Body Dysmorphia in the Age of the Internet

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Abstract

Social media is becoming increasingly popular among younger generations, and the mental health effects of its usage are widely unknown. Usage of social media may be linked to an increased rate of body dysmorphic disorder (BDD) symptoms among users, and may pose harm to user's body perception, based on prior research establishing correlations between social media usage and body image, satisfaction and surveillance. It is important to study this potential correlation due to the nature of BDD, as those affected typically have distorted perceptions of their own physical appearance (both facial and body features), which is often the focus of social media websites. Previous research has yet to establish a correlation between social media usage and BDD specifically. Social media usage, in the context of this study, refers to participants' engagement with Instagram, due to its popular photo-sharing features. Data has been collected through the use of a survey solicited to university students via SONA. The survey consists of three scales, the Body Dysmorphic Disorder Questionnaire (BDDQ) developed by Dr. Phillips (2009) was used to measure participants' rate of BDD symptoms.The Instagram Intensity Scale (Ellison, 2007) and the Passive and Active Use Measure (PAUM) (Trifiro, 2018) were used to measure participants' activity on Instagram. The data derived from the survey was coded and analyzed in SPSS. Findings indicate positive correlations between participants' BDDQ scores and their scores on both the Instagram Intensity Scale and the PAUM. The age of participants was a significant factor in the scores on both the Instagram activity measures, as well as the BDDQ. Gender was also a significant factor in both of the Instagram activity measures, but was not a significant predictor of BDDQ scores.

Keywords: Instagram, social media, body dysmorphia

Introduction

Body Dysmorphia has become a term often used casually among adolescents and young adults to describe feeling insecure or upset about their appearance. It is not uncommon to see the term floating around on social media websites, often in the form of self-deprecating humor. However, body dysmorphic disorder can deeply affect individuals in ways that go beyond insecurity. Body dysmorphic disorder (BDD) is a diagnosable disorder of self-perception that can be found under the category of obsessive-compulsive disorders in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5). Those who are diagnosed with BDD perceive flaws in themselves that may be minor or nonexistent from the perspective of others. Those affected may become obsessed with perceived flaws, often going to great lengths to hide or change them (American Psychological Association, 2013). Because BDD is categorized as an obsessive-compulsive disorder, individuals who experience the disorder may exhibit compulsive behaviors in an attempt to change the way they look, including potentially dangerous habits such as obsessive exercise or dieting.

It is estimated that 0.7%-2.4% of individuals suffer from BDD, but it is believed to be underreported. A study conducted by Dr. Neelam Vashi (2016) presents BDD as a potentially debilitating disorder, rather than a minor psychological phenomenon that it is often believed to be. Because symptoms of BDD revolve around a person's perception of their physical features, it is likely that photo-sharing features on social media websites and applications (often placing focus on physical features) would impact these symptoms.

When a person experiences BDD, triggers are often involved in the manifestation of symptoms. A trigger would most likely include a representation or reference to physical appearances, and this could be a variety of things, such as a photo or video. When exposed to a trigger, a person with BDD may experience various negative thoughts, feelings or behaviors relating to their appearance (Vashi, 2016). For this reason, the abundance of appearance-related content on Instagram could act as a trigger for individuals who experience symptoms of BDD. While not all social media posts

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focus on physical appearances, Instagram in particular is widely known for the sharing of "selfies" (photos of oneself) among users. To some who may experience BDD, this kind of content may elicit anxiety and insecurity about their own appearance.

Although Instagram usage may refer to numerous activities that users are able to perform when engaging with the app, the present study will focus on activities that specifically involve photo-sharing features of Instagram. Previous research has examined the effects of social media usage on the body image of young adult women (ages 18-29), and while this particular study observed participants' usage of Facebook, the findings may apply to Instagram usage as well. The researchers found that the total time that participants spent on Facebook was not related to body image scores, but the engagement with appearance related content (photos) on Facebook was correlated positively with thin-ideal internalization (the internal acceptance of thin body types as ideal), and body surveillance (Cohen, Newton-John and Slater, 2017). Because the content that individuals consume online often focuses on "ideal" physical appearances (primarily focusing on body types, shapes and sizes), they may begin to internalize these ideal appearances and consequently impact the way they view their own body. Engagement with social media will not inherently cause changes in body perception factors among users. The implementation of photo-based content and photo-sharing features that focus on individuals' physical appearances are the aspects of social media usage that seem to be associated with body perception. The viewing and sharing of photo-based content is the primary focus of the current research study when measuring Instagram activity.

