Mental Health in The Digital Age: A Systematic Review of Anxiety and Depression Symptoms Associated with Social Media Use Among Young People

Maximiliano Nazarín-Cibrián[1], Mónica Paola Guerrero-Covarrubias[1], Amely Olalde-Apaseo[1], Dayana Pérez-Saenzpardo[2], Luis Eduardo Valdez-García[3], Jesús Galván-Molina[4].

[1] Faculty of Medicine, Autonomous University of San Luis Potosí, San Luis Potosí, S.L.P., Mexico.
[2] Los Lagos University Center, University of Guadalajara, Lagos de Moreno, Jalisco, Mexico.
[3] Dr. Everardo Neumann Peña Psychiatric Clinic, San Luis Potosí, S.L.P., Mexico.
[4] Department of Psychiatry, School of Medicine, Autonomous University of San Luis Potosí, San Luis Potosí, S.L.P., Mexico.

Corresponding author: Maximiliano Nazarín-Cibrián, nazarincibrianmaximiliano@gmail.com
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ABSTRACT

Introduction: The growing use of social media among adolescents coincides with an increase in anxiety and depressive symptoms in this age group. While digital platforms play a central role in adolescent development, continuous exposure to short-form videos and compulsive usage patterns increase the risk of psychological disorders. However, the lack of standardization in the existing literature highlights the need for this review to clarify current knowledge.
Objective: To analyze the scientific evidence on the relationship between the use of digital platforms and anxiety and depressive symptoms in young people, evaluating risk factors such as problematic use of these platforms and current methodological limitations.
Methodology: A qualitative systematic review was conducted by retrieving articles from the PubMed, SciELO, and LILACS databases. The search strategy included observational and review studies published in the last 5 years. After applying the selection criteria, 21 articles were included, of which 9 were primary studies (6 cross-sectional, 2 longitudinal, and 1 prospective cohort study) that formed the basis of the final qualitative synthesis.
Results: The evidence demonstrated a significant correlation between social media use and the development of anxiety and depressive symptoms. It was observed that the deterioration in users' mental health does not depend exclusively on exposure time, but primarily on problematic social media use. The impact of short-form video platforms with variable reward algorithms (e.g., TikTok) was highlighted, as these accelerate users' dependence.
Conclusions: Problematic use of digital media acts as a chronic stressor for young people, calling for interventions to promote healthy use. However, the current evidence has limitations that prevent the establishment of causality due to self-report biases, the presence of mediating variables such as social comparison, and a notable lack of geographic homogeneity in the samples studied.

Keywords: social media, depression, anxiety, young people.

INTRODUCTION

Over the past decade, the use of social media and other digital platforms has steadily increased among adolescents, becoming a central component of social interaction, leisure, and identity formation during critical stages of human development. At the same time, the rise in the prevalence of depressive and anxiety symptoms among young people has sparked growing interest in exploring the possible role of the digital environment in this phenomenon. In this context, a quantitative review of the available evidence has shown that longer exposure to social media is associated with an increased risk of depression in adolescents. A linear dose-response relationship has also been observed, with an increase in risk for each hour of daily use, as well as a stronger association among girls [1].

However, the relationship between social media and mental health does not appear to depend solely on the amount of time spent on social platforms.

Recent evidence indicates that both general social media use and, to a greater extent, problematic social media use—defined as a pattern of use that involves not only the amount of time spent on these platforms but also compulsive and maladaptive behaviour leading to a significant impairment in an individual's daily functioning—is associated with depression, anxiety, sleep disturbances, and reduced well-being in the general population, although the magnitude and consistency of these associations vary [2]. In particular, problematic social media use has shown stronger associations with diverse outcomes, suggesting that the nature of interaction with these digital platforms may be more relevant than the duration of use [1,2]. However, the diversity in operational definitions, measurement instruments, and assessed outcomes limits comparability across studies and makes it difficult to draw uniform conclusions [3].

In recent years, the analysis has shifted toward specific short-form video platforms, which have gained particular relevance due to their structural

characteristics—such as algorithmic personalization, infinite scrolling, and continuous exposure to highly stimulating content. Evidence suggests that these platforms may be associated with an increased problematic use and poorer mental health outcomes, particularly anxiety, stress and depression, although the strength of the findings remains limited by methodological heterogeneity [4,5]. Vulnerability factors such as neuroticism, lower socioeconomic status, and compulsive patterns of digital interaction have also been identified, suggesting that certain usage profiles may pose a greater psychological risk [6].

Despite the growing body of literature, significant limitations remain, including the predominance of observational designs, reliance on self-reported measures, and a lack of standardization in the definition of problematic social media use. Consequently, there remains a need to critically synthesize the available evidence to identify consistent patterns, knowledge gaps, and methodological limitations. Therefore, the objective of this systematic review was to analyze the scientific evidence on the association between social media use and the presence of anxiety and depressive symptoms in young people.

METHODS

A systematic review was conducted to examine the relationship between social media use and symptoms of anxiety and depression in young people. The review was conducted in accordance with the 2020 Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement. Due to the considerable heterogeneity among the included studies, no meta-analysis was performed; instead, the data were analyzed narratively.

- **Search strategy**

On December 19, 2025 a bibliographic search was conducted in the following databases: PubMed, SciELO and LILACS. The eligible studies were limited to publications in English and Spanish. The same search strategy was applied to the three databases: *(Adolescent[Mesh] OR "Young Adult"[Mesh] OR youth OR teenagers) AND ("Social Media"[Mesh] OR "Social Networking"[Mesh] OR "Instagram" OR "TikTok") AND (Depression[Mesh] OR Anxiety[Mesh] OR "mental health").*

- **Eligibility and selection criteria**

The studies were considered eligible if: 1) they centered around a population of young people (teenagers and/or young adults, as defined by the original studies, without imposing an age limit); 2) they evaluated social media use (general use and/or use of a specific platform); and 3) they reported results related to symptoms of anxiety and/or depression (or broader mental health indicators that included these outcomes). Studies that did not fulfill these criteria, lacked enough information on outcomes, or were not available on its full version were excluded.

