

What You See isn't What it is: Understanding the Impact of Smartphones on Interpersonal Connections

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ABSTRACT

Think about that awful moment when you text a friend or family member, "Haha," in a text message, but you feel down. This is not unusual in today's digital world. The close relations are changing. Smartphones have undeniably transformed how we connect with loved ones. The possible impact of smartphone use on emotional authenticity in intimate relationships, such as those with family and friends, is examined in this study. We will look at the interesting practice of calling and texting while depressed to convey satisfaction and happiness. In contrast to in-person meetings, which provide comfortable nonverbal clues and more sophisticated knowledge of emotions, this difference between fake and real emotions raises questions about the value of connection made by screen-mediated interactions. By doing a systematic literature review, this study investigates the critical role of quality time and in-person conversations in building genuine emotional connections and promoting well-being within close relationships. Investigative aspects can cover the way to developing interventions and strategies to foster emotional authenticity in the digital age, ultimately benefiting individuals and society. By considering how smartphone communication impacts the authenticity and depth of real-world connections, we can work towards developing stronger, more meaningful relationships in our gradually digitalized world.

Keywords: Interpersonal relationships, smartphone communication, screen-mediated interactions, psychological well-being.

INTRODUCTION

Smartphones have evolved from communication tools to multipurpose gadgets that impact many facets of our lives, including our interpersonal relationships (Johnson & Turner, 2020). Smartphones are unquestionably convenient for staying in touch (Nosrati et al., 2020), but there are growing worries about how they may affect interpersonal interactions (Sarwar & Soomro, 2013). According to research, the convenience of digital communication and the depth of emotional connection may not be aligned (Taylor, 2022). This study explores the complex dynamics between smartphone usage and emotional authenticity within close relationships, such as those with family and friends. The advancement of smartphones has distorted the boundaries between our online and offline lives. As we progressively rely on these devices for communication, the line between our digital personas and true personalities develops less distinct. This shift has deep implications for our emotional authenticity. When we communicate through screens, we often feel bound to present ourselves in a certain way, potentially creating a disconnect between our true feelings and the emotions we develop (Roberts & David, 2017). This "emotional dissonance" phenomenon can lead to stress and dissatisfaction in our close relationships (Hochschild, 1983). Imagine hiding your frustration behind a string of "haha" text messages or downplaying your sadness in a carefully curated social media post. Such inauthentic representations can create a frontage that hinders genuine emotional connection. (Sbarra et al., 2019).

An "always be accessible" culture may result from people feeling the need to be available and responsive at all times due to cell phones' constant connectedness (Chesley, 2005). In close relationships, maintaining a positive online persona can be quite taxing. Individuals may prioritize keeping a cheerful façade above communicating their genuine emotions due to the constant pressure to be "on" (Derks et al., 2015). For instance, feeling obliged to respond to messages right away, especially when one is alone, can disrupt quality time and prevent stronger emotional ties within intimate relationships. The constraints of Internet communication further complicate emotional honesty in intimate relationships. Text messages and phone conversations do not have the same depth of nonverbal clues as in-person interactions, such as body language, tone of voice, and facial expressions (Walther & Parks, 2002). These nonverbal cues are critical in accurately understanding and answering another person's feelings (Mehrabian, 1971). Their nonappearance in digital communication can lead to misunderstandings, misinterpretations, and emotional disconnection (Liu et al., 2019). For instance, a sarcastic text message might be misinterpreted as genuine frustration without the benefit of observing the person's facial expression or vocal inflection. This highlights the importance of considering the limitations of digital communication and emphasizing the value of face-to-face interactions for fostering a deeper understanding of one another's emotional conditions within close relationships.

Despite the potential drawbacks, smartphones offer communication tools that can supplement and enhance close relationships (Pang, 2017). Video calls can bridge geographical distances, allowing for a more nuanced exchange of emotions than text messages. Social media platforms can facilitate connection and shared experiences within friend groups and families. However, it is crucial to be mindful of the potential pitfalls associated with excessive smartphone use and to prioritize quality time spent

together in person (Bjola et al., 2019). Understanding these dynamics is crucial for fostering healthier, more authentic interpersonal connections in the digital age (Graciyal & Viswam, 2021).

The purpose of this systematic literature review (SLR) is to clarify how using a smartphone affects emotional authenticity in intimate partnerships. A growing interest in comprehending the wider effects of this trend on our emotional health and the caliber of our interpersonal relationships has been spurred by our increasing reliance on cellphones for daily communication. According to research, there is a complicated relationship between digital communication and emotional expression. Although smartphones provide connectivity and convenience, they may also make it more difficult for us to have genuine and in-depth emotional exchanges. We hope to investigate the subtleties of this phenomenon and offer a thorough summary of how smartphones affect the genuineness of emotional reactions by evaluating previous studies. We also look at the psychological effects of this influence on intimacy and trust between people. Additionally, we plan to investigate practical tactics and interventions to improve authentic communication in digital encounters, considering the dual nature of smartphone communication—fostering connection but potentially hindering real emotional exchanges. In particular, this research aims to answer the following important questions:

RQ1: How does the use of smartphones impact the authenticity of emotional expressions within close relationships, and what are the psychological consequences of this impact on interpersonal trust and familiarity?

RQ2: What strategies and interventions can be implemented to promote more authentic communication and emotional connection in digital interactions, and how effective are these interventions in enhancing the quality of close relationships in the digital age?

By investigating the present studies, this study seeks to undo the difficulties of emotional expression in virtual and face-to-face interactions. This study will explore how smartphone communication, while offering convenience, may come at the cost of emotional depth and real connection. Ultimately, this SLR contributes to a deeper understanding of the multifaceted nature of smartphone communication and its implications for the authenticity and depth of interpersonal connections in the modern age.

