

# Practitioner Review: Assessment and treatment of body dysmorphic disorder in young people

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Body dysmorphic disorder (BDD) is a relatively common and highly impairing mental disorder that is strikingly underdiagnosed and undertreated in Child and Adolescent Mental Health Services (CAMHS). The only clinical guidelines for the management of BDD in youth were published nearly 20 years ago, when empirical knowledge was sparse. Fortunately, there has been a surge in research into BDD over the last 10 years, shedding important insights into the phenomenology, epidemiology, assessment and treatment of the disorder in young people. This review aimed to provide an overview of recent research developments of relevance to clinicians and healthcare policymakers. We summarise key findings regarding the epidemiology of BDD in youth, which indicate that the disorder usually develops during teenage years and affects approximately 2% of adolescents at any one point in time. We provide an overview of aetiological research, highlighting that BDD arises from an interplay between genetic and environmental influences. We then focus on screening and assessment strategies, arguing that these are crucial to promote detection and diagnosis of this under-recognised condition. Additionally, we summarise the recommended treatment approaches for BDD in youth, namely cognitive behaviour therapy with or without selective serotonin reuptake inhibitors. The review concludes by highlighting key knowledge gaps and priorities for future research including, but not limited to, better understanding aetiological factors, long-term consequences and treatment. **Keywords:** Body dysmorphic disorder; children; adolescents; assessment; treatment; cognitive behaviour therapy.

## Introduction

Body dysmorphic disorder (BDD) usually develops during teenage years, affects about 2% of adolescents (Krebs, Clark, Ford, & Stringaris, 2024; Veale, Gledhill, Christodoulou, & Hodsoll, 2016) and is associated with substantial disability, psychiatric comorbidity and suicide risk (Krebs et al., 2022; Krebs, Clark, et al., 2024; Rautio et al., 2022). Despite its prevalence and morbidity, BDD is severely under-detected and under-treated in Child and Adolescent Mental Health Services (CAMHS) across the world (Dyl, Kittler, Phillips, & Hunt, 2006; Grant, Kim, & Crow, 2001; Krebs, Rifkin-Zybutz, Clark, & Jassi, 2023). This may be partially attributable to a lack of up-to-date clinical guidelines. The National Institute for Health and Clinical Excellence (NICE) in the United Kingdom published guidelines for the treatment of BDD across the life span (NICE, 2005). However, these guidelines were written nearly two decades ago and, at the time of writing,

knowledge of BDD in young people was sparse and the evidence-base for BDD treatment in youth was virtually nonexistent. The NICE recommendations were therefore primarily based on extrapolation of data from adult studies and expert clinical opinion. Over the last decade, BDD has received increased empirical attention, which has enabled a better understanding of the phenomenology, epidemiology and treatment of this condition in youth.

The aim of this review was to provide a synthesis of the recent literature on BDD in young people, that is, relevant to clinical practitioners and policymakers. We will provide an overview of current knowledge regarding the characteristics of BDD in youth, its epidemiology and its aetiology. We will then offer guidance on the screening, clinical assessment and multidisciplinary management of BDD in young people. Lastly, key knowledge gaps will be identified and areas for future research will be proposed.

## What are the characteristics of BDD in youth?

Body dysmorphic disorder is characterised by an excessive preoccupation with perceived flaws in

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physical appearance that appear minor or are completely unobservable to others (American Psychiatric Association, 2013). Appearance concerns in BDD can relate to any body part, but facial features are the most common focus (Figure 1), and most young people have multiple appearance concerns (Rautio, Jassi, et al., 2022). In an effort to cope with appearance concerns, young people with BDD typically engage in time-consuming, repetitive behaviours, often aimed at checking, concealing or correcting their perceived flaws (Figure 2). They may also become highly avoidant, for example, of social situations or places with bright lighting.

For a diagnosis of BDD, the appearance preoccupation and repetitive behaviours must be distressing and impairing (American Psychiatric Association, 2013). Furthermore, the preoccupation may not be better explained by concerns with body fat or weight in the context of an eating disorder, such as anorexia nervosa. Table 1 outlines the key similarities and differentiating features of BDD versus other conditions.

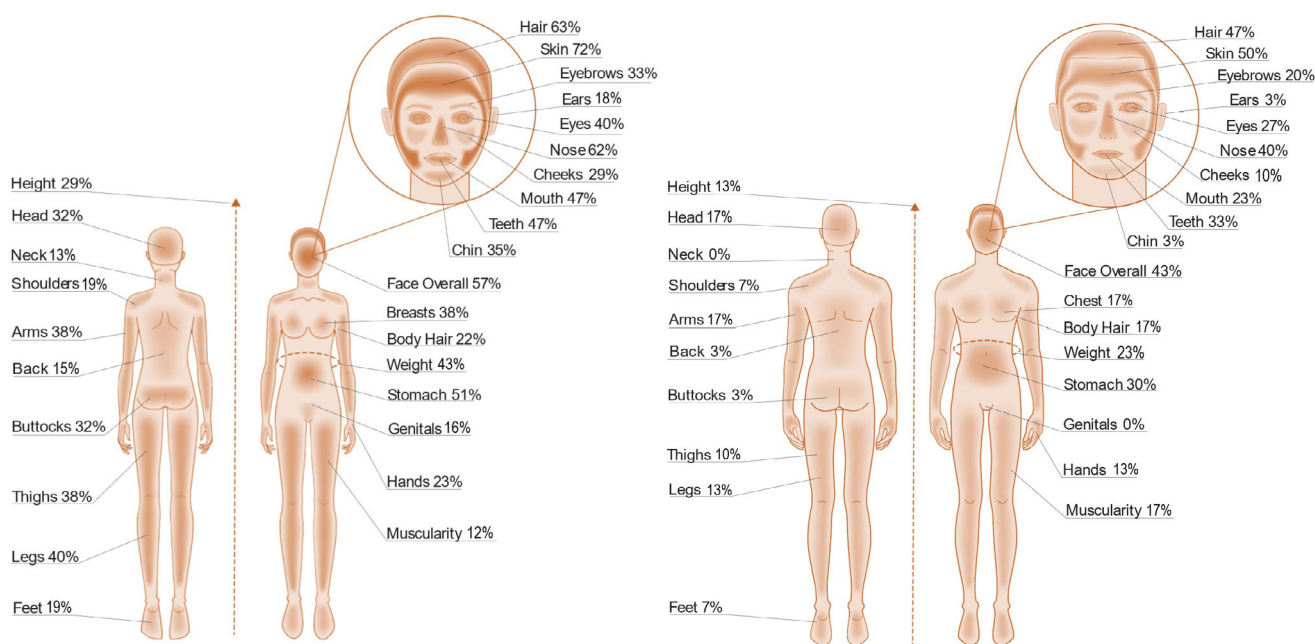
The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) also includes two specifiers for the diagnosis of BDD: muscle dysmorphia and insight. Muscle dysmorphia indicates that the individual is concerned about being too slight or lacking sufficient muscularity. Insight can range from good (the young person recognises their concerns to be excessive or unreasonable) to absent (the young person firmly believes they have a physical defect). Approximately half of adolescents have poor or absent insight (Mataix-Cols et al., 2015; Rautio, Jassi, et al., 2022). However, insight fluctuates substantially over short periods of time

