

Social Media and Anxiety in Youth

A Narrative Review and Clinical Update



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KEYWORDS

- Adolescents • Anxiety • Children • Social media • Facebook • FOMO
- Generalized anxiety disorder • Instagram

KEY POINTS

- Social media use and related research focused on the child and adolescent mental health continues to evolve rapidly.
- Social media's impact and relationship with anxiety has been understudied.
- We examined relevant systematic and narrative reviews.
- Duration, frequency, and type of social media use may have correlations with anxiety.
- Further research focused on anxiety and social media is urgently needed.

There are ongoing concerns about the effects of social media on adolescent mental health. Few earlier studies have examined social media in the context of anxiety. This review provides background on social media use in youth through developmental and neurobiological lenses, summarizes recent systematic reviews and meta-analyses, then narrative reviews on anxiety and social media use offer guidance on how to best address social media use in youth, and suggests future directions for research and clinical practice.

WHAT IS SOCIAL MEDIA, AND HOW HAS IT EVOLVED OVER THE YEARS?

The definition of “social media” varies, and social media continues to evolve rapidly. Social media includes Internet-based platforms that rely on user-generated content comprising user-specific profiles maintained by the platform. Ultimately, social media

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platforms connect users, facilitating the development of social networks.¹ Over time, they have adapted to usage trends, shifting toward more concise and visual content and expanding their reach to broader audiences.

The evolving definition of social media and the need for a well-operationalized definition of social media use complicates research on the topic. Social media use commonly focuses on the amount of time one spends engaging with social media; however, researchers have conceptualized it in various ways. Most fundamentally, social media engagement has been separated dichotomously into active use, generating and reacting to content, versus passive use, consuming content as an observer. More nuanced types of social media engagement have also been described.^{2–4}

IT FEELS LIKE TIMES ARE CHANGING, BUT WHAT ARE THE DATA ON SOCIAL MEDIA USE IN YOUTH?

YouTube is currently the most used social media platform by adolescents aged 13 to 17 years (95% endorsed ever using Youtube), followed by TikTok (67%), and Instagram (32%).⁵ Internet usage trends show an increase from 24% of teens endorsing almost constant Internet use in 2014 to 46% of teens in 2022.⁵ There are demographic and socioeconomic status differences in social media use. Black and Hispanic teens (56% and 55%, respectively) are significantly more likely than White teens (37%) to constantly use the Internet, and teens in low-income households are more likely to use Facebook.⁵ The onset of the COVID-19 pandemic in December 2019 was associated with an increased media use for various purposes.⁶ As usage trends have increased, anxiety, depression, suicide attempts, and suicide completions over time in children and adolescents have increased^{7–10} fueling concerns about a link (Fig. 1, Fig. 2).

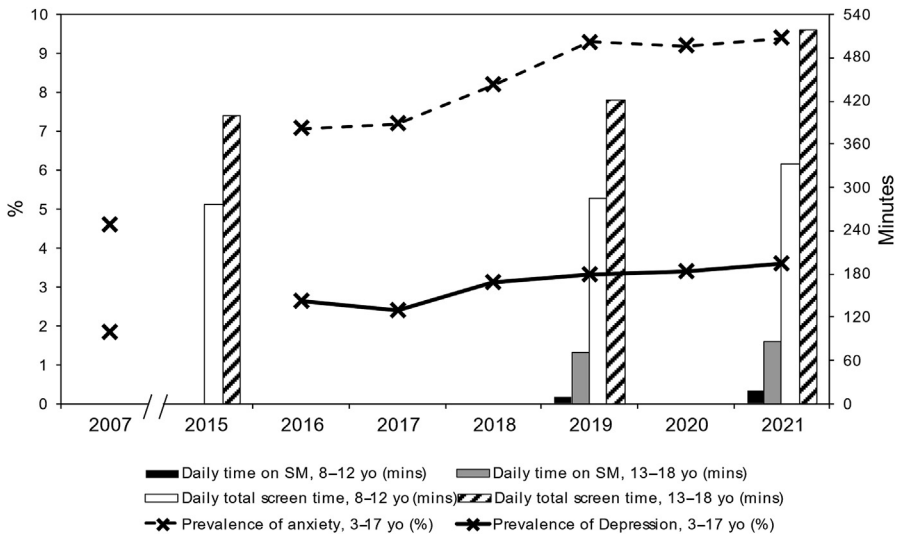


Fig. 1. Annual depression, anxiety, and social media use trends. Daily time on SM, 8–12 yo: 2019 – 10 min, 2021 – 18 min. Daily time on SM, 13–18 yo: 2019 – 70 min, 2021 – 87 min. Daily total screen time, 8–12 yo: 2015 – 276 min, 2019 – 284 min, 2021 – 333 min. Daily total screen time, 13–18 yo: 2015 – 400 min, 2019 – 422 min, 2021 – 519 min. Anxiety and depression data source: <https://www.census.gov/programs-surveys/nsch/data/datasets.html>. Social media use data source: https://www.common sense media.org/sites/default/files/research/report/8-18-census-integrated-report-final-web_0.pdf.

