

## ANALYZING MOBILE PHONE ABUSE: INTEGRATING BEHAVIORAL CHANGE, SOCIAL FEEDBACK, AND FEELINGS OF GUILT

DOI: <https://doi.org/10.26758/16.1.21>

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### Abstract

**Objectives.** This study highlights several aspects demonstrating that the use of mobile phones has become so deeply integrated into everyday life that it transforms users’ behaviors as well as social relationships between individuals.

**Material and methods.** A quantitative study was conducted in 2024 with the participation of 1,591 volunteers, from both urban and rural areas. The average age of the participants was 40. From the applied “omnibus” questionnaire, the items selected for this paper focused on the impact of mobile phone use on users, specifically in relation to receiving criticism for mobile phone use, and the feeling of guilt associated with the time spent using it. The data were statistically processed using MATLAB, version R2020a.

**Results.** Nearly half of all participants (47.50%) were never bothered or criticized by others for excessive mobile phone use. 37.20% of participants sometimes felt guilty about the time spent on their mobile phones. There is a very small, but significant correlation between the two items. 52.62% of participants believed that, if they halved the time spent on social platforms, the way they would be viewed by colleagues/friends would remain largely unchanged. 35.39% of participants often took their mobile phone with them when going to another room. Between the last two items there is a significant correlation, even if very small.

**Conclusions.** This study shows that mobile phones have become essential communication tools, easily accessible in everyday life, to the extent that individuals feel the need to have them constantly within reach.

*Keywords:* mobile phones, problematic use, guilt

### **Suggested citation (APA):**

Baciu, A.B., Mihalache, A.S., Cernat, P., Mihordea, A. & Stoleriu, I., (2026) Analyzing mobile phone abuse: integrating behavioral change, social feedback, and feelings of guilt. *Anthropological Researches and Studies*, 16, 298-311. <https://doi.org/10.26758/16.1.21>

### **Introduction**

Every day, we observe that we live in an increasingly technologized society, where the use of mobile phones is so deeply embedded in daily life that it alters both individual behaviors and human relationships. Consequently, scientific interest in such behavioral addictions has significantly increased in recent years. Following the analysis of 9,199 distinct articles published over a span of 25 years, a growth rate of 130.46% in research on behavioral addiction issues was observed. Among these, disorders related to information and communication technology showed the highest growth rate across five consecutive five-year periods. The United States emerged as the most productive country in terms of overall addiction research, while Asian countries demonstrated a clear interest in studying problems associated with digital technology (Sixto-Costoya et al., 2021).

The conclusions of an article that examined the correlation between the virtual image of the “self” and the individual’s real-life identity while also attempting to define the characteristics of emerging virtual identities indicated that a person living in the digital era must adapt to existence within a world where personal self-identification will become extremely difficult, and many familiar forms of collective identity will practically disappear (Kashchey et al., 2021).

A remarkable number of studies have assessed the impact of digital media consumption on health, targeting groups across various age categories—children and adolescents, young adults, as well as the elderly. It is well established that the advent of smartphones, Wi-Fi internet, and computer games has contributed to a significant increase in the average time spent in front of screens across all age groups, with the highest growth observed among children and adolescents, compared to the 1990s or early 2000s.

A systematic review that included 2,276 papers from the Web of Science (WOS) and 600 papers from Scopus revealed that smartphone addiction has been the primary focus of researchers, highlighting the relationship between excessive use of electronic devices and the internet and the occurrence of mental health problems. In contrast, issues related to treatment and effective intervention strategies have been only marginally addressed (Tran et al., 2020). The results of a study conducted on 731 subjects, aged between 14 and 57 years, showed that 43.6% of respondents checked their mobile phones more than 11 times per hour. Additionally, 25.4% opened their phones 2–5 times per hour, 20.1% did so 6–10 times per hour, 9.5% checked them once per hour, and only 1.6% did so at intervals longer than one hour. These data indicate that most participants were inclined to check their phones very frequently—in theory, a simple calculation suggests that nearly half of them unlocked their mobile phones approximately once every five seconds (Baciu, 2019, p. 96).

