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Evaluation of cutaneous body image dissatisfaction in the dermatology patient

Madhulika A. Gupta, MD, FRCPC[a,*], **Aditya K. Gupta, MD, PhD, FRCPC**[b]

[a]*Department of Psychiatry, Schulich School of Medicine and Dentistry, University of Western Ontario, 585 Springbank Dr, Suite 101, London, ON, N6J 1H3, Canada*
[b]*Division of Dermatology, Department of Medicine, University of Toronto, 645 Windermere Road, London, ON, N5X 2P1, Canada*

Abstract Cutaneous body image (CBI), defined as the individual's mental representation of his or her skin, hair, and nails, is an important clinical factor in dermatologic disorders and often the primary consideration in deciding whether to proceed with cosmetic procedures or institute treatment in some skin disorders such as acne. CBI is a highly subjective construct that can be significantly confounded by cultural, psychosocial, and psychiatric factors. Assessment of CBI in the dermatology patient is best accomplished using a biopsychosocial model that involves (1) evaluation of concerns about the appearance of the skin, hair, and nails, (2) assessment of comorbid body image pathologies, especially body dysmorphic disorder, and (3) assessment of other psychiatric comorbidities such as major depressive disorder that can confound the presentation of the CBI complaint. Depending on the psychiatric comobidities, an assessment of suicide risk may have to be done, and if necessary, a referral made to a mental health professional. The clinician should consider the patient's developmental stage (eg, body image concerns are likely to be much greater in the adolescent patient independent of his or her dermatologic disorder) and sociocultural background (eg, a desire for lighter skin in some ethnic groups), factors that can also have a major effect on CBI.
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Introduction

Body image, defined as the mental representation of the body and its organs, is an important clinical construct in disorders that are cosmetically disfiguring or alter the appearance of the patient.[1] Cutaneous body image (CBI) refers to the individual's mental perception of the appearance of his or her integumentary system (ie, skin, hair, nails).[2] CBI dissatisfaction can contribute to significant morbidity in dermatologic disorders and is often the primary consideration in deciding whether to proceed with some cosmetic procedures or institute treatment in some skin disorders such as acne. Assessment of CBI has important clinical implications, because it can significantly affect the patient's quality of life. CBI dissatisfaction can increase the overall morbidity in dermatologic disease and has been associated with intentional self-injury, such as self-induced dermatoses,[1,3] and suicide.[4,5] In some cases of stress reactive dermatoses, such as psoriasis and atopic dermatitis, the psychosocial stress caused by the social stigma, cosmetic disfigurement, and body image concerns resulting from the dermatologic condition can in turn cause flare-ups of the primary dermatologic disorder.[6]

Poor CBI has been shown to be an important factor in adherence to treatment in chronic disorders such as psoriasis,[7] where patients with more severe and more visible disease were less adherent to dermatologic therapies because the greater psychosocial burden might have caused patients to lose confidence in the treatments.[7] Greater body satisfaction, a construct that measures satisfaction with the

* Corresponding author. Tel.: +1 519 641 1001; fax: +1 519 641 1033.
E-mail address: magupta@uwo.ca (M.A. Gupta).

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way the body looks, was more likely to be associated with thorough skin self-examination performance for melanoma screening,[8] especially among women.

During the last 2 decades, the number of men and women seeking cosmetic treatments and procedures has significantly increased.[9] It is important to assess underlying CBI concerns in patients seeking cosmetic procedures to rule out body image pathologies, such as body dysmorphic disorder (BDD), before starting dermatologic therapies, because BDD patients are often not satisfied with treatment outcome.[10,11] BDD patients who undergo cosmetic procedures have been reported to experience no change or even worsening of their symptom or to develop a preoccupation with another imagined flaw.[10] CBI is a highly subjective construct, and body image perception in dermatology can vary across the life span, depending on the patient's developmental stage, and be significantly confounded by cultural, psychosocial, and psychiatric factors.

