

Social media induced anxiety and depression among young adults: A digital age mental health crisis

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Abstract

The rapid expansion of social media platforms has transformed communication, social interaction, and identity formation among young adults. While these platforms facilitate social connectedness and self-expression, growing evidence suggests that maladaptive patterns of social media use are associated with anxiety, depression, sleep disturbance, emotional dysregulation, and reduced psychological well-being. This narrative review critically synthesizes current evidence from empirical studies, longitudinal investigations, systematic reviews, and meta-analyses published between 2010 and 2025 concerning the relationship between social media use and mental health among young adults. Evidence indicates that passive browsing, upward social comparison, cyberbullying, problematic social media use, fear of missing out (FOMO), and disrupted sleep architecture are major mechanisms contributing to psychological distress. Importantly, recent findings support a bidirectional relationship in which vulnerable individuals may engage in maladaptive online behaviors that further exacerbate anxiety and depressive symptoms. Emerging neurobehavioral evidence additionally suggests that social media engagement activates reward-processing pathways analogous to those implicated in behavioral addictions. Moderating factors including gender, personality traits, emotional vulnerability, and algorithm-driven exposure patterns further influence psychological outcomes. Despite methodological limitations such as reliance on cross-sectional data and self-reported measures, the cumulative evidence highlights an urgent need for digital literacy programs, early clinical screening, and platform-level interventions aimed at promoting healthier online environments. Future research should prioritize longitudinal, cross-cultural, and mechanistic approaches to clarify causality and identify protective factors capable of mitigating digital-age psychological distress.

Keywords: social media, anxiety, depression, young adults, problematic social media use, cyberbullying, FOMO, mental health.

1. Introduction

The integration of social media into everyday life represents one of the most significant sociocultural transformations of the twenty-first century. Platforms such as Instagram, TikTok, Snapchat, Facebook, and X (formerly Twitter) have become central to communication, entertainment, self-presentation, and interpersonal interaction among young adults. Global reports indicate that young people spend several hours daily engaging with digital platforms, making social media an increasingly influential determinant of emotional and behavioral functioning [1]. Although social networking platforms provide opportunities for social connectedness, identity exploration, and emotional support, concerns regarding their psychological impact have intensified over the past decade. The rising prevalence of anxiety disorders, depressive symptoms, loneliness, self-harm, and suicidal ideation among adolescents and young adults has coincided with dramatic increases in smartphone and social media engagement [2].

This temporal association has stimulated extensive research examining whether excessive or maladaptive social media use contributes to declining mental well-being. Importantly, current evidence suggests that social media itself is not universally harmful. Rather, psychological outcomes appear to depend on the nature, intensity, and context of engagement. Active communication and supportive social interaction may enhance social connectedness and perceived support, whereas passive browsing, compulsive checking, exposure to idealized content, and online social comparison are consistently associated with anxiety and depressive symptoms [3,4].

Young adulthood represents a particularly vulnerable developmental stage characterized by identity formation, emotional instability, increased peer sensitivity, and heightened need for social validation. During this period, online feedback mechanisms such as “likes,” comments, and follower counts may disproportionately influence self-esteem and emotional regulation [5].

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Moreover, algorithm-driven content exposure often amplifies emotionally salient and appearance-focused material, potentially intensifying psychological vulnerability. Recent literature has increasingly focused on problematic social media use (PSMU), a behavioral pattern characterized by compulsive engagement, impaired control, withdrawal-like symptoms, and functional impairment. Emerging neurobiological evidence suggests similarities between excessive social media use and behavioral addiction processes involving dopaminergic reward pathways [6]. Furthermore, constructs such as Fear of Missing Out (FOMO), cybervictimization, emotional dysregulation, and sleep disruption have been identified as important mediators linking social media exposure to adverse mental health outcomes. Despite rapid expansion of this field, inconsistencies remain regarding causality, effect size, and moderating factors. Some studies report relatively modest associations after adjustment for confounding variables, whereas others demonstrate substantial longitudinal relationships between problematic social media engagement and psychological distress [7,8]. Variations in study design, cultural context, personality characteristics, and measurement tools likely contribute to these discrepancies. Therefore, the present narrative review critically evaluates current evidence regarding social media-induced anxiety and depression among young adults, emphasizing epidemiological findings, psychological and neurobehavioral mechanisms, moderating variables, methodological limitations, and future research priorities.

2. Methodology

A narrative review approach was adopted to integrate multidisciplinary evidence concerning social media use and mental health outcomes among young adults. Literature searches were conducted using Google Scholar, PubMed, Scopus, and Web of Science databases for studies published between 2010 and 2025. Search terms included combinations of: social media use, problematic social media use, depression, anxiety, young adults, social comparison, cyberbullying, FOMO, sleep disturbance, digital addiction, and mental health.

Studies included

Peer-reviewed empirical studies, longitudinal studies, systematic reviews, meta-analyses and neurobehavioral investigations relevant to digital behavior.