Ten years before the COVID-19 pandemic, during the period 2002–2010, the time spent in front of television screens showed a significant decrease across all age groups, while the time spent using computers increased considerably, with higher averages recorded on weekends. This trend was reported across 30 countries (Bucksch et al., 2016).

The time spent in front of screens has continued to increase, with the trend becoming more pronounced during the COVID-19 pandemic. A study conducted in 2023, which analyzed 53 studies published between January 1, 2016, and October 31, 2021, found that the average screen time among school-aged children (6–14 years) exceeded two hours per day, showing a clear increase in the post-COVID-19 period compared to durations reported in studies conducted in the

same countries prior to the pandemic (Qi et al., 2023). Another study, which analyzed cross-sectional data obtained from a survey of 5,412 adolescents, revealed a rise in average daily screen time after the COVID-19 pandemic—from 3.8 hours per day to 7.7 hours per day for the same cohort (although the younger age at the first measurement may have contributed to this difference) (Nagata et al., 2021).

Statistical analyses involving meta-regression and model comparison, conducted within a study based on a total sample of 21,378 participants (51.22% men and 48.78% women; mean age = 23.55 years) from Europe, Asia, America, and Oceania, revealed an increase in internet addiction among younger generations. This trend was found to be significantly influenced by rising individualism, along with reduced sociability and cultural engagement. The authors emphasized that internet addiction represents a global issue that must be addressed as a genuine public health concern (Lozano-Blasco et al., 2022).

**The objective** of this paper is to present several aspects concerning how mobile phone use influences behavior, particularly in relation to individuals' attitudes toward the reactions of those around them.

*Working hypotheses:*

1. There is a strong correlation between how halving the time spent on social platforms impacts social life and the habit of taking the mobile phone when moving to another room.
2. There is a strong correlation between receiving criticism for mobile phone use and the feeling of guilt associated with the time spent on the mobile phone.
3. There is a significant correlation between the need to use the mobile phone in embarrassing situations and the presence of guilt regarding the time spent on the mobile phone.

## **Material and methods**

In 2024, a cross-sectional quantitative study was conducted in several localities across Romania, involving 1,591 voluntary participants (67.92% female and 32.08% male), of whom 78.16% were from urban areas and 21.84% from rural areas. The participants' ages ranged from 12 to 77 years, with a mean age of 40 years. All ethical standards of scientific research were observed, and the study received approval from the Ethics Committee of the Faculty of Orthodox Theology, "Alexandru Ioan Cuza" University of Iași, under certificate no. 178/19.02.2024.

From the 60 items included in the applied omnibus questionnaire, the following research questions were selected for the present paper:

1. How often are you bothered by people who criticize you for using your mobile phone?
2. Have you ever been criticized for not reading the messages or notifications in a virtual conversation?
3. Do you believe that the way your colleagues or friends perceive you would be negatively affected if you reduced by half the time spent on social media platforms? Would halving the time you spend on your phone affect your social life?
4. Do you feel the need to use your mobile phone in awkward situations (e.g., in an elevator, at the bus stop, or before the start of a class)?
5. Do you take your mobile phone with you when you go into another room (e.g., the kitchen, bathroom, or balcony)?
6. Have you ever felt guilty about the amount of time you spend on your mobile phone?

The results were statistically processed using MATLAB, version R2020a (MATLAB, 2020). An attempt was also made to establish correlations between the selected items.

For the descriptive statistics part, we have mainly used MATLAB functions for the Statistics Toolbox. To quantify the correlation between two variables, we have used the Spearman's correlation coefficient. This coefficient is more appropriate to use here (rather than the Pearson's correlation coefficient), as the data is of Likert type (survey data). The Spearman's coefficient is based on ranks and measures the monotonic relationship between variables. A calculated Spearman coefficient will be statistically significant when the corresponding p-value is smaller than the level of significance. In this analysis, the level of significance is taken to be 0.01.

