

The Impact of Social Media on Body Dissatisfaction and Dysmorphia in Adolescents in the U.S.

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Abstract

The mental health burden of social media on adolescent development has become a subject of interest in recent years. Adolescents in particular use social media to portray idealized versions of themselves and their appearance. Consequently, this has led to increased concern that social media use in adolescents may be linked to body dissatisfaction and body dysmorphia. The aim of this paper is to examine the correlation between social media use in adolescents and presentation of body dissatisfaction and/or dysmorphia. A critical literature synthesis was performed on the current compendium demonstrating links between social media use and body dysmorphia in adolescents in the U.S. Evidence suggests that there is a positive correlation between adolescent social media use and increased prevalence of body dissatisfaction/dysmorphia. The public health significance of this paper is to highlight this important trend in order to educate and protect young individuals in regard to the risks of social media, as well as improve their mental health and wellbeing. This essay also aims to inform interventions that reduce the incidence of mental health disorders or illnesses that may result from the negative effects of social media on adolescents. Interventions that target social-media use including screen time limits, and positive parental involvement may reduce the negative body-image related effects of social media. Understanding the connection between social media use and body dysmorphia will help inform longitudinal studies and additional interventions to improve mental health outcomes in this vulnerable population.

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1.0 Background

This purpose of this essay is to explore the impact that social media has on adolescents in regard to their perceived body-image. The research question is: what is the impact of social media on body dysmorphia and dissatisfaction in adolescents. To answer this research question a review of the literature was conducted via a critical literature synthesis. Background information on social media and body dysmorphia in general was researched to get an understanding of literature on the subject. The public health significance of this study falls in line with improving the mental health and wellbeing of adults and their communities as well as educating and protecting young individuals on the risks of social media. This essay also aims to reduce incidence of mental health problems or illnesses that may result from social media use in adolescents.

1.1 The History of Social Media

Social media has changed the landscape of human interaction and the way people perceive themselves over the last two decades. Social media are defined as interactive technologies and digital mediums (websites and applications) that allow users to create or share content to express themselves, exchange information, and/or participate in social networking communities (Dollarhide, 2021). Over 4.5 out of the 7.9 billion people around the world use social media (Dean, 2021). In 2019, the Pew Research Center reported that around 72% of adults in the U.S. use some kind of social media (The Evolution of Social Media, 2019). In addition, the American Academy of Child and Adolescent Psychiatry (AACAP) estimates that nearly 90% of adolescents ages 13-

17 use social media (AACAP, 2018). Social media was popularized in the early 2000s with the release of Myspace and later Facebook (Ortiz-Ospina, 2019). Soon came sites like Twitter, Tumblr, Pinterest, YouTube, LinkedIn, Instagram, Snapchat, and recently – TikTok. The largest networks today are Facebook, Instagram, Twitter, YouTube, and TikTok (Dollarhide, 2021).

Social media has been used as a way to interact with family, friends, and people around the world. Many positives have resulted from the interconnectedness it has fostered, as social media has changed the way information is accessed, how political change is organized, and even how individuals find partners (Yeung, 2018). Many studies, including Yeung's (2018) are limited in that they do not have defined populations. Instead they speak of social media broadly and have no way of ensuring validity that social media data reflect real-world outcomes. However, some literature does describes both positive and negative effects of social media on wellbeing. A nationally representative study of social media and social well-being conducted by Bekalu et al (2019) found routine use of social media to be associated with positive health outcomes such as improved social well-being, positive mental health, and positive self-rated health in adults ages 18 and older. However, emotional connection to social media was found to be associated with negative health outcomes including decreased social well-being, lower rating mental health, and poor self-rated health. Additionally, the positive social well-being-based findings decreased as age decreased. Perception of social acceptance on social media was found to be significantly lower among younger age groups as compared with older ones (60+ years). A study by Xu and Tan (2012) explained the line between normal and problematic social media use, the latter of which typically happens when the user almost exclusively uses social media to relieve stress, loneliness, or depression.

1.2 Effects of Social Media on Mental Health Outcomes

The rest of the Backgrounds section will provide an overview of previously existing literature on social media as well as its link to mental health and mental health outcomes, including body dysmorphia and dissatisfaction, which will be the focus of the Results, which will specifically address this in adolescents. A systematic review of social media and its connection to mental health found that social media are “responsible for aggravating mental health problems” (Karim et al., 2020). The study continued in saying that social media platforms can have “detrimental effects” on the psychological wellbeing of users, even if the extent to which these effects are quantifiably unknown to the public. This study also cited potential causal factors between social media use and diagnosis with anxiety or depression (Karim et al., 2020). For example, passive social media activity such as reading online posts or interacting with pre-existing content had a strong association with depression. In addition, frequency of social media use exacerbated symptoms of depression (Karim et al., 2020).

The American Academy of Child and Adolescent Psychiatry (AACAP) estimates that out of the almost 90% of adolescents aged 13-17 who use social media, two-thirds of them have personal mobile devices with internet capabilities, on which they spend approximately nine hours daily (AACAP, 2018). The AACAP cites potential risks of social media for adolescents as: “exposure to harmful or inappropriate content, cyber-bullying on social media-based interfaces, oversharing personal information, exposure to excessive advertisements, privacy concerns including data collection on teenagers, identity theft, and interference with daily functioning” (Social Media and Teens, 2018).

Social media has recently been associated with mental health diagnoses ranging from anxiety and depression to body dysmorphic disorder (AACAP, 2018). Recent literature has

emerged linking social media use with these negative mental health outcomes most prominently in adolescents. The North Carolina Medical Journal estimates that one in five adolescents suffers from a diagnosable mental health disorder, the most common of which include anxiety, mood, attention, and behavior disorders, as well as suicidality. In fact, suicide is the second leading cause of death in young people aged 15-24 years old. The incidence of these mental health concerns has increased dramatically among adolescents from 2007 to 2017, the time in which social media use became widespread (Nesi, 2020). This correlation is what motivated researchers to begin investigating social media use and its influence on adverse mental health in teens (Nesi, 2020).

