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BEHAVIORAL AND PSYCHOSOCIAL MECHANISMS LINKING DIGITAL TECHNOLOGY USE AND MENTAL HEALTH ACROSS ADOLESCENTS AND YOUNG ADULTS: A NARRATIVE REVIEW

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ABSTRACT

Digital technologies have become an integral part of daily life, particularly among adolescents and young adults. The widespread use of smartphones, social media platforms, and digital communication tools has significantly transformed social interactions, access to information, and lifestyle patterns (Odgers & Jensen, 2020; Twenge et al., 2018). However, increasing evidence suggests that excessive or maladaptive use of digital technologies may have both beneficial and adverse effects on mental health (Keles et al., 2020; Orben & Przybylski, 2019).

This narrative review aims not only to synthesize current evidence but also to identify key behavioral and psychosocial mechanisms, clinical risk factors, and potential intervention strategies associated with digital technology use and mental health outcomes. A literature search was conducted using PubMed and Google Scholar, focusing on studies published between 2010 and 2024. The findings indicate that digital technologies may contribute to increased levels of anxiety, depression, and stress, particularly in relation to excessive social media use, cyberbullying, and disrupted sleep patterns (Scott et al., 2019; Woods & Scott, 2016).

At the same time, digital tools offer important opportunities, including improved access to mental health resources, enhanced social support, and the development of digital therapeutic interventions (Firth et al., 2017; Naslund et al., 2016). Importantly, this review emphasizes that the impact of digital technologies is mediated by underlying behavioral and psychosocial mechanisms, rather than being determined solely by exposure or screen time.

From a public health perspective, understanding these mechanisms is essential for developing effective prevention strategies and promoting responsible, balanced use of digital technologies. The inclusion of both adolescent and young adult populations reflects the overlap in digital behaviors and psychosocial processes across these developmental stages, allowing for a more comprehensive understanding of risk and protective factors.

KEYWORDS

Digital Technologies, Mental Health, Social Media, Adolescents, Young Adults, Behavioral Determinants, Digital Health

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1. Introduction

Digital technologies have rapidly transformed modern society, fundamentally changing the way individuals communicate, work, and interact. Over the past two decades, the development of smartphones, high-speed internet, and social media platforms has led to an unprecedented level of connectivity (Odgers & Jensen, 2020; Vannucci et al., 2017). Among adolescents and young adults, the use of digital devices has become nearly universal, with this population representing one of the most active user groups. Studies indicate that young adults spend a substantial portion of their daily time engaged with digital technologies, including social networking, content consumption, and online communication (Twenge et al., 2018; Rideout & Robb, 2018).

The increasing integration of digital technologies into everyday life has brought numerous benefits. These include improved access to information, enhanced communication across geographical boundaries, and expanded opportunities for education, employment, and social participation. Digital platforms enable rapid dissemination of knowledge, facilitate remote learning, and provide tools for professional development. Moreover, digital communication allows individuals to maintain social connections and access support networks regardless of physical location (Naslund et al., 2016; Firth et al., 2017).

However, alongside these benefits, growing concerns have emerged regarding the potential negative impact of excessive or maladaptive use of digital technologies on mental health. The concept of "digital overload" has been increasingly discussed in the literature, referring to excessive exposure to digital stimuli and information, which may contribute to cognitive fatigue and emotional distress (Chen & Yan, 2016). Due

to their high level of engagement with digital environments, adolescents and young adults may be particularly susceptible to these effects.

A growing body of evidence suggests that high levels of screen time and intensive social media use are associated with increased symptoms of depression, anxiety, and stress (Keles et al., 2020; Orben & Przybylski, 2019). Importantly, these associations are not solely explained by exposure time, but rather by underlying behavioral and psychosocial mechanisms. One of the most widely discussed mechanisms is social comparison, in which individuals compare their own lives to idealized and often unrealistic representations presented online, potentially leading to feelings of inadequacy, low self-esteem, and reduced life satisfaction (Vogel et al., 2014).

Another key mechanism is the phenomenon of fear of missing out (FOMO), defined as the apprehension that others may be experiencing rewarding events without one's participation. FOMO has been associated with compulsive checking behaviors, increased social media engagement, and heightened anxiety levels (Przybylski et al., 2013). Additionally, exposure to cyberbullying and online harassment represents a significant risk factor for adverse mental health outcomes, particularly among younger individuals who may be more vulnerable to peer influence (Kowalski et al., 2014).

