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THE IMPACT OF INTERNET AND SOCIAL MEDIA USE ON PHYSICAL AND MENTAL HEALTH: A REVIEW

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ABSTRACT

Background: Internet and social media use have become integral to everyday life and are increasingly discussed as factors that may influence both physical and mental health. Existing literature suggests that their effects are complex and depend on multiple factors, including user characteristics, platform features, emotional involvement, and type of content.

Aim: The aim of this narrative review was to examine how internet and social media use affect physical and mental health across different populations and health domains.

Methods: This paper was prepared on the basis of a literature review included empirical studies, systematic reviews, meta-analyses, scoping reviews, and qualitative papers. The findings were synthesized narratively and organized into major thematic areas, including mental health, sleep, body image, eating behavior, loneliness, online health-information seeking, and health-related content shared by influencers.

Results: The reviewed literature indicates that the effects of internet and social media use are not uniform. The most frequently reported mental health outcomes were depression, anxiety, stress, psychological distress, low self-esteem, fear of missing out, loneliness, body dissatisfaction, and problematic or addictive use. Sleep emerged as one of the most consistently affected physical health domains, with bedtime use, frequent checking, and emotionally intense engagement repeatedly associated with poorer sleep quality and shorter sleep duration. Appearance-focused content was commonly linked to body dissatisfaction, disordered eating, and maladaptive comparison processes, while anxiety-driven online health-information seeking was associated with cyberchondria, hyperdiagnosis, and poor health decisions. At the same time, several studies identified benefits of digital platforms, including communication, self-expression, peer support, health advocacy, and reduced isolation in specific groups.

Conclusion: Internet and social media use can both benefit and harm health. Their effects depend more on patterns, meanings, and contexts of use than on exposure alone.

KEYWORDS

Social Media, Internet Use, Mental Health, Physical Health; Sleep, Body Image

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1. Introduction

Internet and social media use now shape communication, information seeking, identity formation, and day-to-day social participation across many age groups [1,2]. The reviewed literature shows that digital platforms are no longer peripheral tools, but social environments in which relationships are maintained, beliefs are formed, and health-related behaviors are influenced [3,4]. This is especially visible in adolescence and young adulthood, because these developmental stages are marked by heightened sensitivity to peer approval, self-presentation, belonging, and social comparison [1,5]. For that reason, a substantial proportion of the reviewed evidence focuses on adolescents, university students, and young adults [3,6]. At the same time, the uploaded papers also demonstrate that internet and social media use matter for older adults, parents, patients, and people navigating major life transitions such as pregnancy and early parenting [7,8]. The topic should therefore be treated as a general public health issue rather than as a narrowly youth-specific concern [4,8]. A recurring theme across the reviewed papers is that digital use is often discussed too broadly [3,9]. Many studies use umbrella terms such as “social media use,” “internet use,” or “screen time,” yet these labels may refer to very different behaviors [3,10]. The reviewed literature includes studies of time spent online, number of platforms used, active posting, passive scrolling, nighttime use, emotionally invested use, addictive use, health-information seeking, and exposure to particular forms of content such as weight-loss, fitspiration, or influencer marketing [11,12]. These are related but distinct exposures [3,12]. As a result, they should not be expected to produce identical outcomes [3,9]. This is one reason why findings in the wider field sometimes appear mixed or contradictory [3,10]. The umbrella review included in the uploaded set clearly highlights this issue, showing

that conclusions drawn at the review level range from weak and inconsistent associations to findings considered important and clinically meaningful. [3]. Part of that variation reflects differences in study design and outcome quality, but part of it also reflects differences in how researchers define both “social media use” and “mental health” [3,9]. Broad time-based measures often tell less than platform-specific, content-specific, or process-based measures [10,12]. For example, a user participating in an online support group is not having the same experience as a user repeatedly comparing their body with edited appearance-focused content or searching symptoms late at night [1,13]. The reviewed evidence repeatedly suggests that quality and meaning of use matter as much as, and often more than, quantity of use [1,12]. Another reason the topic is difficult to simplify is that the internet and social media can be genuinely beneficial under some conditions [1,2]. Several uploaded papers show that online environments may improve access to social support, strengthen contact with family, facilitate communication across distance, support self-expression, and provide spaces where stigmatized or marginalized groups can find validation and understanding [1,8]. Digital platforms have also been described as tools for public health communication, patient empowerment, and advocacy, for example in relation to women’s cardiovascular health [4,13]. At the same time, the literature also contains repeated evidence of harm, especially in relation to depression, anxiety, poor sleep, cyberbullying, loneliness, body dissatisfaction, disordered eating, cyberchondria, and misinformation-related decision-making [14,15]. The challenge, therefore, is not to decide whether social media are inherently good or bad [2,3]. The challenge is to understand the conditions under which they support health and the conditions under which they undermine it [1,13]. The present review was prepared in that spirit [2,3]. Its aim was to synthesize the uploaded source materials on the impact of internet and social media use on physical and mental health [3,13]. The review pays particular attention to depression, anxiety, self-esteem, fear of missing out, loneliness, sleep, body image, eating behavior, cyberchondria, health misinformation, influencer-related health content, and intervention strategies [6,16]. Because the evidence base includes empirical studies, systematic reviews, meta-analyses, scoping reviews, qualitative papers, and viewpoint articles, it allows a broad examination of how digital environments shape health [1,14].