The study by Nesi 2020 describes how the socio-affective circuitry of the teen brain is affected by social media, yielding unique effects on these adolescents. In particular, teens have an increased sensitivity to social information, which can increase the drive for social rewards and peer approval. Psychologist Erik Erikson, in his theoretical model of psychosocial development, describes the importance of adolescence in determining identity, which is primarily accomplished through social relationships (Cherry, 2021). During this stage of development, Erikson says that adolescents that are able to successfully deal with interpersonal conflict emerge with psychological strengths that help them build a strong sense of self (Cherry, 2021).

In recent years, social media has served as the medium for social relationships for many teens and adolescents as it publicly displays information in which peers can provide instant feedback via “likes” or “views.” Nesi (2020) cites that this type of peer interaction plays a large role in the onset and development of psychopathologies, especially in adolescence, as teens use social media to compare their accomplishments, abilities, or appearances. Social-media related pathologies such as cyberbullying have been consistently associated with higher rates of self-harm and suicidal behavior in adolescents, in addition to an internalizing and externalizing mental health

problems (AACAP, 2018). Other behaviors such as conflict and drama on social media put young individuals at risk for self-harm, anxiety, and depression (Nesi, 2020).

Recently, social media has been connected to eating disorder-related triggers and behaviors. A study conducted by Imperatori et al. (2021) found a link between social media and eating disturbances, arbitrated by muscle dysmorphia related symptoms in young adults. This study tested the hypothesis that exposure to thin or fit ideals on social media would “increase feelings of body dissatisfaction which, can represent triggers for eating disorders” (Imperatori et al., 2021). A sample of 721 young adults ranging from 18 to 34 years old was involved in this study where individuals self-reported symptoms related to social media use/addiction and eating disorders. Direct and indirect effects of social media were analyzed by using a mediational model, which ultimately concluded that the two symptoms (social media use in an addictive way and eating disorder presence) were significantly associated ($p = 0.021$). Another study conducted by Rodgers et al. (2019) confirmed media consumption to be a risk factor for eating disorders, with emerging literature highlighting the relationship between social media specifically and risk of eating disorder development.

1.3 Body Dysmorphia and Dissatisfaction

Body dysmorphia is a disorder that, like eating disorders, could similarly arise from social media use and overuse. Teens in particular are susceptible to these types of disorders because of their developmental stage, in which they have heightened sensitivity to social information for identity formation and are often dissatisfied and uncomfortable in their bodies as they go through adolescence (Erikson, 1950). Newport Academy (2020) cites adolescence as a risk factor for body

dysmorphia development and body dissatisfaction because teens in general are more consumed by their appearances as they change quite rapidly through adolescence (Teenage Body Dysmorphic Disorder, 2020). Body dysmorphia goes beyond self-consciousness about appearances to become a preoccupation and form of Obsessive-Compulsive-Disorder (OCD). Those with body dysmorphia tend to fixate on certain body parts specifically, while teens may just be more generally dissatisfied with their appearance with no particular fixation. Those with body dysmorphia are often convinced that this fixated body part is so overpowering and overwhelming that it is the only thing that people see when they view them. To compensate, body-dysmorphic individuals may spend hours “getting ready” in attempt to alleviate their obsession (Teenage Body Dysmorphic Disorder, 2020).

Body dysmorphic disorder (BDD) is a relatively new mental diagnosis. It was not published in the Diagnostic and Statistical Manual of Mental Disorders (DSM) until 1987, and was not named “Body Dysmorphic Disorder” until 1997 in the fourth-edition publication of the DSM (The History of BDD, 2013). Its etiology and pathophysiological factors remain unclear, however its symptoms are well documented (Feusner et al., 2010). The DSM-5 diagnostic criteria for BDD include: appearance preoccupations, repetitive behaviors, clinical significance (causing severe social impairment), differentiation from an eating disorder, and specifiers such as muscle dysmorphia or a particular insight/fixation that a person has (DSM-5, 2013).

BDD often begins around age 12 or 13, and approximately 70% of those with BDD experience onset of the disorder before age 18 (Feusner et al., 2010). Body dysmorphic disorder in teens has been closely linked with suicide (Teenage Body Dysmorphic Disorder, 2020). In fact, a study of 200 individuals with BDD in the Journal of Clinical Psychiatry found that 78% had

contemplated suicide and 27.5% had attempted suicide (Teenage Body Dysmorphic Disorder, 2020). While body dysmorphia typically begins in adolescence, it can onset at any stage of life.

An analysis on body dysmorphic symptoms by Marques et al. (2011) investigated racial differences in BDD across ethnic groups. The study found no significant differences in body dysmorphic-related behaviors in Latino and African American participants as compared to Caucasians. However, there were significant differences in BDD symptoms and concerns between Asians and Caucasians. Asians had fewer body-shape concerns as compared to Caucasians, but had a higher level of concern surrounding dark hair and dark skin tone (Marques et al., 2011). Boroughs et al. (2010) confirmed that Caucasians maintained more symptoms of BDD when studying racial differences in BDD, yet found that Latinas were also highly affected as compared to African Americans (Boroughs, et al., 2010). Body dysmorphia affects both males and females, however females appear to have dysmorphic symptoms at higher rates, occupying about 60% of BDD diagnoses (Himanshu et al., 2020). Although BDD affects both sexes, it presents differently in those identifying as female versus male. Females are typically more concerned with facial hair, fat, complexion, and height, while males typically fixate on muscular build (sometimes called muscle dysmorphia), height, acne, weight, and hair thinning (Himanshu et al., 2020).

In summary, a body of evidence exists that links social media to certain negative mental health outcomes, most concerning of which in regards to this essay is body dysmorphic disorder and its major related symptom of body dissatisfaction. While body dysmorphia requires a clinical diagnosis, body dissatisfaction does not, but is still a primary influence of BDD. Since these disorders seem to pervade adolescents, it would be helpful to more closely examine the impact of social media specifically on body dysmorphia among adolescents. The purpose of this review is to

examine how social media use among adolescents impacts the prevalence and severity of body dissatisfaction and body dysmorphia.

2.0 Methods

This review will examine how social media impacts the severity and prevalence of both body dissatisfaction and body dysmorphia in adolescents. To assess this, a critical literature synthesis was conducted. The provider/interface *Ovid* was used to identify relevant original research articles. The comprehensive search engine database used was Medline. The database was searched by Helena M. VonVille and Grace Haddad, with limiting criteria including that the studies published had to be in English, and had to be published within the past 16 years (the time in which social media became widespread). A filter limiting the results to U.S. studies only was applied. In total, 146 unique items were found and compiled.