MATERIAL AND METHODS

The PRISMA Guideline

Systematic literature reviews (SLRs) are pivotal in synthesizing existing research and guiding future inquiries. Despite their importance, the quality and transparency of reporting in these reviews can be inconsistent. To address this issue, the scientific community has embraced the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, established by Moher et al. in 2009. PRISMA offers a detailed checklist and complete guidance designed to ensure that SLRs are reported with clarity, completeness, and reliability. Adhering to these guidelines not only enhances the trustworthiness of the research but also helps the reproducibility of results.

Management Review

We started the systematic review procedure with a cooperative planning meeting, ensuring a thorough and rigorous approach. This meeting included a professor and two doctoral students, primarily identifying key variables for exploration based on current research. This collaborative approach ensured a thorough and structured review process, setting a solid foundation for examining the impact of smartphone usage on interpersonal connections.

Search Strategy

A comprehensive search strategy was developed to identify relevant literature on the impact of smartphone usage on interpersonal connections. To classify research on smartphone usage and its impact on emotional authenticity within close relationships, we conducted a systematic search across three academic databases: Google Scholar, Scopus, and connectedpapers.com. We employed Boolean operators (AND, OR) to improve our search results and ensure significance. Here is a breakdown of the specific search strings used in each database:

- **Google Scholar:** ("Smartphone Use" AND "Interpersonal Connections" AND "Emotions")
- **Scopus:** ("Smartphone Use" OR "Mobile Phone Use") AND "Interpersonal Relationships" AND "Emotions")
- **connectedpapers.com:** ("Smartphone Use" AND "Close Relationships" AND "Emotional Authenticity")

Then, we followed the selection criteria to select potential studies for the systematic review. Figure 1 shows a flowchart detailing the process of retrieving relevant articles using PRISMA guidelines.

Selection Criteria

An extensive search of electronic databases was performed to conduct a comprehensive systematic literature review on understanding the impact of smartphones on interpersonal connections. The following criteria were used to select the studies initially:

Study Overview: We comprehensively reviewed primary research studies, specifically focusing on peer-reviewed journal articles. Our investigation centered on understanding the impact of smartphones on interpersonal connections.

Publications Timeline: We considered studies published between 2010 and 2024 to ensure relevance and alignment with current trends.

Language: Our search was limited to English-language studies. Due to translation challenges and resource constraints, we did not include studies published in other languages.

Focus: The selected studies explicitly explored the impact of smartphones on interpersonal connections.

The systematic review followed the PRISMA guidelines to analyze the most relevant articles. The initial search yielded 856 articles (Google Scholar: 189, Scopus: 202, and connectedpapers.com: 465). The first stage involved removing duplicates (n=239) and articles not in English (n=239). From these, 239 articles were excluded due to being non-English or book chapters or series, leaving 617 articles for further screening. Next, a quality appraisal was conducted, removing 198 articles that were either incomplete, work in progress, or short papers (less than four pages). This left 419 articles that were assessed for eligibility. Of these, 258 articles were excluded as they were irrelevant to the research questions or keywords. This resulted in 161 articles that were removed from eligibility after screening. Following this, a full abstract review was conducted, which led to the rejection of 139 articles. Finally, 22 articles were selected for the literature review, as shown in Table 1.

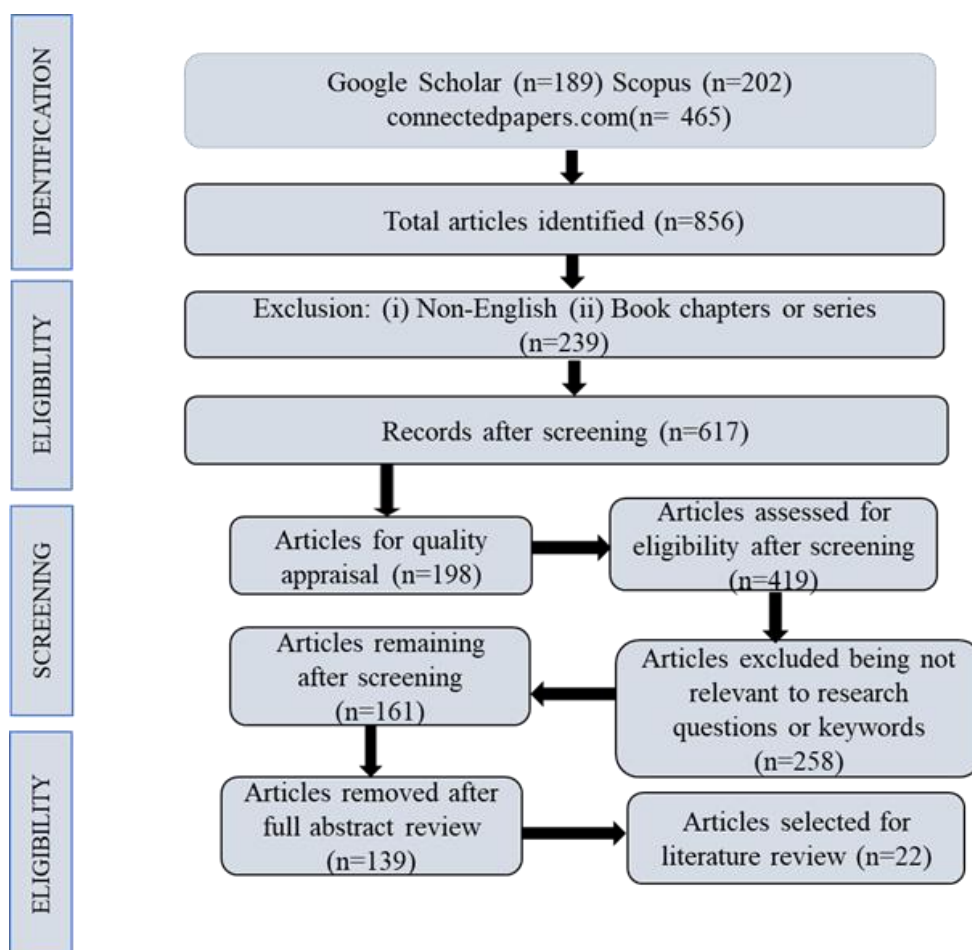


Figure 1: Flow chart detailing PRISMA guidelines for selecting relevant articles.

