Parental mediation in the use of screens by children and adolescents: a systematic literature review

Mediación parental en el uso de pantallas por niños y adolescentes: una revisión sistemática de la literatura

Mediação parental no uso de telas por crianças e adolescentes: uma revisão sistemática da literatura

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Abstract: Parental mediation is essential for guiding the appropriate use of devices, aiming to minimize potential negative impacts such as anxiety, depression, and low self-esteem. This systematic review investigated the influence of different parental mediation styles on the use of digital media by children and adolescents. A new method for searching and classifying articles was used, employing the ASReview software, which utilizes a machine learning model to enhance the efficiency and accuracy of article selection. The review followed all procedures required by PROSPERO. Initially, 28,964 articles were identified, and based on ASReview, 359 articles were read, of which 27 were included in the study. The quality of the manuscripts was assessed using the Critical Appraisal Checklist for Analytical Cross-Sectional Studies. The main findings indicated that parental mediation is a significant protective factor against excessive internet use, gaming dependence, and cyberbullying. Active and restrictive mediation strategies proved effective in moderating the relationship between digital media use and mental health outcomes, highlighting the critical role of parents in guiding their children's digital consumption.

Keywords: parental mediation; adolescents; digital media

Resumen: La mediación parental es esencial para orientar el uso adecuado de los dispositivos, con el objetivo de minimizar los posibles impactos negativos, como ansiedad, depresión y baja autoestima. Esta revisión sistemática investigó la influencia de los diferentes estilos de mediación parental en el uso de medios digitales de niños y adolescentes. Se utilizó un nuevo método de búsqueda y clasificación de artículos con el software ASReview, que emplea un modelo de aprendizaje automático para aumentar la eficiencia y la precisión en la selección de artículos. La revisión siguió todos los procedimientos exigidos por PROSPERO. Inicialmente, se identificaron 28.964 artículos y, con base en ASReview, se leyeron 359, de los cuales 27 fueron incluidos en el estudio. La calidad de los manuscritos fue evaluada con el Critical Appraisal Checklist for Analytical Cross-Sectional Studies. Los principales hallazgos indicaron que la mediación parental es un factor protector significativo contra el uso excesivo de internet, la dependencia de los juegos y el ciberacoso. Las estrategias de mediación activa y restrictiva demostraron ser eficaces en la moderación de la relación entre el uso de medios digitales y los resultados de salud mental, resaltando el papel crítico de los padres en la orientación del consumo digital de sus hijos.

Palabras clave: mediación parental; adolescentes; medios digitales

Resumo: A mediação parental é essencial para orientar o uso adequado de dispositivos, visando minimizar potenciais impactos negativos, como ansiedade, depressão e baixa autoestima. Esta revisão sistemática investigou a influência dos diferentes estilos de mediação parental no uso de mídias digitais por crianças e adolescentes. Utilizou-se um novo método de busca e classificação de artigos com o software ASReview, que emprega um modelo de aprendizado de máquina para aumentar a eficiência e a precisão da seleção de artigos. A revisão seguiu todos os procedimentos exigidos pela PROSPERO. Inicialmente, identificou-se 28.964 artigos e, com base no ASReview, foram lidos 359, dos quais 27 foram incluídos no estudo. A qualidade dos manuscritos foi avaliada utilizando o Critical Appraisal Checklist for Analytical Cross-Sectional Studies. Os principais achados indicaram que a mediação parental é um fator protetor significativo contra o uso excessivo da internet, dependência de jogos e cyberbullying. Estratégias de mediação ativa e restritiva mostraram-se eficazes na moderação da relação entre o uso de mídias digitais e os desfechos de saúde mental, ressaltando o papel crítico dos pais na orientação do consumo digital de seus filhos.

Palavras-chave: mediação parental; adolescentes; mídias digitais

Internet use has become a widespread reality in daily life, encompassing approximately 67% of the global population in 2023 (International Telecommunication Union, 2023). Consequently, connectivity becomes an activity introduced increasingly early in human development, spanning the stages of childhood and adolescence (Andrade, Lobato et al., 2024). In 2020, one in three children and adolescents between 3 and 17 years old had internet access globally, and in Brazil, this number reached 92% of the population aged 9 to 17 years in 2022 (Comitê Gestor da Internet [CGI], 2023; United Nations Children's Fund [UNICEF], 2020).

Digital technologies and the internet offer this population a wide range of research, entertainment, and communication tools, the leading online activities in this age group (CGI, 2023). However, this facilitation of access to information can expose this population to various risk factors, such as difficulty organizing important tasks in daily life, increased usage time, and even behaviors associated with digital addiction (Andrade, Scatena et al., 2023). Furthermore, some authors point to significant relationships between prolonged screen exposure and negative impacts on the mental health of children and adolescents, such as depression (Fardouly et al., 2018), anxiety (Hsieh et al., 2018), decreased well-being (Milosevic et al., 2022), low self-esteem (Schmuck et al., 2023), and sleep disturbances (Cruz et al., 2024). Internet use without adequate parental supervision, especially among the youngest, can also lead to exposure to aggressive, offensive, and discriminatory content, as well as behaviors such as cyberbullying (Machimbarrena et al., 2018). There are also risks of a pornographic nature, including exposure to explicit videos and materials, the presence of online sexual predators, and the danger of disclosing inappropriate photos or personal information (Agarwal & Dhanasekaran, 2012).

