




REVIEW

# Understanding Adolescent Social Media Use: A Narrative Review of Motivations, Risk Factors, and Mental Health Implications

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**ABSTRACT: Background:** Adolescents increasingly engage with social media for connection, self-expression, and identity exploration. This growing digital engagement has raised concerns about its potential risks and mental health implications. **Methods:** This narrative review examines literature on adolescent social media use by exploring underlying motivations, risk and protective factors across personal, environmental, and digital domains, with a focus on mental health outcomes. **Results:** Individual vulnerabilities—such as low self-esteem, impulsivity, and poor sleep—interact with contextual factors like peer pressure and family conflict to elevate risks. Digital environments shaped by algorithmic feeds, feedback mechanisms, and curated content promote social comparison and fear of missing out, further contributing to problematic usage patterns. These risks are counterbalanced by potential protective elements, including authentic self-expression, social support, and positive feedback. Gender, culture, and developmental stage are related to both engagement and outcomes. **Conclusions:** Despite increasing research, many studies have relied on cross-sectional designs and culturally limited samples, highlighting the need for more diverse and longitudinal investigations. This review calls for targeted, developmentally informed strategies to promote adolescent mental health in the digital era.

**KEYWORDS:** Adolescents; social media; mental health; self-identity; cyberbullying; digital risk factors

## 1 Introduction

Adolescence is a critical developmental stage in which individuals experience rapid physical, emotional, cognitive, and social changes [1]. During this period, adolescents begin to shape their identities, gain greater independence, and redefine complex peer and shifting family dynamics, which can significantly affect their mental health and well-being [2]. The World Health Organization emphasizes that half of all mental health issues begin before the age of 14 years. However, mental health problems in adolescents often go unnoticed and unaddressed [3]. Common mental health concerns, such as anxiety, depression, emotional instability, and self-harming behaviors, frequently arise during adolescence and can result in lasting adverse outcomes if not properly treated [4,5]. Mental health problems in adolescence often are linked to challenges in academic achievement, career development, and social integration in adulthood [6]. Therefore, understanding and promoting mental health during adolescence is essential for public health and serves as a cornerstone of well-being across the lifespan.

Over the past two decades, the use of social networking sites (SNS) has dramatically increased worldwide, significantly changing how people communicate, access information, and present themselves to others [7]. Platforms such as Instagram, Snapchat, TikTok, YouTube, and Facebook have gained popularity,



albeit with varying levels of engagement, and now serve as spaces for social interaction, identity expression, and entertainment among adolescents [8]. Research shows that adolescents are among the most active SNS users, with daily usage often exceeding several hours, especially in the late evening [9]. Compared to adults, adolescents are more likely to use SNS not only to maintain social relationships, but also to engage in behaviors closely tied to their developmental needs, such as impression management, self-exploration, and peer validation [10]. Thus, social media use plays a significant role in helping adolescents construct the social identity required at this developmental stage. Furthermore, the algorithmic architecture of many social media platforms, which emphasizes visual stimuli, real-time feedback, and infinite scrolling, effectively caters to adolescents' developmental needs for immediacy, social validation, and identity exploration [11]. These design features not only amplify engagement but also foster patterns of compulsive use, emphasizing the need to explore how platform dynamics interact with adolescent psychology. Furthermore, these distinctive usage patterns during adolescence point to the need to closely examine the motivations underlying SNS use and its implications for mental health.

Although research on social media use and adolescent mental health is increasing, previous findings remain mixed and fragmented, often differing based on platform, developmental stage, and cultural context [12,13]. Some studies emphasize the potential benefits of social media in promoting peer connection, self-expression, and social support [14–21], whereas others highlight associations with depression, anxiety, sleep disturbances, and problematic usage patterns [13,22–29]. Furthermore, the rapid development of digital platforms such as TikTok and Instagram has surpassed the pace of empirical research, leaving important gaps in our understanding of how current usage patterns affect adolescent mental health and psychological well-being [30]. Considering the integral role of social media in contemporary adolescent life and its developmental significance, a narrative review is essential to consolidate the current knowledge regarding the psychological drivers, risk factors, and mental health consequences of SNS use. This review aims to provide an integrative understanding of these dynamics to guide future research, inform clinical interventions, and support the design of effective mental health promotion strategies tailored to adolescents.

To provide a comprehensive understanding of adolescent social media use and its mental health implications, this review is organized as follows. First, the nature and defining features of SNS engagement among adolescents are outlined, followed by a discussion of the motivations for their engagement. Second, various risk factors associated with problematic use are addressed, including personal traits, interpersonal influences, and digital platform dynamics. Third, mental health outcomes, such as anxiety, depression, and challenges in emotional regulation, are explored. Variations by gender, culture, and developmental stage are also considered when relevant. This review concludes with a synthesis of the findings, practical and theoretical implications, and directions for future research and youth mental health promotion.