CBI across the life span

The skin is an important organ of communication throughout the life span. In early life, during the course of normal development, the skin is also essential in the formation of body image, which develops in response to the empathic reflections of the caregiver, communicated mainly by physical sensations such as touch, secure holding, and caressing.[1,12] The skin and its appendages are well innervated with a dense network of afferent sensory nerves and efferent autonomic nerves and serve as the major organ of communication between the infant and the mother/caregiver. The caregiver's touch outlines the original boundary of the body's surface and describes a shape to the infant's otherwise shapeless and boundless space.[12] If the environment during early development does not provide consistent and adequate nurturing and holding, for example, in infants with dermatologic disorders where the caregiver may be reluctant to touch or hold the infant, the psychosocial development of the infant is affected and foundations of body image can become weak.

The overall appearance of the skin, even when minimally flawed, can have a profound effect on the body image, especially in adolescents, and can result in body image pathology. During adolescence and young adulthood, the development of body image is further affected by the reactions of others, especially peers in the social arena.[12] A cosmetically disfiguring skin condition, such as acne or psoriasis, can result in increased self-consciousness, as well as in social disapproval and social exclusion, including bullying, which in turn can lead to academic underachievement, difficulties in the workplace, social withdrawal, and sometimes serious psychologic and body image problems, including increased suicide risk.[12]

When assessing the adolescent or young adult with CBI concerns, the clinician should be aware that the problem can be multifactorial: the concerns about the cosmetic disfigurement are often superimposed on the patient's difficulties with the developmental tasks of adolescence and young adulthood. Second, some of the major psychiatric disorders,[10] such as the eating disorders, BDD, major depressive disorder, bipolar disorder, and schizophrenia, often have first onset during adolescence and young adulthood. The onset of a psychiatric disorder can, therefore, complicate the clinical presentation of CBI concerns (Tables 1 and 2) in the adolescent and young adult. In such situations, the patient's CBI concerns may be grossly out of proportion to the clinical severity of the skin disorder.

The skin, especially facial skin, is one of the most easily visible indicators of chronologic age.[19] In the last several decades, old age has started to acquire increasingly negative connotations. Normal intrinsic aging is often viewed as a medical and social problem that needs to be addressed by health care professionals. The idea that chronologic age itself does not signal the beginning of old age and that one can get older without the signs of aging has become increasingly prevalent.[19] Even in later life, the patient may be highly invested in his or her CBI.

Data from the American Society of Plastic Surgeons[21] report 10.9 million cosmetic procedures in 2006; with more than 9.1 million procedures involving minimally invasive procedures such as botulinum toxin A injections and chemical peels, which are largely used to rejuvenate the appearance. It is further reported[21] that the use of these procedures has increased at least eightfold since 1992. Another aging-related phenomenon is that a greater number of individuals are becoming concerned about aging-related changes at a much younger age. A study of nonclinical individuals reports that more than 50% of women aged younger than 30 years reported dissatisfaction with the appearance of their skin and that some of the attributes that they reported dissatisfaction with, such as wrinkles and "bags" and "darkness" under the eyes, are usually considered to be aging-related skin changes.[16] This emerging trend, where younger individuals may be seeking treatments for cutaneous rejuvenation, further emphasizes the need to evaluate CBI dissatisfaction in patients because some patients may have unrealistic expectations of what treatment has to offer.

General guidelines for assessing CBI

When assessing CBI in the dermatology patient, three major areas should be considered, while taking into account the patient's sociocultural background:

1. degree of dissatisfaction with the appearance of the skin and its appendages, which can be measured clinically or with prevalidated rating scales, or both;

Table 1 Body image pathologies and cutaneous body image–related symptoms

Body dysmorphic disorder (BDD)[10] ("dysmorphophobia" or "dermatologic nondisease"[5])