Sleep disturbances constitute another important pathway linking digital technology use to mental health outcomes. Prolonged exposure to screens, particularly before bedtime, has been shown to disrupt circadian rhythms and reduce sleep quality. Poor sleep, in turn, is strongly associated with increased risk of depression, anxiety, and impaired cognitive functioning (Woods & Scott, 2016; Scott et al., 2019). These findings highlight the multifactorial nature of the relationship between digital behaviors and mental health.

At the same time, digital technologies also offer important opportunities for improving mental health outcomes. Online support communities can provide emotional support and reduce feelings of isolation, particularly for individuals who may lack access to traditional support systems (Naslund et al., 2016). Mobile health (mHealth) applications and digital therapeutic tools have been developed to support mental health through features such as mood tracking, cognitive behavioral therapy (CBT)-based interventions, mindfulness exercises, and psychoeducation (Firth et al., 2017). Furthermore, telemedicine and online counseling services have improved access to mental health care, especially in underserved or remote areas, reducing barriers related to stigma, cost, and availability of services (Torous et al., 2020).

Given this dual role, digital technologies should be understood not only as potential risk factors but also as tools that can be leveraged for intervention. The relationship between digital technology use and mental health is therefore complex and influenced by multiple interacting factors, including patterns of use, individual susceptibility, and broader social context (Odgers & Jensen, 2020; Orben & Przybylski, 2019).

Importantly, from a clinical and public health perspective, digital technology use is increasingly recognized as a modifiable behavioral determinant of mental health. Understanding specific risk patterns, underlying mechanisms, and intervention opportunities is essential for both clinicians and policymakers.

In contrast to previous narrative reviews that primarily describe associations between digital technology use and mental health outcomes, this review emphasizes the role of behavioral and psychosocial mechanisms, clinically relevant risk profiles, and practical intervention strategies. By integrating epidemiological evidence with a clinically oriented perspective, this work aims to support healthcare professionals in identifying at-risk individuals and incorporating digital behavior assessment into routine practice, while also informing public health strategies in increasingly digital societies.

2. Methods

This narrative review was conducted using a structured literature search designed to identify and synthesize current evidence on the relationship between digital technology use and mental health among adolescents and young adults. The search process was carried out using two major scientific databases: PubMed and Google Scholar. These sources were selected due to their broad coverage of biomedical, psychological, and interdisciplinary research, ensuring access to high-quality and relevant scientific publications (Green et al., 2006; Ferrari, 2015).

Articles published in English between 2010 and 2024 were included in the analysis. This time frame was chosen to capture recent developments in digital technology, including the widespread adoption of smartphones, social media platforms, and mobile applications, as well as their evolving impact on mental health. Earlier seminal studies were also considered when they provided important theoretical or methodological contributions.

The search strategy incorporated a combination of keywords and Boolean operators to ensure both sensitivity and specificity. Primary search terms included: "digital technologies," "social media," "screen time,"

"mental health," "depression," "anxiety," "young adults," and "internet use." These terms were applied both individually and in combination (e.g., "social media AND depression," "screen time AND anxiety") to capture studies addressing different aspects of the research question (Arksey & O'Malley, 2005).

A wide range of study designs was included to provide a comprehensive overview of the available evidence. These comprised observational studies (cross-sectional and cohort studies), interventional studies (randomized controlled trials and experimental designs), as well as systematic reviews and meta-analyses. This inclusive approach allowed for a multidimensional understanding of the relationship between digital technologies and mental health (Grant & Booth, 2009).

Studies focusing on adolescents and young adults were prioritized, particularly those examining populations from mid-adolescence to early adulthood. However, studies involving broader age ranges were also included when they provided relevant subgroup analyses. This decision reflects the overlap in behavioral patterns, developmental processes, and psychosocial mechanisms across these age groups.

Inclusion criteria were defined as follows: (1) studies examining the association between digital technology use and mental health outcomes; (2) research addressing key psychological variables such as depression, anxiety, stress, or overall well-being; (3) peer-reviewed articles published in scientific journals; and (4) studies employing validated measurement tools. Exclusion criteria included: (1) studies focusing exclusively on children or elderly populations without relevant subgroup analysis; (2) non-English publications; (3) studies lacking clearly defined methodology or outcome measures; and (4) conference abstracts or reports without full-text availability.