As stated, those with BDD may demonstrate various behaviors in an attempt to alter their appearance due to negative feelings about how they look. Such behaviors may even be done in an effort to lose or gain weight. One research study assessed the use of Instagram among female university students, as well as appearance-related comparison to detect whether they are correlated with drive for thinness and body dissatisfaction. An Instagram photo activity index was used to determine how often participants are exposed to "ideal" images of others and it was determined that the amount to which participants engaged in photo-based activities on Instagram was a significant predictor of participants' scores on measures for drive for thinness and body dissatisfaction, with appearance-related comparison as a mediating variable (Hendrickse, Arpan, Clayton and Ridgway, 2017). Drive for thinness is directly related to an individual's desire to become thinner, and is often experienced by individuals with BDD. As previously discussed, BDD involves individuals' perception of flaws in their body, and these perceived flaws likely stem from feelings of dissatisfaction with one's body.

The findings of Hendrickse et al. (2017) suggest that Instagram can have a potentially harmful effect on young adults, particularly women, in regard to their body satisfaction levels and their tendency to compare themselves socially. The body perception factors analyzed in this study are commonly involved in the manifestation of BDD symptoms, and similar correlations may be found when looking at Instagram usage and its potential relationship with the rate of BDD symptoms among users. The findings of Hendrickse et al. are very similar to another research study in which 273 college students participated in an online survey that contained questions about their use of Instagram, appearance self-schema (beliefs about one's appearance), self-discrepancy (the discrepancy between a person's internalized standards of their self-representation, and their outer presentation of the self), body satisfaction (the degree to which one feels positively about their body), and self-esteem (an individual's sense of value or worth). Results showed that Instagram usage indeed infringes on young adults' body satisfaction scores. It was also determined that appearance self-schema can lead to higher appearance self-discrepancy, meaning that young adults who pay more attention to their appearance will seek out content that contains information about ideal appearances (Ahadzadeh, Sharif and Ong, 2017). Therefore, on a website such as Instagram, users may seek out images of other people that they deem "ideal" in terms of physical appearance. This consumption of "ideal" appearance content may then fuel body surveillance tendencies, and again, trigger compulsive behaviors that attempt to change one's appearance.

Factors such as body shame and body surveillance are directly related to body image, depending on the status of a person's body image. The use of social media and the level of body surveillance and body shame that may occur as a result have been observed in a previous study. The researchers correctly predicted that the link between self-objectified behavior on social media (such as posting photos of oneself) and body shame was dependent on the level to which participants monitored their own body (body surveillance) (Salomon and Brown, 2018). Individuals who are more likely to monitor their own bodies (aligning with criteria for BDD according to the DSM-5) may be more likely to be affected by the appearance-related content that they view on sites such as Instagram, perhaps triggering a higher level of body surveillance and body shame.

Usage of social media often varies depending on the age and gender of users. Prior research has shown that women tend to prefer Instagram over other social media apps compared to men, who prefer Facebook or Twitter. Younger individuals, even in samples with a

limited age range (18-25), continue to use Instagram at higher rates than other social media platforms (Shane-Simpson, Manago, Gaggi, and Gillespie-Lynch, 2018). As for the current study, I hypothesized that participants in the youngest age category (between 18-22 years old) would use Instagram at the highest rates as compared to those in the other age categories. Because I anticipated higher rates of Instagram activity among participants between the ages of 18-22, I also predicted that they would experience BDD symptoms at higher rates. As for female participants, I hypothesized that they would report BDD symptoms at higher rates than male participants. As a general prediction, I anticipated that data would demonstrate connections between higher rates of Instagram usage among all participants and higher rates of BDD symptoms reported on the BDDQ.

Usage of social media may be linked to an increased rate of BDD symptoms among users, and may pose potential harm to users' body perception, based on prior research indicating correlations between social media usage and body image, satisfaction and surveillance. The focus of the current study is to discover whether social media usage is connected to the level at which users experience symptoms of BDD. The aforementioned research collectively demonstrates strong evidence that body image factors and social media usage are correlated. The current study aims to explore the topic further by analyzing Instagram activity, specifically the use of photo-sharing features, in order to determine whether similar trends appear when observing BDD symptoms as a factor.