## Results

Table 1 shows that the most common response for both genders is "never", indicating that most people surveyed don't face upsets caused by criticism for their phone use. For both genders, the frequency of frustrations stemming from criticism decreases as these becomes more frequent (e.g., "monthly" is less common than "rarely", and "daily" is the least common). Apparently, a higher number of females than males reported being bothered by criticism for their mobile phone use across all categories. However, while the raw numbers shown in the table appear different, especially for the "never" category, these differences are not statistically significant when considering the total sample sizes of each gender. The apparent larger counts for females in each category are actually driven by a larger number of female respondents. Gender differences are very small but follow a pattern: women are slightly more likely to experience low-frequency criticism, and men are slightly more likely to experience high-frequency criticism.

A chi-square test was employed to check whether the level of annoyance at criticism is influenced by the gender of the person being criticized. We have found that the test statistic is  $\chi^2(4) \approx 2.14$ , p-value  $\approx 0.70$ , showing no influence of the gender on the level of criticism. Also, the Cramér's V ( $\approx 0.037$ ) statistic indicates a negligible association between gender and level of annoyance at criticism. Therefore, we can conclude that *gender does not play a meaningful role in determining how often individuals are upset because they are being criticized for mobile phone use* within this sample. Spearman's correlation coefficient ( $r_s$ ) between male and female answers is 1, meaning a perfect positive monotonic relationship. In simpler terms, this means that the ranks of the two variables perfectly align. If one variable's rank increases, the other variable's rank increases in perfect correspondence.

**Table 1**

*Distribution of the group, based on the attitude to the criticism received for excessive mobile phone use, by gender*

	never		rarely		monthly		often		daily	
Gender	%	No.	%	No.	%	No.	%	No.	%	No.
male	15.29	236	3.69	57	6.36	98	5.51	<b>85</b>	1.23	19
female	32.21	497	8.23	127	14.97	231	10.37	160	2.14	33
<b>Total</b>	<b>47.50</b>	<b>733</b>	<b>11.92</b>	<b>184</b>	<b>21.33</b>	<b>329</b>	<b>15.88</b>	<b>225</b>	<b>3.37</b>	<b>52</b>

Table 2 shows that the most common response for both genders is "sometimes" (representing monthly), indicating that most respondents' experience criticism several times a month for not reading virtual messages/notifications. For both genders, the frequency of those who were criticized decreases as the criticism becomes more frequent, with "always" (daily) being the least frequent.

The results of a chi-square test shows that there is no significant observed association (statistic test is  $\chi^2(4) \approx 4.26$ , p-value  $\approx 0.37$ ) between gender and the level of criticism. Also, the Cramér's V statistic,  $V \approx 0.052$ , shows a negligible association between gender and level of

criticism. Therefore, we can conclude that *gender does not play a meaningful role in determining how often individuals are criticized for not reading virtual messages/ notifications* within this sample. Spearman's correlation coefficient between male and female answers is 0.9 (p-value = 0.0374), meaning a very good monotonic relationship.

**Table 2**

*Distribution of the group by gender, based on criticism received for not reading virtual messages/ notifications*

	never		rarely		sometimes (monthly)		often		always	
Gender	%	No.	%	No.	%	No.	%	No.	%	No.
male	4.21	65	10.05	155	12.31	190	4.47	69	1.04	16
female	10.43	161	20.09	310	27.03	417	9.07	140	1.30	20
<b>Total</b>	<b>14.65</b>	<b>226</b>	<b>30.14</b>	<b>465</b>	<b>39.34</b>	<b>607</b>	<b>13.55</b>	<b>209</b>	<b>2.34</b>	<b>36</b>

According to Table 3, the majority of subjects of both sexes responded that the way they are viewed by colleagues/friends would be very little influenced if they halved the time spent on social platforms.

