

**UC Davis**  
**Dermatology Online Journal**

**Title**

Cultural and biological factors in body dysmorphic disorder in East Asia

**Permalink**

<https://escholarship.org/uc/item/7263t7fk>

**Journal**

Dermatology Online Journal, 27(9)

**Authors**

Hong, Julie  
Hadeler, Edward  
Mosca, Megan  
[et al.](#)

**Publication Date**

2021

**DOI**

10.5070/D327955133

**Copyright Information**

Copyright 2021 by the author(s). This work is made available under the terms of a Creative Commons Attribution-NonCommercial-NoDerivatives License, available at <https://creativecommons.org/licenses/by-nc-nd/4.0/>

Peer reviewed

# Cultural and biological factors in body dysmorphic disorder in East Asia

Julie Hong BS, Edward Hadelor BA, Megan Mosca BS, Nicholas Brownstone MD, Tina Bhutani MD, John Koo MD

Affiliations: Department of Dermatology, Psoriasis and Skin Treatment Center, University of California San Francisco, San Francisco, California, USA

Corresponding Authors: Julie J Hong BS, 515 Spruce Street, San Francisco, CA 94118, Tel: 443-827-1361, Email: [Jh22hong@gmail.com](mailto:Jh22hong@gmail.com); John Koo MD, 515 Spruce Street, San Francisco, CA 94118, Email: [john.koo2@ucsf.edu](mailto:john.koo2@ucsf.edu)

## Abstract

Body dysmorphic disorder (BDD) can cause severe distress and impairment in many important areas of functioning. Although BDD has been well studied in Western populations, there is limited information on BDD in other cultures. In this review, we discuss the prevalence and presentation of BDD in East Asian countries and the significance of conducting further research in this particular group.

*Keywords: body dysmorphic disorder, dissatisfaction, image, East Asia*

## Introduction

Body dysmorphic disorder (BDD) is characterized by the patient's belief that there are flaws in appearance that are unacceptable to an individual even though the "flaws" may not be observable or appear slight to others; this perception can result in severe distress and impairment in social and occupational functioning (**Table 1**), [1]. It affects approximately 2% of the population, but because individuals with BDD often have very little to no insight into the nature of their preoccupations, BDD is likely under-reported and under-diagnosed [2,3]. Many individuals with BDD will also hide their symptoms because of feelings of guilt or embarrassment, which can manifest as depression, excessive surgeries to correct their perceived defects, social difficulties, and suicide [4,5].

To date, many studies have focused on the diagnosis and management of BDD in the Western societies, such as the United States and United Kingdom because body image dissatisfaction has been historically viewed as a Western phenomenon [6-10]. The Western mass media has also traditionally focused on portrayals of thin female bodies with emphasis on diet and weight control. Many findings in literature have demonstrated the higher prevalence of BDD in dermatology and plastic surgery clinics compared to the general population in the Western societies [11]. Early studies have all demonstrated that Caucasians experience higher rates of body image dissatisfactions compared to other ethnicities, but there are few studies that explore similar data in other cultures [12,13].

More recent studies have suggested that body dissatisfaction and body image concerns are not only confined to the Western societies but that BDD is found in most developed countries and is growing in the developing world [14]. There are a growing number of studies that show the emergence of BDD in East Asian countries, especially in China, South Korea, and Japan [15]. With growing cultural diversities even within Western societies, it is important to identify the role that cultural contexts play in determining body dissatisfaction. In this article, we review studies that assess the prevalence of BDD in East Asian countries, including China, Taiwan, South Korea, Japan, and Singapore. We also examine the prevalence of East Asian

subpopulations in the U.S. and identify biological and social predictors of BDD in these cultures.

