OXFORD JOURNAL
OF STUDENT
SCHOLARSHIP

Social Media and Adolescent Self-Esteem: A Narrative Review of Social Comparison, Validation-Seeking, and Platform Design

You (Eddy) You
eddyyou2010@gmail.com

ABSTRACT

Social media has become an integral part of the lives of adolescents. Since its release, social media has altered the way people interact with others and access to information. It has also provided more opportunities for people to be recognized by curating their personality on digital platforms. However, social media raised concerns regarding effects on adolescent self-esteem. A literature review is conducted with peer-reviewed journals, existing research and systematic analyses obtained from academic databases to synthesize recurring common aspects that are found to associate with adolescent self-esteem and mental health. The literature then suggests that social media is associated with adolescents' self-esteem not just by time spent online, but also by other factors such as social media platform design, common behaviors like comparison and validation-seeking among adolescents, as well as mental health aspects. These findings indicate that understanding the design of social media and adolescent behavior are essential for investigating adolescent self-esteem and promote better well-being in digital environments.

INTRODUCTION

Social media provides opportunities for self-expression, communication, entertainment, and social support. However, it has also raised concerns regarding its psychological consequences (Boer et al., 2020). Specifically, these concerns are most acute for adolescents who are engaging with social media on a daily basis, often spending several hours online each day (Arana-Rodriguez et al., 2026).

Previous research has examined the ties of addictive and unregulated use of social media to low self-esteem and hazards to online privacy. (Tunc-Aksan & Akbay, 2019; Niu et al., 2024). As adolescents spend an increased amount of time on social media platforms, their exposure to a constant stream of content of idealized lifestyle, perfect body types, and social feedback are associated with negative self-view and are potential signs of poor mental health when experiencing withdrawal, social isolation, and neglect responsibilities (Block, 2008; Weinstein and Lejoyeux, 2010). However, the relationship between social media and self-esteem of adolescents remains complex as there are more other ways that social media may affect one's self-esteem than just time spent online.

This paper examines the effects of social media use, social comparisons, external validation, and peer interactions on self-esteem among adolescents. It further investigates the role of the design of social

media platforms, especially on algorithmic feeds and engagement-driven platform features shaping the relationship between social media use (and misuse) and self-esteem among adolescents.

Background

Before social media in the mid-1980s, an organization called the Advanced Research Projects Agency Network in North America (ARPANET) adopted the Transmission Control Protocol and Internet Protocol (TCP/IP) to build the "network of networks", which is commonly known as the "internet". From 1989 to 1990, British scientist Tim Berners-Lee proposed the "World Wide Web", an informational system in the Internet designed to transmit data in the form of websites and hyperlinks. The World Wide Web can be simply divided into four stages in its developments. Web 1.0 allowed for reading only, while 2.0 between 2000-2010 enabled writing and typing besides reading. Different forms of social media also emerged during that time period of the late Web 2.0 and early Web 3.0 era. In 2003, prominent names like Facebook, Orkut, Dogster first appeared, then came YouTube in 2005, Twitter in 2006, Instagram in 2010, Snapchat in 2011, and TikTok in 2019 (Castro et al., 2022).

For the past two decades, the growth of digital and social media platforms has fundamentally changed how information is spread and how communications are conducted. According to the definitions of McCay-Peet and Quan-Haase (2017), social media is a web-service that allows individuals, communities and organizations to collaborate, connect, interact, and create communities of creating and sharing. In the current times, the different forms of social media that are existing serve different functions. Instagram allows users to use images and photos to express their identity online. Twitter (now X) focuses on spreading ideas and opinions on global issues, making it one of the most popular platforms for quick access to instant news. Other platforms like Snapchat and Facebook enable users to focus on the people they want to follow, creating a sense of community.

METHOD

Literature Review

This study employs the narrative review methodology through exploring the existing research on the relationship of social media and adolescent self-esteem. This review will examine the designs and addictive features of social media platforms, and how they are linked to common adolescent behaviors such as validation-seeking and social comparison. For instance, this relationship will provide a framework to analyze its outcomes for mental health and self-esteem.

Search Strategy

The literature search was conducted from March 2026 to August 2026. Sources were identified through databases and search platforms including Google Scholar and PubMed, obtained through academic journals such as the International Journal of Adolescent Health, Current Psychology, and other institutional libraries. Key words used in the search process are "social media", "social media use",

"adolescents", "algorithms", "self-esteem", "social comparison". The terms were also combined in different ways to identify how they relate to each other.

Review articles, systematic reviews, and meta-analyses were prioritized in the early stages of background research. The methodological quality of studies were assessed on study design, sampling, and strength of consistency on reported evidence. Original empirical research articles were also included when they provided evidence for longitudinal observations of adolescent social media users utilizing clear dependent and independent variables, as well as experimental studies that offer a comparison of a control group and another group under experimental conditions. Sources that are not directly related or do not reference to the scopes of this review are excluded. Preference is also given to publications from 1995 to the present. Studies that focus on older adolescents (ages 15-18) were prioritized, while studies involving young adults (ages 18-22) were also included when their proposed mechanisms were interpreted separately from older adolescents.

Data Synthesis

After 80 unique sources were included in the final narrative synthesis, each source was categorized according to its primary research focus, methodology, and key findings. The topics researched span across aspects of social media platform design, addictive mechanisms, and common adolescent behavior online. Studies reporting the same findings were then compared to identify consistent patterns within existing literature, while studies with differing conclusions were compared to examine possible explanations for inconsistencies. The synthesized themes were organized into broader sections that explain how social media design and online behaviors associate with adolescent self-esteem.

RESULTS

Design of the Addictive Nature of Social Media

From a neuropsychological view of attention and its ties to the designs of social media platforms, Raz (2004) offers a clearer account that attention can be understood through a range of networks that explains the mechanisms of human attention. First, a person must be in an "alerting" state that involves a preparation for perceiving a stimulus. The next is for a person to prioritize sensory information that helps a person to keep their focus on an action they perform. Eventually, a person would be least likely to react to other stimuli when they could sustain concentration for an extended amount of time. Similarly, these mechanisms for attention may help explain how certain features on social media platforms sustain users' attention and engagement online. With the popularization of electronic devices, the digital platforms became increasingly accessible, which potentially means greater exposure to potential sources of information or stimuli.

Social media companies incorporate algorithms for a variety of reasons, primarily to keep the users to be in the loop of constant feeds of information. One of the major mechanisms exemplified by growing numbers of studies is algorithm-driven features. (Costello et al., 2023). These features include limitless

scrolling, social awards (ie. "likes" on posts), notifications, and individualized content feeds based on online activity.