When testing whether the gender has an influence on the impact of halving the time spent on social platforms on the social life, the chi-square test shows that there is no significant observed association (statistic test is  $\chi^2(4) \approx 8.14$ , p-value  $\approx 0.08$ ) between these variables. Also, the Cramér's  $V \approx 0.072$  shows a negligible association between gender and the impact of halving the time spent on social platforms. Therefore, we can conclude that *gender does not play a meaningful role in determining the impact of halving the time spent on social platforms on the social life* within this sample. Spearman's correlation coefficient between male and female answers is 1, meaning a perfect monotonic relationship.

**Table 3**

*Distribution of the group, based on the impact on social life following the halving of time spent on social platforms, by gender*

	very little		little		moderate		much		very much	
Gender	%	No.	%	No.	%	No.	%	No.	%	No.
male	16.01	247	7.97	123	4.60	71	2.40	37	1.10	17
female	36.62	565	17.95	277	8.55	132	3.31	51	1.49	23
<b>Total</b>	<b>52.62</b>	<b>812</b>	<b>25.92</b>	<b>400</b>	<b>13.16</b>	<b>203</b>	<b>5.71</b>	<b>88</b>	<b>2.59</b>	<b>40</b>

As one can observe from Table 4, the most common response for both genders is "sometimes", indicating that most people surveyed tended to use their mobile phone surveyed in embarrassing situations (e.g. in the elevator, at the bus stop, before a class starts). For both genders, the "always" category of using the mobile phone in such situations is the least common.

The results of a chi-square test shows that there is no significant observed association (test statistic is  $\chi^2(4) \approx 3.40$ , p-value  $\approx 0.49$ ) between gender and the use of mobile phone in awkward situations. Also, the Cramér's  $V \approx 0.047$  shows a negligible non-significant association between these two variables. Therefore, we can conclude that *gender does not play a meaningful role in determining differences in mobile phone use in embarrassing situations* within this sample. Spearman's correlation coefficient between male and female answers is 1, meaning a perfect monotonic relationship.

**Table 4**

*Distribution of the group by gender, based on the use of the mobile phone in embarrassing situations*

	never		rarely		sometimes		often		always	
Gender	%	No.	%	No.	%	No.	%	No.	%	No.
male	5.12	79	7.71	119	10.37	160	6.29	97	2.59	40
female	9.01	139	18.15	280	20.74	320	14.06	217	5.96	92
<b>Total</b>	<b>14.13</b>	<b>218</b>	<b>25.86</b>	<b>399</b>	<b>31.11</b>	<b>480</b>	<b>20.35</b>	<b>314</b>	<b>8.55</b>	<b>132</b>

Most subjects answered “often”, indicating that most participants took their mobile phone with them when going to another room (e.g. kitchen, bathroom, balcony). For both genders, not taking the phone along was the least frequent response.

The results of a chi-square test shows that there are significant observed differences (test statistic is  $\chi^2(4) \approx 16.59$ , p-value  $\approx 0.002$ ) between gender and frequency of criticism. However, the Cramér’s V  $\approx 0.104$  shows a negligible, though significant, association between gender and frequency of criticism. Therefore, we can conclude that *gender plays a significant role in taking the mobile phone when moving to another room*. The Spearman’s correlation coefficient between male and female answers is 1, meaning a perfect monotonic relationship.

We observe a very small but significant positive monotonic rank correlation between the impact on social life due to halving the time spent on social platforms and taking the mobile phone when going to another room, Spearman’s correlation coefficient being 0.19 (p-value = 0.00). However, while the relationship is statistically significant, it has very little practical importance or predictive power. Although a theoretical relationship exists, it may be possible that this relationship does not exist in practice. When the sample size is large, even trivial effects can be deemed statistically significant.