Two reviewers independently assessed the titles and abstracts to determine their eligibility.

Full articles were obtained from the potentially relevant registries and were also independently evaluated by the same two reviewers. Discrepancies were resolved through discussion and consensus.

- **Data extraction and methodological quality**

A standardized data extraction form was used to collect the following data from the articles: authors/years, study design, sample characteristics (sample size and age group), definition and measurement of exposure (social media use and/or problematic social media use), definition and measurement of outcomes (anxiety/depression assessment instruments when specified), and main findings (including measures of association when available). Data extraction was performed by two reviewers.

Three reviewers independently assessed methodological quality and risk of bias using the Joanna Briggs Institute (JBI) critical appraisal tools, selecting the appropriate checklist based on the study design. Cross-sectional studies were assessed using the JBI critical appraisal checklist for analytical cross-sectional studies. Longitudinal observational studies and prospective cohort studies were assessed using the JBI critical appraisal checklist for cohort studies. Meanwhile, the methodological quality of the systematic reviews and meta-analyses included to contextualize the literature was assessed using the JBI Critical Appraisal Checklist for Systematic Reviews and Research Syntheses. Each item was rated as “yes”, “no”, “unclear”, or “not applicable.” Bias assessments were reported at the item level and summarized at the study level as low, moderate, or high risk of bias, based on predefined thresholds for the proportion of items rated “yes” (low ≥70%, moderate 50-69%, high <50%).

- **Data synthesis**

Because the included studies varied in terms of study design, definitions of exposure (e.g., time-based use versus problematic use), and outcome measures, the findings were synthesized narratively. The results were summarized by outcome measure (anxiety and/or depression) and, when possible, by type of exposure and platform.

RESULTS

- **Selection of studies**

The initial database search yielded a total of 1,414 articles (PubMed: n=1,331; LILACS: n=77; SciELO: n=6). Subsequently, automated filters were applied to the databases, limiting the results to the last 5 years, the languages English and Spanish, and study types (meta-analysis, observational study, review, and systematic review), which reduced the sample to a total of 127 articles.

During the screening phase, 1 duplicate article was discarded, and 84 articles were excluded after reviewing the title and abstract. The remaining 42 articles were retrieved in full text to determine their eligibility.

Following this thorough review, an additional 21 articles were excluded for failing to meet the required methodological quality or for presenting insufficient data.

Finally, the review included a total of 21 articles. Of these, 12 were systematic reviews and meta-analyses that were used exclusively to contextualize the literature and enrich the frame of reference. The remaining 9 studies provided primary data and were the only ones included in the final qualitative synthesis for the extraction of results. These 9 primary studies are broken down as follows: cross-sectional studies (n = 6), longitudinal observational studies (n = 2), and one prospective cohort study (n = 1) (Figure 1).

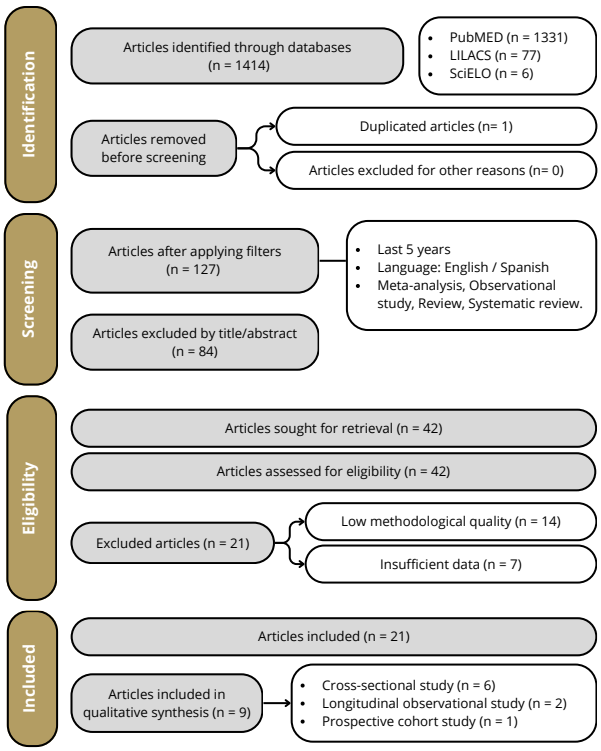


Figure 1. PRISMA Flowchart.

- **Characteristics of the included studies**

A total of 9 studies were included, all of which were published between 2021 and 2025. Cross-sectional studies predominated [7-12], along with longitudinal studies [13,14] and one prospective cohort study [15] (Table 1). These studies were conducted in various geographic settings, including the Dominican Republic [7], Brazil [8,12], Peru [9,10], Ecuador [11], the United Kingdom [13,14], and the United States [15]. Overall, the study population consisted of adolescents and young adults.

Sample sizes varied across studies. The smallest samples consisted of medical students in the Dominican Republic (n = 201) [7], while the largest included 15,836 participants in the United Kingdom [14]. Heterogeneity was observed in the methods used to measure exposure. Some studies assessed internet addiction or problematic internet use using scales such as the Internet Addiction Test (IAT) [8,10,12], while others analyzed smartphone addiction [7,9], and the most recent longitudinal studies focused specifically on social media use, even differentiating between passive viewing, active posting, or self-reported problematic use [13,14,15].