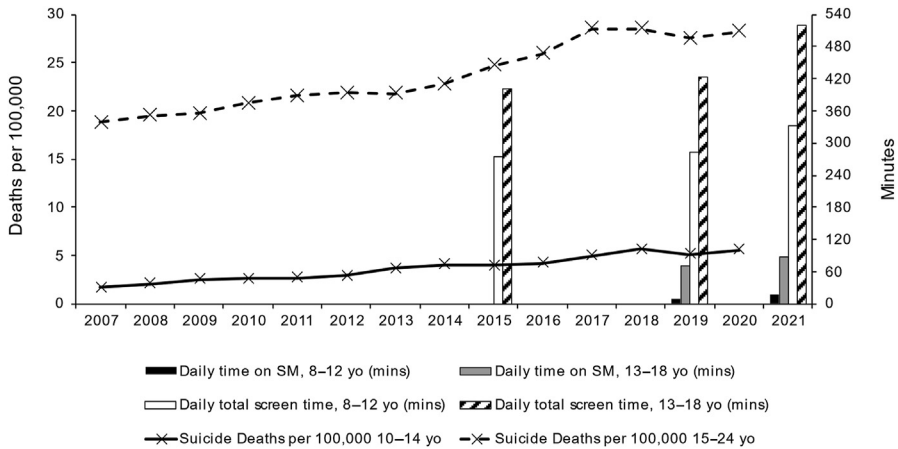


Fig. 2. Annual suicide deaths and social media use trends. Daily time on SM, 8–12 yo: 2019 – 10 min, 2021 – 18 min. Daily time on SM, 13–18 yo: 2019–70 min, 2021–87 min. Daily total screen time, 8–12 yo: 2015 – 276 min, 2019 – 284 min, 2021 – 333 min. Daily total screen time, 13–18 yo: 2015 – 400 min, 2019 – 422 min, 2021 – 519 min. Suicide deaths data source: <https://www.cdc.gov/nchs/data/databriefs/db433-tables.pdf#2>. Social media use data source: https://www.commonsensemedia.org/sites/default/files/research/report/8-18-census-integrated-report-final-web_0.pdf.

Accordingly, new assessment tools and mental health disorders are being proposed. Problematic social media use refers to a pattern of social media engagement despite problematic consequences resulting in addiction-like symptoms.¹¹ Internet Gaming Disorder is described and recommended for further research in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5). Although it has not yet been recognized as an independent disorder in the DSM-5, the criteria have been extrapolated to describe other Specific Internet Use Disorders as defined by the International Classification of Diseases-11 separate from gaming disorders.¹²

HOW DO WE LOOK AT SOCIAL MEDIA USE IN YOUTH THROUGH A DEVELOPMENTAL LENS?

Child and adolescent developmental processes can unfold or derail on social media platforms. Age-based windows where correlations exist between social media use and well-being/ill-being suggest developmental underpinnings.¹³ For example, very-high and very-low social media use correlate with lower life satisfaction ratings in older adolescents (aged 16–21 years). In younger adolescents (aged 10–15 years), a more linear relationship was found with increasing use, along with lower life satisfaction ratings in girls compared with boys.¹³ There were differences in the age-based sensitivity windows for male adolescents (aged 14–15 years and 19 years) and female adolescents (aged 11–13 years and 19 years). Furthermore, a sex-based bidirectional inverse relationship between social media use and well-being during specific ages of adolescence was also found.¹³

Adolescents cultivate trust in social relationships through self-disclosure. There was a positive bidirectional relationship between adolescent self-disclosure and psychological well-being¹⁴ and potential benefit from social media use in adolescence on developing empathy and improvements in self-esteem and well-being.¹⁵ Additionally, the strength of the relationship between 2 individuals correlates with how happy one

feels after reading a positive Facebook post about the other.¹⁶ Although adolescents preferred face-to-face communication, online self-disclosure positively influenced initiation of offline friendships and can be helpful for those with social anxiety.¹⁴

Adolescents are arguably more susceptible to social pressures, including the tendency to imitate an observed behavior. Research is growing on this contagion effect within social media use, for example, with respect to suicide and tics.^{17,18} Youth are more likely to “like” popular content with many “likes” than less popular content.¹⁹ Furthermore, experimental modification of an individual’s Facebook news feed alters the individual’s posting behaviors accordingly.¹⁶

HOW DO WE LOOK AT SOCIAL MEDIA USE IN YOUTH THROUGH A NEUROBIOLOGICAL LENS?