(Schulte, Dietel, Wilhelm, Nestler, & Buhlmann, 2021), and young people with poor insight can benefit from evidence-based BDD treatment (Mataix-Cols et al., 2015; Rautio et al., 2022).

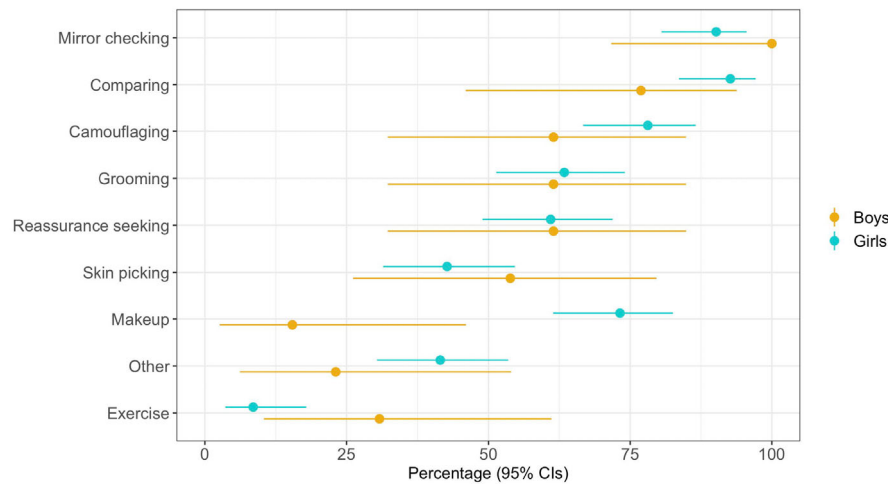
Limited studies have examined whether BDD manifests differently in girls versus boys. In the largest study to date (Rautio, Jassi, et al., 2022), the clinical presentation of BDD was largely similar across gender groups (i.e. girls vs. boys), but with some notable differences (see Figures 1 and 2). Girls reported more areas of appearance concern than boys (a mean of 11 vs. 5 distinct concerns) and were more preoccupied with weight, while boys were more preoccupied with muscularity. To our knowledge, there have not been any studies to date examining BDD in gender minority groups.

### What is the impact and comorbidity associated with BDD in youth?

Body dysmorphic disorder can have a profound and pervasive impact on psychosocial functioning. In extreme cases, young people with BDD can completely withdraw and become housebound (Albertini & Phillips, 1999), and a substantial proportion (as high as 44% in treatment-seeking samples) experience psychiatric inpatient admission (Phillips et al., 2006). Although BDD can affect all areas of functioning, the greatest impairment is typically in school and social activities (Rautio, Jassi, et al., 2022). For example, it is estimated that 22%–37% of young people attending BDD clinics have dropped out of school because of their BDD (Mataix-Cols et al., 2015; Phillips et al., 2006; Rautio, Jassi, et al., 2022).



**Figure 1** Focus of preoccupation among girls ( $n = 129$ ) versus boys ( $n = 30$ ) with body dysmorphic disorder. Data are taken from: Rautio, Jassi, et al. (2022). Four young people who identified as non-binary were excluded from this figure



**Figure 2** BDD-related behaviours in girls ( $n = 74$ ) versus boys ( $n = 13$ ) with BDD. 'Other' includes, for example, searching information on cosmetic procedures on the Internet or taking pictures of oneself. Data are taken from: Rautio, Jassi, et al. (2022). Four young people who identified as non-binary were excluded from this figure

