

Systematic Review on Addiction to Social Networks in Adolescents between 2020-2022

Revisión sistemática sobre la adicción a las redes sociales en
adolescentes latinoamericanos entre el 2020-2022

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Summary

The COVID-19 pandemic showed the current relevance of the use of online communication technologies, including social networks, for daily life. However, this growing advance of virtual media can lead to problematic behaviors similar to those of addiction; mainly in adolescents, who are frequent users of the networks. The present study sought to analyze the manifestation of addiction to social networks in this population, within the Latin American area, for which a systematic review of studies carried out in the period from 2020 to 2022 was carried out. 230 references from specialized databases were obtained, which were analyzed following the PRISMA model standards and according to eligibility criteria, based on the PICO strategy. A total of 10 studies, with a total sample of 22,791 participants, mostly women, were included for the development of the review, being classified as high quality. Regarding the results, medium and high levels of addiction to social networks were evidenced in more than half of the adolescents evaluated. This review synthesizes the main findings and conclusions obtained from research carried out in Latin American countries, contributing to the knowledge of the patterns of dysfunctional use of virtual platforms by the adolescent population and considering the probable negative effects on mental health as a result of the social isolation measures adopted by the pandemic.

Keywords: Addiction; Social networks; Teenagers; Pandemic; Systematic review.

Resumen

La pandemia del COVID-19 mostró la actual relevancia del uso de las tecnologías de la comunicación en línea, entre ellas las redes sociales, para la vida cotidiana. Sin embargo, este avance creciente de los medios virtuales puede acarrear conductas problemáticas similares a las de la adicción; principalmente en los adolescentes, quienes son usuarios frecuentes de las redes. El presente estudio buscó analizar la manifestación de la adicción a las redes sociales en esta población, dentro del ámbito latinoamericano, para ello se hizo una revisión sistemática de estudios realizados en el periodo del 2020 al 2022. Se obtuvo 230 referencias de bases de datos especializadas, las cuales fueron analizadas siguiendo estándares del modelo PRISMA y de acuerdo a criterios de elegibilidad, basados en la estrategia PICO. Un total de 10 estudios, con una muestra total de 22.791 participantes, en su mayoría mujeres, fueron incluidos para el desarrollo de la revisión, siendo catalogados como de alta calidad. En cuanto a los resultados, se evidenciaron niveles medios y altos de adicción a las redes sociales en más de la mitad de los adolescentes evaluados. Esta revisión sintetiza los principales hallazgos y conclusiones obtenidas de las investigaciones realizadas en países de América Latina, aportando al conocimiento de los patrones de uso disfuncional de las plataformas virtuales por parte de la población adolescente y considerando los probables efectos negativos en la salud mental producto de las medidas de aislamiento social adoptadas por la pandemia.

Palabras claves: Adicción; Redes sociales; Adolescentes; Pandemia; Revisión sistemática.

INTRODUCTION

Nowadays, the relevance acquired by the Internet, and everything associated with Information and Communication Technologies (ICT) has drastically transformed our daily lives. Social media have grown at a high rate in the virtual world, becoming one of the primary means of social interaction, especially for adolescents, who are the age group that most frequently and commonly uses digital devices (Aliverdi et al., 2022; Gómez-Urrutia & Jiménez, 2022). Likewise, although the use of social media, since before the global health emergency of COVID-19, already stood as a widespread experience among adolescents capable of influencing their psychosocial development (Pertegal-Vega et al., 2019), it is from the context of mandatory social isolation, along with other preventive measures to contain the pandemic, in which the effects of high use of the Internet and social network on the mental health of adolescents became more conspicuously evident (Fernandes et al., 2020).

This increasing intensive use of online communication technologies reveals the possibility of moving from frequent non-problematic use of social media to the emergence of problematic or maladaptive behaviors that negatively affect the daily activities, interpersonal relationships, and physical health of adolescents (Díaz-Vicario et al., 2019; Becerra et al., 2021). It can even derive from behavioral disorders that undermine social coexistence (Medina & Regalado, 2021) and express indicators similar to those of substance addiction, for example, withdrawal or discomfort that appears when the connection is suspended or restricted, and tolerance; that is, the need to be increasingly more time connected (Kuss & Griffiths, 2017; Servidio, 2021).

In this sense, addictive behavior to social media is considered a subtype of Internet addiction, characterized mainly by the repetitive, compulsive, and prolonged use of these virtual applications, generating an inability to control or interrupt their consumption (Vargas-Serrudo et al., 2021). For their part, Escurra and Salas (2014) argue that this construct has three factors: 1) obsession with social media, related to constantly thinking and fantasizing about what is happening on social media, 2) lack of personal control, linked to the lack of control in the use of social media and the subsequent neglect of daily activities, and 3) excessive use of social media, alluding to the inability to end or decrease the time of use of these applications.

Similarly, intensive exposure to these technologies brings negative psychological consequences, such as difficulties in cognitive flexibility, affective impoverishment, increased levels of distress and anxiety, irritability, and problems in working memory (Peña et al., 2019; Valencia-Ortiz et al., 2021). These unfavorable aspects are intensified in adolescents because they continue developing as people and are still developing the personal resources to adequately face the situation posed. Moreover, due to the desire to be accepted by the social group through trendy practices, many of them are unaware of the compulsive use or addiction to virtual social media and the Internet, or they admit not being able to control themselves or just not wanting to do so (Valencia-Ortiz et al., 2020).

Regarding the empirical context of the topic of interest, Huamani (2022) analyzed various references from the last four years on the influence of Virtual Social Media (VSM) on the mental health of Latin American adolescents. From his relevant findings, he evidenced that the use of

these technologies increased during the COVID-19 pandemic, both in academic and social environments. In addition, he revealed various effects of recurrent use of VSMs on mental health, such as depression, anxiety, irritability, poor academic performance, and behavioral disorders. In turn, Huamán-Moya et al. (2022) conducted a systematic review of articles produced between 2012 and 2021 to analyze the most relevant effects of social media addiction in adolescents, mainly Latin Americans. Their results showed a high percentage (44%) of young people with problems of excessive use of VSMs and various psychological and social consequences related to this addiction. Finally, Troya et al. (2022) analyzed the impact of social media on the mental health of Spanish adolescents by reviewing literature on the scientific evidence produced in 2021 and 2022. The articles studied revealed that the excessive use of social media aggravated various mental disorders, both pre-existing and those arising in the COVID-19 pandemic. They also concluded that the impact of VSMs is more negative than positive, so they recommend focusing on prevention and promotion to minimize their effects on psychological well-being.

