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Literature Review

Emotional Reactivity in the Digital Era: A Systematic Review from a Lifespan Perspective

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Abstract
Digital technology has become an integral part of everyday life and may influence individuals' emotional responses across different stages of development. This systematic review aims to examine the role of emotional reactivity within digital interaction contexts across different stages of human development. A structured review was conducted using the SPIDER framework, with articles sourced from Google Scholar between 2020 and 2025. From an initial pool of 201 records, 10 studies met the inclusion criteria after a multi-stage screening process. The findings indicate that emotional reactivity plays a dynamic and context-dependent role in digital behavior. In early childhood and adolescence, it primarily functions as a dependent variable influenced by digital exposure, such as excessive screen time and negative social media interactions, which may heighten emotional instability. In contrast, during adulthood, emotional reactivity tends to act as a relatively stable predispositional factor, functioning as a predictor or mediator of behaviors such as social media addiction, Fear of Missing Out (FOMO), phubbing, susceptibility to misinformation, and problematic online gambling. In older adults, heightened emotional reactivity is associated with increased vulnerability in digital information processing, particularly in evaluating the credibility of online content. Overall, the findings highlight a reciprocal relationship between digital environments and emotional reactivity. Interventions should extend beyond limiting screen time to strengthening emotional regulation and self-awareness across the lifespan.

Keywords: Emotional Reactivity, Digital Context, Lifespan Development

1. Introduction

As time progresses, technology and electronic devices have become inseparable from everyday life. According to the WHO (2024), digitalization is not merely a technical advancement but also constitutes digital determinants of health, referring to factors originating from the digital environment that can directly or indirectly influence the health and well-being of individuals and populations. The digital environment is now viewed as a crucial ecological context, in which interactions between individuals and technology shape unique developmental experiences across different age groups (Valkenburg et al., 2022). Furthermore, the WHO (2024) highlights that internet access, digital literacy, device availability, as well as policies related to content and algorithms, collectively influence living conditions and human behavior in complex ways, including how individuals process information, cope with pressure, and respond to emotionally stimulating digital content.

From a psychological perspective, one key construct for understanding individuals' affective responses is emotional reactivity. It is generally defined as the initial emotional response that emerges relatively spontaneously in reaction to internal or external stimuli. Individuals with high emotional reactivity tend to be more easily triggered and experience emotions more intensely, both negative and positive (Förster et al., 2022). This concept encompasses how quickly emotions arise in response to a stimulus, the intensity of the response, and how rapidly individuals return to their baseline emotional

state after exposure (Förster et al., 2022). Additionally, within the framework of emotion regulation, emotional reactivity is part of the broader emotional process, including subjective experience, behavioral expression, and physiological responses to specific stimuli (Lavi et al., 2019). Emotion regulation itself refers to an individual's ability to influence their emotions, including how emotions are expressed and experienced. Thus, high emotional reactivity without adequate regulation may increase individual vulnerability (Lavi et al., 2019).

However, individuals' capacity to manage emotional reactivity is not uniform, but develops dynamically across the lifespan. The lifespan development perspective emphasizes that development is lifelong and involves both growth and decline occurring simultaneously across different stages (Baltes et al., 2007). Differences in emotional and cognitive maturity contribute to variations in emotional reactivity at each developmental stage (Santrock, 2012). Research by Doucet et al. (2023) further indicates that cognitive functioning and amygdala activity are significantly influenced by age. Younger individuals tend to show stronger amygdala responses to negative stimuli, whereas older adults demonstrate greater responsiveness to positive stimuli and tend to exhibit greater emotional stability.

