Beyond the Filter: Examining the Psychosocial Effects of Instagram Addiction

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Abstract. How has Instagram's appeal shifted from a simple social media platform to a potent driver of addictive behaviors? What are the hidden psychological and social effects of endlessly scrolling through its curated content? The current study investigates these questions, highlighting how the line between routine use and addiction is becoming increasingly blurred as Instagram captivates millions in a perpetual scrolling cycle. The implications of this phenomenon raise significant concerns about the platform's impact on mental health and social dynamics. This study aims to systematically explore the main components of the Instagram addiction literature, addressing the psychosocial effects of Instagram addiction, the factors contributing to addictive behavior, and proposed strategies for reducing this addiction. Utilizing a systematic review methodology, the study analyzes 20 original research articles from the WoS database. The findings indicate that Instagram addiction has considerable psychosocial effects on mental health, body image, and self-esteem. Key factors contributing to addictive behavior include the platform's notification features and the prevalence of appearance comparisons. Suggested interventions to mitigate Instagram addiction involve behavioral approaches (such as mindfulness techniques, meditation, and self-regulation training), as well as educational and technological strategies. These findings are discussed in the context of current literature, providing a comprehensive overview of Instagram's psychosocial impact.

Keywords: Instagram Addiction, Media Influence, Mental Health Impacts, Digital Behavior, Intervention Strategies.

Introduction

The rise of social media platforms and Instagram's influence on modern communication

In recent years, the rapid development of social media platforms (SMPs) has become one of the most popular and indispensable phenomena of the digital age. Technological advances and widespread internet access across the world have enabled individuals to spend more time in the digital world, which has further accelerated the growth of SMPs. In particular, the widespread use of mobile devices has made these platforms accessible from anywhere at any time, leading to an increase in the number of users and interaction rates. Thus, these SMPs have become multifaceted digital ecosystems where individuals not only maintain social connections but also access information, have fun, exchange ideas and even trade (Hanson, 2016; Kovan, 2017; Kovan & Uygarer, 2024).

Unlike traditional media, social media, one of the new media tools, stands out by giving its users the power to produce and disseminate content. This has enabled individuals to have more influence on social events and play an active role in shaping public discourse (Parker & Bozeman, 2018). For example, individuals who can reach large audiences through SMPs can support social movements, inform public opinion and even initiate political change. In addition, the algorithm-based structures of SMPs have increased interaction and reinforced the addictive features of the platforms by providing personalized content based on users' interests (Flayelle et al., 2023). In other words, through these algorithms, users are constantly exposed to content that is interesting and in line with their personal preferences, which increases the time spent on the platforms and can increase users' loyalty to the platform. In a way, the growth of SMPs can be seen as an indicator of not only technological but also sociocultural transformation.

Instagram stands out as one of the most popular examples among these SMPs. In 2010, when it first entered the market, it focused only on photo sharing, but over time, it has diversified the user experience with the addition of video content and ephemeral content such as stories. This diversity of the platform and its visual content has enabled it to reach a large global audience (Leaver et al., 2020). As of 2024, Instagram has nearly 2 billion active users globally, with over 70% of users under the age of 35, demonstrating the platform's popularity among young individuals. 44% of global users actively use Instagram every day, indicating how integrated the platform is into daily life. Furthermore, 90% of users follow at least one business, highlighting the commercial potential of the platform (Statista, 2024). Instagram's high engagement rates have made it an important tool for both individual users and brands. For example, brands use Instagram to communicate directly with their target audiences, promote their products

and increase customer engagement, while individual users actively use it for personal brand building, strengthening social connections and participating in social events (Guarda et al., 2020). Shortly, such widespread use of the platform comprehensively reflects the evolution of the social media ecosystem and the digital consumption habits of individuals.

Social media restrictions and access ban cases

As of 2024, the country with the highest number of Instagram users worldwide is India, with 363 million users. India is followed by the USA with 170 million users. Other countries with high numbers of Instagram users include Brazil with 135 million, Indonesia with 101 million and Türkiye with 57 million users (Demandsage, 2024). Of these countries, India, Brazil and Indonesia have experienced significant developments in terms of regulations and restrictions on social media in recent years. For example, in India, the Information Technology Rules enacted in 2021 increased the obligations of social media companies to moderate content and cooperate with the government, and as a result, various controls and restrictions were imposed on the content published on SMPs, especially restrictions on social unrest and anti-government content (Basu & Sen, 2024). Similarly, Brazil also has regulations and laws on SMPs. Especially during election periods and in relation to fake news are noteworthy. As a matter of fact, these laws, which came into force in 2018, imposed more responsibility on SMPs in the fight against fake news (Santos, 2020). A similar approach has been adopted in Indonesia. The Electronic Information and Transactions laws, which came into force in 2018, aims to regulate social media and content and imposes strict rules. With this law, regulations to combat hate speech, terrorism and immoral content are regularly enforced (Aditya & Al-Fatih, 2021).

Apart from these countries, in Pakistan, similar regulations have been implemented. SMPs are prohibited from sharing content or live broadcasts that oppose Islam, national security, public order, or the country's integrity. SMPs are required to remove any such content within two days upon the directive of the Telecommunication Authority, with substantial financial penalties imposed for non-compliance. In fact, a recent ban on access to platform X in Pakistan lasted for more than a month, sparking widespread outcry from users, activists and a group of journalists and academics taking legal steps to overturn the ban (Daily Pakistan, 2024). A recent X-related development took place in Venezuela, where tensions are running high following the presidential elections. The government decided to suspend access to the X platform for 10 days, but did not specify when the block would take effect. This uncertainty has caused unrest and anxiety among the population (Chowdhary, 2024).

Recently, in Türkiye, the abrupt 9-day blocking of access to Instagram by the Information and Communication Technologies Authority (ICTA) had widespread repercussions across the country and had profound effects on the dynamics of digital communication. It exposed the intricate

relationship of SMPs with local governments and the regulatory pressures on these platforms. This blocking, which took place in August 2024, sparked intense public debate, particularly on issues such as freedom of expression and the right to access information. The ICTA's decision was based on the claim that certain content on the platform under "catalog crimes" was objectionable on grounds of national security, public order and social sensitivities (Reuters, 2024). However, it is an undeniable fact that this access block has increased users' level of dependency on the platform and encouraged the search for alternative digital solutions. Indeed, while some individuals accessed the platform using a Virtual Private Network (VPN) or Domain Name System (DNS), others waited for Instagram to be unblocked due to concerns about risking their personal information security (The Pinnacle Gazette, 2024). This is reminiscent of how citizens accessed the internet through such VPN or DNS connections as part of the government's strategies to restrict internet access following the civil unrest in Iran in 2023. This is because such restrictions can affect citizens' freedom on the internet and their right to access information. Internet censorship and restrictions can limit the flow of information, making it difficult for the public to be informed about government activities and policies. Such interferences can prevent individuals from accessing SMPs and restrict their access to various sources of information. While the use of VPN or DNS is seen as a way to circumvent such obstacles, it also raises concerns about the security of personal information (Fabian & Günther, 2009). This therefore reflects the impact of government censorship and restrictions in the digital environment on individuals' access to information. This case in Türkiye is an important example of how digital censorship affects individuals' online behavior. Moreover, the reaction of social media users in Türkiye following the blocking of access to Instagram demonstrates how severe the habits of the digital age have become.

