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Environmental and physical risk factors for men to develop body dysmorphic disorder concerning penis size compared to men anxious about their penis size and men with no concerns: A cohort study

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ABSTRACT

To explore the combination of environmental and physical factors associated with the development of body dysmorphic disorder (BDD) related to penis size and the differences between men who are anxious about their penis size (but do not meet criteria for BDD), and men who do not report concerns about penis size. Method: Men with BDD ($n=26$) were compared to those with small penis anxiety (SPA) ($n=31$) and men without concerns ($n=33$), by their demographic characteristics, penile measurements, Childhood Trauma, Perception of Teasing Scale, and differential experiences including past medical conditions. Multinomial logistic regression was run to find predictors of group membership. Results: There were significant differences across the groups in which emotional and physical abuse and neglect, competency and general appearance teasing, smaller penis size, older age, and higher Body Mass Index were all identified as risk factors for developing BDD compared to those in the SPA and men without concerns. Only perceived specific genitalia teasing were identified as a risk factor in both BDD and SPA groups compared to men without concerns. Conclusions: The results have implications for our understanding of the development of BDD compared to body dissatisfaction and the prevention of psychiatric morbidity. Smaller penis size was not hypothesised to increase vulnerability to developing BDD but is consistent with being "different" during adolescence and for teasing by one's peers or a sexual partner.

1. Introduction

Body dysmorphic disorder (BDD) consists of a preoccupation with a perceived defect or ugliness, usually around the face. The 'flaw(s)' is not noticeable to others, or appears only slight, yet causes enormous shame and interference in life and is associated with a high risk of suicide (Phillips et al., 2005; Veale et al., 1996). At the core of BDD is an excessive self-consciousness and often a distorted image from an 'observer perspective' (Osman, Cooper, Hackmann, & Veale., 2004). People with BDD usually avoid public settings and often spend hours mirror gazing, camouflaging, ruminating or constantly comparing their perceived defect with others (Phillips et al., 2006).

BDD frequently follows a chronic course and has a prevalence of about 2% in the general population (Koran, Abujaoude, Large, & Serpe, 2008; Rief, Buhlmann, Wilhelm, Borkenhagen, & Brahler, 2006). People with BDD often voluntarily undergo unnecessary dermatological treatment and cosmetic surgery (Phillips & Dufresne, 2000; Sarwer, Pertschuk, Wadden, & Whitaker, 1998; Veale, De Haro, & Lambrou, 2003). Alternatively, they may present to mental health practitioners with symptoms of depression, social anxiety or obsessive-compulsive disorder as these symptoms are perceived as less stigmatizing than those of BDD (Phillips, Nierenberg, Brendel, & Fava, 1996; Veale et al., 1996).

Little is known about the risk factors for developing BDD. Perceived teasing about general appearance has been associated with higher levels of body dissatisfaction, depression and lower self-esteem in people with binge eating disorder (Jackson, Grilo, & Masheb, 2000) and BDD (Buhlmann, Cook, Fama, & Wilhelm, 2007). Osman et al. (2004) also found that the experience of imagery in BDD was emotionally linked to past aversive memories of being teased or bullied and being excessively self-conscious about appearance changes during adolescence. Another non-specific factor for vulnerability to BDD may be an association with

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emotional, physical or sexual abuse or neglect resulting in poor attachment and body shame (Didie et al., 2006; Kearney-Cooke & Ackard, 2000; Neziroglu, Khemlani-Patel, & Yaryura-Tobias, 2006).

There is some evidence for an increased aesthetic sensitivity in people with BDD (Lambrou, Veale, & Wilson, 2011). An indirect marker for this may be a greater likelihood of training or study in art or design (Veale & Lambrou, 2002). Lastly, there is some evidence that people with BDD may have a genetic predisposition for a need for symmetry or order (Monzani et al., 2012a, 2012b; Veale et al., 1996).

Previous research investigating risk factors for the development of BDD has been limited mainly to studies that have investigated a single factor of interest (e.g., perceived teasing) and did not necessarily compare against a control group or a group that experienced body dissatisfaction without BDD (Didie et al., 2006; Jackson et al., 2000; Neziroglu et al., 2006) or did not use a validated abuse history questionnaire (Neziroglu et al., 2006).

The majority of existing research has used samples biased by containing more women than men (Didie et al., 2006; Lambrou et al., 2011; Monzani et al., 2012a). Body image concerns manifest differently in men and women. A survey of 200 men found that their body image concerns were primarily about body weight, penis size and height (Tiggemann, Martins, & Churchett, 2008). Phillips and Diaz (1997) found gender differences in 188 patients with BDD, in which men were more likely than women to be excessively concerned about muscle shape and the size of their genitalia.