## Methods

A literature search was performed using the MEDLINE (PubMed), Embase, PsycINFO, and Web of Science databases. For MEDLINE, the following search term was used: (body dysmorphic disorder OR body dissatisfaction) AND ("Far East"[mesh] OR Singapore). For Embase, the following search term was used: (body dysmorphic disorder OR body dissatisfaction) AND (china or chinese or taiwan\* or singapore or korea\* or japan\*). For PsycINFO and Web of Science, the following search term was used: (body dysmorphic disorder OR body dissatisfaction) AND (singapore OR china OR chinese OR korea OR korean OR japan\* OR taiwan\*). One reviewer identified all included articles (JH). Only studies that were written or translated in the English language were reviewed. All original prospective, retrospective, and nonexperimental descriptive studies, such as case series and case reports, were chosen for the purpose of this paper. Systemic review articles were examined to identify studies that were not found in the initial MEDLINE, Embase, PsycINFO, and Web of Science database search. Inclusion was limited to studies published prior to February 2021 and assessed studies conducted in China, Taiwan, South Korea, Japan, Singapore, and

elsewhere but focused on the listed ethnic groups and the use of self-reported outcome measures to diagnose body dysmorphic disorder or body dissatisfaction. Exclusion criteria were studies that did not discuss body dysmorphic disorder and did not measure its prevalence.

## Results

A total of 232 search results that were potentially unique and relevant to our search was initially identified. Of these, 134 results were excluded based on reviewing the title. An additional 76 results only had an abstract or conference poster. For two results, only the abstract was written in English. A study from Japan was not included because it was not written in English. Finally, 6 results did not use self-reported outcome measures to assess the prevalence of BDD. After applying the inclusion and exclusion criteria, 14 papers were chosen for the purpose of our review.

In [Table 2](#), we summarized the key findings from our review. For each paper, we included country, gender, age mean and range, most frequently mentioned body parts, types of questionnaires used, comparative study, and key findings. Three (21.4%) studies were published in years 2001-2010 and 11 (78.6%) studies were published in years 2011-2020. A total of 7 (50.0%) studies were conducted in China, one (7.1%) study in Taiwan, three (21.4%) studies in South Korea, two (14.2%) studies in Singapore, and

**Table 1.** *Diagnostic and Statistical Manual of Mental Disorders (DSM)-5 body dysmorphic disorder criteria [1].*

| Disorder class: Obsessive-compulsive and related disorders   |
|--|
| Preoccupation with one or more perceived defects or flaws in physical appearance that are not observable or appear slight to others.   |
| At some point during the course of the disorder, the individual has performed repetitive behaviors (e.g., mirror checking, excessive grooming, skin picking, reassurance seeking) or mental acts (e.g., comparing his or her appearance with that of others) in response to the appearance concerns. |
| The preoccupation causes clinically significant distress or impairment in social, occupational, or other areas of functioning.   |
| The appearance preoccupation is not better explained by concerns with body fat or weight in an individual whose symptoms meet diagnostic criteria for an eating disorder.  |
| Specify if:  |
| With muscle dysmorphia: the individual is preoccupied with the idea that his or her body build is too small or insufficiently muscular. This specifier is used even if the individual is preoccupied with other body areas, which is often the case.   |
| Indicate degree of insight regarding body dysmorphic disorder beliefs (e.g., "I look ugly" or "I look deformed").  |
| With good or fair insight: the individual recognizes that the body dysmorphic disorder beliefs are definitely or probably not true or that they may or may not be true.  |
| With poor insight: the individual thinks that the body dysmorphic beliefs are probably true.   |
| With absent insight/delusional beliefs: the individual is completely convinced that the body dysmorphic beliefs are true.  |

one (7.1%) study in United States. Of these, 8 (57.1%) studies included both female and male participants, 5 (35.7%) studies included only female participants, and one (7.1%) study included only male participants. The most commonly mentioned body parts in these subpopulations were face, hair, skin, weight, and stature. Additionally, four (28.6%) studies compared the prevalence of BDD in different ethnicities within the same country (Singapore and United States).