2. Results

2.1. General mental health outcomes

One of the clearest overall conclusions emerging from the literature is that internet and social media use are associated with mental health outcomes, although the strength and significance of this relationship vary substantially depending on how use itself is defined [3,14]. Studies have demonstrated small but statistically significant associations between social media use and depression and anxiety among children and adolescents. Problematic social media use showed stronger and more consistent associations with depression, anxiety, and stress than general measures of use [14]. This distinction is highly important, as it suggests that dysregulated, compulsive, or functionally impairing use may be more clinically relevant than ordinary use or mere presence on a given platform [14,17].

A nationally representative study of young adults in the United States provides further support for this pattern. In that study, individuals in the highest quartile of social media use had significantly greater odds of depression than those in the lowest quartile. A similar pattern was observed when exposure was measured by the number of site visits and overall frequency of use, with clear linear trends across exposure categories [18]. Although the study was cross-sectional and therefore could not establish the direction of causality, it strongly suggested that greater exposure to social media is associated with poorer mood outcomes in young adults [3,18].

The scoping review on adolescent depression reinforces this conclusion at a broader level. It showed that depression repeatedly appears in the literature together with anxiety, sleep disturbances, low self-esteem, and distress related to social relationships or appearance [6]. This clustering is important, as it suggests that digital risk rarely manifests as a single isolated symptom [6,15]. Rather, depression appears to be part of a broader pattern of emotional, behavioral, and social burden [6,19].

A cross-sectional study on addictive use of social media and video games adds another dimension to these findings. That study demonstrated positive and significant associations between addictive social media use and symptoms of ADHD, OCD, anxiety, and depression. It also found that age, sex, and psychiatric symptoms jointly explained a meaningful proportion of the variance in addictive technology use [17]. This suggests that digital dysregulation does not emerge in isolation, but rather interacts with broader psychological vulnerability [17,19].

A meta-analysis involving students further supports the close relationship between social media addiction and poorer mental health. It demonstrated positive pooled correlations between social media addiction and anxiety, depression, loneliness, and fear of missing out, as well as a negative pooled association with self-esteem [19]. These findings suggest that social media addiction is related not only to emotional symptoms, but also to difficulties in self-evaluation and interpersonal functioning [19,20].

A study conducted among students at a Turkish university illustrates how these patterns may appear in a real student population. The study found moderate levels of social media addiction, moderate levels of depression, mild loneliness, and slight dissatisfaction with life among participants. It also demonstrated that social media addiction and depression were negatively associated with academic self-efficacy, problem-solving skills, and life satisfaction [20]. These findings indicate that the psychological effects of excessive digital media use may also extend into functional domains, such as perceived competence and academic achievement [10,20].

An important subjective dimension should also be added to these findings [1,21]. Adolescents described social media as both attractive and demanding [1,2]. They valued the opportunity to remain connected with others, but at the same time reported pressure to stay constantly available, fear of judgment, and the emotional burden of visible reactions and feedback [1,22]. Young users did not portray social media as a psychologically neutral space [1]. Rather, they described it as a setting in which belonging, shame, exclusion, and approval are continuously negotiated [1,2].

Because of concerns about mental health, bans and strong restrictions on media access are often introduced; however, the evidence supporting such measures remains limited and inconclusive [22]. This observation indirectly highlights the complexity of the entire research field [10,22]. If exposure to the internet and social media operated like a simple toxic exposure, then restricting or banning them should predictably improve health outcomes. However, the reviewed intervention literature does not support such a straightforward model [10,23]. This again suggests that what matters most is not exposure in isolation, but rather the pattern of use, its context, and the degree to which it is regulated [3,22].