**Table 1** Differential diagnosis of body dysmorphic disorder (BDD)

Diagnosis	Similarities with BDD	Key differentiating features
Obsessive-compulsive disorder	Time consuming, repetitive behaviours which can include grooming rituals	Unlike in BDD, grooming rituals in obsessive-compulsive disorder are not driven by an attempt to correct perceived appearance flaws. They may instead be driven by contamination fears, 'just right' urges or a need for symmetry
Social anxiety disorder	Fear of negative evaluation by others. Avoidance of and/or distress in social situations	Social anxiety disorder involves a fear of saying or doing something to embarrass oneself. BDD involves anxiety that others will negatively judge and/or reject them based on their appearance
Depression	Negative self-concept, which can include beliefs about being ugly	Concerns about appearance are not the primary preoccupation in depression and are not associated with significant distress and impairment in their own right, and not typically associated with the repetitive behaviours that are characteristic of BDD (e.g. mirror checking, grooming)
Eating disorders	Distressing and impairing preoccupation with appearance	Appearance preoccupation in eating disorders is focused on body weight and shape, leading to dysfunctional eating behaviours in an attempt to lose weight
Excoriation (skin-picking) disorder	Repetitive skin picking	Skin picking in excoriation disorder is not driven by an attempt to improve appearance, whereas skin picking in BDD is intended to improve the appearance of perceived defects in the skin
Hair pulling disorder (trichotillomania)	Repetitive hair pulling	Hair pulling in hair pulling disorder is not driven by an attempt to improve appearance, whereas hair pulling in BDD is intended to improve the appearance (e.g. by removing facial or body hair, or specific hairs that are viewed as unattractive)
Psychotic disorders	Delusional beliefs	Unlike psychotic disorders, BDD involves prominent appearance preoccupations and associated repetitive behaviours. Hallucinations, disorganised thought, disorganised speech, and other positive psychotic symptoms are not features of BDD
Gender dysphoria	Distressing and impairing preoccupation with body parts that are sex signifiers (e.g. breasts, genitalia). Often seeking surgery or other medical interventions to change appearance	Appearance concerns associated with gender incongruence are typically that the feature is not right/appropriate, rather than ugly per se. The goal is generally removal of sex signifiers and rather than 'correcting' flaws in appearance

Most young people with BDD experience psychiatric comorbidity, with clinical and epidemiology studies showing that approximately 70% meet criteria for at least one additional diagnosis (Albertini & Phillips, 1999; Krebs, Clark, et al., 2024; Mataix-Cols et al., 2015; Rautio, Jassi, et al., 2022). Comorbid internalising disorders (e.g. depressive disorders, social anxiety disorder) and eating disorders are particularly common. Autism spectrum disorder has been reported in approximately 16% of young people seen in specialist BDD clinics (Rautio, Jassi, et al., 2022). Concerningly, suicidality is also common among young people with BDD accessing clinical services, with 11%–44% having a history of attempted suicide (Mataix-Cols et al., 2015; Phillips et al., 2006; Rautio, Jassi, et al., 2022). Even in relatively unbiased, population-based samples approximately one in four young people with clinically significant BDD symptoms self-report having attempted suicide (Krebs et al., 2022) and nearly half of those meeting diagnostic threshold for BDD self-report a history of self-harm and/or suicide attempts (Krebs, Clark, et al., 2024).

### What is the prevalence of BDD among children and adolescents?

Nationwide studies examining the point prevalence of BDD in representative samples of adults have found prevalence estimates ranging from 0.7% (Faravelli et al., 1997) to 3.2% (Schieber, Kollei, de Zwaan, & Martin, 2015). Fewer studies have examined BDD prevalence in young people, although the disorder is understood to typically emerge during early adolescence (Bjornsson et al., 2013; Rautio, Jassi, et al., 2022). School- and university-based studies have estimated the point prevalence of probable BDD to be around 1.7%–3.6% (Mayville, Katz, Gipson, & Cabral, 1999; Möllmann, Dietel, Hunger, & Buhlmann, 2017; Schneider, Turner, Mond, & Hudson, 2016). A large study in Sweden using a twin sample found the prevalence of clinically significant BDD symptoms to be 1.0% among 15-year-olds and 2.0% among 18-year-olds (Enander et al., 2018). However, these studies have relied on brief self-report questionnaires, which may not align with diagnostic assessments of BDD.

Recently, the prevalence of DSM-5 BDD was examined in a large, representative, population-based sample of children and young people in the United Kingdom ( $N = 7,654$ ) using a clinician-rated structured diagnostic assessment, namely the Development and Well-Being Assessment (Krebs, Clark, et al., 2024). The overall point prevalence of BDD was estimated at 1.0%. Notably, BDD was relatively rare in children under 12 years of age (0.1%), but significantly more common among adolescents (1.9%). There were also striking sex effects, with BDD affecting 3.4% adolescent females versus 0.4% of adolescent males.

The prevalence of BDD is elevated among young people attending mental health services, relative to the general population (Dyl et al., 2006). Body dysmorphic disorder has also been shown to be common among adults accessing cosmetic medical services, such as dermatology and rhinoplasty clinics (Veale et al., 2016). To our knowledge, there have not been any studies examining the frequency of BDD among young people seeking cosmetic interventions to date, although a large proportion of young people with BDD report that they desire cosmetic procedures (Rautio, Jassi, et al., 2022).

### What factors contribute to the development of BDD?

Like other psychiatric disorders, BDD is thought to result from the complex interplay between biological predisposing factors, such as a genetic liability, and early-life environmental stressors. Twin studies in both adolescents and adults have reported heritability estimates ranging from 37% to 49% (Enander et al., 2018; Lopez-Sola et al., 2016; Monzani, Rijdsdijk, Harris, & Mataix-Cols, 2014). Multivariate twin studies have also shown that there is some overlap in the genetic influences on symptoms of BDD and other obsessive-compulsive related disorders (Monzani et al., 2014) and anxiety disorders (Lopez-Sola et al., 2016). However, these studies also suggest that most (approximately 65%) of the genetic risk for BDD is not shared with other disorders (Lopez-Sola et al., 2016; Monzani et al., 2014). To date, there have not been any well-powered genomic studies (e.g. genome-wide association studies), and therefore, the specific genetic variants that may underpin BDD symptoms remain unknown.

