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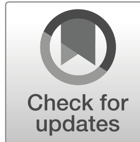
REVIEW ARTICLE



Body Dysmorphic Disorder in Dermatology: a Systematic Review

Isabella Herbst[1,2] · Gregor B. E. Jemec[1,2]

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Abstract
Body Dysmorphic Disorder (BDD) is a psychiatric diagnosis of an impairing condition in which the patient is preoccupied with a slight or perceived defect in their appearance. BDD patients have a higher rate of psychiatric comorbidities than the background population which include obsessive-compulsive disorder (OCD), depression, anxiety and suicide. It causes distress and affects the patient's quality of life. It is previously found that the prevalence of patients that suffers from BDD is higher among dermatology patients than in the background population. To create an overview of the original literature that exist on topic: BDD in dermatology. A systematic review was conducted by two reviewers. PubMed was searched using a predefined search string created in collaboration between the authors and a bibliographic fellow on 18th of August 2018 and again in January 2020. 45 articles were obtained and after exclusion 5 relevant articles remained. Dermatology patients have a higher incidence of BDD than the background population. BDD patients are significantly younger and it has been suggested that BDD develops during adolescence but is diagnosed with a delay of several years because patients seek out health care professionals among non-mental health specialists. BDD does not appear associated with the setting, i.e. cosmetic vs general dermatology, but BDD patients have a lower quality of life and are more commonly unemployed or on sick leave. It is often difficult to treat, and a combination of the dermatologic treatment and the psychiatric treatment may be necessary in the context of visible skin pathology.

Keywords JCDA-D-20-00113 · Body dysmorphic disorder · Body dysmorphia · BDD · Psychiatry · Dermatology · Body image · Quality of life

✉ Isabella Herbst
isherbst@gmail.com

Gregor B. E. Jemec
gbj@regionsjaelland.dk

[1] Department of Dermatology, Zealand University Hospital, Sygehusvej 10, 4000 Roskilde, Denmark

[2] Health Sciences Faculty, University of Copenhagen, Copenhagen, Denmark

The skin is a communicative organ and plays a vital role in socializing to many species including humans. Skin disorders are generally visible disorders, and, even if located in socially non-exposed skin, they are noticed by the patients either because they are visible or due to the symptoms they cause. Skin disease is furthermore often associated with anxiety disorders and depression, and possibly through these also with suicidality [1–4]. If the face is involved, skin disease can be cosmetically disfiguring which may lead to the feeling of social exclusion and, more generally, not being similar to others. Resilience is therefore an important coping mechanism [5, 6].

In many cultures skin diseases are furthermore perceived as stigma. It may therefore be speculated that the simple fact that skin disease is visible has a strong influence on the morbidity caused by skin diseases.

Body Dysmorphic Disorder (BDD) is a psychiatric diagnosis [1, 2, 4, 7] within the spectrum of obsessive-compulsive and related disorders [3]. In BDD the patient has an impairing preoccupation with a minor or perceived defect of their physical appearance. Any minor abnormalities are overly exaggerated by the patient, causing feelings of shame and embarrassment, which have negative effects on the patient's life [1, 3, 7].

BDD patients are more commonly encountered in primary care and dermatology practice than in psychiatric settings [8]. On the other hand, it is not a well-recognised concept within dermatological clinical routine work. This review was undertaken to provide general dermatologists with insight into the problem.

Method

The study was conducted according to the PRISMA guidelines for systematic reviews [9].

Eligibility Criteria

Studies were included if both authors agreed on the following criteria: a) the main topic was BDD, b) BDD was diagnosed or screened using a validated measure or interview and c) the study was published in the English language. Studies were excluded if: a) they were not published in English, b) BDD was not the main topic, c) they were a systematic or literature review, d) they were a commentary or e) they were a survey among health professionals.

Information Sources

PubMed were used to obtain literature searches up to August 2018 and repeated again in January 2020 with no additional results. The results were collated, and duplicates removed. The references of the identified papers were screened for additional studies.

Search

The search strategy was developed with the assistance of a search specialist used to generate the results was:

((“Somatoform Disorders”[Mesh] OR “Body Dysmorphic Disorders”[Mesh]) OR (“body dysmorphic disorders”[Mesh Terms] OR (“body”[All Fields] AND “dysmorphic”[All Fields] AND “disorders”[All Fields]) OR “body dysmorphic disorders”[All Fields] OR (“body”[All

Fields] AND "dysmorphic"[All Fields] AND "disorder"[All Fields]) OR "body dysmorphic disorder"[All Fields])) AND "Dermatology"[Mesh].

Study Selection

The title and abstract of the studies retrieved by the search were screened by the two authors according to relevance. For potentially eligible references, the full texts were screened and references only included if they met the inclusion criteria.