2.2. Depression, anxiety, fear of missing out, and self-esteem

Depression remains one of the most frequently and consistently reported negative outcomes across the reviewed literature [6,14]. In addition to the nationally representative U.S. study and the large meta-analytic review, the broader literature on adolescents and students repeatedly identifies depressive symptoms in association with both intensive and problematic use of digital media [18,19]. The review literature also indicates that depression is among the outcomes most likely to improve in studies designed to modify patterns of social media use [10]. This suggests that depressive symptoms not only co-occur with digital behaviors, but may also respond to changes in how those behaviors are managed [10,23].

The meta-analysis on digital detox provides a useful example. That study demonstrated a significant effect of social media digital detox on depressive symptoms. However, equally strong or equally consistent effects were not observed for all other well-being outcomes [23]. This is important because it suggests that depression may be particularly sensitive to reduced digital media use or temporary disengagement in some users, although abstinence alone is unlikely to represent a universal solution [10,23].

Anxiety is similarly prominent across the reviewed studies [14,19]. Studies have shown that both general social media use and problematic use were positively associated with anxiety, with the stronger association observed for problematic use [14]. A study conducted among adolescent girls examined anxiety in the context of social media disorder and showed that problematic engagement formed part of a broader pattern involving loneliness and sleep disturbance [11,24]. Taken together, these findings suggest that anxiety may be especially strongly linked to forms of use that are difficult to regulate or emotionally difficult to disengage from [14,24].

Fear of missing out (FoMO) is one of the most important mechanisms discussed in the reviewed literature [19,25]. Studies have linked FoMO to poorer quality of life and greater severity of depressive symptoms, and have shown that FoMO was among the variables most strongly associated with social media addiction [19,25]. These findings suggest that anxiety related to social media often arises not only from the content itself, but also from social tension, anticipation, and the perceived possibility of exclusion [1,25]. Users may feel pressure to remain constantly updated, responsive, and continuously connected in order not to miss social opportunities or conversations [1,22]. This helps explain why repeated checking and difficulty disengaging appear so frequently in the literature on sleep and mental health [11,26].

Self-esteem is another recurring factor that appears to link social media use with broader mental health outcomes [9,11]. Of particular importance is the UK study suggesting that self-esteem may mediate part of the

observed relationship between social media use and later emotional difficulties [9]. A study on sleep and social media use in adolescents found that lower self-esteem was associated with greater overall use, stronger emotional investment, and more frequent nighttime use [11]. Another similar study demonstrated associations between social media use, self-esteem, body esteem, and loneliness [27]. These studies clearly show that digital experiences affect not only mood, but also how users evaluate themselves and their own worth [11,27].

2.3. Loneliness, social isolation, and perceived connection

Loneliness is one of the major themes identified in the reviewed literature; however, unlike body image dissatisfaction or sleep disturbances, it is not presented exclusively in negative terms [1,8]. Some studies describe social media as a factor that increases loneliness, particularly when use becomes addictive, repetitive, or driven by social comparison [19,28]. Other studies, in contrast, suggest that social media may reduce loneliness when they facilitate the maintenance of relationships and access to social support [1,8].

A meta-analysis involving students found a positive association between social media addiction and loneliness [19]. A study conducted among adolescent girls showed that participants with social media disorder reported greater loneliness than those without such disorder [24]. Another study documented mild loneliness co-occurring with moderate social media addiction and depression [20]. These findings suggest that compulsive or dysregulated use may be associated with a greater subjective sense of social disconnection, rather than with better fulfillment of social needs [19,20]. In a study of rural youth, frequent Facebook use was associated with higher levels of loneliness. The same study also found that social media use within ten minutes of waking was associated with greater psychological distress. This suggests that loneliness may depend not only on whether a person is online, but also on how and when digital media are used, as well as on the behavioral patterns accompanying such use [1,28].

At the same time, adolescents included in the qualitative review often described social media as useful for maintaining friendships, finding people with similar experiences, and obtaining support. The same review identified social engagement and peer support as one of the five major themes in adolescents' accounts of how social media affect well-being. Participants reported that online communication may facilitate personal disclosure and reduce the pressure associated with face-to-face interactions in certain situations [1]. This appears particularly relevant in populations that feel socially different or misunderstood in their offline environments [1,22]. The review concerning older adults provides some of the clearest evidence of beneficial effects in this area. It showed that digital social media may reduce loneliness and social isolation among older adults. It also suggested that internet access may improve contact with family, provide a sense of support, and strengthen a sense of community belonging. Importantly, the review emphasized that these benefits were more likely when older adults received training and support in the use of relevant technologies. This indicates that digital access alone is not sufficient [8]. The ability to use these tools with confidence and competence also appears to be important [8,16]. It is also worth noting that social media use during adolescence may reduce loneliness in some marginalized groups, including LGBTQ+ adolescents, for whom online support and a sense of belonging may be particularly important [1,22].