## Discussion

Body dysmorphic disorder (BDD), also known as dysmorphophobia, is a condition that is characterized by impairing preoccupation with slight defects or imagined disfigurement in the body. Although BDD has been well studied in the Western societies, it is discussed much less in East Asian cultures, where there is a stigma associated with psychiatric conditions and increasing pressure to conform to a different standard of beauty [16–19]. In this paper, we review the prevalence of BDD in East Asian cultures and the significance of understanding the role that cultural framework may determine overall body satisfaction. There are few important takeaways from this review:

There is a high prevalence of BDD in East Asian societies, especially with facial dissatisfaction; these patients should no longer be considered to be at a very low risk for the development of body dissatisfaction and other psychiatric conditions resulting from it.

East Asians experience more pressure to conform to Asian media portrayal of idealized body than they are to Western media. Body dysmorphic disorder can result from racial teasing and prejudice based on ethnicities.

### High prevalence of BDD in East Asian societies

Individuals who identify with the East Asian ethnic groups were traditionally believed to be at a very low risk for the development of BDD and overall body dissatisfaction [20]. It is important to examine both the cultural and physical differences between Western and East Asian societies. Culture, for example, can set underlying ideas of beauty and

thereby influences how individuals view their physical attractiveness. In early East Asia, slender physique and darker skin tone in women have long been associated with poor health, poverty, and low social class ranking [21]. Such physical traits indicate that individuals do not have enough food to eat and cannot gain weight, and that they have been working out in the sun and performing peasant work [14]. In contrast, lighter skin tone historically has represented femininity, innocence, and upper social status in many Asian cultures.

Similarly, men in East Asian societies traditionally have not placed much importance on defining or conforming to the standards of beauty or body image [11]. The traditional male role as breadwinner and head of the household has remained consistent and more preserved throughout the years in East Asian cultures than Western cultures. On the other hand, Western cultures have long idealized muscularity as a measure of masculinity as this has been predefined by Greek and Roman mythologies and now perpetuated by the Hollywood media [11]. As a result, Western men have emphasized body building as one of their few remaining foundations of masculine self-esteem.

Individuals of East Asian cultures have placed more emphasis on their facial features rather than their body weight or shape to define standards of beauty and attractiveness [22,23]. In one study, researchers explored cross-cultural differences in BDD symptoms across ethnic groups in the U.S. [24]. They reported that although Caucasians expressed more dissatisfaction with their body shape, Asian Americans expressed more dissatisfaction with their hair being too straight and their skin tone being darker. These findings suggest that cultural differences can define how individuals with BDD differ in their experiences despite being in a similar U.S. environment.

However, social changes and increased mingling across different cultures over a relatively short period of time have resulted in shifts away from traditional East Asian values to more Westernized cultural standards. Because of these rapid socioeconomic changes that result in the coexistence of both Asian and Western values in setting new beauty standards,

many individuals in non-Western cultures have been led to embrace unrealistic standards of appearance and experience higher occurrence of BDD [25,26]. Jung and Forbes explored how South Korean women reported high levels of body dissatisfaction and associated eating disorder symptoms despite having a significantly lower average BMI compared to American women [14]. Another study reported that Chinese are just as sensitive and conscious about their weight and body shape as Americans despite the fact that the general Chinese population also is less likely to have obesity compared to other national groups [27]. In fact, the authors view the above contradiction may have resulted from the fact that South Korean or Chinese women in Asia have more opportunities to be exposed to “beautiful people” in Hollywood and other American media instead of having the opportunity to see the actual average American body habitus.

However, culture has also protected individuals from the detrimental influence of the mainstream beauty standards. A British study examined the body image consciousness amongst South Asian migrants, Italian migrants, and the general population [28]. Compared to the Italian migrants and general population, South Asian women who had migrated to Britain did not adopt the thin ideal and believed that larger body shape equated to health and fertility. Although these individuals had emigrated to a new country (United Kingdom) with different cultural beliefs, they had retained their original cultural values and thus felt less pressure to be thin and resulted in less effort to conform to a thin body image.