Given these circumstances, it is not surprising that adolescents, at the developing stages of their lives into adulthood, would have a more sensitive mesolimbic system, the part of the brain that is involved in reward and stimuli processing. For instance, Casey et al. (2008) have found that the brain development in adolescents are typically disproportionate, which is known to further exaggerate the susceptibility of the harms of social media to adolescents. The part of the brain that controls emotion and stress, the amygdala, develops faster while that prefrontal cortex, the part of the brain responsible for decision making and reasoning, develops at a slower pace. As a result, the developmental characteristics are proposed to be a possible explanation for adolescents' susceptibility to rewarding social media experiences (Sherman et al., 2016).

Addictive Social Media Use (ASMU) vs. Problematic Social Media Use (PSMU)

Griffiths (2005) has previously determined the six core principles that helps to explain addictive social media use (ASMU): salience (uncontrolled desire to stay on social media for a prolonged amount of time), tolerance (increased time spent on social media to experience feelings of pleasure), mood modification (change of emotions after social media use), relapse (reverting to higher amounts of social media use after failed attempts to control internet usage), withdrawal symptoms (nervousness and discomfort without social media use), and conflicts (interpersonal problems sparked from social media use).

Most have proposed that intense emotional engagement with social media explains ASMU. Kuss and Griffiths (2017) demonstrated that individuals' PSMU, is "arguably a 'pure' form of Internet addiction or subtype of Internet addiction", which suggests that ASMU could have the potential of developing into maladaptive patterns. However, not all forms of frequent social media use would lead to maladaptive use patterns. Another study from Scotland conducted by Woods and Scott (2016) suggested that adolescents become too emotionally invested in social media throughout the day and feel more isolated and stressed. Therefore, the intense use stemming from the feeling of isolation and stress from adolescents can be a potential interpretation for PSMU.

However, because PSMU lacks a single clinical definition, different groups of theoretical models are proposed to measure its prevalence. For example, cognitive behaviors, social skills, and socio-cognitive models have been used to measure the prevalence of PSMU. For a more reliable evaluation for the prevalence of PSMU, existing tools such as the Internet Addiction Test, Internet Gaming Disorders, and withdrawal symptoms are used to address behavior that occurs after a long duration of PSMU (Banyái et al., 2017). Jafarkarimi et al (2016) reported a prevalence rate of 47% being addicted to Facebook among a sample of Malaysian undergraduate and graduate students using Barron's Ego strength scale and utilizing Griffith's 6 principles for a 5-point Likert response scale. This finding, though, should be interpreted with caution because it is not compatible to generalize adolescent demographics in other countries, even

though it still suggests PSMU with long-term exposure of malicious content is later associated with symptoms such as poor sleep quality, insomnia, and other mental health symptoms.

Social Comparison and Self-Esteem

Online Relationships and Factors of Self-Esteem

Social media, as a type of online socialization, is usually considered the most popular form of creating social bonds without the need for people to physically meet. Therefore, online relationships are often seen as less intimidating and more secure (Young, 1998; Kim et al., 2013). However, this finding also had disagreements. Some studies demonstrate friendships created via social media are not close friendships and show lower perceived social support and happiness (Çolak and Doğan 2016; Moody 2001; Sum et al. 2008). Kircaburun et al. (2019), on the other hand, noticed this inconsistency of agreement on social media and friendship. Instead, their study has offered a new methodology that explores connectedness and belongingness can be used as criteria for assessing social comparison and its outcomes to PSMU and mental health.

During this process, adolescents are also more likely to have a stronger sense of self-concepts when they are presenting themselves online. The process of creating a self-concept, according to Fullwood et al. (2016), is achieved through curating posts about a person's images, opinions, beliefs, and interests, in order to create a stable image of themselves for the audience. Throughout this section, two factors of self-esteem were being assessed for its connection to social media use: self-concept and self-presentation.

Using a method of incorporating a sample of 148 high school students from the UK, and completing a questionnaire of the 12-item Self-Concept Clarity Scale, Facebook Intensity Scale and the 21-item Presentation of Online Self Scale, Fullwood et al have determined that low self-concept clarity has been associated with increased time on Facebook and having fewer friends on Facebook. As a result, adolescents' consciousness of the amount of friends online would possibly be associated with adolescents spending more time on social media platforms to curate their self-concept in order to feel to be seen. Additionally, in Weinstein and Lejoyeux's (2017) examination of a sample of 507 students in the suburban areas of Northeastern U.S., adolescents in their teens who engage in negative comparison suffer poor well-being and would be more likely to think that feeds of other people are seen as happy and see themselves as worse. Additionally, they are more likely to clarify that only the best images of themselves are posted.

This hyper-awareness of social comparison and self-concept can lead to different possible interpretations of self-esteem among adolescents (Mann and Blumberg, 2022). When self-concept forms and becomes self-presentation as individuals try to present their image to the public, it provides opportunities for viewers to see them and leave comments and express their opinions and their views of that one person or group. As a result, the positivity and negativity of opinions likely increases a sense of social comparison by engaging in self-enhancement and comparing their social profiles to others.

The phenomenon mentioned above is known as social comparison orientation (SCO) (Gibbons & Buunk, 1999, Vogel et al., 2015, Mann and Blumberg, 2022). SCO can be upward or downward. Upward social comparison is when people compare themselves to people they see as superior and downward comparison is the opposite. In this context, social media may increase opportunities for upward social comparison, particularly when exposed to idealized portrayals of peers and influencers. Some of these visual content include so-called "perfect and flawless" lives, which may be a factor of negative self-perception of inability to reach the level of happiness portrayed online (Chen et al., 2016). Especially among adolescent users who use image-focused platforms such as Instagram, they would be more likely to post images of having the "perfect body type" that enabled more room for comparison of their physical appearance. For these types of obsessive social comparison of body image, adolescents would often associate themselves with poor body image (i.e. body dissatisfaction) (Ryding & Kuss, 2020). Wang et al (2017) examined whether social media usage is related to lower self-esteem or low self-evaluations. Their findings suggest that upward social comparison can be a useful predictor to low self-esteem. Additionally, possible explanations for the relationship of SCO and upward social comparison could be about individuals' higher tendencies to pay more attention to others' information and comparing themselves based on their behavior that is not related to themselves (Gibbons and Buunk, 1999; Lee, 2014). As a result, the high degree of SCO indicates that individuals would be more likely to make false assumptions about themselves and leading to a feeling of self-worth, eventually low self-esteem.