While this review adopts a narrative approach rather than a systematic protocol, we defined a focused scope based on conceptual relevance. We included studies from the emergence of social networking sites in the early 2000s to 2025 to reflect the developmental trajectory of adolescent social media use. Peer-reviewed literature from psychology, psychiatry, communication studies, and media research was considered. Both cross-sectional and longitudinal studies were included to capture developmental patterns and psychosocial implications. Wherever possible, we prioritized recent studies published within the last five years to ensure that our synthesis reflects current trends and empirical advancements in the rapidly evolving digital landscape. This review was guided by the following core questions: (1) What motivates adolescents to use social media? (2) What personal, environmental, and digital design factors contribute to problematic social media use? (3) How does social media use relate to adolescent mental health outcomes such as anxiety, depression, and self-esteem? These guiding questions and inclusion decisions were informed by narrative review methodology guidelines [31].

## 2 Social Media Use in Adolescence

SNS are web-based platforms that enable users to create personal profiles, communicate with others, and engage in various forms of user-generated content [7]. These platforms support both real-time and delayed communication, such as sharing photos and videos, posting updates, commenting, and reacting to others' content. Although early SNS, such as Facebook, primarily provided a way to maintain existing offline relationships, newer platforms, such as Instagram, Snapchat, TikTok, and YouTube, have introduced more visual, interactive, and algorithm-driven experiences that are especially appealing to adolescents [30]. SNS can be broadly categorized based on the primary media format and user purpose: image-based platforms (e.g., Instagram and Snapchat), short-form video platforms (e.g., TikTok), video-sharing platforms (e.g., YouTube), and general social networking platforms (e.g., Facebook). These distinctions shape adolescents' engagement styles, thereby influencing their emotional reactions, cognitive processing, and tendencies toward social comparison [32].

Adolescents' engagement with SNS reflects their unique developmental stage, which is characterized by identity formation, heightened sensitivity to peer influence, and social cognition development. Unlike adults, adolescents often turn to SNS not only to sustain existing relationships but also to explore their identities, seek peer recognition, and shape their social self-presentation [10]. The immediacy of feedback mechanisms, such as likes, comments, and view counts, effectively satisfies adolescents' heightened need for social evaluation, especially from peers, during this sensitive developmental stage [33]. Adolescents are more inclined than adults to curate idealized digital personas, selectively showcasing aspects of themselves to gain affirmation and social belonging [34]. Moreover, they frequently engage in checking behaviors, often described as "checking loops", driven by the fear of missing out (FoMO) and desire for ongoing social connection [35]. Algorithmic designs that deliver personalized content, encourage continuous scrolling, and use variable reward structures reinforce these behaviors, thereby increasing the likelihood of compulsive engagement [11]. Notably, the nature and intensity of SNS engagement can vary significantly depending on age, gender, personality traits, and cultural background. These differences, which are discussed in more detail later in this review, emphasize the need for a developmentally and culturally sensitive understanding of adolescent social media use.

Adolescent social media use exists along a continuum ranging from non-problematic and developmentally appropriate engagement to patterns that reflect problematic or even addictive behaviors. Non-problematic use generally facilitates healthy socialization, identity development, and access to peer support, particularly when SNS use is balanced and intentional. Many adolescents use platforms such as Instagram and TikTok as spaces for self-expression, information exchange, and emotional connection [10,33,34]. In contrast, problematic use is typically characterized by excessive time spent online, compulsive checking, mood modification, withdrawal symptoms, and disruption of daily activities [36]. Problematic social media use has been linked to negative outcomes, including anxiety, depression, attention problems, and poor academic performance [24,25]. Some researchers argue that platform features such as variable reward schedules, infinite scrolling, and algorithmic personalization may promote behavioral addictions similar to gambling [11]. Notably, adolescents with low self-esteem, high impulsivity, or emotional regulation difficulties are particularly susceptible to maladaptive patterns of social media use [37]. Distinguishing between non-problematic and problematic use is essential. Over-pathologizing normative adolescent behavior may provoke unnecessary concern, whereas underrecognizing harmful patterns may result in missed opportunities for support and intervention.

### 3 Motivations for Social Media Use in Adolescence

The desire for social belonging is a fundamental motivation that drives adolescents' engagement with SNS. During this developmental stage, peer relationships become increasingly important, and SNS offer accessible platforms that allow adolescents to maintain social bonds, gain acceptance, and reduce feelings of isolation [10,38]. Interactive features such as likes, comments, and follower counts function as powerful social cues that reinforce a sense of inclusion and popularity, thereby contributing to adolescents' self-esteem and relational stability [15]. Thus, online engagement often complements real-world interactions, which is particularly valuable for youth who experience difficulties with face-to-face socialization.