An excel workbook designed for single-person critical literature reviews (VonVille, 2022) was used to determine the study selection for analysis in the results section. This workbook was used to store all search strategies and results, as well as data related to the title/abstract screening and full text review. A unique numerical identifier, the title, and the abstract of all items were then added to the excel workbook with a list of exclusionary criteria. A single reason for exclusion from abstract review was selected for each article that was excluded. Items left were then used for review in Results.

Exclusionary criteria were as follows: was not a study related to social media, did not study adolescents exclusively, was an intervention or clinical trial, was not original research (review, conference proceeding, etc.), was not a study conducted in the U.S., was not a study related to body dysmorphia or dissatisfaction, was not available in full text, and other (see table 2 below for the distribution of excluded studies). For clarification purposes, adolescence was defined as the ages between 10 and 19 years old, as explicated by the *World Health Organization* (WHO, 2022).

Social media was defined by *Investopedia* (2021) as interactive technologies including websites and applications that allow users to create or share content to participate in social networking. Body dissatisfaction was defined by the *American Psychological Association* (2018) as a negative attitude toward one's mental or physical representation of their appearance. Body dysmorphic disorder (BDD) was defined by the *Mayo Clinic* (2021) as a mental illness (diagnosed by criteria stated in DSM-5) that involves obsessive concentration on one's own perceived flaw in appearance. For the purposes of this essay, social media includes the specific platforms of: Twitter, Tumblr, Pinterest, YouTube, Instagram, Facebook, LinkedIn, Snapchat, TikTok, and/or Myspace.

Table 1. Search Terms/Query

Search Query
Social Media/
((social adj1 media) or facebook or instagram or snapchat or tiktok).ti,ab,kf.
1 or 2
body image/ or body dissatisfaction/
Body Dysmorphic Disorders/
(body adj3 (dissatisf* or dysmorph* or image)).ti,ab,kf.
4 or 5 or 6
3 and 7
Adolescent Behavior/ or Adolescent/ or Adolescent Health/ or Adolescent Develo
(adolescen* or teen*).ti,ab,kf.
9 or 10
8 and 11
limit 12 to yr="2006 - 2022"
central america/ or exp europe/ or exp south america/) not (north america/ or
limit 14 to english language

This table depicts the search query that was entered into the Ovid web search engine to obtain the information/relevant studies necessary to perform a comprehensive literature synthesis of the research question.

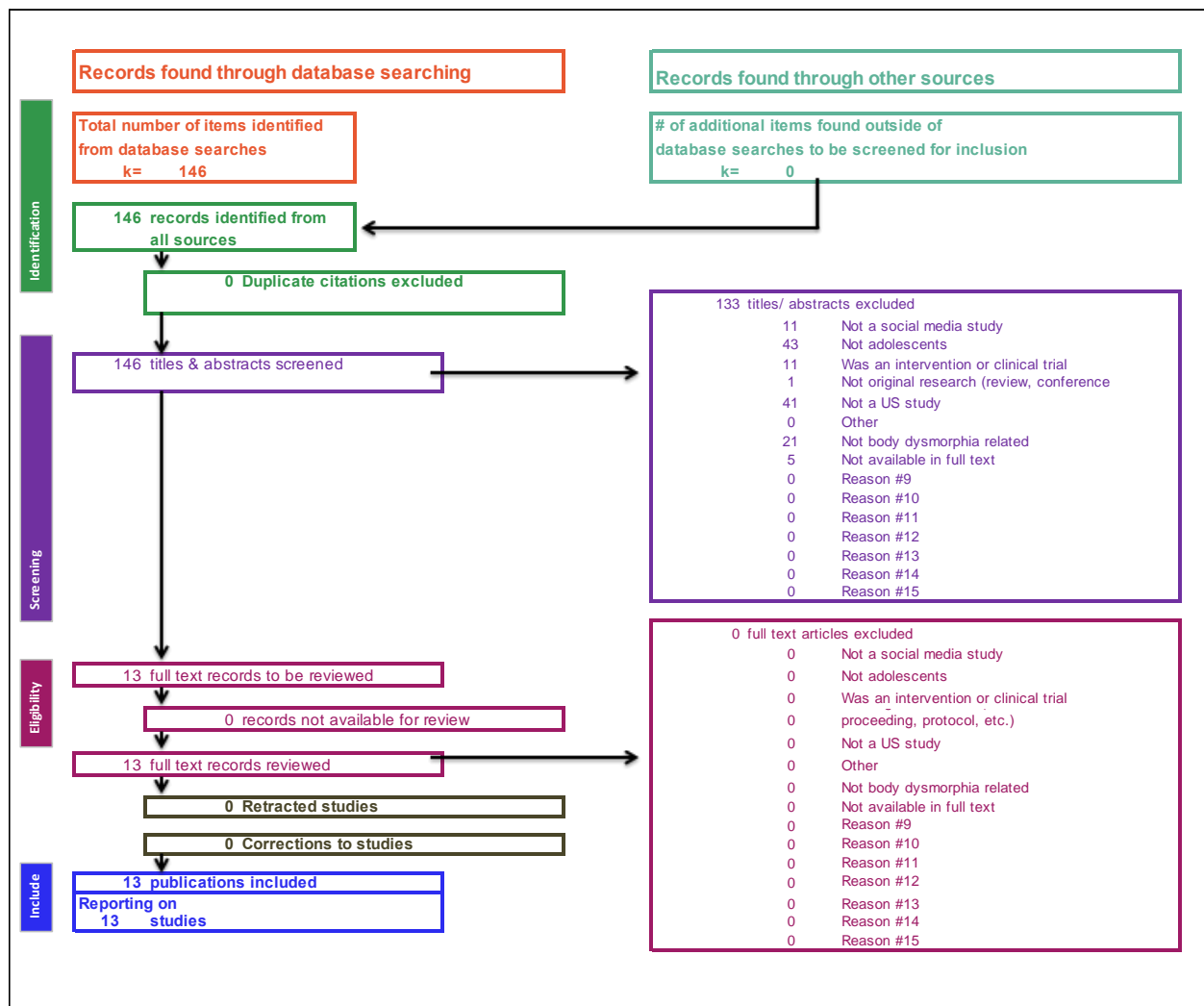


Figure 1. PRISMA modeled flowchart

This flowchart is a visual summary of the screening process used to identify relevant articles to include for review in the Results section of this essay. This flowchart transparently shows the exclusion criteria reported, and the decisions made at various stages of systematic review.