Broader Implications to Mental Health

Even though adolescents would receive positive effects on mental health and self-esteem through social connection, others would have worsened symptoms if they lacked support, leaving them to become marginalized individuals with increased vulnerability to cyberbullying and online victimization. Duarte, Pittman, Thorsen, Cunningham and Ranney (2018) found that symptoms of not only depression, but also individuals of PTSD and having suicidal thoughts have reported of any form of cyberbullying (Baym, 2010; Kraut et al., 1998). In addition to the frequency of adolescents' social media usage, a National Institute of Health (NIH) research published on PubMed wanted to explore if the ways in which adolescents use social media has a degree of effect on depression. Previously, Romer et al. (2013) found that the types of internet activities were positively associated with the frequently reported symptoms of depression. Activities that include using the internet for information search, entertainment, content creation, or social connection are usually associated with higher grades (in this context, higher self-esteem), while others that were engaged in more than 4 hours of communication or gaming were associated with higher symptoms of depression. NIH has discovered that the majority of the studies have found a positive correlation between time spent on social media and higher levels of depression (Akkın Gürbüz, Demir, Gökalp Özcan, Kadak, & Poyraz, 2017; Marengo, Longobardi, Fabris & Settanni, 2018; Pantic et al., 2012; Twenge et al., 2018; Woods & Scott, 2016; Vidal et al., 2020) linked to poor time adjustment (Coyne, Padilla-Walker, Holmgren, and Stockdale, 2018). These experimental findings have appeared to be more prominent especially during the COVID-19 pandemic. During the pandemic, governments and national authorities around the world imposed restrictive measures of quarantining and

reducing physical contact with social distancing or wearing face masks. Therefore, these create more possibilities for people to have the increased tendencies to spend extended time online to feel less lonely, bored and crave for social connection, despite other impairments from their lives already exists. Cross-regional research from countries like China, Germany, Iran, Italy, Lithuania, Poland, and the US have shown a positive correlation of addictive social media use and mental health problems such as depression and anxiety (Atroszko et al., 2018; Boursier et al., 2020; Brailovskaia et al., 2021; Dempsey et al., 2019; Keles et al., 2020; Worsley et al., 2018). Overall, following the framework inspired by Kircaburun et al. (2019), the analysis implicitly suggests that social media affects self-esteem through the degree of belongingness or isolation they felt, and how they compare their experiences and profiles to how their peers present themselves online. By looking at the role of social comparison, the behavior of seeking approval and validation of others tends to lead to higher usage and leading to a higher chance of social comparison (Stapleton et al., 2017). This behavior would be noted as validation-seeking.

Validation-Seeking

What is Validation-Seeking and the Fear of Missing Out

Validation seeking, by definition, is the process in which people use digital interactions to seek approval, including getting praise from peers in the form of likes, comments, shares, and positive reinforcement in self-worth (Mano, 2025). While the behavior of validation-seeking itself is indeed influenced by aspects of social comparison and feelings of loneliness, other studies highlighted the pressures that adolescents face in their experience on social media. These types of pressures can be known as stigma, which can be understood as a "mark of shame, disgrace, or disapproval" (WHO, 2001, p.16; Mitten, Preyde, Lewis, Vanderkooy, & Heintzman, 2016). Another type of stigma can also be the fear of individuals being labeled as an "attention-seeker" and makes adolescents who have mental health problems less likely to reach out for help. Dixon-Ward and Chan (2022) explored a unique way of validation-seeking on Reddit, which is the tendency for adolescents to fake out depression via threads. Through observational studies of posts and comments from April 2019 to January 2020 on three adolescent-based subreddits, the outcomes for adolescents who are experiencing depression and loneliness who are seeking help online are being faced with hostility. Hostilities include profanities and capitals with emphasized anger and dehumanizing vulnerable users as "faking" depression.

Even though some of the scenarios suggest explicit hostility, adolescents who feel socially excluded but unwilling to seek out help experience another phenomenon known as the Fear of Missing Out (FOMO). FOMO is a concern among individuals that are concerned about other people gaining gratifying experiences while they are feeling excluded and constantly feeling like they need to be engaged. The variable of FOMO was developed by Przybylski et al (2013) in 2013, which is a measurement of the intensity of anxiety at the risk of missing out on social experiences. According to existing research about mental health illnesses such as anxiety, depression, loneliness, FOMO appears to be a shared feeling among adolescents who are addicted to social media. Most notably, numerous studies such as Soraci et al. (2025) confirm that feedback loop of FOMO through social media worsens the feeling when adolescents

experience increased loneliness and isolation. Another explanation for the feeling of FOMO in Agbewu et al. (2025) suggests that Posts, likes, shares, and comments would have a more powerful effect on self-perception. Generalizing the examples of each study's findings and interpretations of FOMO, this aspect is possible to be utilized to research about whether FOMO does have a correlation to self-esteem and contribute to validation-seeking among adolescents.

To verify the hypotheses from existing studies, using the FOMO scale and a cross-sectional research design, Amin et al. (2025) incorporated the Pearson Correlation Analysis and linear regression to study the correlation of social media hours with social media engagement. Their sample incorporated 312 university students and were given demographic questionnaires on age, gender, education level, and social media habits (specifically on level of engagement i.e. active vs. negative use.)

Pearson Correlation Analysis

Variable	n	M	SD	1	2	3	4	5
1. SMEQ	312	3.4	2.0	.221**	--			
2. RSES	312	2.5	0.9	-.46**	.24**	--		
3. BAS-2)	312	3.1	1.2	-.46**	-.18**	.43**	--	
4. Self-Concept Clarity	312	3.0	1.2	-.48**	-.22**	.42**	.42**	--
5. FOMO	312	2.9	1.2	.33**	.51**	.35**	.43**	-.50**

Fig. 1: Pearson Correlation Analysis of Social Media Engagement Questionnaire (SMEQ), Rosenberg Self-Esteem Scale (RSES), Body Appreciation Scale-2 (BAS-2), Self-Concept Clarity Scale (SCCS), Fear of Missing Out Scale (FOMO)
Source: Amin, M. F., Zafar, A., Iqbal, D., & Amin, S. (2025). Social media use and Self-Image in university students: the influence of social media on body Appreciation, Self-Esteem, Self-Concept clarity and FOMO. International Research Journal of Arts, Humanities and Social Sciences, 2(3), 529-540.