During this blocking process, users tended to turn to alternative platforms. While there has been a significant increase in the use of other SMPs such as X, Facebook and TikTok, there has also been a significant increase in the demand for VPN services (The Pinnacle Gazette, 2024). This has shown that SMPs have become an indispensable part of daily life for users, rather than just a means of communication. The public's rapid adaptation to being blocked demonstrated how important the online space is for individuals and that even in the event of a block, alternative means are quickly put in place (Miller, 2022). At the same time, these reactions have shown that censoring digital platforms can strengthen, rather than diminish, users' commitment to them (Myers-West, 2018). At this point, the desire and effort of individuals to overcome the access block can be considered as a reflection of the search for freedom in the digital space, and the behavior of the public during the blocking of Instagram in Türkiye points to potential signs of addiction to Instagram. This is because the intense reaction to the access block and the search for alternative solutions showed how strong users' attachment to Instagram is. In particular, users'

efforts to overcome the access block by turning to tools such as VPNs can be said to be an indicator of the intense need for the platform and the distress that arises when this need is not met (Jorge, 2019). This suggests that Instagram use may have become a habit for individuals and that these habits may lead to addiction-like behaviors when faced with restrictions. As it stands, the instant connectivity, interaction and access to information offered by Instagram have become indispensable for users, leading them to experience intense stress, anxiety and uncertainty-induced distress in the event of a platform shutdown (Throuvala et al., 2021). In essence, the public's reaction to the access block reflects a stance that freedom of expression, communication and the press, as well as the right to property and information, cannot be violated by a single administrative decision. Meanwhile, this reaction also shows that Instagram addiction can be considered as a social symptom and that individuals' dependence on digital platforms provides important clues about the effects of such blocking on individuals.

The concept of Instagram addiction

Instagram addiction can be said to be a unique sub-phenomenon that differs from general social media use. Among SMPs, Instagram arouses interest with the visual-oriented content, constantly updated feed and interaction opportunities it provides to its users. Thus, uncontrolled and excessive use of the platform by the individual occurs when this use negatively affects daily functionality, weakens social relationships and damages mental health. Unlike other technological addictions, Instagram addiction is often reinforced by the desire to constantly increase the number of likes, followers, etc. This addiction may cause the individual to constantly identify with his/her virtual self on Instagram and move away from real life (Ponnusamy et al., 2020). While this increases the individual's dependence on the platform, it may lead to the neglect of important psychosocial elements such as social relationships and self-awareness in the real world.

Conversely, it is particularly prevalent among teenagers and young adults and can be directly linked to sensitive processes such as identity development, self-esteem and the need for social approval (Ballarotto et al., 2021a). Individuals may tend to constantly compare themselves to others on Instagram, which can often have negative consequences (Huang & Su, 2018). The increase in the time spent on Instagram, the inability to control this time and the intense feeling of deprivation when away from the platform make it possible to define this as a symptom of addiction, and this situation brings up the concept of fear of missing out, and research demonstrates that this fear is highest among young individuals (Kovan, 2024; Kovan et al., 2024). In light of this, Instagram addiction emerges as a psychological phenomenon/problem that threatens the mental and social health of the individual.

Neuropsychological mechanisms of addiction

Addiction is identified by an excessive craving for a specific substance or behavioral incentive, such as Instagram use, which occurs at the expense of other life rewards. This craving, or addictive desire, can emerge even without an associated increase in pleasure or withdrawal symptoms. Research indicates that the brain mechanisms responsible for desire, referred to as "wanting," function independently from those that mediate pleasure, or "liking." "*Wanting*" and "*liking*" are governed by two distinct brain mechanisms that are anatomically and neurochemically separate, although they typically interact to influence motivation. However, during the transition to Instagram addiction, these mechanisms can become dissociated. "Liking," the hedonic impact of a pleasurable stimulus, is modulated by a brain system of "hedonic hotspots," which are localized subregions within broader brain structures that are relatively vulnerable to disruption. Contrarily, "wanting," which represents the subconscious desire for Instagram or related cues, is mediated by a more robust and extensive brain system. This "wanting" can be amplified by dopamine and opioid enhancements in various regions throughout the mesocorticolimbic circuitry. In susceptible individuals, this circuitry can become hyperreactive or sensitized, often due to prior exposure to rewarding stimuli, causing Instagram use and related cues to trigger heightened dopamine release and intensified "wanting." Such sensitized "wanting" becomes increasingly difficult to resist, leading to compulsive pursuit and relapse in Instagram addiction. This sensitization does not necessarily coincide with an increase in "liking," as dopamine manipulations do not appear to enhance pleasure. Furthermore, Instagram may become the focal point of excessive and narrow pursuit due to interactions between mesolimbic circuitry and other brain areas, such as the amygdala. Instagram addiction, like other behavioral and substance addictions, involves similar sensitization of mesolimbic "wanting" systems during the transition to addiction (Warlow et al., 2020). These mechanisms mentioned is presented in Fig 1 below.
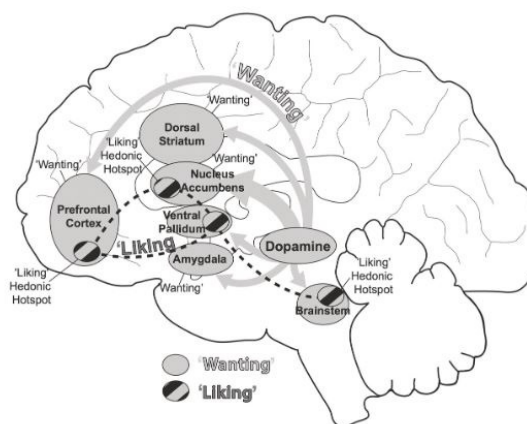
Fig 1. *The role of "wanting" and "liking" mechanisms*

The psychological mechanisms underlying Instagram addiction can be explained by the behavioral reinforcement and social comparison process that the platform creates for users. In terms of Reinforcement Theory (RT), likes and comments provide users with immediate gratification and these rewards increase the time spent on the platform. However, since the timing and amount of these rewards are often unpredictable, users may experience uncertainty about how many likes a post will receive. This uncertainty is similar to the mechanism of variable rate reinforcement in RT. This mechanism is one of the most effective types of reinforcement that maintains and even reinforces individuals' behaviors because it encourages individuals to repeat the same behavior over and over again because they do not know when they will receive a reward (Pekpazar et al., 2021). This process plays an important role in the development of Instagram addiction. Hence, it both increases the amount of time individuals spend on Instagram and strengthens their commitment to the platform. Moreover, Instagram's design features, such as the algorithms' ranking of content or the possibility of posts gaining visibility in the discover tab, make it even more uncertain when users will receive these rewards. This uncertainty, in turn, leads users to spend more time on the platform and interact more frequently, as every interaction offers a potential reward opportunity (Wadsley et al., 2022).

