



Social Media use is Associated with, but is not a Major Cause of Mental Disorder among Adolescents

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Received: 7 April 2026 / Accepted: 23 June 2026
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Abstract

Purpose of Review We evaluate the contemporary societal belief that social media use causes mental health problems among adolescents, such as depressive and eating disorders, and suicide. We alternatively raise the more likely scenario that poor mental health is what can drive social media use/overuse.

Recent Findings We summarize empirical evidence from longitudinal studies on relations between social media use/overuse and mental health among adolescents, demonstrating mixed findings and important methodological limitations that preclude our ability to state that social media use is a major cause of mental disorder. Nonetheless, we discuss the need for government regulation of social media companies, given that these companies have purposefully promoted excessive social media use in adolescents, and have inadequately protected against violent content and misinformation on their platforms.

Summary Social media use/overuse is not likely a major cause of mental disorder, but can nonetheless result in other harms.

Keywords Social media use · Problematic social media use · Social networking · Technology addiction · Depression · Mental disorder

Introduction

News media outlets have increasingly suggested that social media use causes mental health problems, especially among adolescents [1, 2]. This view has been further supported by Jonathan Haidt's international bestseller "The anxious generation" [3], a book criticized in a Nature piece mentioning

that the "repeated suggestion that digital technologies are rewiring our children's brains and causing an epidemic of mental illness is not supported by science." (p. 29) [4].

Relatedly, governmental bodies have compelled social media companies to testify about and answer for alleged mental health harms from adolescent social media use [5]. Furthermore, civil lawsuits have been filed against social

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media companies, claiming harm incurred to adolescents' mental health [6, 7]. Additionally, minimum age restrictions (traditionally, age 13 in the past) have been increased, requiring younger adolescents to mature by several years before beginning social media use [8, 9]. In fact, smartphone bans have been enacted in many school districts around the world [10, 11].

Specifically, the news media have honed in on social media use causing depressive disorders, eating disorders, and suicide among adolescents [2]. But are these assertions based on scientific evidence? In the present paper, we discuss theory and research regarding whether social media use/overuse causes mental health problems among adolescents. We especially address whether mental disorder is a possible outcome from social media use, but we also address other potential, relevant outcomes as well. As we discuss below, the research literature examining the connection between social media use and mental health has conflicting findings and suffers from major methodological limitations.

Relevance of the Youth Mental Health Crisis

Relatedly, at present, there is a youth mental health crisis globally [12]. Over the last 15 years or so (even before the COVID-19 pandemic), among youth from many countries, prevalence rates have in fact significantly increased for suicide, non-suicidal self-injury, and numerous mental disorders such as depressive, anxiety, psychotic and eating disorders [reviewed in 12]. These increasing prevalence rates have coincided with the rise of social media and smartphone use. Therefore, a common belief in society is that the increased use of modern technologies, especially social media and smartphone use, has played a major causal role in the development of this youth mental health crisis [3, 13].

Poor Mental Health Drives Social Media Use/Overuse

An alternative possibility is that other causes (rather than social media use) have driven the youth mental health crisis. Of course, scientists are taught not to confuse correlation with causation. However, we believe that society has likely confused cause and effect regarding the connection between social media use and poor mental health.

In fact, it is more likely that poor mental health causes increased social media use, rather than the opposite sequence. For many years, prominent theoretical frameworks and models have conceptualized mental health problems as an important and primary cause of increased Internet (such as social media) use and overuse [14]. In

these theoretical models, social media use is conceptualized to serve as a method of alleviating negative emotion among individuals with emotional problems. Excessive or problematic social media use (PSMU), involving social media overuse with adverse consequences to daily functioning, in particular is conceptualized as a maladaptive mood regulation strategy [15, 16]. We should emphasize that PSMU has features resembling addiction, but scientific research has not yet supported PSMU being truly addictive [17]. Furthermore, PSMU might be a potential candidate, but has not been included as a diagnosis in the latest revisions of the diagnostic manuals [15].

The theoretical models to which we refer include Uses and Gratifications Theory [18], Compensatory Internet Use Theory [19], the Cognitive-Behavioral Model of Pathological Internet Use [20], Cognitive-Behavioral Model of Generalized Problematic Internet Use [21], and Interaction of Person-Affect-Cognition-Execution (I-PACE) [22]. According to these models, an individual who has mental health problems (among additional risk factors) may consequently use or overuse the Internet/social media as a convenient method to improve their mood.