As for the outcomes, the main ones were symptoms of depression, anxiety, stress, insomnia, loneliness, and general psychological distress, measured using validated instruments such as the Patient Health Questionnaire (PHQ-9), the Generalized Anxiety Disorder Scale (GAD-7), the Depression, Anxiety, and Stress Scale (DASS-21), the General Health Questionnaire (GHQ-12), the Schedule for Depression, Anxiety, and Stress (SDQ), and other clinical scales depending on each study [7,8,10,13,14,15].

- **Risk of bias and methodological quality**

The assessment of the methodological quality of the 9 primary studies revealed that the overall quality was acceptable, allowing for a methodologically sound narrative synthesis of the evidence (Table 2). In general, most studies had a low to moderate risk of bias, with no studies identified as having a high risk of bias. Of the 6 cross-sectional studies assessed using the 8-item JBI tool for analytical cross-sectional studies, 3 studies had a low risk of bias, while the remaining 3 had a moderate risk. The main methodological limitations in this group were related to the lack of identification and statistical control of confounding variables (items 5 and 6), as well as the self-reported measurement of digital exposure—including internet use, smartphone use, or social media use—in some cases using adapted instruments or simplified measures, which may have affected the validity of the measurement (item 3).

Meanwhile, the three studies with a longitudinal, prospective cohort design, which were assessed using the 11-item JBI checklist for cohorts, showed relatively better methodological quality, with two studies classified as having a low risk of bias and one with a moderate risk. These studies stood out for their use of large samples and the application of validated clinical instruments to measure anxiety and depression outcomes (item 7). However, methodological limitations persisted in this group, primarily related to self-reported or simplified measurement of exposure, the duration or adequacy of follow-up (item 8), and an incomplete description of strategies for managing losses to follow-up (item 10). In the prospective cohort study with voluntary intervention, furthermore, the absence of randomization and participant self-selection increased the risk of bias.

No primary studies were excluded at this stage due to a high risk of bias (<50%); therefore, all included studies were considered methodologically acceptable for the narrative synthesis. However, these limitations should be taken into account when interpreting the findings, especially regarding causal inference and the magnitude of the observed associations.

- **Association between problematic digital media use and anxiety or depression symptoms**

Overall, the included studies showed a predominance of positive associations between problematic use of the internet, social media, or smartphones and the presence of anxiety and depression symptoms in

Table 1. Analysis of the scientific evidence on the impact of digital technologies on mental health.

Article	Study design	Prevalence	Correlation	Key finding
Prevalencia de adicción a teléfonos inteligentes en estudiantes de medicina[7]	Cross-sectional	Prevalence of smartphone addiction: 48.8%	Significant association with depressive symptoms ($\chi 2$, p=0.007) and anxiety ($\chi 2$, p< 0.001)	No significant association was identified between smartphone addiction and sleep quality (p = 0.856).
Internet addiction, sleeping habits and psychological distress in Brazilian adolescents and young adults[8]	Cross-sectional	Prevalence of moderate internet addiction of 48.1%	Moderate positive correlations between internet addiction and depression (r≈0.43), anxiety (r≈0.31) and stress (r≈ 0.37)	Problematic use showed significant associations with psychiatric symptoms, being independent predictors of sleep problems.
Adicción a los teléfonos inteligentes en adolescentes tras la pandemia por la COVID-19[9]	Cross-sectional	The prevalence of smartphone addiction was 21.7%.	Associated factors: family conflicts (aRP=1.4) and feelings of shame (aRP=1.44).	No significant association was found with feelings of sadness, anxiety, depression, or social rejection.
Internet addiction and mental health disorders in high school students in a Peruvian region: a cross-sectional study.[10]	Cross-sectional	Internet addiction prevalence of 25.9%	Severe addiction was strongly associated with anxiety (PR=2.96).	No statistically significant difference was found between internet addiction and depression.
Uso de internet y su relación con depresión, insomnio y autoestima en estudiantes de bachillerato, Quito (Ecuador)[11]	Cross-sectional	The prevalence of risk of internet addiction was 46%.	Significant risk factor for depression (OR=3.82) and insomnia (OR=2.59).	There was no statistically significant association between the risk of internet addiction and low self-esteem.
Problematic Internet use, emotional problems and quality of life among adolescents[12]	Cross-sectional	Prevalence of problematic internet use of 17%	There was no significant difference in the intensity of depressive symptoms or stress between users.	The perception of their internet use negatively affected their daily activities and quality of life domains.
The Longitudinal Impact of Social Media Use on UK Adolescents' Mental Health: Longitudinal Observational Study[13]	Longitudinal observational	The study does not mention prevalence.	Spending more time actively using drugs between the ages of 12-13 was not associated with mental health problems at ages 14-15.	Passive use is associated with envy and social comparison; parental support mitigates the negative impact.
The Impact of Different Types of Social Media Use on the Mental Health of UK Adults: Longitudinal Observational Study[14]	Longitudinal observational	55.3% of participants view social media every day.	Daily posting slightly increased psychological distress (+0.35 points on the GHQ-12).	Passively viewing content showed no association with long-term mental health problems.
Social Media Detox and Youth Mental Health[15]	Prospective cohort	The prevalence of network use was 93.8%.	Reduction of symptoms: depression (24.8%), anxiety (16.1%) and insomnia (14.5%).	No statistically significant change was observed in the feeling of loneliness after the detox period.

χ^2: chi-square; r: correlation coefficient; aRP: adjusted prevalence ratio; PR: prevalence ratio; OR: odds ratio; GHQ-12: General Health Questionnaire-12; COVID-19: coronavirus disease 2019.