Beyond that, social comparison processes can also constitute another important element of the psychological mechanisms of Instagram addiction and include the process of individuals comparing themselves with others. Instagram constantly presents its users with idealized lives, bodies and success stories, creating a perfect world that does not correspond to real life. Especially individuals with low self-esteem may feel inadequate and incomplete when they encounter such idealized content (Rosenthal-von der Pütten et al., 2019). Consequently, the process of social comparison may cause individuals to spend more time on Instagram and become more attached to the platform. Indeed, individuals who constantly compare their lives with the idealized lives of others may face the risk of developing depression, anxiety and other mental disorders over time (Dittmar & Howard, 2004). What is more, these comparisons may fuel individuals' desire to be accepted and liked in their social circles, creating a cycle that drives them to spend more time on Instagram, share more content, and seek more engagement (Luttrell, 2021). Individuals may also tend to feel accepted in their social circles through the feedback they receive on SMPs (such as likes, comments, number of followers, etc.). Since SMPs such as Instagram are constantly filled with such feedback, individuals' desire for social approval may increase even more. The increase in time spent may create a sense of deprivation that further reinforces the individual's need for social approval. While this temporary satisfaction provided by SMPs provides a short-term relief, the disappearance of this relief may lead to a search for more approval (Fu & Li, 2022). This process can create a vicious

cycle that feeds Instagram addiction and causes the individual to constantly return to the platform to fulfill their psychological needs.

Instagram addiction and the mechanisms that lead to it have become topics of interest in the literature. Considering this, current research has tended to examine how these addictive tendencies develop and their effects on individuals. For example, Lup et al. (2015) found that Instagram use can cause low self-esteem and depression symptoms in individuals. In particular, it was stated that the posts of others displaying their more 'perfect' lives cause users to feel that their lives are inadequate. Similarly, Kross et al. (2021) stated that social media use in general can negatively affect individuals' momentary moods and that Instagram is particularly prominent in this context. However, many of these studies address more general social media use, and there has been limited research on Instagram-specific addiction and its unique mechanisms. Among these studies, Tiggemann and Slater (2017) showed that Instagram's overemphasis on aesthetics and beauty standards can increase body image concerns, especially in young females. In this context, much of the research has focused on body image and mental health (Fioravanti et al., 2023; Guizzo et al., 2021), but the broader psychosocial effects and addictive features of Instagram have been under-examined.

Meanwhile, Andreassen et al. (2016) also addressed Instagram addiction with the Bergen Social Media Addiction Scale, which they developed specifically for social media addiction, but made an assessment across SMPs. On top of that, Hawi and Samaha (2017) examined the negative effects of Instagram use on academic achievement, but it is seen that this study focuses on the consequences of Instagram addiction rather than its basic dynamics. Akanksh et al. (2018) examined the relationship between Instagram addiction and life satisfaction in young adults and found that addiction levels negatively affect life satisfaction. Nevertheless, although this study highlights the need for a more in-depth analysis of psychosocial interactions with Instagram addiction, it is clear that research in this area is limited. While Sherlock and Wagstaff (2019) suggested that Instagram addiction may increase feelings of anxiety and loneliness, it was stated that studies in this field are generally cross-sectional and the lack of longitudinal data creates a gap in the existing literature. Hussain et al. (2023) examined the relationship between Instagram addiction and personality traits and stated that it may feed the narcissistic tendencies of platform users. At this point, it is seen that existing studies have largely focused on individual-level effects, but the social-level effects of Instagram addiction have been less examined. Casale et al. (2015), explained the effects of social media use on social anxiety, stated that Instagram can negatively affect individuals' self-perception, especially by triggering social comparison behaviors. However, this study, like others, did not fully address the broader psychosocial effects of Instagram addiction. This gap in the literature suggests that studies on Instagram addiction can be addressed in a more comprehensive and systematic manner. Therefore, the

existing literature emphasizes the need for more in-depth research to address the gaps in this area.

By analyzing the psychosocial dimensions and effects of Instagram addiction, this review aims to contribute to the development of knowledge-based strategies for both researchers and practitioners and to lay the groundwork for creating effective intervention methods. Within this framework, current research between 2016 and 2024 was reviewed and focused on themes and findings related to Instagram addiction. The aim of the study is to examine in detail the main psychosocial effects of Instagram addiction, platform characteristics that contribute to addiction, and recommended intervention strategies. This study aims to provide valuable insights for future research and practical applications. For this aim, the following questions were sought to be answered.

RQ_1. What are the psychosocial effects of Instagram addiction?
RQ_2. How do specific features of Instagram contribute to addictive behaviors?
RQ_3. What interventions and/or strategies have been proposed to mitigate Instagram addiction?

Method

This study was designed to systematically examine what is known about a particular topic or phenomenon, as emphasized by Chen (2017) in the existing literature. In line with the aims and objectives of the study, the study followed a systematic review methodology. This process included steps such as formulating review questions, clarifying the conceptual framework, determining inclusion and exclusion criteria, formulating search strategies, identifying relevant studies, coding and synthesizing selected studies. The inclusion and exclusion criteria of the study are presented in Table 1.

Table 1. *Inclusion and exclusion criteria*

Inclusion criteria	Exclusion criteria
• Searching the WoS database, • To be published between 2016 and 2024, • Accessible using the keywords "Instagram addiction" OR "problematic Instagram use" OR "Instagram dependence" OR "Instagram compulsive use", • Open access, and • English as the language of publication.	• Research outside the field of psychology, • Publications other than original research articles (thesis, book chapters, review, meta-analysis, letter, etc.), • Scale development/adaptation studies, and • Published after August 2024.

In determining the inclusion criteria, factors such as the study being up-to-date, being accessible to other researchers and readers to increase accessibility, using the universal language as English to reach a wider readership, and using WoS as the most up-to-date and important scientific literature database were taken into consideration. The exclusion criteria prioritized focusing on studies conducted in the field of mental health,

exploring the psychosocial effects of Instagram addiction, and comprehensively examining interventions and strategies in this field. Additionally, studies that addressed social media use and were conducted in different disciplines but did not overlap with the keywords identified in the abstract and title were not included in this review. This whole process of the research (Page et al., 2021) is visualized in Fig 2, and detailed information about the relevant studies included in the review is given in Table 2.

