Reviews

Effects of Instagram addiction on mood variables in a youth population: a systematic review

Efectos de la adicción a Instagram sobre variables del estado de ánimo en población juvenil: una revisión sistemática

María Sierra-Carot, Patricia Motos-Sellés, José Antonio Giménez-Costa & María Teresa Cortés-Tomás

Dept. of Basic Psychology, Faculty of Psychology and Speech Therapy, University of Valencia, Spain
ORCID Patricia Motos-Sellés: http://orcid.org/0000-0001-6602-2542
ORCID José Antonio Giménez-Costa: https://orcid.org/0000-0003-0444-3119
ORCID María Teresa Cortés-Tomás: https://orcid.org/0000-0002-4492-2184

Received: 20/05/2024 · Accepted: 05/09/2025

Cómo citar este artículo/citation: Sierra-Carot, M., Motos-Sellés, P., Giménez-Costa, J. A., & Cortés-Tomás, M. T. (2025). Effects of Instagram addiction on mood variables in a youth population: a systematic review. *Revista Española de Drogodependencias*, *50*(3), 35-54. https://doi.org/10.54108/10117

Abstract

The addictive use of Instagram among young people and the risks associated with it have become a social and public health concern. Despite the psychological consequences associated with this social network, there is still a lack of systematic reviews on the topic. Our aim is to review the current state of the literature on the negative emotional consequences associated with the addictive use of Instagram among young people. The results of the 21 selected articles indicate that excessive Instagram use leads to emotional problems (depression, anxiety, stress, etc.), especially when negative social comparison acts as a moderator and people use Instagram passively. In contrast, users with higher self-esteem experienced fewer symptoms of emotional distress. The findings described in this review provide a theoretical basis for developing interventions that are more tailored to the needs of this group. However, the studies reviewed are cross-sectional in nature. Therefore, more longitudinal and experimental research is needed to provide more robust findings on Instagram use.

Keywords

Excessive use, addiction, Instagram, mood, youth, adolescents.

– Correspondence:
Patricia Motos Sellés
Email: patricia.motos@uv.es

Resumen

El uso adictivo de Instagram entre los/as jóvenes y los riesgos que lleva asociado se han convertido en un problema social y de salud pública. A pesar de las consecuencias psicológicas vinculadas con esta red social, todavía existe escasez de revisiones sistemáticas al respecto. Nuestro objetivo es revisar el estado actual de la literatura sobre los efectos negativos emocionales, asociados al uso adictivo de Instagram entre los/as jóvenes. Los resultados de los 21 artículos seleccionados indican que el uso excesivo de Instagram comporta problemas emocionales (depresión, ansiedad, estrés, etc.), especialmente cuando la Comparación social negativa actúa como moderadora y las personas realizan un uso pasivo de Instagram. En cambio, los/as usuarios/as que muestran mayor autoestima experimentan menores síntomas de malestar emocional. Los hallazgos descritos en esta revisión, proporcionan unas bases teóricas para desarrollar medidas más ajustadas a las necesidades de este colectivo. No obstante, los estudios revisados son trasversales. Por tanto, se necesita más investigación longitudinal y experimental para obtener resultados más sólidos sobre el uso de Instagram.

Palabras clave

Uso excesivo, adicción, Instagram, estado de ánimo, jóvenes, adolescentes.

INTRODUCTION

Currently, the use of social networking sites (SNS) has become the primary leisure activity among young people, with Instagram being the most widely used platform among individuals aged 13 to 29, who check their accounts at least once a day (Romero-Rodríguez et al., 2020; Ruiz-San-Miguel et al., 2020; Torres-Serrano, 2020).

The use of SNS provides several advantages, such as establishing social relationships, career opportunities, and social support (Faelens et al., 2021). However, they are also associated with negative effects when misused, such as social comparison (Fox & Moreland, 2015), interpersonal problems, anxiety, depression, loneliness (Song et al., 2014; Zheng & Lee, 2016), loss of control, low self-esteem (Saiphoo et al., 2020), or the fear of missing out on events occurring on SNS, known as the FoMO phenomenon (Fear of Missing Out , Wilksch et al., 2017), among others.

Among the platforms most frequently used by young people, Instagram is the one with the most significant repercussions on their mental health (Camacho-Vidal et al., 2023).

Before describing the observed effects, it is important to note that "addiction" to SNS is not formally recognized as a diagnosis in the most recent version of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5-TR; APA, 2022), although it is often conceptualized as psychological dependence. Such dependence can interfere with various areas of users' lives, leading to negative consequences (Serenko & Turel, 2015). Thus, while dependence on SNS cannot formally be categorized as an "addiction," it is

suggested that it follows a pattern of excessive use (Carbonell & Oberst, 2015).

In the reviewed studies, the terms problematic, abusive, excessive, or even "Instagram addiction" are used interchangeably, all referring to elevated frequency and time spent on the platform, lack of control, unawareness of time spent, subsequent negative feelings and consequences, and interference with daily life. For this reason, this systematic review also refers to these terms collectively as a single concept.

Continuing with the negative effects associated with problematic or excessive Instagram use, evidence has shown that higher frequency of use is related to negative mood, symptoms of depression, general and social anxiety, and low self-esteem (Brown & Tiggemann, 2016; Frison & Eggermont, 2017; Sherlock & Wagstaff, 2019; Yang, 2016), as well as dissatisfaction with life and psychological distress (Keles et al., 2020). It has also been linked to increased stress (Brooks et al., 2020) and poorer body image, which plays a central role given Instagram's emphasis on image-based content (Holland & Tiggemann, 2016). These negative effects are also connected to the development of eating disorders (EDs), associated with social comparison and body dissatisfaction (Camacho-Vidal et al., 2023; Lozano-Muñoz et al., 2024).

Despite these harmful consequences, there is still a shortage of systematic reviews or meta-analyses on "Instagram addiction" (Faelens et al., 2021). For this reason, the objective of this study is to conduct a systematic review of the current state of the scientific literature on the potential negative effects of excessive or "addictive" Instagram use on mood-related variables among young people.

The findings may have practical implications in educational and healthcare settings, which are most frequently confronted with problems related to the misuse of SNS among adolescents and young adults.

METHOD

Search Strategy

This systematic review was conducted in accordance with the guidelines recommended by the PRISMA method (Preferred Reporting Items for Systematic Reviews and Meta-Analyses; Page et al., 2021).

The first author performed initial searches in Trobes, Science Direct, ProQuest Central, SpringerLink, Gale Academic OneFile, and SAGE Journals, covering the period from January 1, 2012, to December 1, 2023. The search strategy was developed in collaboration with the co-authors and was based on four key items: (a) Instagram and its synonym (social networks); (b) adolescents and their synonyms (e.g., students); (c) emotional state variables and their synonyms (e.g., self-esteem, depression, anxiety, etc.); and (d) addiction and its synonyms (e.g., problematic use, excessive use, etc.). Specifically, the PICO model was applied to formulate the research question (Martínez et al., 2016), including studies with samples of youth older than 11 years (P), who misuse Instagram (I), without the need for a control group (C), and that analyze the influence of this social network on mood-related variables (O). Based on these variables, the research question was formulated as follows: What negative effects on different aspects of mood can excessive or "addictive" Instagram use have in young populations?