Identity exploration is another core driver of adolescent social media use. Adolescents use SNS to experiment with self-expression, explore social roles, and construct narratives about who they are or aspire to be [16,34]. These platforms enable real-time feedback and selective self-disclosure, supporting personal and social identity development [17]. Although this process may enhance autonomy and self-awareness, it can also increase sensitivity to peer evaluation and play a role in identity instability, especially if adolescents are overly reliant on external validation [39].

Beyond motivations related to social connectedness and identity formation, adolescents also use social media to fulfill their information, entertainment, and self-expression needs. SNS platforms serve as dynamic sources of real-time information, including news, health content, and emerging trends. Adolescents frequently turn to social media to stay updated on peer activities, school-related topics, and broader cultural conversations, potentially influencing their values and decision-making [40]. The participatory and algorithm-driven design of these platforms enables youth to access personalized information streams aligned with their evolving interests and developing identities [41].

Entertainment is another motivator for SNS engagement. Platforms such as TikTok, YouTube, and Instagram Reels are commonly used by adolescents to alleviate boredom, regulate emotions, and escape stress or academic pressure [42]. These platforms provide humor, music, storytelling, and rich visual content that simultaneously deliver immediate emotional gratification and facilitate informal social interactions [18]. However, the rapid and endless flow of entertaining stimuli, combined with algorithmic personalization, can foster compulsive use, thereby increasing the risk of behavioral addiction among adolescents [11].

Self-expression is crucial for attracting adolescents to social media. These platforms allow young users to create and share content that reflects their personalities, values, and creative identities [19,34]. Adolescents can use photographs, captions, videos, and curated aesthetics to express their individuality, connect with like-minded peers, and engage in subcultures or interest-based communities. This expressive function supports personal development and promotes a sense of empowerment and social visibility in online spaces.

FoMO refers to a persistent apprehension that others may be participating in gratifying experiences without one's involvement and has become a prominent psychological driver of adolescent social media use. During this developmental period, peer approval and a sense of belonging are especially salient. Therefore, FoMO can heighten compulsive checking behaviors and emotional reliance on SNS platforms [35,43,44]. This association is compounded by the unending stream of idealized content and immediate social cues, such as likes and comments, amplifying adolescents' perceived need to remain constantly engaged and visible in digital peer networks [18].

FoMO is often accompanied by increased psychological dependence on social media, whereby adolescents may experience anxiety, irritability, and emotional dysregulation when disconnected from online interactions [36,45]. These symptoms are commonly associated with problematic social media use, which has been linked to elevated levels of anxiety and depression and decreased academic achievement [24,25]. Furthermore, recent research suggests that self-presentational motives and discrepancies between real-life

and online self-worth may heighten these vulnerabilities, contributing to feelings of inferiority and reinforcing compulsive SNS use [46]. Platforms such as Instagram and TikTok, which have variable reward schedules and infinite scrolling features, have been associated with addictive use patterns that resemble behavioral addictions [11,21].

## **4 Risk Factors for Adolescents' Problematic Use**

### ***4.1 Personal-Level Risk Factors***

Personal-level risk factors play an important role in adolescent susceptibility and vulnerability to problematic social media use. Among such factors, self-esteem has received considerable attention. Lower self-esteem has been consistently linked to excessive social media engagement, as adolescents may seek external validation to compensate for negative self-evaluations. Self-worth issues can drive both increased screen time and the pursuit of idealized online personas or digital identities, thereby increasing the risk of dependence and psychological distress [34,46,47].

Impulsivity is also a significant individual trait that appears to contribute to problematic social media use. Adolescents with greater impulsivity often have difficulty with delayed gratification and impulse control, making them particularly susceptible to the instant rewards embedded in social media features, such as infinite scrolling and personalized algorithmic content delivery [36]. These platform design mechanisms exploit impulsive tendencies and promote habitual or even compulsive engagement with digital content [11]. Over time, this cycle may erode adolescents' self-regulatory capacity, further reinforcing maladaptive usage patterns.

Although often viewed as an outcome, poor sleep is increasingly recognized as a consequence and contributing risk factor for problematic SNS use. Inadequate or irregular sleep patterns can impair functions necessary for moderating social media behavior, such as emotional regulation and cognitive control [26]. Those experiencing sleep difficulties may use social media as a coping mechanism, particularly at night, thus perpetuating a feedback loop of disrupted rest and excessive engagement [27]. Population-based and clinical studies have supported this reciprocal relationship [28]. This interplay suggests that interventions targeting sleep hygiene may be critical for mitigating problematic social media use among adolescents.

### ***4.2 Environmental Risk Factors***

Environmental factors are crucial in shaping the risk of problematic social media use in adolescents. Among these factors, family functioning is particularly important. Adolescents who experience low parental support, inconsistent monitoring and supervision, high levels of family conflict, or ongoing familial discord are more likely to engage in excessive or maladaptive social media behaviors. Social media may then function as a surrogate space for emotional regulation, offering the validation and a sense of belonging they may lack at home [14,31,48]. Additionally, weak parent-child communication and a lack of structured parental involvement in adolescents' digital activities are associated with an increased risk of unregulated use [49]. These findings highlight the importance of a stable and supportive family environment to buffer excessive or maladaptive patterns of social media engagement.