Table 2. Assessment of risk of bias and methodological quality of the included primary studies.

Article	Study design	JBI Checklist	JBI Score	Overall bias risk	Main methodological shortcomings
Prevalencia de adicción a teléfonos inteligentes en estudiantes de medicina[7]	Cross-sectional	JBI for analytical cross-sectional studies	62.5% (5/8)	Moderate	This is a descriptive cross-sectional study, so it does not allow for establishing a causal direction; it used convenience sampling, which increases selection bias; the population comes from a single university campus, which restricts extrapolation; although it uses known instruments, everything is based on self-reporting, with a risk of recall bias and social desirability bias; methodologically, the association was analyzed only with Chi-square and bivariate comparisons, without multivariate adjustment, so it does not control for confounders; therefore, the associations found with depression and anxiety should be interpreted with caution, because they could be explained by unmeasured variables such as academic workload, stress, sleep habits, or psychological history.
Internet addiction, sleeping habits and psychological distress in Brazilian adolescents and young adults[8]	Cross-sectional	JBI for analytical cross-sectional studies	62.5% (5/8)	Moderate	This cross-sectional study used a non-probability convenience sample, which limits representativeness and generalizability. It includes a broad age range (15–36 years), mixing adolescents and young adults, introducing clinical and behavioral heterogeneity. Exposure and outcomes depend on self-reporting via online forms, with risks of information bias and social desirability bias. Although logistic regression was performed, residual confounding may persist, and a temporal relationship between internet addiction, poor sleep, and psychological distress could not be established.
Adicción a los teléfonos inteligentes en adolescentes tras la pandemia por la COVID-19[9]	Cross-sectional	JBI for analytical cross-sectional studies	75% (6/8)	Low	This is a cross-sectional study, so it does not establish temporality or causality; the main outcome was measured with a modified version of the SAS-SV, adapted by the authors for Peru, with piloting and CFA, but without prior formal external validation in that population; several associated factors were collected with self-reported dichotomous questions, which increases information bias; the sample is restricted to women from a single educational institution, reducing generalizability; in addition, the authors themselves acknowledge that psychiatric comorbidities were not ruled out and that exposure to other screens was not evaluated, which leaves room for residual confounding.
Internet addiction and mental health disorders in high school students in a Peruvian region: a cross-sectional study.[10]	Cross-sectional	JBI for analytical cross-sectional studies	75% (6/8)	Low	This is a cross-sectional study, so causality cannot be inferred; the sample was recruited using non-probability snowball sampling, which compromises representativeness and introduces selection bias; the study was conducted in two private schools in a Peruvian region, which limits external validity; many variables, including the main exposure, depend on self-reporting in online questionnaires; in addition, the authors acknowledge that they did not measure several relevant confounders such as stress, family communication, sleep duration, homework, parental education, and family functioning.
Uso de internet y su relación con depresión, insomnio y autoestima en estudiantes de bachillerato, Quito (Ecuador)[11]	Cross-sectional	JBI for analytical cross-sectional studies	75% (6/8)	Low	This is a cross-sectional study, so it does not demonstrate causality. The association analysis was based primarily on bivariate odds ratios, without extensive multivariate adjustment for potential confounders. The measurement relies on self-reporting, especially regarding emotional symptoms and internet use. The sample comes from two institutions in Quito, which limits generalizability. There is also conceptual ambiguity because the methods section describes it as a "cross-sectional cohort," although methodologically it corresponds to an observational cross-sectional study.
Problematic Internet use, emotional problems and quality of life among adolescents[12]	Cross-sectional	JBI for analytical cross-sectional studies	62.5% (5/8)	Moderate	The study employed a cross-sectional design, thus precluding inferences of causality. Although schools were selected within a broader program, data were collected in a single city, limiting external validity. Emotional problems and problematic internet use were measured using self-reported questionnaires, without clinical confirmation. The authors themselves acknowledge potential confounding factors such as smartphone use, which was not thoroughly assessed. Furthermore, several associations were explored primarily through bivariate analyses, without robust control for all potential confounders.
The Longitudinal Impact of Social Media Use on UK Adolescents' Mental Health: Longitudinal Observational Study[13]	Longitudinal observacional	JBI for cohort studies	81.8% (9/11)	Low	It only assesses hours of "chatting or interacting" on social networks and uses examples from outdated platforms, which may affect its validity. There is significant data loss in the analysis of complete cases, even though multiple imputation was used as a sensitivity measure. The measurement of social network use is self-reported, not objective. Furthermore, the mediation by self-esteem and social connection relies on simplified constructs that may not fully capture these phenomena.
The Impact of Different Types of Social Media Use on the Mental Health of UK Adults: Longitudinal Observational Study[14]	Longitudinal observacional	JBI for cohort studies	81.8% (9/11)	Low	Exposure is self-reported and relatively limited: the frequency of "viewing" and "posting" does not capture the quality, content, or context of use. Data were collected during the COVID-19 pandemic, which may have affected both digital behavior and mental health and limit extrapolation to other contexts. There is a significant proportion of missing data in education, which was addressed through imputation. Furthermore, the follow-up was essentially from one wave to the next, so it does not explore long-term trajectories.
Social Media Detox and Youth Mental Health[15]	Prospective cohort	JBI for cohort studies	63.6% (7/11)	Moderate	The detox was voluntary and non-randomized, introducing self-selection bias; there was no randomized control group, so the improvement could be partly explained by motivation, expectation, or regression to the mean; the follow-up of the effect was very short (only 1 week of detox), insufficient to assess durability; the outcomes were not completely absent at the beginning, as the participants had variable baseline symptoms; in addition, there are missing data in passive sensing, resolved with MICE under the assumption of missing at random, an assumption that the authors themselves admit may not be met; the sample was also very homogeneous (predominantly female, university students), which reduces generalizability.