The search terms were verified to ensure that they were included in the Medical Subject Headings (MeSH) thesaurus.

An example of the search strategy applied in the selected databases was as follows:

"Instagram (social networks)" AND ("addiction" OR "problematic use" OR "addictive use" OR "excessive use" OR "abusive use") AND ("self-esteem" OR "depression" OR "anxiety" OR "stress" OR "psychological well-being" OR "overuse" OR "mental health" OR "body satisfaction" OR "life satisfaction") AND ("Adolescent" OR "Adolescents" OR "Adolescence" OR "Teens" OR "Teen" OR "Teenagers" OR "Teenager" OR "Youth" OR "Youths" OR "Student" OR "Students" OR "Young person" OR "Young persons" OR "Young people" OR "Young adult" OR "Young adults" OR "Minors").

Eligibility Criteria

Peer-reviewed scientific studies were included if they met the following criteria:

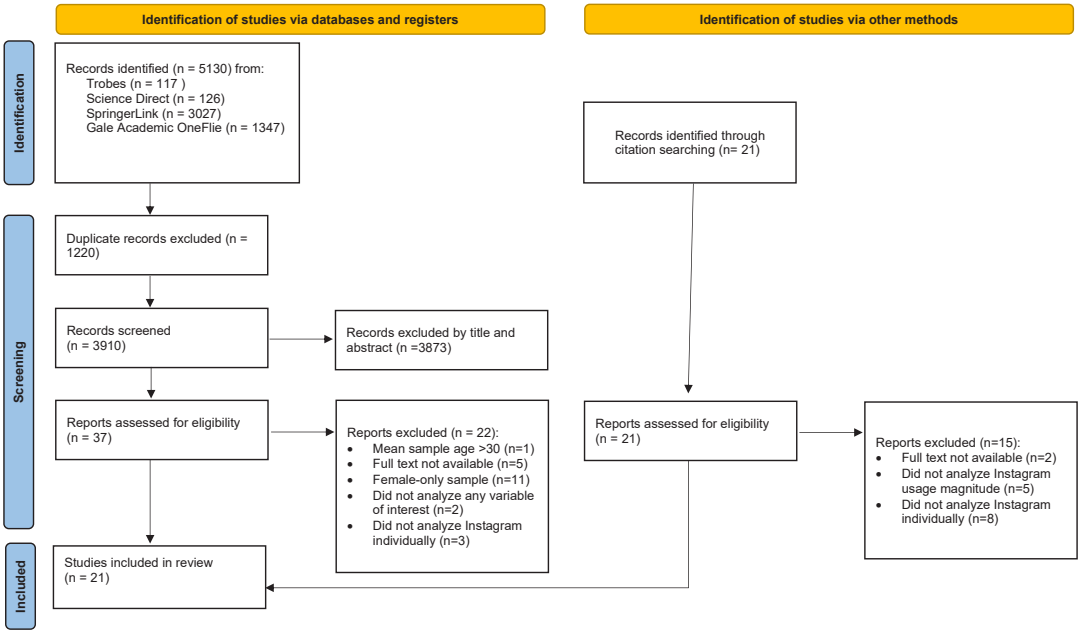
1) Published in a scientific journal.
2) Written in English or Spanish.
3) Full text accessible.
4) The title or abstract contained the keyword "Instagram" or dedicated at least part of the research to studying this platform.
5) The title or abstract contained the keyword "addiction" or similar terms (e.g., excessive use, problematic use, intensive use), or at least one reference to Instagram use.
6) At least one variable or indicator of mental health related to mood (e.g., psychological well-being, depression, anxiety, stress, etc.) and another variable related to intensity, frequency, etc. of Instagram use were measured or analyzed.
7) Published from 2012 onwards.
8) The total sample consisted of an adolescent or youth population (≥12 years, mean age <30), including both male and female participants.
9) The sample was composed of a non-clinical population.
10) The study addressed Instagram exclusively or analyzed it individually at some point.

Selection Process

The selection process was carried out in two phases. First, 5,130 records were identified through Trobes, Science Direct, SpringerLink, ProQuest Central, Gale Academic OneFile, and SAGE Journals. After eliminating 1,220 duplicates, two researchers independently reviewed the titles and/or abstracts of 3,910 records to determine whether they met the inclusion criteria. Many records were easily excluded as neither the title nor the abstract mentioned Instagram or any mood-related variable, nor did they analyze the target sample. Any disagreements were resolved by a third researcher. Ultimately, 37 articles were read in full to evaluate eligibility, with 22 excluded, leaving 15 studies that met all inclusion criteria.

In the second phase, the same two researchers identified 21 additional records through manual citation searches of the selected articles. After reading the full texts, 6 more studies were included. Any disagreements were resolved through team discussion. In total, 21 studies were included in this systematic review. Figure 1 presents the PRISMA flow diagram summarizing the study selection process.

Figure 1. PRISMA flow diagram



Risk of Bias Assessment

The risk of bias of the included studies was assessed using the Joanna Briggs Institute (JBI) critical appraisal tool for cross-sectional studies (Moola et al., 2020). This checklist consists of 8 items; the greater the number of items met, the higher the methodological quality of the study and the lower the likelihood of bias.

As shown in Table 1, if a study met a criterion, the response was "Yes"; if it did not, the response was "No." If it was unclear from the study whether a criterion was met, the response was "Unclear." If an item was not relevant or applicable, the response was "Not applicable." The table also presents a column with the total number of items met for each study and another indicating the final inclusion decision.

Overall, the methodological quality of the selected studies was adequate, as all met most of the desirable criteria. Therefore, all 21 studies were included in this review.

Data Extraction and Synthesis

A standardized four-item data extraction form was used to collect information from the included studies under the following headings: (i) study, year (country); (ii) sample; (iii) variables; and (iv) results.

Once the most relevant data were extracted, they were presented descriptively in a summary table (Table 2), listing each study in order of publication and author surname, along with details on the type of sample, the variables analyzed, and a brief summary of the main findings.