We acknowledge (often addressed by these theories above) that social media use and PSMU can trigger a negative mood *state* (rather than mental disorder); after passive social media use, 10% of the investigated participants felt worse emotionally [23]. And such use could *exacerbate* (rather than initially cause) mental disorder among those individuals with existing premorbid mental health symptoms. Furthermore, involvement in especially risky or dangerous social media use, such as being the victim or perpetrator of cyberbullying [24] or cyberstalking [25], or witnessing repeated trauma-based imagery [26], can cause negative mental health consequences. However, it is unlikely that normal, non-risky social media use/overuse is a major cause of mental disorder among those individuals without a history or vulnerability to disorder. Instead, other established causes are more likely to influence mental disorders.

What Really Causes Mental Disorder?

In fact, the current societal notion that social media use has caused the youth mental health crisis does not fit with decades of psychiatric epidemiology research on the major causes of mental illness. Scientific evidence has demonstrated that the major causes of mental disorder include genetics and biological divergences, psychological trauma and adversity, maladaptive child-rearing/parenting practices, socioeconomic issues such as financial/job strain, and other factors, reviewed in [27, 28]. Internet/social media/

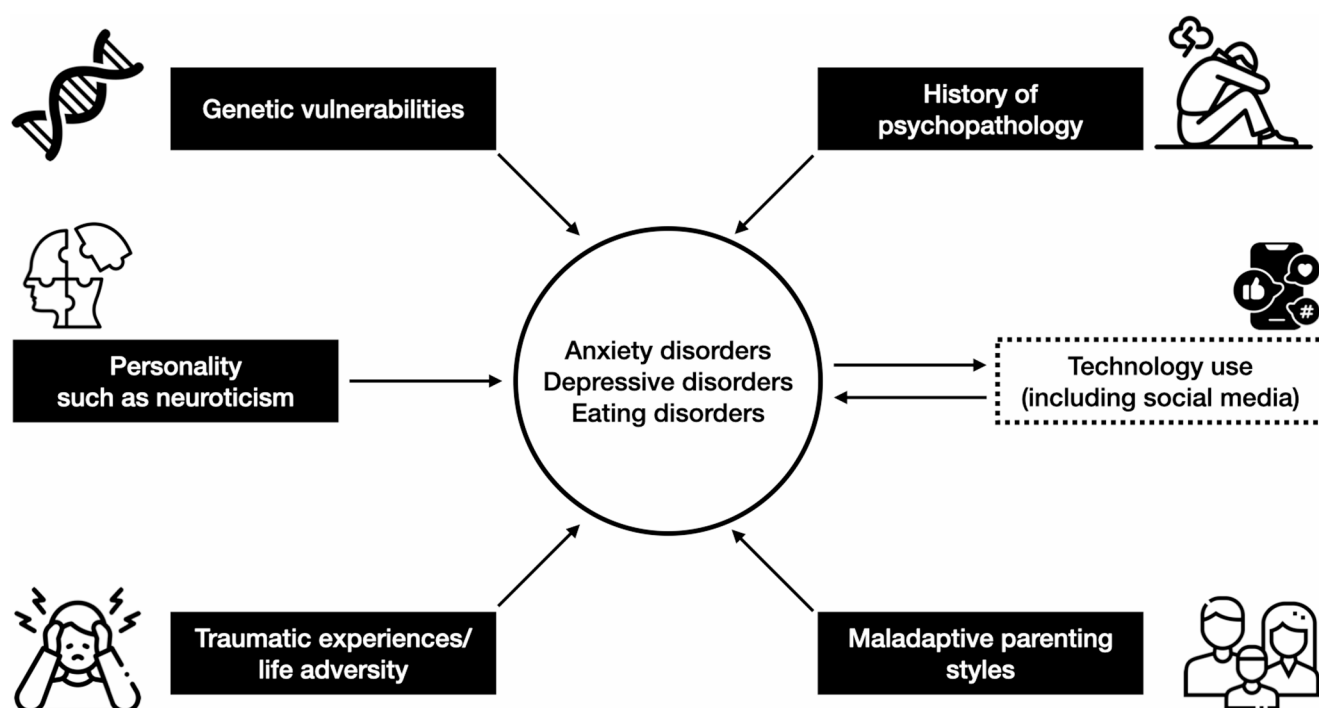


Fig. 1 Examples of major causes of mental disorder

screen use or overuse does not fit well within these known major causes of mental disorder. In fact, prior introductions of new technology (e.g., the radio, TV, etc.) have never been seriously considered or found as viable causes of mental illness. Thus, conceptualizing Internet technology use as a major cause of mental disorder would upend decades of conceptualization and science in the field of psychiatric epidemiology. Figure 1 depicts examples of major causes of mental disorders (in dark colored boxes); social media use appears in a light-colored box enclosed with a dotted rather than solid line, suggesting that while it is not likely a major cause of mental disorder, it may nonetheless have some role in certain circumstances. The connection between social media use and mental disorder is also depicted with reciprocal arrows, indicating bidirectionality. Icons are from www.flaticon.com.

So Why do Many People Believe that Social Media use Causes Mental Disorder?

First, throughout history, as new technology has emerged, a substantial proportion of the population has engaged in a backlash against it, focusing on its negative effects rather than positive benefits [29]. This phenomenon has been also described as the Sisyphean cycle of technology panics [30]. Social media is an example of a contemporary technology being dismissed – perhaps because (as mentioned above) society has confused cause and effect regarding the social

media use-mental disorder relationship. Second, people feel relieved if they believe the youth mental health crisis is due to an identifiable (and potentially changeable) reason (i.e., social media) rather than being the result of unknown or perhaps random, unchangeable reasons (e.g., genetics, prior trauma). This phenomenon is known as the just-world hypothesis [31]. Without having a culprit to account for the youth mental health crisis, people would feel helpless to intervene with today's youth. Third, we must acknowledge that, as discussed below, research studying the connection between social media use and mental health suffers from major methodological limitations. Thus, the researchers also bear some responsibility for fueling the assumption that social media use causes mental disorder.