Peer relationships are also a critical factor that plays a role in adolescents' social media use. The strong developmental drive to achieve peer inclusion, gain affirmation, and avoid rejection often compels adolescents to maintain constant connectivity on social media platforms. However, this heightened peer orientation can increase emotional reactivity and susceptibility to compulsive engagement, particularly in environments that foster frequent social comparisons and perceived judgment [10,33]. Adolescents who feel socially marginalized or experience cyberbullying face an even greater risk of developing maladaptive usage patterns [13,50]. Furthermore, when adolescents are part of digital peer groups in which intensive



and emotionally charged interactions are normalized, they may internalize and replicate such behaviors through social modeling.

School-related stress is another contextual factor associated with problematic social media use. Adolescents may resort to social media for emotional escape or distraction when facing intense educational demands, performance pressure, and fear of underachievement in academic or developmental domains, which are especially salient during adolescence [12,16]. Short-term distraction may offer temporary relief; however, habitual avoidance behaviors through online platforms may reinforce dependency and reduce the time spent on healthy coping strategies or sleep [13,32,51]. Some evidence suggests that dissatisfaction with school life or exposure to a negative academic environment can undermine adolescents' emotional resilience, thereby increasing their vulnerability to excessive social media use [52]. Overall, school-related stressors can create psychological conditions that drive adolescents toward maladaptive digital behaviors when seeking relief or affirmation.

#### **4.3 Digital Environmental Risk Factors**

Digital environmental factors, including platform algorithms and comparison-oriented cultures, are significantly correlated with the development of problematic social media use among adolescents. Algorithmic design is among the most pervasive elements. Social media platforms, such as TikTok, Instagram, and YouTube, rely on machine learning systems to customize content feeds based on user interactions, thus amplifying emotionally stimulating and attention-grabbing material [11]. This personalization increases the likelihood of prolonged use and repetitive checking behaviors [22]. Moreover, features such as variable reward schedules and infinite content loops can reinforce engagement in ways that resemble behavioral addictions [11]. Collectively, these platform-driven features intensify adolescents' vulnerability to compulsive social media habits and the associated psychological risks.

Algorithms disproportionately promote emotionally charged content, especially that related to appearance, popularity, or controversy, potentially aggravating psychological vulnerability among adolescents with pre-existing vulnerabilities related to difficulties with emotional regulation or impulse control [53]. Algorithmic designs are increasingly aligned with the principles of psychoinformatics, in which user behavior is continuously tracked and analyzed to maximize engagement through emotionally tailored stimuli [54,55]. Such mechanisms create environments that not only prolong screen time but also exploit adolescents' developmental sensitivities. Ultimately, these algorithmic dynamics may entrench adolescents in emotionally reactive usage cycles, potentially undermining their capacity for mindful and autonomous media engagement.

Social comparison dynamics—driven by curated posts, visible popularity metrics such as likes and follower counts, and algorithmic amplification—play a central role in fostering problematic social media use. Adolescents, who are especially sensitive to peer evaluation and idealized online portrayals, may engage in compulsive checking, repetitive browsing, or excessive self-presentation to align with perceived standards [10,16,17]. Repeated exposure to selectively positive representations of success, beauty, and popularity heightens upward comparison pressures, often leading to dissatisfaction and a persistent sense of inadequacy [18,19,34]. Moreover, digital feedback systems, including likes, comments, and views, act as forms of social currency, reinforcing the need for external validation and further intensifying overreliance on social networking platforms [15,33]. In this way, comparison-related pressures do not simply affect adolescents' self-esteem but actively promote patterns of excessive and maladaptive use, making them a key mechanism underlying problematic engagement with social media.

In summary, personal vulnerabilities, such as low self-esteem, impulsivity, and sleep disturbances, often interact with broader environmental and digital contexts to shape adolescents' social media engagement.

Family dysfunction, peer instability, and academic stress may exacerbate psychological risks, whereas algorithmically curated content and feedback-driven interfaces can amplify emotional sensitivity and habitual use. These interconnected factors create a feedback loop in which adolescents become increasingly dependent on digital validation and less capable of disengaging, thereby increasing the likelihood of problematic and maladaptive social media behaviors.