Table 1: Articles included in this review.

No	Title	Author	Journal	Research model	Methodology	Findings
1	Exploring Ostracism as A Risk Factor for Smartphone Addiction in Young People: Resilience and Nomophobia Perspectives	Coşkun et al. (2024)	Journal of Happiness and Health	<pre> graph TD Ostracism --> Resilience[Psychological Resilience] Resilience --> Addiction[Smartphone Addiction] Nomophobia --> Addiction </pre>	Mixed-method	<ul style="list-style-type: none"> Youth who are shunned are more likely to develop a smartphone addiction. Nomophobia is not protected by resilience, although it is against addiction. The research emphasizes how crucial coping mechanisms are to mental wellness.
2	Smartphones and Close Relationships: The Case for an Evolutionary Mismatch	Sbarra et al. (2019)	Perspectives on Psychological Science	<pre> graph TD SMS[Smartphone Use and SMS] -- 1 --> Cognitive[Disruption of Cognitive Processes] SMS -- 3 --> Cognitive Cognitive -- 2 --> Relationship[Disruption of Relationship Processes] SMS -- 4 --> WellBeing[Well-Being Depression, Loneliness] Relationship -- 5 --> WellBeing </pre>	Mixed-method	<ul style="list-style-type: none"> The virtual social connection on smartphones and actual intimacy could not work well together. Technoferece and other inconclusive impact evidence. Social relationships could be strained in real time, according to the study.
3	The relationship among the social norms of college students and their interpersonal relationships, smartphone use, and smartphone addiction	Hong et al. (2019)	Behaviour & Information		Quantitative	<ul style="list-style-type: none"> Addiction to smartphones among college students is associated with a variety of social norms. Usage patterns and interpersonal relationships also have an impact. High-risk categories for addiction are identified by the study.
4	Testing relationships between smartphone engagement, romantic partner communication, and relationship satisfaction	Lapierre & Custer (2021)	Mobile Media & Communication		Quantitative	<ul style="list-style-type: none"> The use of a smartphone improves communication in romantic partnerships. Over-reliance reduces affectionate communication. Over-reliance on smartphones leads to lower relationship satisfaction.

5	The dark side of smartphone usage: Psychological traits, compulsive behavior and technostress	Lee et al. (2024)	Computers in Human Behavior		Quantitative	<ul style="list-style-type: none"> Individual traits that raise the risk of forming a smartphone habit include materialism and an external center of control. The study offers valuable insights into problematic smartphone use; the findings contribute to a global understanding of smartphone use.
6	Social Media and Emotional Well-being: Pursuit of Happiness or Pleasure	Guna Graciyal & Viswam (2021)	Asia Pacific Media Educator.	No explicit research model	Mixed-methods	<ul style="list-style-type: none"> Social networking promotes happiness and emotional ties. A lot of comparison might be detrimental to one's self-esteem. The quality of relationships on social media affects emotional well-being.
7	The Relationship between Smartphone Addiction, Parent–Child Relationship, Loneliness and Self-Efficacy among Senior High School Students in Taiwan	Cheng et al. (2021)	Sustainable Citizenship and Education		Quantitative	<ul style="list-style-type: none"> Stronger parent-child bonds reduce smartphone addiction by decreasing loneliness. Self-efficacy moderates the relationship between loneliness and smartphone addiction. The study proposes strategies for parents, educators, and policymakers to tackle smartphone addiction.
8	The smartphone as a “significant other”: interpersonal dependency and attachment in maladaptive smartphone and social networks use	Gritti et al. (2023)	BMC Psychology		Quantitative	<ul style="list-style-type: none"> Attachment style and interpersonal patterns influence smartphone and social media use. Anxious attachment and overdependence correlate with excessive smartphone use. Especially prominent in romantic relationships, this finding underscores the impact of attachment on technology habits.

9	My Smartphone is an extension of myself: A holistic qualitative exploration of the impact of using a smartphone	Harkin & Kuss (2020)	Psychology of Popular Media		Qualitative	<ul style="list-style-type: none"> Participants were able to express and control their identities using smartphones, which improved wellbeing but may have harmed self-esteem in people with mental health issues. Although smartphones improved social interactions, excessive use and continual connectedness linked to stress and a decline in wellbeing. Although smartphones helped partnerships by preserving closeness, they also led to arguments and problems like cyberstalking.
10	Are Smartphones Enhancing or Displacing Face-to-Face Communication With Close Ties? A Panel Study Among Adults	Stevic et al. (2021)	International Journal of Communication		Quantitative	<ul style="list-style-type: none"> Smartphone use affects relationships with loved ones and in-person conversation; offline interaction is increased by communicative usage and decreased by non-communicative activities. Remarkably, there was no discernible effect on the quality of relationships, refuting presumptions about the detrimental impacts of passive smartphone use. This emphasizes the importance of considering the variety of smartphone activities and how intricately they interact with in-person encounters.
11	Social Implications of Smartphone Use: Korean College Students' Smartphone Use and Psychological Well-Being	Park & Lee (2012)	Cyberpsychology, behavior, and social networking	No explicit research model	Quantitative	<ul style="list-style-type: none"> Caring for others boosts self-esteem and reduces loneliness and depression. Communication motives do not affect self-esteem, loneliness, or depression. Building social relations through smartphones improves self-esteem and decreases loneliness and depression.
12	Smartphones distract parents from cultivating feelings of connection when spending time with their children.	Kushlev & Dunn (2019)	Journal of Social and Personal Relationships		Mixed-methods	<ul style="list-style-type: none"> Frequent smartphone use by parents during time with children leads to increased distraction. This distraction reduces social connection and meaningful interaction. Constant internet connectivity negatively