JBI: Joanna Briggs Institute; OR: odds ratio; CI 95%: 95% confidence interval; SAS-SV: Smartphone Addiction Scale–Short Version; CFA: confirmatory factor analysis; MICE: multiple imputation by chained equations; COVID-19: coronavirus disease 2019

adolescents. This relationship was consistently observed, and it was even reported that a one-week social media detox was associated with a reduction in symptoms of anxiety and depression [15]. Similarly, a higher frequency of social media posting was linked to poorer mental health in longitudinal follow-up studies [14]. Similarly, the risk of internet addiction was reported to be associated with depression, although the relationship was clearer for severe anxiety, and some studies reported positive correlations between internet addiction, depression, anxiety, and stress [8,10,11].

In Latin American cross-sectional studies, the association between problematic digital exposure and emotional symptoms was common. In Quito, the risk of internet addiction was significantly associated with depression and insomnia, showing a prevalence of 46% for internet addiction, 62% for depression, and 42% for insomnia; furthermore, the risk of internet addiction constituted a risk factor for depression (OR = 3.82; 95% CI: 2.36–6.18) and insomnia (OR = 2.59; 95% CI: 1.66–4.04) [11].

A link between internet addiction disorder and symptoms of anxiety and depression was documented among Peruvian adolescents. In this study, 22.2% had mild internet addiction, 3.2% had moderate internet addiction, and 0.6% had severe internet addiction; moderate or severe anxiety was present in a significant proportion of students, as were depressive symptoms. In the unadjusted analysis, internet addiction was associated with a higher prevalence of depression; however, after multivariate adjustment, this association did not hold. In contrast, the association with anxiety persists in cases of severe addiction, where the prevalence of anxiety increased markedly [10].

Another study reported a 21.7% prevalence of smartphone addiction and a 48.7% risk of dependence. In the adjusted analysis, this addiction was associated with family conflicts at home and feelings of shame, while feelings of sadness, anxiety, or depression and the perception of social rejection showed an association only in the unadjusted analysis [9].

In Brazil, it was found that 48.1% of participants had moderate internet addiction and 0.8% had severe addiction. Positive correlations were described between internet addiction and depression, anxiety, and stress, showing that both internet addiction and overall psychological distress predicted sleep difficulties [8]. This reinforced the idea of an interaction between excessive internet use and the prevalence of emotional disorders.

In the Dominican Republic, smartphone addiction was found in 48.8% of the sample and was significantly associated with symptoms of depression ($p = 0.007$) and anxiety ($p < 0.001$) [7]. Although no significant association was found with sleep quality, it was documented that those with smartphone addiction exhibited a considerable proportion of emotional symptoms, suggesting an adverse relationship between technology dependence and mental health.

Not all studies consistently showed a significant association between problematic digital use and symptoms of anxiety or depression.

Among Brazilian adolescents, problematic internet use was present in 17% of the sample; however, no statistically significant differences were found between problematic and non-problematic users in terms of depression, anxiety, stress, or quality of life. Even so, 40.1% of adolescents reported that the internet negatively affected their daily activities, with this group showing higher dependency scores and greater levels of stress [12]. Therefore, although the direct association with anxiety and depression was not significant, a pattern of greater subjective distress and stress was identified, suggesting that the mere duration or frequency of use does not always, on its own, explain psychological distress.

Studies such as the one conducted in the United Kingdom revealed a more nuanced picture. The analysis distinguished between viewing and posting content on social media. No evidence of an association was found between the frequency of viewing and worse mental health problems after full adjustment. In contrast, posting daily was associated with greater subsequent psychological distress, with a 0.35-point increase in the GHQ score compared to those who never post anything. Furthermore, those who combined high viewing frequency with high posting frequency had worse mental health scores than those with low frequency in both behaviors [14].

- **Social media detox**

A cohort study conducted in the United States provided additional evidence by evaluating a one-week social media detox among young adults. Of the 373 participants who completed the baseline assessment, 295 agreed to participate in the intervention. After one week of reduced social media use, significant decreases were observed in anxiety (-16.1%), depression (-24.8%), and insomnia (-14.5%), with no significant changes in loneliness [15].

Furthermore, multivariate analyses showed that self-reported problematic social media use was consistently associated with greater severity of depression, anxiety, loneliness, and insomnia, whereas objective measures of use showed little or no association [15]. These findings suggest that it is not merely the amount of social media use that matters, but rather the problematic or emotionally dysfunctional nature of that use.

- **Overall synthesis of findings**

Overall, the results of the articles analyzed in this review showed that the association between problematic use of the internet, social media, or smartphones and anxiety or depressive symptoms was predominantly positive, although not uniformly so. The evidence was more consistent in studies that assessed addiction, dependence, or problematic use, while studies focusing solely on usage time or general frequency tended to show weaker or more inconsistent results. Similarly, longitudinal studies suggested that the effect may depend on the type of use, with active or problematic use having a greater impact than simple passive exposure. Finally, the available evidence suggested that a brief reduction in social media use could be associated with an improvement in anxiety and depressive symptoms [10,11,12,14,15].

DISCUSSION

It is crucial to distinguish between time spent on social media and use considered problematic, since various cited studies agreed that problematic use poses significantly greater risks to the mental health of adolescents and young adults.