Furthermore, globally, as a repercussion of the pandemic, adolescents have changed the traditional ways of doing things, devoting much of their time to using virtual media, whether to study, play online games, watch movies, conduct business, communicate, and exchange digital content (Amador-Ortiz, 2021; Dong et al., 2020; Klimenko et al., 2021). Among the virtual social media most used by the so-called digital generation, made up of people aged between 12 and 25 (Gómez-Urrutia & Jiménez, 2022), are TikTok, considered the fastest user-growing, and others more consolidated on the Internet such as Instagram, WhatsApp, YouTube, Snapchat, Facebook, Telegram, and Twitter (González-Martínez & Villamar, 2022; Ochoa & Barragán, 2022).

The present post-pandemic reality shows us that technological media are useful tools in everyday tasks and can provide various benefits for the vital development of adolescents, such as access to varied and timely information, communication improvement and interaction with others, participation in collaborative activities, fostering creativity, and aiding in learning processes (Rojas-Jara, 2018; Ramírez-Gil et al., 2021). Another positive feature of ICTs is that they satisfy the autonomy needs of adolescents, influencing the building of their identity and strengthening their confidence and self-esteem by obtaining emotional support from a certain group (Moro et al., 2022).

However, all the effects of the emergency measures adopted to counteract the pandemic on the mental health of adolescents are not yet visible (Fegert et al., 2020). In this sense, due to the negative consequences of the situation imposed by the COVID-19 pandemic, it is necessary to address the problems related to the excessive use of virtual media and pay greater attention to the difficulties that arise when adolescents adopt lifestyles centered on the digital world (Medina & Regalado, 2021; Moro et al., 2022).

Thus, from a conceptual point of view, this systematic review will cover the need for theoretical studies that examine and systematize the findings of empirical research on the topic of interest in the adolescent population, considering the context of the pandemic. Also, at a methodological level, it will constitute a reliable starting point and provide information for future studies on the topic. Finally, the contributions will have social relevance as they will serve as input for prevention actions for the benefit of mental health and quality of life of adolescents.

Therefore, this work aims to analyze the phenomenon of social media addiction in Latin American adolescents from 2020 to 2022, emphasizing the level of presence of addictive behaviors and the identification of variables associated with the excessive consumption of these technologies.

METHOD

Type of Study

The type of study conducted was substantive research as it was oriented to describe the phenomenon and identify the characteristics of its current state to reach a general understanding (Sánchez et al., 2018). Likewise, a theoretical design of systematic literature review was implemented, in which evidence from primary studies of a given topic was analyzed and interpreted, based on predefined inclusion and exclusion criteria, to achieve the proposed objective in a rigorous, impartial and replicable way (Galvão & Ricarte, 2019).

Inclusion and Exclusion Criteria

Criteria were established to delimit the choice of scientific literature and ensure the relevance of the studies found. Thus, based on the PICO strategy, aspects such as population, phenomenon of interest, context, and study design were considered to apply the inclusion and exclusion criteria (Aromataris, 2020). First, only scientific articles were selected as they undergo a more exhaustive evaluation before being published. They are usually reviewed by at least two ad hoc reviewers in the blinded review format (Pertegal-Vega et al., 2019). Regarding the population, studies that specified a sample of secondary or higher education participants aged between 11 and 20 were considered, excluding those that covered a wider age range or whose population group had some diagnosed pathology. Regarding the phenomenon of interest, empirical studies that explored the presence of addictive behaviors due to problematic use of social media in adolescents were selected, removing those that independently analyzed the excessive use of the Internet or cell phones. Regarding the context, Latin American productions made between 2020 and 2022 were included. Finally, for the design, quantitative articles linked to the topic were incorporated, removing secondary, theoretical, qualitative, and instrumental research, reviews, and meta-analysis.

Procedure

PRISMA model standards were used in terms of protocol, search process, selection, and result synthesis (Page et al., 2021) to ensure objectivity in the review of scientific publications. In this sense, a first search was carried out in research platforms specialized in Psychology, Education, Medicine, and Health. The following electronic databases were reviewed: Redalyc, SciELO, Dialnet, APA PsycInfo, Scopus, Web of Science, Worldwide Science, and PubMed. Search terms that combined keywords in Spanish and English, such as "addiction to social media" AND "adolescents" and "addiction to social media" AND "high school students" were established. During the filtering, the relevance of the primary sources was considered with respect to the presence of the descriptors within the indexing elements such as title, abstract, and topic. In the

second stage, the articles that met the previously established inclusion and exclusion criteria were fully reviewed. Then, the core information of each of them was synthesized in a table, according to the objectives, for the descriptive and interpretative analysis of the findings.

Data Analysis

The quality of the selected articles was determined using the Scale to Evaluate Scientific Articles in Social and Human Sciences (SSAHS) by López-López et al. (2019). This instrument consists of 19 items and eight sections (abstract: 3 items, introduction: 2 items, methodology: 4 items, results: 3 items, discussion: 3 items, references: 1 item, appendices: 1 item, style, and format: 2 items). It has a content validity quantified by an Aiken's V coefficient above 0.80 and a Cronbach's Alpha value of 0.937 to measure reliability. The minimum score for an article is 19 points (20%), and the maximum is 95 points (100%), following a rating scale from 1 (very low level) to 5 (very high level). In addition, the tool establishes the following categorization: high quality (87.4% to 100%), which may include articles without recommendations and with limited discussion, medium quality (68.4% to 83.1%), which incorporates contributions with a regular methodology and results that should be supplemented with tables or figures, and low quality (53.7% to 62.1%), when the studies present a very limited discussion, regular introduction and little contribution to knowledge of the topic of interest (Prieto, 2022). For this review, only publications rated as high quality were considered.