## **5 Mental Health Implications of Social Media Use**

### ***5.1 Depression, Anxiety, and Stress***

Social media use has consistently been linked to increased symptoms of depression, anxiety, and stress among adolescents. Several cross-sectional and longitudinal studies have reported that greater social media engagement is associated with higher emotional distress and lower psychological well-being in this population [13,23–25,54]. Meta-analytical evidence further supports this relationship, indicating that intensive use, particularly when characterized by passive browsing or exposure to emotionally negative content, is likely to exacerbate psychological symptoms [13,29]. These findings suggest that not only how often adolescents use social media but also how they engage with it, particularly through passive or emotionally taxing interactions, significantly shapes their mental health. Excessive or poorly timed screen use (e.g., late-night scrolling, compulsive checking) has been consistently associated with negative outcomes, including anxiety, depressive symptoms, disrupted sleep, and reduced academic performance [8, 13,24,26–28]. These relationships indicate that the context and quality of use, not just total duration, are crucial determinants of adolescent mental health.

Upward social comparison is one psychological mechanism that contributes to adolescent mental health challenges. Adolescents are particularly sensitive to comparisons with peers and online influencers, who often showcase selectively curated, idealized versions of their lives. Upward social comparison may function as an adaptive psychological mechanism during adolescence, which requires the acquisition of multiple competencies [56]. However, it may function as a psychological risk factor in the context of social media use. Such comparisons can trigger feelings of inferiority, jealousy, and decreased self-esteem, which are closely associated with depressive symptoms [10,18,34]. Passive social media engagement, such as prolonged scrolling without interaction, can intensify these negative associations more than active forms of use [13,23], potentially because of a lack of perceived reciprocity and increased exposure to unattainable social ideals.

The persistent connectivity and social performance demands embedded within digital platforms often intensify anxiety. Adolescents may experience a sense of obligation to reply promptly to messages or vigilantly track how their online posts are received, resulting in anticipatory stress and heightened emotional tension. FoMO, which fuels repetitive checking behaviors and increases adolescents' sensitivity to being excluded or receiving delayed feedback, is a major psychological factor underlying this dynamic [35,44,45]. Studies have shown that FoMO mediates the relationship between problematic use and anxiety symptoms in several adolescent cohorts [35]. Furthermore, research has demonstrated how digital environments can exacerbate vulnerability to anxiety by reinforcing emotional dependence on constant social connectivity.

In addition to interpersonal and performance-related demands, excessive social media use can be a chronic source of stress, particularly through repeated exposure to cyberbullying, interpersonal conflict, and emotionally charged content. Adolescents who experience online victimization, such as exclusion, ridicule, or targeted harassment, consistently report increased anxiety, depressive symptoms, and even suicidal ideation [50,54]. The constant accessibility and immersive nature of social media intensify this exposure, making it difficult for adolescents to mentally disengage or recover from online stressors. During global crises or periods of sociopolitical unrest, algorithms often prioritize fear-inducing or emotionally

provocative content, thereby increasing the psychological strain on adolescents [12,29,32,54]. Under these conditions, adolescents with limited emotional regulation skills or inadequate offline social support may be particularly prone to cumulative stress and emotional exhaustion.

### ***5.2 Self-Esteem and Self-Concept***

Adolescent self-esteem and self-concept are highly sensitive to the social dynamics fostered by digital media. During adolescence, identity formation and peer validation are central psychological tasks, and continuous exposure to social comparisons and evaluative feedback on social media platforms intensifies these processes [10,16]. Platforms such as Instagram and TikTok, which emphasize visual self-presentation and popularity metrics (e.g., likes, comments, and followers), create environments in which adolescents can constantly monitor their digital selves in relation to others [46].

Several studies found that increased social media use is associated with lower self-esteem and a less coherent sense of self, particularly when driven by appearance-based self-presentation or social comparison motives [17,19,34]. Adolescents who are repeatedly exposed to idealized and often unattainable depictions of their peers' lives may internalize unrealistic standards, potentially resulting in dissatisfaction with their own appearance, accomplishments, or daily experiences [18,26,57]. This widening gap between one's real and perceived ideal self often leads to identity confusion and emotional vulnerability [46]. Over time, this internal dissonance may erode self-concept clarity and increase sensitivity to peer feedback.

Emerging evidence emphasizes body image and self-worth discrepancies as mediators in the relationship between social media use and psychological well-being. Colak et al. [47] showed that adolescents with negative body images experience lower self-esteem and are more prone to social media addiction. Numerous studies found that increased social media use, particularly when motivated by appearance-based self-presentation or social comparison, is associated with lower self-esteem and a fragmented sense of self [20,30,37]. Adolescents frequently encounter idealized portrayals of peers' lives, which may foster dissatisfaction with their own appearance, achievements, or lifestyle, thereby undermining identity coherence. While most evidence comes from adolescent-focused studies, research on adults also suggests that discrepancies between real-life and online self-worth can intensify feelings of inferiority and reinforce problematic engagement patterns, indicating that similar mechanisms may operate in youth populations [46]. Furthermore, a recent systematic review confirmed that authentic active use is positively related to self-concept clarity, whereas comparison-driven and passive use are consistently correlated with identity distress and lower self-coherence [16].

