

# ***“Am I Ugly or Sick?” The Influence of social media on Body Dysmorphic Disorder: China and the West***

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**Abstract:** Social media nowadays has cast very serious influences on people, causing appearance anxiety, or even body dysmorphia among all age groups. In order to examine social media's influence on body dysmorphic disorder, we have selected 19 papers related to this subject from the year 2017 to 2021, and completed this review study. Results show that there's a definite positive correlation between social media and body dysmorphia, which can be further explained by costly-signaling theory, the most frequently-appeared theory among studies we reviewed; and patients with body dysmorphic disorder were suggested to use a combination of talk therapy and medication to reduce symptoms.

**Keywords:** Body dysmorphic disorder, social media, Costly-signaling theory.

## **1. Introduction**

From the perspective of Evolutionary Psychology, the beauty standards among humans are likely related to healthy body, high fitness, high fertility that helped ancestral humans maximize the chances they passed their gene to the next generation. However, in today's society, beauty trends have been gradually drifting towards body forms that are less than healthy; More and more people are pursuing an unhealthy aesthetic, such as an extremely thin figure or unhealthily pale skin tone; and in recent years, the problems of body dysmorphic disorder and body image disorder have increased in multiple countries [1].

While at the same time, the development of social media and social networking sites is growing enormously. Our daily exposure to photos and videos about the “perfect body figure” promote an extremely slim body image for females, while promoting for males a more muscular body figure. Sometimes even more extreme unhealthy body aesthetics such as a very thin waist and thigh circumference are portrayed, and a person's deviation from these ideals can cause anxiety and self-doubt. Therefore, researchers have considered the use of social media to be one of the reasons these trends have been becoming more serious and more common.

### 1.1. Significance of Researching BDD Based on Social Media

Studies have found that 95.5% of girls that access social media have body image concerns to some extent; the percentage of time spent on the social media has a significant effect of the internalization of the thin ideal, body surveillance, and drive for thinness; Moreover, 75% of adolescent girls spend about 1.5 hours on Facebook on a daily basis [2]. Hence, it is possible that Facebook users have a higher chance of getting body image concerns than do people without a Facebook account.

### 1.2. Research Questions

The main research question we pursue is focused on how social networking sites modify aesthetics that evolved for the world of the past into today's unhealthy aesthetics of thinness and paleness. To explore this question, and to find causes and potential solutions that have been identified, this review developed three sub-questions for guiding our study:

- (1) whether there is a link between social media usage and body dysmorphia;
- (2) how does social media cast effect on people's aesthetic pursue;
- (3) how can body dysmorphia be treated.

For that matter, the following empirical research is mainly based on published journal articles in the recent years in China and the West, namely, English-speaking countries.

## 2. Materials and Methods

### 2.1. Journals Reviewed

Our major data come from two parts: English articles found through search terms such as body dysmorphia, body dissatisfaction, negative physical self, body image disorder, ideal thin and social media, with Web of Science as the database; another part was made up of Chinese research articles searched by terms such as “body image disorder”, “body dysmorphia”, “social media” and so on, with CNKI (China National Knowledge Infrastructure) as the database. First of all, we compiled two lists of articles that matched the English and Chinese key terms respectively. Then, we set more specific inclusion criteria for this present review. To this end, articles were filtered through the following criteria: (1) researches that were published in the most recent five full years (2017 to 2021); (2) studies with a clear focus on body dysmorphic disorder generated by social media and (3) studies that were found as full text, and indexed in SSCI or SCI if written in English, and in CSSCI or CSCD if Chinese. Other types of publications such as book reviews, commentaries, or editorial materials were excluded from this our study. After screening though above two lists of articles, a total of 9 English papers and 10 Chinese papers were selected and reviewed. These categories provided an organizational framework to understand publications trend, research topics that articles were focused on, and types of theories employed in studies.

### 2.2. Analysis of the Literature

Information from the above mentioned 19 studies was coded for the following five dimensions, which provides an organizational framework to understand the trend in publications over time, research topics that articles were focused on, and types of theories employed in the studies:

- *Year*: Year of publication.
- *Journal title*: Condensed summary of journal title, scope, and research area.
- *Sample characteristics*: the number of samples, the country or economy, age-bracket, and types of gender when available.
- *Theories*: We recorded the name of the theories proposed by in each paper.

- *Key findings:* We selected the research results of each paper that are relevant to our research contents.

### 3. Results and Discussion

The coded results are shown in Table 1 and Table 2.