Table 1. Assessment of the risk of bias of studies

Studies evaluated	1	2	3	4	5	6	7	8	Total	Include
1.Lup *et al.* (2015)	No	Unclear	Yes	Yes	Yes	Yes	Unclear	Yes	5	X
2.Sadat *et al.* (2017)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8	X
3.Stapleton *et al.* (2017)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8	X
4.Kircaburun y Griffiths (2018)	Unclear	Unclear	Yes	Yes	Yes	Yes	Yes	Yes	6	X
5.Lowe-Calverley *et al.* (2019)	No	Unclear	Yes	Yes	Yes	Yes	Yes	Yes	6	X
6.Mackson *et al.* (2019)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8	X
7.Sanz-Blas *et al.* (2019)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8	X
8.Sung-Hwnag (2019)	Yes	Yes	Yes	Yes	Yes	Yes	Unclear	Yes	7	X
9.Wilksch *et al.* (2019)	Unclear	Yes	Yes	Yes	No	No	Yes	Yes	5	X
10.Yurdagül *et al.* (2019)	Unclear	Yes	Yes	Yes	Yes	Yes	Yes	Yes	7	X
11.Ponnusamy *et al.* (2020)	Unclear	Yes	Yes	Yes	Yes	Yes	Yes	Yes	7	X
12.Romero-Rodríguez *et al.* (2020)	Unclear	Yes	Yes	Yes	Yes	Yes	Yes	Yes	7	X
13.Seabra *et al.* (2020)	Unclear	Yes	Unclear	Yes	Yes	Yes	Yes	Yes	6	X
14.Torres-Serrano (2020)	Yes	Yes	Unclear	Yes	Yes	Yes	Yes	Yes	7	X
15.Faelens *et al.* (2021)	Yes	Yes	Yes	Yes	Yes	Yes	Unclear	Yes	7	X
16.Foroughi *et al.* (2021)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8	X
17.Keyte *et al.* (2021)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8	X
18.Rivas-Herrero e Igartua (2021)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8	X
19.Ahmad y Hayat, (2022)	Yes	Yes	Yes	Yes	No	No	Yes	Yes	6	X
20.Choi (2022)	Unclear	Yes	Yes	Yes	Yes	Yes	Yes	Yes	7	X
21.Simon *et al.* (2022)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8	X

Note: 1) Were the sample incluYeson criteria clearly defined?; 2) Were the study subjects and setting described in detail?; 3) Was the exposure measured in a valid and reliable manner?; 4) Were objective, standardized criteria used to measure the condition?; 5) Were confounding factors identified?; 6) Were strategies for addresYesng confounding factors indicated?; 7) Were the outcomes measured in a valid and reliable manner?; 8) Was appropriate statistical analyYess used?

Table 2. Description of the characteristics of the included studies

Study, year (country)	Sample	Variables	Results
1.Lup *et al*., 2015 (EEUU)	117 Instagram users, aged 18–29 years (M=24.81 years); 84% women.	- Instagram use (daily time spent). - Followed strangers (unknown people followed). - Depressive symptoms. - Social comparison.	- Frequency of Instagram use (time spent) was positively related to the percentage of followed strangers and depressive symptoms. - Positive social comparison was negatively related to depressive symptoms, while negative social comparison was positively related.
2.Sadat *et al*., 2017 (Malasia)	273 university students, aged 18–26 years (M=20.09 years); 62.3% women.	- Self-discrepancy (perceived gap between actual and ideal physical appearance). - Self-schema (beliefs about one's own physical appearance). - Body satisfaction. - Self-esteem. - Instagram use (daily time spent).	- Instagram use negatively predicted body satisfaction through self-schema and self-discrepancy (in this order). - Higher Instagram use predicted lower body satisfaction, while higher self-esteem weakened (or even nullified) this negative relationship.
3.Stapleton *et al*., 2017 (Australia)	237 Instagram users, aged 18–25 years (M=23.12 years); 60% women.	- Social comparison. - Instagram use (frequency, duration, emotional connection, and integration into daily life). - Self-esteem. - Contingent self-esteem (dependent on others' approval).	- Intensity of Instagram use positively and strongly predicted social comparison. - Social comparison was moderately and negatively related to self-esteem. - Intensive Instagram use predicted low self-esteem only when social comparison was present (mediator). - Higher self-esteem was strongly related to lower contingent self-esteem. Contingent self-esteem moderated the relationship between Instagram use and social comparison.
4.Kircaburun y Griffiths , 2018 (Reino Unido)	752 university students, aged 18–24 years (M=20.30 years); 69% women.	- Self-liking (self-approval of perceived social value, influenced by external acceptance and feedback). - Instagram addiction (measured through a scale). - Big Five personality traits.	- Lower self-liking was associated with higher Instagram addiction. - Conscientiousness and agreeableness were related to Instagram addiction through self-liking (mediator): higher agreeableness and conscientiousness were linked to greater self-liking, which in turn was linked to lower addictive use of Instagram (and vice versa).
5.Lowe-Calverley *et al*. , 2019 (Australia)	Study 1: 167 Instagram users, aged 18–57 years (M=23.34 years); 77.84% women. Study 2: 120 Instagram users, aged 17–62 years (M=22.98 years); 79.16% women.	Study 1: - Instagram immersion (emotional connection with Instagram use). - Intensity of Instagram use. - Life satisfaction. - Depression-Anxiety-Stress Scale (DASS). Study 2: - Instagram immersion. - Self-esteem. - Number of followers.	Study 1: - Depression, anxiety, and stress were positively and moderately associated with Instagram immersion. - Life satisfaction was strongly and negatively associated with depression, anxiety, and stress. - Instagram immersion positively predicted depression and stress. Study 2: - Number of followers positively predicted Instagram immersion, which negatively predicted self-esteem. - Number of followers predicted self-esteem only when Instagram immersion acted as a mediator.
6.Mackson *et al*., 2019 (EEUU)	204 participants (mostly non-Hispanic whites), aged 18–48 years (M=25.16 years); 75% women.	- Anxiety. - Depression. - Loneliness. - Self-esteem. - Body image. - Instagram anxiety (anxiety associated with Instagram use; linked to its specific functions). - Social comparison. Daily time spent on Instagram.	- Instagram users reported lower levels of anxiety, depression, and loneliness, as well as higher self-esteem compared to non-users. - Daily time spent on Instagram was strongly and positively related to Instagram anxiety. - Social comparison was moderately and positively related to Instagram anxiety, depression, and general anxiety; and moderately and negatively related to self-esteem. - Individuals who spent more time on Instagram and had lower self-esteem were more likely to report depressive symptoms.

