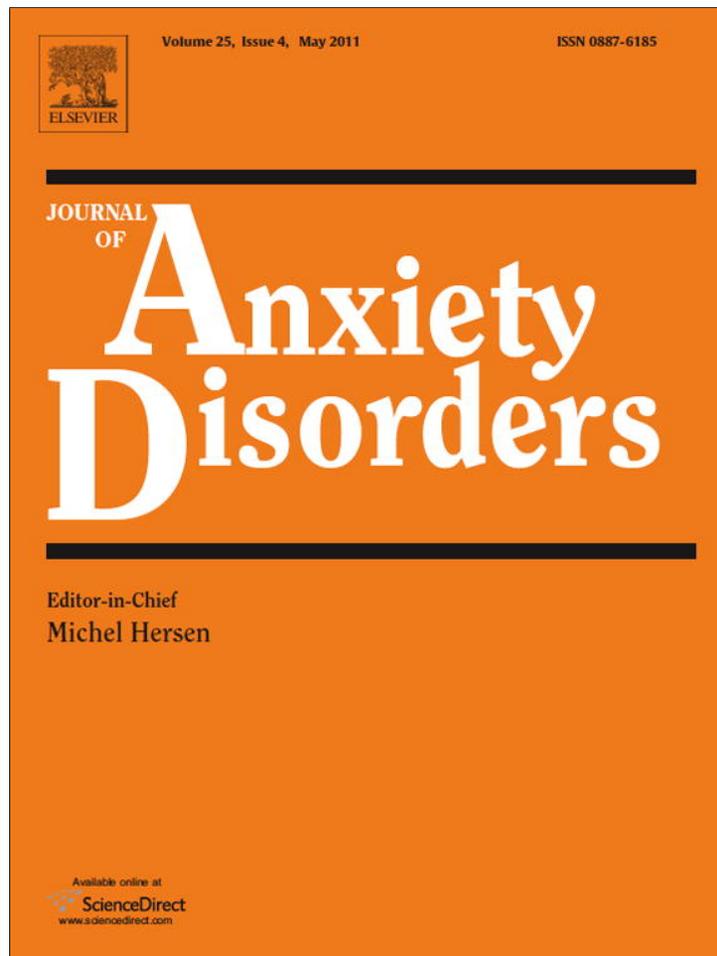


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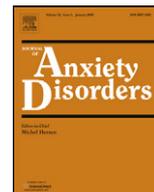
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Status of body dysmorphic disorder in Argentina

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ABSTRACT

Although body dysmorphic disorder (BDD) has received recent attention, it remains misunderstood and under-studied. The Argentine population seeks out plastic surgery at a disproportionate rate and exhibits high rates of preoccupation with bodily dissatisfaction, yet BDD is unrecognized and research is limited. The current study describes the prevalence, quality of life, and presentation style of BDD in depressed adolescents, as depression is the most common symptom for which adolescents seek treatment in Argentina. Twenty-five depressed adolescents and 85 non-depressed students were initially assessed for depression and BDD and subdivided depending on BDD status. Participants were assessed on various constructs including obsessions and compulsions, overvalued ideas, and overall level of impairment. A 2×2 factorial design was employed, and multivariate analysis of variance (MANOVA) was used to analyze the data. Significant main effects were observed for all dependent measures (BDI, OVIS, YBOCS, and Sheehan Disability Scale) for depressed vs. non-depressed participants and BDD status; significant interactions were observed between independent variables for all dependent measures. Depressed adolescents had significantly higher scores on the YBOCS-BDD, OVIS, BDI, and the Sheehan Disability Scale compared to non-depressed participants; furthermore, individuals reporting BDD symptoms reported significantly higher scores on the YBOCS-BDD, OVIS, BDI, and Sheehan Disability Scale. Significant interactions are discussed according to BDD status and depression on dependent measures. Patients with BDD have poor quality of life and present with anxiety and depression, yet it still remains underdiagnosed.

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1. Introduction

Body dysmorphic disorder (BDD) is an underrecognized and underdiagnosed problem that is relatively common among adolescents with an age of onset during adolescence and young adulthood (Neziroglu & Yaryura-Tobias, 1993; Phillips, 1991). Body dysmorphic disorder (BDD) is a disorder characterized by distress about an imagined defect in appearance. According to the Diagnostic and Statistical Manual of Mental Disorders (4th ed., text revision) (DSM-IV-TR), BDD is an excessive preoccupation with an imaginary and/or a slight defect in one's appearance that is not accounted for by another disorder (e.g., anorexia nervosa). Preoccupation must cause marked distress and/or result in a significant decrease in functioning within major life domains (e.g., social, occupational or academic functioning) (American Psychiatric Association, 2000). BDD can be quite severe and potentially disabling, causing marked distress, severe social and occupational impairment and high rates of comorbid mood disorders, suicide attempts and hospitalization (Phillips

et al., 2005; Veale et al., 1996). Common comorbid disorders which present with BDD are major depressive disorder, substance use disorders, obsessive–compulsive disorder (OCD), and social phobia (Phillips et al., 2005).