Twin studies suggest that nonshared environmental experiences play an important role in the development of BDD. Understanding these environmental factors is crucial since they may be amenable to modification. Several putative risk factors have been highlighted, including peer victimisation and childhood trauma (e.g. abuse and neglect). In a recent meta-analysis, BDD symptoms were found to have a small association with childhood abuse ( $r = .22$ ) and experiences of bullying ( $r = .28$ ), and a moderate association with experiences of teasing ( $r = .42$ ) (Longobardi, Badenes-Ribera, & Fabris, 2022). There has been strikingly little research of sociocultural factors in relation to BDD, such as social media. There has been speculation about whether image-based social media platforms, and the use of filters and other digital enhancements, might be risk factors for the development of BDD. However, existing evidence is largely limited to correlational studies showing a cross-sectional association between BDD symptoms and sociocultural attitudes towards appearance, perceived media pressure and use of image-based social media use (Ahmadpanah et al., 2019; Alsaidan et al., 2020;

Gupta, Jassi, & Krebs, 2023; Ryding & Kuss, 2020). In general, the studies of environmental risk factors for BDD conducted to date have major limitations including the overreliance on retrospective and cross-sectional designs, and failure to control for key potential confounders, including familial or genetic influences (i.e. gene–environment correlation) (Knafo & Jaffee, 2013).

### How should BDD be screened and assessed in young people?

Body dysmorphic disorder is strikingly under-detected and under-diagnosed (Grant et al., 2001; Veale et al., 2016). Some common reasons include: a tendency for individuals with BDD to desire and seek cosmetic procedures rather than mental health support; limited awareness and knowledge of BDD among some mental health clinicians; dismissing BDD-related appearance concerns as being normal developmental concerns typical of the adolescent period; reluctance of people with BDD to disclose their symptoms due to a fear of sounding vain, embarrassment or concern that it will attract attention to their perceived flaws.

Even when young people with BDD do present to mental health services, they often describe other symptoms rather than their core appearance concerns, which may lead to misdiagnosis (e.g. depression, social anxiety disorder) and suboptimal treatment (Krebs, Rifkin-Zybutz, et al., 2023). Although young people with BDD rarely disclose their appearance concerns spontaneously, the majority will if directly asked (Buckley et al., 2018).

#### Initial assessment

An initial BDD assessment should involve the key components of a standard CAMHS assessment, and typically involve the young person and at least one parent or guardian. The clinician should start by obtaining a brief description of the main concerns from the young person's and parents' perspective, being aware that these views may differ. The assessment should include a history of the presenting problem, as well as a developmental, medical and family history. Clinicians should additionally assess for specific family factors which may perpetuate a young person's BDD. Parents often get drawn into BDD-related patterns of behaviour (e.g. facilitating avoidance, providing excessive reassurance about appearance and supplying large quantities of cosmetic products), a process often referred to as 'family accommodation' (Jassi, Baloch, Thomas-Smith, & Lewis, 2020). Parents understandably engage in these behaviours in an attempt to reduce their child's distress, but unfortunately they can have the unintended consequence of fuelling BDD.

A detailed assessment of the current BDD symptoms should be carried out directly with the young

person. Examples of questions that can be asked, corresponding to DSM-5 diagnostic criteria for BDD, are shown in Table 2. To further understand the nature of appearance concerns, it is often helpful to systematically ask about different features, for example, starting at the top of the head and working down to the feet. Clinicians should avoid attempts to challenge the young person's beliefs about their appearance and/or provide reassurance about perceived flaws, as this may be interpreted as dismissive and invalidating or fuel a counterproductive cycle of reassurance-seeking.

Initial assessment should also involve a mental state examination with special attention being given to suicidality and common co-occurring disorders such as depression, social anxiety disorder and obsessive-compulsive disorder (OCD). Because young people are often hesitant about disclosing their BDD symptoms, it is important that clinicians are vigilant to behavioural clues during the assessment (e.g. wearing a hood, hat or sunglasses inside, wearing heavy or unusual make up, looking at their reflection in the window or their phone frequently, keeping the camera off during online assessments). When communicating the diagnosis of BDD at the end of the assessment, it is helpful to focus on the distress and impairment experienced since this is usually the 'common ground' between the clinician and young person's perspective.

#### Rating scales

Rating scales can aid assessment and assist in monitoring progress during treatment. The BDD version of the Yale–Brown Obsessive Compulsive Scale (BDD-YBOCS) is a clinician-administered measure of symptom severity (Phillips, Hart, & Menard, 2014), and viewed as the gold-standard measure of BDD. It includes 12 items assessing appearance preoccupation, appearance-related compulsive behaviours, insight and avoidance. Each item is rated on a 0–4 scale, producing a total severity score ranging from 0 to 48, with higher scores reflecting higher symptom severity. The adolescent version of the BDD-YBOCS (the BDD-YBOCS-A) has good internal consistency, convergent validity and sensitivity to change over treatment (Monzani et al., 2022).

The BDD-YBOCS-A has many strengths but can be lengthy to administer, and self-report measures may be a helpful alternative and/or additional assessment method. A number of self-report questionnaires have been developed to assess BDD symptoms, but only a few have been evaluated in young people specifically, namely the Body Image Questionnaire – Child and Adolescent version (BIQ-C) (Schneider, Baillie, Mond, Turner, & Hudson, 2018), the Multidimensional Youth Body Dysmorphic Inventory (MY BODI) (Roberts, Zimmer-Gembeck, & Farrell, 2019), and the Appearance Anxiety Inventory (AAI) (Roberts

**Table 2** Examples of body dysmorphic disorder (BDD) assessment questions, corresponding to the criteria of the 5th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5)

DSM-5 criterion or specifier	Example questions
Criterion A: excessive preoccupation	Most people worry about how they look from time to time, but some people have worries about their appearance that take up a lot of their time and really upset them. Does this happen to you? <i>If yes:</i> Can you tell me what aspects of your appearance worry you most? Do you think about this a lot? How much is it on your mind during an average day? What is the longest you go without thinking about your appearance?
Criterion B: repetitive behaviours	Do you find yourself spending a lot of time doing things to try to hide, change or check your appearance? Do you spend a lot of time doing things in your head, like comparing your appearance to others? <i>If yes:</i> How much time in an average day do you spend? [summary of repetitive behaviour and mental acts that young person has described] <i>If no:</i> Has there ever been a period in the past when you spent a lot of time doing things to try to hide, change, check or compare your appearance?
Criterion C: distress and impairment	How much do these worries about your appearance upset you? Do they make you feel very sad or very anxious? Do these worries about your appearance get in the way of day-to-day life? Do you avoid anything due to these worries?
Specifier: muscle dysmorphia	Do you spend a lot of time worrying that your body build is too small or that you're not muscular enough? Do you spend a lot of time trying to build your muscles (e.g. weightlifting at the gym)?
Specifier: insight specifier	If you had to describe your appearance in a single word, what word would you choose? How convinced are you that you look [use young person's descriptor]? Do you think other people see you the same way?