Study, year (country)	Sample	Variables	Results
7.Sanz-Blas et *al.*, 2019 (España)	342 young Spaniards (mostly students), average age 22 years; 70.5% women.	- Excessive Instagram use. - Instagram addiction. - Emotional fatigue (information overload on Instagram). - Instastress (stress due to the need to stay updated/not miss any information).	- Excessive Instagram use predicted Instagram addiction and higher levels of emotional fatigue. - Instagram addiction was positively and moderately related to instastress and emotional fatigue (it predicted them). - Instagram addiction mediated the relationship between excessive Instagram use (antecedent) and instastress and emotional fatigue (consequences).
8.Sung-Hwnag, 2019 (Corea del Sud)	245 university students, average age 22.51 years; 55% women.	- Frequency and daily time spent on Instagram. - Social comparison on Instagram (upward, downward, and horizontal). - Depression.	- Individuals who used Instagram more frequently tended to compare themselves with others perceived as performing better. - Greater upward comparison was associated with more depressive symptoms, while greater downward comparison was associated with fewer depressive symptoms. - Instagram use (frequency and daily time) had significant negative effects on depression only when social comparison acted as a mediator.
9.Wilksch et *al.*, 2019 (Australia)	996 students, average age 13.08 years (SD = .60); 53.6% girls.	- Eating disorder (ED)-related cognitions. - ED-related behaviors. - Social media use (daily time spent).	- Girls who spent more daily time on Instagram scored higher on both ED cognition and behavior measures. - This relationship between time of use and ED measures was not significant for boys. - Girls with an Instagram account reported higher levels of strict exercise and meal skipping compared to those using other social networks.
10.Yurdagül et *al.*, 2019 (Turquía)	491 high school students, aged 14–19 years (M=15.92 years); 58.66% women.	- Instagram addiction/problematic use. - Body image dissatisfaction. Loneliness. - Depression. - Trait anxiety. - Social anxiety.	- Problematic/addictive Instagram use was associated with higher body dissatisfaction, loneliness, depression, trait anxiety, and social anxiety. - Body dissatisfaction positively mediated all these relationships with problematic Instagram use. - Problematic Instagram use was associated with greater body dissatisfaction, which in turn was related to more psychopathological symptoms (depression, loneliness, anxiety, etc.).
11.Ponnusamy et *al.*, 2020 (Malasia)	364 university students, aged 19–26 years; 51.1% women.	- Instagram addiction. - Psychological well-being. - Loneliness. - Life satisfaction.	- Instagram addiction moderately and negatively influenced life satisfaction. - Higher Instagram addiction predicted lower life satisfaction. - Instagram addiction was positively related to loneliness, and greater loneliness predicted lower life satisfaction.
12.Romero-Rodríguez et *al.*, 2020 (España)	385 university students, aged 18–35 years (M=22.17 years); 61.8% women.	- *Instagram use intensity.* - *Smartphone addiction.* - *Self-esteem.*	- Problematic/addictive smartphone use was related to greater Instagram use intensity, and conversely, intensive Instagram use was related to greater smartphone addiction. - Problematic smartphone use moderately predicted lower self-esteem. - Instagram use intensity was not significantly related to self-esteem.
13.Seabra et *al.*, 2020 (Brasil)	625 Instagram users, average age 26.7 years; 63.7% women.	- Instagram use intensity. - Social comparison orientation (in the dimensions of 'abilities' – comparing skills – and 'opinions' – comparing feelings and thoughts). - Self-esteem.	- Social comparison (in both dimensions) was negatively related to self-esteem. - Greater Instagram use intensity was associated with lower self-esteem in women. - Greater Instagram use intensity was associated with more social comparison (in both dimensions). - Social comparison mediated the negative relationship between Instagram use intensity and self-esteem.

Study, year (country)	Sample	Variables	Results
14.Torres-Serrano, 2020 (España)	301 Instagram users, aged 18–30 years (M=22.93 years); 56.8% men.	- Instagram use (frequency and daily time spent). - Level of FoMO ('Fear of Missing Out'). - Self-esteem.	- Greater FoMO was related to more daily time spent on Instagram. - More daily time invested in Instagram predicted higher FoMO. - Higher self-esteem was associated with and predicted lower FoMO, and vice versa.
15.Faelens *et al*., 2021 (Bélgica)	98 Instagram users, aged 18–35 years (M=22.39 years); 75.5% women.	- Time spent on Instagram. - Social comparison. - Self-esteem (general and contingent). - Negative affect.	- Greater Instagram use predicted higher social comparison and negative affect, as well as lower self-esteem. - Higher contingent self-esteem (dependent on others' approval) predicted greater social comparison and lower general self-esteem. - Social comparison on Instagram was associated with lower general self-esteem and higher contingent self-esteem.
16.Foroughi *et al*., 2021 (Malasia)	364 university students, aged 19–26 years; 51.1% women.	- Instagram addiction. - Social anxiety. - Depression. - Life satisfaction.	- Instagram addiction positively predicted social anxiety and depression. - Both social anxiety and depression negatively predicted life satisfaction.
17.Keyte *et al*., 2021 (Reino Unido)	173 Instagram users, average age 24.53 years; 66.47% women.	- Instagram intensity. - Depression-Anxiety-Stress Scale (DASS).	- Instagram intensity was strongly and positively related to depression, anxiety, and stress.
18.Rivas-Herrero e Igartua, 2021 (España)	401 Instagram users, aged 18–36 years (M=23.80 years); 73.1% women.	- Instagram intrusion (excessive use of Instagram, leading to dependence and daily life disruption). - Social comparison. - Self-esteem.	- Social comparison orientation and lower self-esteem were associated with greater Instagram intrusion.
19.Ahmad & Hayat, 2022 (Pakistán)	659 university students, aged 16–31 years; 52.7% women.	- Instagram addiction (frequency and daily time spent). - Perceived stress.	- Addictive Instagram use predicted greater stress.
20.Choi, 2022 (Corea del Sur)	360 university students, aged 18–25 years; 52.5% women.	- Passive and active Instagram use (frequency of engaging in each type of activity). - Negative social comparison (thoughts and feelings of inferiority compared to others). - Life satisfaction.	- Passive Instagram use (viewing other users' posts and stories, checking profiles, etc.) was positively related to negative social comparison. - Passive Instagram use was negatively associated with life satisfaction, through its positive relationship with negative social comparison. - Greater passive Instagram use was associated with greater negative social comparison, which, in turn, was associated with lower life satisfaction.
21.Simon *et al*., 2022 (Filipinas)	897 university students, aged 18–25 years; 84.28% women.	- Instagram addiction. - Physical appearance perfectionism (concern about physical imperfection and desire for perfection). - Body self-esteem.	- In both men and women, Instagram addiction was positively related to physical appearance perfectionism, which was negatively related to body self-esteem. - However, only among women was Instagram addiction negatively related to body self-esteem.

RESULTS

In general, the design of all the studies included in Table 2 was cross-sectional and conducted using self-report measures, with the exception of one longitudinal study that applied the experience sampling method and network analyses. The statistical analyses employed included bivariate correlations, simple and multiple linear regressions, mediation analyses, and moderation analyses.

Regarding sample characteristics, 12 studies used student populations, with mean ages ranging from 18 to 25 years, except for two cases with younger samples. Six studies included participants over 30 years of age, although the overall mean age of the populations analyzed remained below 30. By country, four studies were conducted in Spain (19%), three in Malaysia (14%) and Australia (14%), and two in the United States (9.2%), the United Kingdom (9.2%), and South Korea (9.2%). Finally, single studies were identified from Turkey, Brazil, Belgium, Pakistan, and the Philippines (4.8% each).