The study selection process was based on relevance to the research question, methodological rigor, and consistency of findings. To enhance the reliability of the synthesis, priority was given to systematic reviews, meta-analyses, and studies employing validated measurement tools. When inconsistencies between studies were identified, findings were interpreted cautiously, taking into account study design, sample size, and potential biases.

Data were analyzed qualitatively using a thematic synthesis approach. Particular attention was given to identifying recurring behavioral and psychosocial mechanisms underlying the relationship between digital technology use and mental health outcomes. The synthesis was organized into thematic categories, including social media use, screen time, cyberbullying, and digital mental health interventions, with an emphasis on mechanism-based interpretation rather than purely descriptive reporting.

Although this review follows a structured approach, it does not adhere to a formal systematic review protocol (e.g., PRISMA). Consequently, while efforts were made to ensure transparency and reproducibility, the findings may be subject to selection bias and should be interpreted within the context of a narrative synthesis.

3. Results

3.1. Social Media Use and Mental Health

Social media platforms represent a dominant digital environment shaping psychosocial functioning among adolescents and young adults. Beyond their communicative function, these platforms actively influence identity formation, social evaluation processes, and patterns of emotional regulation (Odgers & Jensen, 2020; Vannucci et al., 2017). For many individuals in these age groups, social media constitutes a primary context of daily social interaction rather than a supplementary communication tool (Twenge et al., 2018).

Current evidence indicates that the association between social media use and mental health outcomes is not determined solely by duration of use, but primarily by qualitative patterns of engagement. In particular, passive and consumption-based use has been consistently associated with increased depressive symptoms, anxiety, and reduced psychological well-being (Keles et al., 2020; Verduyn et al., 2017; Primack et al., 2017). This suggests that the psychological impact of social media is mediated by underlying behavioral mechanisms rather than exposure alone.

One of the central mechanisms is social comparison. Social media environments amplify exposure to selectively curated and idealized representations of others' lives, which may distort perceived social norms and expectations. This process contributes to negative self-evaluation, reduced self-esteem, and increased dissatisfaction with one's own life circumstances (Vogel et al., 2014; Appel et al., 2016). Importantly, adolescents and young adults appear particularly vulnerable due to ongoing identity development and heightened sensitivity to social feedback.

Fear of missing out (FOMO) represents another key mechanism linking social media use with psychological distress. FOMO reinforces compulsive engagement patterns, including repetitive checking

behaviors and increased dependence on digital interaction, which may further exacerbate anxiety and emotional dysregulation (Przybylski et al., 2013; Elhai et al., 2020). These patterns suggest the presence of feedback loops in which psychological vulnerability and digital behavior mutually reinforce each other.

In addition, platform-specific features such as likes, comments, and shares function as external validation systems that may condition self-worth on social feedback. While positive feedback can transiently enhance mood, reliance on such mechanisms increases susceptibility to negative affect when expected responses are not achieved (Burrow & Rainone, 2017).

Exposure to harmful content, including cyberbullying and online harassment, further intensifies these effects. The combination of anonymity, accessibility, and persistence of online content creates an environment in which negative interactions may have prolonged psychological consequences (Kowalski et al., 2014; Hamm et al., 2015).

At the same time, social media use is not inherently detrimental. Active, intentional, and socially meaningful engagement—such as participation in supportive communities or maintaining interpersonal relationships—may contribute positively to well-being (Naslund et al., 2016). This distinction highlights the importance of differentiating between adaptive and maladaptive usage patterns.

From a clinical perspective, these findings indicate that assessment of social media use should extend beyond quantitative measures (e.g., time spent online) and incorporate qualitative dimensions, including passive consumption, social comparison tendencies, and reliance on external validation. Such an approach may improve identification of individuals at increased risk of adverse mental health outcomes.

3.2. Screen Time and Psychological Well-being

Screen time represents one of the most widely studied indicators of digital technology exposure; however, its relationship with mental health is complex and not solely dependent on duration. Among adolescents and young adults, high levels of screen use have been associated with reduced psychological well-being, but emerging evidence suggests that this relationship is mediated by behavioral, contextual, and physiological factors (Twenge et al., 2018; Orben & Przybylski, 2019).