Methods

Participants. Data was collected from a total of 100 university students, with a majority of participants identifying as female (90%) and the remainder of participants identifying as male (10%). Participants were required to be 18 years old or older in order to participate in the study. When reporting their age, approximately half of participants indicated that they fell between the ages of 18-22 (51%), while the remainder of participants were between the ages of 23-27 (24%) or were 28 years old or older (25%). The majority of participants specified their ethnicity as Latino or Hispanic (57%), while Caucasian was the second most reported ethnicity (23%). The remaining 20% of participants included Asian individuals (7%), African American individuals (3%), Native Hawaiian or Pacific Islanders (1%), individuals with two or more ethnicities (5%), other ethnicities not listed (2%), and individuals who preferred not to report their ethnicity (2%). The majority of participants reported that they were in their junior year (49%) or senior year (33%) of college, while only a small percentage of participants indicated that they were in their freshman (7%) or sophomore year (8%), or studying at the graduate level (3%). Participation in this study was voluntary, and participants were offered extra credit that they could apply to one of their courses if permitted by the instructor.

Measures. The protocols for this study were derived from previously standardized scales that have been used in prior research studies. The three scales were combined into one survey, along with a series of demographic questions. A scale to measure body dysmorphic disorder (BDD) known as the Body Dysmorphic Disorder Questionnaire (BDDQ), created by Dr. Katherine Phillips (2009), was used to measure the level of BDD symptoms that a participant experiences. The BDDQ was chosen as the measure for BDD due to its inclusion of open-ended questions that will allow for participant responses to reflect the wide range of symptoms and how they manifest in each person. The BDDQ has been utilized in clinical and research settings to determine individuals' symptoms of BDD, and it has been a successful tool in this regard.

Two scales were used to determine the level and frequency at which participants engage with various activities on Instagram that involve photo-sharing. Instagram was determined to be the most appropriate social media website to focus on for this study due to its emphasis on photo-sharing and, more specifically, an emphasis on sharing photos of one's body and/or facial features. The two scales that were used to measure Instagram activity were The Instagram Intensity Scale (Ellison, 2007) as adapted by Trifiro (2018), and the Passive and Active Use Measure (PAUM) (Trifiro, 2018). The Instagram Intensity Scale focuses on the "intensity" to which participants engage with activities on Instagram (e.g., it is or is not a part of their daily routine) as well as frequency (i.e., hours per day spent on Instagram). The PAUM was used to measure how often participants perform specific activities on Instagram (e.g., posting photos of themselves, viewing photos, etc.) and whether these activities are being performed actively or passively. The PAUM was a key part of the survey because it allowed for more detailed information regarding participants' Instagram usage; thus, the results not only reflect whether or not participants use Instagram, but how they use it as well. These two scales were chosen as the measures for Instagram activity due to the straight-forward presentation of the questions, and the ability to code each item into numerical values from which total scores were calculated.

Procedures. The BDDQ, the Instagram Intensity scale, the PAUM and the demographic questions were compiled into a survey using *Qualtrics*. These measures were reviewed and approved by the Psychology IRB at CSU Stanislaus, and the survey was uploaded onto SONA, the university's research pool for psychology.

Participants were presented with an informed consent form prior to taking the survey, acknowledging that some questions on the survey may be upsetting as they deal with body image. Participants had the option to stop their participation at any point throughout the survey. Upon completion of the survey, participants were provided with a debriefing form explaining details about the study as well as contact information if they required a further explanation.

The BDDQ began with two questions that served as a screening. Participants' responses to the initial questions determined whether or not they were going to complete the rest of the BDDQ. The initial questions asked participants' about their general perceptions of their bodies and if participants answered "no" on either question (indicating that they are satisfied with their appearance), they were not asked any further questions on the BDDQ and they were finished with that portion of the survey. The remaining items on the BDDQ involved more specific questions about participants' body perception, including open-ended questions. The BDDQ was used as suggested by the creator of the scale, Dr. Philips.

Data Analysis. SPSS, a common software program used for psychological data analysis, was used to analyze data in this study. The data was uploaded from *Qualtrics* to SPSS, and the responses to each item on the survey were coded into numerical values (e.g., male = 2, female = 1) to allow statistical analyses in SPSS.

Scores for each of the three measures used, the BDDQ, the Instagram Intensity Scale and the PAUM, were coded into numerical values within SPSS. The BDDQ was coded based on the "yes or no" responses to each item ("yes" = 1, "no" = 0) with a total possible score of 8. The Instagram Intensity Scale included 7 items that were scored based on a Likert response scale (strongly agree = 5, agree = 4, neither agree nor disagree = 3, disagree = 2, strongly disagree = 1) with a total possible score of 35. The PAUM measure included 10 items that were also scored based on a Likert response scale (very frequently = 5, somewhat frequently = 4, sometimes = 3, rarely = 2, never = 1) with a total possible score of 50.