With respect to the most relevant findings, all studies agreed that there is a relationship between excessive Instagram use and negative psychological outcomes related to mood. Specifically, intensive and frequent use of Instagram was associated with or predicted higher levels of depressive symptoms (Foroughi et al., 2021; Keyte et al., 2021; Lup et al., 2015; Mackson et al., 2019), anxiety (Foroughi et al., 2021; Keyte et al., 2021; Mackson et al., 2019), stress (Ahmad & Hayat, 2022; Keyte et al., 2021; Sanz-Blas et al., 2019), emotional fatigue (Sanz-Blas et al., 2019), body dissatisfaction, loneliness (Ponnusamy et al., 2020; Yurdagül et al., 2019), negative affect (Faelens et al., 2021), fear of missing out (FoMO; Torres-Serrano, 2020), and social comparison (Choi, 2022; Faelens et al., 2021; Lup et al., 2015; Rivas-Herrero & Igartua, 2021; Seabra et al., 2020; Stapleton et al., 2017; Sung-Hwnag, 2019), as well as lower self-esteem (Faelens et al., 2021; Lowe-Calverley et al., 2019; Rivas-Herrero & Igartua, 2021; Romero-Rodríguez et al., 2020; Simon et al., 2022), poorer self-acceptance (Kircaburun & Griffiths, 2018), and lower life satisfaction (Choi, 2022; Foroughi et al., 2021; Ponnusamy et al., 2020).

It is important to highlight the mediating role of social comparison (constant evaluation of oneself and others) in most studies, which emerged as a key variable linking excessive Instagram use to the negative mood-related outcomes (Seabra et al., 2020; Stapleton et al., 2017; Sung-Hwnag, 2019). For instance, the emergence of depressive symptoms (Lup et al., 2015; Mackson et al., 2019; Sung-Hwnag, 2019), anxiety (Mackson et al., 2019), low self-esteem (Faelens et al., 2021; Mackson et al., 2019; Seabra et al., 2020; Stapleton et al., 2017), and dissatisfaction with life (Choi, 2022) occurred primarily when social comparison was associated with higher Instagram use.

In Sadat et al. (2017), a closely related variable—perceived self-discrepancy (the perceived gap between one's actual appearance and the ideal appearance when compared to others)—was analyzed. Findings showed that greater discrepancy between "real-self" and "desired-other" was associated with increased Instagram use and subsequent body dissatisfaction.

According to Sung-Hwnag (2019), Instagram users are more likely to compare themselves with others who present bet-

ter qualities or achievements. This upward or "negative" social comparison produces stronger negative emotional effects.

Furthermore, Choi (2022) reported that upward social comparison was more likely when Instagram was used passively (viewing others' content) than actively (creating, interacting, and posting one's own content).

However, different results were observed when social comparison was analyzed alongside contingent self-esteem (dependent on others' opinions or approval). In this case, contingent self-esteem moderated the relationship between intensive Instagram use and social comparison, such that higher contingent self-esteem predicted greater social comparison among frequent Instagram users (Faelens et al., 2021; Stapleton et al., 2017).

Self-esteem was one of the most widely studied variables. Stapleton et al. (2017) found that higher global self-esteem was related to lower contingent self-esteem. Torres-Serrano (2020) obtained similar results with the FoMO variable.

Sadat et al. (2017) demonstrated that global self-esteem moderated the relationship between Instagram use and body satisfaction: participants with low self-esteem who used Instagram more intensively felt more dissatisfied with their bodies, while those with high self-esteem, despite high use, remained satisfied. Similarly, Lowe-Calverley et al. (2019) observed that having a greater number of followers predicted greater emotional involvement on Instagram, leading to reduced self-esteem.

In some studies, life satisfaction emerged as a secondary consequence rather than a direct outcome of Instagram use. Its negative association with intensive use occurred indirectly through mediating variables such as depression, social and general anxiety, stress, loneliness, or low self-esteem (Foroughi et al., 2021; Lowe-Calverley et al., 2019; Ponnusamy et al., 2020).

It is worth noting that only one study (Macksson et al., 2019) reported positive outcomes associated with Instagram use. Specifically, users of the platform showed lower levels of anxiety, depression, and loneliness, as well as higher self-esteem compared to non-users. However, when daily time spent on Instagram was considered, it was positively related to Instagram-specific anxiety, depression, and general anxiety, and negatively related to self-esteem, with social comparison acting as a moderator of the relationship between usage patterns and emotional outcomes.

Finally, Wilksch et al. (2019) examined the role of SNS in eating disorders. They found that girls who spent more time on Instagram reported more eating disorder-related cognitions and behaviors, such as greater preoccupation with food, body shape, and weight, as well as behaviors like skipping meals or following strict diets and exercise regimens. Moreover, girls with Instagram accounts reported stricter exercise and more meal omission compared to those using other social networks. Similarly, Simon et al. (2022) investigated physical appearance perfectionism—a trait common among individuals with eating disorders—and found that Instagram-addicted users scored higher on this variable, but only women experienced lower body self-esteem. Additionally, Sadat et al. (2017) and Yurdagül et al. (2019) showed that individuals with higher perfectionism were more likely to engage in frequent comparisons to unattainable beauty

standards, which reinforced the perception of a larger gap between their real and ideal appearance (perceived self-discrepancy). This, in turn, was associated with greater psychopathological symptoms such as depression, trait anxiety, and social anxiety.

DISCUSSION

The results of the analyzed studies are consistent with previous literature (Chou & Edge, 2012; Haferkamp & Kramer, 2011; Jiang & Ngien, 2020; Krasnova et al., 2013) and address the objective of this review by confirming that the misuse of Instagram leads to emotional and mental health problems, particularly when social comparison acts as a moderator between excessive Instagram use and the associated negative consequences. This variable has a stronger influence when Instagram is used passively, leading individuals to experience upward or negative social comparison, associated with feelings of inferiority relative to others (Choi, 2022; Sung-Hwnag, 2019).

Based on these results, it may be concluded that it is not necessarily Instagram addiction per se that produces negative effects on mood, but rather the constant comparison with other users perceived as more competent or successful (Chua & Chang, 2016), alongside attempts to modify personal shortcomings in order to match the standards set by images encountered on the platform. This pursuit of unrealistic ideals fosters the need to remain continuously connected in order not to miss content posted by others (FoMO phenomenon), which in turn can facilitate the development of depressive symptoms, as individuals perceive themselves as less happy, less competent, or living worse lives (Foroughi et al., 2019). Similarly, it may contribute to social anxiety (Karaiskos et al., 2010; Koc & Gulyagci, 2013) and to "insta-stress," a sub-dimension of stress that emerges when the vast amount of available content on Instagram exceeds individuals' ability to process it, leaving them feeling out of touch and overwhelmed. This may explain why heavy Instagram users are more likely to experience this type of stress (Sanz-Blas et al., 2019).

Another relevant finding is the protective role of self-esteem against Instagram addiction. Authors such as Sadat et al. (2017) and Torres-Serrano (2020) showed that high self-esteem can serve as a buffer against body dissatisfaction and the onset of FoMO, as individuals with stronger self-worth may be less concerned about what others do on Instagram.

Particular attention should also be given to the moderating role of contingent self-esteem in the relationship between intensive Instagram use and social comparison. Some of the studies analyzed here (Faelens et al., 2021; Stapleton et al., 2017), as well as earlier research (Chou & Edge, 2012; Crocker & Park, 2004), demonstrated that individuals whose self-esteem is highly dependent on others engage in greater social comparison when using Instagram intensively. This may be because individuals with high contingent self-esteem seek validation from others, which makes them more prone to comparing themselves. This, in turn, reduces overall self-esteem, since any negative comparison or negative evaluation from others diminishes their perceived self-worth. Such processes may contribute to body dissatisfaction and the development of eating disorders (Engeln et al., 2020; Thompson et al., 1999).