Identification of studies via databases

Identification

Records identified from database:
WoS
($n = 106$)

Reviews removed before screening:
Conference papers ($n = 2$),
Scale studies ($n = 11$),
Review ($n = 5$),
Different types of SMPs ($n = 44$)
Out-of-scope ($n = 13$)

Screening

Reviews screened:
($n = 31$)

Reviews excluded:
Field mismatch
($n = 9$)

Reviews sought for retrieval:
($n = 22$)

Reviews not retrieved:
Full text not available
($n = 1$)

Reviews assessed for eligibility:
($n = 21$)

Reviews excluded:
Different language
($n = 1$)

Included

Studies included in review:
($n = 20$)

Fig 2. *PRISMA flow diagram*

Table 2. *Studies included in this review*

| Study	Country	Sample	Method	Key Findings
Guizzo et al. (2021)	Italy	Young females	Quantitative	Sexual images on Instagram decrease females' body satisfaction and increase their tendency towards plastic surgery, Instagram addiction tendency predicts intentions towards plastic surgery and affects reactions to Instagram content.
Longobardi et al. (2020)	Italy	Middle school students	Quantitative	Instagram popularity negatively affects young people' subjective happiness by increasing social media addiction and cyber victimization. Adolescents with more followers were found to be at increased risk of developing Instagram addiction and experiencing cyberbullying, while those with fewer followers were less exposed to such negative outcomes.
Pekpazar et al. (2021)	Türkiye	Undergraduate students	Quantitative	Instagram addiction increases procrastination behavior, which negatively affects academic performance. Self-esteem was found to have a direct effect on Instagram addiction and procrastination, but its effect on academic performance was indirect through procrastination.
Ponnusamy et al. (2020)	Malaysia	Undergraduate students	Quantitative	Recognition and social needs significantly affect Instagram addiction. Instagram addiction negatively affects academic performance and increases shyness and loneliness. Psychological well-being moderates the relationship between social needs and Instagram addiction.
Huang & Su (2018)	Taiwan	Undergraduate students	Quantitative	Motivations for Instagram use are social interaction and distraction. Instagram addiction is influenced by demographic factors such as gender and educational background. Female students notice advertisements on Instagram more than males.
Aksu et al. (2023)	Türkiye	Instagram users over 18	Quantitative	Early maladaptive schemas are associated with Instagram addiction. In particular, age and impaired autonomy and performance scores were found to have a significant predictive effect on the Instagram addiction scale.
Hinojo-Lucena et al. (2020)	Spain	Instagram users over 18	Quantitative	Intensive use of Instagram is positively associated with smartphone addiction and negatively associated with self-esteem. Age and time spent on social media are important predictors of Instagram addiction and smartphone addiction.
Giordano et al. (2022)	Web-based crawler	Instagram posts	Quantitative	Non-suicidal self-harm hashtags were most commonly associated with suicide, depression, general mental distress and anxiety. The use of three hashtags increased over time, while one remained stable and one decreased.
Ballarotto et al. (2021a)	Italy	High school students	Quantitative	Poor attachment to parents and peers increases adolescents' psychopathological risks and Instagram addiction. This suggests increased Instagram use as an expression of adolescents' psychological problems.
Ballarotto et al. (2021b)	Italy	Emerging adults	Quantitative	Psychological distress due to covid-19 significantly affects the relationship between alexithymia and Instagram addiction. Females experienced more psychological distress due to covid-19 compared to males.
Rogowska & Libera (2022)	Polond	Undergraduate students	Quantitative	Loneliness bidirectionally mediates the relationship between Instagram addiction and life satisfaction. For females, loneliness affects the link between Instagram addiction and life satisfaction more.

Foroughi et al. (2022)	Malaysia	Undergraduate students	Quantitative	Social needs, recognition and entertainment needs contribute to Instagram addiction. Physical activity moderates the relationship between social and entertainment needs and Instagram addiction. Instagram addiction negatively affects academic performance and positively affects social anxiety and depression.
Simon et al. (2022)	Philippines	Undergraduate students	Quantitative	Physical appearance perfectionism significantly mediates the relationship between Instagram addiction and body esteem.
Ekinci & Akat (2023)	Türkiye	High school students	Quantitative	A positive relationship was found between anxious-avoidant attachment, Instagram addiction and social appearance anxiety. Positive youth development negatively affects social appearance anxiety and plays a mediating role in this relationship.
Avci et al. (2023)	Türkiye	Undergraduate students	Quantitative	Protective/demanding parental attitudes predict obsessive-compulsive disorder and it plays a mediating role in relation to Instagram addiction. Democratic parental attitudes had no effect on obsessive-compulsive disorder.
Alhabash et al. (2024)	USA	Undergraduate students	Quantitative	Instagram usage motivations are associated with higher problematic use and intentions of continued use than other social media platforms.
Pitirut et al. (2024)	Romania	Young females	Quantitative	Appearance-based rejection sensitivity mediates the relationship between Instagram addiction and dysmorphic anxieties. This suggests that it may be associated with more severe manifestations of dysmorphic anxieties.
Fioravanti et al. (2023)	Italy	Young females	Quantitative	Problematic Instagram use was found to increase eating disorder symptoms and interpersonal difficulties. Investment in appearance and body discomfort were identified as important mediators in this relationship.
Lee (2022)	Korea	Young females	Quantitative	Instagram addiction increases the desire for thinness through appearance comparisons, objectification and body satisfaction. Social comparison and objectification processes were found to have negative effects on young females' body image.
Nikbin et al. (2022)	Oman	Instagram users over 18	Quantitative	The dark triad (Narcissism, Machiavellianism, Psychopathy) has direct and indirect effects on Instagram addiction. Adaptation, augmentation, and coping motivations mediate the associations of these traits with Instagram addiction.

The WoS database was searched on the basis of title and abstract. Studies that did not comply with the aims and objectives of the review were excluded from the process, and those found appropriate were obtained as full text. After this stage, a comprehensive review was carried out within the framework of inclusion and exclusion criteria. The studies included in the scope of the study were coded independently by the researcher. To minimize potential problems such as selection bias and reporting bias that may threaten the reliability of the study, all steps related to the included studies were confirmed and discussed by two independent reviewers and an agreement was reached to reduce these biases. To reduce the risk of bias, data were rigorously coded with MAXQDA (v.24.4.1) and accountability was maintained throughout the process.

