Scientific and Social Research, 2025, Volume 7, Issue 10
https://ojs.bbwpublisher.com/index.php/SSR
Online ISSN: 2981-9946
Print ISSN: 2661-4332

The Impact of Social Media Use on Teens' Health: A Literature Review

Ethan Spencer Ku*

Invictus Secondary School, Hong Kong, China

**Author to whom correspondence should be addressed.*

Abstract: This literature review examines the multifaceted impact of social media on adolescents' health, focusing on physical and psychological domains. Drawing from 36 peer-reviewed studies (2015–2025), the analysis reveals that excessive social media use is associated with sleep disruption (e.g., poor quality, reduced duration, and procrastination), sedentary behavior, and physical health complaints (e.g., headaches, neck pain). Psychologically, it correlates with heightened anxiety, depression, body image issues, and addictive behaviors, exacerbated by cyberbullying and Fear of Missing Out (FOMO). However, social media also offers benefits, such as social connectivity and educational resources. The review highlights interventions like digital wellness education, parental guidance, and policy measures to mitigate harms while preserving benefits. Limitations include cultural biases and rapidly evolving platforms, underscoring the need for cross-cultural and longitudinal research.

Keywords: Social media; Adolescent health; Mental health; Sleep disruption; Body image; Cyberbullying; Fear of Missing Out (FOMO)

Online publication: October 29, 2025

1. Introduction

Social media has become an integral part of modern adolescent life, with platforms like Instagram, TikTok, Snapchat, and YouTube shaping how young people communicate, learn, and perceive the world. Recent studies in the US indicate that most teens use social media and have a smartphone, and nearly half say they're online almost constantly, according to a new Pew Research Center survey of U.S. teens aged 13 to 17 conducted in 2024 [1]. While these platforms offer opportunities for self-expression, social connection, and educational engagement, their pervasive influence raises significant concerns about their impact on adolescents' physical, psychological, and social well-being.

Adolescence (ages 11–18) is a critical developmental period marked by heightened neuroplasticity, identity formation, and susceptibility to external influences [2]. During this stage, excessive social media use has been linked to sleep deprivation, sedentary behavior, anxiety, depression, and body image issues [3]. The addictive design of

social media, characterized by infinite scrolling, algorithmic personalization, and intermittent rewards, exploits adolescent neurobiology, reinforcing compulsive use [4].

Furthermore, the displacement hypothesis suggests that time spent online often replaces essential offline activities such as physical exercise, face-to-face social interaction, and restorative sleep [16].

The visual and comparative nature of platforms like Instagram and TikTok exacerbates mental health risks, as adolescents are frequently exposed to idealized, filtered representations of beauty and success, leading to social comparison and diminished self-esteem.

Additionally, cyberbullying and Fear of Missing Out (FOMO) contribute to heightened anxiety and depressive symptoms [5]. Despite these risks, social media also provides support networks, educational resources, and creative outlets for marginalized youth [6].

Given these far-reaching effects, this paper synthesizes recent research (between 2015 to 2025) to examine how social media impacts adolescents' health across the following two domains:

1. Physical health (sleep disruption, sedentary behavior, physical health complaints)
2. Psychological health (anxiety, depression, body image, addiction, and problematic use)

By analyzing these impacts, this review aims to identify interventions that can mitigate harm while preserving the benefits of digital connectivity.

2. Literature selection criteria

To ensure comprehensiveness, validity, and relevance to contemporary adolescent social media use, a rigorous selection process of the studies was implemented. Peer-reviewed articles published between 2015 and 2025 for research focusing specifically on adolescents aged 11–18 have been selected. Databases searched included PubMed, PsycINFO, and Google Scholar, using keywords such as "social media AND teen health", "adolescent mental health AND Instagram", and "social media effects on sleep AND teenagers." A total of 36 studies have been selected.

3. Physical health impacts of social media use

3.1. Sleep

Sleep is a critical component of adolescent development, influencing cognitive function, emotional regulation, and physical health. However, the pervasive use of social media among adolescents has raised concerns about its negative effects on sleep quality, duration, and patterns.

3.1.1. Sleep quality

Frequent social media use, particularly before bedtime, has been significantly associated with poor sleep quality in teens [7]. The mechanisms of sleep disruption include the blue light emitted by screens disrupts melatonin production, a hormone essential for regulating sleep-wake cycles [8]. Studies also show that adolescents who use electronic devices before bedtime experience delayed melatonin onset, making it harder to fall asleep and reducing overall sleep quality [9].

3.1.2. Sleep duration

Studies also show that social media shortens sleep duration among adolescents. The obligation to remain

perpetually online fosters anxiety related to the "Fear of Missing Out" ("FOMO"), which compels adolescents to check their social media accounts repeatedly, even during late-night hours [5]. Behaviourally, FOMO may drive nighttime social media use, which delays bedtimes and restricts sleep opportunity. Cognitively, this underlying concern around the possibility of being missed out may also contribute to increased cognitive arousal before sleep (independent of how much an individual actually uses social media in bed), which further impacts sleep onset and duration.