						impacts family relationships, as the research highlights.
13	Fun in a Box? Loneliness and Adolescents' Problematic Smartphone Use: A Moderated Mediation Analysis of the Underlying Mechanisms	Maftai et al. (2024)	Psychological Reports		Quantitative	<ul style="list-style-type: none"> Loneliness indirectly influences addictive smartphone use (ASU) via self-esteem and boredom proneness. The need to belong moderates these effects. Interventions targeting social bonding and boredom reduction can mitigate ASU risks in adolescents.
14	The mediating effect of attentional impulsivity between mindfulness and problematic smartphone use	Kim et al. (2024)	BMC Psychiatry.	No explicit research model	Mixed-methods	<ul style="list-style-type: none"> The problematic smartphone use group had higher trait impulsivity and lower mindfulness, with addictive use correlated with these traits but not with attention test performance. Acting with awareness, a part of mindfulness, reduces addictive smartphone use by mediating attentional impulsivity, indicating that mindfulness-based interventions can improve executive control over smartphone use.
15	The Relationship Between Harsh Parenting and Smartphone Addiction Among Adolescents: Serial Mediating Role of Depression and Social Pain	Wang et al. (2024)	Psychology Research and Behavior Management		Quantitative	<ul style="list-style-type: none"> Enhancing parenting styles and reducing social pain can alleviate depression in adolescents with smartphone addiction. The study proposes potential interventions to tackle this issue.
16	Reciprocal longitudinal effects among Korean young adolescent' negative peer relationships, social withdrawal, and smartphone	Lee et al. (2024)	Heliyon		Mixed-methods	<ul style="list-style-type: none"> Reciprocal relationships exist between negative peer relationships, social withdrawal, and specific aspects of adolescent smartphone dependence. However, no significant reciprocal relationship was found between social withdrawal and smartphone dependence.

	dependence					
17	The Smartphone as a Pacifying Technology	Melumad & Pham (2020)	Journal of Consumer Research		Mixed-methods	<ul style="list-style-type: none"> Reciprocal relationships exist between negative peer relationships, social withdrawal, and specific aspects of adolescent smartphone dependence. However, no significant reciprocal relationship was found between social withdrawal and smartphone dependence.
18	Smartphone addiction and its relationship with social anxiety and loneliness	Enez Darcin et al. (2016)	Behaviour & Information Technology	No explicit research model	Quantitative	<ul style="list-style-type: none"> The study found significant correlations between SAS and BSPS scores, with BSPS scores predicting SAS scores, highlighted the link between social networking preference and smartphone addiction, and observed risky behaviors like using smartphones in bed or during classes, indicating impacts on sleep, safety, and academic success. The feeling of loneliness was correlated with a high risk of smartphone addiction among the entire study sample.
19	Smartphone Addiction and Its Relationship with Indices of SocialEmotional Distress and Personality	Volungis et al. (2019)	Journal of Mental Health and Addiction	No explicit research model	Quantitative	<ul style="list-style-type: none"> Smartphone addiction correlates with higher social-emotional distress in college students. Specific personality traits influence addiction. Interventions aimed at decreasing smartphone use could enhance mental health in this demographic.
20	Smart Phones and Mediated Relationships: The Changing Face of Relational Communication	Pettegre w & Day (2015)	Review of Communication	No explicit research model	Quantitative	<ul style="list-style-type: none"> Mobile technology enables continuous and mediated contact in close relationships. This has transformative implications for interpersonal and relational development. Researchers are urged to consider these implications in future studies.
21	Is smartphone creating a better life? Exploring the relationships between smartphone practices, social capital, and	Pang (2017)	International Journal of Advanced Media	No explicit research model	Quantitative	<ul style="list-style-type: none"> A strong correlation was found between smartphone use and various social capital types. Emphasis on bridging social capital. The study acknowledges benefits and limitations and suggests further research.

	psychological well-being among college students					
22	Smartphones and Face-to-Face Interaction: Digital Cross-Talk During Encounters in Everyday Life	Ictech (2019)	Symbolic Interaction	No explicit research model	Qualitative	<ul style="list-style-type: none"> • Teenagers are mostly addicted to it, which has a detrimental effect on their finances as well as health concerns like eyesight problems, neck and back pain, alienation, and brain tumors. • A somewhat prevalent issue among teenagers is NOMOPHOBIA, or the dread of being without a phone, a recently recognized phobia. In addition, health-related problems like depression, anxiety, and nerve problems are major worries. • Using cell phones excessively might lead to mental and physical health issues. It is crucial to restrict usage hours and practice moderation to protect their well-being and instill in them values, knowledge, and good behavior.

RESULTS & DISCUSSION

This comprehensive literature analysis investigated the intricate relationship between smartphone use and emotional honesty in intimate relationships. Numerous studies demonstrate a notable emotional detachment made possible by smartphone communication. This study validated our research questions by demonstrating how digital communication can lead to inauthentic emotional expression, highlighting the crucial impact of smartphone use on emotional authenticity within close relationships (Sbarra et al., 2019; Lapierre & Custer, 2021).