**Table 5**

*Distribution of the group by gender, based on taking the mobile phone when going to another room*

	never		rarely		sometimes		often		always	
Gender	%	No.	%	No.	%	No.	%	No.	%	No.
male	0.84	13	6.09	94	7.65	118	12.70	196	4.80	74
female	2.59	40	12.38	191	22.23	343	22.68	350	8.04	124
<b>Total</b>	<b>3.43</b>	<b>53</b>	<b>18.47</b>	<b>285</b>	<b>29.88</b>	<b>461</b>	<b>35.39</b>	<b>546</b>	<b>12.83</b>	<b>198</b>

In the study group, the most common response for both genders is “sometimes”, indicating that most respondents sometimes felt guilty about the time spent on their mobile phones. The combined number for “sometimes”, “often”, and “always” is high for both genders, suggesting that a majority of both male and female users do experience some level of guilt related to their mobile phone use. Also, as observed from Table 6, the substantial lead of females in the “often” and “always” categories indicates that women who feel guilt tend to feel it more frequently or intensely.

The results of a chi-square test shows that there is a significant observed association (test statistic is  $\chi^2(4) \approx 20.82$ , p-value  $\approx 0.0003$ ) between gender and feeling of guilt for the time spent on the mobile phone. However, the Cramér’s V  $\approx 0.12$  shows a weak strength of association, though significant, between these variables. Therefore, we can conclude that *gender plays a*

significant role in feeling guilty for spending time on the mobile phone. Spearman’s correlation coefficient between male and female answers is 0.7 (p-value = 0.19), meaning a good positive monotonic relationship.

**Table 6**

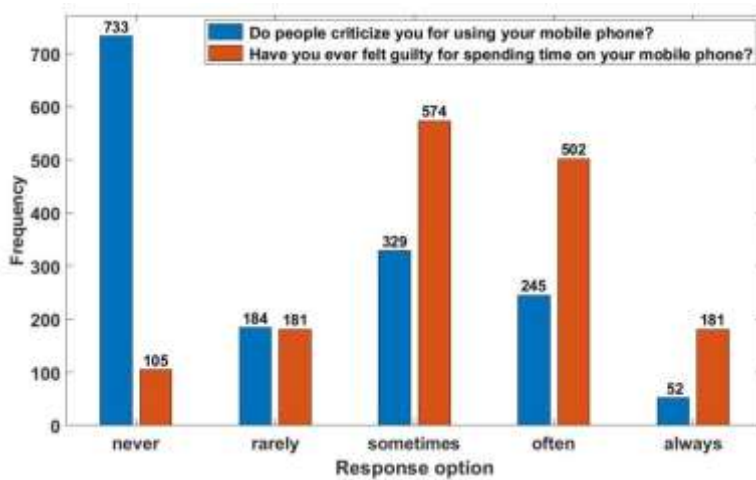
*Distribution of the group by gender, based on the feeling of guilt for the time spent on the mobile phone*

Gender	never		rarely		sometimes		often		always	
	%	No.	%	No.	%	No.	%	No.	%	No.
male	2.98	46	3.82	59	13.22	204	9.53	147	2.53	39
female	3.82	59	7.91	122	23.98	370	23.01	355	9.20	142
<b>Total</b>	<b>6.80</b>	<b>105</b>	<b>11.73</b>	<b>181</b>	<b>37.20</b>	<b>574</b>	<b>32.54</b>	<b>502</b>	<b>11.73</b>	<b>181</b>

Figure 1 shows that almost half of respondents chose “never” to the question “How often are you bothered by people who criticize you for using your mobile phone?”. The combined total for “never” and “rarely” is 917, representing most responses, and making the distribution heavily skewed to the left. The average response for this question is “rarely”. On the other side, the distribution for the question “Have you ever felt guilty for spending time on your mobile phone?” is skewed to the right. Most of the responses are concentrated at the upper end of the scale (“sometimes”, “often” and “always”), while few people answered “never”, meaning that most participants felt a sense of guilt for using the mobile phone. The average response for this question is “sometimes”. As the data suggests, the responses for the two questions are sharply contrasting: the bother of criticism for mobile phone use is overwhelmingly rare, while the feeling of personal guilt about mobile phone use is very common. The number of people who always feel guilty is over 3 times the number of people who are always upset because they are criticized.