Bivariate correlation analyses using Pearson's *r* were used to measure the relationship between scores on the BDDQ and the Intensity scale, as well as the BDDQ and the PAUM. Simple linear regression analyses were used to measure the relationships between age and each of the three survey measures, as well as gender and each of the three survey measures. All statistical analyses were done using an alpha level of .05, and the *p*-value must be lower than the alpha level in order for the statistical test to be considered significant.

Qualitative data was derived from open-ended questions featured on the BDDQ, and they were coded and summarized into common themes.

Results

Using Pearson's correlation coefficient, it was found that a positive correlation exists between participants' scores on the BDDQ and their scores on the Intensity scale ($r(98) = .21$, $p = .04$). A positive correlation was also found between BDDQ scores and scores on the PAUM ($r(98) = .23$, $p = .02$).

A simple linear regression was used to determine whether scores on the BDDQ could be predicted based on participants' age. A significant linear regression equation was identified ($F(1,98) = 4.435$, $p = .04$) with an R^2 of .043. Participants' predicted BDDQ score is equal to 3.660 - .701 points when age is categorized into three groups (18-22, 23-27, 28 and older). Participants' scores on the BDDQ decreased by .701 for each increasing age group. A simple linear regression was also used to determine whether BDDQ scores could be predicted based on gender. No significance was found through regression analysis ($F(1,98) = 1.520$, $p = .22$) with an R^2 of .015.

Simple linear regressions were also used to determine whether scores on the PAUM could be predicted based on the age of participants. A significant linear regression was found ($F(1,98) = 13.166$, $p < .001$) with an R^2 of .118. Participants' predicted PAUM score is equal to 36.603 - 3.847 points when age is categorized into three groups (18-22, 23-27, 28 and older). Scores on the PAUM decreased by 3.847 points for each increasing age group. When looking at gender as a predictor for PAUM scores, a significant regression was also found ($F(1,98) = 10.051$, $p = .002$) with an R^2 of .093. Predicted PAUM scores for participants are equal to 40.311 - 9.456 points when gender is coded as "female = 1, male = 2". Scores of male participants were 9.456 points less on average when compared to female participants.

Age of participants was also found to be a significant predictor of scores on the Instagram Intensity scale using linear regression analyses ($F(1,98) = 5.719$, $p = .02$) with an R^2 of .055. Predicted scores on the Intensity scale were equal to 20.087 - 1.739 points when age is divided into three groups. Scores on the Intensity measure decrease by 1.739 points as the age group of participants increase. A similar finding was identified when examining gender as a predicting variable of Intensity scores ($F(1,98) = 6.954$, $p = .01$) with an R^2 of .066. Participants' predicted scores on the Instagram Intensity scale was equivalent to 22.878 - 5.289 points when gender is coded as "female = 1, male = 2". Scores for male participants were 5.289 points less on average than female participants.

Qualitative data was also derived from open-ended questions on the BDDQ. The two initial questions on the BDDQ were used to screen participants, and those who answered "yes" to both questions moved on to complete

the rest of the BDDQ. Of the participants that completed the BDDQ (n = 40), 38 participants reported body areas of concern. Some body parts were combined and categorized into general body areas. The most frequently reported areas were the "stomach" and/or "waist", and the "face" and/or specific facial features (e.g., nose, eyes, lips, etc.), both areas reported a total of 21 times each. The next most frequently reported areas were the "legs" and/or "thighs" (reported 11 times) and the "arms" (reported 8 times). Less commonly reported body parts included the "butt" (reported 5 times), "breasts" or "chest" (reported 3 times), "skin" (reported 3 times), and "hair" (reported twice). Areas that were only reported one time each included the "hips", "back", "neck" and "feet". Two participants indicated that they were concerned with their weight or "weight distribution", and one participant answered "most" when asked about areas of concern.

Participants were also asked questions on the BDDQ about social activities that they avoid, problems they may have at work or school, as well as various other activities that they struggle with due to appearance-related insecurity. Answers varied as participants were able to respond however they chose to, however, several themes appeared to be prominent across all responses and they were as follows: problems with or avoidance of social activities, avoidance of attention from others, and avoidance of wearing certain clothing.

One common theme among participants' responses to the open-ended items on the BDDQ involved experiencing problems with social activities or avoiding them altogether. When asked how the way they feel about their appearance has affected their social life, many participants reported that they avoid dating, hanging out or "going out" with friends and social situations in which eating or food are involved. Participants also reported that they have often isolated themselves or canceled plans due to appearance-related insecurity.

Another prominent theme among BDDQ responses centered on participants' avoidance of attention from others, whether it be at work, school, public settings or on social media. Participants' reported that they avoid going to the gym out of fear of negative attention, act "shy" or "less outgoing" at work or school, and avoid taking and posting photos or "selfies".