Exclusion criteria included

Studies exclusively involving children, non-peer-reviewed literature, editorials lacking empirical evidence and studies unrelated to psychological outcomes. Preference was given to highly cited and methodologically rigorous studies. Reference lists of selected articles were additionally screened to identify relevant publications.

3. Epidemiological evidence linking social media use with anxiety and depression

An expanding body of literature demonstrates significant associations between social media use and adverse mental health outcomes among adolescents and young adults. Meta-analytic evidence indicates that excessive social networking site use is generally associated with lower psychological well-being, although effect sizes vary across studies [9]. Lin *et al.* reported that individuals with high social media exposure exhibited significantly increased odds of depression compared with low-use groups [10]. Similarly, Primack *et al.* found that frequent social media use was strongly associated with perceived social isolation among young adults in the United States [11]. These findings challenged earlier assumptions that online connectivity necessarily reduces loneliness. Longitudinal studies provide additional insight into temporal relationships. Boers *et al.* demonstrated that increased social media use predicted subsequent depressive symptoms over time, particularly among adolescent girls [12]. Raudsepp and Kais further identified bidirectional relationships in which depressive symptoms also predicted problematic social media engagement, suggesting self-reinforcing cycles of emotional distress [13]. Systematic reviews consistently support these observations. Keles *et al.* concluded that social media use is associated with increased symptoms of depression, anxiety, and psychological distress in adolescents and young adults [14]. Marino *et al.*, in a meta-analysis examining problematic Facebook use, similarly reported robust associations between compulsive platform engagement and poor mental health outcomes [15]. Twenge *et al.* observed that rates of depressive symptoms and suicide-related outcomes increased substantially among adolescents after 2010, coinciding with rapid expansion of smartphone and social media use [2]. Although the authors acknowledged that multiple sociocultural factors likely contributed to these trends, they argued that digital media exposure represents a potentially important environmental risk factor. However, not all studies report uniformly negative effects. Orben and Przybylski argued that the relationship between digital technology use and adolescent well-being may be statistically small when compared with other psychosocial variables [8]. Similarly, Coyne *et al.*, in an eight-year longitudinal study, found limited evidence that time spent on social media alone directly predicts poorer mental health outcomes [7]. These contrasting findings suggest that the quality and context of social media engagement may be more important than duration of use itself. Indeed, emerging evidence indicates that passive browsing and appearance-focused consumption are particularly harmful. Escobar-Viera *et al.* reported that passive social media use was more strongly associated with depressive symptoms than active interaction [3]. Verduyn *et al.* similarly proposed that passive consumption promotes envy, loneliness, and negative self-evaluation through repeated upward social comparison [4].

4. Psychological and neurobehavioral mechanisms

4.1 Upward social comparison and self-esteem disturbance

Social media platforms facilitate constant exposure to idealized portrayals of beauty, success, relationships, and lifestyle achievements. Such exposure promotes upward social comparison, a psychological process associated with envy, dissatisfaction, and depressive affect. Chou and Edge found that frequent Facebook users were more likely to perceive others as happier and living better lives than themselves [16]. Tandoc et al. further demonstrated that envy mediated the relationship between Facebook use and depressive symptoms among college students [17]. Similarly, Nesi and Prinstein reported that social comparison and online feedback-seeking behaviors significantly predicted depressive symptoms, particularly among socially vulnerable adolescents [18]. Instagram and visually oriented platforms appear especially influential due to their emphasis on appearance-centered content. Yang observed that social comparison orientation moderated the relationship between Instagram use and loneliness [19]. Young women may be particularly susceptible because appearance-based validation strongly influences self-worth during emerging adulthood.

4.2 Fear of missing out (FOMO)

Fear of Missing Out (FOMO) refers to anxiety arising from the perception that others are engaging in rewarding experiences without one's participation. Social media continuously exposes users to curated social events, celebrations, and achievements, reinforcing compulsive monitoring behaviors. Przybylski et al. identified FOMO as a significant predictor of problematic social media engagement and emotional dissatisfaction [20]. Rozgonjuk et al. additionally reported that FOMO was associated with problematic smartphone use and disruption of everyday functioning [21]. FOMO contributes to excessive checking behaviors, attentional fragmentation, and emotional dependency on online validation, thereby reinforcing anxiety and compulsive engagement cycles.

4.3 Cyberbullying and online harassment

Cyberbullying has emerged as a major digital-age public health concern. Unlike traditional bullying, online harassment may occur continuously, anonymously, and before large audiences, amplifying emotional consequences. Kowalski et al., in a comprehensive meta-analysis, found strong associations between cybervictimization and depression, anxiety, suicidal ideation, and emotional distress [22]. Victims frequently experience social withdrawal, sleep disturbances, reduced self-esteem, and impaired academic functioning. The psychological impact of cyberbullying may be intensified by the permanence and public visibility of digital content. Furthermore, vulnerable individuals may be more likely to experience repeated victimization, supporting bidirectional models of distress.