Given these vulnerabilities, monitoring and guiding children and adolescents regarding internet use through parental mediation becomes essential (Andrade, Di Girolamo et al., 2023). This term refers to parental practices and attitudes for regulating and managing their children's use of communication tools, aiming to minimize risks and threats (Ren & Zhu, 2022). There are three mediation strategies: restrictive, active, and participative (Cabello-Hutt et al., 2017). The first involves establishing rules regarding technology use, with defined time and hours of use per day (Jiow et al., 2016). Active mediation is characterized by communication and instruction from parents about risks and safe online practices (Clark, 2011). Lastly, participative mediation is based on the joint and shared use of technology between parents and children (Jiow et al., 2016).

Parental mediation has been identified as an essential tool for healthy development in the face of digital media use. It is a significant preventive factor for negative technology-related consequences (Schwartz & Pacheco, 2021). In general, the absence of parental mediation and lack of knowledge about children's online activities are associated with excessive internet use patterns and even dependency (Wang & Ngai, 2021). On the other hand, parental participation, supervision, and guidance regarding internet use are linked to a healthier and more nurturing family environment (Ren & Zhu, 2022).

Considering the widespread adoption of digital technologies among children and adolescents, concerns arise regarding the risk factors above and excessive internet use. Parental mediation, in turn, can mitigate online dangers and act as a protective measure for the younger population (Andrade, Passos et al., 2024; Milosevic et al., 2022). Significant advancements have been made in understanding the impact of parental mediation on youth's digital media usage, particularly concerning their mental health and behavior (Nielsen et al., 2019). However, many prior reviews have encountered limitations

due to their specific cultural or methodological focuses, as well as outdated screening methods. This current review seeks to address these gaps. By employing a machine learning-assisted selection strategy, we are able to explore a diverse range of parental mediation styles across various cultural contexts. This approach enhances the comprehension of how parental influence shapes the interactions of children and adolescents with digital technology, providing valuable insights for families everywhere.

Therefore, this research aimed to identify the influence of different styles of parental mediation on the use of digital media among children and adolescents and its role as a protective factor against emotional problems through a systematic literature review. As research hypotheses, it would expect that children and adolescents with higher levels of parental mediation will present lower digital media usage time. In addition, we hypothesize that parental mediation will be associated with lower symptomatology of emotional problems.

Method

Study characterization

A systematic literature review was conducted following the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Page et al., 2021). This approach allows the use of findings from relevant research to contribute to evidence-based health practice.

Research question identification

The central question of this study is: "What is the impact of different parental mediation strategies on online behavior and the mental health of children and adolescents, considering the risks associated with screen use?" This question was based on the FINER criteria (Feasible, Interesting, New, Ethical, Relevant) proposed by (Cummings et al., 2013). The question is feasible because there is a wide range of available data for analysis in the literature. Given the increasing digital interaction of youth and its potential implications for well-being, the topic is interesting for parents, educators, and researchers. It is an innovative question as it explores the variable effect of mediation practices, addressing underexplored dimensions of parental mediation practices in diverse cultural and methodological contexts. Additionally, it is ethical to investigate how these practices can protect against online risks, contributing to creating a safe digital environment. Finally, the study is relevant as it addresses urgent concerns about the influence of technology on child development, guiding effective parental mediation strategies.

Inclusion and exclusion criteria

The PECOS strategy (Population, Exposure, Comparison, Outcomes, Study design) was used to define and direct inclusion and exclusion criteria (Morgan et al., 2018). The population was delimited to parents whose children have internet and digital media access, and the exposure was parental mediation of this usage. The comparison included different types of parental mediation and their outcomes. Regarding outcomes, it was considered that parental mediation is related to less frequent usage and decreased emotional problems resulting from internet use.

Strategy search

The literature search was conducted using the Scopus and PSYCNET databases. Other platforms were excluded due to the difficulty of exporting data on a large scale. The search strategy was defined through descriptors previously consulted in the Medical Subject Headings [MESH] and Health Sciences Descriptors [DeCS] indexers. The descriptors were combined using boolean operators, forming strings for each database.

The search algorithm consisted of the following descriptors: "parenting" OR "digital parenting" OR "parental control" OR "parental warmth" OR "parental mediation" OR "parenting style" OR "parental regulation" OR "parental monitoring" OR "parental involvement" OR "family communication" AND smartphone addiction OR social media OR digital media OR internet addiction OR dysfunctional internet use OR problematic internet use OR gaming OR game OR depression OR anxiety OR stress OR emotional OR psychological distress OR isolation OR suicide OR aggression OR hostility OR emotional regulation.