- Patients present with imagined or slight "flaws" of the face or head (eg, hair thinning, wrinkles, acne, scars, vascular markings, paleness or redness of the complexion, excessive facial hair, swelling or facial disproportion or asymmetry, and concerns about the shape, size or some other aspect of the head, nose, eyes, eyelids, eyebrows, ears, mouth, lips, teeth, jaw, chin or cheeks). The preoccupation may simultaneously involve several body regions (eg, genitals, breasts, buttocks, abdomen, upper and lower extremities, overall body size, body build, and muscularity) including the skin. The complaint may be specific (eg, "bump" on nose) or vague (eg, "falling face" or "inadequately firm eyes").
- Acne is a major concern among patients with BDD; nonpsychiatric treatments most frequently sought after and received in BDD are dermatologic treatments, with the most common being topical acne agents.[13] In a study of acne patients aged 16 to 35 years, 32.9% with clinically mild acne met the criteria for BDD,[14] and patients requiring systemic isotretinoin therapy were twice as likely to have BDD than those who never used isotretinoin.[14] Sociocultural factors are likely an important factor in determining specific CBI complaints in BDD. In a Brazilian study, for example,[11] the most frequently (61.9%) reported concern in cosmetic patients with BDD was dyschromia, including melasma and postinflammatory hyperpigmentation, followed by acne (23.8%).
- In a study of 200 BDD patients, 25% reported BDD-related tanning[15]; among the tanners with BDD, 84% rated their skin as their most common area for concern; 52% of the tanners had received dermatologic treatments which were not effective for their BDD symptoms, and 26% of tanners had attempted suicide. BDD patients frequently check their "defect" with special lighting or magnifying glasses, exhibit excessive grooming behavior, for example, excessive hair removal, hair combing, and ritualized makeup application; current (36.9%) and life-time (44.9%) pathologic skin picking (repetitive, ritualistic, or impulsive picking of otherwise normal skin) have been reported in BDD.[3,10] Sometimes excessive checking and grooming intensifies the preoccupation about the appearance instead of reassuring the patient, and in such cases, patients may avoid mirrors. Patients may try to cover their imagined scars by growing a beard or hide their "hair loss" by wearing a hat. In BDD patients there is a higher prevalence of dissatisfaction with the outcome of dermatologic treatments.

Eating disorders (anorexia nervosa, bulimia nervosa, eating disorder not otherwise specified)[10]

- Cutaneous body image (CBI) dissatisfaction involving aging of the skin was noted among 81% of eating disordered patients (n = 32) aged younger than 30 years vs 56% of age-matched nonclinical controls ($P = .03$)[16]; the dermatologic attributes of greatest concern among the eating disordered patients were those that are also associated with aging and photodamage (eg, "darkness" under the eyes, freckles, fine wrinkles, and patchy hyperpigmentation in addition to dryness and roughness of the skin, which are often secondary to the eating disorder); greater concerns about aging skin in the eating disordered sample is most likely an index of the overall difficulties experienced by many eating disordered patients in dealing with the developmental tasks of "growing up" and young adulthood. Significant fluctuations in body weight in eating disorders can in turn lead to redundant skin folds and premature aging of the appearance, further complicating concerns about aging.
- Patients seeking treatments for aging skin tend to have a higher frequency of body image concerns related to body weight and shape. In studies[17,18] that evaluated the efficacy of topical tretinoin for the treatment of mildly to severely photodamaged skin and used the Eating Disorder Inventory (EDI) to assess patients, patients receiving active treatment with topical tretinoin—and not the control group—reported significant declines ($P < .01$) in the EDI subscale scores for Drive for Thinness (EDI), which measures an excessive preoccupation with thinness and weight loss, and Body Dissatisfaction (EDI), which measures dissatisfaction with body weight and shape. These results suggest that the non-CBI concerns improved with treatment of the photodamaged skin.
- CBI dissatisfaction in eating disordered patients[12] may manifest as picking of minimal acne lesions and acne excoriée, neurotic excoriations and excessive grooming behaviors.

Delusional disorder, somatic type[10]

- In some patients concerns about the imagined defect in the appearance can reach delusional proportions. Such patients have no insight into the nature of their perceived "defect" and typically present with an extremely distorted perception of their body image, often involving their face.

2. comorbid BDD and other body image pathologies (Table 1), such as anorexia nervosa (AN) and bulimia nervosa (BN), which have all been associated with a higher frequency of CBI concerns; and
3. a wide range of possible comorbid psychiatric disorders (eg, major depressive disorder in the psoriasis patient; Table 2), that can confound the clinical presentation of the CBI complaint. This is important because psychologic and psychiatric factors are important among at least 30% of dermatology patients.[1]

Assessment of dissatisfaction with the appearance of the skin and its appendages

When assessing the skin, it is very important to consider the effect of even clinically mild disease when it is present in "emotionally charged" regions,[6] such as the readily visible areas of the hands, face, and the genital area, and include an assessment of the hair and nails. The hair,[22] especially scalp hair,

Table 2 Clinical presentation of cutaneous body image concerns in psychiatric disorders[10,19]