Ethical Considerations

The study respected research ethics standards and Peruvian regulations related to good practices and scientific integrity to ensure that all aspects of the research are conducted accurately, honestly, and responsibly (National Council for Science, Technology and Technological Innovation [CONCYTEC], 2019).

RESULTS

The most important results of the review conducted are shown below, beginning with a description of the bibliographic search and selection process, and then presenting the general characteristics of the articles, their methodological particularities, and the relevant data related to the purpose of this study.

The scientific articles on the topic were located between September and November 2022. Eight electronic databases were searched, with the following results: Redalyc (n=38), SciELO (n=12), Dialnet (n=35), APA PsycInfo (n=8), Scopus (n=18), Web of Science (n=17), World Wide Web (n=67) and PubMed (n=35). A total of 230 documents were found, of which 153 were removed as duplicates. After reviewing the title and abstracts of the remaining records, 39 publications were removed because they were non-empirical studies, leaving 38 to be examined following the eligibility criteria. After this process, 21 articles that did not meet the inclusion criteria were removed, so that 17 documents were identified for quality analysis using the SSAHS. Once this scale was applied, seven studies were also excluded, totaling ten studies that were included for the review. Figure 1 shows the flowchart of the process described.

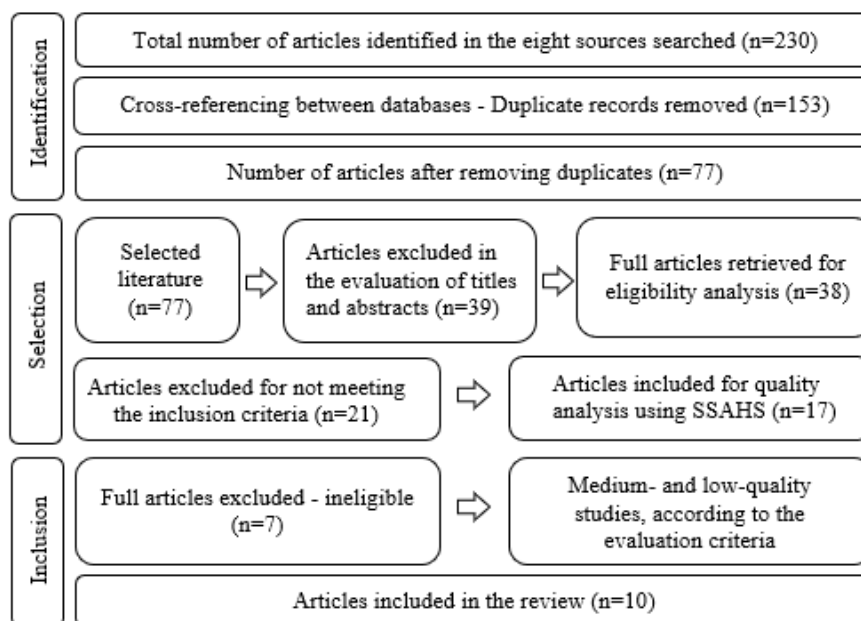


Figure 1.
PRISMA flowchart of the selection of reviewed articles

Source. Elaborated by the author.

Although the search for articles considered the period from 2020 to 2022, the number of productions on the topic was variable in that period, with 2021 and 2022 having the highest number of productions ($n=8$). Regarding the country of origin of the research, they were mostly conducted in Peru (Chiza et al., 2021; Estrada & Gallegos, 2020; Roque et al., 2022; Solís & Quispe, 2021; Villalba et al., 2021; Yana-Salluca et al., 2022), followed by Colombia (Acosta et al., 2022; Klimenko et al., 2021), and Mexico (Rendón et al., 2022; Valencia-Ortiz et al., 2021). Table 1 shows the locations and general characteristics of the studies analyzed.

The articles were published in nine different journals, distributed in four thematic areas: Psychology, Health Sciences, and Education, especially Psychology and Health Sciences (70%). The sample size ranged from 117 to 17,600 participants, with 30% of the research reviewed having a sample larger than 1,000 people. The participants' ages ranged between 11 and 20 years old, with a higher concentration between 15 and 17 years old (90%), the age bracket corresponding to the stage called middle adolescence (Hidalgo-Vicario & Ceñal, 2014). Likewise, almost all the studies analyzed included secondary school students ($n=9$). Only one study was conducted with the participation of first-years university students (Villalba et al., 2021). Moreover, publications with participants of both genders were more frequent ($n=8$), with the female population being the majority in 60% of the studies. Only two articles did not specify the gender of the participants (Solís & Quispe, 2021; Rendón et al., 2022).

Similarly, it should be noted that only two studies in this review analyzed the phenomenon of social media addiction by the gender of the participants (Klimenko et al., 2021; Yana-Salluca et al., 2022). Although no significant differences between genders were evidenced, one research identified for some dimensions higher levels of risk of addiction to social media and the Internet in women (Klimenko et al., 2021). Likewise, the other study showed a difference of 0.5% for the

female gender with respect to the presence of addictive behaviors to social media (Yana-Salluca et al., 2022).

Table 1.

General characteristics of the publications selected for the review.