2.4. Sleep, poor sleep quality, and nighttime digital engagement

Sleep is one of the most consistently disrupted domains of physical health in the reviewed literature [29,33]. Studies conducted among young adults show that greater social media exposure is associated with sleep disturbance, and that use immediately before bedtime appears to play a particularly important role [26,29]. A study focusing on the thirty minutes preceding sleep found that social media use during this short time window was independently associated with sleep disturbance, even after adjustment for broader patterns of use [26]. This is one of the clearest indications in the reviewed literature that not only total duration of use, but also the timing of use, is important [26,31].

The study examining social media use, sleep, anxiety, depression, and self-esteem in adolescents adds important detail to this picture. It found that nighttime social media use and strong emotional investment in social media were associated with poorer sleep quality. The same study also linked these patterns with lower self-esteem and greater severity of anxiety and depressive symptoms [11]. This suggests that sleep problems may form part of a broader cluster of emotionally burdensome digital experiences, rather than representing an isolated effect [11,32].

The broader review literature is highly consistent on this issue [33,34]. A scoping review of recent studies found that social media use is generally associated with poorer sleep and poorer mental health among children, adolescents, and young adults [33]. A systematic review on digital media use and sleep in late

adolescence and early adulthood demonstrated that digital media use is associated with shorter sleep duration and poorer sleep quality. In that review, such associations were observed for overall screen time as well as for mobile phone, internet, and social media use, although the evidence was weaker or less consistent across some device categories. The review also emphasized that nighttime use and difficulty disengaging from conversations or engaging content may be particularly important [34].

A review focused on adolescents and young adults reached similar conclusions. It showed that excessive or problematic social media use is associated with poorer sleep quality through mechanisms such as delayed bedtime, nighttime checking of content, fear of missing out (FoMO), and cognitive or emotional arousal [30]. Review papers aimed at pediatricians and clinicians further reinforce this picture by repeatedly indicating that the presence of screens in the bedroom, bedtime media habits, and nighttime notifications are associated with later sleep onset, shorter sleep duration, and daytime fatigue. The same literature also points to light exposure, habit formation, and sleep interruption caused by alerts and vibrations as likely underlying mechanisms [31,35].

A university-based study on problematic social media use and gaming-related behaviors also found poorer sleep quality co-occurring with greater psychological distress [32]. This suggests that sleep disturbance may be not only a direct consequence of digital exposure, but also part of a broader dysregulated lifestyle pattern [20,32]. A study conducted among university students in Saudi Arabia supports this interpretation, linking heavy social media use with shorter sleep duration, distraction during academic activities, and poorer social functioning [36]. A review based on a cohort study adds further weight to this area because it draws on a large, widely discussed cohort of younger adolescents. That paper showed that greater screen time, including social media use, is associated with sleep problems as well as risks to both mental and physical health [37]. Similarly, a narrative review on TikTok identifies sleep problems as one of the major health concerns related to highly engaging short-form content among children and adolescents [38]. Overall, the reviewed literature is remarkably consistent in identifying nighttime digital use and emotionally difficult-to-disengage-from media use as important threats to healthy sleep [11,34].

2.5. Body image, self-objectification, and appearance-related comparison

The body image section of the reviewed literature represents one of the strongest and most coherent parts of the entire evidence base [12,13]. The reviewed studies repeatedly point to similar mechanisms, including appearance comparison, internalization of the thin ideal or muscular ideal, self-objectification, and persistent attention to peer feedback regarding appearance [5,39]. These processes are particularly pronounced on highly visual platforms, where users post, edit, view, and evaluate images [40,41]. A review on body image and eating disorders in adolescents states directly that social media may worsen body image and contribute to disordered eating behaviors. It also indicates that these harms are especially relevant in highly visual and comparison-rich environments such as Instagram and TikTok [40]. The developmental-sociocultural framework included in the reviewed materials helps explain this phenomenon by showing how adolescent girls in particular experience the convergence of peer salience, heightened self-consciousness, and gendered beauty norms on social media. In this model, social media intensify attention toward both the appearance of others and one's own appearance, thereby increasing body image concerns [5].

A mixed-methods systematic review involving healthy young adults found that exposure to appearance-related content was associated with greater body dissatisfaction, dieting or dietary restriction, overeating, and certain changes in food choices. The qualitative findings of this review are particularly informative, as participants described comparing themselves with others, feeling worse about their bodies, and editing or curating their appearance to match perceived ideals [42]. This clearly shows that the issue concerns not only what users see, but also how viewing these images alters their self-perception and behavior [39,42].