BDD is under-diagnosed and under-studied within the United States, and even less information exists about the disorder within other countries. Argentina, for example, is one of the world capitals of plastic surgery, ranking 13th among the top 25 countries for total number of surgical procedures (International Society of Aesthetic and Plastic Surgery, 2009), yet BDD is hardly diagnosed nor researched (Borda & Perez Rivera, 2006; Yaryura-Tobias, Perez Rivera, Neziroglu, & Borda, 2003). Although onset of the disorder occurs in adolescence, BDD research in child and adolescent psychiatry is relatively limited and can be chronic if not treated appropriately (Phillips, 2005a). Adolescents in societies with disproportionate rates of plastic surgery and body dissatisfaction, such as Argentina, may be at higher risk for development of BDD. Likewise due to the comorbid nature of BDD, presentation and course of treatment may differ in depressed adolescents with BDD compared to depressed adolescents without BDD.

There has been only one epidemiologic study in the US indicating a prevalence rate of 2.4%, exceeding prevalence rates of schizophrenia and bipolar disorder type I (Koran, Abujaoude, Large,

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& Serpe, 2008). Prior studies indicated prevalence data of 0.7% (Faravelli et al., 1997) to 13% (Biby, 1998). Prevalence studies that exclusively investigated adolescents of similar age to the population used in this study (14–19 years old) reported a BDD rate of 2.2% (Mayville, Katz, Gipson, & Cabral, 1999).

Otto, Wilhelm, Cohen, and Harlow (2001) conducted a survey of women ages 36–44 years old in the USA and found a prevalence rate of 0.7%. A nationwide survey of over 3,000 participants in Germany estimated a prevalence rate of 1.7% (Rief, Buhlmann, Wilhelm, Borkenhagen, & Braehler, 2006). Vinkers, van Rood, and van der Wee (2008) used a validated screening questionnaire to estimate the prevalence of BDD in a Dutch population ($n = 892$). The estimate was 0.7% (C.I. 0.2–1.2), which is remarkably similar to the prevalence studies of Faravelli et al. (1997) and Otto et al. (2001). Vinker's sample consisted of 55% females, with an average age of 32.8 years, and 49.3% were married or living with another person. No further analysis is provided on those identified as having BDD.

Biby (1998) screened undergraduate psychology students. The original sample included 83 females and 25 males ($n = 108$), however, 6 students with eating disorders were excluded. A questionnaire specifically devised for the study was used, and a BDD prevalence rate of 13% was reported. Bohne et al. (2002) found the prevalence rate of BDD in a nonclinical sample of German college students (average age 21) to be 5.3%. According to another study (Dufresne, Phillips, Vittorio, & Wilkel, 2001), poor body image is associated with poor self-esteem and symptoms of depression and obsessive–compulsive disorder. Lastly, Cansever, Uzun, Donmez, and Ozsahin (2003) surveyed 420 female nursing college students in Turkey. A self-report questionnaire was used to screen for dissatisfaction with appearance and 43.8% reported dissatisfaction. Those dissatisfied students were then interviewed by a psychiatrist who diagnosed BDD in 4.8% of them. Head/face areas and hips were the most common areas of concern.

Additionally, Fontenelle et al. (2006) conducted a sociodemographic, phenomenological, and long-term study of patients with BDD in Brazil. The prevalence rate of BDD in this clinical Brazilian population who was seeking treatment at a facility specializing in obsessive–compulsive spectrum disorders was 12% ($N = 20$). Six patients (30%) indicated complete lack of insight on the YBOCS while only four patients (20%) demonstrated full insight regarding their dysmorphic beliefs. Comorbidity included obsessive–compulsive disorder (70%), major depressive disorder (55%), eating disorders (25%), and co-occurrence of OCD and MDD (30%). There was a prevalence of females with the following body parts affected: overall appearance, size or shape of their face, skin, hair, nose, body build, and weight. All patients displayed compulsive behaviors such as mirror checking, camouflaging, seeking reassurance, and cosmetic use.

The mental representation of body image occurs early during psycho-emotional and cognitive development. Commonly, BDD appears during adolescence, and some traits may already be present during childhood and puberty (Neziroglu & Yaryura-Tobias, 1993). This is not surprising because body appearance changes substantially during the developmental process. The developmental literature underscores the role of body image during adolescence as a factor which influences and is impacted by adolescent transitions, including development, peer relationships, dating, and sexuality. BDD appears to become less common with increasing age (Borda & Perez Rivera, 2003). Exceptions may be late onset BDD associated with a life crisis and a belief about the consequences of an aging appearance, or the appearance after cosmetic surgery.

Although BDD develops during adolescence the time between the onset of BDD and the time that individuals seek treatment it is about 10 years (Yaryura-Tobias et al., 2003). Because of the severity of BDD and the length of time of time prior to seeking treatment the individual's quality of life is affected. In fact, BDD

patients have a poorer quality of life as compared to other psychiatric and physical illnesses such as diabetes and cardiovascular problems (Phillips, 2000). In addition, BDD is not only associated with high rates of functional impairment, but it is also complicated by depressive symptoms, high rates of hospitalization, and suicidal ideation and attempts (Hollander, Cohen, & Simeon, 1993; Phillips, McElroy, Keck, Pope, & Hudson, 1993; Phillips, 1991; Veale et al., 1996).