Impact of Smartphones on Emotional Authenticity

The review draws attention to a substantial emotional gap made possible by smartphone communication. Despite hidden unhappiness or discontent, people frequently pretend to be happy and joyful in their texts and phone conversations. For instance, Pettegrew and Day (2015) found that study participants tended to use more positive emojis and language in text messages, even when reporting feelings of sadness. One important aspect influencing emotional authenticity in intimate relationships is the possibility of inauthentic communication, which is demonstrated by this divergence between digital and real emotions (Sbarra et al., 2019; Gritti et al., 2023). Volungis et al. (2019) further highlighted the emotional gap, which also highlighted the disparity between online personalities and real-life emotions.

This problem gets worse by the absence of nonverbal clues in digital communication. Nonverbal cues, including facial expressions and body language, convey emotional nuances. The absence of these cues in text-based interactions makes expressing and interpreting genuine emotions challenging (Bjola et al., 2019; Kushlev & Dunn, 2019; Melumad & Pham, 2020). As a result, digital communication can result in shallow exchanges that do not fully convey the range of genuine emotions, which might erode intimacy and trust (Harkin & Kuss, 2020; Pang, 2017; Park & Lee, 2012).

The ongoing absence of emotional authenticity in internet relationships might have serious psychological effects over time. Studies reveal that the overuse of smartphones may lead to psychological and physiological complications (Ictech, 2019). In intimate relationships, it can undermine closeness and trust, which may result in feelings of isolation and separation. The curated nature of online personas may create a facade of closeness that does not reflect the reality of the relationship (Volungis et al., 2019; Park & Lee, 2012; Coşkun et al., 2024). Graciyal and Viswam (2021) also noted that the illusion of constant connectivity can mask underlying emotional gaps. Studies show that when cell phones are used for communicative purposes, people spend more time offline with friends and family, while when they are used for noncommunicative purposes, they spend less time with them Stevic, (Schmuck et al., 2021).

Smartphone use significantly impacts emotional authenticity by causing emotional estrangement, inauthentic emotional expression, a lack of nonverbal cues, superficial relationships, and the collapse of intimacy and trust. Figure 2 shows these elements work together to produce inauthentic communication and various psychological effects.

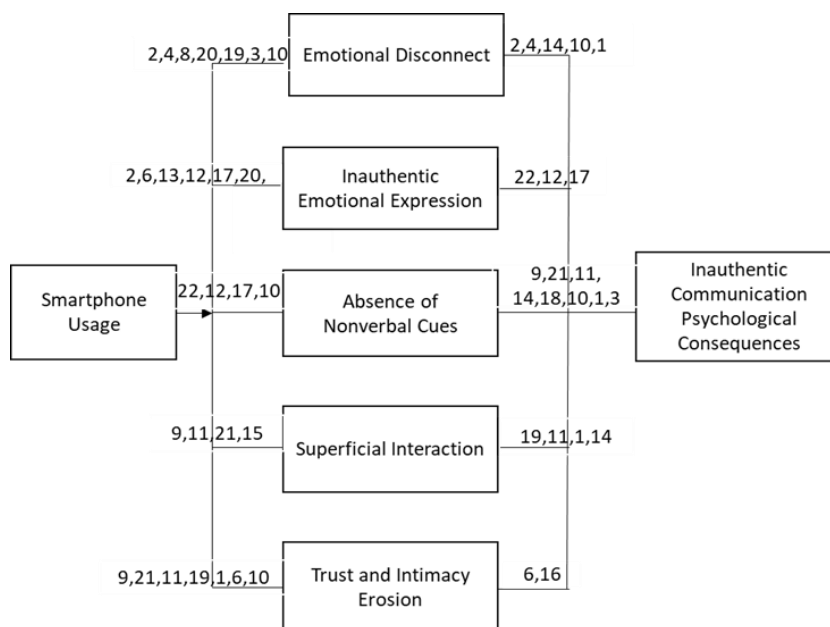


Figure 2: Impact of smartphone use on emotional authenticity.

Strategies for Promoting Authentic Communication

To answer the second study question, the review identifies a number of tactics to encourage more genuine communication in the digital era. It is crucial to promote more in-depth discussions than fleeting interactions. People can more effectively express their genuine feelings by creating more meaningful communication (Graciyal & Viswam, 2021; Cheng et al., 2021). The negative consequences of fleeting digital encounters can be lessened by providing opportunities for deeper conversation

(Harkin & Kuss, 2020). A study found that "talking with others online" and "text chat conversation" are positively connected with "feeling uncomfortable talking with others face-to-face" (Enez Darcin et al., 2016).

Encouragement of attentive online communication can facilitate more open communication. This involves communicating real feelings even in digital formats and being aware of the potential for inauthentic expression (Lee et al., 2024; Maftai et al., 2024; Pettegrew & Day, 2015). According to Kim et al. (2024), mindfulness can assist people in identifying when they are drifting into unauthentic communication habits and making the necessary adjustments. People who practice mindfulness can recognize when they are sliding into unauthentic communication habits and make the necessary adjustments (Kim et al., 2024). It is possible to preserve long-term connections by avoiding unfavorable social contacts. According to Lee et al. (2024), this approach can significantly lessen teen smartphone addiction and end the destructive cycle.

People use their phones for at least five hours every day. As a result, there is a discernible rise in app usage, which has led to a decline in social and physical engagement as well as issues with addiction, distraction, health, and other areas (Ictech, 2019). Due to this, there has been a discernible increase in the use of apps, which has reduced social and physical interaction and resulted in distraction, addiction, health problems, and other problems (Ictech, 2019).