White matter connections increase during adolescence, improving communication between brain structures and increasing behavioral and emotional regulation. Simultaneously, gray matter volume decreases, notably in areas involved in social engagement.²⁰ The incomplete development of the prefrontal and parietal cortices involved in executive functioning and emotional regulatory networks may result in adolescents being more vulnerable to emotional social media content and the potential negative consequences of social media use,^{20,21} just because they are more susceptible to social pressures offline.

Greater activation of reward circuitry correlates with receiving “likes” on personal content and when viewing others’ content with many likes.¹⁹ Viewing popular content was also associated with activation in brain areas involved in visual attention.¹⁹ Activation of brain areas involved in providing social support is related to “liking” content. These neurobiological circuits evolved in primates and humans as social engagement deepened, and their implication in social media use may foster positive social development.²² Regarding cognition, a recent study on more than 12,000 adolescents, including a portion with problematic social media use, showed no significant correlation between social media use on various domains of cognition.²³

SUMMARY OF RESULTS OF SYSTEMATIC REVIEWS AND META-ANALYSES

A broad search of PubMed using the terms “anxiety” and “social media” identified 6 relevant systematic reviews and meta-analyses. A seventh systematic review was included based on review of the references (**Table 1**). The fact that our search for studies resulted in 7 systematic reviews and meta-analyses from the past 5 years with little overlap in included studies underscores the heterogeneity of research and recent productive study of the role of social media in adolescent mental health.

Shannon and colleagues systematically examined associations between problematic social media use and mental health outcomes, including depressive symptoms, anxiety symptoms, and stress. Eighteen studies from the United States, Europe, the Middle East, and Asia included study populations aged 12 to 30 years and used validated scales. The association between problematic social media use and anxiety was weak ($r = 0.348$, $P < .001$), and heterogeneity was greatest in anxiety assessments. There were also weak correlations between problematic social media use and depression ($r = 0.273$, $P < .001$) and stress ($r = 0.313$, $P < .001$) with no heterogeneity based on age, gender, or year of publication.²⁴

Alonzo and colleagues systematically reviewed the relationship between active Internet use, sleep quality, and mental health outcomes, including anxiety, depression, and psychological distress, using validated scales in individuals aged 12 to 30 years across many countries. They assessed these variables as potential mediators,

Table 1
Systematic Reviews and Meta-Analyses on Social Media and Anxiety in Youth from the Past 5 Years (2018–2022)

Author, Year	Title	Study Type	N	Age
Hancock et al, ⁴ 2022	Psychological well-being and social media use: a meta-analysis of associations between social media use and depression, anxiety, loneliness, eudaimonic, hedonic, and social well-being	MA and NR	226 studies	Adolescent and older
Shannon et al, ²⁴ 2022	Problematic Social Media Use in Adolescents and Young Adults: Systematic Review and Meta-analysis	SR and MA	18 studies; 9269 subjects	12–30 yo
Alonzo et al, ²⁶ 2021	Interplay between social media use, sleep quality, and mental health in youth: A systematic review	SR	42 studies	12–30 yo
Piteo et al, ²⁷ 2020	Review: Social networking sites and associations with depressive and anxiety symptoms in children and adolescents – a systematic review	SR and MA	19 studies	5–18 yo
Cataldo et al, 2020	Social Media Usage and Development of Psychiatric Disorders in Childhood and Adolescence: A Review	SR	44 studies	10–19 yo
Marino et al, ²⁹ 2018	The associations between problematic Facebook use, psychological distress and well-being among adolescents and young adults: A systematic review and meta-analysis	SR and MA	23 studies; 13,929 subjects	16.5–32.4 yo
Hussain and Griffiths ³⁰ 2018	Problematic Social Networking Site Use and Comorbid Psychiatric Disorders: A Systematic Review of Recent Large-Scale Studies	SR	9 studies	12–88 yo

Abbreviations: MA, meta-analysis; SR, systematic review; yo, years old.