The Pearson correlation analysis suggested that social media hours correlated positively with social media engagement ($r = 0.21$, $p<0.01$) and positively correlated with FOMO ($r = 0.51$, $p < 0.001$) and negatively correlated with self-esteem ($r = -0.46$, $p < 0.001$). The findings eventually did support the finding of how self-concept is more strongly correlated with social media usage and interest in social validation (likes, comments, followers) among university students. This could implicitly suggest how individual engagement types of content that appear on social media (i.e. body image, lifestyle, accomplishments) and validation mechanisms may provide an understanding in a similar process related to adolescents, even though this interpretation requires further differentiation from adolescent samples

Posting Latency

To cope with social exclusions, individuals would engage in behaviors that are seen as validation-seeking such as seeking reconnections, aggressing against them, withdrawing from social interactions in whatever form, or posting continuously on social media in large amounts of content (e.g. Maner et al., 2007; Ren et al., 2018, 2020, Kenntemich et al., 2026). For instance, the behavior of posting would be an effective tool to restore relatedness and reduce the feeling of missing out on social engagement on social media. Sometimes, validation-seeking can be different from seeking connection. These behaviors of searching for connection are particularly common on Twitter and Reddit where users post short texts called "tweets" to interact with other users through likes or retweets and mentions. This type of online interaction is known as "reciprocal communication", previously defined by Gouldner (1960) which is the "mutually contingent exchange of gratifications". With this motion, Twitter allows users to have a likelihood of receiving an answer that another user has been retweeted or mentioned, thus increasing the chances of re-inclusion and boost another person's relatedness.

Kenntemich et al (2026) hypothesized that validation-seeking behavior is first influenced by social exclusion because if social exclusion is the most significant factor, then behavioral differences would be more prevalent when contrasting unpopular posts and regularly popular posts. The time between the last

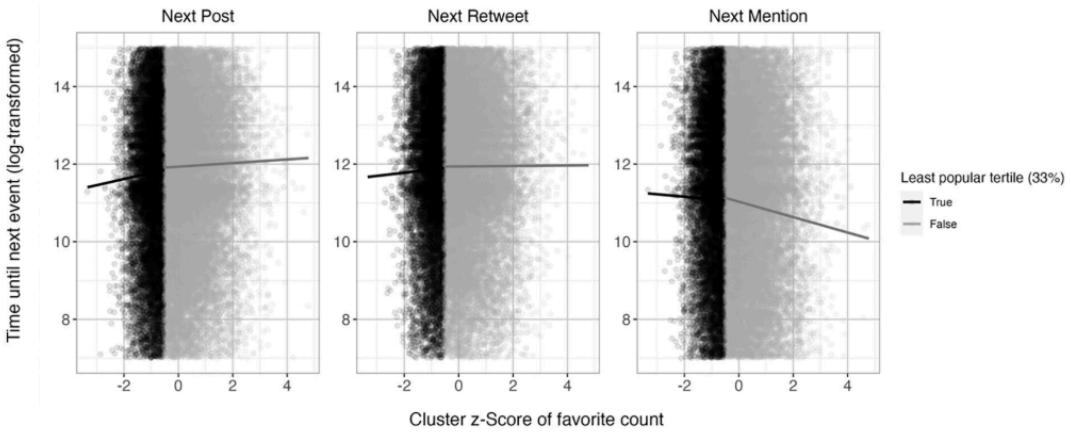


Fig. 2: Association of Relative Favorite Count of a Post with the Time Taken Until the Next Own Tweet (Left), Retweet (Middle), Mention (Right).
Source: Kenntemich, C., Buttner, C. M., & Rudert, S. C. (2026). The Pursuit of Approval: Social Media Users' Decreased Posting Latency Following Online Exclusion as a Form of Acknowledgment-Seeking Behavior. Personality and Social Psychology Bulletin, 52(4). https://doi.org/10.1177/01461672241297824

post and the next post is defined as latency. Within the established domain, the study suggests a nonlinear relationship between the popularity of a post and the latency until the next post. The steeper, positive slopes in the lower third and the more steady slopes in the two upper thirds indicate that users tend to post at a faster rate if they find that their post is unpopular rather than choosing to follow other popular posts. Despite this showing a weak trend, there is a negative relationship between the popularity of a previous

tweet and the latency of the next mention, which means individuals mentioned others more quickly under more popular posts.

By researching the latency interval between posting in user behavior on social media, combined with stigmas that vulnerable adolescents face online, and the ways in which adolescents engage with online experience, combined findings suggest that when adolescents seek validation online, posting intervals shorten (meaning posting content at a quicker rate), but some directed behaviors, such as commenting and mentioning, requires longer time to generate. Therefore, adolescents' social media use time could be maximized not only when adolescents pay attention to the number of followers, likes, or comments (Lee et al., 2015), they would also actively engage in posting and reposting content at a faster rate. This could then be a plausibly interpreted as a "buffer against negative effects of social exclusion" (Kuehn et al., 2015; Kenntemich et al., 2026).

DISCUSSION

This review examined the process involving ways in which adolescents use social media and the quality of self-esteem as the outcome of social media use. After synthesizing the findings from existing literature, adolescents' self-esteem is not only related to time used to engage in social media, but also by the designs social media platforms intentionally incorporate to maximize engagement, such as algorithmic feeds, likes, comments, and follower counts to create room for behaviors such as social comparison and validations. These design features later played a role in the way adolescents use social media that promoted social comparison, validation-seeking, and high peer interactions. These findings then imply that adolescents who feel socially excluded, have an unhealthy relationship, or experience negative online experiences may be vulnerable to the effect of social media. However, literature shows that it is more complex. Exposure to content of their peers posting idealized peer content may not only contribute upward social comparison (or SCO), feelings of FOMO, and social exclusion, it could also potentially mean increased frequency of validation-seeking behavior such as decreased posting latency, increased engagement into peer content through comments and resending, as well as curating one identity on their social media profile in order for more people to notice them.

As a result, to answer the question whether time spent on social media has an effect on adolescents' self-esteem, this review does not disagree on the fact that time plays little or no role in adolescents' self-esteem. Instead, this review suggests that time spent on social media increases when adolescents want to search for gratification as they feel socially excluded and seeking a sense of belonging. Relating back to the discussion of the study by NIH and PSMU, the increased amount of time on social media leads to poor time management, which could also be a potential explanation for adolescents' lack of self-esteem as social media use gets uncontrollable on impulse. To examine the relationship between mental health and self-esteem, the mental health illnesses mentioned in this review such as depression, FOMO, anxiety, and loneliness, studies have suggested that these are plausible factors that can be interpreted as the outcome of lowered self-esteem.