One key mechanism involves displacement effects, whereby increased screen use reduces engagement in protective behaviors such as physical activity, face-to-face interaction, and restorative leisure activities. This shift toward a more sedentary and socially limited lifestyle has been associated with increased symptoms of depression and anxiety (Hoare et al., 2016; Teychenne et al., 2010).

Another important pathway is related to cognitive and emotional load. Continuous exposure to digital stimuli—including notifications, rapid information flow, and multimedia content—may lead to attentional fragmentation, mental fatigue, and reduced capacity for sustained focus. This phenomenon, often described as digital fatigue, contributes to emotional exhaustion and decreased psychological resilience (Chen & Yan, 2016).

Sleep disruption represents a particularly significant mechanism linking screen time with mental health outcomes. Exposure to blue light and stimulating content in the pre-sleep period interferes with circadian rhythms and delays sleep onset, resulting in reduced sleep quality (Woods & Scott, 2016; Scott et al., 2019). Given the well-established relationship between sleep disturbances and affective disorders, this pathway constitutes a critical mediator of the observed associations (Levenson et al., 2017).

Importantly, not all screen use exerts the same psychological impact. Passive and unstructured consumption, such as prolonged scrolling or binge-watching, appears to be more strongly associated with negative outcomes, whereas purposeful and goal-directed use may have neutral or beneficial effects (Verduyn et al., 2017).

These findings suggest that screen time should be conceptualized not merely as a quantitative exposure variable, but as a multidimensional behavioral construct. From a clinical perspective, excessive screen use may represent a modifiable behavioral risk factor that can be targeted through interventions aimed at improving sleep hygiene, increasing physical activity, and promoting more structured and intentional patterns of digital engagement.

3.3. Cyberbullying and Online Harassment

Cyberbullying constitutes a distinct and high-impact psychosocial stressor within digital environments, particularly among adolescents and young adults. Unlike traditional forms of bullying, it is characterized by its persistence, potential anonymity, and broad reach, which together amplify its psychological impact (Kowalski et al., 2014; Hamm et al., 2015).

Exposure to cyberbullying has been consistently associated with increased levels of depression, anxiety, and suicidal ideation. The chronic and uncontrollable nature of online harassment contributes to sustained psychological distress, often accompanied by feelings of helplessness, social withdrawal, and reduced self-esteem (John et al., 2018).

A key mechanism underlying the severity of cyberbullying is the online disinhibition effect, whereby anonymity and reduced accountability facilitate more extreme and aggressive behaviors compared to offline contexts (Suler, 2004). In addition, the permanence and rapid dissemination of digital content prolong exposure to harmful material and intensify perceived social threat (Slonje et al., 2013).

Cyberbullying also interacts with other risk factors, including excessive social media use, low social support, and pre-existing psychological vulnerabilities. These interactions may lead to cumulative or synergistic effects, increasing the likelihood of clinically significant mental health outcomes (John et al., 2018).

Importantly, the impact of cyberbullying extends beyond direct victims. Perpetrators and bystanders may also experience negative psychological consequences, including increased impulsivity, emotional dysregulation, and desensitization to harmful behavior (Kowalski et al., 2014).

Despite these risks, digital environments also offer opportunities for prevention and intervention. Platform-based moderation tools, reporting systems, and digital literacy programs may reduce exposure to harmful content and promote safer online behavior (Hamm et al., 2015).

From a clinical standpoint, early identification of exposure to cyberbullying is critical. Screening for online harassment and related psychosocial stressors may enable timely intervention and reduce the risk of progression to more severe mental health disorders.

3.4. Positive Effects of Digital Technologies

Despite the potential risks associated with excessive or maladaptive use, digital technologies also offer a range of beneficial effects on mental health, particularly when used in an intentional and structured manner. Increasing evidence suggests that digital environments may function not only as sources of risk, but also as platforms for resilience-building and mental health support among adolescents and young adults (Naslund et al., 2016; Firth et al., 2017).

One of the primary protective functions of digital technologies is the facilitation of social support. Online platforms enable individuals to establish and maintain interpersonal connections, share experiences, and access peer-based support networks. This is especially relevant for individuals experiencing social isolation, stigma, or limited access to traditional support systems. Participation in online communities may foster a sense of belonging, emotional validation, and perceived social connectedness, all of which are key determinants of psychological well-being (Naslund et al., 2016; Naslund et al., 2014).