Though categorized as a somatoform disorder, BDD shares psychopathological similarities with anxiety and mood disorders such as social phobia (e.g., fear of negative evaluation), obsessive–compulsive disorder (e.g., intrusive thoughts and compulsive behaviors) and depression (e.g., suicidal ideas). In addition, it appears that a majority of BDD patients have at least one comorbid disorder, and are more likely than other psychiatric outpatients to have three or more comorbid Axis I disorders (Gunstad & Phillips, 2003) and Axis II disorder (Neziroglu, McKay, Todaro, & Yaryura-Tobias, 1996). With different assessment methods, BDD outpatients met criteria for a mood disorder in 88% of cases and for an anxiety disorder in 60% of cases (Phillips & Diaz, 1997). The most common Axis I disorders were major depression (82%), social phobia (38%), substance use disorders (36%), and obsessive–compulsive disorder (30%) (Gunstad & Phillips, 2003).

Because BDD individuals demonstrate a high rate of incidence with depression – rates from 36% to 76% (Phillips & Diaz, 1997) – it seems important to determine rate of BDD in individuals seeking treatment for depression. This seems even more crucial given that very few individuals in Argentina seek treatment for BDD. It is noteworthy that within an inpatient and outpatient population of more than 500 patients, none had received a diagnosis of BDD (Alfredo Cia personal communication, 2009).

Proper assessment of BDD is crucial in improving the underdiagnosis of BDD especially among adolescents during which its onset occurs. Assessment instruments with acceptable psychometric properties have been developed to specifically to assess BDD (e.g., the Body Dysmorphic Disorder Examination; Rosen & Reiter, 1996 and the Yale-Brown Obsessive Compulsive Scale modified for body dysmorphic disorder; Phillips et al., 1997). Another area of diagnostic importance is the degree to which individuals hold their obsessional beliefs to be true. Overvalued ideas have been shown to predict treatment outcome in OCD and BDD (Neziroglu, Stevens, McKay, & Yaryura-Tobias, 2001).

Estimation of the exact prevalence of BDD appears to be a difficult task, not only because patients with BDD primarily do not go to psychologists or psychiatrists, but also because of the rate of subclinical conditions (i.e., conditions in which the core symptoms of BDD are present but are not inducing a significant impairment in functioning) (Altamura, Paluello, Mundo, Medda, & Mannu, 2001).

The aim of the current study is to describe the prevalence, quality of life, and presentation style of BDD in an Argentine adolescent population, where there is a disproportionate rate of body dissatisfaction. Due to high rates of surgery and body preoccupation in Argentina, this study sought to explore obsessive body concerns in a clinical and nonclinical sample of adolescents diagnosed with BDD. A nonclinical sample was compared to a clinical sample of adolescents with depression in order to assess the general level of body dissatisfaction in a sample of Argentine college students. We hypothesized that depressed patients with BDD would have greater severity of depressive symptoms and poorer overall functioning than depressed patients without BDD. In addition, it was hypothesized that the student population would demonstrate a high rate of body dissatisfaction but not necessarily BDD. Specifically, the goal of this study was to emphasize the importance of assessing for the presence of BDD in adolescents seeking treatment for depression. Symptoms of BDD in adolescents may go undiagnosed and lead to misdiagnosis due to comorbid symptoms of depression.

2. Method

2.1. Participants

The nonclinical sample consisted of students ($N=85$) who were recruited from private high schools in Buenos Aires and the University of Buenos Aires. The clinical sample ($N=25$) was recruited from the Bio-Behavioral Institute in Buenos Aires, Argentina, and depression was the primary concern among individuals seeking treatment. All participants in the study were female, and their ages were as follows: nonclinical sample ($M=16.7$, $SD=1.79$, range = 15–19), clinical sample ($M=17.5$, $SD=1.33$, range = 15–19). The mean education level for the nonclinical sample was 13.7 years ($SD=2.2$) and 11.5 years ($SD=1$) for the clinical sample.

Of the 85 participants in the nonclinical sample, 47% ($n=39$) met criteria for BDD symptoms, while 53% ($n=46$) did not. Of the 25 adolescents in the clinical population, 44% ($n=11$) met criteria for BDD, while 56% ($n=14$) did not. There is an unusual preponderance of BDD symptoms in the Argentine nonclinical population which will be addressed in Section 4.

Consistent with results of the Anxiety Disorders Interview Schedule for DSM-IV (ADIS), many participants met criteria for additional diagnoses. In the nonclinical group among individuals who met BDD criteria according to the BDDQ, the following comorbidities were noted: Social Phobia (7.7%), Specific Phobia (2.6%), Panic Disorder (7.7%), Generalized Anxiety Disorder (5.1%), Obsessive–Compulsive Disorder (12.8%), Dysthymia (46%), Externalizing Disorder (2.6%), Substance Abuse (17.9%), and Mixed Anxiety-Depressive Disorder (25.6%).

Of the 46 (54%) individuals in the nonclinical sample who did not meet criteria for BDD other diagnoses were identified: Specific Phobia (19.6%), Panic Attack Symptoms (6.5%), Agoraphobia (2.2%), Generalized Anxiety Disorder (2.2%), Obsessive–Compulsive Disorder (6.5%), Substance Abuse (4.3%), Eating Disorders (4.3%), and Mixed Anxiety-Depression (17.4%).