The reviewed articles concluded that excessive time spent on social media during the COVID-19 pandemic is specifically associated with a higher likelihood of experiencing symptoms of anxiety (OR 1.55) and depression (OR 1.43), thus establishing that prolonged use is described as a "double-edged sword" since the content consumed on various social media platforms can provide a sense of relief from isolation, but also exposes users to misinformation and content that exacerbates behaviors such as desensitization, irritability, low frustration tolerance, sadness, and annoyance, among others [16].

Consider, then, that since the COVID-19 pandemic, there has been a significant increase in these symptoms among both young adults and adolescents. What is happening to adolescents? How does this problematic use affect them? Well, community-based clinical studies have highlighted that adolescents with certain medical conditions may be more affected because social comparison—based on the number of "likes" and the fear of negative evaluation—is more prevalent, significantly altering the way adolescents interact digitally [17]. When we talk about the fear of negative evaluation, we are referring to feelings of comparison with other adolescents regarding physical appearance, which is more common in this age group. However, it also impacts socialization, as face-to-face interactions have become increasingly rare, thereby reducing socio-emotional skills.

This face-to-face interaction decreased considerably during the COVID-19 pandemic; however, after this period, such interaction struggled to become a natural tool for human socialization. Consequently, during the first year of the pandemic, it was noted that more active and prolonged use of social media was associated with a predominantly negative impact, directly affecting sleep and increasing family conflicts. In addition, increased stress led to social media addiction and psychological distress as a form of immediate reward [18].

Returning to the concept of face-to-face social interactions, some studies have focused on social connection interventions, noting that platforms have evolved toward formats that encourage one-way, non-interactive engagement (such as passive scrolling), which differs from healthy connection with others as well as from one's attention span. This leads to a sense of loneliness, which is a pattern that predicts signs of depression in young adults [19].

Previous studies have shown a positive association between social media use and mental health problems. They highlighted that risk-based measures (such as addiction or Facebook intrusion) have a more consistent association with psychiatric symptoms than measures based solely on frequency and duration of use [20].

Finally, as mentioned at the beginning, distinguishing between duration of use and problematic use is linked to other risky behaviors or experiences, such as cyberbullying and digital hoarding, which are associated with symptoms of anxiety, depression, and even hypersexualization and self-harming behaviors—especially among young people with preexisting vulnerabilities such as ADHD or eating disorders. The global prevalence of this problematic use is estimated to be approximately 7% [21].

Among other mechanisms revealed in the studies, FOMO (Fear of Missing Out) was discussed as a compulsive behavior stemming from the fear of being excluded from social dynamics or trends, which compels individuals to impulsively check social media, leading to an addiction to these platforms [1,20]. FOMO also influences algorithms and the flow experience, especially on short-form video platforms like TikTok, which use advanced recommendation algorithms to create a personalized "feed" that generates this flow experience characterized by intense concentration while enjoying the content and a distorted perception of time [4], that is to say; the more they scroll, the more their attention is captured, preventing them from noticing how much time they are spending on the platform.

Given the growing problem among adolescents, the emotional, physical, and psychological consequences are evident in education. For example, due to social media addiction and overstimulation, adolescents are unable to concentrate for long periods of time and tend to procrastinate more, leading to lower academic achievement and greater distraction from academic responsibilities [5,6,7,10]. The academic community can begin to implement certain strategies related to school curricula [6], which include topics on how the brain works and what happens when there is overstimulation caused by social media due to addiction, as well as teaching habits related to managing screen time and promoting face-to-face interactions, avoiding the use of electronic devices or platforms [5,6].

It is therefore essential that teachers be able to detect when students show signs of isolation or compulsive use of electronic devices during class or at lunch. Identifying these signs and incorporating relevant topics and interactive activities serve as an intervention that fosters students' social development [8]. Such interventions are related to "digital detoxes," which serve as an effective tool for significantly reducing psychological distress and improving well-being in just one week [6,15]. These activities and adjustments to the curriculum can have a positive impact not only on adolescents' social-emotional development but also on the development of their identity and self-esteem. Ultimately, the discussion also touched on the responsibility of social media companies—namely, to design apps with fewer addictive features—and the need for laws that limit minors' access and screen time [6].

Other authorities, such as the World Health Organization (WHO), recommend establishing clear usage guidelines to prevent behavioral issues exacerbated by the COVID-19 pandemic [7]. These

guidelines and new well-being initiatives require a collaborative effort among society, the government, and parents. Society and the government have tools with a broader reach, such as workshops open to the general public, promoting new community activities, addressing the stigma associated with acknowledging the need for help, and encouraging visits to a mental health professional. In the specific case of parents, their support and active involvement are key, as they serve as protective factors to mitigate the risk of addiction, not only in terms of emotional and psychological consequences but also physical ones (by preventing a sedentary lifestyle) [5].

The study had some limitations regarding generalizability and geographic bias, since most of the data comes from high-income populations, which does not allow for an explanation of social media use among families with different structures or income levels, factors that give rise to different social dynamics and forms of interaction, as is the case, for example, in Latin America, as it appears that cultural norms influence what may be considered problematic use across different countries (Table 3).

Moreover, it is difficult to establish a definitive cause-and-effect relationship between social media use and symptoms of distress, given the possibility that young people with pre-existing symptoms may use digital platforms more as maladaptive coping mechanisms, rather than social media and its problematic use being the primary cause of the problem. In addition, there is a bias in data collection because the data are obtained through self-reporting, primarily using self-administered digital questionnaires, which lack in-person clinical validation. Therefore, the results reflect only the respondent's subjective perception, which may lead to an overestimation of the results and the actual prevalence of the mental disorders studied.