Digital communication tools also play a significant role in maintaining relational continuity across geographical boundaries. This function is particularly important for adolescents and young adults undergoing educational, occupational, or social transitions, where continuity of social ties may act as a protective factor against loneliness and emotional distress (Nowland et al., 2018).

In addition, digital technologies have substantially improved access to mental health resources. Mobile health (mHealth) applications and digital interventions provide scalable and accessible tools for self-monitoring, psychoeducation, and symptom management. These include applications based on cognitive behavioral therapy (CBT), mindfulness training, and mood tracking, which enable users to actively engage in self-regulation and behavioral modification (Firth et al., 2017; Donker et al., 2013).

Online therapy platforms and telepsychiatry services further extend access to professional care, reducing barriers related to cost, availability, and stigma. These modalities have demonstrated effectiveness comparable to traditional interventions in certain contexts, highlighting their potential role in modern mental health care systems (Torous et al., 2020; Andersson & Titov, 2014).

Another important advantage is the potential for early detection and intervention. Digital tools incorporating real-time monitoring and data-driven analysis may facilitate identification of early symptoms of mental health disorders, allowing for timely and potentially preventive intervention (Torous et al., 2020).

From a conceptual perspective, the beneficial effects of digital technologies can be understood through several key protective mechanisms: (1) enhancement of perceived social support, (2) increased accessibility of mental health resources, (3) facilitation of self-regulation and behavioral monitoring, and (4) reduction of structural barriers to care. These mechanisms highlight the potential of digital environments to act as active components of mental health support systems rather than passive communication tools.

Importantly, the positive impact of digital technologies appears to depend largely on patterns of use. Active, purposeful, and socially meaningful engagement is associated with improved outcomes, whereas passive and unstructured consumption may attenuate these benefits or contribute to negative effects (Verduyn et al., 2017).

From a clinical perspective, these findings suggest that digital technology use should not be uniformly discouraged, but rather guided and optimized. Integrating digital tools into preventive strategies and therapeutic interventions may enhance engagement, accessibility, and effectiveness of mental health care among adolescents and young adults.

Overall, digital technologies represent a dual-function system with both risk and protective potential. Understanding and leveraging their beneficial mechanisms is essential for developing balanced, evidence-based approaches to digital mental health.

3.5. Clinical Risk Profiles and Vulnerable Populations

Emerging evidence indicates that the impact of digital technology use on mental health is heterogeneous and moderated by individual vulnerability factors. Rather than exerting uniform effects, digital environments may disproportionately affect individuals with specific psychological, behavioral, and social characteristics (Odgers & Jensen, 2020; Orben & Przybylski, 2019).

Individuals with pre-existing mental health conditions, including anxiety disorders and depression, appear particularly susceptible to maladaptive patterns of digital engagement. In these populations, excessive social media use and exposure to online stressors may exacerbate symptom severity, reinforce negative cognitive biases, and contribute to emotional dysregulation (Keles et al., 2020; Primack et al., 2017).

Personality traits and psychological profiles also play a significant role. Higher levels of neuroticism, low self-esteem, and maladaptive coping strategies have been associated with increased vulnerability to social comparison, fear of missing out (FOMO), and dependence on external validation mechanisms (Vogel et al., 2014; Przybylski et al., 2013). These factors may contribute to a bidirectional relationship in which psychological vulnerability promotes maladaptive digital behaviors, which in turn further deteriorate mental health.

Adolescents and young adults undergoing identity formation represent another high-risk group. During this developmental stage, heightened sensitivity to peer evaluation and social feedback increases susceptibility to the effects of curated online content and social comparison processes (Vannucci et al., 2017). Similarly, individuals experiencing social isolation or limited offline support may rely excessively on digital environments, potentially increasing exposure to negative interactions and reinforcing feelings of loneliness (Nowland et al., 2018).

Additional risk has been observed in individuals with attentional difficulties, where constant digital stimulation may exacerbate attentional fragmentation and impair cognitive regulation (Chen & Yan, 2016). Furthermore, exposure to cyberbullying represents a critical risk factor, particularly among vulnerable individuals, significantly increasing the likelihood of depressive symptoms, anxiety, and self-harm behaviors (John et al., 2018; Kowalski et al., 2014).