Since all of the Chinese researches took samples from China, we did not include the column of country or economy in Table 2. And for both tables, when there displays a slash (/) in columns of age, gender and number of samples, it means that this is a study of theoretical analysis with no experiments presented.

#### 3.1. Descriptive Characteristics of Studies and Trends

##### 3.1.1. Overview of Publishing Years

We have summarized the number of papers published from 2017 until 2021. There seems to be a rather steady trend in the number of studies over the years, both in China and the West. It seems that we can expect papers published on this topic to increase over the next few years likely due to the same pattern being predicted for the use of social media.

##### 3.1.2. Overview of Journal Titles

The 9 English articles were from 9 different academic journals respectively, mostly from the field of psychology. It is also noticeable that 2 papers were found in the field of business and economics. For the 10 Chinese articles, the field of psychology was the most represented. However, 2 papers related to research on new media were found as well.

Although varied in focus, a common topic of the most frequently found journals was still psychology. From the above tables, it is also plausible to draw the conclusion that body dysmorphia has become severe enough that it caught the attention of clinical healthcare fields like dermatology. A correlation can be drawn between social media and body dysmorphia due to the fact that journals regarding media paid attention to the topic of body dysmorphia.

Business and economic journals were also found among selected papers since that appearance anxiety, or body dysmorphic disorder will possibly trigger impulsive consumption, contributing to the beauty industry.

##### 3.1.3. Overview of Sample Characteristics

Among the 19 studies we chose, 7 out of 9 English studies were empirical, and 5 out of 10 Chinese studies were empirical studies.

It can be seen from above that in the English-language research, the participants were of broader age range, with two studies focusing purely on females and two on males. In the Chinese studies, the sample number is generally bigger than that in the English language studies, with all of them taking both genders into account. In each study, the number of females outnumbered that of males.

Table 1: Coded information of the 9 English studies.

Reference	Journal title	Research Area	Country or economy	Age distribution	gender	Number of samples	Theories	Key findings
Pila et al. (2017) [3]	<i>International Journal of Eating Disorders</i>	Psychology & Psychiatry, Healthcare	Not specified (Whoever has access to Instagram)	Not specified	Evenly distributed	600	Costly-signaling, Self-discrepancy	(a) People's photographic content often depicts highly muscular bodies in acts of deliberate body exposure. (b) The content of the text reflects the idealization of overconsumption, a strict commitment to fitness, and a framework of rewards around diet and fitness.
Cordes et al. (2017) [4]	<i>Body Image</i>	Clinical Psychology	Germany	Averagely 28.7	Male	49	Social comparison	Only by contacting with one's own body leads to an increase in negative emotions, and its effect on male body image is comparable to the effect of contact with the muscular ideal body.
Shome et al. (2019) [5]	<i>Journal of Cosmetic Dermatology</i>	Dermatology	India	21 to 26	Evenly distributed	300	Looking-glass, Self-verification	As time spent on social media increased, social anxiety, feelings of decreased confidence, decreased physical attractiveness, and the desire to undergo cosmetic surgery all increased significantly. In addition, all findings were higher for women compared to men.
Brooks et al. (2019) [6]	<i>Perspectives on Psychological Science</i>	Psychology	/	/	/	/	Visual normalization	(a) High levels of body dissatisfaction were associated with an attentional bias towards thin people, which in turn led to greater size overestimation sequelae. (b) Separate neural populations are responsible for the perception of fat and muscle mass.
Lenza (2020) [7]	<i>Clinical Social Work Journal</i>	Clinical Psychology, Social Science	The U.S.	23 & 32	Female	2	The transdiagnostic theory, the relational frame theory	This paper reveals the three most prevalent factors as eating disorders: (1) early dieting and extreme weight loss behaviors; (2) depression and body dissatisfaction; and (3) internalization of the media.

Table 1: (continued).