Research Study	Type/Design	Instrument	Psychometric properties
Chiza et al. (2021)	Correlational, non-experimental and cross-sectional	Social Media Addiction (SMA) Questionnaire.	Content validity (V= .886) and reliability (α = .94).
Estrada y Gallegos (2020)	Correlational, non-experimental and cross-sectional	Social Media Addiction (SMA) Questionnaire.	Content validity (V= .912) and reliability (α = .901).
Roque et al. (2022)	Correlational, non-experimental and cross-sectional	Social Media Addiction (SMA) Questionnaire.	Content validity (V= .85) and reliability (α = .88).
Solis y Quispe (2021)	Correlational, non-experimental and cross-sectional	Social Media Addiction Risk Scale (SMARS)	Content validity (V= .99) and reliability (α = .96).
Villalba et al. (2021)	Correlational, non-experimental and cross-sectional	Social Media Addiction (SMA) Questionnaire.	Construct validity (KMO= .968, $\chi^2=31648,228$, $p= .00$) and reliability (α = .944).
Yana-Salluca et al. (2022)	Correlational, non-experimental and cross-sectional	Social Media Addiction (SMA) Questionnaire.	Construct validity ($p> .0005$) and reliability (α = .965).
Acosta et al. (2022)	Descriptive, non-experimental and cross-sectional	Social Media Addiction (SMA) Questionnaire.	Content validity (V= .886) and reliability (α = .95).
Klimenko et al. (2021)	Correlational, non-experimental and cross-sectional	Adolescent Social Media and Internet Addiction Risk Scale (ASMI-ARS)	Construct validity (KMO= .90, $\chi^2=6138.89$; $p< .001$) and reliability (α = .90).
Rendón et al. (2022)	Correlational, non-experimental and cross-sectional	Internet Addiction Test (IAT)	Content validity (V= .835) and reliability (α = .862).
Valencia-Ortiz et al. (2021)	Descriptive, non-experimental and cross-sectional	Social Media Addiction Scale. Student Form (SMAS.SF)	Construct validity (KMO= .96, $\chi^2=12680.88$, $p= .00$) and reliability (α = .926).

Source. Elaborated by the author.

Regarding the assessment of the quality of the studies, it was verified that all met the items of the SSAHS checklist, reaching 95.8% of the maximum score in the total number of articles, so they were classified as high quality.

Table 2 shows the methodological characteristics of each study analyzed in the review. All the articles opted for a non-experimental cross-sectional design since the variables were not manipulated but were analyzed as they were expressed in their environment, and data were collected at a single point in time. In addition, most articles were correlational in scope (80%), that is, they sought to know the relationship among variables, the remaining ones being descriptive (Acosta et al., 2022; Valencia-Ortiz et al., 2021). Regarding the instruments used, all the studies conducted analyses to obtain evidence of validity (content or construct) and reliability

in their respective samples, obtaining satisfactory values for both indices. Likewise, 50% of the studies applied questionnaires and/or scales adapted to their national contexts. Similarly, 40% collected information collectively through virtual forms.

Table 2.
Methodological characteristics of the selected studies

Research Study	Type/Design	Instrument	Psychometric properties
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Villalba et al. (2021)	Correlational, non-experimental and cross-sectional	Social Media Addiction (SMA) Questionnaire.	Construct validity (KMO= .968, $\chi^2=31648,228$, $p= .00$) and reliability (α = .944).
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Klimenko et al. (2021)	Correlational, non-experimental and cross-sectional	Adolescent Social Media and Internet Addiction Risk Scale (ASMI-ARS)	Construct validity (KMO= .90, $\chi^2=6138.89$; $p< .001$) and reliability (α = .90).
Rendón et al. (2022)	Correlational, non-experimental and cross-sectional	Internet Addiction Test (IAT)	Content validity (V= .835) and reliability (α = .862).
Valencia-Ortiz et al. (2021)	Descriptive, non-experimental and cross-sectional	Social Media Addiction Scale. Student Form (SMAS.SF)	Construct validity (KMO= .96, $\chi^2=12680.88$, $p= .00$) and reliability (α = .926).

Source. Elaborated by the author.

Regarding the objectives of the articles reviewed, those that aimed to measure the degree of relationship between social media addiction and other variables within a particular context predominated (80%), of which only two presented results with correlations interpreted as high and significant (Estrada & Gallegos, 2020; Yana-Salluca et al., 2022). Likewise, the samples reported high levels of social media addiction, ranging from 11% to 75% of the total number of participants. It is noteworthy that 70% of the studies reported prevalence percentages, mentioning the strategy used, while the rest did not report any percentages (Acosta et al., 2022) or used predefined scores to categorize the prevalence of social media addiction in their respective samples as medium or moderate (Klimenko et al., 2021; Valencia-Ortiz et al., 2021).

Table 3 summarizes the aspects above mentioned, including the main results and conclusions of the research analyzed in this review.

Table 3.
Summary of the selected articles.

Authors and year	General objective	Main results	Conclusions
Chiza et al. (2021)	To determine the relationship between social media addiction and cyberbullying	Positive, low and significant correlation between both variables ($\rho = .381$, $p = .00$). Presence of social media addiction: 35% of total.	Participants with a high level of social media addiction show high indicators for cyberbullying.
Estrada y Gallegos (2020)	To determine the relationship between family functioning and social media addiction	Inverse, high and significant correlation between both variables ($\rho = -0.843$, $p = .000$). Presence of social media addiction: 40% of total.	Participants with inadequate levels of family functioning show high levels of social media addiction.
Roque et al. (2022)	To determine the relationship between social media addiction and aggressive behavior	Positive, weak and significant correlation between variables ($r = .242$, $p = .000$). Presence of social media addiction: 24.3% of total.	The more participants use social media, the more likely they are to exhibit aggressive behavior.
Solís y Quispe (2021)	To determine the relationship between perceived social support and social media addiction risk.	Indirect, low and significant correlation between the variables ($r = -0.350$, $p = .000$). Presence of social media addiction: 49.7% of total.	The participants with high scores in perceived social support have a lower social media addiction risk.
Villalba et al. (2021)	To analyze the relationship between technological acceptance and social media addiction.	Direct, weak and significant correlation between the variables ($r = .211$, $p = .000$). $P = .4593$, $1 - \beta = .997$. Presence of social media addiction: 11% of total.	In its particular context, the acceptance of technological devices is related to possible social media addiction.
Yana-Salluca et al. (2022)	To determine the relationship between social media addiction and academic procrastination.	Direct, high and significant correlation between the variables ($r = .710$, $p = .001$). Presence of social media addiction: 75% of total.	The participants with high levels of social media addiction exhibit higher tendency to academic procrastination, with female students showing higher addiction.
Acosta et al. (2022)	To describe the levels of social media addiction and self-image.	Presence of social media addiction: 40.2% of total.	Students' self-image is not altered by social media addiction. Individual and family conditions determine the functional use of social media.
Klimenko et al. (2021)	To determine the relationship between social media addiction risk and life skills.	Median, negative and significant correlation between variables ($r = -0.475$, $p = .009$). Median level in total addiction risk, on the scale of 1 to 4: M 2.5 (Dt 0.6)	Deficiencies in adolescents' soft skills could be related to increased social media addiction risk. The development of protective factors contributes to the responsible use of social media.
Rendón et al. (2022)	To study the relationship between sexual behavior and social media addiction	There is no significant relationship between the variables, with a value of $p > .05$.	The frequent use of social media by adolescents does not necessarily lead to risky sexual behaviors.
Valencia-Ortiz et al. (2021)	To analyze perceptions on the levels of social media addiction.	H_0 is rejected at a significance level $p \leq .001$. A moderate effect size was obtained for social media ($t = -37.550$).	Students believe that their uses of social media do not create either addiction or other types of risk, while the faculty is of the opposite opinion. This situation suggests the need for training actions on digital competencies to make appropriate use of social media.