Despite societal belief, it is important to examine the scientific evidence regarding whether social media use causes mental disorder.

Nature of the Association Between Social Media use and Mental Health: The Research Evidence

A significant body of research has emerged, examining the relationship between social media use/overuse and mental health. This research question has been investigated in numerous school-aged adolescent samples (under age 17–18), finding increased social media use related to depression symptoms primarily with small effects, reviewed [32],

and to anxiety with small to medium effects, reviewed in [33]. Social media use is also associated with greater body dissatisfaction in youth [34]. PSMU symptoms have also been examined, though in relatively few adolescent samples, finding small to medium associations with depression severity [35, 36], and medium to large associations with anxiety severity [37–39].

Importantly, however, these studies discussed above were all cross-sectional. Thus, findings cannot be used to conclude whether social media use/overuse *caused* mental health symptoms or if the opposite sequence is supported. Examining evidence from longitudinal studies would be needed to address this question (albeit not even longitudinal study designs per se guarantee valid causal inferences).

Initially, we conducted a literature search in September 2025, which we repeated in February 2026, regarding longitudinal studies on relations between social media use/PSMU and mental health symptoms among adolescents. We used search terms related to social media/networking use, and adolescents/children, and repeated measures/longitudinal methodology. We focused our search on adolescent samples rather than college student samples. We excluded experience sampling/ecological momentary assessment including only short-term data collection methodology. We also excluded studies that assessed psychological constructs unrelated to mental health symptoms. Ultimately, we discovered 21 relevant studies which we discuss next.

In fact, several studies examined longitudinal relations between social media use and mental health among adolescents, mostly examining depression, anxiety, and alcohol abuse. These studies span numerous countries across North America, Europe and Asia, the majority of which had 3 or more waves of data analyzed. However, conflicting findings were observed regarding directionality. Some work has demonstrated that mental health problems, including prior alcohol use [40] and depression symptoms [41], influenced subsequent social media use levels; depression also influenced later PSMU levels [42, 43]. Others have instead found that earlier social media use (and/or PSMU) influenced subsequent mental health symptoms, including anxiety, depression or eating disorder symptoms [44–54]. One study found bidirectional relations for social media use with both alcohol use and internalizing symptoms [55]. While still other studies found no significant longitudinal association [56–60].