Major depressive disorder
Most common psychiatric comorbidity[12] in dermatologic disorders; core features include feelings of worthlessness which may manifest as low self-esteem and poor body image; higher suicide risk especially when associated with body image concerns involving the face; in depression with psychotic features patients may present with delusions of disfigurement.
Bipolar disorder
Patients may present with inflated and grandiose opinion of their appearance, which can reach delusional proportions in bipolar I disorder (eg, a patient may state that his or her beauty parallels that of some famous historical figure or movie star). Bipolar II patients can be more subtle in their presentation (eg, they may appear very motivated, be prepared to spend a significant amount of money for cosmetic treatments, and have somewhat unrealistic and grandiose expectations of what treatment has to offer). It is important to be aware that once the patient is no longer in a manic or hypomanic state their cutaneous body image (CBI) is likely to become more realistic.
Obsessive–compulsive disorder (OCD)
OCD can be associated with obsessive thoughts about some aspects of the appearance that the patient perceives as flawed or imperfect. Some patients may scrutinize their "flaw" (eg, with a magnifying glass etc), and engage in excessive grooming behaviors (eg, ritualized makeup application, excessive grooming of hair, compulsive hair removal, etc). Some patients may compulsively pick at the perceived "flaw" or benign irregularity on their skin (eg, in neurotic or psychogenic excoriations). OCD symptoms can overlap with body dysmorphic disorder.
Social phobia (social anxiety disorder)
Patients are typically very self-conscious about excessive blushing or flushing, and hyperhidrosis, in a social situation. Other skin conditions, such as psoriasis or rosacea, can exacerbate social anxiety by making the patient more self-conscious about the appearance of their skin.
Posttraumatic stress disorder (PTSD)
Some PTSD patients, especially those with a history of sexual abuse, may repeatedly self-injure to enhance a deformity (eg, in some cases of acne excoriée), as they project their sense of "badness" and being "tainted" on their external body image. A larger number of PTSD patients may seek cosmetic procedures[20] in an attempt to "fix" the body, albeit at an unconscious level, that has been "tainted" by the childhood abuse; such patients may be excessively focused on their CBI. PTSD-related flashbacks with tactile/sensory, olfactory, and visual hallucinations may affect CBI. The frequency of eating disorders is higher in patients who have a history of sexual abuse.
Factitious disorder
Patients may focus on self- induced skin lesions (eg, dermatitis artefacta), or exacerbate an existing skin problem to assume a sick role, which serves as a coping mechanism; history is typically vague, dramatic, and sometimes inconsistent; external motivations for the behavior such as economic gain or other reasons for malingering are absent; patients deny the self-inflicted nature of their lesions.
Dissociative disorders
Patient may experience dissociation or "disconnect" from their body, including their CBI. Some patients may end up neglecting to take care of their bodies, including their skin, and neglect to treat (eg, a skin cancer) a health problem. CBI in patients with dissociative identity disorder (or multiple personality disorder) may vary, depending on the dissociated state that is dominant.
Psychotic disorders
Most common presentation with CBI concerns would be delusional disorder, somatic type discussed in Table 1. Patients with schizophrenia will typically present with bizarre delusions that represent a very distorted perception of their appearance including their CBI.
Personality disorders
Personality disorders are probably under-recognized among dermatology patients who are excessively preoccupied about their CBI. • Narcissistic personality disorder: There is a pervasive pattern of grandiosity and need for admiration, and having an attractive and youthful appearance is often a precondition for self-acceptance and counting on the acceptance of others. Such patients can have great difficulty adjusting to a change in their appearance due to a disfiguring skin condition or aging. • Histrionic personality disorder: There is a pervasive pattern of attention seeking and excessive emotionality, and patients are uncomfortable in situations where they are not the center of attention. Such patients can have a great deal of difficulty adjusting to changes in their CBI (eg, due to disease or aging), especially if they perceive others as reacting negatively to the changes in their appearance. • Obsessive-compulsive personality disorder: There is an associated preoccupation with perfectionism and control, wherein the patient may carry out special makeup rituals, make regular visits to the spa, etc, in an attempt to manage their appearance. Such patients have difficulty adapting to changes in their skin due to aging, and may seek dermatologic therapies and cosmetic procedures in an attempt to regain "control" of their appearance.

tends to be an important component of the CBI, is central to an individual's feelings of attractiveness, and expresses his or her individuality. The hair has great social significance[22] because it tends to be an indicator of gender, age, values, and group membership, and changes in the hair, even when clinically not significant, can have a major effect on the patient's body image.