BDD assessment should additionally determine that appearance concerns are not better explained by concerns with body fat or weight in an individual whose symptoms meet diagnostic criteria for an eating disorder (Criterion D). The questions provided here are based on DSM-5 diagnostic criteria; there is no validated structured diagnostic interview for BDD.

et al., 2018). The psychometric properties of these measures have been evaluated among adolescent samples ranging from 11 to 19 years (Monzani et al., 2022; Roberts et al., 2018, 2019; Schneider et al., 2018). The BIQ-C and MY BODI both capture distress and impairment associated with BDD and are therefore useful screening tools and outcome measures, whereas the AAI assesses specific cognitive and behavioural processes maintaining BDD and is therefore a helpful process measure that can guide psychological therapy. Of note, there are no empirically-derived cut-offs for the detection of BDD in youth for any of the aforementioned measures, and there are currently no parent-report or teacher-report questionnaires of BDD symptoms in youth.

### Differentiating BDD from normal appearance concerns

Body dysmorphic disorder is distinct from normative appearance concerns, which are highly prevalent among young people, and can be differentiated according to several criteria. First, BDD is associated with more extreme levels of appearance preoccupation, often taking up several hours per day. Second, BDD is defined not just by the presence of appearance concerns, but also time-consuming repetitive behaviours (e.g. frequent mirror checking) and/or avoidance (e.g. of social situations). Third, to fulfil diagnostic criteria for BDD, the appearance

preoccupation and related behaviours must be causing significant distress and/or impairment in psychosocial functioning across multiple domains, including within school, home, and friendships.

A similar challenge can occur when assessing BDD symptoms in the presence of a genuine, observable difference in appearance. For example, a young person may report extreme preoccupation with their skin in the context of visible acne. In fact, the DSM-5 allows for the coding of 'Body dysmorphic-like disorder with actual flaws' in the Other Specified Obsessive-Compulsive and Related Disorders section. It is important to consider whether the preoccupation and distress are disproportionate to the physical problem; whether the young person is engaging in time-consuming, repetitive behaviours or avoidance in relation to these concerns; whether other significant appearance concerns are present (most young people with BDD report multiple appearance concerns); and the associated functional impairment.

### Physical examination

A diagnosis of BDD usually requires direct visual observation of the young person's perceived appearance defect(s) to inform clinical judgement about whether the preoccupation and distress are disproportionate. If a young person's perceived flaw is concealed by clothing, the clinician can gently encourage the young person to remove the relevant

clothing briefly, explaining that this is to help gain a better understanding of their distress. If a young person is too anxious to do this, or if it is not appropriate to ask them because of the nature of their appearance concerns (e.g. concerns about genitalia, breasts), it may be possible to obtain corroborative evidence, such as from a parent or general practitioner. Some young people will have already sought a medical opinion prior to attending a mental health assessment, which can provide a valuable source of information. If corroborative evidence is not available from any source, it *may* be appropriate to refer a young person for a medical examination, although clinical judgement is needed to determine if this is feasible or necessary. For example, if there is already sufficient evidence to indicate BDD (e.g. concerns about other features that can be objectively assessed, and high levels of distress and impairment), then a medical examination may not be required.

### Risk assessment

Thorough and dynamic risk assessment is crucial in BDD. Key areas of risk assessment include, but are not limited to, self-harm, suicidality and unwarranted or unsafe cosmetic procedures.

Approximately half of young people with BDD report self-harm (Mataix-Cols et al., 2015; Rautio, Jassi, et al., 2022). Self-harm in BDD may be related to low mood or emotional dysregulation, but can also be specifically related to appearance concerns and serve as an (counterproductive) attempt to change or improve physical appearance. For example, young people may apply bleach to their skin in an effort to remove freckles or skin-pick in an attempt to remove blemishes, leading to lesions. The association of BDD with suicidal ideation and attempts has been widely noted, as described above, and BDD is considered to be a particularly high-risk psychiatric disorder (Angelakis, Gooding, & Panagioti, 2016).

Of young people with BDD accessing specialist mental health services, approximately half report a desire for cosmetic procedures (Rautio, Jassi, et al., 2022) and one in 10 undergo a cosmetic procedure before the age of 20, including surgical procedures (e.g. rhinoplasty) and non-surgical cosmetic treatments (e.g., dermal fillers). The current weight of evidence (primarily in adults) suggests that psychological outcomes of cosmetic procedures in people with BDD are poor (Bowyer, Krebs, Mataix-Cols, Veale, & Monzani, 2016). That is, most people either feel disappointed with the results, which can precipitate a deterioration in mental health, or the focus of their appearance concerns shifts to another feature. Although young people are often unable to access professional cosmetic treatments due to age restrictions and/or financial constraints, they may attempt to undertake 'treatments' themselves at home which can involve high-risk behaviours (Veale, 2000).