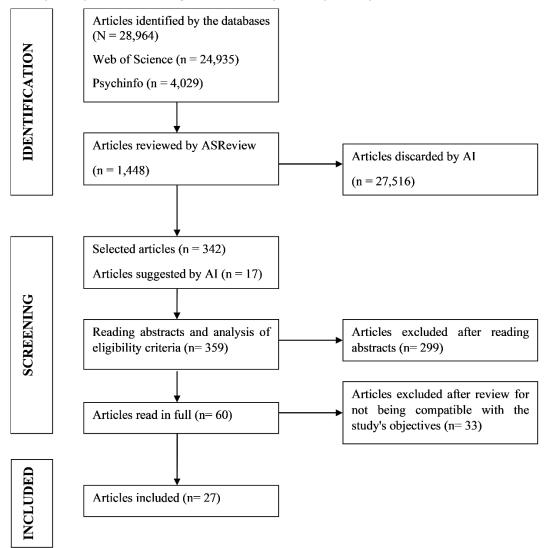
Article selection and data extraction

The data were extracted and exported in ".ris format" to the reference management software Zotero to unify the articles from the two research databases. Subsequently, all data were exported to

ASreview, an Artificial Intelligence (AI) and machine learning tool used to select and screen textual data on a large scale. The platform was trained by labeling a sample of 5% of articles as relevant or irrelevant according to the research objective, and based on this process, the AI can identify articles similar to those indicated by the programmer (Van de Schoot et al., 2021).

A total of 28,964 articles were found in the databases, and the titles and abstracts of 5% of the articles (n = 1,448) were read, as suggested by ASreview. After the preliminary analysis, 342 articles were classified as relevant, and the AI suggested an additional 17. Next, titles and abstracts were reviewed, resulting in the selection of 60 studies. After full-text reading and eligibility criteria analysis, the final number of articles was 27. Figure 1 describes the PRISMA flowchart of the selection process.

Figure 1
Flow of identification, screening, and selection of articles for the systematic review



Finally, the data from each article was extracted and organized in the Airtable software, with a numerical identifier ordered by publication date and alphabetical order. The following categories were created: authors, country, objectives, methodological design, central theme, instruments used, and sample characteristics (profile, age, size, and gender distribution), as well as results and limitations. The central theme relates to the different subjects investigated in the realm of parental mediation, which were mental health, parental attitudes, problematic internet use, digital gaming disorder, parenting styles, bullying/cyberbullying, smartphone use, risk factors, and apps.

Study evaluation and bias risk

The quality assessment of the manuscripts was conducted using the Critical Appraisal Checklist for Analytical Cross-Sectional Studies (Moola et al., 2020). This method comprises nine questions, with

a Yes/No response format, totaling a final score from 1 to 9. The cutoff point for article inclusion was 5, considered on a scale of 5 to 6 as moderate methodological quality and moderate risk of bias. Articles scoring 7 or 8 were classified as having good methodological quality and a low risk of bias (Aromataris et al., 2024). The evaluation and final score for each study is shown in Table 1.

Table 1 *Results of methodological quality assessment*

References	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Total
Barry & Kim (2023)		X	X	X			X	X	5
Geniş & Ayaz-Alkaya (2023)	X	X	X	X			X	X	6
Görgülü & Özer (2023)		X	X	X			X	X	5
Schmuck et al. (2023)	X	X	X	X			X	X	6
Eo & Lee (2022)	X	X	X	X			X	X	6
Günaydın et al. (2022)		X	X	X			X	X	5
Milosevic et al. (2022)	X	X	X	X			X	X	6
Yao et al. (2022)		X	X	X			X	X	5
Çevik et al. (2021)		X	X	X			X	X	5
Lung & Shu (2021)	X	X	X	X			X	X	6
Stevic & Matthes (2021)		X	X	X			X	X	5
Wang & Ngai (2021)		X	X	X			X	X	5
Biernesser et al. (2020)	X	X	X	X			X	X	6
Fu et al. (2020)		X	X	X			X	X	5
Padilla-Walker et al. (2020)	X	X	X	X			X	X	6
Chang et al. (2019)		X	X	X			X	X	5
Karaer & Akdemir (2019)	X	X	X	X			X	X	6
Meeus et al. (2019)	X	X	X	X			X	X	6
Zandi Payam & Mirzaeidoostan (2019)	X		X	X			X	X	5
Fardouly et al. (2018)	X	X	X	X			X	X	6
Hsieh et al. (2018)	X	X	X	X			X	X	6
Martínez-Ferrer et al. (2018)	X	X	X	X			X	X	6
Wright (2016)	X	X	X	X			X	X	6
Chang et al. (2015)	X	X	X	X			X	X	6
Wright et al. (2015)	X	X	X	X			X	X	6
Zhang et al. (2015)	X	X	X	X			X	X	6

Note. Q1: Were the sample inclusion criteria clearly defined? Q2: Have the study subjects and environment been described in detail? Q3: Was the exposure measured validly and reliably? Q4: Were objective and standardized criteria used to measure the condition? Q5: Were confounding factors identified? Q6: Were strategies for dealing with confounding factors stated? Q7: Were the outcomes measured validly and reliably? Q8: Was appropriate statistical analysis used?