Extension on Cyberbullying

One important implication in negative online experiences is the role of cyberbullying. Because social media platforms optimize constant communications and public visibility, it leaves more opportunities for criticism, online harassment, social exclusion, and victimization to take place. For example, under a person's posts, others may leave threatening words or offensive comments that are designed to undermine their peers' identity and damage their reputation. Wall (2022) suggested that another factor that has made adolescents more vulnerable online is information theft. Information theft consists of breaching personal data and privacy that potentially increases exposure of an individual to be targeted at a faster rate and higher degree of damage that it does to an individual's identity. Some results of this mechanism leaves individuals to have a higher possibility to adopt protective behaviors, such as regulated use of social media and social media detoxification (e.g. Boerman et al., 2018; Niu et al., 2024) in order to prevent even further breach of personal information that leaves them under public scrutiny.

Ethical Concerns on Revenue and Legal Protection

With new advancements in algorithmic designs, algorithms become more sensitive to user behavior, including browsing and watch history, likes, shares, and watch time (Kumar and Nanda, 2023). This would mean for adolescents, their data would be tracked and stored without them noticing, leading to violations of privacy and autonomy. With the lack of ethical concerns in algorithms, Raffoul et al (2023) implied that algorithmically targeted commercials accumulated view counts and generated revenue out of adolescents' lack of resistance to social media use. Recent estimations from their study on revenue social media earned from adolescents' view on commercials reaches an astonishing 11 billion dollars. Approximately, 30%-40% of the revenue are from three major social media platforms (Snapchat, Tik Tok, and YouTube), and among millions of commercials adolescents access on social media every day, does not guarantee them from being protected from harmful or age-inappropriated content.

Costello et al (2024) also mentioned an example from 2013 involving a fifth-grade student, Alexis Spence, who reported to have a negative social media experience when she joined Instagram. When confronted by algorithms, she is exposed to content that portrays anorexia nervosa, negative body image, and self-harm. In 2018, she wrote "I hate my body…Please stop caring about me."

Extending to a legal perspective regarding ethical concerns, social media platforms are a space for freedom of expression of opinion and identity because these policies are regarded as legal under the First Amendment of the constitution that guarantees freedom of speech. Under Section 230 of the Communication Decency Act (CDA), social media platform companies are shielded from liabilities. The most current intervention that regulates the collection and handling of personal information from children under the age of 13 is the Children's Online Privacy Protection Act (COPPA). However, research that focuses on adolescent mental health and self-esteem gradually discovered that COPPA regulations do not guarantee protection for adolescents, such as disregarding age verification, infinite scrolling, increasing

the chance of exposure to a wide range of content and leaving room for harmful ones to appear in their feeds.

Recent lawsuits among parents of children who died of suicide have further suggested the consequences of lack of moderation of adolescent social media use in social media platform developers. In one example of a liability case, Tammy Rodriguez, mother of her daughter Selena Rodriguez, died from suicide, alleged that Meta and Snapchat have lack of parental controls to Selena's account that the only way to access her account is confiscation of Selena's phone. She also emphasized the fact that Selena has faced solicitation of sexually explicit images that were leaked to her classmates. From this case of Tammy Rodriguez v. Meta Platforms, Inc., this is only one of many other examples that are evidence for adolescents' vulnerability to the mechanisms of social media platforms, but the case itself does not establish a causal relationship between platform design and mental health outcomes.

Limitations and Future Directions

This review has certain limitations. While it examines the relationship between social media mechanisms, common online behaviors, and the outcome of adolescent self-esteem and mental health, it does not account adequately for the different personalities and different types of adolescents. Likewise, some or most of the findings generalized in this research may not affect all adolescents the same way. Additionally, most adolescent samples featured in literature discussed in this review may have varying ways of using social media, resulting in an incomplete or partial description of how the differences of viewing social media content can impact them differently.

This review also has methodological limitations. For some open platforms such as Instagram and Twitter that allow for more access to examine user behavior, some social platforms have restricted access, limiting the scope of available research (Trezza, 2023). Even if there are a variety of studies that specifically focus on the behaviors of social comparison and validation-seeking, some factors that are not considered in this review include family relationships and offline social relationships. Furthermore, the review does not account for other demographic aspects such as gender, race, ethnicity, or sexual orientation for adolescents.

Given the increasing integration of artificial intelligence in content recommendation systems, future studies should continue to investigate the deeper integration of AI into social media algorithms that can be balanced with promoting better online experiences that support adolescent well-being and higher self-esteem. Future research should also prioritize longitudinal studies that better examine the long term effects social media use on adolescents' self-esteem. Additionally, research in the future should investigate the platform-specific effects and how protective factors such as offline social support and digital privacy could influence adolescents' self-esteem and online behavior.

CONCLUSION

Ultimately, the literature review suggests social media is associated with adolescents' self-esteem in multiple interacting factors, such as how they use social media in which they desire to be recognized, acknowledged, and to feel belonged. Across literature, these findings have indicated that algorithmic mechanisms of social media such as "likes", personalized feeds, comments, and follower counts create environments for adolescents to see how their peers perceive them. As a result, social media provides opportunities for expressions of identity and personal opinions, different types of personalities portrayed online have left opportunities for social comparison.

Likewise, exposure to images of idealized figures of lifestyle or appearance reinforces adolescents' tendency to associate themselves as "less significant" or "inferior" to others, making them vulnerable individuals online. For individuals that are victims of social exclusion, experiencing FOMO when being left out, or have been cyberbullied, implications of depression and anxiety have left adolescents to feel lack of self-worth or unsupported. Overall, the literature review has come down to a generalized outcome that the designs of social media platforms, combined with constant searching for validation, have played an important role in shaping adolescent self-esteem and mental health.

ACKNOWLEDGEMENTS

I would like to recognize my research outcomes made possible by the Horizon Academic Research and Publishing program, and to my research mentor Dr. Karly Drabot. I am also thankful for my parents and my college admissions counselor who gave me this precious opportunity to produce this research.

REFERENCES

Boer, M., Van den Eijnden, R. J., Boniel-Nissim, M., Wong, S. L., Ichley, J. C., Badura, P., Craig, W. M., Gobina, I., Kleszczewska, D., Klanscek, H. J., & Stevens, G. W. (2020). Adolescents' Intense and Problematic Social Media Use and Their Well-Being in 29 Countries. Journal of Adolescent Health, 66.