By providing educational programs that promote digital communication skills, people can benefit from technology while maintaining real human connections. These classes can teach students how to express complicated emotions on digital platforms and encourage transparency and honesty in online interactions (Pettegrew & Day, 2015; Lee et al., 2024; Gritti et al., 2023). Increasing one's degree of digital literacy can help people become more adept at navigating the challenges of digital communication.

Studies have demonstrated the efficacy of treatments in various relationship contexts, including friendships, romantic engagements, and parent-child ties. Gaining insight into how various smartphone usage patterns affect emotional authenticity in various settings aids in the development of focused tactics for creating sincere connections (Chang et al., 2022; Wang et al., 2024; Lee et al., 2024). With additional time available on the weekends for smartphone use and socializing with friends and family, people's smartphone usage and face-to-face (FtF) conversational time may differ (Stevic et al., 2021).

Deeper insights are also offered by individual variations in smartphone use and emotional honesty. For example, attachment styles and personality factors may moderate the association between emotional authenticity and smartphone use (Gritti et al., 2023; Hong et al., 2019; Volungis et al., 2019). Understanding these differences could help tailor solutions to specific needs and conditions. Addressing problematic smartphone usage and emotional authenticity requires taking individual differences into account, using objective measurements of smartphone use, and investigating mindfulness therapies across different relationship types (Kim et al., 2024). To prevent the negative effects of smartphone addiction, it is advised that young people's social environments be closely monitored for signs of social anxiety and loneliness (Enez Darcin et al., 2016).

This review highlights the need for a balanced smartphone use method that prioritizes emotional authenticity and genuine connections in close relationships. People can authentically navigate the digital landscape by adopting mindful practices and educational strategies, fostering deeper and more meaningful relationships (Sbarra et al., 2019; Graciyal & Viswam, 2021). Figure 3 outlines several strategies to encourage authentic communication. Engaging in deeper conversations and social interactions can help balance the superficial interactions often facilitated by smartphone use. Implementing mindful online practices enhances the value of digital communication, ensuring it remains deep and authentic. Educational programs raise awareness about the importance of authentic communication and provide tools for effectively navigating the digital landscape. Setting clear boundaries for smartphone use reduces superficial interactions and encourages more meaningful connections. By integrating these strategies, fostering a more authentic and emotionally connected communication environment is possible.

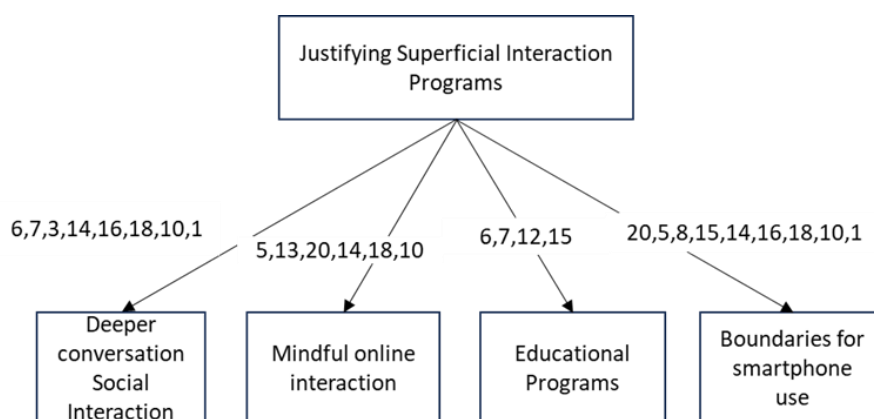


Figure 3: Strategies for promoting communication.

Figure 4 shows smartphone use's consequences on inauthentic and authentic communication. Inauthentic smartphone communication often leads to superficial interactions, a struggle to express complex emotions, and a lack of nonverbal cues. The potential consequences of this type of communication include decreased emotional authenticity, eroded trust and intimacy, and feelings of isolation and disconnection. On the other hand, smartphone use can also facilitate authentic communication, resulting in richer emotional exchanges, deeper emotional understanding through nonverbal cues, stronger bonds, and a sense of closeness.

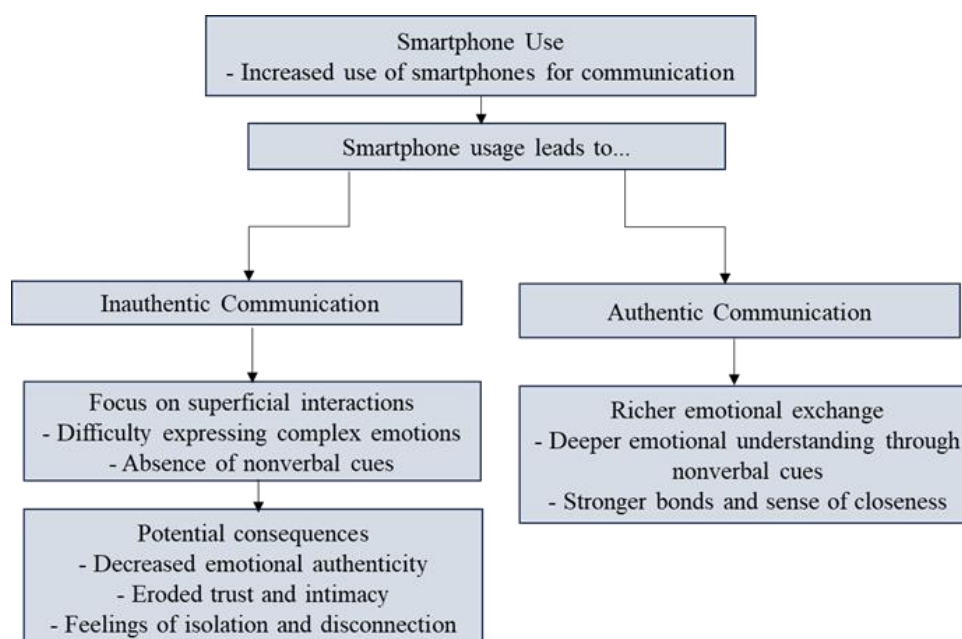


Figure 4: The dual pathways of smartphone communication.