This study may pave the way for novel lines of research, such as conducting cohort studies and experimental designs (controlled trials) to understand how the relationship between technology and well-being evolves over time and the persistence of the observed symptoms. In addition, it could help monitor the effects of a digital detox and assess its impact on cognitive functions—such as attention and memory—which appear to be most affected by overstimulation and problematic social media use.

Of course, it is also essential that, rather than analyzing screen time, future research could focus on distinguishing variations in the architecture of different platforms, as well as analyzing variations among existing algorithms and interaction dynamics, all while taking into account how these factors impact users' cognition and their interactions with friends and family. Along these lines, it is necessary to distinguish between active use (creating content and interacting) and passive use (endless scrolling), as well as to investigate the nature of the content consumed (whether it is educational or for entertainment) and the impact of this consumption on users.

Finally, vulnerable groups should not be excluded based on factors such as race, ethnicity, and socioeconomic status, as these variables moderate and provide new insights into the actual impact of social media on mental health. In this regard, it is also important to emphasize the need for research in other regions, such as Latin America and Africa, to enable comparisons between different countries, taking into account whether they are high- or low-income nations. It is also necessary to include holistic perspectives that highlight potential benefits (social support, connection with peers) in order to develop new solutions to this problem, such as digital detox and the implementation of activities by communities and the government.

Table 3. Critical analysis and methodological limitations of the reviewed literature on social media use.

Analysis	Findings	Limitations
Homogeneity and geographical bias	Data saturation is observed among high-income populations: the United Kingdom[13] and Korea[5,16]. Evidence in Latin America is emerging but is still limited to local samples in places like Ecuador[11] and Peru[10].	There is a limitation to generalization: Problematic social media use is mediated by cultural norms. Western results do not explain the impact on young people with different family structures or social dynamics.
Disparity in standardization	There are multiple diagnostic criteria applied, including smartphone addiction scales (SAS.SV), internet addiction test (IAT) and clinical symptom scales such as PHQ-9 for depression and GAD-7 for anxiety.	There is a lack of standardized measurement. There is a lack of consensus on whether the damage to mental health stems from the duration of the interaction or its nature, leading to inconsistent diagnoses across studies.
Nature of data collection	Most studies use self-administered digital questionnaires such as IAT, or SAS-SV, which are distributed through social networks or survey platforms.	There is a self-reporting bias, since in most cases in-person clinical validation is not available. The results reflect the user's subjective perception, which may overestimate or underestimate the true prevalence of these mental disorders.[17]
Stress isolation (Mediating variables)	No direct impact on the mental health of users is indicated; there are other variables such as body dissatisfaction[5] and social comparison that act as critical bridges for the development of anxious-depressive symptoms[1,13,18,19,20]	It is difficult to determine causality, that is, whether social networks cause the symptoms of distress or whether young people with previous symptoms use social networks as a maladaptive coping mechanism.
Interface Dynamics and Algorithms	Research on platforms with short video formats such as TikTok has shown that the algorithm's "variable reward" design accelerates user dependence compared to static social networks.[21]	There is a technological gap between research and updates to digital social media platforms, making it difficult to create intervention protocols that are up-to-date for these new interfaces.

IAT: Internet Addiction Test; PHQ-9: Patient Health Questionnaire-9; GAD-7: Generalized Anxiety Disorder-7; DASS-21: Depression, Anxiety and Stress Scale-21; GHQ-12: General Health Questionnaire-12; SDQ: Strengths and Difficulties Questionnaire; SAS-SV: Smartphone Addiction Scale-Short Versión.

CONCLUSIONS

The evidence analyzed suggests that there is an association between problematic social media use and the presence of anxiety and depressive symptoms in adolescents, with this association being more consistent when digital exposure was defined as addiction, problematic use, or compulsive interaction. In particular, anxiety, stress, and sleep disturbances showed more frequent associations, while the findings regarding depression were less consistent.

However, these results should be interpreted with caution. The included literature revealed significant heterogeneity in methodological designs, study populations, the instruments used to measure both digital exposure and emotional outcomes, and the statistical strategies employed. Furthermore, the predominance of cross-sectional studies limits the ability to establish causal relationships and to clearly differentiate between association, bidirectionality, and temporal effects.

Overall, the findings presented support the need to consider problematic use of digital technologies as a potential factor associated with emotional distress in young people, although longitudinal studies with standardized measurements and greater methodological rigor are still needed to more precisely define the magnitude, direction, and mechanisms of this association.

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Conflict of interest

The authors declare no conflicts of interest.

Ethical considerations

This study did not involve the participation of humans or animals, nor the collection of primary data; therefore, it did not require approval from a research ethics committee. All data used were obtained from previously published and publicly accessible secondary sources.