### What are the recommended treatments for BDD in young people?

The NICE guidelines recommend that all young people with BDD should be offered cognitive behaviour therapy (CBT) as the first-line treatment (NICE, 2005). The guidelines specify that CBT for BDD should: incorporate exposure with response prevention (ERP; described below); involve the family or carers; and be adapted to the developmental level of the young person. The NICE guidelines also recommend that selective serotonin reuptake inhibitors (SSRIs) should be used as a second-line treatment for young people aged 12–18 years who have moderate to severe BDD-related functional impairment, and who have not had an adequate response to CBT. However, the 12–18 years age range is relatively arbitrary and there is no evidence to support the primacy of CBT in the sequence of treatments. In the United Kingdom, CBT for BDD is seldom available and therefore young people are more likely to be treated with SSRIs (Krebs, Rifkin-Zybutz, et al., 2023).

### Evidence-base for cognitive behaviour therapy

There have been 10 randomised controlled trials of CBT for BDD (Harrison, Fernández de la Cruz, Enander, Radua, & Mataix-Cols, 2016; Ritter, Schüller, Berkmann, von Soosten-Höllings-Lilge, & Stangier, 2023; Wilhelm et al., 2019, 2022), of which all but one focussed on adults. A meta-analysis of seven RCTs (six of which were conducted with adults and one with adolescents) found CBT to be efficacious relative to waitlist and psychological control conditions (e.g. anxiety management, supportive psychotherapy) in reducing BDD symptoms (Cohen's  $d = -1.22$ ) (Harrison et al., 2016). Additionally, CBT was associated with a greater improvement in depression and BDD-related insight, compared with control conditions (Harrison et al., 2016).

There has only been one RCT of CBT for adolescent BDD (Mataix-Cols et al., 2015). In this pilot RCT, 30 adolescents with BDD were randomly assigned to receive 14 sessions of specialist CBT for BDD or a control condition comprising brief psychoeducation materials and weekly risk monitoring. CBT was associated with significantly greater reductions in BDD symptoms relative to control, with a large between-group effect size (Cohen's  $d = 1.13$ ). Additionally, CBT was associated with greater improvements in secondary outcomes, including insight, depression, and quality of life, and gains were maintained at 12-month follow-up (Krebs et al., 2017). Although these group outcomes are encouraging, it is notable that after treatment only 40% of adolescents who completed CBT (vs. 7% in the control group) could be classified as treatment responders, defined as a reduction  $\geq 30\%$  in the BDD-YBOCS-A score. This modest response rate

may be partly due to the severity of the sample (e.g. over a third had dropped out of school prior to treatment because of their BDD). Superior outcomes (70% response rate) were obtained in an open trial of severe but less functionally impaired adolescents (e.g. none reported as having dropped out of school) (Greenberg, Mothi, & Wilhelm, 2016). Nevertheless, the findings highlight that some young people with BDD may require more comprehensive treatment packages, which could include a longer course of CBT, home-based CBT sessions, and/or medication optimisation (e.g. higher dose SSRI).

More recently, the largest naturalistic study to date has examined outcomes associated with multi-modal treatment among young people accessing specialist BDD services in London and Stockholm as part of routine clinical care (Rautio, Gumpert, et al., 2022). In this study, 140 young people aged 10–18 received specialist CBT for BDD (mean number of sessions = 17.2, range 2–80) and the majority (72%) of young people also received concurrent medication, primarily selective serotonin reuptake inhibitors (SSRIs). Treatment was associated with significant reductions in BDD symptoms, with 79% of participants classified as responders and 59% as full or partial remitters at post-treatment. Improvement in depressive symptoms and psychosocial functioning were also observed, and additional gains were made over the 12-month follow-up period. Analyses of unmedicated patients ( $n = 37$ ) revealed very similar results, suggesting that CBT alone may be an effective treatment for adolescent BDD in routine care.

### *Engaging young people in CBT for BDD*

Engaging young people with BDD in treatment can be challenging, particularly when insight is poor. It is important that therapists refrain from polarising physical and psychological explanations and instead explain that the goal of treatment is to reduce distress, improve quality of life and build self-confidence. Motivational interviewing techniques are often used at the start of therapy (and potentially throughout therapy) to increase engagement.

### *Format and content of CBT for BDD*

CBT for BDD in young people comprises three main stages: psychoeducation and formulation (typically sessions 1–3), exposure with response prevention and/or behavioural experiments (typically from Session 4 onwards), and relapse prevention (the last two sessions). A typical course of CBT for adolescent BDD comprises 12–22 sessions, typically occurring on a weekly basis (Greenberg et al., 2016; Mataix-Cols et al., 2015; Rautio, Jassi, et al., 2022). While there are no empirical guidelines for determining the optimal numbers of sessions, it

has been noted that young people with more severe BDD symptoms may require a longer course of CBT. This suggestion is supported by findings from an adult RCT showing that additional improvements occurred after session 12 (Hoepfner et al., 2023; Veale et al., 2014) and by a naturalistic study in young people showing that some young people may need a large number of sessions to achieve clinical benefit (Rautio, Gumpert, et al., 2022).

Key components of CBT for BDD are outlined in Table 3. The main focus is ERP, which involves encouraging the young person to gradually confront feared or avoided situations, while resisting the urge to engage in compulsive, safety behaviours. For example, a girl with concerns about the size and shape of her ears might be encouraged to walk down the street with her hair tied up, without a hat or hood. Through doing these tasks, the young person discovers that their initial anxiety subsides over time and, with repeated practice, it extinguishes altogether. In some cases, for example if the primary emotion is shame as opposed to anxiety, it can be helpful to frame exposure exercises as behavioural experiments aimed at testing negative beliefs (e.g., ‘people will stare at my ears and laugh if I do not cover them up’).

### *Parental involvement in CBT*

Published treatment studies suggest that it is usually beneficial for parents/carers to be included in CBT for BDD in young people, at least during the psychoeducation phase to ensure a shared understanding of BDD (Greenberg et al., 2016; Mataix-Cols et al., 2015). The level of parental involvement thereafter depends on a range of factors, including: the developmental level of the young person; their ability to practice CBT techniques autonomously in between sessions; and the extent to which parents are involved in BDD-related rituals, such as providing reassurance, which may inadvertently fuel BDD (Jassi et al., 2020).