Unwanted facial hair is associated with the high psychologic burden in women and represents a significant intrusion into their daily lives.[23] Loss of eyebrows and eyelashes has been associated with perturbations in the core sense of self and self-identity in alopecia areata patients.[24] The appearance of the nails plays an important role in CBI. Dystrophic nails[25] have been associated with significant psychiatric morbidity, and onychomycosis[26] patients report significantly more problems with their physical appearance. In psoriasis,[6] disfigurement of the nails can also have a major effect on body image and quality of life.

Skin color and CBI

Patient dissatisfaction with skin color can lead to potentially harmful behaviors such as tanning or involve a socioculturally-based belief system that a lighter-colored skin is more desirable and lead to the use of harmful skin-lightening agents. Satisfaction with skin color is a very important and often underestimated component of CBI that should be regularly addressed.

A survey[27] of 1237 adolescents (aged 14 to 17 years) from Minnesota and Massachusetts revealed 12% of boys and 42% of girls tanned indoors; and 77.2% of tanners planned to continue tanning indoors. Sociocultural and appearance-related body image factors have been shown to be the main reasons behind the intention to engage in sunbathing and indoor tanning behaviors.[28] A study[29] of 155 boys (average age 14.3 years) reported that those with high peer influence engaged more frequently in behaviors such as using tanning booths, sunbathing, skin waxing, and spa treatments compared with boys who showed low peer influence. A literature review[30] revealed that educating adolescents about the health risks of tanning, such as a higher risk of skin cancer, including melanoma, does not change tanning behaviors because of the perception of invulnerability,[30] peer pressure,[29] and insecurities about body image in this age group. A study[15] of 200 BDD patients reported that 25% engaged in BDD-related tanning, defined as darkening one's skin color by direct exposure to sunlight or artificial light, that was motivated by a desire to improve a perceived appearance defect (ie, a BDD concern). Among the BDD-tanners, 84% reported that their skin was the most common body area of concern. All tanners experienced functional impairment due to BDD and 26% had attempted suicide.[15]

Studies have shown that a lighter skin tone is preferred by individuals of European Caucasian descent[31] as well as those from cultures and ethnic groups with a darker skin color.[32-37] The term ethnic skin has been used in the medical literature to describe skin of color, traditionally Fitzpatrick skin types III to VI.[35] This does not define any particular race, ethnicity, or culture.[35] Culture and ethnicity affect CBI,[35] because they are the basis for differences in skin pathophysiology, mechanisms of aging, and unique facial structure among people; however, culturally based anthropologic, sociologic, and political factors perhaps have even a greater effect on CBI.

The clinician should be aware that in many cultures the preference for fair or lighter-colored skin is quite pervasive. Skin-lightening products, for example, are used in India,[32] countries in sub- Saharan Africa,[33,34,36] and by some Arab women[37] because lighter skin is associated with several perceived benefits, including job, beauty, and marriage opportunity.[32,37] As a result, harmful practices like skin bleaching[32,33,34,36,37] are done; the more frequently individuals used bleaching agents, the more likely they were to underestimate the risk associated with these agents.[33] In a study[36] of 450 Nigerians who reported using bleaching creams, about 73.3% were women and 27.6% were men, and the use of bleaching creams cut across all sociodemographic and religious groups.[36] The use of bleaching agents has been associated with psychiatric morbidity,[33] such as depression, anxiety, body image and core identity issues. Clinicians should be sensitive to these issues and even make an effort to mitigate[32] the perpetuation of potentially harmful belief systems regarding preferred skin color.

Clinical assessment of CBI

During the course of a busy clinic, the clinician can ask the patient, "How satisfied are you with the appearance of your skin (hair and nails)?" The patient's response should be rated on a 10-point scale where "1" denotes "not at all" and "10" denotes "very markedly." During the course of treatment, the same question may be asked, and the patient's satisfaction with his or her CBI can be monitored. Regular monitoring of the CBI can be therapeutic, because it validates the patient's concerns about his or her CBI as being clinically relevant rather than merely a sign of vanity. The clinician may wish to make a note of whether a significant discrepancy exists between the patient's subjective evaluation of his or her cosmetic problem and an objective dermatologic evaluation of the cosmetic effect of the skin disorder because this could be an indication of body image pathology (Table 1) or other underlying psychiatric comorbidity (Table 2).