In early childhood, emotional reactivity is often an outcome influenced by the digital environment due to immature self-regulation capacities (Jusienė et al., 2025). During adolescence, emotional vulnerability increases sharply as a result of heightened social sensitivity, making exposure to social media platforms such as Instagram more likely to trigger maladaptive emotional responses (Cimino et al., 2025). In contrast, in adulthood and older age, emotional reactivity tends to function as a stable predictor (Filkuková & Langguth, 2021) or as a mediator that drives certain behaviors (Peleg & Boniel-Nissim, 2024). This is supported by findings from Doucet et al. (2023), which show that the amygdala becomes less sensitive to negative stimuli with age, indicating shifts in emotional functioning in later life. Moreover, (Valkenburg et al., 2022) argue that the impact of the digital environment is person-specific, meaning that the effects of social media on mental well-being can differ significantly between individuals, even within the same age group. Therefore, not only age but also the way individuals actively engage in digital interactions, along with supporting cognitive capacities such as emotion recognition (Scarpulla et al., 2023), play a crucial role.

Based on the above discussion, it is evident that findings regarding emotional reactivity are diverse and indicate its complex role depending on the context of digital interaction and developmental stage. Emotional reactivity has been positioned as a dependent variable, independent variable, moderator, and mediator across different studies, alongside varied digital interaction contexts. Therefore, the aim of this systematic review is to map and analyze how emotional reactivity is positioned and functions in research related to digital interaction across different stages of development.

2. Methods

This systematic review was conducted through a series of structured stages, including planning, implementation, and reporting. The planning stage began with formulating the review question using the SPIDER framework (Sample, Phenomenon of Interest, Design, Evaluation, Research Type) to map the role of emotional reactivity in explaining human behavior in the digital era and its developmental patterns from childhood to adulthood. The literature search was conducted using the Google Scholar database with the keywords "emotional reactivity" AND "social media," yielding 201 journal articles. All articles were then uploaded into Rayyan AI to identify duplicates, resulting in the removal of one duplicate article.

Based on the PRISMA flow diagram (Figure 1), inclusion criteria were defined as follows: (1) studies examining emotional reactivity as a variable in the digital era, (2) participants from various developmental stages, (3) studies published between 2020 and 2025, (4) publications in English or Indonesian, and (5) accessible full-text articles. Exclusion criteria included: (1) studies on emotional reactivity outside a digital context, and (2) articles such as reviews, reports, books, literature reviews, and theses.

The screening process began with title and abstract screening, requiring that studies explicitly include emotional reactivity as a variable in a digital context. At this stage, 150 articles were excluded for not meeting the inclusion criteria. The remaining 50 articles underwent full-text screening, resulting in the exclusion of 40 additional articles. Ultimately, 10 articles met all criteria and were included for in-depth analysis.

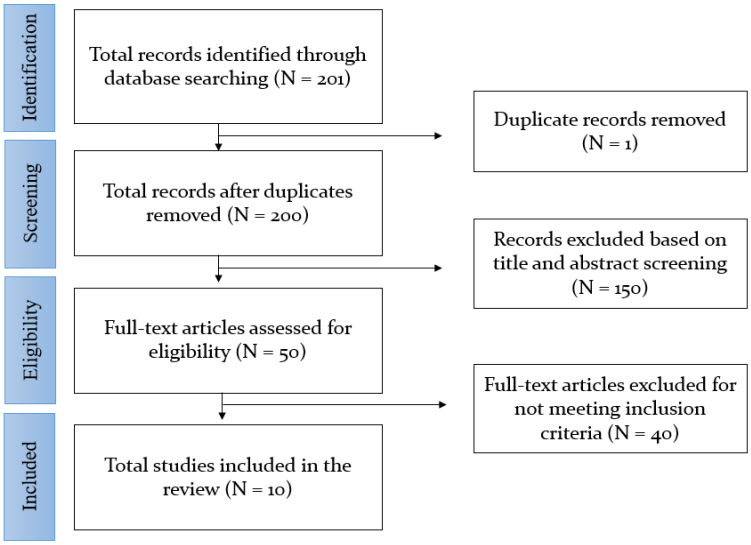

Figure 1. PRISMA
Source: Adapted from Page et al. (2021)

3. Results and Discussion

3.1. Research Results

Following a systematic screening of 201 research articles published from 2020 to 2025, a final subset of 10 studies satisfied all inclusion criteria. The comprehensive profiles of these selected articles are presented in Table 1.