Results

Table 2 presents data on the selected articles, including information such as authors, year, country of origin of the study, objectives, method used, central theme, instruments, and sample characteristics. The results reveal a predominance of studies from the United States, Taiwan, China, Turkey, and other European, Asian, African, and Oceanian countries. No studies of Latin American origin were found. All research adopted an exploratory approach, highlighting the scarcity of experimental studies.

The total number of participants was 70,298. Some samples were composed exclusively of children or adolescents, while others combined these groups. Additionally, three studies included data from more than one report, collected through pairs of children or adolescents and their caregivers. Several variables related to parental mediation were identified, emphasizing the importance of this

practice for healthy development. Among these variables, mental health stands out, particularly in relation to depression, anxiety, self-esteem, technological use disorders, suicidal ideation, and well-being. Furthermore, there were studies related to parental mediation and social media, cyberbullying, parenting styles, and interpersonal relationships of children and adolescents.

Table 2This section provides data on article identifiers, authors, year, country, objectives, methodological design, central theme, and instruments used

	Authors	Country	Objectives	Variables	Sample	Age	Sample size
1	Barry & Kim (2023)	USA	Explore the interaction between social media usage, parental monitoring, mental health, self-perception, and the alignment of perceptions between parents and children while analyzing monitoring styles (active or restrictive) and adolescent adjustment issues.	Mental health.	Teenagers	14-17 teenagers 30-70 parents	N = 316 teenagers and parents
2	Geniş & Ayaz- Alkaya (2023)	Turkey	Investigate the prevalence of digital gaming addiction and social anxiety among teenagers, identifying risk factors and parental attitudes.	Parental attitudes; Mental health; Digital gaming disorder.	Teenagers	14-17	N = 1379
3	Görgülü e Özer (2023)	Turkey	Examine the role of parental control mediation in the relationship between escapism motivation, daily gaming duration, and gaming disorders in high school students.	Digital gaming addiction	Children and teenagers	11-13	N = 501 (n = 250 W; n = 251 M)
4	Schmuck et al. (2023)	Germany	Investigate the connection between parental control over smartphones, internet usage, and child selfesteem.	Mental health; Smartphone usage.	Children and teenagers	10-14	N = 1206
5	Eo & Lee (2022)	Korea	Explore the relationship between media use disorder in school-age children, health status, self-esteem, and parenting approaches.	Mental health: Problematic internet use.	Children	9	N = 1484
6	Günaydın et al. (2022)	Turkey	Analyze the relationship between problematic internet use by adolescents, emotional regulation challenges, and familial attitudes.	Parental attitudes; Mental health.	Teenagers	14-17	N = 5916

	Authors	Country	Objectives	Variables	Sample	Age	Sample size
7	Milosevic et al. (2022)	Europe	Examine the correlation between children's internet usage, life satisfaction, and European parental mediation.	Mental health.	Children and teenagers	9-17	N = 11000
8	Yao et al. (2022)	China	Understand the impact of parental psychological control on adolescents' problematic cell phone usage.	Problematic internet use; Smartphone usage.	Children and teenagers	9-19	N = 4999
9	Çevik et al. (2021)	Turkey	Investigate the links between excessive internet use, school burnout, parental supervision, and their effects on bullying and victimization.	Bullying/Cyber bullying; Problematic internet use; Mental health.	Teenagers	15-18	N = 362 (n = 108 W; n = 254 M)
10	Lung & Shu (2021)	Taiwan	Study the association between dissociative experiences and a heightened risk of problematic internet use.	Risk factors: Problematic internet use.	Teenagers	12	N = 17.694
11	Stevic & Matthes (2021)	Austria	Evaluate the role of parental mediation in the connection between smartphone use and loneliness in children aged 10 to 14.	Mental health; Smartphone usage.	Children and teenagers	10-14	<i>N</i> = 1.206
12	Wang & Ngai (2021)	China	Investigate the effects of personal and situational factors, internal states, and parental mediation on cyberbullying perpetration among adolescents.	Bullying/Cyber bullying; Mental health.	Children and teenagers	12-18	N = 1103 (n = 52,5% W; n = 47,5% M)
13	Biernesser et al., (2020)	USA	Explore parents' and children's perspectives on social media use by adolescents with depression and parents' experiences in monitoring this usage.	Mental health.	Children and teenagers	13-20	N = 21 teenagers and parents
14	Fu et al. (2020)	China	Examine how parental monitoring impacts adolescents' problematic cell phone use.	Smartphone usage.	Teenagers	13-20	N = 584
15	Padilla- Walker et al. (2020)	USA	Understand the role of parental media monitoring in adolescents' internalized behaviors, including media consumption time and multitasking.	Mental health.	Children and teenagers	10-20	<i>N</i> = 1155