Moreover, prolonged engagement with self-presentation and validation-seeking behaviors is linked to an externalized locus of self-worth, wherein adolescents become dependent on digital feedback for self-affirmation. This dependency on external approval may disrupt the formation of stable, internalized self-esteem and heighten susceptibility to psychological issues such as anxiety and depression [13,18,24]. Considering the cumulative effects of persistent social comparison, dependence on external validation, and fragmented self-presentation, these patterns suggest that the dynamics of social media, particularly those that encourage performance and comparison, can interfere with adolescents' ability to build a coherent and resilient self-concept. Therefore, promoting balanced and authentic engagement and fostering offline sources of self-worth may be critical for healthy identity development during this formative stage.

### ***5.3 Cyberbullying and Traumatic Experiences***

Cyberbullying is a significant psychological threat to adolescents' social media use. Unlike traditional face-to-face bullying, online harassment can occur at any time and is amplified by the anonymity and reach of digital platforms. Adolescents subjected to such abuse, whether through threatening messages, public



humiliation, or the spread of harmful rumors, are more likely to experience sustained emotional distress, including anxiety, depression, and suicidal thoughts [14,50]. Exposure to online harassment can severely compromise an individual's emotional well-being and self-worth. For many victims, the inability to escape these digital spaces creates a sense of helplessness and ongoing vulnerability.

Cyberbullying and exposure to disturbing online content can be forms of psychological trauma, particularly during the emotionally sensitive period of adolescence. Repeated encounters with online harassment, sexual predation, or graphic imagery in the form of violent videos, discriminatory messages, or hate speech can overwhelm adolescents' capacity to cope [58]. These digital experiences may result in trauma-related symptoms, such as persistent hyperarousal, intrusive memories, emotional numbing, dissociation, and avoidance of digital or social situations reminiscent of the triggering content [59,60]. These symptoms are consistent with post-traumatic stress responses and may significantly disrupt emotional development and school functioning [61]. In severe cases, trauma stemming from online experiences may become integrated into adolescents' broader development, potentially influencing their identity formation, shaping their worldviews, and increasing the risk of long-term mental health difficulties.

Previous systematic reviews, including earlier meta-analyses, have consistently linked repeated exposure to online harassment with elevated symptoms of depression and anxiety and disruptions in adolescents' emotional regulation, trust, and peer functioning [16,62]. Furthermore, adolescents who witness or experience vicarious trauma through online viral videos depicting violence, discrimination, or war-related content may develop secondary traumatic stress, particularly when such exposure occurs without appropriate contextual support or debriefing [63]. This cumulative exposure, whether direct or vicarious, indicates that social media platforms, through algorithmic amplification or insufficient moderation, can reinforce trauma-related processes that interfere with normative psychosocial development.

#### **5.4 Protective Factors**

Although the risks of adolescent social media use have received significant scholarly attention, growing evidence indicates that digital interactions can provide psychological protection when used constructively. Positive feedback and perceived social support are two protective factors. Adolescents who receive supportive comments, peer validation (e.g., likes), and encouraging interactions online often report enhanced self-esteem, emotional well-being, and social connectedness, especially during critical stages of identity development [10,15,34]. These affirming experiences can play a stabilizing role, thereby helping strengthen one's self-concept and mitigate the effects of everyday stressors.

Notably, social media platforms can potentially cultivate meaningful peer support networks. Adolescents who engage in supportive online communities, such as mental health awareness groups or shared-interest spaces, have reported reduced loneliness and enhanced emotional coping skills [13,23]. For adolescents who belong to marginalized groups or lack robust offline support systems, these digital interactions may function not only as a complement but also as a primary source of emotional connection in some cases [20]. Moreover, perceived social support from online relationships can moderate the negative associations of cyberbullying and social comparison [14]. Adolescents who experience online harassment but simultaneously report high levels of online support demonstrate fewer symptoms of depression and anxiety than those who lack such support systems [50,64]. These prior findings suggest that a protective digital environment can play a critical role in building resilience.

Finally, authentic self-expression in online environments, such as sharing personal experiences, expressing opinions, or posting content reflecting genuine thoughts and emotions, has been linked to enhanced psychological well-being and greater self-acceptance [22]. These activities allow adolescents to move beyond superficial self-presentation and engage in more meaningful digital communication, which

can contribute to a stable and coherent self-concept [16]. Feeling that their true selves are acknowledged and accepted in online interactions can play a constructive role in supporting mental health and promoting healthy identity development among adolescents [65]. Such findings serve as a reminder that social media is not inherently harmful, but how adolescents use it and in what context largely determine its role.