In the clinical group among individuals who met BDD criteria according to the BDDQ, the following comorbidities were noted: Social Phobia (45.5%), Obsessive–Compulsive Disorder (27.3%), and Substance Abuse (27.3%). Data for the clinical sample that did not meet criteria on the BDDQ (56%), were as follows: Social Phobia (14.3%), Specific Phobia (7.1%), and Obsessive–Compulsive Disorder (7.1%).

2.2. Materials

The following assessments were given to all participants.

2.2.1. Anxiety Disorders Interview Schedule for DSM-IV (ADIS)

The Anxiety Disorders Interview Schedule for DSM-IV (ADIS) child and adolescent versions was used to diagnose comorbid diagnoses (Silverman & Albano, 1996). The ADIS has demonstrated good to excellent reliability for a majority of DSM-IV categories (Brown, DiNardo, Lehman, & Campbell, 2001).

2.2.2. Body Dysmorphic Disorder Questionnaire (BDDQ)

The Spanish version of the Body Dysmorphic Disorder Questionnaire (BDDQ), a self-report screening instrument for BDD based on the criteria outlined in the DSM-IV, was used to assess BDD symptoms. The BDDQ is highly correlated with the clinician's judgment of whether BDD is present. It has a reported sensitivity of 100% and a specificity of 89% among individuals with a psychiatric diagnosis (Phillips, 2005b).

2.2.3. Yale-Brown Obsessive–Compulsive Scale adapted for BDD (YBOCS-BDD)

The Yale-Brown Obsessive–Compulsive Scale for BDD (YBOCS-BDD; Phillips et al., 1997) assesses the duration, frequency, and intensity of obsessions and compulsions relating to the perceived body defect on two 5-item subscales. The YBOCS-BDD is a reliable and valid instrument for assessing the severity of BDD (Phillips et al., 1997). The scale is a modified version of the YBOCS (Goodman et al., 1989), a scale used to assess the severity of OCD symptoms. Subscale scores range from 0 to 20 with higher scores indicating greater symptom severity.

2.2.4. Overvalued Ideas Scale (OVIs)

The Overvalued Ideas Scale (OVIs; Neziroglu et al., 2001) is an 11-item scale that assesses the extent to which a patient holds his/her obsessional belief to be true. In this case, the belief assessed was body defect. Characteristics of the belief, including strength, reasonableness, accuracy, and agreement of others, are assessed on separate 10-point scales. The average of the first 10 items provides an estimate of one's degree of overvalued ideas, where higher scores represent greater levels of OVI. The last item is an indication of the duration of the belief. Reliability and validity data indicate an internal consistency of 0.95 and test–retest reliability, over a period of 4 weeks, of 0.93.

2.2.5. Beck Depression Inventory (BDI)

The Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) is a self-report 21-item scale measuring cognitive symptoms of depression. Total scores range from 0 to 63, with higher scores indicating increasing severity of depression. The Beck Depression Inventory (BDI) has been shown to be a reliable and valid instrument in assessing depressive symptoms across cultures (Contreras, Fernandez, Malcarne, Ingram, & Vaccarino, 2004). It has good internal reliability ($\alpha=0.86$) and convergent validity (0.66).

2.2.6. Sheehan Disability Scale

The Sheehan Disability Scale (as cited in Sheehan, 2000) is a brief report tool that was developed to assess functional impairment in three inter-related domains: work/school, social life/leisure activities, and family life/home responsibilities. Patients rate the extent to which domains are impaired by his or her symptoms on a 10 point analog scale. The three items can be summed into a single dimensional measure of global functional impairment that ranges from 0 (unimpaired) to 30 (impaired).

2.3. Procedure

Initially, the BDDQ was given to 1210 students recruited from schools, however, only 110 participants returned completed forms. Of 110 participants, 85 were students (nonclinical population, the others were in psychiatric treatment and thus eliminated) and 25 were seeking treatment for depression. In both populations, clinical and nonclinical, the BDDQ was administered and thereafter a clinical interview was conducted using DSM-IV criteria to determine if they actually would qualify for a diagnosis of BDD and to rule out eating disorders. Participants then completed the ADIS, BDI, YBOCS-BDD, OVI, and Sheehan Disability Scale. Depression was assessed via a clinical interview based on DSM-IV criteria as well as scores from the BDI and ADIS. To assess for comorbidity, the ADIS was conducted.

Dysthymia was not an exclusionary criteria since it is characteristic and does not demonstrate the clinical symptoms of a major depression with symptoms of hopelessness and helplessness. Social phobia was only excluded if the social anxiety was due to appearance related concerns.

3. Results

This study involved a 2×2 factorial design, with population sample (clinical and nonclinical samples) and BDD status (meeting criteria and not meeting criteria for BDD) representing the two independent variables. Results were analyzed using a two-way MANOVA, with scores on the BDI, Sheehan Disability Scale, YBOCS-BDD, and OVIs representing dependent measures to be investigated. The overall MANOVA was found to be significant for BDD status, $F(3, 106) = 217.6, p < .001$; and for population sample (clinical vs. non-clinical sample), $F(3, 106) = 454.4, p < .001$; and the interaction of BDD status and sample, $F(3, 106) = 39.8, p < .001$. Differences between groups are explored below according to dependent measure.