	Authors	Country	Objectives	Variables	Sample	Age	Sample size
16	Chang et al. (2019)	Taiwan	Assess the prevalence of problematic smartphone use among Taiwanese children and related factors, including the role of parental mediation.	Smartphone usage.	Children	9-11	N = 2.621 children and 2.468 parents
17	Karaer & Akdemir (2019)	Taiwan	Investigate the relationship between parental styles, support systems, emotional regulation, and psychiatric disorders in internet-addicted adolescents.	Parental style; Mental health.	Children and teenagers	12-17	N = 176
18	Meeus et al. (2019)	Belgium	Examine the role of parental mediation styles and self-regulation in problematic mobile device use among preteens and adolescents.	Parental style: Smartphone usage.	Children	9-13	N = 516
19	Zandi Payam & Mirzaeido ostan (2019)	Iran	Investigate the relationship between online gaming addiction, cognitive distortions, parental styles, and narcissistic personality traits in high school students.	Parental style; Mental health; Digital gaming disorder.	Teenagers	16-18	<i>N</i> = 200
20	Fardouly et al. (2018)	Australia	Explore the relationship between parental time control on social media for pre-teens and mental health outcomes.	Parental attitudes; Problematic internet use.	Children	10-12	N = 528
21	Hsieh et al. (2018)	Taiwan	Analyze associations between psychosocial variables, psychological symptoms, and problematic internet use in Taiwanese children.	Parental attitudes; Problematic internet use.	Children	9-10	N = 6.233
22	Martínez- Ferrer et al. (2018)	Spain	Examine the relationship between parent-child violence, parental socialization styles, and problematic use of virtual social networks in adolescents.	Parental attitudes; Parental styles; Problematic internet use.	Children and teenagers	12-18	N = 2.399 (n = 49,8% W; n = 50,2% M)
23	Wright (2016)	USA	Investigate the moderating effect of parental mediation on the relationship between cyberbullying victimization and psychosocial adjustment difficulties in eighthgrade adolescents.	Bullying/Cyber bullying; Mental health.	Teenagers	13-15	N = 568 (n = 53% W; n = 47% M)

	Authors	Country	Objectives	Variables	Sample	Age	Sample size
24	Chang et al. (2015)	Taiwan	Explore the relationship between parental mediation and internet addiction in adolescents, along with its associations with cyberbullying, depression, and substance use.	Risk factors: Mental health.	Teenagers	12-15	N = 1.808
25	Wright et al. (2015)	China e USA	Explore the relationship between cyber victimization and adjustment difficulties in Chinese and American adolescents, considering mitigating factors such as social support and self-esteem.	Bullying/Cyber bullying.	Teenagers	13-15	N = 950 (n = 49% W; n = 52% M)
26	Zhang et al. (2015)	China	Investigate the underlying mechanisms in the relationship between temperament and problematic internet use in adolescents, including the mediating role of maladaptive cognition and the moderating role of parenting styles.	Parental styles: Problematic internet use.	Teenagers	14	N = 660 (n = 55% W; n = 45% M)
27	Singer et al. (2004)	USA	Examine the impact of exposure to violence, parental monitoring, and television viewing on childhood psychological trauma.	Risk factors.	Children and teenagers	7-15	N = 2.245 (n = 49,1% W; n = 50,9% M)

Note. USA: United States of America; W: Woman; M: Men.

Table 3 summarizes the main findings and limitations of each study. Overall, parental mediation emerges as a protective factor against cyberbullying and mental health problems in children and adolescents. In addition, the quality of the parent-child relationship was also identified as an important aspect for healthy development and reduced use of digital media. As for the limitations, the cultural specificity of the samples stands out, which compromises the generalizability of the data, the self-report data, which are subject to bias, and the cross-sectional design of the studies.

Table 3 *Main results and limitations of each study*

N	Main results	Limitations
1	A positive correlation exists between social media use and the incidence of adaptive problems in adolescents, such as depression, anxiety, and low self-esteem. Active parental monitoring can mitigate these issues, though a perceptual discrepancy between parents and adolescents remains.	Longitudinal studies are essential to understand the relationship between social media use and mental health. This study did not control for significant variables, such as pre-existing mental health conditions, which may affect the validity o the results.

