

Virtual Connections and Youth Well-being: Analyzing Social Media's Influence on Adolescent Mental Health

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March 25, 2024

Abstract

The realm of social media is growing at a rapid rate, and adolescents are undeniably attracted to the notion of virtual platforms and unlimited communication with others. While there are a multitude of studies exploring social media's impacts on individuals, there is a lack of analysis regarding the specific and nuanced effects of social media on adolescent mental health. This study explores the reason behind adolescent addiction to social media, examining adolescent, parent, and objective perspectives on this issue. A detailed synthesis of quantitative and qualitative data was conducted through an examination of user behaviors, engagement patterns, and attitudinal surveys. Resulting analysis suggests that social media has a negative impact on adolescent mental health, leading to psychological consequences such as depression and FoMO, affecting both emotional and cognitive well-being. Future implications point towards conducting further studies to investigate the relationship between adolescents and social media, with the ultimate goal of identifying and implementing addiction-prevention methods.

1 Introduction

We are in the middle of a national youth mental health crisis, and I am concerned that social media is an important driver of that crisis – one that we must urgently address. (Dr. Vivek Murthy, U.S Surgeon General, 2023).

In 2022, nearly all teens, aged 13-17, had access to a smartphone, which was a 73% increase compared to 2014-2015 [Cen22a]. The amount of teens who indicate they use the internet has exponentially increased by 22% since 2015, and the prevalence of anxiety and depression in adolescents has increased by 70% in the last 25 years [oPHM17]. An abundance of research has indicated a link between social media use and psychological disturbance. A series of 11

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studies conducted in 2017 showed a small but significant positive relationship between social media use and depressive symptoms in children and adolescents [McC17]. Similarly, a study measuring social media usage and depression in 467 Scottish adolescents has shown that peoples’ use of social platforms are directly linked to depression and anxiety, especially among social media addicted young adults [Woo16]. Many other studies have been conducted that also correlate social media usage with a negative psychological state, indicating a significant relationship between its consumption and harmful outcomes, some of which include depressive symptomatology, anxiety symptoms, lowered self-esteem and suicide ideation [Hoa16, Lil14]. Although there are debates in this field, some studies highlight a positive influence of social media usage on adolescent mental health. As such, it remains unclear under which conditions social media affects adolescent mental health and how.

In this paper, we will address both the positive and negative arguments for the impact of social media on adolescent mental health, arguing for social media’s negative impact on psychological functioning, instantiated in depression, harassment, low self-esteem and poor body image.

Firstly, the review will dissect the definition of adolescence and how adolescents’ developmental age makes them extremely drawn to social media and more susceptible to its influence. Secondly, the review will discuss the negative impact of social media on adolescents’ mental health from adolescent, parent, and researcher perspectives, respectively. Finally, the review will address three counterarguments that suggest positive effects of social media on adolescent health and discuss the limitations of these arguments to further strengthen the position that social media has a negative impact on adolescent mental health.

2 The definition of adolescence and their “un-explainable” attraction to social media

2.1 The definition of adolescence

As the investigation into the harmful impacts of social media and its relationship with adolescent mental health deepens, one question immediately arises: What is adolescence? A study found that adolescence was challenging to limit to a specific age range, as it is “variable but specific in its beginnings with the physiological changes of puberty” and is “highly variable and nonspecific in its end” [Mar80]. However, adolescence is generally accepted as a time when a child develops and matriculates into adulthood. While it is challenging to determine a fixed age, it is customary for the definition of adolescents to range between the ages 10-19 years [Orgte].

Although the definition of adolescence varies among scholars, one feature related to this stage of development is clear: the current generation of young people is suffering from social media addiction, most of which lead to detrimental mental health impacts [Sch11]. The relationship between adolescence and social media addiction leads one to inquire about the origin and strength of the

connection.