The difference in prioritization of certain body parts in BDD patients between Western and East Asian societies can be also explained by the physical differences between the two ethnic groups. For example, there are underlying biological variations in body fat percentage in different ethnic groups. All ethnic groups can accumulate fat in the stomach, but East Asians accumulate less subcutaneous fat under the skin and this unique characteristic becomes more obvious with increasing age [14,29]. Hair care practice variations between Asians and other ethnicities can also result from the innate differences

in the structural hair properties. Compared to the average Caucasian hair, Asian hair shafts are thicker in diameter; this makes it more resistant to damage and less likely to result in hair loss through age-related decrease in diameter. Moreover, Asian hair grows at a fast rate (1.3cm/month), [30]. Conversely, African hair is spiraled and tightly curled, more fragile, sensitive to excessive manipulation, and grows at the slowest rate (0.9cm/month). Because of these biological differences, Asians are less likely to experience hair loss even with increasing age.

East Asian cultural practices have also contributed to the difference in physical traits. A number of East Asian cuisines involve products of lacto-fermentation, such as miso soup, kimchi, natto soybeans, all of which can be considered as natural probiotics. These foods have shown to promote weight loss and increased loss of visceral fat [31]. The high population density in many East Asian countries promotes use of public transportation and small apartment complexes in areas where shops and other public places are all located within walking distance [32]. Thus, people spend greater amount of time walking a longer distance compared to Americans who travel mostly by car because of convenience and the scattered locations of destination.

### **Conforming to Asian medial portrayal of idealized body**

Increasing diagnoses of BDD had been attributed to “Westernization” and wider accessibility of medial portrayals of the idealized body image imported from the United States, United Kingdom, and other European countries [33]. However, studies have indicated that BDD may not be entirely caused by the exposure to Western mass media in East Asian countries. A greater number of East Asian adolescents were reported to judge their body image based on Korean, Japanese, and Taiwanese mass media, such as television shows and movies. The appearance of popular musicians, all of whom are uniformly slim, are also influential. Influence from Western mass media had a weaker association with their body image [34].

Individuals are more likely to emulate and compare themselves to more similar others [35]. Thus, it is



important to understand how East Asian mass media has a significantly greater impact on individuals who identify with East Asian cultures. Although these studies have explored the effect of East Asian media on individuals with BDD in East Asian countries, there is relatively strong evidence that longstanding cultural identity influences have a greater influence on BDD compared to cultural influences that they may have assimilated only superficially. Further research could be helpful in identifying the sources of disturbances to prevent and treat BDD in this population.

### **Racial teasing and prejudice based on ethnicities**

Although there are several studies that discuss the role of race and ethnicity on body image in the general population, the effect of racial tension and discrimination as a contributing factor of BDD has not been explored systematically. Marques et al. suggested that individuals with BDD from ethnic minority groups may become more concerned with specific parts of the body with cultural implications [24]. For example, an African American patient was more concerned about his skin color, a Jewish patient was concerned about the size of his nose, and an Asian patient endorsed concerns about her single eye-fold and lower nose bridge [36]. All these features distinguish persons of ethnic minorities from the ethnic majorities in certain countries and have been previously associated with negative ethnic stereotypes.

Despite the increased awareness of the prevalence of racial stereotyping and discrimination in the past decade, there is still a dearth of studies that explore its effect on the development and natural history of BDD. Some studies have suggested that racial

teasing is significantly associated with body image problems in Caucasian and African American women [37]. However, little is known about its effect on Asian minority groups in multiracial context. Future research should seek to ascertain if similar findings as Caucasians and African Americans can be documented among East Asians.

### **Conclusion**

A significant number of publications in the literature emphasized the cross-cultural variations in the prevalence of body image disturbances and dissatisfaction. However, much of these have focused on individuals who identify with the Western culture and little is known about BDD in non-Western societies, especially East Asia. In this article, we reviewed the prevalence of BDD in East Asian cultures and explored the cultural and physical factors that may contribute to the development of body dissatisfaction. The observed differences in areas of concern for these individuals with BDD appear to reflect the ethnic differences in beauty ideals and what is considered desirable in specific cultures. The presented findings point to the need for clinicians to be more sensitive to the extent to which culture and ethnicity influence an individual's concerns on body image. Future studies should systematically assess the prevalence and phenomenology of BDD across nationalities, cultures, and ethnicities.