Results

Study Selection

Figure 1. provides a flowchart of the systematic search, and the number of studies that were screened for eligibility and subsequently excluded or included in the final review. Due to the limited number of studies only qualitative analysis was done.

One study was excluded due to duplication; five because they were not published in the English language; seventeen literature or systematic reviews, or case studies; one historic overview; eleven because they were not investigating BDD; four was surveys for health professionals and therefore excluded and lastly one commentary was excluded.

Study Characteristics

Study characteristics of included studies are shown in Table 1. A total of 1171 patients were included in the five studies; the prevalence range of diagnosed BDD patients was 4.9–36%. The mean age of the patients studied is 37,3 years with a mean range of 30,9–42,8 years of age. Female participants constituted 82% (965/1171) of the participants.

Discussion

The analysis suggests that BDD is more common in dermatology patients, with prevalence rates ranging from 4.9%–36%, compared to 1.7%–2.4% in the general population [1]. Female patients constitute 82% (965/1171) of the patients. Despite the fact that the majority of the enrolled patients are female no significant gender difference in BDD was found [3, 4, 7]. The age of the patients included studies ranges from 30.9–42.8 years.

Authors [1, 4, 7] compared patients with positive screening for BDD and patients with negative screening for BDD and found a few differences: All agree that patients diagnosed with BDD were significantly younger than the patients without BDD. Akinboro et al. [3] found no significant difference in age but they found that BDD positive patients below the age of 50 years had a significantly higher mean BDD score. The reason for this seemingly different age-dependent outcome is unidentified, but Brown et al. [10] suggests that the negative effect of depression and anxiety seems to be tempered with age and that this "age effect" might to be due to greater adaptation and life experience that comes with age. Akinboro et al. [3] suggests that the higher mean BDD score among younger patients might be related to the simple fact that younger people usually care more about appearances.

PRISMA 2009 Flow Diagram

Identification

Records through database searching
(n = 45)

Additional records identified through other sources
(n = 1)

Records after duplicates removed
(n = 45)

Screening

Records screened
(n = 45)

Records excluded
(n = 37)

Eligibility

Full-text articles assessed for eligibility
(n = 8)

Full-text articles excluded for reasons
(n = 3)

Included

Studies included in systematic review
(n = 5)

Fig. 1 PRISMA diagram

It has thus been suggested that BDD develops during adolescence but is diagnosed with a delay of several years because patients seek out health care professionals among non-mental health specialists [1, 3]. Skin disease accounts for 15–20% of the general practitioners workload and it is the most frequent reason for patients to visit their general practitioner with a new problem [11]. Since these patients are often referred to dermatologists and plastic surgeons, these specialties play a vital role in diagnosis and referral of the patient to the relevant psycho-dermatological treatment. Results from a study by Phillips et al. [4] however show that 46% of BDD patients had sought treatment from a dermatologist, and 38% had received dermatologic treatment, which suggests that the disorder is underdiagnosed even by dermatologists.

BDD is diagnosed by exploring if the patient is unhappy with their appearance, and to what degree this affects their life. In the diagnosis dermatologist can use The Body Dysmorphic Disorder Questionnaire (BDDQ) which correlates to the DSM-IV diagnostic criteria for BDD.

Table 1 Study characteristics

No.	Reference	Journal	Location	BDD screening tool	Interview	Age mean	Participants	n(%) with BDD [CI (95%)]		
							Total	Male	Female	Total
1	Brohede et al. (2017) [1]	International Journal of Dermatology	Sweden	BDDQ, HADS, DLQI		30.9	425	0	425 (100)	4.9%
2	Phillips al. (1999) et al. [4]	American Academy of Dermatology, Inc.	USA	BDDQ		42,8	268	81	187 (70%)	11.9%
3	Kacar et al. (2014) [7]	Clinical and Experimental Dermatology	Turkey	Self-reported BDD questionaire		33. BDD(26.6) non BDD (33.39)	318	68	250 (79%)	6.3%
4	Dufresne et al. (2001) [2]	American Society for Dermatologic Surgery	USA	BDDQ		42 range (14–74)	46	10	36 (78%)	19.6%
5	Akinboro et al. (2019) [3]	Anais Brasileiros de Dermatologia	Africa	HADS, BDD-YBOCS		37.7	114	47	67 (59%)	36%
					Total		1171	206	965	
					Mean:		37.3	41.2	193	

No.	n(%) with BDD [CI (95%)]		HADS						DLQI (median)	
	Male	Female	Anxiety			Depression				
			Positive B	Negative BDD	Total	Positive BDD	Negative BDD	Total	Positive BDD	Negative BDD
1	0	4.9%	48%	11%	13%	19%	1.8%	3%	18	4
2										
3										
4										
5	41.2%	58.8%	30.7%							