Chatzopoulou et al. (2020) [8]	Journal of Consumer Affairs	Business & Economics	The U.K.	18 to 25	Male	25	Operant conditioning theory, agenda setting theory, Social comparison, Self-discrepancy	On the one hand, male Instagram users feel anxious and compete with others their age, which often leads to muscle deformation; on the other hand, they feel more masculine, have higher self-confidence, and they are more motivated to stay healthy and eat healthier.
Rodner et al. (2021) [9]	Journal of Services Marketing	Business & Economics	The U.K.	18 to 30	Female	16	Self-discrepancy, Self-representation	(a) Earlier studies on the uptake of cosmetic surgery pointed to a preference for a Western (read: white) hegemonic appearance, with other races attempting to "shape the white appearance", and more recent studies remind us that we need to be aware of this cultural "whiteness" simplification. (b) The ideal of beauty for non-Caucasian women has now been appropriated by white women in the West.
Goodyear et al. (2021) [10]	Qualitative research in Sport, Exercise and Health	Healthcare	The U.K.	13 to 15	Female	49	Costly-signaling	Adolescent girls are highly capable in a complex social environment and constantly juggle the private and public aspects of their lives on social media. Their body dysmorphic disorder may be caused by: (i) skinny fat, and (ii) naturally fake.
Imperator et al. (2021) [11]	Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity	Psychiatry	Italy	24.13±3.70	504 F, 217 M	721	Costly-signaling	Symptoms associated with psychiatric disorder (MD) may play an important role in mediating the relationship between the severity of social network dependence (SMS) and eating disorder (BD) pathology.

Table 2: Coded information of the 10 Chinese studies.

Reference	Journal Title	Research Area	Age distribution	Gender	Number of samples	Theories	Key findings
Ye et al. (2017) [12]	Psychological Development and Education	Psychology, Pedagogy	20.02±1.78	429 F, 305 M	734	Costly-signaling	Difficulties in emotion regulation not only directly affect college students' social media addiction, but also indirectly affect college students' cognition through negative physical self and social avoidance and distress.
Ji & Li (2017) [13]	Television Research	New Media	/	/	/	Looking-glass self	Women are still the objects of control, play, and appreciation in the patriarchal society, and become objectified objects in the context of the consumer society.
Zhang (2018) [14]	Journal of Sports and Science	Healthcare	/	/	/	Self-discrepancy, Costly-signaling	The impact of the media on women's physical self and mental health is complex and subtle, and is influenced by a variety of factors such as geography, culture, race, religion, family, and friends. The media itself does not directly lead to negative body self-concepts in women.
Chen et al. (2018) [15]	Journal of Psychological Science	Psychology	18.92±1.23	523 F, 341 M	864	Social Comparison	(a) Appearance rejection sensitivity has a significant partial mediating effect between social anxiety and body dysmorphic disorder in college students. (b) Social anxiety can directly affect body dysmorphic disorder, and it can also indirectly affect body dysmorphic disorder by increasing appearance rejection sensitivity.
Li & Liu (2018) [16]	Advances in Psychological Science	Psychology & Psychiatry	/	/	/	Looking-glass self	The external causes of body image disorder mainly lie in the negative real evaluations given by the primary group and the diverse real evaluations given by the secondary groups; the internal causes are mainly due to the fear of subjective imagination evaluation and the deviation of subjective perception evaluation.

Table 2: (continued).

Li & Zheng (2019) [17]	Advances in Psychological Science	Psychology & Psychiatry	/	/	/	A-R-D theory, Mate value, Sexual selection, Dual-mating, Sperm competition, Mate switching	In the development of intimate relationships, mismatched physical attractiveness causes low-physical attractiveness partners to adopt a series of partner retention, jealousy, insults, and sexual compulsion, thereby accelerating the breakdown of intimate relationships.
Zhang et al. (2020) [18]	Journal of Southwest University (Natural Science Edition)	Natural Science	18 to 25	305 F, 209 M	514	Self-discrepancy	(a) Appearance satisfaction does not directly affect body image disorder, but has a mediating effect on body image disorder through self-evaluation and self-acceptance. (b) The effects of individual factors and environmental factors on psychological behavior are complementary.
Wang et al. (2021) [19]	Chinese Journal of Clinical Psychology	Clinical Psychology	16 to 22	280 F, 196 M	476	Looking-glass self	There is a significant positive correlation between social media body talk and body dissatisfaction for both genders.
Ke & Song (2021) [20]	News and Writing	New media	/	/	/	Looking-glass self, Hyperpersonal interaction, Costly-signaling	The emergence of virtual reality is weakening and disintegrating the realistic foundation of traditional social interaction.
Cai et al. (2021) [21]	Studies of Psychology and Behavior	Psychology	19.94±1.05	78 F, 72 M	150	Objectification, Sexual selection	(a) Mating motives may affect the psychological mechanism of female body objectification. (b) Sexual selection shapes the evolution of female body objectification.

It is worth mentioning that one Chinese study took sexual orientation into consideration [21]. Gender dysphoria is usually considered as having somewhat similar symptoms as body dysmorphia, and it is usually found in transgender and homosexual groups [22]. Thus, to illustrate such study was carried within heterosexual groups could rule out other possibilities that might resemble body dysmorphia. However, all of the Chinese empirical studies took college students as participants, with the same age span and the same country background across studies.