2.2 Why adolescents are so attracted to social media

2.2.1 Socializing and connecting

Young adults often seek support and require interaction with others, both online and in person, due to their developmental stage characterized by increased independence, identity formation, and exploration of personal values, which can be accompanied by hormonal reactions related to emotional and social development [Spe09]. Different online sources often serve as mental health resources for youth, allowing youth to access support networks at any moment, making the ease and accessibility of online resources extremely attractive and potentially quite positive [Bur10]. However, the opposite can also be true. According to a literature review regarding social media's effect on adolescent patient health, patients' overreliance on online support networks can cause addiction to social media and loss of privacy [Sma16]. An Oxford Internet Survey (OxIS) conducted on young people in 2014 evidences this claim, showing a negative relationship between age and privacy. The study reveals a privacy paradox; social media users, especially adolescents, must disclose information about themselves due to attempts to fit in and conform, despite the fact that these sites do not provide adequate security controls [Bla14]. A similar study was conducted on 1,000 adolescents aged 12-18, revealed that there were significant positive correlations between self-esteem, depression, and social media usage [Kir16].

The intuitive design of social media is extremely attractive to adolescents as they begin to find their place within the social hierarchy and exercise their newfound autonomy. For example, social media creates controllability for adolescents, allowing them to disclose information they choose, maintaining a sense of anonymity when desired [Val11]. Similarly, adolescents want to engage with others because they have a fear of missing out, colloquially known as FoMO. Specifically, adolescents fear being left out while others are conversing on different platforms, prompting their engagement with social media to alleviate the feeling of loneliness [Prz13]. Because youth often believe that they need to share every experience with their peers [Prz13], they increasingly interact on platforms, as discussed in greater detail in section 3.

2.2.2 Technological advancements

Today's youth are exposed to social media at an earlier age compared to past generations. According to a technical report, in 1970, children consistently began to watch TV at 4 years of age, contrasting from 2016, where children began interacting with digital media at merely 4 months of age [RC16], leading to an innate attraction and normalization of daily media consumption. Furthermore, parents are usually unaware of how to use different forms of social media efficiently because of generational differences and new platforms constantly appearing [Cla09]. As development occurs, adolescents often develop sensitivity,

considering their mobile devices personal property and begin to exercise their right to privacy [Gho18]; thus, parents are unable to monitor their children on social media and cannot fully control the extent to which their children access platforms, increasing the probability of addiction in adolescents.

2.2.3 Conditioning and behaviors

The gradual increase in device or platform usage over time can develop into a habit with symptoms similar to addictive drug usage. Social media uses algorithms to customize each user’s experience. Consequently, social media platforms push users towards videos similar to ones they’ve previously liked or saved, engaging the user and resulting in a “problematic use pattern manifested by addiction-like undesired behaviors” [Su21]. Each time the susceptible adolescent brain receives a comment, follow, or a like on social media, it generates dopamine, leading to a constant “dopamine loop” where an individual derives rewards from positive social media interaction [Mac18]. Driven by FoMO, individuals remain constantly engaged with social media platforms due to their fear of missing out and slipping into social irrelevance [Bro20], creating and fostering an addiction to social media. As depicted in Table 1, research has suggested that engagement with social media follows a similar progression as an addiction to drugs.

Criteria	Behaviour	Example
Draw attention	Substance has become the most important thing in individual's life and mind. It dominates emotions and behaviours.	Individual dreams to connect when he is not connected to social media.
Emotional change	Experience when reached substance	Individual has emotional activity when connected to social media.
Tolerance	Constantly increasing time spent for substance	The time spent on social media today is greater than before
Deprivation	Unpleasant sensations that occur when the action is not continued or suddenly stopped	When access to social media is obstructed, emotions develop such as nervousness, restlessness, trembling etc.
Recurrence	The tendency of substance to recur with previous patterns	Feeling like never been away after reconnecting social media after a long break

Figure 1: Addicted behavior measures [Gri99, BAL09]

Table 1. Comparing the roles of attention, emotional change, tolerance, deprivation, and recurrence with various steps of social media usage. The first criteria, drawing attention, acts as a parallel alongside a person’s first time experiencing and developing addiction to drugs, similar to how an individual dreams about social media even when platforms are not available. The succeeding criterias continue comparisons of various phases of drug addiction with the phases of social media addiction.