BDDQ Body Dysmorphic Disorder Questionaire

HADS Hospital Anxiety and Depression Scale

DLQI The Dermatology life Quality Index

BDD-YBOCS English version of the Body Dysmorphic Disorder Modication of the Yale-Brown Obsessive-Compulsive Scale

The questionnaire has a high sensitivity (100%) and specificity (89–93%). Aiding the diagnosis of BDD, The Hospital Anxiety and Depression Scale (HADS), a validated self-report screening scale can help determine the degree of anxiety and depression along with skin specific Health related quality of life (HRQoL) measure e.g. the Dermatology Life Quality Index (DLQI) to examine the quality of life among the included patients screening positive for BDD [1].

The motivation to seek dermatological treatment may objectively be more or less close to the core definition of BDD, i.e. the magnitude of objective disfigurement may vary ranging from the obvious to the discrete, the later more often being termed cosmetic. In addition to these individual factors, the setting of the clinical encounter (primarily medical vs primary cosmetic) has therefore been suspected of playing a role, the rate of BDD did however not differ significantly in the two studies that have specifically addressed this issue [4, 7].

Generally, BDD patients seem to have a lower quality of life than people without BDD [1, 11]. Brohede et al. [1] used DLQI and found the median total DLQI score to be 18 (very large effect on patient's life) in the BDD group and 4 (little effect on patient's life) in the non-BDD group and the minimal clinically important difference has been identified at 4 [12]. In the study by Kacer et al. [7] a significant portion of the BDD patients stated that their preoccupation with their appearance had effects on their lives such as work, low self-esteem, avoiding friends, wearing particular clothing, relationships and leaving the house. This is in good accordance with the study by Brohede et al. [1] who found that depression was ten-fold more common in the patients with BDD and anxiety was four-fold more common. Akinboro et al. [3] found that specifically conditions of the face was related to the highest prevalence of BDD and anxiety and depression. They also found that a significantly higher mean BBD score were also associated with anxiety and depression.

Patients with BDD were also more commonly unemployed or on sick leave compared to patients without BDD [1, 3]. Approximately one-third of dermatology patients are estimated to have an underlying psychiatric comorbidity [1]. Thus, BDD patients have a higher rate of psychiatric comorbidities than the background population. These include obsessive-compulsive disorder, major depressive disorder, social phobia, anxiety, and suicide [1, 3, 4]. These comorbidities may contribute to the higher rate of suicide among BBD patients [1–4].

Body dysmorphic disorder is difficult to treat. The patients seek dermatologists and/or plastic surgeons for treatment, but the patients often have a poor response to dermatologic treatment and are therefore often unsatisfied with the dermatologic treatment they receive [1, 2, 4]. They may request extensive workups, multiple consultations, consult numerous physicians etc. Some may claim that the treatment did not work and even have worsened their appearance [2, 4]. Even if the dermatologic treatment successfully addresses the problem, the patient may focus on a new perceived defect which may lead to additional therapy [2].

Self-inflicted skin lesion (SISL) such as skin picking, are clearly correlated with mental health disorders [8]. Similarly to patients suffering from delusions of infestations, many BDD patients also have a poor insight into their own illness and many do not recognize the need for psychiatric treatment [1]. The motivated BDD patients can however often be successfully treated with e.g. serotonin re-uptake inhibitors and cognitive-behavioural therapy [2], A combination of the dermatologic treatment and the psychiatric treatment may be necessary in the context of visible skin pathology [1, 2, 4, 8].

Limitations of this study include the limited number of studies, possible selection bias due to language restrictions and selection bias inherent in the included studies. Furthermore, the use of self-reported data for diagnosis through questionnaires can potentially create bias.

Finally, one may ask: Is this a consequence of society's increasing pre-occupation with image though e.g. social media, which have led younger people to seek treatment for their perceived skin condition? Or does this suggest that BDD is a condition for a younger patient group only and that this condition may be outgrown? The existing literature does not provide answers to these questions.

Conclusion

The dysmorphology of skin disease is obvious to most patients and may lead to perceived or real stigma. BDD is a pathological reaction within the spectrum of obsessive-compulsive and related disorders. It appears to be relatively common in dermatological patients with reported prevalence rates in the range of 4.9%–36%. BDD occurs with equal frequencies in cosmetic and general dermatological patients suggesting that BDD is a general and independent reaction to skin dysmorphology.

BDD influences treatment as it indicates that a pure dermatological approach is less likely to be successful if not accompanied by a mental health approach. The diagnosis BDD should be considered in any patient with a grossly disproportionate concern about their diagnosed skin disorder.

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