From a clinical perspective, these findings support the identification of distinct digital risk profiles. Incorporating assessment of digital behavior patterns—such as intensity, type of use, and exposure to online stressors—into routine mental health evaluation may enhance early detection of at-risk individuals. This approach may facilitate more targeted and personalized prevention and intervention strategies.

3.6. Prevention and Intervention Strategies

Current evidence suggests that effective intervention strategies should not focus exclusively on reducing overall screen time, but rather on modifying patterns of digital engagement and promoting adaptive use. This shift from a restriction-based approach to behavioral optimization represents a key paradigm in contemporary digital mental health (Odgers & Jensen, 2020; Orben & Przybylski, 2019).

Given the central role of digital technologies in everyday life, complete avoidance is neither feasible nor desirable. Instead, preventive and therapeutic strategies should aim to enhance digital self-regulation and support the development of healthy usage patterns.

Several key approaches can be identified. First, reducing passive consumption of content—such as prolonged scrolling or exposure to curated social media feeds—may help mitigate mechanisms related to social comparison and emotional distress (Verduyn et al., 2017). Second, promoting active and meaningful engagement, including communication, participation in supportive communities, and intentional use of digital tools, may enhance psychological well-being (Naslund et al., 2016). Third, implementation of structured screen time regulation strategies, including time limits and scheduled breaks, may reduce cognitive overload and improve balance between online and offline activities (Twenge et al., 2018). Fourth, digital hygiene practices—such as limiting device use before sleep and establishing device-free periods—may improve sleep quality and reduce associated mental health risks (Woods & Scott, 2016; Scott et al., 2019).

In addition, integration of digital literacy into educational and public health frameworks may improve individuals' ability to critically evaluate online content, manage digital exposure, and recognize potentially harmful patterns of use (Odgers & Jensen, 2020). Such interventions may be particularly beneficial among adolescents and young adults, who are at increased risk of maladaptive engagement.

From a clinical perspective, digital behavior modification may represent a valuable component of non-pharmacological interventions for anxiety and depressive disorders. Incorporating guidance on digital habits into therapeutic settings, including cognitive behavioral interventions, may enhance treatment outcomes and support long-term behavioral change (Firth et al., 2017; Andersson & Titov, 2014).

Overall, prevention and intervention strategies should aim to shift the focus from limiting access to digital technologies toward fostering adaptive, mindful, and goal-directed use. Such an approach aligns with the dual-role model of digital technologies as both potential risk factors and therapeutic tools.

4. Discussion

The findings of this review confirm that the relationship between digital technology use and mental health is complex, multidimensional, and context-dependent. Digital environments cannot be conceptualized as inherently harmful or beneficial; rather, they function as dynamic systems whose effects are shaped by patterns of use, individual vulnerability, and broader psychosocial context (Odgers & Jensen, 2020; Orben & Przybylski, 2019).

A key contribution of this review is the integration of behavioral mechanisms with clinically relevant risk profiles. The evidence suggests that the impact of digital technologies is mediated primarily by qualitative aspects of engagement rather than by exposure alone. Passive consumption, social comparison, and reliance on external validation appear to represent central mechanisms associated with adverse outcomes, whereas active and intentional use may exert protective effects (Verduyn et al., 2017; Naslund et al., 2016).

Importantly, the findings support a non-linear model of association between digital technology use and mental health. This model challenges simplistic interpretations based solely on screen time and emphasizes the need to consider interaction patterns, content type, and user characteristics. Such an approach aligns with emerging perspectives in digital mental health, which highlight the importance of behavioral context over quantitative exposure (Orben & Przybylski, 2019).

The mechanisms underlying negative outcomes are multifactorial and interconnected. Social comparison and fear of missing out (FOMO) contribute to cognitive and emotional vulnerability, while cyberbullying, digital overload, and sleep disruption further amplify psychological distress (Vogel et al., 2014; Przybylski et al., 2013; Woods & Scott, 2016). These mechanisms often operate in feedback loops, reinforcing maladaptive patterns of engagement and increasing the risk of persistent mental health problems.

At the same time, digital technologies provide significant opportunities for intervention. The availability of digital mental health tools, online therapy platforms, and peer-support communities highlights their potential as scalable and accessible components of mental health care (Firth et al., 2017; Andersson & Titov, 2014). These findings support a dual-role model in which digital environments may act both as risk factors and as therapeutic resources.