#### 3.1.4. Overview of Theories

The most frequently visited theory in the English articles was Higgins' self-discrepancy theory and Zahavi's costly signaling theory, followed by Berger's objectification theory, Cooley's looking-glass self theory. Likewise, in Chinese research articles, the most frequently found theory was the looking-glass self, followed by costly-signaling theory.

Costly signaling theory proposes that animals (including humans) may send signals about desirable and attracting personal characteristics, where they would also demonstrate access to resources through costly biological displays, altruism, or other behaviors. All those behaviors mentioned above would be hard to fake [23]. Thus, through dressing up fancy, or using costly cosmetics, or building up body shape, individuals send out signals that are highly costly, showing off their resources and special mate value. Social media has definitely become a platform for such behaviors to occur. The more they strive to display, the more chances they have to likely be disappointed by not receiving the expected outcome.

### 3.2. Key Findings

Ever since the outbreak of the pandemic in 2019, social media usage has significantly increased by 61% [24]. This serves as an extremely enormous spike in an already-growing trend, appealing for the need to reflect on its mental health impacts.

Through this review, main findings can be concluded into two categories:

(a) Social media has generated clear perception of appearance;

All 19 studies above have drawn the conclusion that there can be a link (maybe a positive correlation) between social media use and body image. This result suggests that discussing physical appearance in social media can almost for sure lead to body dissatisfaction, or even body dysmorphia, which was considered mentally ill. In the very recent five years, social media has become an important way for people to communicate and, at the same time, has provided a new platform for users to engage in body talk.

(b) Social media is deepening body dysmorphia by shaping aesthetic standards.

With unlimited access to social platform, ergo, the infinite content from online, the way we use social media today can have profound effects. Moreover, because people can edit their photos, the images people see on social media need not even reflect the reality of how the person looks.

## 4. Discussions and Limitations

### 4.1. Discussions

#### 4.1.1. The Relationship between Social Media and Body Dysmorphia

Social media is positively correlated with body dysmorphic disorder, and social media has an impact on all dimensions of body dysmorphic disorder, including males and females. From the research findings, it was revealed that there is a direct correlation between social media and body dysmorphic disorder. According to Pila et al., through signaling theory, humans signal value and status to others



[3]. Therefore, through social media, people can signal value and status to others. Through social media buttons such as like, dislike, ugly, lovely and so on, social media users can send a signal of value and status to others. By the time an individual is posting their image, they already have a perception of whom they are and how they look like. Ye et al. find that some people find it hard to regulate emotions created through signaling leading to social media addiction, but also indirectly affect college students' cognition through negative physical self and social avoidance and distress. For instance, if others send a positive signal, the user may become addicted to social media [12].

#### **4.1.2. How do Social Media Constitute Body Dysmorphic Disorder**

By self-discrepancy theory, an individual may develop dissatisfaction with their body if their actual body does not align with their ideal body [9]. Therefore, where an individual receives negative responses through signaling by others about their images on social media platforms, it is likely that they will develop a body dysmorphic disorder. Through operant conditioning, an individual who has received a positive signal will become addicted to social media since they have trained their mind to expect a positive reward.

The theory of the looking glass reveals the link between the use of social media and body dysmorphic disorder. According to looking glass theory, people view themselves by how they think others view them [5]. Simply, humans imagine how other people see them and that imagination gives them the image of how they look. According to Shome et al., social anxiety, feeling of decrease in confidence, feeling of decrease in physical attractiveness and the desire to undergo cosmetic surgery is all for purposes of shaping the image of themselves they imagine to have [5].

According to Cordes et al., social comparison increases the chances of developing Body Dysmorphic Disorder [4]. The author argues that the more social exposure to one's body, the more negative effects. According to Chen et al., social comparison creates social anxiety and when one receives a rejection, they are likely to run into body dysmorphic disorder [15]. It is impossible for one to be a social media user without interaction with other people. Although it is not a comparison contest, people will always borrow some ideas from other people's images and in apply them in future. For instance, a man who exposes their body will likely be compared with an ideal image of a masculine man. Such comparison may reveal discrepancies compared with the ideal image that one may want to have thus leading to body dysmorphic disorder.