**Figure 1**

*Distribution comparison of the response option for two variables: level of discomfort caused by criticism for using the mobile phone and guilt for time spent on mobile phone*



One can observe a small, positive, but significant rank correlation between the presence of discomfort following criticism for mobile phone use and the feeling of guilt for the time spent on the mobile phone, Spearman’s correlation coefficient being 0.24 (p-value = 0.00). However,

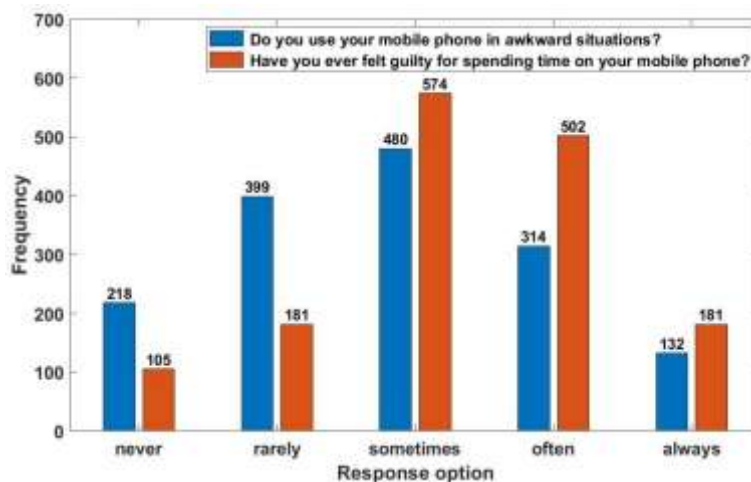
while the relationship is statistically significant, it has very little practical importance or predictive power.

Figure 2 shows that the distribution for using the phone in awkward situations is skewed slightly towards the lower end of the scale ("never" and "rarely"), while the distribution for feeling guilty is skewed slightly towards the higher end of the scale ("sometimes", "often", and "always"). For both questions, the largest group is represented by "sometimes", which is the average response. The total number of people who often or always feel guilty (683) is significantly higher than the number who often or always use their phone in awkward situations (446). The data suggests that people are more likely to feel guilty about spending time on their phones than about using their cell phones in embarrassing situations.

We observe a small, positive, but significant rank correlation between the need to use the mobile phone in embarrassing situations and the presence of guilt feelings for the time spent on the mobile phone, Spearman's correlation coefficient being 0.28 (p-value = 0.00). Again, although the strength of the correlation is a bit higher than the previous two correlations, this relationship has little practical importance or predictive power.

**Figure 2**

*Distribution comparison of the response option for two variables: the use of mobile phone in awkward situations and guilt for time spent on mobile phone*



## Discussions

This study revealed that a small proportion of participants were bothered by being criticized by those around them for excessive mobile phone use, an experience that also contributed to their feelings of guilt regarding the time spent on their phones. Another contributing factor was the need to use the mobile phone in embarrassing or uncomfortable situations. Although a considerable number of respondents reported being occasionally criticized for not reading messages or notifications in virtual conversations, many of them believed that reducing the time spent on social media platforms would not significantly affect the way they were perceived by colleagues or friends. However, to avoid such criticism, some participants reported taking their mobile phones with them when moving to another room.

A study conducted on 930 American participants, recruited nationwide through a professional survey company, revealed that individuals with a high level of loneliness tended to rely more heavily on smartphone-mediated communication and were more reluctant to engage in face-to-face interactions, thereby increasing the likelihood of developing problematic smartphone

use. A multi-group analysis further indicated that young adults aged 31–40 were at a higher risk of developing problematic smartphone use compared to adolescents aged 13–18 (Kim, 2017).

To the question “*How often are you bothered by people who criticize you for using your mobile phone?*”, almost half of all participants have never been bothered by criticism from those around them for mobile phone use. This indicates that the annoyance of criticism for mobile phone use is an uncommon experience overall. Daily discomfort for this reason is the rarest event for both genders, with only 3.84% of males and 3.15% of females reporting it. This reinforces the finding that external criticism is not a major issue for most users.