Source. Elaborated by the author.

DISCUSSION

This review aimed to analyze the phenomenon of social media addiction in Latin American adolescents according to the scientific literature produced between 2020 and 2022. In this regard, the findings obtained were detailed according to the systematization of the main results and conclusions. First, it was found that in the period indicated, most studies reported high levels of social media addiction in more than a third of the adolescent population (Acosta et al., 2022; Chiza et al., 2021; Estrada & Gallegos, 2020; Klimenko et al., 2021; Solís & Quispe, 2021; Yana-Salluca et al., 2022). This situation is related to what is proposed by Dong et al. (2020) and Fernandes et al. (2020) who evidenced the influence of the COVID-19 pandemic, specifically that of the mandatory social isolation measures, on the increase in the frequency and duration of the use of social media and the Internet by principally children and adolescents, which would generate negative consequences on mental health, expressed in the development of addictive behaviors. It also agrees with Aliverdi et al. (2022) regarding the fact that, at present, virtual social media are growing fast and are the principal medium through which adolescents interact.

Beyond the frequency of addictive behaviors, the possible effects on adolescents' mental health stand out. In this regard, the studies analyzed have reported a series of negative consequences related to the appearance of violent behaviors, neglect of daily activities, and the presence of cognitive distortions that prevent the perception of problematic use of social media (Chiza et al., 2021; Roque et al., 2022; Valencia-Ortiz et al., 2021; Villalba et al., 2021; Yana-Salluca et al., 2022). These findings are consistent with what was found by Becerra et al. (2021), Valencia-Ortiz et al. (2021), and Medina & Regalado (2021) on the presence of psychosomatic problems derived from the maladaptive use of online communication technologies, which negatively affect daily activities, social relationships, physical health (poor sleep quality, obesity, vision impairment) and psychological adjustment of adolescents. Such unfavorable aspects are intensified at this evolutionary stage due to the vulnerability involved, as people are not yet fully autonomous and are exposed to various risky situations (Valencia-Ortiz et al., 2020).

With respect to the main results, the levels of perceived social support were indirectly related to the risk of social media addiction, that is, the perception that adolescents have of adequate support, attention, and consideration, mainly from their families, acts as a protective factor against different problematic situations, such as social media addiction (Solís & Quispe, 2021). This contribution suggests the importance of considering protective factors in adolescence, considering the findings of Huamani (2022) and Troya et al. (2022) that the COVID-19 pandemic worsened various psychological problems so that, in general, the impact of the use of social media in the youth population was negative.

Furthermore, the so-called soft skills were negatively and moderately related to the risk of social media addiction. Therefore, the development of socio-emotional skills and life skills could prevent the risk of addiction to the use of these media (Klimenko et al., 2021). Along these lines, Acosta et al. (2022) pointed out that individual, social, and family conditions influence coping styles and the formation of personal protective resources in the face of adverse events.

A high and positive correlation was also evidenced between academic procrastination and social media addiction, with a higher prevalence of the latter variable in the female gender (Yana-

Salluca et al., 2022). These results can be compared with the conclusions of Amador-Ortíz (2021) with respect to the significant association between academic failure and social media addiction, making a negative impact on academic performance more likely in students with high social media use. Moreover, with respect to differences in the risk of social media addiction by gender, the results of Klimentko et al. (2021) confirmed a higher tendency in adolescent females to develop addictive behaviors related to the use of social media.

Similarly, weak positive correlations were found between social media addiction and cyberbullying (Chiza et al., 2021), aggressive behavior (Roque et al., 2022), and acceptance of technological devices (Villalba et al., 2021), which is linked to the findings of Moro et al. (2022) on the correlation, with high scores, between the abusive use of social media and video games with antisocial behavior and bullying.

Furthermore, one of the articles pointed out that, in the case of adolescents aged between 15 and 19, sexual behavior and addictive use of social media are independent of each other (Rendón et al., 2022). These results contrast with Peña et al. (2019) who argue that the referred addiction is also linked to surfing and interacting on sexual concerns or topics since these audiovisual platforms, being Internet spaces, allow access to all kinds of information, regardless of whether it is appropriate or not, which influences the knowledge and attitudes of users.

Additionally, it has been found that, in the analysis of the conclusions, descriptive-cross-sectional studies emphasize the importance of establishing psychoeducational actions that allow students to develop the digital competencies and emotional self-regulation necessary to make functional use of social media and can prevent risky behaviors associated with exposure to technologies since they recorded medium and high levels of social media addiction in the samples evaluated (Acosta et al., 2022; Valencia-Ortiz et al., 2021). In this sense, it is related to what was pointed out by Medina and Regalado (2021), Huamani (2022), and Troya et al. (2022), referring to the fact that the COVID-19 pandemic and the social isolation measures have aggravated the dependence on social media and the Internet, especially in adolescents and young people. Therefore, they proposed implementing strategies that contribute to the responsible use of communication and information technologies.