And based on Wang et al., the problem cuts across both genders, however, there seems to be a variation in some aspects [19]. Shome et al. revealed that the problem of seeking self-verification was higher in females [5]. As revealed through the looking glass theory, humans seek approval of their imagined image from others. Therefore, people will join social media to seek self-verification. The finding by Shome et al. points out that women are likely to be victims of body dysmorphic disorder as compared to their male counterparts [5]. Ji & Li argue that social media objectifies women by stating that the construction and presentation of female images reflect the deep-rooted traditional gender order [13].

#### **4.1.3. Possible Solutions and Treatments for Body Dysmorphic Disorder**

Social media has made body dysmorphic disorder a deeply rooted problem in contemporary society, and although treatment is challenging, the condition can be alleviated and cured. However, the treatments are chosen by most people suffering from body dysmorphic disorder often make the condition worse [25]. Studies have shown that most patients will undergo expensive cosmetic surgery to fix their perceived cosmetic flaws rather than seek appropriate treatment [26].

Treatment of body dysmorphic disorder is often treated with cognitive-behavioral therapy combined with medications. Cognitive-behavioral therapy (CBT) is the most effective talk therapy

for patients with relatively mild symptoms. The therapy incorporates biological, psychological, and sociocultural factors in the development and maintenance of this disease [27]. The focus of this therapy is to help patients understand the long-term effects of negative thoughts on health issues and learn more flexible ways of thinking to improve the patient's mental health. By changing the patient's cognition and behavior, the patient's thinking about the defect will be corrected, thus reducing compulsive behaviors like constantly looking in the mirror, etc. [27].

In addition to cognitive-behavioral therapy, patients with moderate to severe symptoms may be advised to take an antidepressant called selective serotonin reuptake inhibitors (SSRIs) [28]. Although the U.S. Food and Drug Administration (FDA) has not approved a specific drug to treat body dysmorphic disorder disorders, SSRIs appear to be more effective than other antidepressants and may help control negative thoughts and repetitive behaviors [25]. Usually, patients with body dysmorphic disorder can use a combination of talk therapy and medication to reduce symptoms and can enjoy life again.

#### 4.2. Limitations

Of course, this overview is not unlimited, as not all forms of representation are covered. Fashion and beauty magazines, for example, are known for their use of Photoshopped models, lack of diversity and omission of characters of all types on their covers. However, it is an undeniable fact that modern social media has increased the severity of obscenity. More research is still needed, like longitudinal studies that track the exposure to media of individuals, in order to more fully understand this relationship. Our study focuses on Western and Chinese groups and does not provide a more inclusive and detailed analytical description of body image issues experienced by different cultural groups. Cultural groups and the cultural environments in which people live may also be helpful in distinguishing patterns of body image that might otherwise be a confounding factor in reasoning conclusions. Cross-cultural qualitative research and diversely measured comparative data that could reveal the depth of body image issues are still required. We also failed to find studies that have explored biological sex as a moderator of the social media effect in recent years. Data on the association between sexual minority status (i.e., homosexual, lesbian, bisexual, and transgender) were also missing.

The definition of social media is also not carefully delineated in this review. In the review, the terms social media and social networking service (SNS) are often used interchangeably, but they are not really the same. Social media encompasses a wide range of social applications, referring to online production, sharing, and collaboration [29]. In contrast, the main research focus of this review is on the social networking services that have the greatest impact on body dysmorphic disorder, a particular type of social media that has developed in recent years. Future work should include literature on different social networking services platforms, such as Facebook and Instagram, for studies that specify the definition of social media. These data were not included in the review because there has been little specific research in this area. The conclusions drawn may be influenced by a vague and generic definition of the media platform.

#### 5. Conclusion

In conclusion, this paper focused on how social networking sites modify aesthetics that evolved for the world of the past into today's unhealthy aesthetics of thinness and paleness. To explore this question, to find causes that have been identified and potential solutions, this literature review is mainly based on the research trend in the recent years in China and the Western, English-speaking countries. To achieve the purpose, it collects data source consist of two parts: English research articles that were searched using search terms such as body dysmorphia, body dissatisfaction, negative

physical self, body image disorder, ideal thin and social media, with Web of Science as the database; another part was made up of Chinese research articles searched by relatively similar terms, with CNKI (China National Knowledge Infrastructure) as the database. The study has revealed that the usage of social media is positively correlated with the cause of body dysmorphic disorder. While the study acknowledges that social media users do not post their images for attention, such posts are meant to seek approval from others about an image they have imagined about themselves. When their perception of how they imagine they look does align with the perception of others, it will give room for body dysmorphic disorder to develop.

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