It is important to note that while FoMO exists in both social and behavioral contexts, there are clear differences between these two realms. FoMO in a social context refers to the fear of being excluded by friends or like-minded individ-

uals. Because of adolescent’s age and developmental stage, they often worry about their identity, leading them to constantly seek support on platforms. In contrast, FoMO in a behavioral context refers to the need for adolescents to go on social media to receive dopamine rewards and self-satisfaction, creating a constant cycle. By recognizing the differences between social FoMO and behavioral FoMO, one can observe the relationship between these two different types of FoMO and note that both lead to the same result: addiction [Tan21].

3 The impact of social media on adolescent mental health

Beyond addiction, exploring the impact of social media on adolescent mental health reveals many negative effects that extend further than digital dependency to include the normalization of self-harm, sleep loss, and depression [AJ20]. According to a clinical report by the American Academy of Pediatrics, most social media risks fall into four categories: social exclusion among peers, inappropriate content, lack of understanding privacy issues, and outside influences of third-party advertising groups [?]. Although there have been objective analyses of the impact of social media on adolescents, there may be “adaptive aspects of social media use for adolescents, such as in perceived connectedness to others” [Bar17]. Therefore, to fully analyze the effects of social platforms on adolescent mental health, both adolescent, parent, and objective perspectives need to be considered.

3.1 Adolescents’ feelings towards social media

“Teenagers these days don’t really express their feelings. Like, everything’s always done over social media” [Rad17]. Adolescents often experience inner conflicts regarding their use of social media, and when they engage in group discussions, differences of opinion on the subject also emerge; as of recent times, more adolescents are seemingly coming to the realization that social media is dangerous [Ore18]. Adolescents generally have negative feelings towards platforms for two reasons: exclusion and exposure to inappropriate content.

Contexts in which kids and adolescents report experiences of exclusion are school, sports team, religious groups [Lad16], and, more recently, online interactions [Lil14]. According to a study conducted on 1,316 U.S. teens aged 13-17 regarding social media, 31% of adolescents feel that they are being left out by their friends and 23% of adolescents on social media feel worse about themselves after checking the platform seeing that their friends are hanging out without them [Cen22b]. Similarly, a study conducted in 2017 asked adolescents to estimate how they would feel if they were excluded from social media group chats or invites— participants estimated a significantly higher threat to their sense of belonging compared to their sense of control and meaning, anticipating negative impacts on their mood and psychological needs and ultimately evidencing the importance that adolescents place on their need for inclusion [Smi17].

Furthermore, a qualitative study examining social media usage among 23 adolescents revealed an overlapping theme: viewing triggering posts [Rad17]. In an open-ended survey question to European youths aged 9-16, 10,000 children and adolescents reported risks that concerned them on the internet: twenty-two percent of adolescents mentioned pornography, 19% mentioned cyber-bullying, and 18% mentioned violent content [Liv14]. Many other reports have also shown that adolescents’ have a negative stance toward exposure to inappropriate content on social media [Lil14, Ore18].

3.2 Parents’ feelings towards social media

Parents are perpetually worried about their childrens’ screen time and social media usage. When Myspace, one of the first social networks to reach a global audience was introduced, parents were immediately “seeking to regulate teens’ behavior in this new space...prohibiting teens from engaging in networked publics” [Boy08]. However, especially in the present age of increased connectivity online, parental concerns have grown exponentially. One reason parents oppose the overuse of social media is due to its negative impact on family systems and relationships [Pro19]. A survey conducted on parents of U.S. teens aged 13-17 revealed that “65% of parents say they worry at least some about their teen spending too much time in front of screens” [Cen19]. As a result, parents often check their adolescents’ browsing history to monitor behavior:

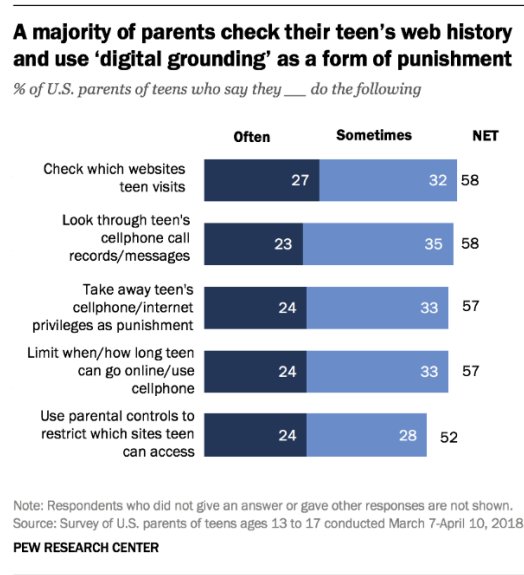


Figure 2: Checking teen’s web history and “digital grounding” as a form of punishment [Cen19]