3.0 Results

3.1 Summary of Findings

Out of the 146 studies searched in Ovid, only 13 articles were relevant and reviewed for the results of this paper. The results section of this essay synthesizes the findings of 13 total studies (9 correlational, 2 cross-sectional, 1 descriptive, and 1 longitudinal study) related to body dysmorphia and/or body dissatisfaction, as it presents in adolescents. The findings are organized accordingly:

Table 2. Summary of Findings

Author, year	Title	Study Design	Population (N)	Age Range (years)	Other Demographic Information	Key Results
Roberts et al. (2022)	Incorporating Social Media and Muscular Ideal Internalization into the Tripartite Influence Model of Body Image: Towards a Modern Understanding of Adolescent Girls' Body Dissatisfaction	Correlational	543	13-18 Mean: 15.58	49.17% Hispanic, 28.18% White 8.66% Black 7.55% Asian 6.45% multiracial or other All female	Social media is a source of appearance-based pressure to look thin/fit for adolescent females, which was associated with body ideal internalization and body comparison that lead to lower self-esteem (p=0.04).
Himanshu et al. (2020)	Rising Dysmorphia among Adolescents: a Cause for Concern	Cross-Sectional	186	16-18 Mean: 16.81	52.13% females 47.84% males	Social media was described as a factor that led to decreased self-esteem regarding body image, the extent of which was not quantified.

						Females generally had higher rates of bodily dissatisfaction.
Charmaraman et al. (2021)	Early Adolescent Social Media-Related Body Dissatisfaction: Associations with Depressive Symptoms, Social Anxiety, Peers, and Celebrities	Cross-Sectional	700	11-14	48% White 14% Black 16% Asian 11% Hispanic 4% Biracial 7% Other 52% female 48% male	Adolescents who checked their social media more frequently had greater feelings of body dissatisfaction (p=0.026), higher rates of depressive symptoms, greater online anxiety, and greater difficulty with offline friendships.
Choukas-Bradley et al. (2020)	The Appearance-Related Social Media Consciousness Scale: Development and Validation	Correlational	Study 1: 1227 Study 2: 226	Study 1: 14-19 Mean: 15.72 Study 2: 15-17	Study 1: 47% Caucasian 36% Hispanic 8.4% Asian	Adolescents who used social media had greater appearance-related body consciousness (measured using ASMC

	with Adolescents			Mean: 16.25	6% Black 2.4% Mixed race 51.8% female 48.2% male Study 2: 45.6% Caucasian 24.3% Black 25.2% Hispanic 4.9% Other 58.4% female 39.8% male	scale), higher rates of body dissatisfaction, and greater reporting of depressive symptoms ($p<0.001$).
Aubrey et al. (2020)	Appearance Framing versus Health Framing of Health Advice: Assessing the Effects of. YouTube	Correlational	154	14-17 Mean: 15.67	64.9% White 13% Black 9.7% Hispanic 7.1% Asian	Younger adolescents were more susceptible to appearance-based anxiety and greater physical self-

	Channel for Adolescent Girls				5.2% Other All female	objectification when exposed to videos with appearance-framed health advice (p<0.01).
Cavazos-Rehg et al. (2019)	"I Just want to be Skinny." A Content Analysis of Tweets Expressing Eating Disorder Symptoms	Retrospective Correlational	Random sample of tweets 3,000/29,000 tweets	≤19	90% female	2584/3000 tweets were body image or eating disorder related. 90% of these statements were made by females, 77% of which were adolescents. Statements ranged from preoccupation with body shape, calories, and body weight.
Shah et al. (2019)	New Age Technology and Social Media: Adolescent Psychosocial Implications and the Need	Review	---	No age range specified	---	Social media platforms (Facebook, Instagram, Snapchat) enable social acceptance or rejection that

	for Protective Measures					can negatively affect the body image, self-esteem, and satisfaction of adolescents.
Rohrich & Cho (2018)	When is Teenage Plastic Surgery versus Cosmetic Surgery Okay? Reality versus Hype: A Systematic Review	Correlational Systematic Review	229,551 cosmetic procedures in 2019	13-19	---	Social media is an underlying factor that contributes to adolescents seeking cosmetic plastic surgery due to body dissatisfaction from increased appearance-related feedback and pressures online, as well as comparisons to celebrities and other unrealistic body standards.
Burnette et al. (2017)	"I Don't Need People to Tell me I'm Pretty	Correlational	38	12-14	86.1% White 13.9% Black	Individuals in each of the six focus groups

	on Social Media.” A Qualitative Study of Social Media and Body Image in Early Adolescent Girls			Mean: 13.14	5.6% Hispanic 2.8% Asian All female	admitted to engaging in some form of conscious appearance-based comparison, even though it was socially undesirable. Most adolescents visited social media sites multiple times per day, with average time spend on the Internet being upwards of 3 hours per day.
Opara & Santos (2019)	A Conceptual Framework Exploring Social Media, Eating Disorders, and Body Dissatisfaction Among Latina Adolescents	Correlational	---	No age range specified	All Hispanic All female	Increased social media engagement was linked to higher rates of dysfunctional eating patterns and body-image related concerns, however the ethnic identity

						of Latinas served as a protective factor against low body dissatisfaction and disordered eating because of their overall acceptance of larger body shapes.
McLean et al. (2019)	How Do “Selfies” Impact Adolescents’ Well-Being and Body Confidence? A Narrative Review	Narrative Review (Correlational)	---	14-19	---	Exposure to social media based selfies negatively affects the mood and body confidence of adolescents, especially in those with tendencies of comparison.
Meier & Gray (2014)	Facebook Photo Activity Associated with Body Image Disturbance in Adolescent Girls	Correlational	103	12-18 Mean: 15.4	84.5% White All female	Appearance-related Facebook exposure was positively correlated with negative self-objectification.