	Main results	Limitations
2	Among the participants, 16.5% demonstrated digital gaming disorder, with males more susceptible. Longer gaming durations are associated with increased social anxiety and higher disorder risk.	The research was restricted to a single city, presenting challenges for generalizing the results. Additionally, using a limited set of instruments and potential bias in self-reports could compromise the robustness of the conclusions.
3	Excessive gaming shows adverse effects, including poor academic performance, diminished social skills, and increased aggressiveness. Older boys are more prone to excessive gaming, often driven by the need to escape negative emotions.	This study faces limitations associated with self-reports and the absence of longitudinal data. The COVID-19 pandemic may have also influenced the results, adding an uncontrolled external variable.
4	Children perceiving greater parental control over smartphone usage exhibit higher self-esteem. Conversely, more time spent online correlates with lower self-esteem. Parents exerting more smartphone control also tend to have higher self-esteem.	Relying on self-reports from parents and children, the study is subject to memory bias. Furthermore, specific types of smartphone use and other factors influencing child self-esteem were not considered.
5	In South Korea, 9.3% of school-aged children exhibit high media use disorder, and 22.5% are at risk. Low selfesteem in children increases the likelihood of media use disorder. Positive parenting practices, such as involvement and promoting physical activities, are linked to reduced media use disorder.	Research conducted in South Korea presents challenges in generalizing the results to other contexts. The lack of detailed media use and consideration of other factors associated with media use disorder in children limit the applicability of the findings.
6	Emotional regulation difficulties relate to problematic Internet use. Family attitudes and parental monitoring inversely correlate with such use. Educational tools and emotional regulation intervention programs are recommended.	The study was based exclusively on reports from adolescents in a specific region, using self-report scales, which may reflect a partial and limited view of the phenomenon studied.
7	Parental mediation is crucial for children's well-being, with those under high parental mediation experiencing greater life satisfaction. However, girls report lower life satisfaction than boys, irrespective of Internet use or parental mediation.	Self-reported data from children may not be accurate, and the study did not consider other variables impacting the relationship between internet use, parental mediation, and life satisfaction.
8	A positive association exists between parental psychological control and adolescents' excessive cellphone use, especially among girls, suggesting such control may contribute to excessive usage.	The study conducted in China is based on self-reports and is subject to cultural bias, which limits its applicability in other cultural contexts.
9	A positive correlation was found between problematic internet use and peer bullying among Turkish adolescents. Parental monitoring emerged as a protective factor against bullying and victimization, underscoring the importance of parental supervision.	The use of self-reported instruments in a small sample compromises the generalization of the results and the study's statistical power.
10	Dissociative experiences are identified as significant risk factors for problematic internet use in adolescents, more prevalent among boys.	The study in Taiwan uses self-reported measures and does not control for confounding factors, such as mental health or substance use, presenting limitations in generalizing the results due to cultural context and the cross-sectional nature of the research.
11	Active and restrictive parental mediation can moderate the relationship between smartphone use and loneliness in children. Active mediation is associated with less smartphone use, with girls reporting greater loneliness related to cellphone use than boys.	Small effect sizes and reliance on self-reported data, possibly influenced by social desirability or memory bias, question the robustness of the conclusions.
12	In China, 23.8% of study participants engaged in cyberbullying. Negative emotions, such as anger and frustration, are positively linked to cyberbullying, indicating that emotional regulation-focused interventions can be effective.	The study's cross-sectional design limits the ability to determine causal relationships; the sample, restricted to a Chinese city, limits the generalization of the results, and the focus on mediating effects of parental mediation is limited.

Main results Both parents and adolescents acknowledge social networks' positive aspects, such as maintaining contact and accessing mental health resources. However, negative aspects like cyberbullying, social comparison, and exposure to violent content are also noted. The pandemic has intensified social network use among depressed adolescents, many of whom increased their use due to isolation and anxiety. Evasion motivation was significant in the relationship between parental monitoring and excessive cellphone use among adolescents, indicating that shy adolescents are likelier to use cell phones to escape negative emotions or A negative association was observed between parental media monitoring and symptoms of internalization. However, internalization was more intense with greater media usage time, especially on social networks, games, and music. In Taiwan, 10.8% of fifth graders depend on smartphones, more commonly among boys. Active and 16 restrictive parental mediation was negatively associated with problematic smartphone use. Adolescents with internet addiction exhibited greater alexithymia, difficulties in emotional regulation, and disorders compared to the control group. They were also more likely to have parents with authoritarian parenting styles and lower emotional availability. Parental mediation that promotes autonomy intensifies the internalization of parental messages in children, favoring self-regulation. This form of mediation is more 18 effective in reducing problematic media use while controlling and inconsistent styles are associated with more problematic use. A significant positive correlation was identified between online gaming addiction, cognitive distortion, and narcissistic personality traits. Individuals addicted to games tend to exhibit distorted thinking patterns. Furthermore, a negative correlation was observed between online gaming disorder and authoritarian parental style, indicating that children of authoritarian parents are less likely to develop a gaming addiction. Parental monitoring of the time spent on social networks by pre-adolescents is associated with better mental health indicators, including reduced depressive 20 symptoms and increased life satisfaction. Girls spend more time on social networks and engage in more appearance comparisons than boys. The prevalence of problematic internet use in children was 10.8%, more common among boys. This disorder is related to symptoms of anxiety and depression. The

quality of the parent-child relationship is a crucial factor

in preventing internet addiction, with children who have

positive relationships with their parents presenting a

lower risk.