In conclusion, the data reveals a population that is highly dependent on constant mobile phone proximity but has a very low concern about the negative social consequences of reducing their phone usage. Data also shows a significant disconnect between the constant phone proximity and the perceived importance of the phone for social life.

A sample of 854 European adults participated in an online study aimed at exploring the cognitive components that, according to problematic users, may contribute to potential internet addiction. The research examined issues related to internet use and attachment styles. Self-reported addictions to social networks, the internet, and gaming showed prevalence rates ranging from 1.2% (gaming) to 2.7% (social networks). A qualitative analysis of the responses provided by internet users who self-identified as compulsive revealed that feelings of non-belonging and disconnection during life events were perceived as key causes of internet addiction. These were further compounded by mixed emotions associated with negative thoughts, which were compensated by a positive online identity. The onset of addiction was suggested by the significant impairment of participants’ daily activities across various domains, depending on the severity of the behavioral patterns described in this study (Lopez-Fernandez et al., 2022).

In the present study, the Spearman correlation indicated a very weak relationship between the extent to which halving the time spent on social media platforms influences social life and the habit of taking along one’s mobile phone when moving to another room, thereby refuting the corresponding working hypothesis. Furthermore, it was observed that mobile phone users rarely face annoyance at direct criticism from others. As 1257 people felt guilt (574 - “sometimes”, 502 - “often” and 181 - “always”), despite the lack of external pressure, users frequently experience internal conflict and guilt regarding the time they spend on their phone.

Researchers have primarily focused on problematic smartphone use, particularly its impact on the daily functioning of adolescents and young adults. A study presenting the results of a cross-sectional investigation on 154 older adults (aged 60+) from Norway concluded that elderly smartphone users engage with their devices for a variety of social and non-social purposes, with social networking and news reading being the most common domains of use. Moreover, lower levels of problematic smartphone use among older adults were associated with higher self-control (Busch et al., 2021). A study conducted by Elhai et al. (2016) on a sample of 308 participants, who completed standardized assessments of problematic smartphone use, frequency of smartphone use, depression, anxiety, and potential underlying mechanisms, including behavioral activation, need for touch, fear of missing out (*FoMO*), and emotion regulation, found that problematic smartphone use was most strongly correlated with anxiety, need for touch, and fear of missing out.

The results of this study indicate that there is a statistically significant but low-ranking positive correlation between being bothered by criticism from others for mobile phone use and the feeling of guilt associated with the time spent on the mobile phone. This correlation has very limited practical significance and predictive power, meaning that the working hypothesis is only partially confirmed. The data further suggests that individuals are more likely to feel guilty about the time they spend on their phones than about using their phones in embarrassing situations.

A statistically significant correlation was found between the need to use the mobile phone in embarrassing situations and the presence of guilt regarding the time spent on the mobile phone, thereby confirming the working hypothesis.

The results of a qualitative study based on 11 in-depth interviews and responses to 183 exploratory written questionnaires, which aimed to investigate smartphone addiction, identified four distinct profiles of smartphone users. In two of these profiles, users exhibited addictive behaviors. In the first group, user profiles corresponded to those typically associated with other forms of addiction, whereas in the second group, traditional definitions of addiction did not apply, and the characteristics of these users were markedly different. These findings suggest that in the case of mobile phone addiction, the adoption of traditional conceptualizations of addiction is insufficient for defining, understanding, and managing this addictive behavior (Lapointe et al., 2013).

Adolescence is a developmental stage characterized by greater vulnerability to digital technology use, which explains why most studies on the effects of problematic internet use have been cross-sectional and conducted on samples of children and adolescents. However, longitudinal intercultural studies remain scarce. Research involving adult populations is even more limited, which is why the present study focused primarily on adults, with a mean participant age of 40 years.