						Facebook users had higher incidence of body image disturbance as compared to non-Facebook users (p=0.026).
Ferguson et al. (2013)	Concurrent and Prospective Analyses of Peer, Television, and Social Media Influences on Body Dissatisfaction, Eating Disorder Symptoms, and Life Satisfaction in Adolescent Girls	Longitudinal	237	10-17 Mean: 14.11	94.1% Hispanic 2.5% Caucasian 3.4% Other All female	Social media did not predict body dissatisfaction among adolescent females.

Table 3. Exclusion Criteria Distribution

Exclusion Reasons	Total # for each reason
Not a social media study	11
Not adolescents	43
Was an intervention or clinical trial	11
Not original research (review or conference proceeding)	1
Not a US study	41
Not body dysmorphia related	21
Not available in full text	5

This table depicts the number of studies (out of 146) that fell under each exclusionary measure (133 total excluded).

3.2 Descriptive Results of Findings

A study by Roberts et al. (2022) examined social media's contribution to adolescent girls' body dissatisfaction by recruiting 543 adolescent girls (ages 13-18) from a large, suburban high school in Florida to take online surveys. In these surveys, the participants answered a range of questions on a scale of "definitely disagree" (1) to "definitely agree" (5). Higher scores were correlated with higher appearance-based pressures based on the context of the questions. The study described social media as a modern source of appearance-based pressure that adolescent girls fall victim to when striving for "thin" or "fit" body-types. Of the three influences examined in this study (family, peers, and media), social media was the only source of pressure that was associated with appearance-based self-esteem via thin/fit body ideal internalization and body

comparison. Social media was found to be an important source of appearance socialization with adolescence being a sensitive time for body image development, as many girls begin to develop bodily dissatisfaction. Roberts et al. (2020) continued that media generally promoted “thinness” as a measure of attractiveness (in Western societies), but recently muscularity has also become a desired body ideal in tandem with being thin – adding even more pressure. Greater social media pressure in the context of this study was significantly associated with high body comparison, thin ideal internalization, and muscular ideal internalization. Greater ideal internalization and body comparison was then significantly associated with lower self-esteem ($p = 0.04$). Ultimately, the study highlighted how crucial it is to consider social media-based appearance pressures when looking at the etiology of body dissatisfaction among adolescent girls. There were several limitations to this study. The authors describe the use of cross-sectional data as a limitation because it can only account for a certain proportion of the variance in the relationship between appearance pressure from social media and appearance-based esteem, especially since it is self-surveyed data. The authors stated that longitudinal data is necessary to create a causal model describing the relationship between social media and body dissatisfaction. Lastly, the author disclosed that the study was designed to measure a Eurocentric beauty ideal (thinness), and not necessarily other appearance ideals that could be culturally relevant to the populations studied (Roberts et al., 2020).

Himanshu et al. (2020) conducted a qualitative cross-sectional study examining social media and the contributing factors that lead to increased dysmorphia and body dissatisfaction among adolescents (ages 16-18). This took place in a premedical preparation class where 186 students (both male and female) verbally consented to take an anonymous question-based survey. It was found that females have higher rates of body dissatisfaction as compared to males. Increasing social media influence was described as a factor that led to decreased self-esteem

regarding body image. The physical features that most frequently concerned males in the study were muscularity, height, acne, hair thinning, and weight. The bodily features that concerned females the most were fatness (weight), facial hair, complexion, and height. The authors disclosed that BDD is difficult diagnosis to make, since many clinicians are unaware of the nature of the disease. They listed this as a limitation of the study because more individuals may unknowingly have BDD than are diagnosed with it. In addition, the study is subject to self-reporting bias as all the survey data was self-reported (Himanshu et al., 2020).

Charmaraman et al. (2021) examined the socializing effects of networked media on body self-consciousness in adolescents (ages 11-14). This survey study of 700 middle school students in urban and suburban areas of the Northeast United States was divided into two subsamples of 374 individuals and 396 individuals. One group took a 40-minute survey and the other group was divided into focus groups that were interviewed on the phone. This study aimed to answer the question of what proportion of adolescents in the study experienced body dissatisfaction after using social media, and the type of dissatisfaction they felt. In addition, the study examined whether following celebrity accounts on social media affected socioemotional health. The percentage of study participants who felt dissatisfied with their bodies after viewing social media sites was 19%. A higher percentage of females reported feelings of body dissatisfaction, as compared to males. The most common reasons females felt dissatisfied after viewing social media were: “not being thin enough (64%), not being attractive enough (63%), and disliking their body shape (59%).” The most common reasons males cited feeling of body dissatisfaction after viewing social media were: “disliking their body shape (73%), not being thin enough (55%), not being attractive enough (46%), or disliking facial features or hair (46%).” The predominant sources of social media mediated feelings of dissatisfaction came from celebrity photographs (54%), a

friend's photograph (53%), or a photograph of someone anonymous (37%). Fewer than 11% of adolescents had feelings of insecurity that stemmed from a comment someone made about them on social media. Charmaraman et al. (2021) found that adolescents who checked their social media more frequently had greater feelings of body dissatisfaction ($p=0.024$). Finally, adolescents who already had low self-esteem surrounding their body image were more likely to engage with social-media based platforms, report higher rates of depressive symptoms, have online social anxiety, and have difficulty with offline friendships as compared to those adolescents who use social media less. All results of this study were statistically significant (≤ 0.026). The authors disclosed the sample size of those who reported social-media-related body dissatisfaction as a limitation, in addition to the data being cross-sectional. They suggested a longitudinal study to understand the relationship between social media and body image among adolescents more clearly.

Choukas-Bradley et al. (2020) performed a study that examined appearance-related social media consciousness (ASMC) using focus groups and subsequent surveys. The age of the adolescent participants ranged from 14-19 years old. The surveys asked questions with answers following a 7-point Likert Scale (1=Never, 2=Almost Never, 3=Rarely, 4=Sometimes, 5=Often, 6=Almost Always, 7=Always). Participants responded and results were examined using an ASMC Scale (tested for reliability and validity) that was developed in the context of the study to determine body dissatisfaction among adolescents. Higher ASMC scores correlated with higher rates of depressive symptoms and disordered eating symptoms, even when factors such as race/ethnicity, gender, and time spent on social media were controlled. Females had higher rates of body dissatisfaction scores compared to males ($p<0.001$). In addition, adolescents who used social media had greater tendencies to think about their level of attractiveness as perceived on social media, even during their offline activity. The authors identified several limitations of the study.