Results

The studies in Table 2 were analyzed within the framework of the research questions and the findings obtained for these questions are explained as follows:
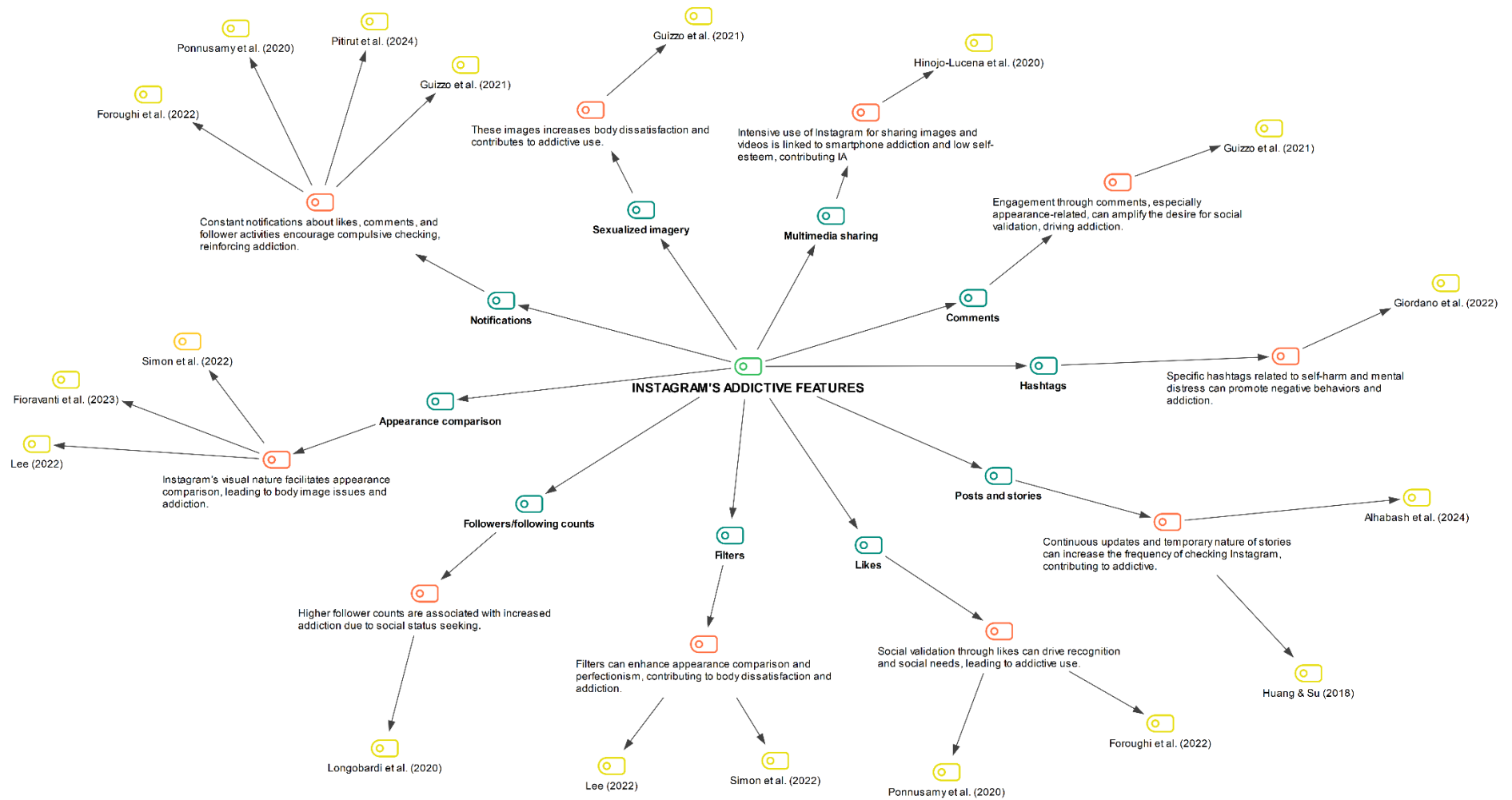
Within the scope of RQ_1, the main themes that examine the psychosocial effects of Instagram addiction on individuals in detail were identified (cf. Fig. 3). As can be seen, various themes are prominent in the studies addressing these effects. Among these themes, mental health issues (23%) and body image and self-esteem (17%) are the most highlighted effects. These effects are followed by motivations for social media use (11%) and psychological well-being (6%). It is understood that Instagram addiction has multifaceted psychosocial effects on individuals. Especially the prominence of mental health and body image effects indicates that Instagram may have significant effects on individuals' self-perception and emotional states. Moreover, the noteworthy effects on social media use motivations and psychological well-being suggest that the reasons and ways individuals use this platform may be directly related to their mental health and life satisfaction. Another important point is that the studies have an increasing momentum as of 2020, indicating that the widespread use of Instagram may be an indicator of a potential that may create addiction on individuals and societies. Especially in this period coinciding with the pandemic process, it is observed that the increase in individuals' use of social media has caused excessive use of Instagram to be reflected more in the studies.
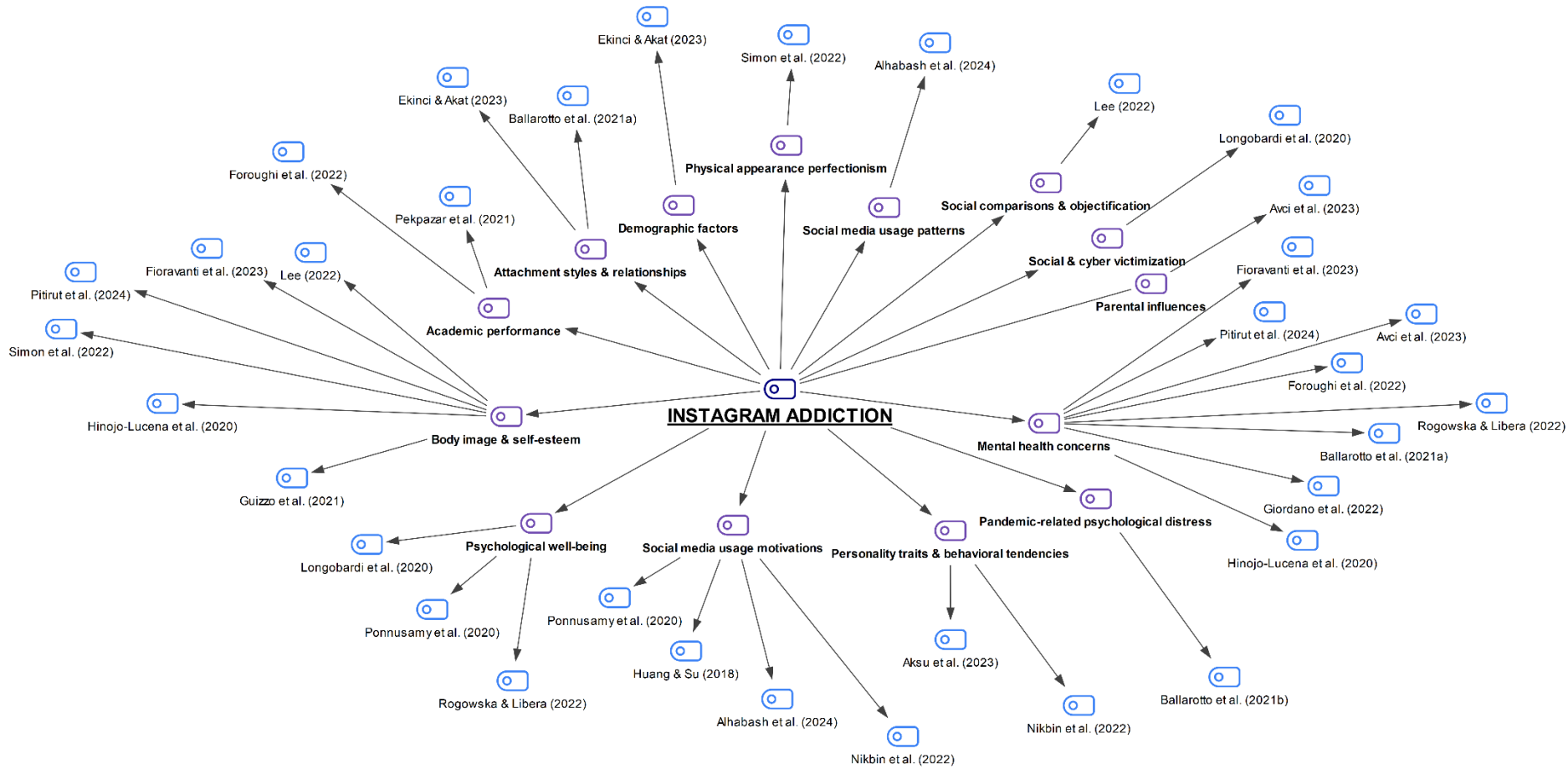
Fig 3. *Psychosocial effects of Instagram addiction*