Arana-Rodríguez, A., Garrido-Fernández, A., Sánchez-Alcón, M. Impact of health education on internet addiction, internet use time, and social media addiction in adolescents: a systematic review and meta-analysis. BMC Public Health 26, 92 (2026). https://doi.org/10.1186/s12889-025-25793-4

Tunc-Aksan, A., & Akbay, S. E. (2019). Smartphone addiction, fear of missing out, and perceived competence as predictors of social media addiction of adolescents. European Journal of Educational Research, 8(2), 559-566.

Niu, J., Mazhar, B., Haq, I. U., & Maqsood, F. (2024). Protecting Privacy on Social Media: Mitigating Cyberbullying and Data Heist Through Regulated Use and Detox, with a Mediating Role of Privacy Safety Motivations. Social Media + Society, 10(4).

Weinstein A, Lejoyeux M. Internet addiction or excessive internet use. Am J Drug Alcohol Abuse. 2010; 36(5):277–83. https://doi.org/10.3109/00952990.20 10.491880.

Castro, C. A., Riley, I. O., & Carthy, A. (2022). The Evolution of the Internet and Social Media: A Literature Review. Nternational Journal of E-Education, E-Business, E-Management and E-Learning, 12(1). https://doi.org/10.17706/ijeeee.2022.12.1.30-41

Filley, C.M. The neuroanatomy of attention. Semin. Speech Lang. 2002, 23, 89–98.

Giraldo-Luque, S., Aldana Afanador, P. N., & Fernández-Rovira, C. (2020). The Struggle for Human Attention: Between the Abuse of Social Media and Digital Wellbeing. Healthcare, 8(4), 497. https://doi.org/10.3390/healthcare8040497

McCay-Peet, L., & Quan-Haas, A. (2017). What is social media and what questions can social media research help us answer. The SAGE handbook of social media research methods, 13-26.

Raz, A. Anatomy of attentional networks. Anat. Rec. 2004, 281B, 21–36.

Costello, N., Sutton, R., Jones, M., Almassian, M., Raffoul, A., Ojumu, O., ... & Austin, S. B. (2023). Algorithms, addiction, and adolescent mental health: An interdisciplinary study to inform state-level policy action to protect youth from the dangers of social media. American Journal of Law & Medicine, 49(2-3), 135-172.

Statista. Number of social media users worldwide from 2017 to 2028 (in billions). (2024). https://www.statista.com/statistics/278414/number-of-worldwide-social-network-users/.

Ahmed O, Walsh EI, Dawel A, Alateeq K, Espinoza Oyarce DA, Cherbuin N: Social media use, mental health and sleep: a systematic review with meta-analyses. J Affect Disord. 2024, 367:701-12. 10.1016/j.jad.2024.08.193

Nesi J, Prinstein MJ: Using social media for social comparison and feedback-seeking: gender and popularity moderate associations with depressive symptoms. J Abnorm Child Psychol. 2015, 43:1427-38. 10.1007/s10802-015-0020-0

De D, El Jamal M, Aydemir E, et al. (January 08, 2025) Social Media Algorithms and Teen Addiction: Neurophysiological Impact and Ethical Considerations. Cureus 17(1): e77145. https://doi.org/10.7759/cureus.77145

Casey, B. J., Getz, S., & Galvan, A. (2008). The adolescent brain. Developmental review, 28(1), 62-77.

Andreassen, C. S., Griffiths, M. D., Gjertsen, S. R., Krossbakken, E., Kvam, S., & Pallesen, S. (2013). The relationships between behavioral addictions and the five-factor model of personality. Journal of behavioral addictions, 2(2), 90-99.

Brailovskaia, J., Schillack, H., & Margraf, J. (2020). Tell me why are you using social media (SM)! Relationship between reasons for use of SM, SM flow, daily stress, depression, anxiety, and addictive SM use–An exploratory investigation of young adults in Germany. Computers in human behavior, 113, 106511.

Griffiths, M. (2005). A 'components' model of addiction within a biopsychosocial framework. Journal of Substance Use, 10(4), 191–197. https://doi.org/10.1080/14659890500114359

Kuss, D. J., & Griffiths, M. D. (2017). Social networking sites and addiction: ten lessons learned. International Journal of Environmental Research and Public Health, 14, 311.

Woods, H. C., & Scott, H. (2016). Sleepyteens: social media use in adolescence is associated with poor sleep quality, anxiety, depression and low self-esteem. Journal of Adolescence, 51, 41–49.

Mann, R. B., & Blumberg, F. (2022). Adolescents and social media: The effects of frequency of use, self-presentation, social comparison, and self esteem on possible self imagery. Acta Psychologica, 228, 103629.

Lin, L., Yi Sidani, J. E., Shensa, A., Radovic, A., Miller, E., Colditz, J. B., et al. (2016). Association between social media use and depression among U.S. young adults. Depress Anxiety 33, 323–331. https://doi.org/10.1002/da.22466

Schivinski, B., Brzozowska-Woś, M., Stansbury, E., Satel, J., Montag, C., & Pontes, H. M. (2020). Exploring the role of social media use motives, psychological well-being, self-esteem, and affect in problematic social media use. Frontiers in psychology, 11, 617140.

Arness, D. C., & Ollis, T. (2023). A mixed-methods study of problematic social media use, attention dysregulation, and social media use motives. Current psychology, 42(28), 24379-24398.

Rozgonjuk, D., Sindermann, C., Elhai, J. D., & Montag, C. (2020). Fear of Missing Out (FoMO) and social media's impact on daily-life and productivity at work: Do WhatsApp, Facebook, Instagram, and Snapchat Use Disorders mediate that association?. Addictive behaviors, 110, 106487.

Sampasa-Kanyinga, H., & Lewis, R. F. (2015). Frequent use of social networking sites is associated with poor psychological functioning among children and adolescents. Cyberpsychology, behavior, and social networking, 18(7), 380-385.

Bányai, F., Zsila, Á., Király, O., Maraz, A., Elekes, Z., Griffiths, M. D., ... & Demetrovics, Z. (2017). Problematic social media use: Results from a large-scale nationally representative adolescent sample. PloS one, 12(1), e0169839.

Keles, B., McCrae, N., & Grealish, A. (2020). A systematic review: the influence of social media on depression, anxiety and psychological distress in adolescents. International journal of adolescence and youth, 25(1), 79-93.