First, they stated that without longitudinal or experimental data, the link between any mental health concerns and social media cannot be said to be causal. Second, all measures within the study were self-reported, which lends itself to self-reporting bias and subjectivity. Lastly, this study did not differentiate between time spent on social media and time spent on photo-based social media specifically, which could have affected results (Choukas-Bradley et al., 2020).

Aubrey et al. (2020) examined the effects of a YouTube channel on how adolescent girls aged 14-17 perceived their bodies by showing them videos and then conducting a 5-point survey analysis. In the YouTube videos, appearance-framed health advice was given. Younger adolescent girls had higher susceptibility and sensitivity to the appearance-framed health advice in these videos ($p < 0.01$). The study cited that this could have been because younger adolescents are likely still experiencing pubertal changes in their bodies and are more sensitive to appearance-based advice. Participants in the study were also asked to perform a self-objectification, in which they described themselves in 20 statements that start with "I am" using a word bank provided that included 40 adjectives (20 that were appearance-based and 20 that were personality-based). The number of appearance-related statements were measured and recorded. Younger adolescents tended to choose more statements that were appearance-based and had higher rates of appearance-related anxiety as measured by the survey questions, after viewing videos with appearance-enhancing product preferences. The authors concluded that watching social media-based videos related to health led to an increase in appearance-based dissatisfaction and negative self-objectification. The authors addressed the ambiguity of the causal order between appearance-anxiety and social media to be a limitation of this experiment, and an area for further study. They also stated that participants were recruited via a convenience sample, which could limit the generalizability of the results to other populations. For further direction, the authors recommend

replicating the study in a controlled laboratory experiment to help eliminate other sources of confounding that may have occurred (Aubrey et al., 2020).

Cavazos-Rehg et al. (2019) performed a content analysis of tweets, mostly from adolescent females, that expressed eating disorder related symptoms. They used 28,642 tweets containing eating disorder or body image related keywords preliminarily, and randomly sampled 3,000 of them. Out of the 3,000 tweets that were sampled, 2,584 were determined to be eating disorder or body-image related based upon content analysis. The categorical contents of these tweets included preoccupation with body-shape (65%), issues related to food/eating/calories (13%), stressing the importance of body weight (4%). Most tweets were determined to be sent by females (90%), 77% of whom were adolescents that were 19 years of age or less. While this study did not effectively examine behavioral intent, it did effectively show body-image related concerns on social media that were voiced primarily by adolescent females. The study further found that concerns in regards to body shape were often key symptoms or features of eating disorders, with preoccupations ranging from “thinness” to “thigh gaps.” The study demonstrated that social media was often used by adolescents to voice their body-image related concerns, in particular adolescents that expressed bodily dissatisfaction and/or concerns that promoted disordered eating behaviors. The authors identified one of the biggest limitations of the study to be the list of keywords used and that they may not have been comprehensive of all body-image related terms. Another limitation was that they only were able to use publicly available tweets for the study. It is possible that private tweets may have generated different content. Lastly, it is impossible to determine the actual degree of body-image dissatisfaction from social media tweets alone (Cavos-Rehg et al., 2019).

A review published by Shah et al., (2019) describes the psychosocial implications of social media (Facebook, Instagram, and Snapchat) use on outcomes of adolescents related to body image,

socialization, and development. The authors note that that social media platforms enable social acceptance and rejection among peers virtually, which negatively affects body image, self-esteem, and body satisfaction of adolescents. In addition, the paper mentioned how exposure to unregulated pornographic content on social media has caused more adolescents to internalize unrealistic body-image ideals and engage in riskier (sexual) activities. In addition, cyber-bullying (some of which was body-image related) was exacerbated by social media, as it has amplified traditional bullying by eliminating safe spaces for victims, since bullying continued online. While there was no particular group that was surveyed in this paper, it did broadly inform on some of the risks social media presents to adolescents, especially in the regards to body-image related concerns. The descriptive nature of this review could be identified as a limitation since there was no identified sample that was recruited or measured for the purposes of these results. This lack of original data could be seen as a limitation in review (Shah et al., 2019).

A study by Rohrich and Cho (2018) investigated the factors that could have led to the increase in cosmetic-based plastic surgery procedures among adolescents in the decade leading up to 2016. They report that this generation of adolescents has greater exposure to appearance-related peer feedback due to social media use in comparison to previous generations that did not have social media. Rohrich and Cho (2018) state that social media lends itself to increased comparison of adolescents' bodies to those of others, including celebrities. The American Society of Plastic Surgeons database, which was referenced in the study, found that 229,551 cosmetic procedures in 2016 were performed on adolescents. The procedures ranged from: rhinoplasty (31,255 patients), breast augmentation (8076 patients), and breast reduction in men (7099 patients). This adds up to 4% of the surgical procedures that were performed in the U.S. in that year, with the number of surgeries rapidly increasing from 2006 to 2016. This analysis described social media to be an

underlying factor in the increase in plastic surgery among adolescents because social media allows individuals to receive and post external feedback about their body image so easily. In addition, social media allows adolescents to follow celebrities and compare themselves to unrealistic body-image based standards. Limitations of this study include that the data only accounted for procedures that were performed in the U.S., which could mean that the number of plastic surgeries among adolescents could be higher. Additionally, the authors identified the exclusion of nonsurgical procedures (such as Botox) to be a limitation that needs to be taken into account upon further study (Rohrich & Cho, 2018).