Limitations

The sample, self-selected and small in size, geographically and demographically limited, relies on self-reported data, which may compromise representativeness and generalization of the results.

Conducted in China and based on self-reports without controlling for confounding factors, the study's cross-sectional design restricts the possibility of drawing causal conclusions. It does not explore other mediators or moderators that could influence the results.

Based on self-reports from a national sample of adolescents, the cross-sectional study did not consider genetic influences, peer relationships, or socioeconomic status, factors that can significantly affect the results.

This study was conducted in primary schools in Taipei, Taiwan, and did not represent the general student population. The use of self-reported instruments and the cross-sectional design impose significant limitations on establishing causal relationships.

The absence of a healthy control group, gender imbalance, and lack of assessment of parental psychopathology limit the generalization of the results of this study, conducted in the specific cultural context of Turkey.

Based on self-reports and subject to potential biases and inaccuracies, the study used a cross-sectional design that did not allow for establishing causality and was limited to a specific geographic region.

The specific and limited sample and the use of self-reports may introduce biases in the study on online gaming disorder. Relevant social and environmental influences were not considered.

The correlational study focused only on restrictive parental mediation and used a limited measure to assess parental control. It did not establish causal directions and limited comparisons of preadolescents perceptions of social networks.

The unidimensional data collection based solely on children's reports restricts generalization to other cultural contexts. Factors such as access to technology and time on the internet were disregarded.

N	Main results	Limitations
22	The prevalence of child-to-parent violence (CPV) among adolescents is about 10%. CPV is associated with authoritarian and neglectful parenting styles, problematic social network use, and alexithymia, which hampers the identification, expression, and regulation of emotions.	The reduced sample size and data collection by self-report may introduce bias. The study did not include relevant variables, such as mental disorders in adolescents or the quality of parent-child relationships.
23	Among students, 68.7% used smartphones for more than five hours daily. Problematic smartphone use was positively correlated with separation anxiety, sensation-seeking, and attachment avoidance.	Using a convenience sample and self-administered questionnaires may result in biased responses. The study's cross-sectional design represents a significant limitation.
24	Adolescents who were victims of cyberbullying exhibited higher levels of depression, anxiety, and loneliness. Instructional parental mediation, focused on teaching adolescents how to manage cyberbullying, was associated with lower levels of depression and loneliness.	The sample, predominantly composed of white, middle-class adolescents, restricts the generalization of the results. The study did not consider other influencing factors in the relationship between cyberbullying and mental health, nor other parental mediation strategies beyond the restrictive.
25	Cyber victimization is related to psychological problems in adolescents, being less intense among Chinese. Parental and teacher mediation reduces victimization and improves psychological adjustment.	The cross-sectional design and execution in two specific cities limit long-term generalization and other cultural contexts. The study did not consider factors such as victimization severity and technology use frequency.
26	Feelings of seeking and anger/frustration are linked to problematic internet use in adolescents. Authoritarian and permissive parenting styles negatively influence young people's internet use.	Focusing only on maternal parenting styles may not provide a complete assessment of the family environment. Adolescents' reports might reflect parental practices perceived as more effective than those reported by parents.
27	About 40% of students suffered aggression at home and a third reported school violence. Lack of parental monitoring and excessive TV time are associated with trauma and aggressive behaviors.	The non-representative sample and cross-sectional design prevent the establishment of causal relationships. The focus on children from third to eighth grade and the lack of consideration of other factors that may affect children's mental health are significant limitations of this study.

Discussion

The excessive use of digital media by children and adolescents is linked to a variety of negative phenomena, such as problematic internet use, exposure to inappropriate content, organizational difficulties, and emotional problems (Reichert et al., 2021; Spritzer et al., 2023). In this sense, parental mediation plays an essential role in preventing risk factors and promoting healthy development. In the context of mental health, adolescents with low or no parental mediation have higher levels of anxiety, depression, low self-esteem, aggressiveness, and suicidal ideation, as well as reduced academic performance (Lee et al., 2023; Meeus et al., 2019; Singer et al., 2004). Thus, practices such as setting limits, monitoring, and communication, common in parental mediation, play a crucial role in preventing excessive use and its negative consequences for well-being.