Jafarkarimi, H., Sim, A. T. H., Saadatdoost, R., & Hee, J. M. (2016). Facebook addiction among Malaysian students. International Journal of Information and Education Technology, 6(6), 465.

Fullwood, C., James, B. M., & Chen-Wilson, C. H. (2016). Self-concept clarity and online self-presentation in adolescents. Cyberpsychology, Behavior, and Social Networking, 19(12), 716-720.

Young, K. S. (1998). Internet addiction: the emergence of a new clinical disorder. Cyberpsychology & Behavior, 1(3), 237–244.

Kim, J. H., Griffiths, S. M., Lau, C. H., Fong, B. Y. F., & Lam, J. (2013). Pathological Internet use and associated factors among university students in Hong Kong. Hong Kong Medical Journal, 19,9–11.

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: desire for interpersonal attachments as a fundamental human motivation. Psychological Bulletin, 117(3), 497–529.

Eroğlu, Y. (2016). Üniversite öğrencilerinde problemli internet kullanımı: İlişkisel-karşılıklı benlik kurgusu ve dürtüselliğin yordama güçleri. Turkish Studies, 11(3), 1091–1114

Kırcaburun, K., Kokkinos, C. M., Demetrovics, Z., Király, O., Griffiths, M. D., & Çolak, T. S. (2019). Problematic online behaviors among adolescents and emerging adults: Associations between cyberbullying perpetration, problematic social media use, and psychosocial factors. International Journal of Mental Health and Addiction, 17(4), 891-908.

Gibbons, F. X., & Buunk, B. P. (1999). Individual differences in social comparison: development of a scale of social comparison orientation. Journal of personality and social psychology, 76(1), 129.

Vogel, E. A., Rose, J. P., Okdie, B. M., Eckles, K., & Franz, B. (2015). Who compares and despairs? The effect of social comparison orientation on social media use and its outcomes. Personality and individual differences, 86, 249-256.

Ryding, F. C., & Kuss, D. J. (2020). The use of social networking sites, body image dissatisfaction, and body dysmorphic disorder: A systematic review of psychological research. Psychology of Popular Media, 9(4), 412.

Wang J.L., Wang H.Z., Gaskin J. and Hawk S. (2017) The Mediating Roles of Upward Social Comparison and Self-esteem and the Moderating Role of Social Comparison Orientation in the Association between Social Networking Site Usage and Subjective Well-Being. Front. Psychol. 8:771. https://doi.org/10.3389/fpsyg.2017.00771

Lee, E. J., & Kim, Y. W. (2014). How social is Twitter use? Affiliative tendency and communication competence as predictors. Computers in Human Behavior, 39, 296–305. https://doi.org/10.1016/j.chb.2014.07.034

Stapleton, P., Luiz, G., & Chatwin, H. (2017). Generation validation: The role of social comparison in use of Instagram among emerging adults. Cyberpsychology, Behavior, and Social Networking, 20(3), 142-149.

Duarte C, Pittman SK, Thorsen MM, Cunningham RM, & Ranney ML (2018). Correlation of minority status, cyberbullying, and mental health: A cross-sectional study of 1031 adolescents. Journal of Child & Adolescent Trauma, 11(1), 39–48. doi:10.1007/s40653-018-0201-4 [PubMed: 32318136]

Romer D, Bagdasarov Z, & More E (2013). Older versus newer media and the well-being of United States youth: Results from a national longitudinal panel. Journal of Adolescent Health, 52, 613– 619. https://doi.org/10.1016/j.jadohealth.2012.11.012 [PubMed: 23375827]

Akkın Gürbüz HG, Demir T, Gökalp Özcan B, Kadak MT, & Poyraz BC (2017). Use of social network sites among depressed adolescents. Behaviour & Information Technology, 36, 517–523. doi:10.1080/0144929X.2016.1262898

Marengo D, Longobardi C, Fabris MA, & Settanni M (2018). Highly-visual social media and internalizing symptoms in adolescence: The mediating role of body image concerns. Computers in Human Behavior, 82, 63–69. https://doi.org/10.1016/j.chb.2018.01.003

Coyne SM, Padilla-Walker LM, Holmgren HG, & Stockdale LA (2018). Instagrowth: A longitudinal growth mixture model of social media time use across adolescence. Journal of Research on Adolescence, 29, 897–907. https://doi.org/10.1111/jora.12424 [PubMed: 29953692]

Vidal, C., Lhaksampa, T., Miller, L., & Platt, R. (2020). Social media use and depression in adolescents: a scoping review. International Review of Psychiatry, 32(3), 235-253.

Atroszko, P. A., Balcerowska, J. M., Bereznowski, P., Biernatowska, A., Pallesen, S., & Andreassen, C. S. (2018). Facebook addiction among Polish undergraduate students: Validity of measurement and relationship with personality and well-being. Computers in Human Behavior, 85, 329–338. https://doi.org/10.1016/j.chb. 2018.04.001

Boursier, V., Gioia, F., & Griffiths, M. D. (2020). Do selfie-expectancies and social appearance anxiety predict adolescents' problematic social media use? Computers in Human Behavior, 110, 106395. https://doi.org/10.1016/j.chb.2020.106395

Brailovskaia, J., & Margraf, J. (2024). Addictive social media use during Covid-19 outbreak: Validation of the Bergen Social Media Addiction Scale (BSMAS) and investigation of protective factors in nine countries. Current Psychology, 43(14), 13022-13040.

Brailovskaia, J., Teismann, T., & Margraf, J. (2020c). Positive mental health mediates the relationship between Facebook addiction disorder and suicide-related outcomes: A longitudinal approach. Cyberpsychology, Behavior and Social Networking, 23(5), 346– 350. https://doi.org/10.1089/cyber.2019.0563

Dempsey, A. E., O'Brien, K. D., Tiamiyu, M. F., & Elhai, J. D. (2019). Fear of missing out (FoMO) and rumination mediate relations between social anxiety and problematic Facebook use. Addictive Behaviors Reports, 9, 100150. https://doi.org/10.1016/j.abrep. 2018.100150

Lin, C.-Y., Broström, A., Nilsen, P., Griffiths, M. D., & Pakpour, A. H. (2017). Psychometric validation of the Persian Bergen social media addiction scale using classic test theory and Rasch models. Journal of Behavioral Addictions, 6(4), 620–629. https://doi.org/ 10.1556/2006.6.2017.071