The study by Burnette & Mazzeo (2017) looked at the empirical basis of which social media contributed to body dissatisfaction in female adolescents using six focus groups that included 38 girls aged 12-14. Participants were recruited from the seventh and eighth grades at a private all-girls school in Virginia. The study was interested in promoting social media literacy and self-confidence in addition to measuring body-image related views of adolescents via questionnaires. The survey asked questions regarding social media used, devices used, time spent on the internet, sites visited, online activities engaged in, and the frequency in which they are engaged. Out of the 38 participants, 35 had internet access at home. The average number of hours spent using the internet per day was 3.25 hours, with 33% of the sample reporting internet use greater than 3 hours per day. Of all the participants, only 8.4% said that they visited social media sites less than daily, while 27.8% reported visiting social media sites daily, and 52.8% said they visited social media sites multiple times per day. Additionally, image-based social media such as Snapchat and Instagram were far more popular than text-based sites like Twitter. In the focus groups, over half of the participants denied taking selfies themselves, and stated that their peers took significantly more selfies in comparison. When social comparisons were brought up in focus

group discussions, participants in each of the six groups said they engaged in some degree of appearance-based comparisons. However, it was noted that social comparisons were generally “socially undesirable,” so participants in the study may have been hesitant to report consciously engaging in said comparative behaviors. The authors identified the focus-group nature of the study to be a potential limitation because they often lack external validity because the sample is small and homogenized. Additionally, since these focus groups were conducted in a public manner, privately held opinions and viewpoints may not have been expressed by everyone, especially those hesitant to share. The last limitation the authors identified was that the study was qualitative in nature. Quantitative measures would be necessary for greater generalizability to other populations (Burnette & Mazzeo, 2017).

Opara and Santos (2019) conducted a study on adolescent Latinas, exploring how social media relates to body dissatisfaction in this group. Strengths-based and culturally specific approaches were used to assess this. These approaches included strengthening ethnic identity in Latinas, and pointing out the cultural differences, norms, and body ideals between Latinas and the U.S. dominant society. The study found that individuals with negative feedback on their social media pages were more likely to have dysfunctional eating patterns and body-image related concerns. Furthermore, during adolescence, negative attitudes about one’s own body image were linked with lower overall self-esteem stemming from social media. Body dissatisfaction was described as a risk factor for low self-esteem, which can lead to eating disorders and sometimes even depressive symptoms. However, it was noted that the ethnic identity of Latinas serves as a protective factor against eating disorders and low body dissatisfaction because of their ethnic-group acceptance of larger body shapes. A limitation of the study was that it was primarily

qualitative in nature. Surveys were not used in this study, and the methodology of how results were obtained was not disclosed. (Opara & Santos, 2019).

McLean et al., (2019) performed a study on adolescents aged 14-19 with the intention of analyzing how “selfies” impact the body confidence of adolescents. This experimental research found that viewing Instagram feeds had negative effects on well-being and body confidence. Mid-adolescent males and females experienced adverse effects on their positive and negative affect when compared to teen models of the same gender. Higher overall negative affect was found after viewing images on social media-based networks due to selfie-comparison. Altogether, these qualitative findings demonstrate that exposure to social media negatively affects mood and body confidence in adolescents. The effects were even more pronounced in individuals with greater tendencies to compare their appearance to that of others. Impacts on other aspects of well-being are unknown and in need of further study. The authors cite that there is gap in the literature regarding the impact of social media on children before they reach adolescence, given that access to mobile devices is not just limited to adolescents. The authors also state that most studies, theirs included, provide a limited understanding of the directionality of the relationship between social media and its mental health impacts on adolescents, suggesting that longitudinal designs are necessary for further study (McLean et al., 2019).

Meier and Gray (2014) conducted a survey of 103 adolescent females ages 12-18. These participants were recruited from a public middle school and high school in the State of New York. They examined the link between body image disturbance and Facebook photo activity by surveying all 103 participants. Based on the results of the survey, an “appearance exposure score” was calculated, which took into account the participants’ use of Facebook’s photo applications and overall use/time spent exposed to Facebook. The results linking overall time spent on Facebook

were not significantly correlated with weight dissatisfaction, even when controlling for body-image variables and BMI. Independent-tests were then used to assess body image concerns between Facebook users and non-Facebook users overall. The results of these t-tests did show significant differences between Facebook and non-Facebook users in relationship to body-image disturbances ($p=0.026$), suggesting that Facebook users had higher rates of negative self-objectification compared to their non-Facebook-using counterparts. Meier and Gray (2014) noted this study was correlational, and they found a bidirectional relationship between adolescents that had “thin” body ideals/body dissatisfaction and heavy use of Facebook’s photo-related features. Online activity involving frequent exposure to appearance-related activity further reinforces, and in some cases, exacerbates body dissatisfaction and overall body-image concerns of adolescents. The study concluded that appearance-related (photographic) Facebook exposure was positively correlated with self-objectification. The authors disclose several limitations of this study. First, this study was based on a convenience sample of volunteers, which limits generalizability to populations. Secondly, the study was correlational in design. The authors stated that longitudinal or experimental study designs would be necessary to draw inferences of causation. Third, all data was self-reported, which is subject to recall bias and potentially social desirability bias. Lastly, the sample was limited to adolescent females based on their heightened vulnerability. Thus, future areas of exploration could include studying both sexes for results that are more encompassing (Meier & Gray, 2014).

The last study that will be discussed in this paper is that of Ferguson et al. (2013). This study examined social media influences on body dissatisfaction in adolescent girls aged 10-17 years old who were mostly Hispanic. Out of the 237 participants, 101 were reassessed six months later in survey follow-up. Recruitment methods were not described in the study, however the

methodology of the study was based on survey data that each participant self-reported. This survey information included: BMI (calculated from reported height and weight), reported television exposure, and reported social media use. The overall results of the surveys found that social media use did not predict body dissatisfaction among teenage girls. Instead, peer competition, rather than the effects of social media effects, was the most predictive influence of body dissatisfaction. There was however, a small concurrent correlation between life satisfaction and social media use. In the follow-up survey, social media was found to contribute to peer competition, but it did not predict body dissatisfaction directly. The authors identify limitations of their study. They state that the data is correlational in nature, which means it cannot be used to make causal inferences. Additionally, they identified small sample size as a limitation that could have reduced the power of their results. Lastly, the outcomes did not include clinically validated diagnoses; instead they simply relied on self-reported information that could be prone to error on a variety of fronts (Ferguson et al., 2013).