In RQ$_2$, which focused on what are the elements that lead to Instagram generating addictive behavior that cause psychosocial effects, the study findings were synthesized (cf. Fig. 4). These findings provided important clues for understanding how and why certain features of Instagram are addictive. In particular, the platform's notification feature and appearance comparison factor were found to play an important role in the development of addictive behaviors. This suggests that the instant feedback mechanisms offered by Instagram and the idealized images on the platform cause users to constantly compare themselves with others and become more attached to the platform. Accordingly, it can be said that these factors are the main factors that shape individuals' social media use and trigger addictive behaviors.

Next, in RQ$_3$, the intervention strategies proposed in the existing literature to reduce Instagram addiction were systematically examined under various categories, and the diversity and application areas of the proposed approaches were demonstrated (cf. Fig. 5). Looking at these interventions, it is seen that the literature largely focuses on behavioral interventions. Specifically, mindfulness techniques, meditation practices and self-regulation trainings, which have become very popular in recent years, are emphasized. Besides, as in other types of addiction, Cognitive Behavioral Therapy (CBT) and group counseling are also included in behavioral interventions. Alternatively, educational and technological intervention strategies are also suggested in the literature. Among educational interventions, social media literacy programs as well as workshops and seminars stand out. Technological interventions include usage monitoring and restriction applications and notifications and warnings to reduce usage time.

Ponnusamy et al. (2020)

Pitirut et al. (2024)

Guizzo et al. (2021)

Foroughi et al. (2022)

Guizzo et al. (2021)

Hinojo-Lucena et al. (2020)

Guizzo et al. (2021)

These images increases body dissatisfaction and contributes to addictive use.

Intensive use of Instagram for sharing images and videos is linked to smartphone addiction and low self-esteem, contributing IA

Engagement through comments, especially appearance-related, can amplify the desire for social validation, driving addiction.

Sexualized imagery

Multimedia sharing

Constant notifications about likes, comments, and follower activities encourage compulsive checking, reinforcing addiction.

Comments

Notifications

Giordano et al. (2022)

INSTAGRAM'S ADDICTIVE FEATURES

Hashtags

Specific hashtags related to self-harm and mental distress can promote negative behaviors and addiction.

Simon et al. (2022)

Fioravanti et al. (2023)

Lee (2022)

Appearance comparison

Instagram's visual nature facilitates appearance comparison, leading to body image issues and addiction.

Posts and stories

Alhabash et al. (2024)

Followers/following counts

Filters

Likes

Continuous updates and temporary nature of stories can increase the frequency of checking Instagram, contributing to addictive.

Higher follower counts are associated with increased addiction due to social status seeking.

Filters can enhance appearance comparison and perfectionism, contributing to body dissatisfaction and addiction.

Social validation through likes can drive recognition and social needs, leading to addictive use.

Huang & Su (2018)

Longobardi et al. (2020)

Lee (2022)

Simon et al. (2022)

Ponnusamy et al. (2020)

Foroughi et al. (2022)
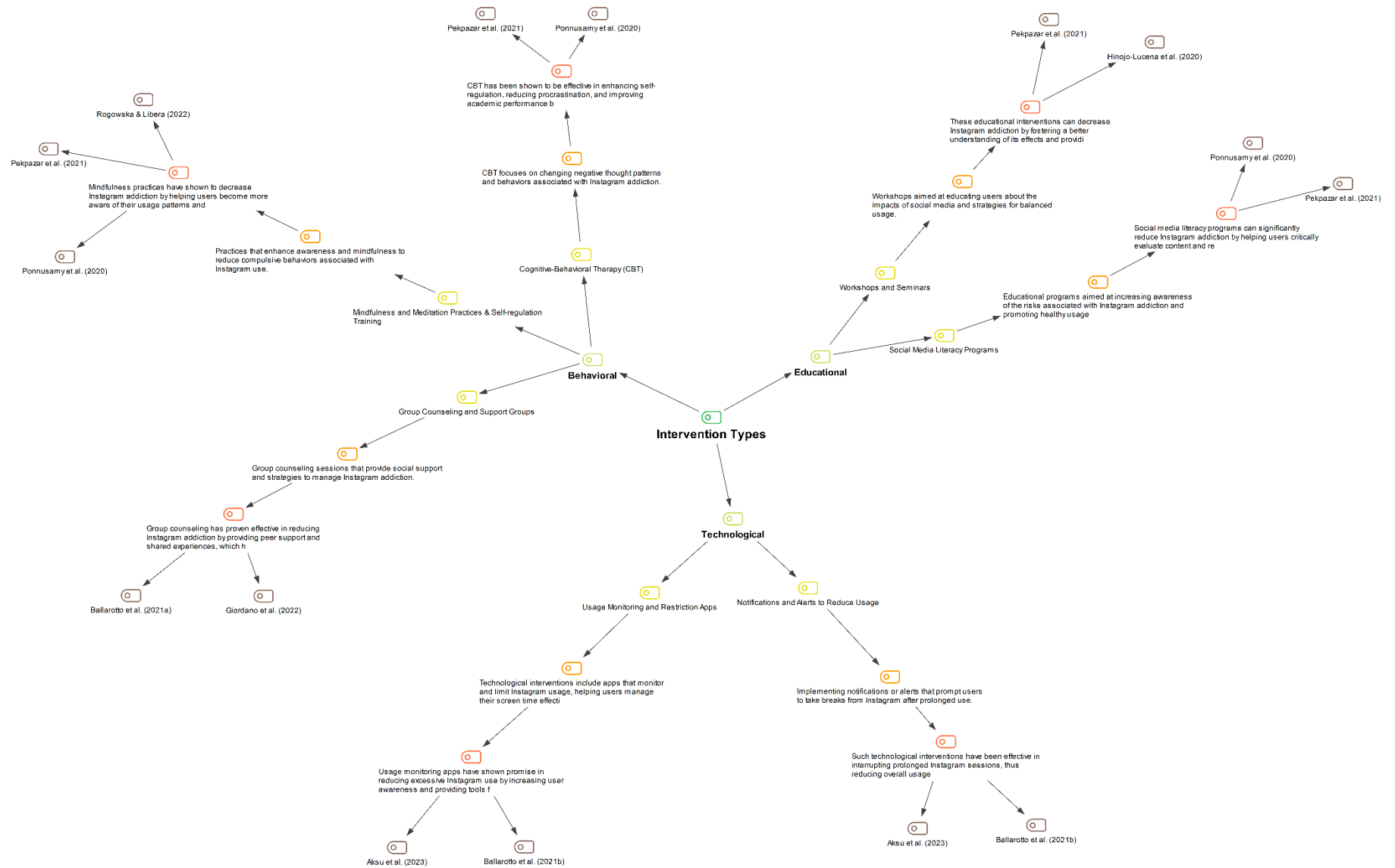
Fig 4. *Addictive features of Instagram*