### **Potential conflicts of interest**

The authors declare no conflicts of interest.

### **References**

1. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. Fifth Edition. American Psychiatric Association; 2013. <http://repository.poltekkes-kaltim.ac.id/657/1/Diagnostic%20and%20statistical%20manual%20of%20mental%20disorders%20-%20DSM-5%20%28%20PDFDrive.com%20%29.pdf>.
2. Phillips KA, Wilhelm S, Koran LM, et al. Body dysmorphic disorder: some key issues for DSM-V. *Depress Anxiety*. 2010;27:573–91. [PMID: 20533368].
3. de Brito MJA, Nahas FX, Ortega NRS, et al. Support system for decision making in the identification of risk for body dysmorphic disorder: a fuzzy model. *Int J Med Inform*. 2013;82:844–53. [PMID: 23726374].
4. Phillips KA. Suicidality in Body Dysmorphic Disorder. *Prim Psychiatry*. 2007;14:58–66. [PMID: 18449358].
5. Reese HE, McNally RJ, Wilhelm S. Reality monitoring in patients with body dysmorphic disorder. *Behav Ther*. 2011;42:387–98. [PMID: 21658522].
6. Perugi G, Akiskal HS, Giannotti D, et al. Gender-related differences in body dysmorphic disorder (dysmorphophobia). *J Nerv Ment Dis*.