4.0 Discussion

The overall results show that adolescents who use social media have an increased odds of body dissatisfaction, a predisposition that could lead to development of body dysmorphic disorder. Social media use among adolescents in many cases was found to be positively correlated with symptoms not only of body dissatisfaction, but also of low self-esteem, depressive symptoms, anxiety, disordered eating, greater difficulties with offline friendships, and desire for cosmetic plastic surgery (Roberts et al., 2022; Charmaraman et al., 2020; Rohrich & Cho, 2019). There were three studies that did not directly link social media use to body dissatisfaction. Opara & Santos (2019) found Latina ethnic identity to be a protective factor against social-media-related body dissatisfaction due to increased cultural acceptance of larger body shapes. Meier & Gray (2014) found that negative body image only occurred in people accessing the photo-based aspects of social media (Facebook, in this case). Lastly, Ferguson et al. (2013) did not find a statistically significant link between social media and body dissatisfaction in adolescent females at all. The general body of literature that was examined came to the consensus that social media use was associated with lower body satisfaction among adolescents, and can even go so far as to affect their overall self-esteem. This is especially true in females, and with image-based social medias such as Instagram, Snapchat, and the photographic features of Facebook.

In light of this review of the body of literature describing the impacts of social media on adolescent body image, interventions ought to be put in place to protect adolescent from the negative self-image based effects of social media. Roberts et al. (2022) found that interventions that identified the superficiality of social media-based images have been demonstrated to protect adolescent females from being negatively affected by exposure to thin body ideals. Charmaraman

et al. (2021) underscore the importance and the need for interventions that target problematic social media usage among adolescents by suggesting programs that promote better social media literacy among youth. This could be done through online-based interventions that have messages that target those in need of it. Burnette et al. (2017) cited social media literacy as a potential intervention that the study was already gathering preliminary data for in order to reduce risk factors for body dissatisfaction and eating disorder related symptoms. In addition to social-media-literacy-based interventions, screen time limitations on social media applications could be an effective strategy to reduce their negative effects. This can be done by placing limits on the devices themselves, or through parental monitoring/restriction or even parental mediated media literacy instruction. The study by Burnette et al. (2017) cited that female adolescents with nurturing and positive parental influence combined with a supportive school environment had greater preventative factors against body dissatisfaction.

Based on the studies reviewed, there are a few ways that body dissatisfaction among adolescents can be improved. Interventions can be put in place to encourage adolescents to have realistic body expectations and reference points for their age, so they do not compare themselves to unrealistic standards or celebrities on social media. Additionally, limiting social media use via parental controls or even informing adolescents on why they should limit their own media consumption may be a useful way of improving social-media related body dissatisfaction. Lastly, health practitioners can be involved in stressing the importance of health over physical appearance. Health practitioners can describe metrics such as BMI, bloodwork, and physical activity as ways adolescents can keep track of their health, instead of fixating on certain body-image ideals seen online.

There were several limitations to this review in addition to the limitations the authors of each study mentioned (as mentioned in the results). First, most of the studies were non-longitudinal, survey-based studies prone to self-reporting error since they rely on the participants to accurately access their feelings and behaviors. Second, most of the studies were conducted on a small scale, which could have led to bias in the results. Third, database searches were limited to English-only publications, which could have potentially skewed the results by not including non-English language relevant studies. Fourth, only a limited number of databases were searched using Ovid. While the search results were fairly comprehensive, there may have been more studies to include in the review if other databases were also used. Fifth, virtually none of the studies mentioned how African American adolescents were affected by social media in regard to body satisfaction. While they were included in the demographic makeup of some of the studies, racial differences (aside from the Latinx population) went unaddressed, which could present a problem as well as a gap in the literature regarding the effects social media has on the mental health of minority populations. Sixth, the searches were limited to published articles that described completed studies. By excluding conference abstracts and study registries, there may have been relevant recently complete studies that were excluded. Seventh, no authors mentioned in the studies were contacted or requested for additional study details or to verify study data. This essay relied on the vetting process of peer-reviewed articles and publication websites to access high quality studies for review. Eighth, none of the studies included a meta-analysis, which would improve the precision and accuracy of the results as well as increase the statistical power to detect an effect. Lastly, studies were limited to those done in the U.S. No other countries were included, which may have resulted in the exclusion of other high-quality studies. For example, several studies from Australia examined the effects of social media on adolescents, yet were excluded

from this review since they were not U.S.-based. The aim of this exclusion criteria was to homogenize the cultural influence of one country, as not to have varying cultural differences that might have impacted how individuals perceive body satisfaction.

Even with these limitations, this literature synthesis supports the idea that social media is positively correlated with body dissatisfaction among adolescents. Areas for further study include expanding to countries outside of the U.S. In addition, performing longitudinal studies instead of just correlational ones might make for more robust findings. Surveys could be implemented over time as teens progress through adolescence, which would give more datapoints to base conclusions and implications off of. Measuring social media's effect on areas of the brain associated with self-esteem via an EEG to see which pathways are affected by its use might also be an area of further experimental study.

5.0 Conclusion

In conclusion, the overarching results of this literature review demonstrate that adolescents who use social media, such as Twitter, YouTube, Instagram, Facebook, Snapchat, Tiktok, and Myspace, tend to have higher rates of body dissatisfaction and in some cases, predisposition to development of body dysmorphic disorder as compared to adolescent counterparts that do not use social media. In addition, social media use among adolescents is positively linked with low self-esteem, depressive symptoms, anxiety, disordered eating, and greater difficulties with offline friendships in some cases. As social media becomes more widespread among adolescents and even children, it is increasingly important to be aware of the potential negative effects that it can have unintentionally. Based on the literature reviewed in this paper, online social media is having offline consequences for adolescents in regard to negatively affecting their perceived body image, self-esteem, and overall satisfaction with their appearance. This is important because having poor self-esteem can harm mental health and even lead to problems such as depression and anxiety. Poor self-image mediated by social media can also be a symptom of body dysmorphia, it can exacerbate pre-existing BDD, and even lead adolescents to develop disordered eating behaviors. Interventions targeting social-media based literacy, screen time limits, and/or positive parental involvement may reduce the negative body -image-related effects of social media. Positive parental and school involvement may serve as a protective factor against body-image related cyber-bullying and cyber-bullying on social media in general.

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