Table 1. Study Characteristics

Author (Year)	Participants	Digital Context	Findings
Baukienė et al. (2021)	754 toddlers (aged 2-5 years)	Screen-based media	Strengthens the negative impact of screen time on sleep problems.
Jusienė et al. (2025)	754 toddlers (aged 2-5 years)	Child screen time	Triggers behavioral problems in children.
Cimino et al. (2025)	232 female children (aged 9-10 years)	Instagram addiction	Leads to body dissatisfaction and a desire to be thin.
			Negative interactions on social media elicit stronger and more

Hamilton et al. (2020)	110 female adolescents (aged 11-13 years)	Social media interaction	persistent emotional reactivity compared to face-to-face interactions.
Bocci Benucci et al. (2023)	529 adults (aged 18-75 years)	FOMO and social media addiction	Influences cognitive processes and increases craving in social media use.
Idrees and Ahmad (2022)	266 young adults (aged 18-25 years)	Social media addiction	Increases sensitivity, intensity, and persistence of emotional reactivity.
Andangsari et al. (2024)	307 adults (aged 18- 40 years)	Twitter use	Makes users more reactive to stress and triggers problematic internet use (PIU).
Filkuková and Langguth (2021)	694 adults (aged 18- 91 years)	Fake News	Increases susceptibility to believing and sharing criminal fake news.
Peleg and Boniel-Nissim (2024)	431 adults (aged 16- 68 years)	Phubbing	Promotes phubbing behavior (ignoring others in favor of mobile phones).
Kovan and Yıldırım (2025)	1487 adults	Online Problem Gambling	Predicts online problem gambling behavior, either directly or indirectly through psychological distress (e.g., depression and anxiety)

Table 1 summarizes the main characteristics of the ten studies included in this systematic review. These studies were published over a six-year period, from 2020 to 2025, reflecting recent research on the topic. The participants represented a wide range of age groups, including toddlers, children, adolescents, young adults, adults, and older adults, allowing the findings to capture evidence from different stages of human development. This broad age distribution provides a more comprehensive understanding of the phenomenon being investigated across the lifespan. In addition, the studies differed substantially in the number of participants they recruited. Sample sizes ranged from 110 to 1,487 individuals, indicating considerable variation in study scale and research design. Although the included studies varied in participant characteristics and sample size, together they offer a diverse body of evidence that contributes to a more comprehensive evaluation of the research topic.

Across the included studies, emotional reactivity was investigated in various forms of digital engagement, reflecting the broad ways individuals interact with technology in their daily lives. The digital environments explored included screen-based media, children's screen time, Instagram addiction, social media interaction, Fear of Missing Out (FOMO), social media addiction, Twitter use, exposure to fake news, phubbing behavior, and online problem gambling. Although each study focused on a different type of digital activity, the findings consistently showed that emotional reactivity was related to a wide range of psychological and behavioral outcomes. Individuals with higher levels of emotional reactivity were more likely to experience sleep disturbances, behavioral problems, body dissatisfaction, problematic internet use, greater vulnerability to believing or sharing fake news, increased phubbing behavior, and a higher risk of engaging in online problem gambling. These findings suggest that emotional reactivity may influence how people respond to different digital experiences, making them more sensitive to emotional triggers encountered in online environments. As a result, emotional reactivity appears to play an important role in explaining why some individuals are more likely than others to develop unhealthy behaviors and experience negative.

3.2. Discussion

A total of ten studies were included in this review, all of which met the predefined inclusion criteria. Overall, these studies demonstrate considerable variability, reflecting the complexity of emotional reactivity phenomena in the digital era. This diversity is evident across different digital contexts, each highlighting distinct issues. Furthermore, the role of emotional reactivity varies across studies, being conceptualized not only as a dependent or independent variable, but also as a mediator and moderator. Additional differences are observed in the characteristics of the study participants, which span a wide range of developmental stages, allowing for a lifespan perspective on emotional reactivity. Collectively, these findings emphasize that emotional reactivity is not merely a passive emotional response, but also a dynamic mechanism that shapes how individuals interact with technological developments.