3.1.3. Sleep procrastination

Research shows that adolescents often lose track of time while browsing social media, leading to delayed bedtimes and insufficient sleep [10]. In many countries, nonactive social media use among adolescents was associated with earlier bedtimes relative to active social media use [11]. Van den Eijnden et al. found that sleep procrastination is driven by the addictive nature of social media platforms, which are designed to maximize user engagement [10].

3.1.4. Health consequences of poor sleep in adolescents

Sleep deprivation and poor sleep quality have been associated with serious long-term health effects, including cognitive impairments of reduced attention span, poorer academic performance, and memory consolidation issues, increased mental health risks, including increased susceptibility to depression, anxiety, and emotional dysregulation, as well as physical health decline in relation to higher risks of obesity, insulin resistance, and cardiovascular problems due to metabolic disruptions [12].

3.2. Physical health complaints

Recent research highlights concerning trends in physical health complaints due to frequent use of social media among adolescents, particularly in Norway. Nilsen et al. observed a linear increase in physical health complaints, including neck or shoulder pain, headaches, and abdominal pain, among adolescents aged 13–18 [13]. Notably, girls reported significantly higher rates of these complaints than boys, suggesting potential gender differences in susceptibility or behavioural influences (screen use patterns, stress responses).

A related study by Frielingsdorf et al. further supports these findings by identifying a significant association between time spent on social media and daily headaches in adolescents [10]. This aligns with broader concerns that excessive digital engagement, particularly on platforms encouraging prolonged use, may contribute to physical strain (poor posture, eye fatigue) and stress-related symptoms.

3.3. Physical activity

The relationship between adolescent social media use and physical activity represents a complex, multidimensional phenomenon that continues to evolve with technological advancements. Current research demonstrates contradictory findings, revealing both positive and negative associations that appear heavily contingent upon several key factors: (1) the type of digital engagement (e.g., active vs. passive use), (2) intensity and duration of use, and (3) gender differences [14–16]. This paradoxical relationship challenges traditional displacement theories, suggesting instead a more nuanced interaction between digital and physical behaviors in adolescent populations.

3.3.1. Negative associations (Displacement Theory)

High frequency use of social media has been associated with reduced moderate-intensity physical exercise among

male middle-school students, pursuant to which, high engagement in these activities displaced time for physical activity among Korean adolescents, particularly in boys [16]. At the same time, problematic social media use (e.g., addiction-like symptoms) correlates with lower physical activity in the exercise domain among Canadian adolescents, suggesting displacement of voluntary activities like leisure-time workouts [15]. Problematic social media use would have lower odds of doing any physical activity, as well as lower odds of high engagement across all domains of physical activity [15].

3.3.2. Positive associations (Complementary effects)

In Canada, adolescents with intense but non-problematic social media use were more likely to meet national physical activity guidelines than those with either minimal or addictive usage patterns [15]. Explanations offered include that highly social individuals may use platforms to connect with peers who encourage active lifestyles (e.g., joining fitness challenges, sharing workout routines).

3.3.3. Gender differences

In Korea, boys who frequently played internet games or watched game streams had significantly lower physical exercise rates, whereas girls showed no association [16].

4. Psychological health impact of social media use

The rise of social media has significantly altered communication among adolescents, presenting both opportunities for connection and risks for mental health in various aspects. Studies indicate that excessive use of platforms like Facebook, Instagram, and Twitter correlates with higher rates of depressive symptoms and psychological distress [17].

4.1. Depression and anxiety

Extensive research has established a concerning link between social media use and increased rates of depression and anxiety among adolescents. A key factor in this relationship is the amount of time spent online, with studies showing that adolescents who engage with social media for more hours report significantly higher levels of psychological distress compared to those with more limited usage [18]. Excessive time spent on social media can contribute to feelings of loneliness, which exacerbate anxiety and depressive symptoms [17].

Research also highlights the role of cyberbullying in promoting mental health issues. Victims of online harassment report significantly higher levels of anxiety and depression compared to their peers [19].

4.2. Body image and self-esteem

Social media exerts a powerful influence on adolescents' body image perceptions and self-esteem development [20]. Platforms that emphasize visual content, such as Instagram and TikTok, are saturated with images promoting unrealistic beauty standards, often enhanced through filters and digital editing tools. For young people in the critical stage of identity formation, constant exposure to these idealized representations can lead to significant body dissatisfaction and disordered eating behaviors [21].

Appearance-focused activities on social media, including posting selfies, comparing oneself to influencers, and seeking validation through likes and comments, have been particularly associated with negative outcomes [22]. Research indicates that girls and young women are especially vulnerable to these effects due to societal pressures emphasizing female appearance [22].