A table of key elements of systematic reviews and meta-analyses on social media and anxiety in youth from the past 5 years organized in chronological order.

moderators, or confounders of the relationship. Of the 42 studies included, only 7 focused on social media use, whereas the rest evaluated general Internet use. Of these 7 studies, only 3 described findings on anxiety—increased time spent on social media correlated with higher anxiety levels. One study found this association only when perceived consequences were not considered, suggesting that acknowledgment of consequences plays a role in outcome.²⁵ When looking at the presence or absence of smartphone-interrupted sleep, there was no correlation with mental health symptoms, and most smartphone-interrupted sleep was due to text messages rather than social media use. There was evidence that poor sleep quality mediates the relationship between Internet/smartphone/social media use and poor mental health outcomes in youth.²⁶

Piteo and Ward examined relationships between social media use and depression and anxiety symptoms in 19 studies with participants aged 5 to 18 years across Asia, North America, Australia, and Europe. Included studies assessed not only time spent on social media but also the type of use and specific platforms, and outcomes were assessed using validated instruments. Again, correlations between time on social media use and increased anxiety symptoms were weak. The number of social media accounts correlated moderately with increased anxiety symptoms, although the sample size was small, and the frequency of checking social media accounts correlated weakly with increased anxiety. Fear of missing out (FOMO) was a mediating variable and perceived social support and social comparison were postulated to affect the relationship between social media use and symptoms of depression and anxiety.²⁷

Cataldo and colleagues provided an overview of correlations between problematic social media use with cognitive, psychological, and social outcomes in 44 studies, including youth aged 10 to 19 years. Correlations between social media use and anxiety ranged from insignificant to moderate. There was a direct association between addictive social media use behaviors, increased anxiety, and poorer academic performance.²⁸ Social anxiety correlated with behavioral dimensions, for example, comparing one's own photo with others' pictures on social media platforms. A direct link was found between Instagram use and anxiety in boys, whereas in girls, body image dissatisfaction mediated this link suggesting different mechanisms at play in each gender. One prospective study found that using Facebook at 17 years of age to alleviate boredom predicted increased anxiety at age 19, suggesting anxiety may be a product of social media use. The authors speculated that increased unstructured time and decreased adult oversight after graduating high school may play a role and that those with a predisposition to anxiety may be more prone to problematic social media use, which may cyclically reinforce and perpetuate anxiety.²⁸

Marino and colleagues focused on problematic Facebook use. They included 23 studies with participants aged 16.5 to 32.4 years. There were weak correlations between problematic Facebook use and psychological distress, with correlation coefficients ranging from 0.23 to 0.34 and a corrected mean correlation coefficient for anxiety of 0.33. Higher mean age and population samples from Western countries were associated more strongly with measures of psychological distress. There were also weak negative correlations between problematic Facebook use and well-being, with a corrected mean correlation coefficient of -0.22 .²⁹

Hussain and Griffiths reviewed 9 large-scale studies ($N > 500$) on social media use and comorbid psychiatric disorders. Study populations ranged from 12 to 88 years old, although most were limited to adolescents and young adults. Six studies specifically assessed anxiety, effect sizes were weak, and there was notable heterogeneity in anxiety metrics across studies. Five studies excluded for inadequate sample sizes also found a positive correlation between problematic social media use and anxiety.³⁰

Hancock and colleagues explored associations between social media use and multiple mental health outcomes, including depression, anxiety, loneliness, and 3 dimensions of well-being: eudaimonic, hedonic, and social well-being. They included 226 quantitative studies with populations of adolescents and older published between 2006 and 2018. They defined theoretical, methodological, and study-level moderators for data analysis. There was no significant relationship between social media use and well-being as a single dimension, but effect sizes did vary across moderators. There was a weak correlation between social media use and anxiety ($r = 0.13$, $P < .01$) but no association between the 2 in longitudinal studies (only positive associations between social media use and depression and social well-being). Additionally, there was no difference in anxiety between active and passive social media use, even though active but not passive use was associated with general well-being, eudaimonic well-being, and social well-being. Further analyses found no directional, causal relationships between outcomes. The positive effect on well-being seems to be related to the social support derived from social media use, especially related to self-disclosure.⁴

SUMMARY OF RESULTS OF NARRATIVE REVIEWS

Our search returned ten narrative reviews; an eleventh was included based on a review of references (Table 2). These reviews included studies from many countries and a wide range of participant ages, although most subjects were adolescents and college-age youth. There was significant heterogeneity across reviews with respect to the types of Internet, phone, and social media use included, as well as the mental health outcomes explored. Here, we focus on the results related to anxiety and social media use.