A meta-analysis focused on online social comparison provides particularly strong quantitative support. It found a moderate positive association between social comparison on social media and body image concerns, as well as another positive association between comparison and eating disorder symptoms. It also demonstrated a negative association between social comparison and positive body image [39]. A study of adolescents and young adults examining comparison frequency further strengthens this interpretation. It showed that comparing one's own physical appearance with that of people followed on social media was associated with body dissatisfaction and drive for thinness. This points directly to the act of comparison itself, rather than merely to exposure to content as such [43]. Users are not only viewing images; they are also evaluating themselves in relation to those images [5,39,43].

A study of adolescents examining internalization of the thin ideal and muscular ideal broadens the discussion of body image by including both girls and boys [41]. It found that social media use, thin-ideal internalization, and muscular-ideal internalization were positively associated with body dissatisfaction in both sexes [41]. Thin-ideal internalization had a significant effect in both girls and boys, whereas muscular-ideal internalization intensified the relationship between social media use and body dissatisfaction among boys [41]. This is important because it challenges the view that body image-related harm on social media is exclusively a female issue [5,41]. The form of the ideal may differ, but the underlying comparison-based pressure remains relevant regardless of sex [24,41].

A study focused on the type of content consumed provides one of the most important practical contributions to this area. It found that the specific type of content consumed on social media was more important than duration of exposure or the number of platforms used. Exposure to weight-loss-related content was associated with lower body appreciation, greater fear of negative appearance evaluation, and more frequent binge eating. In contrast, body-positive or body-neutral content did not demonstrate as clear a protective effect as might have been expected. This finding suggests that interventions focused exclusively on reducing time spent online may overlook some of the most important drivers of body image-related harm [12].

An exploratory study conducted among female university students also linked eating disorders with self-esteem, body image, desired body image, and social media use [44]. A review on social media and aesthetic surgery shows how appearance-related pressure may extend even further, influencing willingness to consider aesthetic procedures. That paper found that idealized and digitally modified images on platforms such as Instagram and Snapchat may contribute to body dissatisfaction and greater openness to cosmetic surgery [45]. Taken together, the reviewed literature strongly supports the conclusion that appearance-focused digital environments may alter how users evaluate their bodies, which standards they internalize, and which behavioral responses they adopt [40,42].

2.6. Eating behaviors, dieting, and digital food environments

The reviewed evidence indicates that eating-related outcomes are not limited to symptoms of eating disorders [42,46]. Social media may also influence everyday food choices, dieting behaviors, binge eating, and peer norms regarding what is considered healthy or desirable eating [12,42]. Studies have demonstrated associations between engagement with visual content on social media and dieting or dietary restriction, as well as overeating [42].

A review on peer influences on adolescent eating behaviors broadens this issue by showing that social media affect eating not only through body dissatisfaction, but also through visual food content, fast-food advertising, peer sharing of content, and digital social influence. That review found that Instagram and Facebook were among the most common platforms influencing both healthy and unhealthy eating patterns. It also identified online forums as potentially helpful environments for relapse prevention in eating disorders among adolescents [46]. This shows that digital eating-related influences may operate in both harmful and beneficial directions, depending on the structure of the online environment and the social norms prevailing within it [42,46].

The literature on fitpiration and influencers adds another dimension to this issue. When influencers present dieting, supplementation, or a highly controlled “healthy” lifestyle as desirable and ordinary, they may normalize restrictive or perfectionistic attitudes toward food and the body [13,47]. A broader review on influencers explicitly highlights concerns regarding the promotion of unhealthy diets and misleading nutrition-related content [13]. These findings suggest that digital food environments cannot be clearly separated from digital appearance environments. In many cases, they reinforce one another [12,13,42].

2.7. Cyberbullying, self-harm content, and severe risk pathways

Another important finding across the reviewed literature is that digital environments may harm users not only through overuse or social comparison, but also through direct harmful interactions and exposure to dangerous content [1,15]. A qualitative review concerning adolescents found that cyberbullying, online exclusion, loss of privacy, and exposure to disturbing material constituted one of the main negative themes in adolescents’ descriptions of the effects of social media. Participants described these experiences as anxiety-provoking, intensifying feelings of isolation, and difficult to control. Some also indicated that content shared impulsively during emotional distress may lead to conflicts extending beyond the online environment [1].