3.3 An objective perspective towards social media

Objective research exploring the relationship between adolescent mental health and social media usage has uncovered many straining aspects of social media usage, all of which can be sorted into two main categories: mental health and physical health. One of the negative outcomes of social media usage and adolescents is self-esteem [Pan14]. According to a series of questionnaires and interviews conducted in 2017, an increase in social media usage causes the self-esteem of individuals to decrease [Jan17]. Another outcome of social media usage is loneliness and social anxiety. A multi-database search revealed that both loneliness and social anxiety correlate with problematic social media usage and that loneliness is also a risk factor for problematic social media usage; when addiction occurs to social media, an addicted adolescent's symptoms of depression can worsen [O1]. Abusing social media generates many other variable outcomes in adolescents, such as chronic sleep deprivation, promotion of self-harm and suicidality, which negatively affect one's cognitive control and lowers empathy ([Kol21,She20]).

Ultimately, the many negative variables social media inflicts on adolescents lead back to two main outcomes: depression and anxiety. A questionnaire conducted on 10,904 14-year-olds from the U.K revealed that "greater social media use related to online harassment, poor sleep, low self-esteem and poor body image; in turn these related to higher depressive symptom scores" [Kel18]. In addition, a meta-analysis with 23 studies showed a correlation between adolescents with psychological distress and problematic Facebook use causes [Mar18]. A survey conducted in 2018 revealed that while face-to-face emotional support was important to decrease depressive symptoms, social media support usage was correlated with an increase in depressive symptoms [She20]. Similarly, a review regarding social media exposure in China during the Covid-19 outbreak revealed that anxiety and depression were prevalent along with a clear association between social media usage and mental health issues [Gao20]. The studies reviewed above provide concrete evidence regarding the negativity of social media on adolescent mental health.

3.4 A comparison of the perspectives

Many patterns and observations can be made while comparing the three perspectives. It is clear that both parents and adolescents tend to view social media usage as a problem; however, adolescents may be less anxious about social media usage and their opinions on digital media may be more mixed than those of their parents. This convergence resonates with findings from a study conducted in 2019. From both parent and adolescent perspectives, youth in the study's sample were regularly engaged in social media, although parent-reported hyperactivity, anxiety, and depression was much higher and seemed much more urgent than what adolescents reported [Chr19]. All three perspectives provide crucial insight both individually and when combined, allowing scholars to reach conclusions after reviewing multiple vantage points. Ultimately, the concerns

of the adolescent mental health crisis and social media usage are repeatedly emphasized through the analyses above.

4 Challenging the authenticity of the “positive” impacts social media usage brings to adolescents

Although social media is now one of the largest influences in our world today, it is still considered a relatively new phenomenon. For this reason, there is still widespread debate regarding social media’s positive and negative effects within the field. There are three main claims regarding the positive impacts of social media that have arisen across different contexts: identity development, a sense of belonging, and novel protesting methods, discussed in the succeeding subtopics. However, there is a plethora of evidence that refutes these claims.