- 1997;185:578–82. [PMID: 9307620].
7. Phillips KA. Body dysmorphic disorder: the distress of imagined ugliness. *Am J Psychiatry*. 1991;148:1138–49. [PMID: 1882990].
  8. Ung EK, Fones CS, Ang AW. Muscle dysmorphia in a young Chinese male. *Ann Acad Med Singap*. 2000;29:135–7. [PMID: 10748983].
  9. Veale D, Boockvar A, Gournay K, et al. Body dysmorphic disorder. A survey of fifty cases. *Br J Psychiatry*. 1996;169:196–201. [PMID: 8871796].
  10. Turkson SN, Asamoah V. Body dysmorphic disorder in a Ghanaian male: case report. *East Afr Med J*. 1999;76:111–4. [PMID: 10442135].
  11. Yang C-FJ, Gray P, Pope HG. Male body image in Taiwan versus the West: Yanggang Zhiqi meets the Adonis complex. *Am J Psychiatry*. 2005;162:263–9. [PMID: 15677589].
  12. Altabe M. Ethnicity and body image: Quantitative and qualitative analysis. *Int J Eat Disord*. 1998;23:153–9.
  13. Boroughs MS, Krawczyk R, Thompson JK. Body Dysmorphic Disorder among Diverse Racial/Ethnic and Sexual Orientation Groups: Prevalence Estimates and Associated Factors. *Sex Roles*. 2010;63:725–37. [DOI: 10.1007/s11199-010-9831-1].
  14. Jung J, Forbes GB. Body Dissatisfaction and Disordered Eating among College Women in China, South Korea, and the United States: Contrasting Predictions from Sociocultural and Feminist Theories. *Psychol Women Quart*. 2007;31:381–93. [DOI: 10.1111/j.1471-6402.2007.00387.x].
  15. Wildes JE, Emery RE, Simons AD. The roles of ethnicity and culture in the development of eating disturbance and body dissatisfaction: a meta-analytic review. *Clin Psychol Rev*. 2001;21:521–51. [PMID: 11413866].
  16. Xu X, Li X-M, Zhang J, Wang W. Mental Health-Related Stigma in China. *Issues Ment Health Nurs*. 2018;39:126–34. [PMID: 29053392].
  17. Ando S, Yamaguchi S, Aoki Y, Thornicroft G. Review of mental-health-related stigma in Japan. *Psychiatry Clin Neurosci*. 2013;67:471–82. [PMID: 24118217].
  18. Zane N, Yeh M. The Use of Culturally-Based Variables in Assessment: Studies on Loss of Face. In: Asian American Mental Health. Kurasaki KS, Okazaki S, Sue S, editors. Springer U.S.; 2002. p. 123–38.
  19. Chin Evans P, McCONNELL AR. Do Racial Minorities Respond in the Same Way to Mainstream Beauty Standards? Social Comparison Processes in Asian, Black, and White Women. *Self Identity*. 2003;2:153–67. [DOI: 10.1080/15298860309030].
  20. Yates A, Edman J, Aruguete M. Ethnic differences in BMI and body/self-dissatisfaction among Whites, Asian subgroups, Pacific Islanders, and African-Americans. *J Adolesc Health*. 2004;34:300–7. [PMID: 15040999].
  21. Lippincott JA, Hwang HS. On cultural similarities in attitudes toward eating of women students in Pennsylvania and South Korea. *Psychol Rep*. 1999;85:701–2. [PMID: 10611801].
  22. Frith K, Shaw P, Cheng H. The Construction of Beauty: A Cross-Cultural Analysis of Women's Magazine Advertising. *J Commun*. 2005;55:56–70. [DOI: 10.1111/j.1460-2466.2005.tb02658.x].
  23. Lee S. Global modernity and eating disorders in Asia. *European Eating Disorders Rev*. 1998;6:151–3. [DOI: 10.1002/(SICI)1099-0968(199809)6:3<151::AID-ERV256>3.0.CO;2-3].
  24. Marques L, LeBlanc N, Weingarden H, et al. Body dysmorphic symptoms: phenomenology and ethnicity. *Body Image*. 2011;8:163–7. [PMID: 21354876].
  25. Jeffreys S. Beauty and misogyny: Harmful cultural practices of the West. Routledge; 2005.
  26. Bordo S. Unbearable weight: Feminism, Western culture, and the body. 2nd ed. University of California Press; 2004.