Table 2 Narrative Reviews on Social Media and Anxiety in Youth from the Past 5 Years (2018–2022)	
Author, Year	Title
Primack et al, ¹⁶ 2022	Social Media as It Interfaces with Psychosocial Development and Mental Illness in Transitional-Age Youth
Kovačić Petrović et al, ³⁶ 2022	Internet use and internet-based addictive behaviors during coronavirus pandemic
Glover et al, ⁶ 2022	#KidsAnxiety and the Digital World
Beyens et al, ³³ 2022	Social Media, parenting, and well-being
Haddad et al, ³⁷ 2021	The Impact of Social Media on College Mental Health During the COVID-19 Pandemic: a Multinational Review of the Existing Literature
Sarmiento et al, ³⁵ 2020	How Does Social Media Use Relate to Adolescents' Internalizing Symptoms? Conclusions from a Systematic Narrative Review
Zdanowicz et al, ³⁸ 2020	Screen Time and Belgian Teenagers
Steele et al, ²¹ 2020	Conceptualizing digital stress in adolescents and young adults: toward the development of an empirically based model
Ogders and Jensen ³⁴ 2020	Annual Research Review: Adolescent Mental Health in the Digital Age: Facts, Fears and Future Directions
Mougharbel and Goldfield ³¹ 2020	Psychological Correlates of Sedentary Screen Time Behavior Among Children and Adolescents: A Narrative Review
Ghaemi et al, ³² 2020	Digital depression: a new disease of the millennium?

A table of key elements of narrative reviews on social media and anxiety in youth from the past 5 years organized in chronological order.

Three larger population studies revealed positive correlations between increased social media use and anxiety, problematic Facebook use and social anxiety, and symptoms of anxiety, OCD, and potentially addictive use of social media.¹⁶ Social media use and screen time were associated with poorer mental health outcomes in children and adolescents.^{31,32} There is a potential association between social media use and increased multitasking, independently linked to decreased attention, academic performance, subjective well-being, and increased depression and anxiety.¹⁶ Socially anxious youth seeking external validation are at greater risk for problematic Internet use.⁶ Notably, active parental mediation and an autonomy-supportive parenting style around social media use correlated with fewer anxiety and depressive symptoms in youth and fewer depressive symptoms in youth experiencing cyberbullying.³³

Overall, associations between the quantity of digital technology use and mental health outcomes, including anxiety, are inconsistent and small. There was no support for causality on analysis and little evidence to support an association between adolescent mental health outcomes and social media use at the population level.³⁴ Longitudinal studies provide some evidence that anxiety induces changes in adolescent social media use patterns, yet there is no evidence for the reverse.³⁵ The way variables, outcomes, and confounders were defined produced a wide variety of effect sizes and unreliable conclusions, highlighting the need for further studies exploring moderating and mediating factors.^{34,35}

During the COVID-19 pandemic, the prevalence of anxiety was found to be 26.4% in one population, with a corresponding social media addiction prevalence of 6.8%. Overall, Internet addiction and problematic smartphone use were higher in youth during the pandemic. However, a Chinese study found that use was higher early in the pandemic compared with one and a half months later.^{36,37} Anxiety correlated with frequent Internet and technology use among adolescents and adults,⁶ problematic Internet use was a risk factor for Internet addiction.³⁶ The correlations between social media use and anxiety during the pandemic found in Chinese population samples were not found in a population sample from the Netherlands,³⁷ suggesting unrecognized moderating factors at play. Additionally, a fear of COVID-19 in Italian students during the first pandemic lockdown was linked to Internet addiction and higher rates of anxiety.³⁶ At the same time, COVID stress moderated the relationship between social media use and depression symptoms but not anxiety symptoms in a Chinese population.³⁷

Few studies have explored specific social media platforms. Most have focused on Facebook, and a correlation was found between youth with insecure attachment and higher Facebook use.³⁸ One population-based survey ranked changes in depression and anxiety symptoms after social media use by platform from most to least detrimental: Instagram, Snapchat, Facebook, and Twitter.³²

Female gender was more strongly associated with increased social media use greater than 3.5 hours per week and social media addiction compared with male gender.³⁶ There is some evidence that girls are more susceptible to the impact of social anxiety on social media use.³⁵ Additionally, female adolescents and youth with lower online popularity were more sensitive to the effects of approval anxiety, including depressive symptoms.²¹ Nevertheless, male gender was associated with social media addiction during the COVID-19 pandemic.³⁶

FOMO correlates with lower mood and lower life satisfaction.²¹ Additionally, FOMO moderates and mediates social media use itself, ambivalence toward social media use, online communication patterns, and negative consequences of social media use, including symptoms of anxiety, depression, and a need to “belong” and for “popularity,” among others.²¹ In fact, FOMO-driven social media use is a risk factor for suicide.³⁸ Concerning anxiety, FOMO has been found to mediate the relationship between anxiety and

negative consequences in youth. There is an association between youth with high anxiety and high cooccurring levels of FOMO and problematic social media use.⁶ Youth may use social media as an unhealthy coping mechanism, inadvertently fostering rumination and avoidance, which can further exacerbate anxiety in a positive-feedback loop.^{6,38}

DOES SOCIAL MEDIA USE CAUSE POORER MENTAL HEALTH OUTCOMES IN YOUTH?