4.1 Counterclaim to identity development

A phenomenon known as social identity gratification pushes individuals, especially adolescents, to find information about themselves regarding pre-existing social identities [Har99]. Through this action, many scholars claim that there is a positive effect of social media use on adolescents. For example, a study collecting the opinions of 738 freshman students younger than 19 found increased social media was often used as a way to develop positive self-images [Bar12]. However, correlation doesn’t necessarily mean causation. It is important to address whether social media itself leads adolescents to positive self-conceptions or whether adolescents are simply portraying a positive image of themselves. This introduces another issue regarding the potential for an adolescent to believe in an idealized version of themselves. If this is true, then an individual may generate an identity that doesn’t reflect their true self [Hol12], contradicting the original study’s statement. Indeed, a survey conducted on 213 college freshmen revealed that authentic online self-presentation was related to higher self-esteem, although revealing personal information was associated with lower identity acceptance [Yan17]. The problem lies in the ability to expose the authentic self online especially as societal norms that are constantly being perpetrated on social media, pressuring individuals to “sugarcoat” their identities [Kim14]. This statement is supported by the Kimmons & Veletsianos study’s second finding, revealing that the negativity surrounding an individual indicates one’s true identity. Although both the Harwood and Barker studies seem to provide reasonable solutions, the contradiction behind their statements strengthens this paper’s previous sections and arguments.

In general, identity development in adolescents is hindered by social media usage for a couple of reasons, including exposure to inappropriate information. As an adolescent, the prefrontal cortex is still developing and controlling techniques such as emotion regulation [You19]; adolescents often witness and share

inappropriate content on online platforms such as Instagram and Snapchat. Moreover, [Dav13] found that adolescents who were motivated to go online to express and explore different aspects of their identities tended to experience lower self-concept clarity, generating another negative impact of social media.

4.2 Counterclaim to a sense of belonging

A sense of belonging is especially important during the adolescent stage of life [Val07]. This proves to be true both in a social context and in an academic context; when adolescents feel like they belong, they pay more attention to the academic material they are learning [Gil12]. Many studies advocate for the increased sense of belonging among adolescents after using social media. For example, after combining qualitative and quantitative approaches to the study of language and its effect on mental health, a 2007 study revealed that when there is interaction with other individuals that are experiencing the same concerns and feelings of frustration, a sense of belonging to a group is often created [Har07]. However, while it is possible that social media may elevate the shared experiences between similar adolescents, it is important to realize that the quality of these interactions may falter. Social media is designed to attract individuals to utilize their platforms, meaning that adolescents are correlating their perception of belonging with the number of interactions they make rather than fostering genuine connections. Because individuals are already seeking a sense of inclusion, they constantly access the platform, fostering addictive behavior and therefore ignoring a physical, present companion, a phenomenon known as “phone-snubbing” [Dav17].

A different study interviewing 32 adolescents aged 13-18 revealed that discussions among young people through methods, such as texting and calling, helped create a sense of belonging. The study mentioned that for some participants, the ability to reach out anytime “is not just a convenience, it is a necessity” [Dav12]. When asked about friendships without access to digital media, a 15-year-old participant stated that by being up-to-date with everybody, everybody would communicate with him instead of spending time with others [Dav12]. Although this article seems to be suggesting the positivity of social media on a sense of belonging, it proves the opposite. The statement suggests that the participant has created a situation where everyone communicates with them digitally, implying a heavy reliance on digital interaction. Furthermore, this statement highlights the idea that being “up-to-date with everybody” may prioritize quantity, a wide digital network, over quality, meaningful, in-person friendships, revealing the shallowness of online connections, a growing dependency on social media which can develop into an obsession, and how FoMO pressures adolescents to constantly check platforms [McC18, Tur12, Kus17].

When considering the idea of a sense of belonging in adolescents when using social media, it is important to acknowledge the ideas of ostracism and exclusion, two experiences that can be easily identified. These experiences are reflected in real life, causing social pain, threatening the overall mood of the adolescent, and threatening self-esteem [Sch17]. In a study performed by [Wil00], participants

from 62 countries played a virtual tossing game. Despite minimal interaction during the game, the more participants were ostracized, the more they reported feeling bad, having less control, and losing a sense of belonging. Specifically, adolescents are affected more by ostracism compared to their older counterparts [Pha11], revealing the heightened and definite negative impact social media uses to create adolescents' sense of belonging.