Fig 5. *Interventions to mitigate Instagram addiction*

Discussion and Conclusion

In Table 2, where the study information is presented, it is seen that there are more studies conducted with samples from Italy (25%) and Türkiye (20%) compared to other countries. Although the 2024 Instagram usage data points to India, the USA, Brazil, Indonesia and Türkiye as the countries with the highest number of users worldwide, the underrepresentation of India, Brazil and Indonesia in the studies demonstrate the limitations in the distribution of research samples. Further, the fact that all studies are based on quantitative research methods and there is no qualitative and mixed-methods study can be considered as an important methodological shortcoming. Another noteworthy finding is that 20% ($n = 4$) of the sample groups were young females. Two of these studies were conducted with Italian samples and the other two with females in Romania and Korea. However, females' motives for using Instagram are often cited in the literature as physical appearance perfection, social comparison and feeling good, which may indicate that females have different motivations than males (Guizzo et al., 2021; Lee, 2022).

The lack of studies on male users suggests that gender differences in social media use can be investigated more comprehensively. This may suggest that gender differences in social media use may be overlooked in research or that more studies are needed in this area. According to 2024 data, although males' Instagram usage is higher than females', the lack of research on this group shows that males' motivations for social media use can be examined in depth. To add to this, looking at the sample groups, it is seen that an only study was conducted with secondary school students, two studies were conducted with high school samples, but 45% of the studies were conducted with undergraduate students. This shows that the social media usage habits of undergraduate students are accepted as a more common and important research topic and that the behaviors of this age group on digital platforms are examined in more depth. While the intensity of studies on undergraduate students' social media use provides important data on the role of this group in digital interactions, it can also be considered as a clear indicator that this group faces digital risks.

The findings of the study examined in-depth the negative effects of Instagram on individuals' psychosocial health and were found to be in strong agreement with existing knowledge in the literature. Given this context, studies show that especially young female users are more likely to experience body dissatisfaction when exposed to idealized body images on Instagram. In the literature, it is emphasized that idealized body images encountered on social media are associated with serious mental health problems such as body dissatisfaction, depression and anxiety among female users (Choukas-Bradley et al., 2022; Tiggemann & Slater, 2013). Actually, it is often emphasized in the literature that ideal body images on Instagram can lead to eating disorders among young females. Griffiths et al. (2018) reported that Instagram use had a role in the development of eating

disorders such as anorexia nervosa and bulimia, and the constant promotion of the thin body ideal negatively affected the eating behaviors of female users, contributing to the emergence of eating disorders. At the same time, Perloff (2014) emphasizes that idealized body images encountered on social media, especially the pressure to be thin, increases the risk of eating disorders in females. These findings suggest that Instagram use can have serious consequences on both mental and physical health. In a nutshell, the profound effects of Instagram use on individual self-perception and emotional well-being illustrate the pressure it exerts on female users. Social Comparison Theory can be considered as an appropriate perspective to address this situation, suggesting that individuals shape their self-perceptions by comparing themselves with others (Buunk et al., 2013). As it happens, there are findings in the relevant literature that visual-oriented platforms have negative effects on body image by intensifying social comparison processes, especially among young females (Fardouly & Vartanian, 2016).

On top of that, the finding that motivations for Instagram use are closely related to the psychological effects of this platform is also noteworthy. Users' reasons for using this platform are not only limited to the effects on body image, but also play a decisive role in general psychosocial health. It has been reported that the use of social media as an escape tool can trigger symptoms of depression and anxiety, which points to the need for a more detailed examination of the motivations and frequency of social media use (Sheldon et al., 2019). Beyond that, with the onset of the covid-19 pandemic, this increase in social media use has made the addictive potential of Instagram and its role during global crises even more evident. The increased social isolation during the pandemic has increased the need for online interactions, leading individuals to use platforms such as Instagram more intensively. Singleton et al. (2016) emphasizes that the increased use of social media during this period led to unprecedented levels of psychosocial distresses, especially among young users. Due to social isolation, young female users in particular were more exposed to the idealized body images they encountered on Instagram, resulting in body dissatisfaction and serious declines in self-esteem. While these findings help to understand the far-reaching effects of Instagram use on female users, they also expose the need for conscious and balanced management of the use of these SMPs.

The findings suggest that Instagram's notification mechanisms and appearance comparison elements play an important role in the development of addictive behaviors and psychosocial effects. Specifically, the findings identified that the instant feedback that users constantly receive through notifications and the appearance comparison factors present on the platform has a central role in the development of addictive behaviors. Instant feedback mechanisms reinforce users' tendency to constantly compare themselves to others, while such interactions create a reward system that positively reinforces users' behavior. This encourages users to use the

platform regularly and intensively (He et al., 2017). Furthermore, comparisons with idealized visual content on Instagram play a decisive role in the development of addictive behaviors and mental health problems, especially among young users. The visual-oriented nature of Instagram negatively affects users' self-worth by intensifying their social comparison processes, which have been found to be associated with body image dissatisfaction and low self-esteem (Fardouly & Vartanian, 2016). The visual-driven nature of Instagram, coupled with the fact that much of the content users consume is curated and idealized, can cause individuals to feel inadequate or inferior. These feelings may encourage individuals to pursue the search for social approval even more deeply, which may increase engagement with the platform. The effects of reporting features and appearance comparison factors on users' psychosocial health are crucial to understanding the impact of Instagram on individuals' behavior and self-perceptions. Moreover, fomo is also considered as an important factor that further reinforces this process (Kovan, 2024; Kovan et al., 2024). Because users feel the need to constantly follow the platform in order not to miss the activities of their friends or others and acquaintances on Instagram, they can further deepen their addictive behaviors. Various studies support that these processes can have long-term and serious effects on mental health (Perloff, 2014; Tiggemann & Slater, 2013).