Regarding online risk behaviors, such as cyberbullying, problematic internet use, and exposure to online violence, these phenomena represent threats to the integrity of children and adolescents in the digital age (Ramos et al., 2023; Romualdo et al., 2025). Through unsupervised use, users can protect themselves behind fake profiles and corroborate the practice of cyberbullying and the dissemination of hate speech, in addition to increasing the risk of victimization (Swider-Cios et al. 2023). In this context, parental mediation emerges as an essential shield to prevent these risk behaviors, since in addition to supervising content, it promotes autonomy and the internalization of guidelines, rules, and values established by parents in relation to the proper use of the internet (Meeus et al., 2019; Schmuck et al., 2023). In addition, studies indicate that excessive use of digital technologies, especially when not mediated by parents, is associated not only with greater exposure to violent and sexual content, but also with negative implications for the mental health of individuals (Barry & Kim, 2023; Neophytou et al. 2021; Singer et al., 2004).

Regarding parental mediation strategies, the most investigated were active and restrictive mediation, especially in relation to their moderating role in the relationship between smartphone use and children's health (Chang et al., 2019; Fardouly et al., 2018; Meeus et al., 2019). Active mediation was associated with lower internet addiction among adolescents and was negatively related to smartphone addiction (Hsieh et al., 2018; Stevic & Matthes, 2021), demonstrating its potential in promoting healthy internet use through guidance, modeling, and encouragement of online self-regulation. On the other hand, restrictive parental mediation was related to lower smartphone use. However, restrictive mediation was not shown to be a protective factor against online victimization, as it focuses more on limiting the time and frequency of use without directly interfering with the quality of the content consumed (Stevic & Matthes, 2021; Wright, 2016).

The results indicate a gender difference in the online activities carried out by children and adolescents. Boys showed a greater tendency to addiction to games, exposure to violent content, and the development of social anxiety and externalizing problems, such as aggressiveness, disobedience, and impulsivity (Rozgonjuk et al., 2023; Zandi Payam & Mirzaeidoostan, 2019). On the other hand, girls showed a greater propensity for Instagram addiction, self-esteem problems due to high social media consumption, higher levels of anxiety, and vulnerability to cyberbullying victimization (Lee et al., 2023; Stevic & Matthes, 2021). In addition, girls also demonstrate a greater benefit from parental mediation, as they tend to seek more parental help than boys (Yao et al., 2022).

Studies that included parental reports indicate a discrepancy in parents' perception of their effectiveness in parental mediation compared to their children's perception. Parents tend to report higher levels of mediation than adolescents, suggesting possible communication failures or an overestimation of the strategies adopted by parents (Barry & Kim, 2023; Schmuck et al., 2023). In addition, parenting styles were identified as a crucial aspect for the effectiveness of parental mediation. For example, more authoritarian parenting styles are correlated with emotional regulation difficulties. In this context, children are likely to seek the internet as a space for acceptance and escape from reality for self-regulation, increasing the risk of problematic and excessive use (Hsieh et al., 2018; Martínez-Ferrer et al., 2018). On the other hand, parents who adopt a more democratic parenting style and consistently practice parental mediation tend to have greater self-efficacy in the parental role and, consequently, a better perception of support and protection from their children (Schmuck et al., 2023).

Parental mediation stands out as an important aspect for the healthy development of children and adolescents. However, it is important to emphasize that, beyond this strategy, the quality of family relationships is also an essential factor for well-being, since parents' emotional involvement with their children promotes autonomy, self-regulation, and the creation of interests beyond the virtual environment (Chang et al., 2015; Eo & Lee, 2022; Hsieh et al., 2018). Thus, functional family bonds, combined with parental mediation, are associated with greater internalization of values and rules by children, which favor protection against the risks posed by the internet (Meeus et al., 2019). It's important to recognize a limitation in the selection of articles for this review. The criteria primarily focused on studies that examine the negative outcomes associated with internet use, which may have caused us to overlook research showcasing the potential benefits of digital media, particularly when supported by parental involvement. Recent literature suggests that digital engagement can enhance cognitive, emotional, and social development in children and adolescents, especially when parents are actively and positively involved. This omission may have led to a skewed representation of the overall picture, emphasizing the need for caution when generalizing the results.

Conclusion

A general widespread use of the internet by children and adolescents brings along exposure to various risks such as cyberbullying, dependency, and emotional issues like depression, anxiety, and low self-esteem. In this context, parental mediation is crucial in supervising, guiding, and controlling access to certain content and excessive use frequency. Despite providing a comprehensive overview of scientific production in this area, this study highlights the need for more comprehensive research that includes longitudinal aspects, cultural diversity, and the use of standardized instruments.

It is important to acknowledge the limitations of this article. The research was limited to studies from only two databases, which may have excluded relevant works from other sources due to limitations in the number of articles processed by the ASReview software. Additionally, the article was selected through artificial intelligence software, which may introduce bias depending on the data quality and

algorithm used. Most of the analyzed studies adopt a cross-sectional design, making it difficult to establish causal relationships between parental mediation and its impacts on children and adolescents' behavior and mental health. Finally, the diversity in methodologies and assessment instruments makes direct comparison and generalization of results challenging.

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