Participants commonly reported that they avoid certain clothing due to their feelings about their body. Many participants reported to avoid wearing bathing suits or "bikinis", short pants, tank tops, "tight" clothing, and dresses. One participant also reported that they avoid going out in public without first applying makeup.

Discussion

As predicted, a positive correlation between the BDDQ and Instagram Intensity scale, as well as between the BDDQ and the PAUM, indicates that participants' rate of Instagram activity is associated with the level at which they experience BDD symptoms. Specifically, as a participant's Instagram activity increases, so does their chance of experiencing symptoms of BDD, and vice versa. A positive correlation between Instagram activity and BDD symptoms does not indicate causality, therefore, these variables may be related for a number of reasons. It is possible that those who are more engaged with Instagram will experience BDD-like symptoms at higher rates as a result, or that those who are prone to body insecurity will seek out appearance-related content. However, based on this correlational data alone, a cause and effect relationship cannot be determined.

Age was found to be a significant factor in scores on all three measures. As predicted, younger participants reported using Instagram at higher rates. Younger participants also reported higher levels of BDD symptoms on the BDDQ. Gender was also found to be a significant factor in scores on both of the Instagram activity measures, however, it was not a significant predictor of participants' scores on the BDDQ as I had hypothesized. Although female participants reported Instagram activity at higher rates than male participants, due to a lack of male responses (n = 10) it is not likely that this statistic is representative of the gender differences between Instagram users.

Participants that completed the entire BDDQ provided important information regarding the impact that one's negative self-perception can have on their functioning. Participants shared the obstacles that they face in their daily lives as a result of their dissatisfaction with their appearance, including difficulties they face in school, work and their social activities. Within the diagnostic criteria in the DSM-5, it is noted that BDD symptoms often include the avoidance of social situations or environments (American Psychological Association, 2013). An individual may feel that they are receiving unwanted attention from others in such situations, and this may create problems with their ability to function in the social aspects of their daily life. While a number of prior research studies have already established connections between body perception factors and the use of Instagram, the correlations found in this study between BDD symptoms and Instagram usage suggests that engagement with Instagram is not only associated with a negative body perception, but also with potentially serious obstacles that individuals may face because of their body perception.

Limitations

The lack of male participants was the primary limitation in this study as it did not allow for meaningful comparisons to be done on the basis of gender. Men may use social media differently than women but this cannot be properly examined using only the data from this study. Participants consisted of only university students and thus, these results focus mainly on younger groups. Because significant correlations were observed between age and Instagram activity and between age and BDDQ scores, it is likely that responses from older age groups not included in this research would vary from the sample studied here. Also, university students may differ from other populations in unique ways, and thus the results may not be applicable to some groups.

Future Research

Higher scores on the BDDQ were associated with higher scores on the Instagram activity measures, and although this data does not provide evidence of Instagram usage causing higher rates of BDD symptoms, a significant correlation suggests that further research may be necessary to determine if causality exists between these variables. Future research may consider an experimental study, in which confounding variables can be controlled, to discover whether Instagram usage influences a person's level of BDD symptoms, or perhaps that individuals who experience BDD symptoms seek out appearance-related content on Instagram.

Conclusion

While participants who scored higher on the BDDQ also reported higher rates of Instagram usage, many participants indicated on the BDDQ that they avoid posting photos of themselves on social media, which suggests that not all types of Instagram activity may be associated with higher levels of BDD symptoms. This finding aligns with previous research specifying that general usage of social media is not necessarily associated with users' perceptions of their bodies but certain aspects of its usage, such as exposure to appearance-related content (i.e., photos of other people), is associated with negative body perception and higher rates of body surveillance (Cohen, Newton-John and Slater, 2017). The intention of this study is not to suggest that social media usage should be avoided, but that individuals should be mindful in their usage, as the issue lies mainly within specific content on social media websites.

The association between Instagram activity and BDD, as well as other body perception factors observed in prior research, demonstrates that the usage of social media is connected in some ways to the state of users' mental health. As social media continues to grow more popular among adolescents and young adults in particular, it is important to assess the possible consequences of its usage. As we find out more about how it is associated with our mental wellbeing, it is necessary that users of social media websites are aware of safe practices. Safe social media usage may include taking breaks from social media websites or filtering the content that one views as to avoid upsetting or triggering images.

Social media has become a useful tool used by individuals to keep in touch with friends and family, stay connected and informed about current events, seek entertainment, as well as for various other purposes. It is my hope that the findings of this study will help open up significant discussion about the usage of social media websites among young adults and adolescents, due to their prominence in the current social culture and individual social environments.

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