Another finding resulted from an examination of interventions to reduce Instagram addiction and detected a broad approach that can be divided into behavioral, educational and technological categories. To be specific, studies suggest that behavioral interventions such as mindfulness techniques, meditation practices, and self-regulation training can play a central role in combating Instagram addiction. These techniques aim to increase users' awareness of their usage patterns and provide them with the necessary tools to manage and reduce their digital addiction. The literature emphasizes that CBT is particularly effective in this context because it enables users to manage their social media use more consciously by restructuring dysfunctional thought patterns and related emotional reactions that contribute to addiction (Young, 2013). In this process, identification of problematic usage behaviors and changing these behaviors with healthy habits are addressed. Alternatively, group counseling can help individuals cope with addictive behaviors within a social support system. As an example, studies conducted in the UK and Australia show that such group therapies are effective in combating social media addiction. A study conducted in the UK found that participants shared their experiences in group sessions and developed strategies to reduce social media use with expert guidance. In Australia, school-based group counseling programs were implemented to reduce digital media addiction among young individuals. These programs aimed to improve ability to cope with media pressures while providing practical suggestions for limiting digital media use (Andrews et al., 2023; Throuvala et al., 2019).

Educational interventions aim to raise awareness about the negative effects of media use and promote healthy behaviors by improving media literacy. Programs to improve social media skills are usually delivered in the form of workshops and seminars and aim to enable users to interact with social media in a more critical and informed way. Kardefelt-Winther et al. (2017) show that such educational interventions show a significant role in reducing negative effects by helping users better understand the psychological and sociological mechanisms underlying social media. Increasing the level of media literacy enables users to use platforms such as Instagram more thoughtfully and responsibly, which can contribute to reducing the risk of addiction in the long term. For example, a study in the Netherlands found that media literacy training provided to high school students increased their ability to critically evaluate social media content and reduced the risk of media addiction (Van den Eijnden, et al., 2016). By the same token, a program conducted in US helped young adults to consciously guide their social media use habits (Collins & Halverson, 2018). Technological interventions are supported by applications and systems that aim to control user behavior. Apps to monitor and limit usage, notifications and alerts to reduce screen time are central to this category. Including, in South Korea, government-sponsored apps are widely used to help users monitor their social media use and keep it within set limits (Park et al., 2021). Similarly, apps developed in Japan present various warning and limiting features to help individuals manage their screen time (Sugiyama et al., 2023). Such technological interventions may contribute to the prevention of problematic use by allowing users to monitor their social media use in real time.

These proposed interventions present different approaches to reducing Instagram addiction, and each intervention category has its strengths and limitations. Behavioral interventions aim to create a fundamental change in users' media usage habits, while educational interventions increase users' knowledge and awareness of social media, leading to a more conscious use. Although technological interventions aim to control user behavior, it is emphasized that the most effective results are achieved when these interventions are implemented in combination with behavioral and educational strategies (Radtke et al., 2022). This multifaceted diversity of approaches demonstrates that multidisciplinary strategies can be developed and implemented effectively in the search for solutions to a deep-rooted behavioral addictions such as Instagram addiction.

Implications

Methodologically, a limitation is that most of the studies are based on quantitative research methods, cross-sectional and correlational studies. In order to overcome this limitation, it is recommended to include studies that are not only based on quantitative methods, but also include longitudinal and experimental studies, qualitative research methods and

mixed-methods. By doing so, a more holistic understanding of Instagram addiction can be developed. What's more, due to the multifaceted structure of behavioral addictions, it is important to develop and implement sessions and modules based on therapeutic approaches and their adaptation to individuals. Such therapeutic interventions can be effective in managing addictive behaviors and increasing individuals' ability to cope with such behaviors. To add to this, another limitation is that the sample groups in the studies were limited to middle and high school students. However, these groups are considered as one of the main samples of the risk group due to their close contact with digital platforms. In this context, to better understand the digital and psychological well-being of the Z and Alpha generations, it is recommended that these groups be included in more studies. Research focusing on the dynamics of these generations may show the long-term effects of their interactions with digital platforms and allow for the development of more effective interventions (Hernandez et al., 2023). Simply put, ensuring methodological diversity in the study of Instagram addiction and similar behavioral addictions, using larger and more representative sample groups, and investigating the reactions of these groups to therapy processes can make significant contributions to the literature. Studies to be conducted in line with these recommendations may contribute to the development of more effective strategies for individuals to manage their digital addictions.

As noted in the literature, technological interventions generally focus on controlling user behavior, and the most effective results can be achieved when these interventions are implemented in combination with behavioral and educational strategies. Therefore, before the state regulates and blocks access to SMPs, investing in behavioral and educational interventions can take an important role in combating digital addiction. Regular implementation of education and awareness programs, both in schools and at the general public level, could include information about the potential harms of overuse of digital platforms, as well as strategies to cope with these addictions. Particularly given that behavioral addictions, such as Instagram addiction, may show individual differences, it would be appropriate for the state to invest more in the field of mental health and lead the development of modules based on the needs and addiction levels of individuals. Regarding group therapies, organizing special sessions specifically for the Z and Alpha generations can enable these generations to discuss their relationship with the digital world and develop mutual support mechanisms.

Not only that, it may be effective for governments to collaborate with local governments to ensure that family counseling and support programs are regularly implemented. Providing counseling services to help families understand their children's relationship with digital platforms and set healthy boundaries in this regard can be of great importance in terms of managing the time their children spend on SMPs such as Instagram and developing healthy digital habits. In terms of school-based intervention

strategies, schools can act a key role in combating digital addiction. In light of this, it may be useful for schools to organize in-class activities, seminars and workshops to raise digital awareness among students. It may also be important for school psychologists to identify the symptoms of digital addiction at an early stage and initiate intervention processes. Ultimately, practitioners can conduct long-term follow-up studies to evaluate the effectiveness of intervention and therapy processes related to Instagram addiction and other digital addictions. Such research can help determine which methods are more effective and contribute to the development of better strategies in applied areas. Studies in line with these recommendations can contribute to the development of more effective interventions against digital addictions and strengthen the digital well-being of the public.

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