Individual differences represent a critical moderating factor. Psychological traits, baseline mental health status, and coping strategies influence both patterns of digital engagement and susceptibility to its effects (Odgers & Jensen, 2020). In particular, adolescents and young adults undergoing identity formation may be more sensitive to social evaluation and online feedback mechanisms, increasing their vulnerability to negative outcomes.

In addition, structural and environmental factors should be considered. Platform design features, including algorithm-driven content delivery and engagement-based reinforcement systems, may contribute to prolonged use and intensification of maladaptive behaviors (Orben & Przybylski, 2019). These findings suggest that responsibility for digital well-being extends beyond individual users to include technological and societal determinants.

From a clinical perspective, the results highlight the importance of incorporating digital behavior into routine mental health assessment. Screening for patterns such as excessive passive use, sleep-disruptive habits, and exposure to online stressors may improve early identification of at-risk individuals. Furthermore, integrating digital behavior modification into therapeutic approaches—particularly within cognitive behavioral frameworks—may enhance treatment outcomes and support long-term mental health stability (Firth et al., 2017).

From a public health perspective, the findings support the development of interventions focused on digital literacy, self-regulation, and adaptive engagement rather than simple reduction of screen time. Educational and community-based strategies aimed at promoting mindful and structured use may mitigate risks while preserving the benefits of digital technologies (Twenge et al., 2018; Odgers & Jensen, 2020).

This review has several limitations. As a narrative review, it is subject to potential selection bias and does not provide a quantitative synthesis of findings. In addition, heterogeneity in study designs, measurement tools, and definitions of digital technology use may limit comparability across studies. These limitations should be considered when interpreting the results.

Future research should prioritize longitudinal and experimental designs to clarify causal relationships and identify mechanisms underlying both risk and protective effects. Further investigation is also needed to evaluate the long-term effectiveness of digital mental health interventions and to develop evidence-based guidelines for safe and beneficial technology use.

In summary, digital technologies represent a complex and evolving influence on mental health. Their impact is determined not by their presence, but by how they are used. Understanding the interplay between behavioral patterns, individual vulnerability, and environmental factors is essential for developing effective clinical and public health strategies in the digital age.

5. Conclusions

Digital technologies represent a significant and evolving determinant of mental health among adolescents and young adults. As highly digitally engaged populations, these groups are particularly exposed to both the risks and opportunities associated with modern digital environments (Odgers & Jensen, 2020; Twenge et al., 2018).

The findings of this review confirm that the impact of digital technology use is not inherently positive or negative, but depends on patterns of engagement, individual vulnerability, and contextual factors (Orben & Przybylski, 2019). In particular, qualitative aspects of use—such as passive consumption, social comparison, and exposure to online stressors—appear to play a more critical role than overall screen time in determining mental health outcomes (Verduyn et al., 2017).

At the same time, digital technologies offer substantial potential for mental health support. Online platforms, digital interventions, and telemedicine services may improve access to care, enhance social support, and facilitate early intervention, particularly among individuals facing structural or psychosocial barriers (Firth et al., 2017; Naslund et al., 2016).

These findings support a shift from viewing digital technologies as a simple risk factor toward understanding them as a modifiable behavioral domain with both harmful and protective potential. Consequently, effective strategies should prioritize optimization of digital engagement rather than its reduction alone.

From a clinical perspective, incorporating digital behavior assessment into routine practice may improve identification of at-risk individuals and support more personalized intervention approaches. Targeting maladaptive patterns—such as excessive passive use, sleep-disruptive habits, and exposure to online stressors—may represent a valuable component of preventive and therapeutic strategies.

From a public health perspective, promoting digital literacy, self-regulation, and mindful engagement should be considered essential elements of mental health promotion. Collaborative efforts between healthcare systems, educational institutions, and policymakers are required to develop evidence-based guidelines that balance the benefits and risks of digital technologies.

Future research should focus on longitudinal and mechanism-based studies to better understand causal pathways and to identify effective intervention strategies tailored to specific risk profiles.

In conclusion, digital technologies should not be viewed solely as a challenge, but as an integral component of contemporary mental health ecosystems. Their impact depends on how they are used, and when appropriately managed, they have the potential to contribute meaningfully to improved mental health outcomes.

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