An interpretive paper published in *CMAJ* treats these harms as particularly serious. The authors indicate that cyberbullying is associated with a markedly increased risk of suicidal ideation, suicide plans, and suicide

attempts. They also emphasize the visibility of self-harm and suicide-related content on social media, as well as the ways in which some online spaces may normalize or even reinforce such behaviors [15]. Although not all users encounter this kind of content, the reviewed evidence suggests that it constitutes a significant threat for adolescents who are already vulnerable [1,15].

A broader pediatric scoping review supports these concerns by identifying cyberbullying, behavioral problems, sexual harms, and online grooming as risk elements discussed in studies of youth digital media use [48]. A review on TikTok also identifies cyberbullying and problematic behaviors as part of the risk environment associated with highly engaging platforms aimed at young users [38]. These studies show that digital harms cannot be reduced solely to mood symptoms or screen time [15,48]. The health-risk landscape also includes targeted aggression, algorithmically repeated exposure to distressing content, and unsafe online peer cultures [1,15,48].

2.8. Online health-information seeking, cyberchondria, and poor health decisions

A separate but important part of the reviewed literature focuses on health-information seeking in online environments [13,16]. A bibliometric study on social media and health misinformation indicates that digital platforms currently play an important role in the communication of health information [13]. This has obvious potential benefits, including rapid dissemination of knowledge and increased patient access to information [4,13]. However, the same paper also emphasizes that social media may amplify misinformation and sensationalized messages [13].

A paper on hyperdiagnosis and nosophobia illustrates how this phenomenon may become a mental health problem at the individual level. The authors indicate that repeated exposure to disease-related content, especially when combined with self-diagnosis supported by artificial intelligence or the internet, may intensify health anxiety and cyberchondria. They also suggest that excessive symptom monitoring and self-diagnosis may disrupt academic functioning and everyday concentration, particularly among medical students [49]. This reinforces the conclusion that digital health information does not always have a reassuring or empowering effect [13,49]. In some users, it may become an anxiety-maintaining behavior [49,50].

A Saudi study referred to as “Dr Google” further supports this interpretation. It demonstrated a positive association between cyberchondria and health anxiety, while also showing that health literacy plays an important role in the interpretation of online health information. The authors argue that improving health literacy may help reduce both cyberchondria and anxiety [16]. This is consistent with the World Health Organization-inspired perspective that health literacy constitutes a capacity influencing how people access, understand, and apply health information [16,51].

A study involving parents shows that these issues have direct relevance for decision-making in pediatrics. It found that a very high proportion of parents searched online for information in order to diagnose themselves and their children. It also found that an important subgroup of respondents discontinued medication because of information read online. The authors concluded that insufficient health literacy combined with high cyberchondria increases the risk of making incorrect health decisions [51]. This is a particularly striking finding, as it shows that internet use may affect not only perceptions of health, but also concrete treatment-related behaviors [16,51].

A study on cyberchondria conducted in the context of the COVID-19 pandemic further shows how broader social uncertainty may intensify these mechanisms. During the pandemic, when people were already burdened by anxiety and exposed to rapidly changing information, online health-information seeking may have become even more repetitive and psychologically distressing [50]. The reviewed sources therefore suggest that online health-information seeking has a dual potential [13,16]. It may support informed participation in healthcare, but it may also lead to anxiety, overtreatment, delays, and poor decisions when information seeking becomes compulsive or occurs without adequate guidance [49,51].

2.9. Influencers, persuasion, and health-related communication

The reviewed literature also devotes substantial attention to influencers as health-relevant actors [13,52]. Influencers matter because they often combine high visibility with perceived authenticity, closeness, and parasocial trust. In many cases, audiences do not perceive them merely as advertisers. Rather, they are perceived as familiar figures whose advice, lifestyle, and preferences appear meaningful and credible [13,47,52].

A scoping review on influencers and adolescent health found that influencers have become an important source of health-related information for young people. The most commonly addressed health topics in the

reviewed literature were appearance, nutrition, and substance use. The review also showed that many studies emphasized the ability of influencers to build trust and seemingly close relationships with followers. At the same time, the same paper highlighted important concerns, such as unrealistic body ideals, promotion of unhealthy foods, substance-related content, and inaccurate diagnostic or therapeutic advice. It also emphasized the importance of stricter regulation and improved social media and health literacy [13].

A review on pregnancy and early parenthood shows that health effects related to influencers are not limited to adolescence. It demonstrated that influencers and bloggers may provide support, strengthen identity, and create a sense of shared experience during pregnancy and early parenthood. At the same time, the authors expressed concerns regarding misinformation, confrontational interactions, and the commercialization of intimate life stages. This is particularly important because pregnancy and early parenthood are periods during which users may be especially motivated to seek advice and support [7].