### *SSRIs*

There have been no clinical trials of SSRIs in youth with BDD. Nevertheless, in keeping with clinical guidelines and research in adults, SSRI are commonly prescribed to young people with BDD (Krebs, Rifkin-Zybutz, et al., 2023; Rautio, Jassi, et al., 2022). A range of SSRIs have been used in the treatment of BDD in adults (e.g. fluoxetine) as well as non-selective serotonin reuptake inhibitors (SRIs) (e.g. clomipramine) (Krebs, Fernández de la Cruz, & Mataix-Cols, 2017). Among adults, RCTs have shown S/SRIs to be efficacious relative to control and associated with response rates ranging from 53 to 65 versus 18% to 35% in the control groups (Hollander et al., 1999; Phillips, Albertini, & Rasmussen, 2002). There have not been any formal



**Table 3** Key components of cognitive behaviour therapy (CBT) for body dysmorphic disorder (BDD)

Treatment phase	Technique	Overview
Start of treatment	Psychoeducation about BDD	<ul style="list-style-type: none"> <li>Physical appearance versus body image, emphasising that: (a) the former is objective whereas the latter is a subjective experience; (b) the two do not necessarily go hand-in-hand (i.e. desirable physical appearance does not necessarily mean positive body image, and vice versa)</li> <li>Visual perception. Optical illusions and visual puzzles (e.g. Rubin's vase and Muller-Lyer illusion) can be used to illustrate that: (a) people can see things in different ways; (b) what we see is not always accurate and can be a 'trick of the mind'; and (c) what we see can change depending on our focus of attention</li> <li>Selective attention and self-focused attention. Experiential exercises can be used to illustrate that: (a) over-focusing on a stimulus (e.g. a white wall) can distort our visual perception; (b) over-focusing a stimulus can mean that we miss important information (e.g. the well-known 'moonwalking bear' video). This can then be related to heightened self-focused attention and its consequences</li> </ul>
Start of treatment	Psychoeducation about anxiety	<ul style="list-style-type: none"> <li>Anxiety as a normal, protective process (fight or flight)</li> <li>Developing an idiosyncratic anxiety rating scale (e.g. 0–10 scale with examples mapped on to use as 'anchors' for subsequent ratings)</li> <li>Anxiety habituation, ideally using an example from the young person's own experience (e.g. going on a rollercoaster). The key points to emphasise are that when we confront a feared situation anxiety initially increases but subsides naturally over time, and with repeated practice it extinguishes altogether</li> </ul>
Start of treatment	Constructing a hierarchy	<ul style="list-style-type: none"> <li>Young person generates a list of all their BDD-related safety behaviours and avoided situations</li> <li>Using their anxiety scale, they are asked to rate how anxious they would feel if they resisted each behaviour while in an anxiety-provoking situation (e.g. a social situation)</li> </ul>
Start of treatment	CBT formulation	<ul style="list-style-type: none"> <li>Consider how early experiences may have informed beliefs about self and appearance, and how these feed into a cycle of thoughts, behaviours and feelings that maintain the problem. The BDD cycle should include safety behaviours (e.g. camouflaging, checking, concealing), avoidance behaviours, and covert behaviours/cognitive processes (e.g. self-focussed attention, comparing appearance)</li> <li>Use as opportunity to identify solutions to the problem (i.e. changing avoidance and safety behaviours will break the maintenance cycle)</li> <li>Crucial that the formulation provides a <i>credible</i> explanation of the young person's difficulties</li> </ul>
Start of treatment	Goal setting	<ul style="list-style-type: none"> <li>Young people should set goals for the short-term (next month or so), medium-term (by the end of treatment), and longer-term</li> <li>Goals should be 'SMART': Specific, Measurable, Achievable, Relevant, and Time-bound</li> <li>Long-term goals may be harder to identify and can be revisited later in treatment if needed</li> </ul>
Main phase of treatment	Exposure and response prevention (ERP)	<ul style="list-style-type: none"> <li>A key element of therapy whereby patients are encouraged to confront feared and avoided situations (e.g. social situations) while resisting the urge to engage in safety behaviours (e.g. covering up their perceived flaw/s), with the goal of experiencing distress habituation</li> <li>Guided by their hierarchy, generally starting with less anxiety-provoking tasks and building up to more challenging tasks over the course of therapy. However, hierarchy does not need to be followed rigidly; tasks that are most likely to result in functional gains should be prioritised</li> <li>ERP tasks should be completed in session with therapist-assistance and in between sessions for homework</li> </ul>
Main phase of treatment	Behavioural experiments	<ul style="list-style-type: none"> <li>Often similar to ERP, but the aim is to explicitly test negative beliefs (e.g. 'people will sneer at me because I am ugly')</li> <li>Often a helpful approach when the young person's primary emotion is shame or disgust, which may not habituate in the same way as anxiety</li> </ul>
Main phase of treatment	Evaluating thoughts	<ul style="list-style-type: none"> <li>Young people are encouraged to identify maladaptive thoughts about appearance (e.g. 'appearance is all that matters'). Therapists can ask them to consider evidence for and against these beliefs, to develop a more balanced perspective</li> <li>Behavioural experiments and surveys can be used to gather evidence as part of this process</li> </ul>
Main phase of treatment (optional)	Mirror retraining	<ul style="list-style-type: none"> <li>The goal of mirror retraining is to encourage the young person to: (a) process their image as a whole and see 'the bigger picture', rather than fixate on specific body parts; and (b) view themselves in a neutral, non-judgemental way</li> <li>Involves standing in front of a full-length mirror and to describing body from head to toe using non-judgemental language and without ritualising</li> <li>Often helpful for the therapist to model the process first</li> </ul>

(continues)