Regarding the conclusions of the correlational studies, they have shown consistency with their proposed objectives (see Table 3), with respect to finding a relationship between social media addiction and other variables, although with different degrees of association between them. These findings support what is stated by Fegert et al. (2020) that further research is needed to assess the implications of policies enacted to contain the COVID-19 pandemic on the mental health of children and adolescents and identify risk factors associated with social media addiction to prevent future negative consequences.

Finally, in reviewing the selected studies, there were some limitations, such as the data since only articles published in Spanish and English were considered as the latter language has greater international visibility, leaving aside publications in Portuguese, which is spoken mainly in Brazil, a country that belongs to the Latin American sphere. Similarly, difficulties were encountered in filtering the bibliography to obtain an adequate number of articles according to the eligibility criteria. Likewise, another limitation in this work is related to the type of study

carried out since it does not allow extrapolation to the general population, using statistical techniques, of the results extracted from the sample analyzed, as would be the case in a meta-analysis (Escrig et al., 2021). Nevertheless, the results found allow us to highlight the importance of analyzing and addressing the consequences of the phenomenon of social media addiction in adolescents from a peri-post pandemic perspective.

CONCLUSIONS

Based on the evidence found and according to the objective of analyzing the phenomenon of social media addiction in adolescents in the Latin American and the COVID-19 pandemic contexts, this review has found that most studies were conducted between 2021 and 2022, were from Peru, covered a total sample of 22,791 participants, with a predominance of females, of an age bracket corresponding to middle adolescence, and who are secondary school students. Likewise, all the articles analyzed had a non-experimental cross-sectional design, being eight correlational and two descriptive. In addition, all reported evidence of validity and reliability of the instruments used, evaluating the topic of interest mainly with the Social Media Addiction (SMA) Questionnaire.

Furthermore, the most frequent objectives in the studies reviewed were those that sought to determine the degree of relationship of addictive behavior to social media with various variables, which led to the conclusion that deficiencies in the attributes of a family when facing problematic situations, as well as low levels in the perceived social support system and the poor development of both cognitive and socioemotional personological resources, could be related to the increased level of addiction to these technologies in adolescents.

Similarly, at a general level, the findings suggest that social media-related addictive behaviors can lead to postponing the academic activities of adolescent students, negatively impacting their school performance. Also, it was found that participants with a high level of social media addiction exhibit a high predisposition to engage in cyberbullying, experience interpersonal conflicts, manifest aggressive behaviors, and inappropriately incorporate the use of technologies in their daily lives.

However, it is important to add as a conclusion that the continuous use of these virtual platforms does not necessarily imply the alteration of the dimensions of self-concept, such as self-image, or the presence of risky sexual behaviors, since the latter factor depends basically on the age at which adolescents begin their sexual life, being a highly variable aspect.

In addition, evidence has been found in the difficulties that adolescents may have in perceiving harmful behaviors related to the use of the digital tools above mentioned, which could lead to a distortion between the real and virtual worlds. This situation is complicated when there is no adequate parental supervision, so it would be necessary to establish training programs for the responsible use of new technologies in educational centers.

In another vein, most studies reported data on the prevalence of social media addiction in the adolescents evaluated, with medium and high levels predominating in more than 50% of the participants. Although not all the studies analyzed the differences of those addictions by gender,

an insignificant variation between both genders was identified, with a slightly higher tendency in female adolescents to develop patterns of dysfunctional uses of new technologies.

Based on the above, it is necessary to emphasize that the coronavirus pandemic has accelerated the massive use of online communication technologies, mainly among children and adolescents, and that the full psychosocial effects of the social isolation measures adopted in response to the health emergency have yet to be fully understood. Therefore, based on the data provided by the selected studies, the need to prevent, evaluate, and intervene in the possible negative impacts of COVID-19 confinement on adolescents' mental health from multiple levels, such as the individual, family, school, and community, is highlighted.

Finally, despite the limitations of this review, it was possible to understand aspects linked to the general objective outlined; in this sense, it is recommended to continue deepening research on this topic through more complex and sophisticated designs, as well as assess the practical uses of the findings revealed for the development of psychoeducational strategies to address the problem of social media addiction in adolescents, considering the context of the pandemic and post-pandemic.

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REFERENCES

- Acosta, S., Ramírez, A., Saldarriaga, Y., Uribe, J. & Ruiz, N. (2022). Use of social networks and self-image in adolescents from Educational Institutions in Antioquia, Colombia. *Revista Senderos Pedagógicos*, 13(1), 1-29. <https://doi.org/10.53995/rsp.v13i13.1123>
- Aliverdi, F., Farajidana, H., Tourzani, Z. M., Salehi, L., Qorbani, M., Mohamadi, F. & Mahmoodi, Z. (2022). Social networks and Internet emotional relationships on mental health and quality of life in students: structural equation modelling. *Boston Medical Center-Psychiatry*, 22(1), 451. <https://doi.org/10.1186/s12888-022-04097-6>
- Amador-Ortíz, C. (2021). Influencia de la adicción a las redes sociales en la reprobación escolar de estudiantes de nivel licenciatura. *Revista Ciencia- Universidad Autónoma de Tamaulipas*, 16(1), 62-72. <https://doi.org/10.29059/cienciauat.v16i1.1510>
- Aromataris, E. (2020). *Joanna Briggs Institute reviewer's manual*. Joanna Briggs Institute. <https://reviewers-manual.joannabriggs.org>
- Becerra, J., López, F. & Jasso, J. (2021). Uso problemático de las redes sociales y teléfono móvil: impulsividad y horas de uso. *Revista de Psicología de la Universidad Autónoma del estado de México*, 10(19), 28-46. <https://revistapsicologia.uaemex.mx/article/view/16105>