It is also important to consider that Instagram, as a platform based on the sharing of images and photographs, fosters constant exposure to unrealistic depictions of physical perfection, which encourages unhealthy personality traits such as appearance-related perfectionism, particularly in young women (Simon et al., 2022). Individuals who score high on this trait strive for flawlessness and set extremely high expectations for themselves, combined with fear of negative evaluation (Frost & Marten, 1990). Consequently, they are more vulnerable to low self-esteem and body dissatisfaction (Sadat et al., 2017; Yurdagül et al., 2019) and are more likely to engage in disordered eating behaviors in pursuit of those standards (Gilbert, 2001).

These findings are consistent with recent studies showing that concerns about physical appearance emerge at increasingly younger ages, around 11 years old, particularly among girls (Camacho-Vidal et al., 2023; Karsay et al., 2018). Since the predominant content on Instagram is images of idealized bodies, often altered by filters or editing to approximate unrealistic beauty standards, continuous exposure fosters early internalization of unhealthy aesthetic ideals that are reinforced over time (Lozano-Muñoz et al., 2024).

The insights from this review help identify key targets for developing prevention and intervention strategies better suited to the real needs of this population (Romero-Rodríguez et al., 2020). Importantly, these efforts must incorporate a gender perspective, as young women are particularly vulnerable to the pressures exerted by SNS regarding physical appearance. They often experience heightened insecurity, which can lead them to engage in risky behaviors such as restrictive dieting or the use of cosmetic products inappropriate for their age or harmful to their health (Cohen et al., 2017; OCU, 2024), all in the pursuit of acceptance and to avoid rejection.

First, preventive efforts should prioritize addressing social comparison, given its strong influence on the emotional health consequences described in this review. Evidence shows that implementing strategies to reduce the frequency and negativity of social comparisons (e.g., learning to engage in healthier, non-envious comparisons) improves individuals' self-perceptions, increasing body and life satisfaction while reducing depressive and anxious symptoms, insta-stress, and related problems (Mackson et al., 2019; Stapleton et al., 2017). Likewise, promoting self-esteem is critical, as high self-esteem has been shown to buffer against the impact of distorted body ideals portrayed on Instagram and against the development of disordered eating-related cognitions and behaviors (Wilksch et al., 2019).

Second, intervention programs should foster awareness of the consequences associated with SNS use (e.g., depressive and anxious symptoms, insta-stress, low self-esteem, FoMO) and how these can harm social life and mental health. To this end, it is essential to understand the variables, beyond Instagram use itself, that influence the emergence of these problems (e.g., motivations for Instagram use, positive expectations) and work on them (Prades & Carbonell, 2016). Additionally, developing self-reflection skills and SNS literacy is crucial to encourage critical engagement with online content (Choi, 2022; Rivas-Herrero & Igartua, 2021) and to raise awareness of the limited freedom individuals may actually

have in their decision-making. This can facilitate healthier behavioral changes in relation to SNS use.

Third, it is necessary to promote healthy coping strategies that allow young people to better manage negative emotional states (stress, anxiety, envy, emotional fatigue, etc.). Evidence-based strategies in the field of addictions include engaging in alternative activities (e.g., sports, music, cinema, writing, dance) and developing social skills such as empathy, assertiveness, self-control, and emotional regulation (Cortés et al., 2022; 2023; Foroughi et al., 2021).

Families also play a key role. They should be supported in implementing digital hygiene measures such as parental monitoring of Instagram use and in fostering socioemotional skills (e.g., active listening, empathy, quality family time).

Finally, policymakers should be urged to regulate SNS use to mitigate or prevent the negative effects associated with excessive Instagram use, particularly among minors. Children and adolescents should not be exposed to misinformation, biased recommendations, or poorly informed influencers but should instead be guaranteed a safe online environment—even protecting them from themselves at times. This includes regulating advertising of harmful products on SNS that may threaten minors' physical and psychological health (OCU, 2024).

Several limitations must be acknowledged. First, most included studies employed cross-sectional designs, making it difficult to establish causal relationships. Future research should employ longitudinal and experimental designs to provide stronger evidence about the causal mechanisms underlying the observed psychopathological consequences. Second, the samples were often not fully representative of all Instagram users, as convenience samples of mostly students aged 18–25 were commonly used. Future studies should diversify recruitment to include participants of different ages, backgrounds, and employment statuses to enhance external validity. Third, all studies relied on self-report measures of Instagram use and its negative effects on mood-related variables, which may bias results compared to more objective measures. Future research should incorporate mobile applications or software to track and measure Instagram use and its consequences more reliably. Finally, the measurement of Instagram use varied across studies, with different scales and instruments employed. Future literature would benefit from the development and adoption of a reliable, validated instrument applicable across studies.

Conflict of Interest

The authors declare that they have no conflicts of interest.

REFERENCES

Ahmad, A., & Hayat, N. (2022). Undergraduate Students Predisposition From Instagram And Snapchat Interactive Effect On Stress. *Webology, 19*(3).

American Psychiatric Association (2022). *Diagnostic and statistical manual of mental disorders* (5ª ed.- Text Rev; DSM-5-TR). American Psychiatric Association.

Brooks, S., Wang, X., & Schneider, C. (2020). Technology Addictions and

Technostress: An Examination of the US and China. *Journal of Organizational and End User Computing, 32*(2), 1–19. https://doi.org/10.4018/JOEUC.2020040101

Brown, Z., & Tiggemann, M. (2016). Attractive celebrity and peer images on Instagram: Effect on women's mood and body image. *Body Image, 19*, 37–43. https://doi.org/10.1016/j.bodyim.2016.08.007

Camacho-Vidal, P., Díaz López, A., & Sabariego-García, J. A. (2023). Relación entre el uso de Instagram y la imagen corporal de los adolescentes. *Apuntes de Psicología, 41*(2), 117-122. https://doi.org/10.55414/ap.v41i2.1537

Carbonell, X., & Oberst, U. (2015). Las redes sociales en línea no son adictivas. *Aloma, 33*(2), 13-19.