3.2.1. Emotional Reactivity in Early Childhood

Based on the review findings, in early childhood, emotional reactivity is generally positioned as a characteristic that is still strongly influenced by the digital caregiving environment. Jusienė et al. (2025) highlight a phenomenon in which parents frequently use digital media as a calming tool to manage emotionally reactive children. However, longitudinal findings indicate that this practice may contribute to behavioral problems, as children lose opportunities to develop internal emotion regulation capacities. Similarly, Wulandari and Fauziah (2024) found that uncontrolled screen time in early childhood is significantly associated with emotional instability, which may hinder children's social development. In addition, Baukienė et al. (2022) position emotional reactivity as a moderating variable that strengthens the relationship between screen-based media exposure (e.g., television screen time) and sleep disturbances in children. This is consistent with findings from Munzer et al. (2026), which suggest that contemporary digital ecosystems contain features that may foster emotional dependency in children, thereby requiring more mindful parenting strategies regarding children's emotional development. Thus, in early childhood, emotional reactivity functions both as a developmental outcome and as a vulnerability factor in response to negative digital exposure.

3.2.2. Emotional Reactivity in Adolescence

In adolescence, emotional reactivity is more commonly positioned as a psychological response to social experiences in the digital environment, often functioning as a dependent variable. From a developmental perspective, adolescence is characterized by an imbalance between emotional systems and cognitive control (Cimino et al., 2025). Hamilton et al. (2020) found that negative interactions on social media elicit more persistent emotional reactivity compared to face-to-face interactions. The accessibility of negative content in digital platforms may prolong emotional recovery among adolescents. This is further supported by Liu (2026), who reported that post-pandemic digital behaviors have contributed to heightened emotional reactivity patterns in adolescents, with digital anxiety emerging as a key driver of excessive gadget use. This may explain why Instagram addiction is closely associated with social withdrawal and body dissatisfaction among adolescent girls (Cimino et al., 2025).

3.2.3. Emotional Reactivity in Young Adulthood

In young adulthood, the role of emotional reactivity begins to shift toward functioning as a predictor and mediator of behavior. Bocci Benucci et al. (2024) explain that negative emotional reactivity can drive compulsive cognitive processes, which in turn increase addictive engagement with social media as a form of emotional escape. Additionally, Andangsari et al. (2024) found that digital stress creates dual emotional pathways that exacerbate problematic internet use.

Idrees and Ahmad (2022) found that social media addiction increases the sensitivity and intensity of emotional reactivity, indicating a reciprocal relationship between digital engagement and individuals' emotional responses. In this context, emotional reactivity is positioned as a dependent variable associated with key developmental tasks in adolescence and young adulthood, particularly identity formation. When self-validation heavily depends on social feedback from the digital environment, negative or excessive online experiences are more likely to elicit heightened emotional reactivity.

3.2.4. Emotional Reactivity in Adulthood

In adulthood, emotional reactivity is generally viewed as a relatively stable psychological characteristic compared with childhood and adolescence, when emotional responses are still developing and tend to change more frequently. As individuals grow older, they usually develop stronger emotion regulation abilities, greater self-control, and more effective coping strategies through life experiences. These developments contribute to more consistent patterns in the way emotions are experienced and expressed across different situations. Although adults may still react differently depending on personal circumstances, their overall level of emotional reactivity is considered a stable individual characteristic that can influence how they think, make decisions, and respond to everyday challenges. For this reason, emotional reactivity is commonly regarded as an important factor that shapes individual behavior rather than simply reflecting temporary emotional states (Bocci Benucci et al., 2024). In today's digital environment, where online interactions and social media have become part of daily life, emotional reactivity is frequently treated as an independent variable because it helps explain and predict a wide range of digital behaviors. Individuals with different levels of emotional reactivity may engage with digital platforms in different ways, influencing how they communicate, respond to online content, interact with others, and manage their activities in virtual environments.

