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Prevalence of body dysmorphic disorder on a psychiatric inpatient ward and the value of a screening question

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ABSTRACT

The aim of this study was to estimate the prevalence of body dysmorphic disorder (BDD) on an inpatient ward in the UK with a larger sample than previously studied and to investigate the value of a simple screening question during an assessment interview. Four hundred and thirty two consecutive admissions were screened for BDD on an adult psychiatric ward over a period of 13 months. Those who screened positive had a structured diagnostic interview for BDD. The prevalence of BDD was estimated to be 5.8% (C.I. 3.6–8.1%). Our screening question had a slightly low specificity (76.6%) for detecting BDD. The strength of this study was a larger sample size and narrower confidence interval than previous studies. The study adds to previous observations that BDD is poorly identified in psychiatric inpatients. BDD was identified predominantly in those presenting with depression, substance misuse or an anxiety disorder. The screening question could be improved by excluding those with weight or shape concerns. Missing the diagnosis is likely to lead to inappropriate treatment.

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1. Introduction

Body dysmorphic disorder (BDD) is characterised by a preoccupation with a perceived defect(s) or flaw(s) in physical appearance that is either not noticeable or appears only slight to others. In addition, to fulfil the diagnostic criteria the preoccupation must be significantly distressing or cause impairment in social, occupational or other important areas of functioning. BDD is now classified within the obsessive compulsive and related disorders (OCRD) section of the Diagnostic and Statistical Manual of mental disorders 5th Edition (DSM5) (American Psychiatric Association, 2013) and it is proposed to include the diagnosis in the same section of the revised version of International Classification of Diseases (ICD-11) (Veale and Matsunaga, 2014). BDD is more common than previously recognised with a prevalence of about 2% in the general population (Koran et al., 2008; Rief et al., 2006). It may be a chronic disorder, which persists for many years if left untreated (Phillips et al., 2005b). There is a high rate of psychiatric hospitalisation, suicidal ideation and completed suicide (Phillips et al., 2005a; Phillips and Menard, 2006; Veale et al., 1996a). In addition, many resources are wasted on those who attend dermatological and cosmetic surgery settings (Phillips et al., 2000; Sarwer et al., 1998; Veale et al., 2003). One setting where there may be a higher prevalence of BDD than there is in the community is psychiatric

inpatients. There have been two previous studies in the USA where the prevalence rate on an adult ward was reported as between 11 and 12.9% (Conroy et al., 2008; Grant et al., 2001). However a subsequent study in Germany found a much lower prevalence rate of 1.9% (Kollei et al., 2011). One inpatient study has been conducted on an adolescent psychiatric unit, which found a prevalence of 4.8% (C.I=3.3–10.1%) in 208 patients who had definite BDD (Dyl et al., 2006). What was striking in all these studies is that virtually all the patients identified as having BDD had not disclosed their symptoms to the treating psychiatrist. A self-report BDD screening questionnaire was used in Conroy et al. (2008) and Grant et al. (2001) but screening questionnaires are rarely adopted in routine clinical practise. We therefore decided to evaluate the usefulness of a single screening question that could be incorporated into a standard history taking by a psychiatrist.

The aim of this study was therefore to determine (a) the prevalence rate of BDD in an inpatient setting in the UK, (b) how BDD presents in an in-patient setting and (c) the value of a screening question to detect BDD; and (d) to explore the reasons for non-disclosure of symptoms by patients.

2. Methods

2.1. Subjects and setting

Four hundred and eighty two patients admitted to an adult ward over a period of 13 months. The study took place in the

inpatient ward of a private psychiatric hospital in the UK. In this setting, most patients are funded privately or by their insurer. Some are funded by the state, National Health Service, usually when there are no acute beds available in the local service.

2.1.1. Inclusion

All consecutive patients admitted to the adult ward to either (i) a general adult psychiatry service ($n=285$) or (ii) an alcohol rehabilitation unit ($n=147$). Patients with anorexia nervosa are not generally admitted, as there is no formal eating disorder program.