- Consejo Nacional de Ciencia, Tecnología e Innovación Tecnológica. (2019). *Código nacional de la integridad científica*. https://cdn.www.gob.pe/uploads/document/file/1425738/codigo_nacional_integridad_cientifica.pdf?v=1604600213
- Chiza, D., Vásquez, D. & Ramírez, C. (2021). Adicción a redes sociales y ciberbullying en los adolescentes. *Revista Muro de la Investigación*, 6(1), 10-21. <https://doi.org/10.17162/rmi.v6i1.1437>
- Díaz-Vicario, A., Mercader, C. & Gairín, J. (2019). Uso problemático de las TIC en adolescentes. *Revista Electrónica de Investigación Educativa*, 21(1), e07. <https://doi.org/10.24320/redie.2019.21.e07.1882>
- Dong, H., Yang, F., Lu, X. & Hao, W. (2020). Internet addiction and related psychological factors among children and adolescents in China during the coronavirus disease 2019 (COVID-19) Epidemic. *Frontiers in psychiatry*, 11(1), 00751. <https://doi.org/10.3389/fpsyt.2020.00751>
- Escrig, V., Lluca, J., Granel, L. & Bellver, M. (2021). Meta-analysis: a basic way to understand and interpret your evidence. *Revista de Senología y Patología Mamaria*, 34(1), 44-51. <https://doi.org/10.1016/j.senol.2020.05.007>
- Escurra, M. & Salas, E. (2014). Construcción y validación del Cuestionario de Adicción a Redes Sociales (ARS). *Lib-erabit. Revista de Psicología*, 20(1), 73-91. <http://www.scielo.org.pe/pdf/liber/v20n1/a07v20n1.pdf>
- Fegert, J., Vitiello, B., Plener, P. & Vera, C. (2020). Challenges and burden of the Coronavirus 2019 (COVID-19) pandemic for child and adolescent mental health: a narrative review to highlight clinical and research needs in the acute phase and the long return to normality. *Child and Adolescent Psychiatry and Mental Health*, 14(1), 20-24 (2020). <https://doi.org/10.1186/s13034-020-00329-3>
- Fernandes, B., Biswas, U., Tan-Mansukhani, R., Vallejo, A. & Essau, C. (2020). The impact of COVID-19 lockdown on Internet use and escapism in adolescents. *Revista de Psicología Clínica con Niños y Adolescentes*, 7(3), 59-65. <https://doi.org/10.21134/rpcna.2020.mon.2056>
- Galvão, M. & Ricarte, I. (2019). Revisión sistemática de la literatura: conceptualización, producción y publicación. *Logeion: Filosofía de la información*, 6(1), 57-73. <https://doi.org/10.21728/logeion.2019v6n1.p57-73>
- Gómez-Urrutia, V. & Jiménez, A. (2022). Identidad en la era digital: construcción de perfiles en redes sociales en adolescentes chilenos/as. *Convergencia Revista de Ciencias Sociales*, 29, 1-25. <https://doi.org/10.29101/crcs.v29i0.17430>
- González-Martínez, E., & Villamar, N. (2022). Vício em redes sociais em jovens de Guayaquil, Equador. *Revista Mídia E Cotidiano*, 16(2), 239-258. <https://doi.org/10.22409/rmc.v16i2.51634>
- Hidalgo-Vicario, M. & Ceñal, M. (2014). Adolescencia: aspectos físicos, psicológicos y sociales. *Anales de Pediatría Continuada*, 12(1), 42-46. [https://doi.org/10.1016/S1696-2818\(14\)70167-2](https://doi.org/10.1016/S1696-2818(14)70167-2)

- Huamani, K. (2022). Redes sociales virtuales y la salud mental en tiempos de COVID-19: una revisión de literatura. *LATAM Revista Latinoamericana de Ciencias Sociales y Humanidades*, 3(2), 773–783. <https://doi.org/10.56712/latam.v3i2.146>
- Huamán-Moya, G., Macukachi-García, K., Pérez-Soto, K., Velazco-Arias, J. & Yupanqui-Palacios, A. (2022). La adicción a las redes en adolescentes: revisión sistemática. *Reflexiones en Trabajo Social*, 2(1), 46–56. <https://revistas.uncp.edu.pe/index.php/reflexiones/article/view/1648>
- Klimenko, O., Cataño, Y., Otálvaro, I. & Úsuga, S. (2021). Riesgo de adicción a redes sociales e Internet y su relación con habilidades para la vida y socioemocionales en una muestra de estudiantes de bachillerato del municipio de Envigado. *Psicogente*, 24(4), 123-155. <https://doi.org/10.17081/psico.24.46.4382>
- Kuss, D. & Griffiths, M. (2017). Social networking sites and addiction: ten lessons learned. *International Journal of Environmental Research and Public Health*, 14, 1-17. <https://doi.org/10.3390/ijerph14030311>
- López-López, E., Tobón, S. & Juárez-Hernández, L. (2019). Escala para evaluar artículos científicos en Ciencias Sociales y Humanidades (EACSH). *Revista iberoamericana sobre calidad, eficacia y cambio en educación*, 17(4), 111–125. <https://doi.org/10.15366/reice2019.17.4.006>
- Medina, A., & Regalado, M. (2021). Phubbing: el otro rostro de la COVID-19. *Medicina de Familia- Sociedad Española de Médicos de Atención Primaria*, 47(6), 426. <https://doi.org/10.1016/j.semerg.2021.05.001>
- Moro, Á., Ruiz-Narezo, M. & Fonseca, J. (2022). Use of social networks, video games and violent behaviour in adolescence among secondary school students in the Basque Country. *Boston Medical Center- Psychology*, 10(1), 241. <https://doi.org/10.1186/s40359-022-00947-w>
- Ochoa, F. & Barragán, M. (2022). El uso en exceso de las redes sociales en medio de la pandemia. *ACADEMO Revista de Investigación en Ciencias Sociales y Humanidades*, 9(1):85-92. <https://doi.org/10.30545/academo.2022.ene-jun.8>
- Page, M., McKenzie, J., Bossuyt, P., Boutron, I., Hoffmann, T., Mulrow, C., Shamseer, L., Tetzlaff, J., Akl, E., Brennan, S., Chou, R., Glanville, J., Grimshaw, J., Hróbjartsson, A., Lalu, M., Li, T., Loder, E., Mayo-Wilson, E., McDonald, S., McGuinness, L., ... Moher, D. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *Revista Española de Cardiología (English ed.)*, 74(3), 790–799. <https://doi.org/10.1016/j.rec.2021.07.010>
- Peña, G., Ley, S., Castro, J., Madrid, P., Apodaca, F. & Aceves, E. (2019). Predominio de las TIC y adicción a las redes sociales en estudiantes universitarios del área de salud. *Revista de Investigación en Tecnologías de la Información*, 7(1), 83-91. <https://dialnet.unirioja.es/servlet/articulo?codigo=7107358>
- Pertegal-Vega, M., Oliva-Delgado, A. & Rodríguez-Meirinhos, A. (2019). Systematic review of the current state of research on online social networks: taxonomy on experience of use. *Comunicar*, 60(1), 81-91. <https://doi.org/10.3916/C60-2019-08>