CBI can be assessed using a wide range of prevalidated rating instruments. Depending on the clinical situation, one can choose from the many disease-specific and general quality of life scales that also address aspects of CBI. If the clinician wishes to measure CBI specifically, the Cutaneous Body Image Scale[2] (CBIS) can be used. The CBIS is a seven-item scale (Table 3) that has been validated among Canadian[2] and Japanese[38] dermatology patients. A composite CBIS score is derived from the mean ratings of the seven items (Table 3), where a high score is indicative of greater satisfaction with CBI. As with many other measures in medicine, CBIS scores have a normal distribution in nonclinical samples[2,38] and differentiated between nonclinical groups and dermatology patients.

Table 3 Cutaneous Body Image Scale[2]

Using the following scale, please rate each of the following items with *one* number between "0" to "9" that best describes your response.

0	1	2	3	4	5	6	7	8	9
Not at All	*Slightly*			*Moderately*			*Markedly*		*Very Markedly*

Item	*Rating ('0' to '9')*
1. "I like the overall appearance of my skin"	_____
2. "I like my complexion or overall color of my skin"	_____
3. "I like the appearance of the skin of my face"	_____
4. "I like the complexion or the overall color of the of the skin of my face"	_____
5. "I am very satisfied with my hair"	_____
6. "I am satisfied with the appearance of my fingernails"	_____
7. "I am satisfied with the appearance of my toenails"	_____

Cutaneous Body Image Scale (CBIS) score = average of all 7 ratings (possible range, 0 to 9).
CBI dissatisfaction grading using CBIS score: score <3 = 'severe'; 3 to 6 = 'moderate'; >6 = 'mild to none.'

In the Canadian sample,[2] the mean ± standard deviation CBIS score (possible range, 0-9, Table 3) was 4.44 ± 1.56 in the 127 dermatology patients (28.3% acne, 21.3% psoriasis, 40.1% onychomycosis/athletes foot, and 10.3% atopic dermatitis/alopecia/other), which was significantly lower (P = .004) than the 4.96 ± 1.73 score in the 312 individuals in the community-based nonclinical group, consistent with greater body image dissatisfaction in the dermatology group. Similarly, in the Japanese study[38] the CBIS scores among the dermatology patients (3.18 ± 1.69) were significantly lower than among healthy controls (4.11 ± 1.80). The lower mean scores in the Japanese sample vs the Canadian sample suggest greater CBI concerns among the Japanese group. The basis for this is most likely multifactorial, including culture-based values and norms that are important in determining an individual's satisfaction with his or her CBI. These preliminary findings suggest that the CBIS[2] may prove to be a useful tool for monitoring CBI in clinical populations. To our knowledge, there are no other tools like the CBIS that specifically assess CBI. The CBIS has to be tested among a wider range of dermatologic patients from diverse backgrounds before more robust normative data can be established.

Assessment of comorbid body image pathologies

BDD[10] ("dysmorphophobia") is a condition where aspects of body image, including the CBI are distorted. The Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision[10] describes BDD as a condition where the essential feature is a preoccupation with a defect in appearance, with concerns about the skin being one of the most common complaints (Table 1). In dermatology and cosmetic surgery settings, reported rates of BDD range from 6% to 15% of patients,[10] and with the increase in the demand for cosmetic procedures during the last 2 decades,[9,21] the prevalence of BDD in dermatology settings is likely to increase. In mental health settings, the prevalence of BDD in patients with depressive and anxiety disorders has been reported to range from 5% to about 40%.[10]

BDD usually has first onset during adolescence but can begin early in childhood. Patients can present with simultaneous preoccupation with several body parts (eg, genitals, breasts, overall body size and body build), and have a history of higher frequency of cosmetic procedures, such as rhinoplasty. The defect in appearance is imagined or, in cases where there is a slight anomaly, the patient's concern is markedly excessive, may lead to impairment in overall functioning (social, occupational, vocational, etc), and may cause significant distress to the individual, leading to increased suicide risk and completed suicide.[4] BDD-related tanning was reported among 25% of BDD patients[15] (discussed above). BDD patients are frequently dissatisfied with the outcome of dermatologic therapies. BDD is considered a contraindication for cosmetic procedures because these patients require psychiatric management of their disorder.[19]