  27. Roberts A, Cash TF, Feingold A, Johnson BT. Are black-white differences in females' body dissatisfaction decreasing? A meta-analytic review. *J Consult Clin Psychol*. 2006;74:1121–31. [PMID: 17154741].
  28. Bush HM, Williams RG, Lean ME, Anderson AS. Body image and weight consciousness among South Asian, Italian and general population women in Britain. *Appetite*. 2001;37:207–15. [PMID: 11895321].
  29. Kim SY, Seo YS, Baek KY. Face consciousness among South Korean women: a culture-specific extension of objectification theory. *J Couns Psychol*. 2014;61:24–36. [PMID: 24040778].
  30. Koch SL, Tridico SR, Bernard BA, Shriver MD, Jablonski NG. The biology of human hair: A multidisciplinary review. *Am J Hum Biol*. 2020;32:e23316. [PMID: 31479564].
  31. Dimidi E, Cox SR, Rossi M, Whelan K. Fermented Foods: Definitions and Characteristics, Impact on the Gut Microbiota and Effects on Gastrointestinal Health and Disease. *Nutrients*. 2019;11. [PMID: 31387262].
  32. Cerin E, Barnett A, Zhang CJP, et al. How urban densification shapes walking behaviours in older community dwellers: a cross-sectional analysis of potential pathways of influence. *Int J Health Geogr*. 2020;19:14. [PMID: 32299439].
  33. Becker AE, Burwell RA, Gilman SE, Herzog DB, Hamburg P. Eating behaviours and attitudes following prolonged exposure to television among ethnic Fijian adolescent girls. *Br J Psychiatry*. 2002;180:509–14. [PMID: 12042229].
  34. Jackson T, Cai L, Chen H. Asian versus Western appearance media influences and changes in body image concerns of young Chinese women: A 12-month prospective study. *Body Image*. 2020;33:214–21. [PMID: 32361154].
  35. Miller DT, Turnbull W, McFarland C. Particularistic and universalistic evaluation in the social comparison process. *J Personality Social Psychol*. 1988;55:908–17. [DOI: 10.1037/0022-3514.55.6.908].
  36. Mellor D, Waterhouse M, Mamat NHB, et al. Which body features are associated with female adolescents' body dissatisfaction? A cross-cultural study in Australia, China and Malaysia. *Body Image*. 2013;10:54–61. [PMID: 23228484].
  37. Body Image, Ethnicity/Race and. In: Encyclopedia of Children, Adolescents, and the Media. SAGE Publications, Inc.; 2007.
  38. Chee I-S, Kim H-J, Lee Y, Kim JW. Body Dysmorphic Disorder, Psychiatric Symptoms, and Quality of Life in Female Dermatological Patients. *Neuropsychiatr Dis Treat*. 2020;16:2921–8. [PMID: 33311980].
  39. Choi Y, Choi E, Shin D, Park SM, Lee K. The Association between Body Weight Misperception and Psychosocial Factors in Korean Adult Women Less than 65 Years Old with Normal Weight. *J Korean Med Sci*. 2015;30:1558–66. [PMID: 26538998].
  40. Hsu C, Ali Juma H, Goh CL. Prevalence of body dysmorphic features in patients undergoing cosmetic procedures at the National Skin Centre, Singapore. *Dermatology*. 2009;219:295–8. [PMID: 19590172].
  41. Knowles G, Ling FCM, Thomas GN, Adab P, McManus AM. Body size dissatisfaction among young Chinese children in Hong Kong: a cross-sectional study. *Public Health Nutr*. 2015;18:1067–74. [PMID: 24844379].
  42. Liao Y, Knoesen NP, Deng Y, et al. Body dysmorphic disorder, social anxiety and depressive symptoms in Chinese medical students. *Soc Psychiatry Psychiatr Epidemiol*. 2010;45:963–71. [PMID: 19784802].
  43. Pillai VT, Sündermann O. Racial teasing and body dysmorphic disorder symptoms – A cross-sectional study of Asian ethnic groups in Singapore. *Asia Pacific J Counselling Psychother*.