3.1. Beck Depression Inventory

A significant main effect was observed for scores on the BDI for BDD status, $F(3, 106) = 68.2, p < .001$; and clinical/non-clinical sample $F(3, 106) = 1144.9, p < .001$; and an interaction effect was observed for BDD status and sample, $F(3, 106) = 13.5, p < .001$. The BDI mean difference between those who met criteria for BDD ($M = 39$) and those who did not ($M = 30$) is statistically significant, $p < .001$. The BDI mean difference between those in the clinical sample ($M = 52.6$) and those in the nonclinical sample ($M = 16.8$) is also statistically significant, $p < .001$. Significant main effects observed indicate that both BDD status and group assignment may affect responses on the BDI; furthermore, the significant interaction indicates that compared to the clinical sample, depression differences between members of the nonclinical sample are more pronounced based on BDD status.

3.2. Sheehan Disability Scale

A significant main effect was observed for scores on the Sheehan Disability Scale for BDD status, $F(3, 106) = 149.7, p < .001$; and clinical/non-clinical sample $F(3, 106) = 866.5, p < .001$; and an interaction effect was observed for BDD status and sample, $F(3, 106) = 58.6, p < .001$. The Sheehan Disability Scale mean difference between those who met criteria for BDD ($M = 22.2$) and those who did not ($M = 15$) is statistically significant, $p < .001$. The Sheehan mean difference between those in the clinical sample ($M = 27.2$) and those in the nonclinical sample ($M = 9.9$) is also statistically significant, $p < .001$. Significant main effects observed indicate that both BDD status and group assignment may affect responses on the Sheehan; furthermore, the significant interaction indicates that compared to the clinical sample, differences in self-report of psychological dysfunction among members of the nonclinical sample are more disparate based on BDD status (i.e., Psychological functioning differs more substantially based on BDD status in the nonclinical group than in the clinical group).

3.3. Overvalued Ideas Scale (OVIs)

A significant main effect was observed for scores on the Overvalued Ideas Scale for BDD status, $F(3, 106) = 96.4, p < .001$; and clinical/non-clinical sample $F(3, 106) = 80.8, p < .001$; and an interaction effect was observed for BDD status and sample, $F(3, 106) = 11.3, p < .001$. OVIs mean difference between those who met criteria for BDD ($M = 5.1$) and those who did not ($M = 2.5$) is statistically significant, $p < .001$. The OVIs mean difference between those in the clinical sample ($M = 5$) and those in the nonclinical sample ($M = 2.6$) is also statistically significant, $p < .001$. Significant main effects observed indicate that both BDD status and group assignment may affect responses on the OVIs; furthermore, the significant interaction indicates that compared to the nonclinical sample, dif-

ferences in self-report of overvalued ideation among members of the clinical sample are more disparate based on BDD status (i.e., overvalued ideation differs more substantially based on BDD status in the clinical group than in the nonclinical group).

3.4. Yale-Brown Obsessive Compulsive Scale adapted for BDD (YBOCS-BDD)

A significant main effect was observed for scores on the YBOCS-BDD for BDD status, $F(3, 106) = 748, p < .001$; and clinical/non-clinical sample $F(3, 106) = 20.4, p < .001$; and an interaction effect was observed for BDD status and sample, $F(3, 106) = 39, p < .001$. The YBOCS-BDD mean difference between those who met criteria for BDD ($M = 28.9$) and those who did not ($M = 6.3$) is statistically significant, $p < .001$. The YBOCS-BDD mean difference between those in the clinical sample ($M = 19.5$) and those in the nonclinical sample ($M = 15.7$) is also statistically significant, $p < .001$. Significant main effects observed indicate that both BDD status and group assignment may affect responses on the YBOCS-BDD; furthermore, the significant interaction indicates that compared to the nonclinical sample, differences in self-report of BDD symptoms among members of the clinical sample are more disparate based on BDD status (i.e. overvalued ideation differs more substantially based on BDD status in the clinical group than in the nonclinical group).

4. Discussion

Appearance concerns are commonplace in today's society. Due to the favorable effect that physical attractiveness appears to exert on social perception, some degree of concern may actually be warranted (Dion, Berscheid, & Walster, 1972). Dissatisfaction with physical appearance is prevalent within the general population (Butters & Cash, 1987), but is not itself indicative of a mental disorder. Fitts, Gibson, Redding, and Deiter (1989), indicated that 70% of American students were dissatisfied with some aspect of their bodies and 46% were preoccupied with this aspect. No such study exists in Argentina, or anywhere else in South America. Body image concern is a frequent problem in the Argentine adolescent population (Bernstein, 2006) and thus they are at a higher risk for developing BDD.