Overall, the evidence supporting the hypothesis that social media use may detrimentally affect youth mental health is correlational and weak. There is also correlational and weak evidence to support the hypothesis that social media use may beneficially affect youth mental health. It is essential to recognize that the evidence is mixed when discussing social media use with patients and families to avoid perpetuating a potentially inaccurate confirmation bias. For example, the Monitoring the Future Study in the United States strongly concluded that digital technology use was linked to depression³⁹; however, reanalyses of the data showed results were highly dependent on modeling and confounding variables.³⁴

Accordingly, methodology must be carefully considered. Studies relied almost exclusively on cross-sectional design, correlational data, and self-reported data subject to recall bias. Compounding this, framing social media use as addictive in a study provokes more negative responses related to well-being.⁴ Variables and terms related to social media use are poorly defined, and screen time as a measure of social media use rather than type or style limits the ability to assess outcomes. Without well-operationalized terms and variables, there is a lack of assessment tools for research, resulting in heterogeneity in research methods. Methodology must also be flexible enough to adapt as social media platforms evolve.

The lack of adequate consideration of confounding, mediating, and moderating variables was one of the most notable limitations of the literature, and most studies acknowledged this. We conceptualize potential moderating and mediating variables in 5 categories: biological, psychological, social, investigational, and social media use (**Fig. 3**) and provide a nonexhaustive list of variables for consideration (**Table 3**). A high-quality research methodology that addresses the current limitations, especially potential moderating and mediating factors, is needed to understand better the links between social media use and mental health in youth.

Generalizability is also a limitation. Population samples were biased toward adolescents rather than children, and community samples rather than clinical populations. Generalizability between social media platforms or even within the same platform at a later time may be limited, given how quickly they evolve. Additionally, results may be specific to the cultures and geographic regions in which they were studied. For example, associations differed between adolescents, adults, and college students⁴ and between Western and Asian populations.^{4,37} Furthermore, results obtained during the COVID-19 pandemic may not be generalizable to future time frames.

In addition to the potentially harmful effects of social media use on mental health, there are other risks to consider. Social media use may expose youth to inappropriate content and cyberbullying, which is more detrimental than offline bullying with respect to mental health, including suicidal ideation, physical health, self-esteem, and absenteeism.⁴⁰ Additionally, social media engagement is ripe for misinformation and personal data exploitation.⁴¹ Youth are creating a permanent digital footprint during a developmental period when they inherently cannot appreciate the potential long-term consequences of posting content on future academic and career opportunities.

Although most study hypotheses speculate social media use contributes adversely to mental health in youth, one can imagine favorable impacts, too. Social media

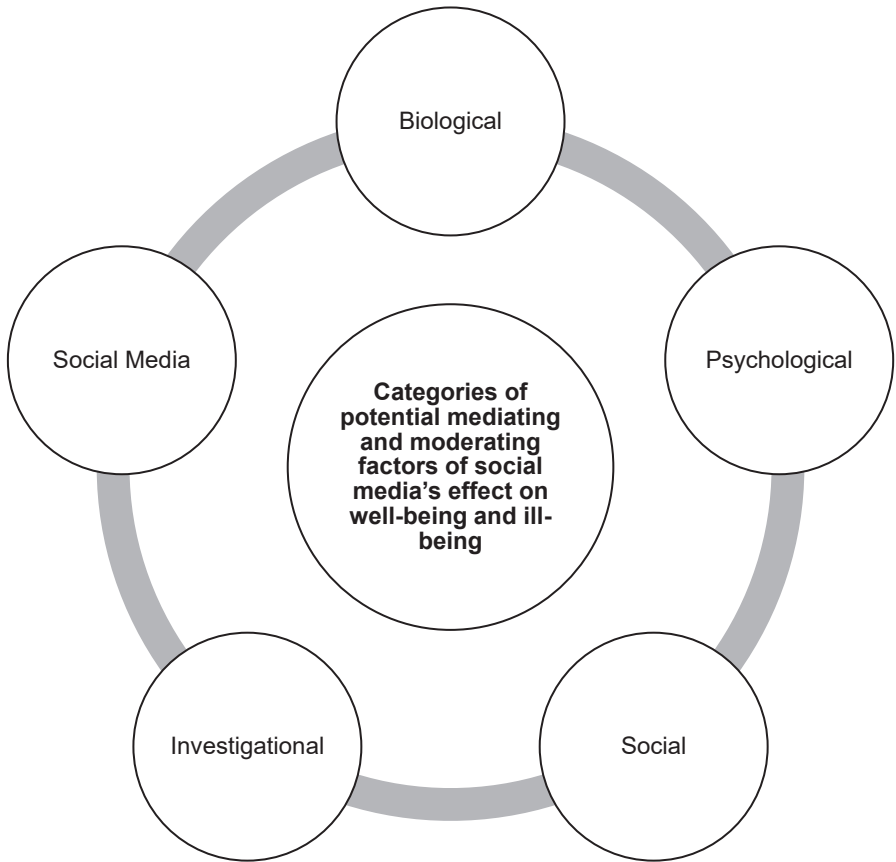


Fig. 3. Categories of potential mediating and moderating factors of social media's effect on well-being and ill-being.