## **6 Gender, Cultural, and Developmental Considerations**

### ***6.1 Gender Differences in Social Media Motivations and Effects***

Adolescent social media use varies significantly by gender, with distinct patterns in both motivation and psychological outcomes. Girls are more likely to engage in social media for relational purposes, such as maintaining friendships, sharing personal experiences, and seeking social validation, whereas boys tend to favor instrumental uses, such as gaming, entertainment, and content consumption [10,22,34,66]. These motivational differences contribute to divergent risk profiles. Female adolescents tend to be more active on visually oriented platforms such as Instagram and are more frequently exposed to appearance-based self-presentation and peer feedback, which have been associated with body dissatisfaction, low self-esteem, and internalizing symptoms such as depression and anxiety [17,18,26,67,68]. By contrast, male adolescents are more prone to externalizing behaviors linked to SNS use, including problematic engagement, reduced academic focus, and online aggression, which are often exacerbated by impulsivity [11,37,69–71].

Several studies found that girls experience stronger emotional reactions to social media content, particularly during emotionally salient events, such as the COVID-19 pandemic. Feng and Ivanov [71] found that female social media users are more likely to engage with emotionally charged content, suggesting a heightened affective sensitivity to online stimuli. Meanwhile, adolescent boys may underreport psychological strain or emotional distress associated with social media, potentially obscuring its effects [72]. Booker et al. [73] showed that the associations between social media use and well-being vary by gender and age, with girls aged 10–15 years reporting steeper declines in mental health with increased social media use.

These gender-specific trends suggest that girls may be more vulnerable to emotional and identity-related risks, whereas boys may exhibit behavioral or attention-related consequences. Understanding these differentiated pathways can inform the development of gender-sensitive interventions and digital literacy programs to provide better support for adolescents' psychological well-being across the spectrum of SNS use.

### ***6.2 Cultural Differences in Social Media Use and Psychological Effects***

Cultural norms significantly shape adolescents' motivations for social media use, self-presentation strategies, and susceptibility to psychological effects. In collectivist cultures, such as many East Asian societies, youth often emphasize group harmony, familial duty, and relational interdependence. Consequently, they tend to prioritize social conformity, indirect communication, and reputational sensitivity in their online behavior [16,74]. Adolescents from these cultures are more likely to curate self-images that align with group expectations, avoid controversial self-expression, and remain sensitive to peer evaluations and public feedback. These patterns are reflected in cross-national comparisons, in which East Asian adolescents tend to use social media more to maintain existing relationships than for personal disclosure or content creation [75,76]. Consequently, the psychological effects of negative feedback or perceived social rejection may be magnified in these contexts because of the implications for social standing and group belonging.

Conversely, adolescents in individualistic cultures, such as those in North America and parts of Europe, are more likely to use social media platforms for self-exploration, autonomous expression, and identity

assertion [7,10,77]. This orientation supports more open and diverse self-presentation styles, often including opinion sharing, personal storytelling, and direct social commentary. While such autonomy may buffer individuals from conformity-based stress, it may simultaneously increase vulnerability to appearance-based comparisons, public performance anxiety, and competitive metrics (e.g., likes and follower counts) [18,34]. In a comparative analysis, Hsu et al. [77] found that adolescents were more psychologically affected by content that violated their cultural values, suggesting the potency of culturally rooted sensitivities even in digitally globalized spaces.

Research has further demonstrated that cultural context mediates the link between social media use and adolescent mental health. Studies have shown that in collectivist societies, self-esteem is more highly associated with social approval and interpersonal harmony, which increases emotional reactivity to exclusion, online conflict, and lack of validation [10,34,74]. Moreover, the cultural stigma surrounding mental health, which is prevalent in many non-Western regions, can deter adolescents from seeking support, even when experiencing distress from cyberbullying, social comparison, or excessive SNS use [49,78]. These findings underscore the need for culturally tailored interventions, including digital literacy education, parental mediation strategies that reflect local values, and the promotion of online communities that foster positive peer connections without undermining cultural identity.

### ***6.3 Developmental Differences in Social Media Use and Effects***

Adolescents' responses to social media are deeply shaped by their developmental stage, which plays a role in their interpretation of and engagement with digital environments. In early adolescence (ages 10–13 years), youth experience heightened sensitivity to peer evaluation and are particularly attuned to social hierarchies, making them more vulnerable to online exclusion, comparison, and status-driven engagement [1,10,19]. Identity formation is fluid and externally guided at this stage, and social media interactions, especially those involving likes, comments, and follower counts, can be disproportionately associated with self-concept and emotional well-being [16]. Furthermore, early adolescents' cognitive immaturity and limited digital literacy may reduce their ability to critically assess online content, thereby increasing their susceptibility to negative outcomes, such as low self-esteem and increased anxiety [1,26].

By contrast, those in middle-to-late adolescence (ages 14–18 years) demonstrate more developed executive functioning, allowing for increased emotional regulation, abstract thinking, and moral reasoning [2,5,79]. These capacities may enhance their ability to navigate complex online environments and reflect on the social meaning of their digital behavior. However, they also face intense academic and social pressures, including college preparation, romantic relationships, and peer status concerns, which can increase their emotional reliance on social media for distraction, affirmation, or emotional release [17,19,24]. Strategic self-presentation, impression management, and participation in online subcultures tend to be more pronounced in this age group, reflecting their growing agency and awareness of social norms [17,34,79].