Although previous data suggest that BDD's clinical features are generally similar across cultures (Cash & Pruzinsky, 2004) it is interesting to note that both Argentine populations with BDD had higher YBOCS-BDD scores than that reported in the US. Altamura et al. (2001) suggested that total YBOCS-BDD scores between 8 and 11 may indicate subclinical BDD suggest that those scoring lower may have obsessions and compulsions but may not be impaired due to them. In the present study, the group who met criteria for BDD had a mean score of 28.9 on the YBOCS-BDD (those who met criteria across conditions; both depressed and non-depressed participants) as compared to a mean score of 6.3 in those who did not (those who did not meet BDD criteria; both depressed and non-depressed participants). The clinical sample had a mean score of 19.5 on the YBOCS-BDD (participants in the clinical sample; both those who met BDD criteria and those who did not) compared to the non-clinical sample who had a mean score of 15.7 (participants in the nonclinical sample; both those who met BDD criteria and those who did not). It seems that in the Argentine population, bodily concerns and BDD are quite severe. This may be due to the cultural emphasis on body image, particularly in women, as well as the popularity of surgical treatments such as in other countries like Brazil. Brazil is the second largest market for botulinum toxin in the world spending over 30 million dollars each year (Finger, 2003). Clinical characteristics of patients with BDD in Brazil, however, have been found to be similar to those in developed countries (Fontenelle

et al., 2006) and much lower than in Argentina. It does not seem that the Brazilian population has the same prevalence rate of BDD (12%) as compared to Argentina (47%). The discrepancy in findings in the two countries, that have a preponderance of appearance concerns, may be in the two different assessment instruments used, e.g., the SCID (research type) vs. the BDDQ, respectively, which may have resulted in the higher rate in Argentina. Therefore, trans-cultural variations are identified in comparison with other samples around the world.

It is not surprising, given the degree of preoccupation, that the quality of life was also quite impaired in all domains. It is interesting that within the sexual domain it has been found that a wide variety of sexual dysfunctions has been noted, including complete avoidance, diminished sexual arousal, anorgasmia, dyspareunia, and vaginismus (Borda & Perez Rivera, 2003; Perez Rivera & Borda, 2001).

BDD patients' conviction in their beliefs can range from weak to strong; good insights to delusional ideas. When the conviction is strong it is more difficult to treat and they are said to have high overvalued ideation. Findings of this study are consistent with other investigations that indicate that individuals with BDD have high overvalued ideation, high levels of distress and impaired functioning (Neziroglu, Khemlani-Patel, & Jacofsky, 2009).

Prevalence data suggest that BDD is more common in adolescents and young people (Neziroglu et al., 2009; Yaryura-Tobias et al., 2003). BDD appears to become less common with increasing age. The exceptions may be either late onset BDD associated with a life crisis and a belief about the consequences of an aging appearance, or an onset after cosmetic surgery (Perez Rivera & Borda, 2001; Yaryura-Tobias et al., 2003). Based on our results, and in agreement with the literature (Neziroglu et al., 2009; Yaryura-Tobias et al., 2003), we can conclude that depression and anxiety are often comorbid with BDD in a sample with high body preoccupation. Similar comorbidities were found in a Brazilian sample of BDD (Fontenelle et al., 2006). Patients with BDD respond primarily with depression when they think about or actually observe their defects in private or public situations.

Comparable rates of BDD in the clinical sample (44%) compared to the non-clinical sample (47%) may have been due to the assessment instruments employed in diagnosing BDD. The Body Dysmorphic Disorder Questionnaire (BDDQ; Dufresne et al., 2001) has been validated in a psychiatric population; however, it lacks validation in a community sample. The elevated levels of BDD in the nonclinical group may be accounted for by the lack of sensitivity of the BDDQ to detect BDD in samples with a high rate of body preoccupation and dissatisfaction. The comparable rate of BDD in the nonclinical sample may be a reflection of the high rate of body concern in Argentina which is an avenue for future inquiry. Future research should investigate whether the BDDQ is a valid instrument to assess for BDD in populations with high rates of body preoccupation as most commonly found in countries like Argentina.

Another noteworthy consideration for subsequent research is the use of dependent measures that are unaffected by depressive symptoms (i.e., Body Image Concern Inventory; Littleton & Breittkopf, 2008) which would allow for a more reliable and valid comparison across depressed and non-depressed groups. The exclusion of the male population is another important limitation of this study. Some studies report an approximately equal gender ratio (Phillips et al., 1997), whereas others report a preponderance of men (Hollander et al., 1993) or women (Veale et al., 1996). Therefore, it is important to study the male population, as no significant relationship between quality of life and gender has been found (Zimmerman & Mattia, 1998), and adolescent men are also an at-risk population. Another limitation of the study is that it did not examine the prevalence of BDD in individuals seeking treatment for other disorders, i.e., social anxiety. We concentrated on depressed

individuals because, in Argentina, that is the most common reason for seeking treatment.

5. Conclusions

BDD is a severe psychiatric disorder that occurs everywhere, and in many cases remains undiagnosed. Therefore, this study has several clinical and epidemiological implications. Although BDD symptoms can be easily trivialized, our findings indicate that patients with BDD have notably poor quality of life, consistent with previous studies. Patients often present to clinicians revealing only anxiety, depression or suicidal ideation (Neziroglu et al., 2009). Consequently, BDD is misdiagnosed in depressed patients, in whom only depression is diagnosed and therefore treatment is unsuccessful. Our study offered support that BDD may go undiagnosed in adolescence and consequently receive solely a diagnosis of depression. Within our sample of depressed adolescents, the occurrence of BDD was comparable to that in a nonclinical sample emphasizing the importance of valid assessment instruments in populations that have a preponderance of body image concerns as well as in adolescents presenting as depressed. The data support that BDD is a more common problem that may be underdiagnosed due to comorbid conditions. Therefore, proper diagnosis of BDD is crucial in predicting treatment outcome given that data suggest that some treatment modalities for depression are ineffective (Phillips, 1999).