CONCLUSION

In today's digital age, smartphones have become a double-edged sword for close relationships. While they offer undeniable accessibility for staying connected, this review has illuminated possible disadvantages related to emotional authenticity (Chang et al., 2022). The pressure to curate online personas and the limitations of digital communication in conveying emotions can create a facade of closeness that masks the depth of genuine connection. This research underscores the irreplaceable value of face-to-face interactions, with their richer nonverbal cues, for fostering emotional authenticity and well-being. Moving forward, the challenge lies in harnessing the power of technology for communication while safeguarding the authenticity of our interpersonal bonds. Future research can play a crucial role in achieving this balance.

Humanizing a digital environment that encourages genuine conversation and emotional connection should be the main goal of future studies. This could entail investigating methods for communicating complicated emotions via digital platforms that more accurately convey subtle emotions or strategies that encourage openness and vulnerability in virtual exchanges. It's also critical to provide people the tools they need to conduct themselves carefully when interacting online. Developing educational programs that promote digital communication literacy can empower people to leverage technology's benefits while prioritizing authentic connections. Also, research could investigate the effectiveness of interventions that help individuals establish boundaries for smartphone use within close relationships. This might involve exploring strategies for making phone-free zones or designated times for focused, in-person interactions. Understanding smartphone use impacts emotional authenticity across various relationships (romantic partnerships, friendships, parent-child bonds). By exploring these differences, researchers can inform the development of targeted strategies for fostering genuine connections within different contexts. By addressing these future research directions, we can strive towards a future where technology complements and enhances our close relationships, leading to deeper emotional connection and promoting well-being in our increasingly digital world.

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REFERENCES

- Bjola, C., Cassidy, J., & Manor, I. (2019). Public diplomacy in the digital age. *The Hague Journal of Diplomacy*, 14(1-2), 83-101. <https://doi.org/10.1163/1871191x-14011032>
- Chesley, N. (2005). Blurring boundaries? Linking technology use, spillover, individual distress, and family satisfaction. *Journal of Marriage and Family*, 67(5), 1237-1248. <https://doi.org/10.1111/j.1741-3737.2005.00213.x>