Bocci Benucci et al. (2024) demonstrated that emotional reactivity serves as an independent variable in explaining phenomena such as Fear of Missing Out (FOMO) and social media addiction. Their findings indicate that individuals with high levels of negative emotional reactivity are more likely to experience FOMO, which subsequently increases compulsive engagement with social media. Intense emotional responses act as an internal predisposition that drives problematic digital behavior patterns. Similarly, Filkuková and Langguth (2021) found that individuals with high emotional reactivity are more susceptible to emotionally charged content and are less likely to engage in critical evaluation of the accuracy of digital information. This, in turn, influences how individuals process information and make cognitive decisions in digital environments.

Kovan and Yıldırım (2025) also position emotional reactivity as a significant predictor of online problem gambling behavior in adults. Their findings suggest that emotional reactivity not only directly influences online gambling behavior but also exerts an indirect effect through increased psychological distress (e.g., depression and anxiety). In addition to its role as a predictor, emotional reactivity in adulthood can also function as a mediator. Andangsari et al. (2024) found that emotional reactivity mediates the relationship between emotion dysregulation and social media addiction (X). This finding indicates that adults who experience difficulties in managing their emotions are more likely to exhibit heightened emotional reactivity, which subsequently drives compulsive social media use. A similar mediating role is observed in the study by Peleg and Boniel-Nissim (2024), which examined phubbing behavior in adults. The study shows that higher emotional reactivity increases individuals' tendency to ignore face-to-face interactions in favor of mobile phone use. Overall, adults with higher levels of emotional reactivity are more vulnerable to FOMO, social media addiction, susceptibility to fake news, and problematic online gambling behavior.

3.2.5. Emotional Reactivity in Older Adulthood

In older adults, emotional reactivity is often regarded as an important independent variable that influences how digital information is processed and evaluated. As people grow older, changes in cognitive abilities may reduce the efficiency of carefully analyzing information, making emotional responses more influential when judging online content. Research conducted by Filkuková and Langguth (2021), which involved older adult participants, demonstrated that individuals with higher emotional reactivity are more likely to believe fake news than those with lower emotional reactivity. This pattern suggests that emotionally charged information can attract greater attention and shape judgments before critical evaluation takes place. Older adults who respond strongly to emotional cues may rely more on immediate feelings than on systematic verification of the information they encounter. As a result, emotionally appealing headlines, stories, or images can increase the likelihood of accepting misleading information as credible. These findings indicate that emotional reactivity serves as a significant predictor of susceptibility to misinformation because age-related cognitive changes may strengthen the influence of emotions during information evaluation and decision making in digital environments. Understanding this relationship is important for explaining why some older adults experience greater difficulty distinguishing reliable information from false or misleading online content.

4. Conclusion

Overall, this systematic review of ten studies suggests that emotional reactivity plays a reciprocal role in the dynamics of human digital behavior. On the one hand, the digital environment, through excessive screen exposure, platform addiction, and negative social interactions, acts as a driver that increases emotional reactivity, particularly among children and adolescents whose cognitive regulatory systems are not yet fully mature. The use of digital devices as a "soothing tool" in toddlers and persistent exposure to social conflict in adolescents emerge as key factors shaping emotional response patterns. On the other hand, in adults, emotional reactivity tends to function as a stable predispositional factor that determines vulnerability to maladaptive behaviors, such as FOMO, phubbing, susceptibility to fake news, and problematic online gambling. These findings highlight that heightened emotional reactivity may impair individuals' ability to critically evaluate digital information.

The implications of these findings for educators, parents, and mental health practitioners suggest that interventions targeting behavioral problems in the digital era should not be limited to restricting technology use (screen time). Instead, a broader approach is needed, focusing on strengthening emotional capacity and self-awareness. Such an approach allows for a more comprehensive understanding of how emotional reactivity functions as a dynamic variable across the lifespan.

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