Emerging longitudinal and neurodevelopmental research has suggested that age moderates the psychological role of social media engagement. Petro et al. [80] found that interactions between pubertal development and social media use could predict changes in cortical activity and mental health symptoms, indicating possible neurobiological sensitivity to digital input during adolescence. Similarly, Steinsbekk et al. [81] reported that younger adolescents experience stronger associations between social media use and increased offline social competence than their older peers. These findings emphasize the importance of designing interventions and media literacy programs based on adolescents' developmental stages, recognizing that younger users may require greater guidance, whereas older adolescents may benefit from strategies that promote autonomy and balance self-regulation.

## 7 Summary and Implications

This review synthesizes evidence on adolescents' social media use, emphasizing motivations, risk and protective factors, and the broader psychological implications of online engagement. Although digital platforms offer opportunities for self-expression, connection, and support [20], they also introduce risks such as sleep disruption, social comparison, cyberbullying, and identity fragmentation [13,18,24,26,33]. Personal factors (e.g., low self-esteem and impulsivity), environmental contexts (e.g., peer dynamics and school stress), and digital design elements (e.g., algorithm-driven content and validation metrics) interactively contribute to problematic usage patterns [11,16,19,22].

Research findings have emphasized the importance of nuanced mental health strategies that address both the risk and protective factors of social media use. For example, interventions should target adolescents' internal resources, such as self-worth and emotional regulation, as well as their digital behaviors (e.g., excessive comparison or compulsive checking) [10,24,46]. Programs that foster digital literacy, critical media awareness, and healthy self-presentation may buffer negative psychological outcomes [15,16,20]. Furthermore, recognizing positive aspects, such as peer support and identity exploration, particularly in marginalized groups, is essential for balanced guidance [20,63].

Interventions should adopt a multilayered approach that incorporates schools, families, clinicians, and SNS platforms. School-based programs can integrate emotional resilience training and peer support networks [14,64], whereas parental guidance can emphasize balanced technology use and open communication [48,49]. In terms of policy, platforms should be encouraged to enhance user safety features, including algorithm transparency, moderation tools, and trauma-sensitive content curation [29,54]. Moreover, culturally tailored approaches that consider gender, cultural background, and developmental stage are essential for maximizing relevance and effectiveness [16,29,63].

## 8 Limitations of the Review

Although this review is comprehensive in scope, it is subject to several limitations inherent to narrative literature reviews. First, it did not use a systematic review or meta-analytic methodology, potentially introducing selection bias and limiting replicability [12,13]. Despite our efforts to include high-quality peer-reviewed studies from diverse disciplines and databases, the lack of pre-specified inclusion criteria and quality appraisal procedures may affect the objectivity and generalizability of the findings.

Second, most of the included studies were based on cross-sectional data, limiting our ability to draw causal inferences between social media use and mental health outcomes [13,24]. Although some longitudinal and experimental research exists [10,16,79], it remains insufficient relative to the rapid evolution of digital platforms and adolescent social media behaviors.

Third, this review largely focused on studies published in English and Western or high-income contexts, potentially excluding culturally specific dynamics in other regions [41,63]. Cultural values surrounding self-presentation, social norms, and parenting styles may mediate or moderate the psychological effects of social media; however, these roles are underrepresented in the literature.

Finally, many of the psychological constructs discussed (e.g., self-concept clarity, FoMO, cyberbullying exposure) vary in operationalization across studies, complicating direct comparisons of outcomes and effect sizes [16,44]. In addition, current research does not sufficiently account for developmental distinctions across stages of adolescence (e.g., early vs. late adolescence), which may differentially shape motivations for social media use and vulnerability to psychological roles. Future research would benefit from standardized measures, more robust longitudinal designs, and the inclusion of diverse adolescent populations across socioeconomic and cultural contexts [26,54].

## 9 Conclusions

This review provides a comprehensive synthesis of adolescent social media use, focusing on underlying motivations, personal and environmental risk factors, and their mental health implications. Social media platforms shape adolescents' experiences across cognitive, emotional, and behavioral domains, offering both opportunities for connection and risks to well-being. Vulnerabilities such as low self-esteem, identity uncertainty, and FoMO, combined with contextual stressors and digital design features (e.g., algorithmic feeds, feedback loops), contribute to anxiety, depression, and problematic use.

Although protective roles—including authentic self-expression, social support, and positive feedback—have been identified, evidence on their buffering effects remains limited across cultural and demographic groups. Gender, culture, and developmental stage further moderate outcomes, highlighting the need for tailored interventions.

Future research should employ longitudinal and experimental designs to clarify causal pathways, enhance representativeness, and inform developmentally sensitive strategies. Multisector collaboration among researchers, educators, clinicians, and platform designers is essential to safeguard adolescent well-being in the digital age.

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