A Tunisian study on adolescent behavior identified credibility, originality, persuasiveness, and uniqueness as features that may increase the influence of influencers on adolescent attitudes and behaviors [47]. A broader review on influence and influencer identification similarly emphasizes that influence cannot be understood solely in terms of follower counts. It also includes trust, perceived expertise, repeated exposure, and the ability to shape how other users think, choose, and behave [50]. Taken together, these studies suggest that digital health communication is increasingly shaped not only by formal institutions, but also by semi-personal, highly persuasive, and commercially entangled online figures [13,17,47,51,52].

2.10. Broader physical health and functional outcomes

Although a substantial part of the reviewed literature focuses on mental health, several papers indicate that internet and social media use is also associated with broader consequences for physical health and everyday functioning [37,38]. A review related to the ABCD study found that greater screen time in early adolescence is associated not only with mental health symptoms, but also with sleep problems and cardiometabolic risk indicators [37]. A review on TikTok similarly discusses sedentary behavior, obesity risk, cognitive burden, and academic difficulties alongside mood-related harms [38]. This suggests that digital media may affect health both directly and indirectly through lifestyle patterns [37,38].

A study conducted among university students in Saudi Arabia supports this broader perspective. It found that heavy social media use was associated with shorter sleep duration, distraction during studying, reduced social interaction, a more sedentary lifestyle, and susceptibility to risk factors for non-communicable diseases [36]. A pediatric scoping review also identifies reduced physical activity, headaches, vision-related complaints, and dental caries as elements of the broader spectrum of health problems associated with youth digital media use [48]. Although some of these associations have been studied less consistently than depression or sleep, they show that the health consequences of digital life extend beyond emotional outcomes alone [37,48].

The sleep literature further reinforces this functional perspective, because poor sleep quality affects alertness, concentration, energy level, self-regulation, and everyday functioning [31,35]. Similarly, a study on academic self-efficacy in university students suggests that social media addiction may be associated with poorer academic functioning through its links with depression, loneliness, and reduced problem-solving ability [20]. The reviewed literature therefore supports a broad understanding of the health effects of digital functioning, encompassing mental, behavioral, and physically relevant outcomes [36,37].

3. Discussion

The reviewed evidence suggests that internet and social media use are best understood as complex social environments rather than as single exposures producing uniform effects [2,3]. This complexity is apparent across nearly all health domains addressed in the included studies [1,3]. The same platforms may support communication, social connectedness, and access to support, while at the same time intensifying social comparison, misinformation, compulsive checking, and emotional dysregulation [1,4]. For this reason, the principal value of the reviewed literature lies less in determining whether social media are inherently beneficial or harmful, and more in identifying the mechanisms through which their effects emerge [3,5].

One of the clearest overall patterns is that problematic or addictive use is more strongly associated with adverse health outcomes than general or broad measures of use [14,19]. This relationship has been observed in relation to depression, anxiety, loneliness, stress, and sleep quality [14,32]. This suggests that clinical and public health concern should not focus solely on access to platforms or their general use, but also on dependence, emotional compulsion, and interference with daily functioning [10,17]. This distinction has

practical importance, because simple public messages about “time spent online” may fail to identify users at the highest level of risk [3,10].

A second important pattern is the role of content. Appearance-focused content, weight-loss content, idealized lifestyles, distressing health information, and unhealthy commercial messaging recur across the reviewed studies as high-risk content categories [12,13]. This is particularly evident in the body image literature, where the type of content appears to be more important than exposure duration alone in predicting poorer body-related outcomes [12,39]. Similarly, in the cyberchondria literature, repeated exposure to illness-related content and poor-quality information may transform online health-information seeking into a source of anxiety and poor decision-making [48,50]. These findings suggest that interventions focused exclusively on limiting exposure time may overlook what users are actually consuming [10,12].

A third key pattern is the importance of timing, particularly in relation to sleep [11,26]. Late-night media use, frequent checking before sleep, the presence of a phone in the bedroom, and difficulty disengaging from social interaction at night have repeatedly been linked to poorer sleep [31,35]. This is not merely a sleep-related issue [11,30]. Because poor sleep quality is associated with worse mood, reduced self-regulation, and impaired daytime functioning, it may represent one of the mechanisms through which social media use more broadly affects both mental and physical health [11,37]. In this sense, sleep disturbance may function both as an outcome and as a mediating mechanism [11,30].