4.4 Sleep disturbance and circadian dysregulation

Sleep disruption represents another important mechanism linking social media use with mental health disturbances. Night-time exposure to screens suppresses melatonin release, delays sleep onset, and disrupts circadian rhythms. Levenson et al. found significant associations between social media use and sleep disturbance among young adults [23]. Woods and Scott similarly demonstrated that night-time social media engagement was associated with poor sleep quality, anxiety, depression, and low self-esteem among adolescents [24]. Scott et al., using data from the UK Millennium Cohort Study, further reported that frequent social media use correlated with delayed sleep onset and emotional difficulties [25]. Chronic sleep deprivation may impair emotional regulation, increase stress reactivity, and alter serotonergic and dopaminergic signaling pathways implicated in anxiety and depression.

4.5 Problematic social media use and addiction-like behaviors

Problematic social media use (PSMU) shares several characteristics with behavioral addiction, including compulsive engagement, impaired control, withdrawal symptoms, and functional impairment. Andreassen described social networking site addiction as an emerging behavioral concern characterized by salience, tolerance, mood modification, and relapse-like patterns [26]. Neurobehavioral studies suggest that social media feedback activates dopaminergic reward pathways similar to those implicated in substance and behavioral addictions [6]. Bányai et al. identified problematic social media use in a substantial proportion of adolescents and demonstrated significant associations with psychological distress [27]. Likewise, Andreassen et al. reported relationships between addictive social media use, narcissistic traits, low self-esteem, and emotional instability [28]. Animal behavioral models investigating intermittent reward exposure and reinforcement learning have shown that unpredictable reward schedules strongly activate mesolimbic dopamine circuitry, supporting theoretical parallels between compulsive digital engagement and reward-seeking behavior observed in addiction paradigms.

5. Moderating variables influencing psychological risk

The mental health effects of social media vary considerably across individuals due to multiple moderating variables.

Gender differences

Females consistently report stronger associations between social media use and depressive symptoms, likely because of greater vulnerability to appearance-based comparison and relational stressors [2].

Personality traits

Individuals with high neuroticism, emotional instability, low self-esteem, and social anxiety appear more vulnerable to problematic engagement patterns [30].

Pre-existing psychological vulnerability

Emotionally vulnerable individuals may increasingly use social media for reassurance-seeking and avoidance coping, thereby exacerbating psychological distress.

Platform algorithms

Algorithm-driven content amplification prioritizes emotionally salient material, potentially reinforcing compulsive engagement, outrage, comparison behaviors, and emotional dysregulation.

6. Clinical and public health implications

Given the widespread use of social media among young adults, addressing its mental health consequences has become a public health priority.

Individual-level strategies

Mindful digital engagement, limiting late-night use, disabling excessive notifications, and promoting offline social interaction may reduce emotional burden. Hunt et al. demonstrated that limiting social media use significantly reduced loneliness and depressive symptoms among college students [29].

Clinical interventions

Mental health assessments should increasingly incorporate screening for problematic social media use, cybervictimization, sleep disruption, and compulsive checking behaviors. Cognitive behavioral interventions targeting maladaptive comparison and FOMO-related cognition may be beneficial.

Educational and policy-level interventions

Digital literacy programs should educate young adults regarding healthy online behaviors, emotional resilience, and critical evaluation of curated online content. Social media companies should strengthen anti-cyberbullying measures, improve transparency regarding recommendation algorithms, and implement safeguards reducing excessive engagement among vulnerable users.

7. Limitations of current literature

Despite substantial research growth, several limitations remain. Many studies rely on cross-sectional designs, limiting causal inference. Self-reported screen-time measures may additionally introduce recall bias and measurement inaccuracies. Definitions of problematic social media use vary across studies, reducing methodological consistency. Furthermore, most available data originate from Western populations, limiting cross-cultural generalizability. Rapid technological evolution also complicates interpretation because social media platforms and user behaviors change continuously. Importantly, bidirectional relationships remain insufficiently understood, as individuals experiencing depression or anxiety may engage more heavily with social media as a coping mechanism.

8. Future directions

Future investigations should prioritize longitudinal and experimental methodologies capable of clarifying causal relationships between social media use and psychological outcomes.

Additional research is needed regarding

Algorithmic exposure patterns, short-form video platforms, neurobiological correlates of digital reward processing, emotional resilience factors and culturally diverse populations. Integration of neuroscientific, psychological, and behavioral approaches will be essential for developing comprehensive models of digital-age mental health.

9. Conclusion

The current body of evidence strongly supports a significant association between maladaptive social media use and symptoms of anxiety and depression among young adults. While social networking platforms offer opportunities for communication and social support, problematic patterns of engagement—including passive browsing, upward social comparison, cyberbullying exposure, compulsive use, FOMO, and sleep disruption—consistently predict poorer psychological well-being. Importantly, the relationship between social media use and mental health appears multifactorial and bidirectional, influenced by developmental vulnerability, personality characteristics, emotional predisposition, and platform architecture. As digital technologies continue to evolve, understanding their psychological consequences has become increasingly important for clinicians, researchers, educators, policymakers, and technology companies. Comprehensive strategies promoting healthier digital engagement and emotionally safer online environments are urgently needed to protect the mental well-being of young adults in the digital era.

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