- Prieto, J. (2022). Revisión sistemática sobre la evaluación de propuestas de gamificación en siete disciplinas educativas. *Teoría de la Educación. Revista Interuniversitaria*, 34(1), 189-214. <https://doi.org/10.14201/teri.27153>
- Ramírez-Gil, E., Cuaya-Itzcoatl, I., Guzmán-Pimentel, M. & Rojas-Solís, J. (2021). Adicción a las redes sociales y procrastinación académica en universitarios durante el confinamiento por COVID-19. *Dilemas contemporáneos: educación, política y valores*, 8(4), e00020. <https://doi.org/10.46377/dilemas.v8i.2771>
- Rendón, E., Herrera, E., De la Cruz, E., Peña, M., Cabrera, D., Cervantes, D., Cantellán, M. & Arcos, M. (2022). Comportamiento sexual relacionado con redes sociales en los adolescentes. *Ciencia Latina Revista Científica Multidisciplinar*, 6(5), 2894-2910. https://doi.org/10.37811/cl_rcm.v6i5.3291
- Rojas-Jara, C., Ramos-Vera, J., Pardo-González, E. & Henríquez-Caroca, F. (2018). Adicción a Internet en adolescentes: una breve revisión. *Drugs and Addictive Behavior*, 3(2), 267–281. <https://doi.org/10.21501/24631779.2876>
- Roque, D., Alvarez, M., Jemima, K. & Ramírez, C. (2022). Addiction to social networks and agresión in teenagers in the province of San Martin. *Revista Científica de Ciencias de la Salud*, 15(1), 60-69. <https://doi.org/10.17162/rccs.v15i1.1756>
- Sánchez, H., Reyes, C. y Mejía, K. (2018). *Manual de términos en investigación científica, tecnológica y humanística*. Universidad Ricardo Palma. <https://www.urp.edu.pe/pdf/id/13350/n/libro-manual-de-terminos-en-investigacion.pdf>
- Servidio, R. (2021). Fear of missing out and self-esteem as mediators of the relationship between maximization and problematic smartphone use. *Current Psychology*, 40(2), 232–242. <https://doi.org/10.1007/s12144-020-01341-8>
- Solís, J. & Quispe, A. (2021). Perceived social support and risk of addiction to social networks in students of a public institution in Haquira. *Revista Científica de Ciencias de la Salud*, 14(2), 34-38. <https://doi.org/10.17162/rccs.v14i2.1654>
- Troya, J., Periñan, N. & Sánchez-Movellan, P. (2022). El impacto de las redes sociales en la salud mental. Revisión bibliográfica. *SANUM: Revista Científico-Sanitaria*, 7(1), 18-28. <https://dialnet.unirioja.es/servlet/articulo?codigo=8870904>
- Valencia-Ortiz, R., Cabero-Almenara, J. & Garay, U. (2020). Modalidad de estudio, presencial o en línea, y la adicción a las redes sociales virtuales. *Edutec- Revista Electrónica de Tecnología Educativa*, 7(2), 1-16. <https://doi.org/10.21556/edutec.2020.72.1649>
- Valencia-Ortiz, R., Cabero-Almenara, J. & Garay, U. (2021). Adicción a las redes sociales en estudiantes mexicanos: percepciones de discentes y docentes. *Tecnología, Ciencia y Educación*, 19(1), 103-122. <http://dx.doi.org/10.51302/tce.2021.616>
- Valencia-Ortiz, R., Cabero-Almenara, J., Garay, U. & Fernández, B. (2021). Problemática de estudio e investigación de la adicción a las redes sociales online en jóvenes y adolescentes. *Revista Tecnología, Ciencia y Educación*, 18(1), 99-125. <https://hdl.handle.net/11441/104915>

- Vargas-Serrudo, M., Parra-Murillo, M., Cortez-Rojas, W. & Vargas-Serrudo, R. (2021). Habits of access and addiction to virtual social networks in secondary school students of Educational Units of Sucre. *Current Opinion Nursing & Research*, 3(1), 4-15. <http://ucbconocimiento.cba.ucb.edu.bo/index.php/CONR/article/view/681/665>
- Villalba, K., Maldonado, J., Berroa, H., Lavalle, A., Rodriguez, J., Becerra, S., Arias, D. & Flores, J. (2021). Technological Acceptance and Addiction to Social Networks in Virtual Mandatory Contexts. *Education in the Knowledge Society*, 24(1), 1-16. <https://doi.org/10.14201/eks.25424>
- Yana-Salluca, M., Adco-Valeriano, D., Alanoca-Gutierrez, R. & Casa-Coila, M. (2022). Adicción a las redes sociales y la procrastinación académica en adolescentes peruanos en tiempos de coronavirus COVID-19. *Revista Electrónica Interuniversitaria de Formación del Profesorado*, 25(2), 129-143. <https://doi.org/10.6018/reifop.513311>