Worsley, J. D., Mansfield, R., & Corcoran, R. (2018). Attachment anxiety and problematic social media use: The mediating role of wellbeing. Cyberpsychology, Behavior and Social Networking, 21(9), 563–568. https://doi.org/10.1089/cyber.2017.0555

Soraci, P., Di Corrado, D., Coco, M., & Magnano, P. (2025). Problematic social media use and psychological distress: Mediating roles of FOMO and social appearance anxiety. International

Journal of Mental Health and Addiction. Advance online publication. https://doi.org/10.1007/s11469-025-01054-6

Przybylski, A. K., Murayama, K., DeHaan, C. R., & Gladwell, V. (2013). Motivational, emotional, and behavioral correlates of Fear of Missing Out. Computers in Human Behavior, 29*(4), 1841–1848. https://doi.org/10.1016/j.chb.2013.02.014

Amin, M. F., Zafar, A., Iqbal, D., & Amin, S. (2025). Social media use and Self-Image in university students: the influence of social media on body Appreciation, Self-Esteem, Self-Concept clarity and FOMO. International Research Journal of Arts, Humanities and Social Sciences, 2(3), 529-540.

Maner, J. K., DeWall, C. N., Baumeister, R. F., & Schaller, M. (2007). Does social exclusion motivate interpersonal reconnection? Resolving the "porcupine problem." Journal of Personality and Social Psychology, 92(1), 42–55. https://doi.org/10.1037/0022- 3514.92.1.42

Ren, D., Wesselmann, E. D., & Williams, K. D. (2018). Hurt people hurt people: Ostracism and aggression. Current Opinion in Psychology, 19, 34–38. https://doi.org/10.1016/j. Copsyc.2017.03.026

Hayes, R. A., Carr, C. T., & Wohn, D. Y. (2016). One click, many meanings: Interpreting paralinguistic digital affordances in social media. Journal of Broadcasting & Electronic Media, 60(1), 171–187. https://doi.org/10.1080/08838151.2015.1127 248

Williams, K. D. (2009). Ostracism: A temporal need-threat model. Advances in Experimental Social Psychology, 41, 275–314. https://doi.org/10.1016/S0065-2601(08)00406-1

Gouldner, A. W. (1960). The norm of reciprocity: A preliminary statement. American Sociological Review, 25(2), 161–178.

Lee, E., Lee, J.-A., Moon, J. H., & Sung, Y. (2015). Pictures speak louder than words: Motivations for using Instagram. Cyberpsychology, Behavior, and Social Networking, 18(9), 552–556. https://doi.org/10.1089/cyber.2015.0157

Kuehn, M. M., Chen, S., & Gordon, A. M. (2015). Having a thicker skin: Social power buffers the negative effects of social rejection. Social Psychological and Personality Science, 6(6), 701– 709. https://doi.org/10.1177/1948550615580170

Kenntemich, C., Buttner, C. M., & Rudert, S. C. (2026). The Pursuit of Approval: Social Media Users' Decreased Posting Latency Following Online Exclusion as a Form of Acknowledgment-Seeking Behavior. Personality and Social Psychology Bulletin, 52(4). https://doi.org/10.1177/01461672241297824

Wall, M. (2022). One user—two viewpoints? An examination of information privacy concerns from the employee and consumer perspective. Junior Management Science, 7(4), 986–1000. https://doi.org/10.5282/jums/v7i4pp986-1000

Boerman, S. C., Kruikemeier, S., & Zuiderveen Borgesius, F. J. (2018). Exploring motivations for online privacy protection behavior: Insights from panel data. Communication Research, 48(7), 009365021880091. https://doi.org/10.1177/0093650218 800915

Soomro, M., Haq, S., & Naz, I. (2025). The Role of Artificial Intelligence and Excessive Social Media Use in Increasing Depression and Anxiety Among Young Adults. Research Journal for Social Affairs, 3(4), 405-417.

Tawnell D. Hobbs et al., 'The Corpse Bride Diet': How TikTok Inundates Teens with Eating-Disorder Videos,Wall St. J. (Dec. 17, 2021, 10:45 AM), https://www.wsj.com/articles/how-tiktok-inundates-teens-with-eating-disorder-videos-11639754848 [https:// perma.cc/9RAH-NXB5].

Complying with COPPA: Frequently Asked Questions, F.T.C' (July, 2020), https://www.ftc.gov/businessguidance/resources/complying-coppa-frequently-asked-questions [https://perma.cc/2UER-MSPU].

Rodriguez v. Meta Platforms, Inc., No. 3:22-cv-00401 (N.D. Cal. Jan. 20, 2022), 2022 WL 190807, at *1 [hereinafter Rodriguez Complaint]

Trezza, D. (2023). To scrape or not to scrape, this is dilemma. The post-API scenario and implications on digital research. Frontiers in sociology, 8, 1145038.

Block J.J. Issues for DSM-V: internet addiction. Am J Psychiatry. 2008;165:306– 7. https://doi.org/10.1176/appi.ajp.2007.07101556.

Baym, N.K. (2010). Personal connections in the digital age. Cambridge: Polity Press.

Kraut R, Patterson M, Lundmark V, Kiesler S, Mukophadhyay T, & Scherlis W (1998). Internet paradox: A social technology that reduces social involvement and psychological well-being? American Psychologist, 53, 1017–1031. https://doi.org/10.1037/0003-066X.53.9.1017 [PubMed: 9841579]

Mano, M. (2025). Assessing the psychological impact of social media on youth self esteem: The role of virtual validation. International Journal of Advance and Innovative Research, 12(2), 67-74.

Dixon‐Ward, K. C., & Chan, S. W. (2022). Faking it': Exploring adolescent perceptions of depression (in) authenticity and 'attention seeking. British Journal of Clinical Psychology, 61(2), 177-196.

Sherman, L. E., Payton, A. A., Hernandez, L. M., Greenfield, P. M., & Dapretto, M. (2016). The power of the like in adolescence: Effects of peer influence on neural and behavioral responses to social media. Psychological science, 27(7), 1027-1035.

Kumar, V., & Nanda, P. (2023). Product innovation: traditional marketing analytics vs. social media analytics approach. International Journal of Services Operations and Informatics, 12(4), 307-324.

Raffoul, A., Ward, Z. J., Santoso, M., Kavanaugh, J. R., & Austin, S. B. (2023). Social media platforms generate billions of dollars in revenue from US youth: Findings from a simulated revenue model. Plos one, 18(12), e0295337