4.3 Counterclaim to novel protesting methods

While novel protesting methods often receive praise and are considered effective and creative, social media as a protesting method often overshadows the individual, emphasizing the use of social media as a tool for political engagement instead of the individuals who are utilizing platforms to advocate for their cause. A 2011 study utilized different cross-sectional analyses to reveal the case of Chilean youth and how they employed social media as a method of political engagement. The findings of this study reveal that there is a strong link between using online platforms, including social network sites, and political and civic participation [Sch10,Sch11]. While it may be true that Chilean youth utilized social media to politically engage its youth, it is important to consider that the case of Chile does not represent all contexts. Chilean students, at the time, were engaged in a series of protests known as the 2011-2013 Chilean student protests, in which teens resorted to social media as a means of digitally communicating and congregating [Bel14]; this implies that social media, in this case, emerged as a safer and more accessible platform to discuss viewpoints. The effectiveness of protesting via social media in Chile does not apply universally as other countries may have more efficient and developed protesting methods, including public gatherings and strikes.

Contrary to the conclusions the Chilean study presents, there are a couple of reasons why social media isn't a reliable protesting method, especially for adolescents. Firstly, social media undermines the true definitions concerning different political stances, meaning that individuals may express political views that are oversimplified and distorted, false information may spread, and extreme polarized viewpoints may be encouraged as a result of exposure to content that aligns with a user's existing beliefs [Ear22]. Another reason why social media isn't a reliable protesting method is the superficial engagement that it creates. Although social media is an effective way to generate support, the level of engagement that is created does not always show meaningful, long-term action. For example, adolescents may interact with a post by liking or commenting, but this surface-level engagement does not reflect the viewer's true thoughts and doesn't create action. This statement is supported by a study conducted by [Mac12], revealing that adolescents who were already interested in an issue used Facebook to tell others about their interest, but learning about the issue on Facebook did not produce offline action. Overall, it is evident that protesting on social media does not bring benefits to adolescents.

5 Discussion

5.1 Implications

This review paper explored the negative effects of adolescent social media usage on mental health. Firstly, it analyzed the concept of adolescence and explained the three main reasons adolescents are so attracted to social media: socializing, technological advancements, and conditioning and repeated behaviors. This analysis implies that there are a variety of reasons causing severe addiction to social media in adolescents, such as the increasing prevalence of social media as a communication method and FoMO. Subsequently, the impact of social media on adolescent mental health was analyzed through adolescent, parent, and objective perspectives, revealing that parental and adolescent standpoints regarding social media are similar. This section correlates adolescent mental health and social media usage with loneliness, social anxiety, chronic sleep deprivation, lowered empathy, and ultimately, depression and anxiety. Implications of the preceding research include the significantly large role of parenting within social media usage and that prolonged use of social media platforms may lead to psychological consequences that negatively affect both emotional and cognitive well-being. The review also dissected social media's "positive" impacts, providing counterclaims to these statements. These counterarguments imply that social media's impact on adolescents require further research and clarification, potentially creating larger societal implications that should be noted.

5.2 Limitations

One limitation of this review pertains to overlooking other potential factors that may impact adolescents' social media addiction, such as the possibility of some adolescents being more sensitive than others or other reasons such as family environment, peer relationships, and socioeconomic factors. Another limitation within this review regards the oversimplification of the complexity of social media. The complexity of social media and its impact on mental health may require an analysis that takes into account the differences between distinct social media platforms, the types of content shared on these platforms, and the way adolescents engage with them. Finally, the counterarguments presented could have had other interpretations that were not explored.

5.3 Future Directions

Social media has proven to negatively affect adolescents' mental health. As technology is becoming increasingly advanced, the urgency of the issue increases. In the future, person-specific therapy and treatments need to be developed along with education regarding the effects of social media on well-being. In addition, further studies need to be conducted to investigate the relationship between adolescents and social media to find the best prevention methods. Similarly, adults' negative feelings towards adolescents in this realm are increasing rapidly.

Investigating the significance of parents in educating adolescents about responsible social media usage could lead to valuable discoveries, possibly leading to healthier online behaviors. Finally, identifying ways for adolescents to maximize on the positive outcomes of social media while minimizing different platforms' negative consequences may be beneficial.

6 Conclusion

This review aimed to reveal the effects of social media and its impact on adolescents. The findings indicate that social media has had and will continue to have detrimental consequences on both adolescents' developing minds and bodies. Overall, more research needs to be conducted to have a broader understanding of the various claims that different scholars hold regarding the topic and to consider new forms of technology that have started becoming an integral aspect of many adolescents' lives.

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