2.1.2. Exclusion

(i) Patients admitted to a national specialist service for severe treatment refractory BDD (Drummond et al., 2008),
(ii) repeat admissions, who had already been screened.

2.2. Procedure

After their routine intake diagnostic assessment by the consultant and staff psychiatrist on admission, all patients were asked by a different staff psychiatrist, experienced in the diagnosis and management of BDD with the following screening question for BDD which is modified from Phillips (2005): "*Some people worry a lot about their appearance. Do you worry a lot about the way you look and wish you could think about it less?*" If they answered yes (and there was no obvious deformity or disfigurement), the BDD Diagnostic module was then used from the Structured Clinical Interview for DSM-IV disorders (SCID) (First et al., 1995) and the patient consented to participate in the study. Other diagnoses such as anorexia nervosa or bulimia nervosa, were exclude with the SCID whenever the interviewer had any suspicion of another disorder accounting for the symptoms of BDD. DSM-IV was used as the study began before the publication of DSM-5 (American Psychiatric Association, 2013). The main feature of concern was identified and if a diagnosis of BDD was made, an interview was conducted to determine what prevented the individual from voluntarily reporting the symptoms in their history to their treating psychiatrist. The case was then discussed with the admitting psychiatrist and the case notes were reviewed to determine if any other diagnosis was more appropriate. Ethical permission was granted by East London Research Ethics Committee (reference 10/H0704/71).

2.3. Statistical Analysis

Because the focus of this paper was on an adult setting, we removed the data on adolescents ($n=21$) from the study by Grant et al. (2001) in order to compare prevalence across different settings (Table 1).

3. Results

Of the 482 patients admitted to the inpatient ward, seven (1.5%) were excluded as they were a planned admission on the specialist service for severe treatment refractory BDD. Forty-three patients (8.9%) were excluded as a result of being a repeat admission. This left a cohort of 432 patients, in whom the screening question was asked.

3.1. Screening question

Answering "yes" to the screening question was a false positive in 95 out of the 432 (22%). Of these, 67 patients had body weight or shape concerns but did not fulfil criteria for BDD or for anorexia

Table 1
Characteristics of four inpatient psychiatric samples assessing BDD prevalence. All values unless indicated refer to N (%).

	Present study	Kollei et al. (2011)	Conroy et al. (2008)	Grant et al. (2001)
Country	England	Germany	USA	USA
Sample size	432	155	100	101
Current BDD	25 (5.8%)	3 (1.9%)	11 (11%)	13 (12.9%)
95% C.I.	3.6–8.1%	0.4–5.8%	5.2–17.4%	6.3–19.1%
Lifetime BDD	–	4 (2.6)	16 (16.0)	–
95% C.I.	–	0.1–5.1%	8.7–23.3%	–
Age, years, mean (SD)	40.4 (14.3)	39.3 (13.6)	39.5 (12.7)	38.4 (10.1)
Age range	17–80			
Female	224 (51.9)	95 (61.3)	67 (67.0)	65 (53.3)
Diagnoses:				
Psychotic disorder	18 (4.2)	12 (7.7)	15 (15.0)	20 (16.4)
Mood disorder	186 (43.0)	69 (44.5)	76 (76.0)	92 (75.4)
Substance use disorder	162 (37.5)	16 (10.3)	2 (2.0)	62 (50.8)
Anxiety disorder	49 (11.3)	25 (16.1)	3 (3.0)	6 (4.9)
Somatoform disorder	0 (0.0)	3 (1.9)	0 (0.0)	1 (0.8)
Eating disorder	2 (0.5)	14 (9.0)	2 (2.0)	9 (7.4)
Adjustment disorder	8 (1.9)	0 (0.0)	1 (1.0)	2 (1.6)
Personality disorder	4 (0.9)	12 (7.7)	1 (1.0)	0 (0.0)
Impulse-control disorder	0 (0.0)	1 (0.6)	0 (0.0)	6 (4.9)
ADHD	0 (0.0)	1 (0.6)	0 (0.0)	2 (1.6)
Other disorder	3 (0.7)	1 (0.6)	0 (0.0)	5 (4.1)

nervosa or bulimia nervosa. The remaining 28 out of the 95 had other concerns such as worries about their face or appearance in general but did not fulfil criteria for BDD. The specificity of the screening question was therefore 76.6% (C.I 72.2–80.7%).