REFERENCES

1. M. Liu, K.E. Kamper-DeMarco, J. Zhang, J. Xiao, D. Dong, P. Xue. Time Spent on Social Media and Risk of Depression in Adolescents: A Dose-Response Meta-Analysis. Int J Environ Res Public Health. 2022;19(9):5164. doi:10.3390/ijerph19095164
2. O. Ahmed, E.I. Walsh, A. Dawel, K. Alateeq, D.A. Espinoza Oyarce, N. Cherbuin. Social media use, mental health and sleep: A systematic review with meta-analyses. J Affect Disord. 2024;367:701-712. doi:10.1016/j.jad.2024.08.134
3. B. Kerr, A. Garimella, L. Pillarisetti, N. Charlly, K. Sullivan, M.A. Moreno. Associations Between Social Media Use and Anxiety Among Adolescents: A Systematic Review Study. J Adolesc Health. 2025;76(1):18-28. doi:10.1016/j.jadohealth.2024.09.011
4. G. Conte, G. Di Iorio, D. Esposito, S. Romano, F. Panvino, S. Maggi et al. Scrolling through adolescence: a systematic review of the impact of TikTok on adolescent mental health. Eur Child Adolesc Psychiatry. 2025;34(11):1511-1527. doi:10.1007/s00787-024-02581-w
5. L. Nguyen, J. Walters, S. Paul, S. Monreal Ijurco, G.E. Rainey, N. Parekh et al. Feeds, Feelings, and Focus: A Systematic Review and Meta-Analysis Examining the Cognitive and Mental Health Correlates of Short-Form Video Use. Psychol Bull. 2025;151(9):1125-1146. doi:10.1037/bul0000498
6. L. Jain, L. Velez, S. Karlapati, M. Forand, R. Kannali, R.A. Yousaf et al. Exploring Problematic TikTok Use and Mental Health Issues: A Systematic Review of Empirical Studies. J Prim Care Community Health. 2025;16:1-30. doi:10.1177/21501319251327303
7. N. Martínez, M. Vidal, P. Ureña, F. Rosado. Prevalencia de adicción a teléfonos inteligentes en estudiantes de medicina. Ciencia y Salud. 2025;9(2):19-28. doi:10.22206/cysa.2025.v9i2.3113
8. M.G. Marin, A.B.C. Machado, G.S. Freitas, R.M.M. Almeida. Internet addiction, sleeping habits and psychological distress in Brazilian adolescents and young adults. Psicologia: Reflexão e Crítica. 2024;37:37. doi:10.1186/s41155-024-00323-0
9. B. Becerra-Canales, E. Hernández-Huaripaucar, D. Becerra-Huamán, C. Laos-Anchante, M. Dávalos-Almeyda, M.J. Cevallos-Cárdenas et al. Adicción a los teléfonos inteligentes en adolescentes tras la pandemia por la COVID-19. Rev Cubana Med Milit. 2023;52(4):e023010141. URL: https://revmedmilitar.sld.cu
10. J.C. Perez-Oyola, D.M. Walter-Chavez, J.P. Zila-Velasque, C.J. Pereira-Victorio, V.E. Failoc-Rojas, V.J. Vera-Ponce et al. Internet addiction and mental health disorders in high school students in a Peruvian region: a cross-sectional study. BMC Psychiatry. 2023;23:408. doi:10.1186/s12888-023-04838-1

11. V.N. Asimbaya Cadena, K.F. Lima Taramuel. Uso de internet y su relación con depresión, insomnio y autoestima en estudiantes de bachillerato, Quito (Ecuador). Más Vita Rev Cienc Salud. 2022;4(2):160-177. doi:10.47606/ACVEN/MV0112
12. A.L.M. Andrade, S.R.F. Enumo, M.A.Z. Passos, E.P. Vellozo, T.H. Schoen, M.A. Kulik et al. Problematic Internet Use, Emotional Problems and Quality of Life Among Adolescents. Psico-USF. 2021;26(1):41-51. doi:10.1590/1413-82712021260104
13. R. Plackett, J. Sheringham, J. Dykxhoorn. The Longitudinal Impact of Social Media Use on UK Adolescents' Mental Health: Longitudinal Observational Study. J Med Internet Res. 2023;25:e43213. doi:10.2196/43213
14. Y. Yu, J. Dykxhoorn, R. Plackett. The Impact of Different Types of Social Media Use on the Mental Health of UK Adults: Longitudinal Observational Study. J Med Internet Res. 2024;26:e56950. doi:10.2196/56950
15. E. Calvert, M. Cipriani, B. Dwyer, V. Lisowski, J. Mikkelson, K. Chen et al. Social Media Detox and Youth Mental Health. JAMA Netw Open. 2025;8(11):e2545245. doi:10.1001/jamanetworkopen.2025.45245
16. Y. Lee, Y.J. Jeon, S. Kang, J.I. Shin, Y.C. Jung, S.J. Jung. Social media use and mental health during the COVID-19 pandemic in young adults: a meta-analysis of 14 cross-sectional studies. BMC Public Health. 2022;22:995. doi:10.1186/s12889-022-13409-0
17. L. Fassi, K. Thomas, D.A. Parry, A. Leyland-Craggs, T.J. Ford, A. Orben. Social media use and internalizing symptoms in clinical and community adolescent samples: A systematic review and meta-analysis. JAMA Pediatr. 2024;178(8):814-822. doi:10.1001/jamapediatrics.2024.2078
18. M. Draženović, T. Vukušić Rukavina, L. Machala Poplašen. Impact of Social Media Use on Mental Health within Adolescent and Student Populations during COVID-19 Pandemic: Review. Int J Environ Res Public Health. 2023;20(4):3392. doi:10.3390/ijerph20043392
19. C. Vazquez Alvarez, L. Mirza, J. Das-Munshi, T.K. Oswald. Social connection interventions and depression in young adults: a systematic review and meta-analysis. Soc Psychiatry Psychiatr Epidemiol. 2024;60:549. doi:10.1007/s00127-024-02722-1
20. Q.D. Alfredson, A. Garimella, B. Kerr, M.A. Moreno. Systematic Review of Studies Measuring Social Media Use and Depression, Anxiety, and Psychological Distress in Adolescents: 2018-2020. WMJ. 2024.
21. L.S. Eddy Ives, A. Hueras Patón, M.A. Forti Buratti, J. Álvarez Pitti, M.A. Salmerón-Ruiz, P.J. Rodriguez Hernández et al. Impact of Screen and social media use on mental health. An Peadtr (Barc). 2025;3:503909. doi:10.1016/j.anpedi.2025.503909