4.3. Addiction and problematic use

The phenomenon of addiction problematic social media use has gained attention as a significant factor influencing mental health. Problematic social media use is characterized by an irresistible urge to use social media, leading to negative consequences in various life domains [17]. Characterized by compulsive checking, withdrawal symptoms when offline, and neglect of real-life responsibilities, problematic social media use shares neurological similarities with substance addiction [23–24].

Studies show that adolescents with high levels of social media addiction experience increased symptoms of depression and anxiety, often exacerbated by feelings of isolation and low self-esteem [19].

FOMO serves as a primary driver of compulsive social media behaviors when adolescents constantly monitor their feeds to stay updated on peers' activities, creating a state of chronic hyper-awareness that can lead to significant stress and anxiety [5].

4.4. Social connectedness

While social media can facilitate physical activity by enabling peer support for sports (e.g., organizing team events), social isolation from non-active users (those avoiding social media) correlated with lower activity levels, suggesting digital exclusion reduces access to active peer networks [15, 25]. This is consistent with previous studies that one of the most well-known benefits of social media is social connection, in which 81% of students say it boosts their sense of connectedness to others and improves well-being. Social media can be used to increase acceptance or a feeling of community by providing adolescents with opportunities to connect with others who share their interests, beliefs, and experiences [26].

5. Addressing the physical and psychological impact of frequent social media use on adolescents

The multifaceted challenges posed by social media to adolescent health demand a comprehensive approach that balances risk mitigation with the preservation of digital opportunities [19]. Addressing these issues requires developmentally appropriate interventions at individual, familial, educational, and policy levels.

5.1. Physical health impacts

To address sleep disruption, adolescents should limit screen time before bedtime, as blue light from devices disrupts melatonin production and delays sleep onset [8]. Tools like iOS Screen Time or Android Digital Wellbeing can help enforce boundaries, while blue light filters (e.g., Night Shift) may reduce eye strain and improve sleep quality [27].

Schools and parents should educate teens about the risks of "sleep procrastination" caused by social media's addictive design [10]. Encouraging a "no-screen" rule an hour before bed and replacing social media with calming activities (e.g., reading) can further support healthy sleep habits.

For physical health complaints such as headaches and neck pain, ergonomic adjustments and regular breaks are essential. The 20-20-20 rule—looking at something 20 feet away for 20 seconds every 20 minutes—can alleviate eye strain [28]. Additionally, promoting physical activity can counteract sedentary behavior linked to prolonged social media use. Research suggests that active engagement (e.g., fitness challenges) may increase physical activity, whereas passive scrolling displaces exercise [15]. Schools can integrate movement breaks into daily routines to mitigate these effects.

5.2. Psychological health impacts

To combat depression and anxiety, mindful social media use is critical. Curating feeds to avoid negative content and scheduling digital detoxes can reduce psychological distress [17]. Cyberbullying, a key contributor to anxiety, requires proactive measures such as school-based counseling and anonymous reporting tools [19]. Encouraging offline social interactions may also lessen reliance on virtual validation.

Body image issues stem from exposure to idealized beauty standards on platforms like Instagram and TikTok. Media literacy programs can teach adolescents to critically analyze edited images, while promoting body-positive content may improve self-esteem [22]. Parents and educators should emphasize self-worth beyond appearance and encourage hobbies that foster confidence.

Problematic use and addiction can be addressed through self-monitoring tools and behavioral changes. Studies compare social media addiction to substance dependence, noting similar neurological mechanisms [24]. Encouraging teens to track usage and set limits can reduce compulsive behaviors, while tech-free zones at home can strengthen real-world connections [7].

5.3. Systemic and policy level solutions

Schools should integrate digital wellness education into curricula, covering topics like healthy screen habits and online safety. Social media platforms must also take responsibility by implementing features that discourage excessive use, such as default time limits [11]. Policymakers could advocate for regulations that protect adolescent users, while parents can utilize a monitoring app to guide usage without invading privacy.

6. Limitations of this review

While this review focused on studies published between 2015–2025, the rapid evolution of social media platforms (e.g., the rise of TikTok after 2018) means some findings may already be outdated. Longitudinal effects of newer platforms remain understudied.

The majority of included studies focused on Western, high-income populations, limiting generalizability to low-resource or non-Western contexts where social media use patterns may differ. For example, cultural norms around body image or sleep habits vary significantly across regions.

Study designs of the included studies vary (e.g., self-report surveys vs. objective screen-time tracking). Not all studies employed experimental or longitudinal designs to establish causality.

7. Directions for future research

Further research may explore the cross-cultural impacts of social media use by examining how cultural values (e.g., collectivism vs. individualism) moderate social media's effects on self-esteem or sleep. Studies may consider including underrepresented regions (e.g., Africa, South Asia) to address current biases in research.

Protective factors, including moderating variables that buffer against social media's negative effects, are currently understudied. This can include an examination of how different parenting styles (e.g., active co-viewing vs. restrictive monitoring) may influence the impact of social media use on adolescents.

Disclosure statement

The author declares no conflict of interest.

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