In order to tightly control the variable of interest, the focus of this study is on men in whom the size or shape of the penis is the main, if not their exclusive, preoccupation causing significant distress and shame (Veale et al., 2014, 2015b). We use the term "small penis anxiety" (SPA) to describe a condition that consists of dissatisfaction or worry about penis size where the man does not fulfil the criteria for BDD (Wylie & Eardley, 2007). In a previous study with this dataset (Veale et al., 2015b, in press), we identified men with BDD who had significantly higher scores than both the SPA group and no penile concern group for measures of imagery, avoidance, safety seeking and depression. They experienced significant interference in their life in terms of relationships and intimacy.

Men with BDD and SPA often seek solutions from internet sites that promote non-evidence based lotions, pills, exercises or penile extenders. As well as purchasing lotions or extenders, such men may also seek help from urologists or plastic surgeons, and may be offered fat injections or surgical procedures to try to increase the length or girth of their penis (Veale et al., in press). However, cosmetic phalloplasty is still regarded as experimental without any adequate outcome measures or evidence of safety (Ghanem, Glina, Assalian, & Buvat, 2013). Some studies report a minor increase in length but do not report psychosocial outcomes (Ghanem et al., 2013). Psychological research in this area is extremely limited and there are no psychological interventions that have been evaluated for men with BDD over penis size or for SPA.

In this study we wanted to determine whether the putative risk factors are exclusive to BDD or whether they occur in the experience of body dissatisfaction (without BDD). Men with penile concerns have been described in the urology literature as having "penile dysmorphic disorder" but without a formal diagnostic interview for BDD (Li et al., 2006; Perovic et al., 2006; Spyropoulos et al., 2005). Risk factors for developing BDD regarding penis size may be similar to those in BDD in general or there may be some specific factors for a preoccupation with penis size. A history of past medical or surgical interventions for the genitalia may be relevant for the development of BDD with penis concerns as it may increase attention on an area that has been considered "defective" in the past.

Our study therefore aims to investigate the combination of environmental and physical risk factors associated with having BDD or SPA (that is, without BDD) compared to men without concerns. Our hypothesis was that men with BDD were more likely than either the SPA or men without concerns to report a history of (a) physical, emotional or sexual abuse, (b) perceived teasing about their competency or general appearance, (c) specific perceived teasing about their penis size, (d) an education or training in art and design, and (e) medical or surgical intervention to the genitalia as this may be associated with beliefs about the genitalia being abnormal during adolescence. The research also aims both to further previous research in understanding the development of BDD by examining a combination of factors and to contribute to the limited amount of body image research in an area specific to men. The study findings may be generalised to an understanding of the development of BDD in general.

2. Method

The study consisted of a cohort group design comparing men either (a) who fulfilled diagnostic criteria for BDD regarding penis size, or (b) who expressed dissatisfaction or worry about their penis size but did not fulfil diagnostic criteria for BDD (Small Penis Anxiety, SPA group), (c) and men who did not express any concerns about their penis size and did not fulfil criteria for BDD. The same dataset was used to describe the phenomenology and characteristics of men with BDD concerning penis size (Veale et al., 2015b). The Queen Square NHS Research Ethics Committee granted ethics permission for the research (Reference 11/LO/0803).

2.1. Participants

All men were recruited from one of three sources: (a) by email to staff and students at King's College London ($n=36$), (b) by email to the Mind Search database of volunteers at the Institute of Psychiatry, Kings College London ($n=10$) and (c) by a link on the "Embarrassing Bodies" website, following their feature on penis size concerns ($n=44$). This is a television programme in which members of the public present to a doctor with physical and medical concerns that are regarded as embarrassing or shameful.

We sought to recruit men in a study on their beliefs about penis size, whether they had any concerns or not. In total, 90 men were included in the study. The demographic data are shown in Table 1. The inclusion criteria were men aged 18 or older who were proficient in English. Our exclusion criteria were men who:

(1) Had a "micro-penis" (defined as 6 cm or less in the flaccid state). This is based on 2 standard deviations below the mean for age (Wessells, Lue, & McAninch, 1996);
(2) Had a penile abnormality (e.g., Peyronie's disease, hypospadias, intersex, phimosis);
(3) Had had penile or prostatic surgery (which may reduce penile size).

2.2. Materials

All men completed the following questionnaires online.

Demographic information. Information was collected on age, body mass index (BMI), marital status, education level, employment status, ethnicity, and sexual orientation.

Cosmetic Procedure Screening Scale for BDD related to penile appearance (COPS-P) (Veale et al., 2015a). The COPS-P is a 9 item scale (range 0–72) based on the original COPS for general appearance concerns (Veale et al., 2011), which is validated as a