- Cheng, Y. C., Yang, T. A., & Lee, J. C. (2021). The relationship between smartphone addiction, parent-child relationship, loneliness, and self-efficacy among senior high school students in Taiwan. *Sustainability*, *13*(16), 9475, 16 pages. <https://doi.org/10.3390/su13169475>
- Chang, K., Li, X., Zhang, L., & Zhang, H. (2022). A double-edged impact of social smartphone use on smartphone addiction: A parallel mediation model. *Frontiers in Psychology*, *13*, 808192, 10 pages. <https://doi.org/10.3389/fpsyg.2022.808192>
- Coşkun, M., Kavaklı, M., & Türkmen, O. O. (2024). Exploring ostracism as a risk factor for smartphone addiction in young people: Resilience and nomophobia perspectives. *Journal of Happiness and Health, (FirstView Articles)*, 25-33. <https://doi.org/10.47602/johah.v4i1.66>
- Davis, 2019: Yus, F. (2021). *Smartphone Communication Interactions in the App Ecosystem*. Routledge.
- Derks, D., van Duin, D., Tims, M., & Bakker, A. B. (2015). Smartphone use and work-home interference: The moderating role of social norms and employee work engagement. *Journal of Occupational and Organizational Psychology*, *88*(1), 155-177. <https://doi.org/10.1111/joop.12083>
- Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & Prisma Group. (2010). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *International journal of surgery*, *8*(5), 336-341. <https://doi.org/10.1016/j.ijso.2010.02.007>
- Enez Darcin, A., Kose, S., Noyan, C. O., Nurmedov, S., Yılmaz, O., & Dilbaz, N. (2016). Smartphone addiction and its relationship with social anxiety and loneliness. *Behaviour & Information Technology*, *35*(7), 520-525. <https://doi.org/10.1080/0144929x.2016.1158319>
- Graciyal, D. G., & Viswam, D. (2021). Social media and emotional well-being: the pursuit of happiness or pleasure. *Asia Pacific Media Educator*, *31*(1), 99-115. <https://doi.org/10.1177/1326365x211003737>
- Gritti, E. S., Bornstein, R. F., & Barbot, B. (2023). The smartphone as a “significant other”: Interpersonal dependency and attachment in maladaptive smartphone and social networks use. *BMC psychology*, *11*(1), 296, 17 pages. <https://doi.org/10.1186/s40359-023-01339-4>
- Harkin, L. J., & Kuss, D. (2021). My smartphone is an extension of myself”: A holistic qualitative exploration of the impact of using a smartphone. *Psychology of Popular Media*, *10*(1), 28–38. <https://doi.org/10.1037/ppm0000278>
- Hassenzahl, M., Heidecker, S., Eckoldt, K., Diefenbach, S., & Hillmann, U. (2012). All you need is love: Current strategies of mediating intimate relationships through technology. *ACM Transactions on Computer-Human Interaction (TOCHI)*, *19*(4), 1-19. <https://doi.org/10.1145/2395131.2395137>
- Hong, F. Y., Lin, C. C., Lin, T. J., & Huang, D. H. (2021). The relationship among the social norms of college students, and their interpersonal relationships, smartphone use, and smartphone addiction. *Behaviour & Information Technology*, *40*(4), 415-426.
- Hochschild, A. R. (1983). *The managed heart: Commercialization of human feeling*. University of California Press.
- Ictech, B. (2019). Smartphones and face-to-face interaction: digital Cross-Talk during encounters in everyday life. *Symbolic Interaction*, *42*(1), 27–45. <https://doi.org/10.1002/symb.406>
- Johnson & Turner, 2020: Melumad, S., & Pham, M. T. (2020). The Smartphone as a Pacifying Technology. *Journal of Consumer Research*, *47*(2), 237-255. <https://doi.org/10.1093/jcr/ucaa005>
- Kushlev, K., & Dunn, E. W. (2019). Smartphones distract parents from cultivating feelings of connection when spending time with their children. *Journal of Social and Personal Relationships*, *36*(6), 1619-1639. <https://doi.org/10.1177/0265407518769387>
- Kim, M., Seong, G., Jeon, M. J., Jung, Y. C., & Lee, D. (2024). The mediating effect of attentional impulsivity between mindfulness and problematic smartphone use. *BMC psychiatry*, *24*(1), 294, 12 pages. <https://doi.org/10.1186/s12888-024-05708-0>
- Lapierre, M. A., & Custer, B. E. (2021). Testing relationships between smartphone engagement, romantic partner communication, and relationship satisfaction. *Mobile Media & Communication*, *9*(2), 155-176. <https://doi.org/10.1177/2050157920935163>
- Liu, X., He, P., Chen, W., & Gao, J. (2019). Multi-task deep neural networks for natural language understanding. *arXiv preprint arXiv:1901.11504*, 10 pages. <https://doi.org/10.18653/v1/p19-1441>
- Lee, H. S., Choi, M., & Na, E. Y. (2024). Reciprocal longitudinal effects among Korean young adolescent’negative peer relationships, social withdrawal, and smartphone dependence. *Heliyon*, *10*(3), 10 pages. <https://doi.org/10.1016/j.heliyon.2024.e25188>
- Lee, Y. K., Chang, C. T., Lin, Y., & Cheng, Z. H. (2014). The dark side of smartphone usage: Psychological traits, compulsive behavior, and technostress. *Computers in Human Behavior*, *31*, 373-383. <https://doi.org/10.1016/j.chb.2013.10.047>
- Maftai, A., Merlici, I. A., & Opariuc-Dan, C. (2024). Fun in a Box? Loneliness and Adolescents’ Problematic Smartphone Use: A Moderated Mediation Analysis of the Underlying Mechanisms. *Psychological Reports*, *00332941241226681*.
- Nosrati, S., Sabzali, M., Heidari, A., Sarfi, T., & Sabbar, S. (2020). Chatbots, counselling, and discontents of the digital life. *Journal of Cyberspace Studies*, *4*(2), 153-172.
- Pang, H. (2017). Is smartphone creating a better life? Exploring the relationships between smartphone practices, social capital and psychological well-being among college students. *International Journal of Advanced Media and Communication*, *7*(3), 205-223. <https://doi.org/10.1504/ijamc.2017.089346>
- Park, N., & Lee, H. (2012). Social implications of smartphone use: Korean college students' smartphone use and psychological well-being. *Cyberpsychology, Behavior, and Social Networking*, *15*(9), 491-497. <https://doi.org/10.1089/cyber.2011.0580>

- Pettegrew, L. S., & Day, C. (2015). Smart phones and mediated relationships: The changing face of relational communication. *Review of Communication, 15*(2), 122-139. <https://doi.org/10.1080/15358593.2015.1044018>
- Roberts, J. A., & David, M. E. (2017). Put down your phone and listen to me: How boss phubbing undermines the psychological conditions necessary for employee engagement. *Computers in Human Behavior, 75*, 206-217. <https://doi.org/10.1016/j.chb.2017.05.021>
- Sarwar, M., & Soomro, T. R. (2013). Impact of smartphone's on society. *European Journal of Scientific Research, 98*(2), 216-226.
- Sbarra, D. A., Briskin, J. L., & Slatcher, R. B. (2019). Smartphones and close relationships: The case for an evolutionary mismatch. *Perspectives on Psychological Science, 14*(4), 596 - 618.
- Smith, 2018: Carrier, M. (2018). From Smartphones to Social Media: How Technology Affects Our Brains and Behavior. *ABC-CLIO*.
- Stevic, A., Schmuck, D., Karsay, K., & Matthes, J. (2021). Are smartphones enhancing or displacing face-to-face communication with close ties? A panel study among adults. *International Journal of Communication, 15*, 792–813.
- Taylor, 2022: Zhen, R., Li, L., Li, G., & Zhou, X. (2021). Social Isolation, Loneliness, and Mobile Phone Dependence among Adolescents During the COVID-19 Pandemic: Roles of Parent–Child Communication Patterns. *International Journal of Mental Health and Addiction, 19*, 933–950. <https://doi.org/10.1007/s11469-021-00700-1>
- Volungis, A. M., Kalpidou, M., Popores, C., & Joyce, M. (2020). Smartphone addiction and its relationship with indices of social-emotional distress and personality. *International Journal of Mental Health and Addiction, 18*, 1209-1225. <https://doi.org/10.1007/s11469-019-00119-9>
- Wang, D., Zhou, M., & Hu, Y. (2024). The Relationship Between Harsh Parenting and Smartphone Addiction Among Adolescents: Serial Mediating Role of Depression and Social Pain. *Psychology Research and Behavior Management, 17*, 735–752. <https://doi.org/10.2147/prbm.s438014>