- 2020;11:47–59. [DOI: 10.1080/21507686.2019.1708425].
44. Wang Q, Cao C, Guo R, et al. Avoiding Psychological Pitfalls in Aesthetic Medical Procedures. *Aesthetic Plast Surg.* 2016;40:954–61. [PMID: 27761610].
45. Wang S-K, Lee Y-H, Kim J-L, Chee I-S. No Effect on Body Dissatisfaction of an Interaction between 5-HTTLPR Genotype and Neuroticism in a Young Adult Korean Population. *Clin Psychopharmacol Neurosci.* 2014;12:229–34. [PMID: 25598828].
46. Yin Z, Wang D, Ma Y, et al. Self-esteem, Self-efficacy, and Appearance Assessment of Young Female Patients Undergoing Facial Cosmetic Surgery: A Comparative Study of the Chinese Population. *JAMA Facial Plast Surg.* 2016;18:20–6. [PMID: 26469879].



**Table 2.** Key findings on studies conducted on body dysmorphic disorder in East Asian cultures.

| Author, Year [ref] | Country                    | Gender | Age (mean) | Age (range) | Most frequently mentioned body parts                        | Self-reported measured outcomes (questionnaires)   | Comparative study? | Key findings   |
|--------------------|----------------------------|--------|------------|-------------|---|--|--------------------|--|
| Chee, 2020 [38]    | South Korea                | F      | 34.85      | N/A         | Skin  | BDDE-SR, SCL-90-R, Skindex-29  | N                  | Patients with undetermined skin conditions were more like to present with BDD symptoms and poor quality of life  |
| Choi, 2015 [39]    | South Korea                | F      | N/A        | 20-64       | Weight  | Body weight misperception questionnaire, psychosocial factor questionnaire   | N                  | Low self-reported health status is associated with body weight misperception, regardless of age  |
| Hsu, 2009 [40]     | Singapore                  | Both   | 37.9       | 21-81       | Undefined   | Undefined  | Y                  | Aesthetic clinic developed their own questionnaire to screen for BDD. High prevalence rate of BDD (29.4%; N=198) in aesthetic procedure seekers  |
| Jackson, 2020 [34] | China                      | F      | 18.69      | 16-24       | Weight, face, stature                                       | Acceptance of Cosmetic Surgery Scale, facial concerns, fatness concerns, and stature concerns subscales of the Mandarin-language Negative Physical Self-Scale, Asian Media Appearance Preference Scale | N                  | Western mass media portrayals of body image do not affect Chinese women as much as Asian mass media  |
| Knowles, 2015 [41] | China                      | Both   | 9.2        | 6-13        | Weight  | CBIS   | N                  | Body dissatisfaction (75%; N=620) is prevalent in Chinese children, as early as age of 6   |
| Liao, 2009 [42]    | China                      | Both   | 18.5       | 16-21       | Face, hair, waist/stomach, buttocks/hips/thighs, legs, skin | BSQ, SMAQ, SIAS, DCQ, SDS, BDDQ  | N                  | Individuals who expressed dissatisfaction in their appearance were more likely to have depressive and anxiety symptoms   |
| Marques, 2011 [24] | USA                        | Both   | 31.57      | 18-62       | Hair, skin  | BDDQ, BDD-YBOCS, Body Checklist  | Y                  | With regard to BDD-related rituals, Asians were more likely to engage in excessive exercise (>1 hour/day), but less likely to participate in grooming or camouflaging their body parts, compared to Caucasians |
| Mellor, 2014 [36]  | Australia, China, Malaysia | Both   | 15.53      | 11-19       | Face, hair, stature   | Body Image and Body Change Inventory   | Y                  | Body dissatisfaction in males is higher in Chinese adolescents compared to Australian  |

|                   |             |      |       |       |                  |  |   |   |
|-------------------|-------------|------|-------|-------|------------------|--|---|---|
|                   |             |      |       |       |                  |  |   | adolescents due to more emphasis on male hair fashion and male face in Asian media                  |
| Pillai, 2020 [43] | Singapore   | Both | 23.05 | N/A   | Skin             | MET, AAI, BDDQ, PHQ-9  | Y | Racial discrimination by skin colors may be associated with the development of BDD                  |
| Wang, 2016 [44]   | China       | F    | 33.13 | 16-67 | Face             | BDDE, MBSRQ-AS, RSE-S  | N | High prevalence rate of BDD (14.2%; N=106) in aesthetic procedure seekers                           |
| Wang, 2014 [45]   | South Korea | Both | 23.66 | N/A   | Undefined        | EPQ, BDDE, BDI, SES  | N | There is no genetic link between anxiety and body dissatisfaction                                   |
| Yang, 2005 [11]   | Taiwan      | M    | N/A   | N/A   | Weight, body fat | Body image computerized test   | N | Taiwanese men experience less preoccupation with male body image compared to Western men            |
| Yin, 2016 [46]    | China       | Both | N/A   | 18-30 | Face             | Rosenberg Self-Esteem Scale, General Self-efficacy scale, facial appearance assessment | N | Negative self-esteem in young Chinese women can lead to decision to undergo facial cosmetic surgery |

AAI, The Appearance Anxiety Inventory; BDDE, body dysmorphic disorder examination; BDDQ, Body dysmorphic disorder questionnaire; BDD-YBOCS, The Yale-Brown Obsessive Compulsive Scale Modified for BDD; BDI, Beck Depression Scale; BICI, Body Image Concern Inventory; BSQ, Body Shape questionnaire; CBIS, Child's Body Image Scale; Co, Country; CS, Comparative study; DCQ, Dismorphic Concern questionnaire; EDDS, Eating disorder diagnostic scale; EPQ, Eysenck Personality Questionnaire; MBSRQ-AS, Multidimensional body self-relations questionnaire-appearance scales; MET, The Measure of Ethnic Teasing; PHQ-9, Patient Health Questionnaire 9; Ref, References; RSE-S, Rosenberg self-esteem scale; SCL-90-R, Symptom Checklist 90-Revised; SDS, Self-rating depression scale; SES, Self-Esteem Scale; SIAS, Social Interaction Anxiety Scale; SK, South Korea; SMAQ, Swansea Muscularity Attitudes questionnaire.