Choi, J. (2022). Do Facebook and Instagram differ in their influence on life satisfaction? A study of college men and women in South Korea. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace, 16*(1). https://doi.org/10.5817/CP2022-1-2

Chou, H. T. G., & Edge, N. (2012). ''They are happier and having better lives than I am'': the impact of using Facebook on perceptions of others' lives. *Cyberpsychology, Behavior, and Social Networking, 15*, 117–121. https://doi.org/10.1089/cyber.2011.0324

Chua, T. H. H., & Chang, L. (2016). Follow me and like my beautiful selfies: Singapore teenage girls' engagement in self-presentation and peer comparison on social media. *Computers in Human Behavior, 55*, 190–197. https://doi.org/10.1016/j.chb.2015.09.011

Cohen, R., Newton-John, T., & Slater, A. (2017). The relationship between Facebook and Instagram appearance-focused activities and body image concerns in young women. *Body Image, 23*,183–187. https://doi.org/10.1016/j.bodyim.2017.10.002

Cortés-Tomás, M. T., Giménez-Costa, J. A., Motos-Sellés, P., & Sancerni-Beitia, M. D. (2022). Consequences, motives, and expectancies of consumption as predictors of binge drinking in university women. *Frontiers in Psychology, 13*, 862334. https://doi.org/10.3389/fpsyg.2022.862334

Cortés-Tomás, M. T., Giménez-Costa, J. A., Motos-Sellés, P., & Sancerni-Beitia, M. D. (2023). Expectancies and Motives as Predictors of Risky Alcohol Consumption in College Women. *International Journal of Mental Health and Addiction, 21*(6), 3604-3626. https://doi.org/10.1007/s11469-022-00811-3

Crocker, J., & Park L. E. (2004). The costly pursuit of self-esteem. *Psychological Bulletin, 130*, 392–414. https://doi.org/10.1037/0033-2909.130.3.392

Engeln, R., Loach, R., Imundo, M. N., & Zola, A. (2020). Compared to Facebook, Instagram use causes more appearance comparison and lower body satisfaction in college women. *Body Image, 34*, 38-45. https://doi.org/10.1016/j.bodyim.2020.04.007

Faelens, L., Hoorelbeke, K., Cambier, R., van Put, J., van de Putte, E., de Raedt, R., & Koster, E. H. W. (2021). The relationship between Instagram use and indicators of mental health: A systematic review. *Computers in Human Behavior Reports, 4*, 1–18. https://doi.org/10.1016/j.chbr.2021.100121

Foroughi, B., Iranmanesh, M., Nikbin, D., & Hyun, S. S. (2019). Are depression and social anxiety the missing link between Facebook addiction and life satisfaction? The interactive effect of needs and self-regulation. *Telematics and Informatics, 43*, 101-247. https://doi.org/10.1016/j.tele.2019.101247

Fox, J., & Moreland, J. J. (2015). The dark side of social networking sites: an exploration of the relational and psychological stressors associated with Facebook use and affordances. *Computers in Human Behavior, 45*, 168-176. https://doi.org/10.1016/j.chb.2014.11.083

Frison E., & Eggermont S. (2017). Browsing, posting and liking on Instagram: the reciprocal relationships between different types of Instagram use and adolescents' depressed mood. *Cyberpsychology, Behavior, and Social Networking, 20*(10), 603–609. https://doi.org/10.1089/cyber.2017.0156

Frost, R. O., & Marten, P. A. (1990). Perfectionism and evaluative threat. *Cognitive therapy and research, 14*, 559-572. https://doi.org/10.1007/BF01173364

Gilbert, P. (2001). Evolution and social anxiety: The role of attraction, social competition, and social hierarchies. *Psychiatric Clinics, 24*, 723–751. https://doi.org/10.1016/S0193-953X(05)70260-4

Haferkamp, N., & Kramer, N. (2011). Social comparison 2.0: examining the effects of online profiles on social networking sites. *Cyberpsychology, Behavior, and Social Networking, 14*, 309–314. https://doi.org/10.1089/cyber.2010.0120

Holland, G., & Tiggemann, M. (2016). A systematic review of the impact of the use of social networking sites on body image and disordered eating outcomes. *Body Image, 17*, 100–110. https://doi.org/10.1016/j.bodyim.2016.02.008

Jiang, S., & Ngien, A. (2020). The effects of Instagram use, social comparison, and self-esteem on social anxiety: A survey study in Singapore. *Social Media+ Society, 6*(2), 2056305120912488. https://doi.org/10.1177/2056305120912488

Karaiskos, D., Tzavellas, E., Balta, G., & Paparrigopoulos, T. (2010). Social network addiction: A new clinical disorder? *European Psychiatry, 25*(1), 855. https://doi.org/10.1016/S0924-9338(10)70846-4

Karsay, K., Knoll, J., & Matthes, J. (2018). Sexualizing media use and selfobjectification: A meta-analysis. *Psychology of Women Quarterly, 42*(1), 9-28. https://doi.org/10.1177/0361684317743019

Keles, B., McCrae, N., & Grealish, A. (2020). A systematic review: The influence of social media on depression, anxiety and psychological distress in

adolescents. *International Journal of Adolescence and Youth, 25*(1), 79–93. https://doi.org/10.1080/02673843.2019.1590851

Keyte, R., Mullis, L., Egan, H., Hussain, M., Cook, A., & Mantzios, M. (2021). Self-compassion and instagram use is explained by the relation to anxiety, depression, and stress. *Journal of technology in behavioral science, 6*, 436-441. https://doi.org/10.1007/s41347-020-00186-z

Kircaburun, K., & Griffiths, M. D. (2018). Instagram addiction and the Big Five of personality: The mediating role of self-liking. *Journal of behavioral addictions, 7*(1), 158-170. https://doi.org/10.1556/2006.7.2018.15

Koc, M., & Gulyagci, S. (2013). Facebook addiction among Turkish college students: The role of psychological health, demographic, and usage characteristics. *Cyberpsychology, Behavior and Social Networking, 16*(4), 279–284. https://doi.org/10.1089/cyber.2012.0249

Krasnova, H., Wenninger, H., Widjaja, T., & Buxmann, P. (2013). Envy on Facebook: A hidden threat to users' life satisfaction? Available under License BORIS Standard License, 27, 01-02.

Lozano-Muñoz, N., Borrallo-Riego, Á., & Guerra-Martín, M. D. (2024). Efectividad de las intervenciones para mitigar la influencia de las redes sociales en la anorexia y bulimia nerviosa: una revisión sistemática. *An Sist Sanit Navar. 47*(1): e1074. https://doi.org/10.23938/ASSN.1074

Lowe-Calverley, E., Grieve, R., & Padgett, C. (2019). A risky investment? Examining the outcomes of emotional investment in Instagram. *Telematics and Informatics, 45*, 101299. https://doi.org/10.1016/j.tele.2019.101299

Lup, K., Trub, L., & Rosenthal, L. (2015). Instagram #instasad?: Exploring associations among instagram use, depressive symptoms, negative social comparison, and strangers followed. Cyberpsychology, *Behavior and Social Networking, 18*, 247–252. https://doi.org/10.1089/cyber.2014.0560

Mackson, S. B., Brochu, P. M., & Schneider, B. A. (2019). Instagram: Friend or foe? The application's association with psychological well-being. *New Media & Society, 21*(10), 2160-2182. https://doi.org/10.1177/1461444819840021

Martínez, J. D., Ortega, V., & Muñoz, F.J. (2016). El diseño de preguntas clínicas en la práctica basada en la evidencia. Modelos de formulación. *Enfermería Global, 15*(3), 431-438. https://doi.org/10.6018/eglobal.15.3.239221