Patients may have poor insight into the nature of their perceived "defect" and a diagnosis of delusional disorder, somatic type[10] should be considered if the preoccupation

with an imagined defect in appearance reaches delusional proportions. If obsessional preoccupation about the appearance is associated with compulsive behaviors (eg, compulsive mirror checking, body washing etc), a diagnosis of obsessive-compulsive disorder[10] may be appropriate.

Eating disorders,[10] including AN, BN, and eating disorder not otherwise specified (EDNOS), are characterized by body image dissatisfaction and distorted body image related to body weight and shape. AN[10] is characterized by a refusal to maintain a minimally normal body weight (<85% of expected weight). The patient has an intense fear of gaining weight or becoming fat even though underweight; and there is a disturbance in the way in which one's body weight or shape is experienced, with undue influence of body weight or shape on self-evaluation, or denial of the seriousness of the current low body weight. AN can be the restricting type, where the patient simply restricts food intake, or the binge-eating/-purge type. BN[10] is characterized by repeated episodes of binge eating when the patient experiences a sense of lack of control over the eating behavior. Patients may engage in recurrent inappropriate compensatory behaviors to prevent weight gain, including self-induced vomiting, fasting, or excessive exercise, and abuse of laxatives, diuretics, emetics, and diet pills. EDNOS[10] is a category for disorders of eating that do not meet all the criteria for AN or BN.

AN and BN usually start during adolescence, and among some patients, the disorders can persist into later adult life, with exacerbations and remissions. Some patients can experience significant fluctuations in body weight that can in turn lead to redundant skin folds and premature aging of the appearance. Patients often do not disclose that they have an eating disorder and are ashamed of their chaotic eating patterns, which can range from severe dietary restriction to binging and purging. In many patients, the dermatologic signs[39] of AN and BN, which result from the starvation, nutritional deficiencies, and binging and purging behaviors, may be the only indication that the patient has an eating disorder.

Patients with an eating disorder also present with a higher frequency of CBI complaints (Table 1), frequently related to aging of the appearance. In some eating disordered patients, who can present with excessive concerns about aging skin at a young age (<30 years), the CBI concerns may be grossly inconsistent with the norms for their age.[16] Alternately, individuals seeking treatment for aging skin tend to have a higher frequency of body image concerns related to body weight and shape, which decreases with treatment of the cutaneous signs of aging.[17,18] A youthful look is typically associated with a slim and well-toned body, and some individuals may become excessively preoccupied with diet and exercise as their appearance ages, which can predispose them to developing eating disorders.[40] In a small group of individuals who have other risk factors for the development of an eating disorder, the fear of aging caused by the cutaneous changes of aging, can precipitate AN.[41]

Assessment of other comorbid psychiatric disorders

A wide range of psychiatric disorders[10] (Table 2), which can be associated with dermatologic disorders,[12] can further confound the clinical presentation of CBI. Certain dermatologic disorders, such as acne and psoriasis, have been associated with a high prevalence of suicidal ideation, which may not always be commensurate with the clinical severity of the skin disorder.[12] In such instances, the psychiatric comorbidities could be a predisposing, precipitating, or perpetuating factor that increases body image concerns and suicide risk.

Conclusions

Assessment of CBI in the dermatology patient is best accomplished using a biopsychosocial model that involves (1) evaluation of concerns about the appearance of the skin, hair, and nails, (2) assessment of comorbid body image pathologies, especially BDD (Table 1), and (3) assessment of other psychiatric comorbidities (Table 2), such as major depressive disorder, which can confound the presentation of the CBI complaint. Depending on the psychiatric comobidities, an assessment of suicide risk may have to be done and an appropriate referral made to a mental health professional. The clinician should consider the patient's developmental stage (eg, body image concerns are likely to be much greater in the adolescent patient independent of their dermatologic disorder) and sociocultural factors (eg, a desire for lighter skin in some cultures) that can affect the CBI.

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