References

- Altamura, C., Paluello, M., Mundo, E., Medda, S., & Mannu, P. (2001). Clinical and sub-clinical body dysmorphic disorder. *European Archives of Psychiatry and Clinical Neuroscience*, 251, 105–108.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed. Text revision). Washington, DC: APA Press.
- Beck, A., Ward, C., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry*, 4, 561–571.
- Bernstein, M. (2006). El reino del bisturí: Argentina, tercer país en cirugías estéticas. *Revista Argentina de Cirugía Plástica*, 12, 8–15.
- Biby, E. (1998). The relation between body dysmorphic disorder and depression, self-esteem, somatization, and obsessive-compulsive disorder. *Journal of Clinical Psychology*, 54, 489–499.
- Bohne, A., Wilhelm, S., Keuthen, N., Florin, I., Baer, L., & Jenike, M. (2002). Prevalence of body dysmorphic disorder in a German college student sample. *Psychiatry Research*, 109, 101–104.
- Borda, T., & Perez Rivera, R. (2003). Trastorno de la Imagen Corporal. *Anxia*, 9, 27–30.
- Borda, T., & Perez Rivera, R. (2006). Trastorno Dismórfico Corporal. In *El trastorno obsesivo-compulsivo y su espectro*. Buenos Aires, Argentina: Polemos, pp. 321–343.
- Brown, T. A., DiNardo, P. A., Lehman, C. L., & Campbell, L. A. (2001). Reliability of DSM-IV anxiety and mood disorders: implications for the classification of emotional disorders. *Journal of Abnormal Psychology*, 110(1), 49–58.
- Butters, J., & Cash, T. (1987). Cognitive-behavioral treatment of women's body-image dissatisfaction. *Journal of Consulting and Clinical Psychology*, 55, 889–897.
- Cansever, A., Uzun, O., Donmez, E., & Ozsahin, A. (2003). The prevalence and clinical features of body dysmorphic disorder in college students: a study in a Turkish sample. *Comprehensive Psychiatry*, 44, 60–64.
- Cash, T., & Pruzinsky, T. (2004). *Body image: a handbook of theory, research and clinical practice*. New York: Guilford Press.
- Contreras, S., Fernandez, S., Malcarne, V. L., Ingram, R. E., & Vaccarino, V. R. (2004). Reliability and validity of the Beck Depression and Anxiety Inventories in Caucasian Americans and Latinos. *Hispanic Journal of Behavioral Sciences*, 26, 446–462.
- Dion, K., Berscheid, E., & Walster, E. (1972). What is beautiful is good. *Journal of Personality and Social Psychology*, 24, 285–290.
- Dufresne, R. G., Phillips, K. A., Vittorio, C. C., & Wilkel, C. S. (2001). A screening questionnaire for body dysmorphic disorder in a cosmetic dermatological surgery practice. *Dermatologic Surgery*, 27, 457–462.
- Faravelli, C., Salvatori, S., Galassi, F., Aiuzzi, L., Drei, C., & Cabras, P. (1997). Epidemiology of somatoform disorders: a community survey in Florence. *Social Psychiatry and Psychiatric Epidemiology*, 32, 24–29.
- Finger, C. (2003). Brazilian beauty. *The Lancet*, 362(9395), 1560.
- Fitts, S., Gibson, P., Redding, C., & Deiter, P. (1989). Body dysmorphic disorder: implications for its validity as a DSM-III-R clinical syndrome. *Psychological Reports*, 64, 655–658.
- Fontenelle, L. F., Telles, L. L., Nazar, B. P., de Menezes, G. B., do Nascimento, A. L., Mendolowicz, M. V., et al. (2006). A sociodemographic, phenomenological, and long-term follow-up study of patients with body dysmorphic disorder in Brazil. *International Journal of Psychiatry in Medicine*, 36, 243–259.