Moola, S., Munn, Z., Tufanaru, C., Aromataris, E., Sears, K., Sfetcu, R., Currie, M., Qureshi, R., Mattis, P., Lisy, K y Mu, P. F. (2020). Systematic reviews of etiology and risk. En. Aromataris y Z. Munn (Eds). *JBI Manual for Evidence Synthesis.* JBI. https://synthesismanual.jbi.global

Organización de Consumidores y Usuarios (OCU, 2024). Cosmética adolescente, una moda peligrosa. Disponible en https://www.ocu.org/salud/cosmeticos/noticias/cosmetica-infantil-riesgos

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., ..., & Moher, D. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *bmj, 372*. https://doi.org/10.1136/bmj.n71

Ponnusamy, S., Iranmanesh, M., Foroughi, B., & Hyun, S. S. (2020). Drivers and outcomes of Instagram Addiction: Psychological well-being as moderator. *Computers in Human Behavior, 107*,1–11. https://doi.org/10.1016/j.chb.2020.106294

Prades, M., & Carbonell, X. (2016). Motivaciones sociales y psicológicas para usar Instagram. *Communication Papers–Media Literacy y Gender Studies, 5*(9), 27-36. https://recercat.cat//handle/2072/267447

Rivas-Herrero, B. e Igartua, J. J. (2021). Los jóvenes se sumergen en Instagram. Un estudio desde la perspectiva de los usos y gratificaciones. *Profesional de La Información, 30*(5), 1–15. https://doi.org/10.3145/epi.2021.sep.09

Romero-Rodríguez, J. M., Aznar-Díaz, I., Marín-Marín, J. A., Soler-Costa, R., & Rodríguez-Jiménez, C. (2020). Impact of problematic smartphone use and instagram use intensity on self-esteem with university students from physical education. *International Journal of Environmental Research and Public Health, 17*(12), 1–10. https://doi.org/10.3390/ijerph17124336

Ruiz-San-Miguel, F., Ruiz-Gómez, L., & Hinojosa-Becerra, M. (2020). *Uso de Instagram como herramienta de debate y aprendizaje*. 15th Iberian Conference on Information Systems and Technologies (CISTI), 1-7. https://hdl.handle.net/10630/19673

Sadat, A., Pahlevan, S., & Sim, F. (2017). Self-schema and self-discrepancy mediate the influence of Instagram usage on body image satisfaction among youth. *Computers in human behavior, 68*, 8-16. https://doi.org/10.1016/j.chb.2016.11.011

Saiphoo, A. N., Dahoah Halevi, L., & Vahedi, Z. (2020). Social networking site use and self-esteem: A meta-analytic review. *Personality and Individual Differences, 153*, 1–11. https://doi.org/10.1016/j.paid.2019.109639

Sanz-Blas, S., Buzova, D., & Miquel-Romero, M. J. (2019). From Instagram overuse to instastress and emotional fatigue: the mediation of addiction. *Spanish Journal of Marketing - ESIC, 23*(2), 143–161. https://doi.org/10.1108/SJME-12-2018-0059

Seabra, L., Azevedo, T., & Natividade, J. C. (2020). Use of Instagram, social comparison, and personality as predictors of self-esteem. *Psico-USF, 25*(4), 711-724. https://doi.org/10.1590/1413/82712020250410

Serenko, A., & Turel, O. (2015). Integrating technology addiction and use: An empirical investigation of Facebook users. *AIS Transactions on Replication Research, 1*(2), 1–18. https://doi.org/10.17705/1atrr.00002

Sherlock, M., & Wagstaff, D. L. (2019). Exploring the relationship between frequency of Instagram use, exposure to idealized images, and psychological well-being in women. *Psychology of Popular Media Culture, 8*(4), 482-490. https://doi.org/10.1037/ppm0000182

Simon, P. D., Cu, S. M. O., de Jesus, K. E. M., Go, N. T. S., Lim, K. T. F., & Say, C. L.C. (2022). Worried about being imperfect? The mediating effect of physical appearance perfectionism between Instagram addiction and body esteem. *Personality and Individual Differences, 186*, 1–6. https://doi.org/10.1016/j.paid.2021.111346

Song, H., Zmyslinski-Seelig, A., Kim, J., Drent, A., Victor, A., Omori, K., & Allen, M. (2014), "Does facebook make you lonely? A meta analysis". *Computers in Human Behavior, 36*, 446-452. https://doi.org/10.1016/j.chb.2014.04.011

Stapleton, P., Luiz, G., & Chatwin, H. (2017). Generation validation: The role of social comparison in use of Instagram among emerging adults. *Cyberpsychology, Behavior, and Social Networking, 20*(3), 142–149. https://doi.org/10.1089/cyber.2016.0444

Sung-Hwnag, H. (2019). Why social comparison on Instagram matters: Its impact on depression. *KSII Transactions on Internet and Information Systems (TIIS), 13*(3), 1626-1638. http://doi.org/10.3837/tiis.2019.03.029

Thompson, J. K., Coovert, M. D., & Stormer, S. M. (1999). Body image, social comparison, and eating disturbance: a covariance structure modeling investigation. *International Journal of Eating Disorders, 26*(1), 43-51. https://doi.org/10.1002/(SICI)1098-108X(199907)26:1<43::AID-EAT6>3.0.CO;2-R

Torres-Serrano, M. (2020). Fear of missing out (FoMO) y el uso de Instagram: análisis de las relaciones entre narcisismo y autoestima. *Revista de Psicologia, Ciències de l'Eduació i de l'Esport, 38*(1), 31–38. http://hdl.handle.net/20.500.14342/2019

Wilksch, S. M., O'Shea, A., Ho, P., Byrne, S., & Wade, T. D. (2020). The relationship between social media use and disordered eating in young adolescents. *International Journal of Eating Disorders, 53*(1), 96-106. https://doi.org/10.1002/eat.23198

Wolniewicz, C. A., Tiamiyu, M. F., Weeks, J. W., & Elhai, J. D. (2017). Problematic smartphone use and relations with negative affect, fear of missing out, and fear of negative and positive evaluation. *Psychiatry Research, 262*, 618-623. https://doi.org/10.1016/j.psychres.2017.09.058

Yang, C. C. (2016). Instagram use, loneliness, and social comparison orientation: Interact and browse on social media, but don't compare. *Cyberpsychology, Behavior and Social Networking, 19*, 703–708. https://doi.org/10.1089/cyber.2016.020

Yurdagül, C., Kircaburun, K., Emirtekin, E., Wang, P., & Griffiths, M. D. (2019). Psychopathological Consequences Related to Problematic Instagram Use Among Adolescents: The Mediating Role of Body Image Dissatisfaction and Moderating Role of Gender. *International Journal of Mental Health and Addiction, 19*(5), 1385–1397. https://doi.org/10.1007/s11469-019-00071-8

Zheng, X., & Lee, M. K. (2016). Excessive use of mobile social networking sites: negative consequences on individuals. *Computers in Human Behavior, 65*, 65- 76. https://doi.org/10.1016/j.chb.2016.08.011