In the cohort of 432 patients, twenty-five (5.8%, CI 3.6–8.1) were identified at a diagnostic interview as having BDD. The demographic details and diagnoses of all the patients admitted on the ward are provided in Table 1 and compared against three previous studies in adult inpatient settings.

3.2. Demographics of BDD

Of those diagnosed with BDD in this study, sixteen were female and 9 were male. Seven were married, 4 were single in a long-term relationship, 9 single, 1 widowed, and 4 had missing data. The mean age was 37 (SD 12.86). Twenty-two were Caucasian, one was Asian, one was Chinese, one was of mixed race. The main preoccupation was as follows: face in general including the skin (7), hair (4), eyes (2), skin (2), nose (2), teeth (2), height (1), breasts (1), ears (1), muscles (1), eyebrows (1), and genitalia (1).

3.2.1. Admitting diagnoses

The admitting psychiatrist recorded the following ICD10 diagnoses in those with BDD: substance use (9); depressive episode (6); anxiety disorder (6, of whom 2 had generalised anxiety disorder, 1 had panic disorder, 3 had a mixed anxiety and depressive disorder); hypomania (2); bulimia nervosa (2). None had been identified as having BDD by the admitting psychiatrist.

Thirteen out of 21 (62%) patients said their symptoms of BDD were either their main problem or one of their main problems for which they wanted help. Five (24%) stated it was not their main problem but still wanted help for it. Three (14%) did not think it was their main problem and did not want help as they were

Table 2
Reasons provided by patients for not disclosing symptoms of BDD.

n	Reason
22	Felt ashamed, embarrassed or weak to discuss it
11	Thought the problem was their appearance
10	Did not know where to seek help
9	Did not know that such a problem existed
5	Wanted to ignore the problem
3	Did not want their family doctor to find out
1	Did not want their family to find out

managing by using avoidance or camouflaging behaviours.

The main reasons for not disclosing their symptoms of BDD were identified in Table 2. The most common reason was shame or lack of knowledge of the symptoms of BDD as a recognized condition.

4. Discussion

This study is the first to identify the prevalence of BDD in a psychiatric inpatient setting in the UK and found a prevalence rate of 5.8% (CI 3.6–8.1%). The strengths of the study are a larger sample size and narrower confidence interval than the 3 previous studies. This study adds to previous observations that BDD is poorly identified in psychiatric inpatients. None of the patients revealed their symptoms of BDD during a routine history. This was mainly because of shame or lack of knowledge about BDD or its treatment, or a desire to avoid the problem.

There is a significant discrepancy in prevalence between the German study (Kollei et al., 2011) and those in the USA (Conroy et al., 2008; Grant et al., 2001). Kollei et al. (2011) noted that the differences may be related to (a) the relatively small sample sizes and wide confidence intervals in each of the studies, (b) lower frequency of the diagnosis of depression and substance misuse in the German sample, (c) the fact that the American sample were first screened using a questionnaire. Also of note is that the studies in the USA excluded those who did not consent to participate (for example if they lacked capacity or they were not interested in research). However, if there were no patients with BDD in those excluded in the American samples, it would have reduced the prevalence to 10.8% (Grant et al., 2001) to 11.2% (Conroy et al., 2008). We might have expected a higher rate of BDD in those identified with substance misuse. Substance misuse was diagnosed in 50.8% of the sample in Grant et al. (2001) and only 2% of Conroy et al. (2008).

This study adds to the 3 previous ones, as there was a much larger sample size. The prevalence rate in in-patient settings is likely to vary depending on the diagnostic intake. However, the main message is that the prevalence across all four settings is larger enough to make it important to screen for.