These mixed findings make it difficult, if not impossible, to conclude that social media use/overuse is an important cause of mental disorder. Furthermore, these longitudinal studies share two major weaknesses. First, only one of these studies used a standardized clinical

interview-based measure of mental disorder (for eating disorder symptoms) [54]; rather, they used brief, self-report measures to assess mental health symptoms. Yet, use of structured diagnostic interviews of mental disorder is the gold-standard for assessing and diagnosing mental disorder; self-report measures cannot be reliably used to diagnose mental disorder on their own [61, 62]. Thus, any significant social media-mental health associations would merely suggest that higher levels of social media use correlate with greater reports of negative mood or an unspecified number of mental health symptoms, but not necessarily a diagnosable disorder. Furthermore, without structured diagnostic interviews, it is not possible to rule out the possibility that pre-existing mental disorder rather than social media influenced later mental health symptoms. Second, none of these studies objectively assessed social media use with device-based screentime estimates. Instead, they all used subjectively reported estimates of social media use (mostly 1–2 social media use frequency items). Such subjective estimates of internet use are known to be highly inaccurate when judged against objective data [63, 64].

Therefore, at the present time, because of mixed findings and the lack of standardized diagnostic data and objective social media data implemented, it would be difficult to conclude that social media use is an important cause of mental disorder. Continued use of longitudinal studies, implementing standardized diagnostic interviews and objectively-measured social media use data relying on mobile sensing and digital phenotyping [65], would be required to offer such a conclusion.

More Likely Causes of the Youth Mental Health Crisis

If we cannot conclude that social media use is a major cause of mental disorder, what has most likely caused the youth mental health crisis? Likely, numerous other influencing factors representing recent adverse societal changes have caused this crisis. These factors include an earlier puberty onset, growing economic and social disparities and related stress, increased academic achievement pressure from parents, overparenting (e.g., helicopter parenting) practices, increased focus on individualism with less governmental social service intervention, and social isolation and stress from the pandemic [12, 66, 67]. Unlike social media use, these factors fit with the known, major causes of mental disorder from the psychiatric epidemiology literature. Moreover, these factors may also be predictors of social media overuse.

Social Media Use Offers Benefits

We have so far focused primarily on whether social media confers negative consequences to mental health. However, we have not yet mentioned that social media use actually offers positive benefits to individuals [68]. In fact, social media use has numerous advantages for adolescents, in promoting social support, building and bridging social capital, and maintaining in-person relationships, reviewed in [69, 70]. The positive benefits of social media use often become lost in society's discussion of whether social media causes mental health problems.

Adding Nuance in Examining the Social Media Use-Mental Health Connection

It is important that we offer some caveats about social media use in connection with mental health. First, we primarily focus on *adolescents* here, and how social media use is likely not a major influence on mental disorder. Certainly, we do not believe that younger children (e.g., below age 13) should be using social media. For healthy brain development, it is important that children have enough play-time outside. Fulfilling the inner mammalian need for (rough and tumble) play is highly relevant in shaping social learning and motor skills [71]. As long as the social media industry operates with a data-driven business model aiming at prolongation of online time, we think that this stands in stark contrast to fulfillment of important psycho-developmental tasks [72]. This argument also needs to be considered for the psycho-developmental tasks in adolescents including identity formation.

Second, we must be careful not to treat social media use as a single, monolithic activity. Different social media platforms may have different effects on adolescents. Also, what one specifically does on social media matters, with social and active use being more beneficial to well-being than non-social, passive use, reviewed in [73]. And as discussed above, involvement in risky/dangerous social media use can be harmful to mental health. Excessive exposure to body appearance-focused content can also worsen body image and self-esteem for some, which is relevant to eating disorders [74]. Fittingly, recent evidence suggests that abstaining from social media use on one's smartphone reduced body dissatisfaction [75]. And certain types of smartphone and social media use may impair attention [76]. Third, time spent on social media is important in conferring well-being and social benefits. Yet, the relationship between social media use and well-being/socialization is not linear. Instead, research has discovered an inverted U-shaped relationship: very low and very high social media use frequency have

little benefit to well-being, while moderate use confers the most benefit [77].

If Social Media Use is Not a Major Cause of Mental Disorder, are the Social Media Companies Absolved from Wrongdoing?

Despite our arguments and evidence that social media use is not a major influence on mental disorder, this does not mean that social media companies are free from blame in causing harm to adolescents. As we stated earlier, social media use can still exacerbate mental health symptoms among the vulnerable. And we already acknowledged that risky/dangerous content on social media can cause mental disorder. Yet social media companies have not gone far enough in monitoring and moderating dangerous, violent content witnessed by adolescents on their platforms [78, 79]. The social media industry also does not adequately protect against misinformation, which can adversely affect democracy [80].