A fourth important conclusion is that vulnerability is not evenly distributed. Adolescents are repeatedly presented as a particularly susceptible group, because this developmental stage is characterized by heightened self-consciousness, increased sensitivity to peers, and the growing importance of social status [1,5]. Girls appear more frequently to be affected in the literature on appearance-related and emotional outcomes, especially in highly image-based platform environments [5,6]. However, boys are not free from risk, particularly where muscularity-related ideals and self-presentation pressures are involved [24,41]. The literature also suggests that users with low self-esteem, pre-existing anxiety, depressive symptoms, vulnerability to eating disorders, or loneliness may experience greater harm in connection with specific forms of digital engagement [1,43]. This reinforces the need for interventions that take vulnerability into account, rather than treating all users as equally affected [10,22].

At the same time, the reviewed sources clearly demonstrate that digital life also has documented benefits [1,4]. The qualitative literature on adolescents indicates that social media may support self-expression, peer support, a sense of belonging, and open discussion of difficult experiences [1]. A review concerning older adults suggests that digital social media may reduce loneliness and social isolation by improving communication and family contact [8]. A review related to cardiovascular health shows that digital platforms may strengthen public health communication, professional education, and patient empowerment [4]. A review on pregnancy and parenthood indicates that content created by influencers or peer communities may provide reassurance, support, and a shared sense of identity during periods of particular vulnerability [7]. These findings are important because they show that policy-level responses should not ignore the functions that internet and social media already serve in people’s lives [4,22].

The intervention and health policy literature included in the reviewed set points more toward harm reduction than toward simple prohibition [22,40]. A review of interventions found stronger evidence for the effectiveness of therapy-based approaches than for total abstinence or simple daily limits [10]. A meta-analysis on digital detox demonstrated some benefits with respect to depressive symptoms, but did not confirm universal improvement across all mental health outcomes [23]. A viewpoint paper on bans during adolescence suggests that strong restrictions may lead to unintended harms, such as isolation, rebellion, and underdeveloped digital competencies [22]. This argument is supported by qualitative data showing that digital spaces are socially meaningful and not easily replaceable for many young users [1,22]. As a result, more promising approaches appear to include emotion regulation, health literacy, digital literacy, body image resilience, and support in building healthier habits around specific risky patterns, such as checking content before sleep or comparison-based use [10,16].

The reviewed literature also has important methodological implications [3,9]. Future research requires more precise definitions of digital behaviors, stronger longitudinal and experimental designs, and clearer distinctions between active, passive, problematic, emotionally intense, and content-specific forms of use [3,10]. Broader inclusion of diverse populations is also needed, as some groups remain insufficiently studied, including older adults, parents, and marginalized populations [7]. The influencer literature further emphasizes the need to move beyond simple definitions and to examine authenticity, parasocial relationships, and commercialization in greater depth [13,52].

Overall, the reviewed studies suggest that internet and social media influence health through identifiable pathways [1,5]. These include social comparison, self-evaluation, reassurance seeking, compulsive engagement, disrupted sleep timing, parasocial trust, exposure to misinformation, and altered health behaviors [1,13]. Understanding these mechanisms is more useful than relying on general claims about screen time or mere platform exposure [3,12]. It is also more likely to support realistic and effective interventions [10,22].

4. Conclusions

The reviewed evidence shows that digital environments may contribute to depression, anxiety, loneliness, sleep disturbance, body dissatisfaction, disordered eating behaviors, cyberchondria, misinformation-related harms, and functional difficulties, particularly when use is problematic, emotionally intense, comparison-based, or poorly regulated [14,15]. At the same time, these environments may support communication, self-expression, peer support, patient empowerment, health advocacy, and reduced isolation among users who rely on communities or connections that are difficult to maintain offline [1,4].

The available literature therefore does not support a one-directional conclusion that internet and social media use are simply harmful or simply beneficial [2,3]. Instead, it shows that outcomes depend on the pattern of use, its meaning, timing, content, and purpose, as well as on the user's vulnerabilities and resources [1,13]. Particularly relevant to poorer outcomes appear to be highly visual comparison-based use, bedtime engagement, repeated checking, anxiety-driven health-information seeking, and exposure to misleading or idealized content [12,26]. In contrast, supportive communities, health communication, peer connectedness, and structured therapeutic or literacy-based interventions appear more likely to yield benefit [4,10].

Future research should prioritize longitudinal and platform-specific designs, better definitions of digital engagement, and more detailed differentiation between passive, active, problematic, and content-specific behaviors [3,10]. More studies are also needed on older adults, parents, marginalized groups, and rural populations, as well as on interventions that move beyond restricting access toward regulation, literacy development, and the promotion of healthier digital habits [7]. A more precise understanding of these mechanisms may help researchers, clinicians, educators, and policymakers reduce digital harms without overlooking the genuine forms of support and connection that online environments may also provide [4,22].

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