The screening was done by a single question, which may have a specificity that is too low. It could potentially be improved by excluding worries about being too fat or overweight, which is unlikely to lead to a diagnosis of BDD. Further research is required to not only screen all inpatients but to determine if those identified with BDD can be engaged in Cognitive Behaviour Therapy which is specific to BDD (Veale et al., 2014, 1996b; Wilhelm et al., 2014) and/or a SSRI in the maximum tolerated dose (Phillips et al., 2002) and to the determine the treatment outcome as controlled trials tend to recruit those who are aware of the diagnosis and have sought help.

Of note is that the majority of patients identified in this and previous studies had either a comorbid diagnosis of depression, substance misuse or an anxiety disorder. This implies that

screening might be best targeted at those who present with such diagnoses either in an inpatient or community setting.

4.1. Limitations

There was no formal screening with a structured diagnostic interview for other problems that puts the prevalence of BDD in the context of other unidentified diagnoses. Not all patients were interviewed with the structured diagnostic interview for BDD and so we cannot calculate the exact sensitivity or specificity of the screening questionnaire. However we are reasonably confident that the screening had a high sensitivity (few false negatives) for diagnosing BDD as it is very unlikely that a person who answers negatively to the question about whether they were worried about their appearance could fulfil the diagnostic criteria for BDD. It is possible that shame might prevent them from discussing their symptoms with the screening question but then they are also unlikely to reveal their symptoms with a full diagnostic interview. The primary aim of this study was also to identify whether the diagnosis of BDD was being missed. Unfortunately, there were insufficient resources to conduct a full structured diagnostic interview for all admissions. Equally we did not determine whether the participants with BDD had a delusional subtype, which is an indicator of severity of symptoms. In those patients who volunteered weight or concerns about being too fat, the important diagnosis of anorexia nervosa or bulimia was excluded; some might have fulfilled a diagnosis of eating disorder not otherwise specified (DSMIV) or an atypical eating disorder (ICD10) but this was not the focus of this study. The diagnosis of BDD can however still occur in the context of anorexia nervosa or bulimia (for example a preoccupation with another body part other than weight or shape). We used a clinical judgment in the SCID for determining whether a patient had a perceived defect and did not use a defect rating scale to operationalise the criterion (Stangier et al., 2000). Lastly we cannot exclude an interviewer bias in the use of the SCID for BDD.

This study was conducted in a private psychiatric hospital in the UK. The prevalence of BDD is likely to be lower in a state (National Health Service) psychiatric in-patient hospital where there is a higher prevalence of psychosis. Whatever the prevalence rate in a particular setting, the clinical implications are that because patients do not reveal their symptoms of BDD, then screening should occur and especially in those who present with depression, substance misuse or an anxiety disorder. We demonstrated that this could be done by a single screening question that was acceptable to patients. Alternatively, screening for BDD can be done by a validated screening questionnaire (Cash et al., 2004; Veale et al., 2012). The hospital provides a specialist service for BDD. However the patients on the BDD service were excluded from the study. It is possible that the service may attract people with BDD to the hospital and bias the prevalence rate. However they were like to have been identified as an outpatient before admission and be part of the BDD service (and therefore excluded from the study). Alternatively they are likely to have volunteered their symptoms of BDD before the screening question and none did so.

4.2. Conclusions

Whilst awareness of BDD in the general public may improve over time, it can still shameful for an individual to reveal their symptoms even when it is their biggest problem. Thus it is the responsibility of a mental health professional to screen for BDD in the way that it is important to ask about an alcohol history or thoughts of suicide – issues that patients are often ashamed about and do not volunteer in their history without gentle probing. Further research needs to understand why professionals do not

conduct a broader diagnostic interview – too often an assessment is limited to a patient's history, mental state examination and risk assessment. At the very least this should be done in patients who present with substance misuse, depression or an anxiety disorder otherwise patients may continue to be treated inappropriately. Further research is required to determine the sensitivity and specificity of a screening question or questionnaire by interviewing all patients (irrespective of whether they score positively) with a full SCID.

Conflict of interest

None.

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