- Goodman, W. K., Rasmussen, S. A., Price, L. H., Mazure, C., Heninger, G. R., & Charney, D. S. (1989). *Yale-Brown Obsessive-Compulsive Scale (manual)*. New Haven, CT: Department of Psychiatry, Yale University School of Medicine.
- Gunstad, J., & Phillips, K. (2003). Axis I comorbidity in body dysmorphic disorder. *Comprehensive Psychiatry*, *44*, 270–276.
- Hollander, E., Cohen, L. J., & Simeon, D. (1993). Body dysmorphic disorder. *Psychiatric Annals*, *23*, 359–364.
- International Society of Aesthetic Plastic Surgery. (2009). *International Survey on Aesthetic/Cosmetic Procedures Performed in 2009*.
- Koran, L. M., Abujaoude, E., Large, M. D., & Serpe, R. T. (2008). The prevalence of body dysmorphic disorder in the United States adult population. *CNS Spectrums*, *13*, 316–322.
- Littleton, H., & Breitkopf, C. R. (2008). The Body Image Concern Inventory: validation in a multiethnic sample and initial development of a Spanish language version. *Body Image*, *5*(4), 381–388.
- Mayville, S., Katz, R., Gipson, M., & Cabral, K. (1999). Assessing the prevalence of body dysmorphic disorder in an ethnically diverse group of adolescents. *Journal of Child and Family Studies*, *8*, 357–362.
- Neziroglu, F., Khemlani-Patel, S., & Jacofsky, M. (2009). Body dysmorphic disorder: symptoms, models and treatment interventions. In: G. Simos (Ed.), *Cognitive behaviour therapy: a guide for the practicing clinician* (pp. 94–111). New York: Routledge.
- Neziroglu, F., McKay, D., Todaro, J., & Yaryura-Tobias, J. A. (1996). Effect of cognitive behavior therapy on persons with body dysmorphic disorder and axis II diagnoses. *Behavior Therapy*, *27*, 67–77.
- Neziroglu, F., Stevens, K., McKay, D., & Yaryura-Tobias, J. A. (2001). Predictive validity of the overvalued ideas scale: outcome in obsessive compulsive and body dysmorphic disorders. *Behaviour Research and Therapy*, *39*, 745–756.
- Neziroglu, F., & Yaryura-Tobias, J. A. (1993). Body dysmorphic disorder: phenomenology and case descriptions. *Behavioural Psychotherapy*, *21*, 27–36.
- Otto, M. W., Wilhelm, S., Cohen, L. S., & Harlow, B. L. (2001). Prevalence of body dysmorphic disorder in a community sample of women. *American Journal of Psychiatry*, *158*, 2061–2063.
- Perez Rivera, R., & Borda, T. (2001). The etiology of body dysmorphic disorder. *Psychiatric Annals*, *31*, 559–564.
- Phillips, K. A. (1991). Body dysmorphic disorder: the distress of imagined ugliness. *American Journal of Psychiatry*, *148*, 1138–1149.
- Phillips, K. A. (1999). Body dysmorphic disorder and depression: theoretical considerations and treatment strategies. *Psychiatric Quarterly*, *70*, 313–331.
- Phillips, K. A. (2000). Quality of life for patients with body dysmorphic disorder. *The Journal of Nervous and Mental Disease*, *188*, 170–175.
- Phillips, K. A. (2005a). Body dysmorphic disorder: recognizing and treating imagined ugliness. *World Psychiatry*, *3*(1), 12–17.
- Phillips, K. A. (2005b). Instruments for assessing BDD: the BDDQ: a self-report screening instrument for BDD (appendix B). In: K. A. Phillips (Ed.), *The broken mirror: understanding and treating body dysmorphic disorder* (pp. 379–381). New York: Oxford University Press.
- Phillips, K. A., & Diaz, S. (1997). Gender difference in body dysmorphic disorder. *The Journal of Nervous and Mental Disease*, *185*, 570–577.
- Phillips, K. A., Hollander, E., Rasmussen, S. A., Aronowitz, B. R., DeCaria, C., & Goodman, W. K. (1997). A severity rating scale for body dysmorphic disorder: development, reliability, and validity of a modified version of the Yale-Brown Obsessive Compulsive Scale. *Psychopharmacology Bulletin*, *33*, 17–22.
- Phillips, K. A., Coles, M. E., Menard, W., Yen, S., Fay, C., & Weisberg, R. B. (2005). Suicidal ideation and suicide attempts in body dysmorphic disorder. *Journal of Clinical Psychiatry*, *66*(6), 717–725.
- Phillips, K. A., McElroy, S. L., Keck, P. E., Pope, H. G., & Hudson, J. I. (1993). Body dysmorphic disorder: 30 cases of imagined ugliness. *American Journal of Psychiatry*, *150*, 302–308.
- Rief, W., Buhlmann, U., Wilhelm, S., Borkenhagen, A., & Brahler, E. (2006). The prevalence of body dysmorphic disorder: a population-based survey. *Psychological Medicine*, *36*(6), 877–885.
- Rosen, J. C., & Reiter, J. (1996). Development of the body dysmorphic disorder examination. *Behavior Research and Therapy*, *34*(9), 755–756.
- Sheehan, D. V. (2000). Sheehan Disability Scale. In: A. J. Rush, H. A. Pincus, & M. B. First (Eds.), *Handbook of psychiatric measures* (1st ed., Vol. 2, pp. 113–115). Washington, DC: American Psychiatric Association.
- Silverman, W., & Albano, A. M. (1996). *Anxiety Disorders Interview Schedule for DSM-IV*. The Psychological Corporation.
- Veale, D., Boockock, A., Gournay, K., Dryden, W., Shah, F., Willson, et al. (1996). Body dysmorphic disorder: a survey of fifty cases. *The British Journal of Psychiatry*, *169*, 196–201.
- Vinkers, D. J., van Rood, Y. R., & van der Wee, N. J. (2008). Prevalence and comorbidity of body dysmorphic disorder in psychiatric outpatients. *Tijdschrift Voor Psychiatrie*, *50*(9), 559–565.
- Yaryura-Tobias, J. A., Perez Rivera, R., Neziroglu, F., & Borda, T. (2003). *Obsesiones corporales*. Buenos Aires, Argentina: Polemos.
- Zimmerman, M., & Mattia, J. (1998). Body dysmorphic disorder in psychiatric outpatients: recognition, prevalence, comorbidity, demographic and clinical correlates. *Comprehensive Psychiatry*, *39*, 265–270.