provides a setting where adolescents can explore their identity, experiment with self-disclosure, and practice social skills. Through online engagement, they can enhance offline relationships and form meaningful online relationships. More broadly, social media has the potential to reduce mental health stigma, provide social support, expand access to educational and mental health information, and even promote treatment.⁶ Social media platforms may provide a more accessible source of support networks for those struggling with anxiety.⁶ YouTube use was associated with beneficial mental health outcomes³² and increased texting in adolescents at risk for substance use and externalizing problems correlated with less same-day anxiety.³⁴ More research is needed on the potential for positive impacts of social media.

HOW SHOULD CAREGIVERS AND CLINICIANS PROCEED?

National organizations, including the American Academy of Child and Adolescent Psychiatry and the American Academy of Pediatrics, published online guidance for parents and caregivers on managing social media use. Specifically, concerning anxiety, they advise limiting the use of social media, which enables avoidance and perpetuates anxiety. Furthermore, families can use social media as a reward for youth avoiding

Table 3

Categories of Potential Mediating and Moderating Factors of Social Media's Effect on Well-Being and Ill-Being with a Nonexhaustive List of Examples

Biological	Psychological	Social	Investigational	Social Media
Chronological age	Personality traits	Socio-demographic background	Methodology from study design to data analysis	Type of engagement
Developmental age	Resilience and coping skills	Cultural background	Framing	Type of communication
Developmental stages (physical, cognitive, social and emotional, moral)	Susceptibility to digital stress	Family dynamics	Operationalization of SM-related terms and outcomes	Frequency of use
Sex and gender	FOMO	Parenting styles	Biases	Total time of use
Genetics	Attachment style	Social support		Platform(s) used
Family history of medical or mental health disorders	Self-esteem	Social engagement		Parental oversight
Personal history of medical or mental health disorders	Values	Discrimination		
Activity level	Hx of psychological trauma	Bullying		
Nutrition		Hobbies and activities		
Sleep		Widespread public issues (pandemics, climate change, politics, war)		
		Local public issues		

Abbreviations: FOMO, fear of missing out; Hx, history; SM—social media.

Conceptualization of categories of potential mediating and moderating factors of social media's effect on well-being and ill-being with a nonexhaustive list of examples important to consider in future research.

school or offline social engagement⁶ and can limit time on social media if clinical concerns are present.³²

Parental mediating and moderating of social media use have the potential to decrease ill-being along a variety of metrics, including anxiety.³³ These techniques can be implemented in styles that echo parenting literature.³³ We suspect, similar to conclusions in the parenting literature that a more authoritative style is most effective in maximizing positive benefits and minimizing the negative impacts of social media use.

Many concerned caregivers turn to clinicians for guidance. Social media use in youth is so prevalent that it has been suggested that the widely used HEADSSS (Home, Education & Employment, Activities, Drugs, Sex, Suicide, Safety) assessment be updated to HEADS4 (Home, Education & Employment, Activities, Drugs, Sex, Suicide, Safety, Social media use) to include social media use.⁴² Assessment of problematic social media use should be based on a comprehensive clinical interview and the use of validated assessment tools. The PQRST (Provocation, Quality, Radiation/Region, Severity, Timing) pain assessment tool can be adapted to guide the clinical interview (**Table 4**). The most commonly used assessment tools for problematic use of social media are based on addiction literature, outdated, do not consider different and evolving social media platforms, and need updating.⁴³

In patients with suspected or identified problematic social media use, and comorbid physical and mental health disorders, including poor sleep,⁴⁴ should be identified and their management optimized.⁴² Pharmacotherapy data for Internet use disorders are limited. There is some evidence to support escitalopram, citalopram, bupropion, olanzapine, quetiapine, naltrexone, and memantine,⁴² although this may be tied to the treatment of underlying comorbid mental health disorders.