**Table 3** (continued)

Treatment phase	Technique	Overview
Main phase of treatment (optional)	Attention training	<ul style="list-style-type: none"> <li>Attention training can be used to develop greater attentional control, and ultimately reduce self-focussed attention</li> <li>Involves systematic training in focussing attention externally, such as sounds in the room and colours in a picture</li> </ul>
Main phase of treatment (optional)	Habit reversal therapy	<ul style="list-style-type: none"> <li>Habit reversal techniques may be used to tackle skin-picking or hair pulling that has a habitual quality</li> <li>Involves awareness training and use of competing responses, such as making a first rather than picking or pulling</li> </ul>
End of treatment	Relapse prevention	<ul style="list-style-type: none"> <li>Developing a plan for building on treatment gains (e.g. ongoing ERP, functional goals)</li> <li>Identifying potential triggers for a lapse or relapse (e.g. relationship breakdown), and therefore when to be vigilant to re-emerging symptoms</li> <li>Identifying 'warning signs' of relapse (e.g. What symptoms would be likely to re-emerge first? What would they notice?)</li> <li>Action plan for tackling any symptoms that re-emerge in the future</li> <li>Identifying sources of support if a lapse or relapse were to occur</li> </ul>

dose-finding studies in BDD, but the available evidence and expert clinical opinion indicates that BDD typically requires relatively high doses of S/SRIs, in keeping with practice in OCD (Phillips & Stein, 2015). There is also evidence that individuals with BDD need to remain on S/SRIs for relatively long periods to reduce the likelihood of relapse (Phillips et al., 2016). Clinical guidelines suggest that S/SRI augmentation with an atypical antipsychotic can be beneficial (NICE, 2005), but this is largely based on clinical experience and a single RCT of augmentation of fluoxetine with pimozide in adults with BDD (Phillips, 2005).

### Access to evidence-based treatments

Research suggests that there are major barriers to individuals with BDD accessing evidence-based treatment, particularly CBT (Marques, Weingarden, LeBlanc, & Wilhelm, 2011). In fact, young people with BDD may be more likely to receive SSRIs as a first-line treatments than CBT (Krebs, Rifkin-Zybutz, et al., 2023). A key obstacle to young people accessing CBT for BDD is lack of trained therapists. BDD is not part of the core curriculum for most professional training courses, such as the Children and Young People's Improving Access to Psychological Therapies (CYP-IAPT) programme in the United Kingdom. There is a clear need to increase BDD training for clinicians working in CAMHS in order to aid detection and diagnosis and to increase treatment capacity. An additional strategy for improving accessibility to CBT for BDD in youth is the development of digitalised programmes which integrate self-help with low-intensity therapist support. Such programmes have been developed for adults with BDD and shown to be efficacious relative to waitlist control (Wilhelm et al., 2022) and supportive therapy (Enander et al., 2016) in two RCTs.

Importantly, these trials involved coaches with no formal clinical qualifications (Wilhelm et al., 2022) or therapists who were clinical psychology trainees (Enander et al., 2016), and in both cases provided minimal levels of support, highlighting the potential scalability of this approach. Moreover, cost-effectiveness has been formally demonstrated, which has important implications for policy (Flygare et al., 2023). Similar programmes have recently been developed for adolescents with BDD, with evaluation underway (e.g. Hartmann et al., 2021; Kuck, Dietel, Nohr, Vahrenhold, & Buhlmann, 2022).

### Directions for future research

Body dysmorphic disorder is an under-researched condition. Large-scale epidemiological studies in representative samples of young people are needed to establish the prevalence of BDD in children and adolescents, particularly in non-Western countries (Veale et al., 2016). Epidemiological studies are also required to determine whether there are cultural influences on the prevalence and/or phenomenology of BDD. Furthermore, there is a need for research examining the prevalence and characteristics of BDD in minoritised groups, such as sexual and gender minority groups. Additionally, the mortality risk of BDD, particularly from suicide, is currently unknown. Similarly, the short and long-term socio-economic impacts of the disorder (e.g. educational attainment, labour market participation and violent victimisation) are unknown. These would be best studied in the context of large epidemiological surveys or register-based studies.

Additionally, little is known about the specific genetic and environmental risk factors associated with the disorder. Large-scale genomic studies are required to discover significant genetic loci implicated in the disorder. Similarly, longitudinal studies,

preferably employing genetically informative designs, are needed to identify non-shared environmental risk factors. Hopefully, some of these risk factors will be modifiable, enabling the rational design of prevention or early intervention efforts.

Several treatment evidence gaps are notable. First, there have been no pharmacological trials in young people with BDD. Second, evidence supporting the efficacy of CBT for BDD in young people is limited to a single RCT (Mataix-Cols et al., 2015). Larger trials are needed to confirm the efficacy of CBT for BDD, particularly compared to active control conditions, and to determine whether longer course of treatment (i.e. more sessions) confer added benefit. Third, it will be important to understand the mechanisms of change in CBT for BDD. Fourth, the relative efficacy of SSRIs and CBT for BDD, and their combination, have not been formally investigated, either in young people or adults. Fifth, there is a need to evaluate if CBT can augment the efficacy of SSRIs, and vice versa, in individuals who do not adequately respond to a first treatment trial. Finally, because specialist

CBT for BDD is rarely available, there is a need to evaluate if CBT can be delivered remotely without sacrificing efficacy, compared to in-person CBT for BDD.

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### Key points

- BDD is relatively common in youth, especially among adolescent girls, but often goes undiagnosed or is misdiagnosed.
- Young people with BDD tend not to disclose their symptoms unless directly asked.
- BDD is associated with high rates of school absenteeism, self-harm and suicide attempts.
- Cosmetic treatments are not recommended for young people with BDD, even if legally available.
- BDD can be successfully treated with CBT and or S/SRI medications, but there is a need to improve access to these treatments.

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