Furthermore, social media companies know exactly which elements of their platforms (e.g., the Like button, short-form video reels, etc.) influence their consumers to excessively engage in use, at the expense of other important activities such as work, school or socializing [81]. This point belongs to the discussion around the displacement hypothesis; hence, if young users spend too much time on a social media platform, they have less time for fulfilling important psycho-developmental tasks (which then could have detrimental consequences to mental health, in particular for vulnerable users - see above) [72].¹ The social media companies actively entice their consumers (using these design elements) to increasingly stay on their platforms for revenue generation. Prolonged use earns revenue from advertisers, and by eliciting more consumer data allowing more micro targeting of ads [82].

We believe that companies should certainly manufacture the best products that they can, to offer the highest quality to their consumers. Companies should not be expected to offer inferior products just so that consumers avoid spending a lot of time using their products. However, these companies also have responsibility. Yet, the motivation behind the social media industry is not only to offer a high-quality product, but to also use their consumers (and their data) without regard to (and in fact often promoting) consumer harm. The social media industry would be wise to recall what happened to the

¹ Again, we mention that this does not stand in contrast with the above summarized evidence pointing against social media being a major driving factor of developing mental disorders. Here, we make the point again that products aiming merely at prolongation of online time need to be seen as detrimental, and for some users might have – in concert with other variables as depicted in Fig. 1 – detrimental effects.

tobacco industry starting in the 1990s when tobacco companies were found to purposefully add addictive elements to their products (and concealed this knowledge) to keep their consumers addicted to cigarettes – the result were major, expensive lawsuits that the tobacco industry often lost [83]. In the end, to reduce time spent online, we believe that the industry (not the user) must change [84].

Conclusions

Despite contemporary societal thinking, theoretical frameworks, and decades of psychiatric epidemiology research suggest that poor mental health causes increased social media use/overuse rather than the opposite sequence. Furthermore, scientific evidence from longitudinal studies does not support the contention that social media use is an important cause of mental disorder in adolescents, at least not seen from the perspective of a monocausal factor. Additionally, exposure to appearance-based ideals is a well-known contributing factor to eating disorders. Yet, as mentioned above, primarily in vulnerable youth, would social media use play a role, among other more important factors, in driving mental disorder. Against this background, we believe that other adverse societal changes have instead caused the youth mental health crisis. Nonetheless, social media companies still have a responsibility to safeguard harmful content, and heed vulnerable users; a responsibility the social media companies have largely shirked. These companies will likely continue to avoid such responsibility unless government regulations force them to make changes.

We should emphasize that social media in itself is not necessarily harmful. It is merely a channel or medium, and the important question is - which content features come through the medium that may cause harm? The worrisome content features include (a) general platform elements that can trigger overuse, and (b) risky/dangerous content that can trigger mental health harm. These content features are the real source of social media's problem, and should be targets of government regulation.

The youth mental health crisis is legitimate. And society desperately wants a culprit to blame for this crisis, and a means of intervention. Social media seems to be an easy culprit because it appears obvious to people that social media may have caused this crisis. Also, the solutions seem fairly straightforward – ban social media use among younger adolescents. However, for adolescents who habitually use social media, abruptly discontinuing use may pose several risks. And, if our arguments here are correct, and social media use in fact is not the major driving cause of mental disorder among adolescents, what will happen when these proposed solutions are implemented but are not effective? Who will

we blame next when newly emerging adolescents continue to struggle emotionally?

Acknowledgements N/A.

Author contributions JDE wrote the original draft; ZD, SC, and CM reviewed and edited. All authors provided final approval for the version to be published. All authors agree to be accountable for all aspects of the work.

Funding This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Data Availability No datasets were generated or analysed during the current study.

Declarations

Human and Animal Rights and Informed Consent N/A – no data were used.

AI Statement The authors did not use generative or assistive AI for article write-up.

Competing interests The authors report no conflicts of interest with this paper's study. In addition, the authors report the following: Jon Elhai has never received funding or payments from the social media industry. Zsolt Demetrovics has never received funding or payments from the social media industry. Silvia Casale has never received funding or payments from the social media industry. Dr. Montag mentions that he was part of a discussion circle (Digitalität und Verantwortung: <https://about.fb.com/de/news/h/gespraechskreis-digitalitaet-und-verantwortung/>) debating ethical questions linked to social media, digitalization and society/democracy at Facebook. In this context, he received no salary for his activities.

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