The data on therapy treatment modalities are also mixed, and studies vary in quality. Still, cognitive behavioral therapy (CBT) and acceptance and commitment therapy (ACT) approaches, offline social skills development, group counseling, and sports interventions have some evidence as potential therapeutic modalities for problematic social media use. Steele's 4 components of digital stress (availability stress, approval anxiety, FOMO, and connection overload) could help guide therapy treatment planning.²¹ Additionally, therapy can bolster skills that may beneficially affect associations between social media use and poor mental health effects, including optimistic thinking, mindfulness, cognitive reappraisal abilities, and dialectical thinking.³⁷ Higher levels of care specializing in Internet use disorders include multidisciplinary clinics, inpatient programs, residential programs, and wilderness programs.⁴² Evidence for abstinence from social media use is mixed²¹ and may not be possible given its prevalence. That said, establishing social media-free times may be helpful.⁴⁴

Technology-based treatment modalities are increasing but there is little research on their efficacy. Increasing evidence supports structured CBT-based interventions that are delivered online.⁶ Interventions delivered to youth via social media sites showed no benefit in anxiety symptoms despite improvement in depressive symptoms.⁴⁵ Moderation by clinical experts was crucial to the more successful social media-based interventions.⁴⁵ Participants' who were less likely to actively engage in the intervention had more offline support or were shy.⁴⁵ This suggests face-to-face interventions play a different but valuable role and could complement offline interventions. Regarding interventions based on mobile applications (apps), only 23% of 121 apps marketed to treat anxiety utilized 2 or more evidence-based treatment modalities.⁴⁶ Another review assessing 15 mental health apps found no evidence that they help with teen mental health issues because they were marketed to do.⁴⁷ Recognizing the need to be

Table 4
A Suggested Model to Clinically Evaluate Social Media Use Based on the “PQRST” Pain Model

Provoking Factors	Quality	Region/Radiation	Severity	Timing
Comorbid mental or physical health conditions	Style of SM use Type of SM use Purpose of SM use	How do you experience social media use physically? Mentally?	How is SM use getting in the way of functioning in different domains? Rate how problematic SM use is for you on a scale of 1 to 10 Incorporate validated assessment tools	Frequency of use Total time of use Setting of use Time of day of use Does anything influence use patterns positively or negatively?
Susceptibility to FOMO, peer-pressure, rejection sensitivity	Platform(s) used Number of platforms used			
Personality traits				

*Abbreviations:*FOMO–fear of missing out, SM–social media.
 A suggested model to clinically evaluate social media use based on the “PQRST” pain evaluation model.

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able to evaluate these apps, the Agency for Healthcare Research and Quality has developed the Framework to Assist Stakeholders in Technology Evaluation for Recovery to Mental Health and Wellness to guide consumers⁴⁸ and the American Psychiatric Association developed the publicly available “App Evaluation Model.”⁴⁹

AS A FIELD, HOW DO WE HARNESS THE POWER OF SOCIAL MEDIA AS A PUBLIC MENTAL HEALTH TOOL?

Social media public health campaigns have successfully addressed autism awareness, tobacco cessation, and sexually transmitted infection screening, among other issues.⁵⁰ There were positive and negative associations related to COVID-19 provaccination versus antivaccination social media content and intent to vaccinate college students.⁵¹ Clinicians can carry the successful social media-based public health principles into public mental health to scale our impact exponentially. National organizations should capitalize on social media’s reach and influence with high quality, evidence-based curated content toward antistigma, psychoeducation, screening, and even intervention goals. Studies examining social media platforms as a potential screening tool for mental health issues have primarily focused on depression and suicide risk with limited but promising findings.¹⁶ Innovative mental health providers are already using social media as a public health tool,⁵² and social media platforms are implementing methods of verifying health-care providers to combat disinformation.⁵³ More researches are needed on how best to utilize social media as a public mental health tool, and we need to adapt the clinical and public health lessons we learn now to social media platforms because they rapidly evolve.

CLINICS CARE POINTS

- Social media use and proposed related disorders are currently poorly defined and poorly operationalized.
- Social media use may positively or negatively influence the development throughout the life span, specifically during adolescence.
- Impacts of social media use have potential neurobiological correlates throughout development.
- There are weak correlational associations between anxiety and social media use in youth.
- Having and engaging in multiple social media accounts can indicate a higher risk of anxiety.
- There are many potential mediating and moderating variables, including FOMO, of social media use and anxiety.
- Parental monitoring of social media use may mitigate potential negative impacts.
- Assess social media use with a comprehensive clinical interview and validated assessment tools, although current assessment tools need updating.
- Treat underlying/comorbid psychiatric and physical ailments.
- Data on psychopharmacology to address problematic social media use are lacking.
- Data on therapy modalities are mixed but consider therapy with the specific goal of addressing problematic social media use by reinforcing other adaptive skills.
- Consider limiting social media use when it poses problems and incorporating social media use into a behavioral reward system.

- Develop ways to use social media as a public mental health tool through collaboration with national organizations.

DECLARATION OF INTERESTS

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