A 12-month longitudinal study involving three assessments conducted every six months on a European sample of 139 adults (45.5% women; mean age = 26.14 years, SD = 5.92) from 11 countries (Finland, Germany, Italy, Spain, France, Switzerland, Hungary, Poland, the United Kingdom, Norway, and Belgium) demonstrated that problematic internet use was generally low among European adults, showing a declining trend over the course of one year, in contrast with findings observed among adolescents (López-Fernández et al., 2025).

An online cross-sectional study involving 1,016 participants (84.4% women; mean age = 30.3 years) aimed to examine the relationship between personality traits, coping strategies, and sociodemographic factors in relation to problematic use of the internet, smartphones, and text messaging among Greek users. It also investigated how personality traits mediate the relationship between maladaptive coping strategies and problematic use across these three media. The findings indicated that addressing predisposing factors, such as personality traits, may precipitate or maintain problematic use, while screening vulnerable groups and developing adaptive coping strategies could play a crucial role in prevention and therapy (Kalaitzaki et al., 2022). The results of a cross-sectional study involving 207 Lebanese adults (aged 18–65), conducted through a telephone survey, showed that the prevalence of problematic smartphone use among Lebanese adults was 20.2%, particularly among younger individuals (mainly those aged 18–34), unmarried participants, and those with a mobile data subscription. Chatting was identified as the most frequently used smartphone function on a typical day (Nahas et al., 2018).

Studies examining the impact of prolonged screen time or extended internet use also report various behavioral and conduct patterns that warrant attention. One study, based on a large cohort (N = 8,673), found that each additional hour of daily smartphone exposure was associated with a higher impulsivity score (Sina et al., 2023). Other studies have highlighted conduct-related problems such as aggressiveness (Zhang et al., 2022; Hahn & Kim 2014), dishonesty (Drouin et al., 2016), social withdrawal (Mozafar Saadati et al., 2021), shyness (Yu et al., 2019), and difficulties in behavioral and emotional self-control (George et al., 2018), as well as impulsivity (Zhang et al., 2015). Moreover, some research suggests that problematic smartphone use may contribute to the cultivation of a secret or hidden life and the development of negative behavioral traits.

Globally, problematic internet use has become a major concern due to its numerous negative correlations with both mental and physical health, as well as its increasing prevalence. Several studies have highlighted a negative relationship between resilience and problematic internet use, although further research is still required to better understand this association (Hidalgo-Fuentes et al., 2023).

The study conducted by Lissak (2018) revealed that spending more than two hours per day on the internet correlates with antisocial behavior, an increased risk of antisocial tendencies, a decrease in prosocial behaviors, as well as a reduction in social coping abilities and the emergence of behavioral traits similar to those observed in substance addiction (Lissak, 2018).

A recently published meta-analysis evaluated 381 studies and, after applying several scientific rigor and language criteria, retained 35 articles from which conclusions were drawn regarding the cognitive and emotional characteristics of excessive digital media use, as well as the most frequently reported causes of brain degradation (“brain rot”). Among the digital behaviors associated with this phenomenon were *doomscrolling*, *zombie scrolling*, *cognitive disengagement* (Yousef et al., 2025).

Effects on intrafamilial relationships have also been reported as a consequence of excessive mobile phone use, including a reduction in face-to-face interactions, poor social skills, and a diminished sense of belonging (Boniel-Nissim et al., 2024). Moreover, since digital activities tend to replace traditional interactions and emotional support (Institute of Digital Media and Child Development, 2024; Vaghefi et al., 2017), parent–adolescent relationships have become increasingly strained.

Ultimately, addiction to social networks and mobile devices may lead to behavioral patterns resembling those observed in substance dependence, accompanied by a progressive decline in social coping abilities and an increased need for social validation (Wacks & Weinstein, 2021; Lissak, 2018). Finally, prolonged exposure to digital content may heighten the risk of antisocial behavior and reduce prosocial tendencies (Lissak, 2018).

## **Conclusions**

This study demonstrates that mobile phones have become essential communication tools, easily accessible in everyday life, to the extent that individuals feel the constant need to have them within reach. Their use has become so frequent that it is now perceived as a habitual and socially accepted behavior, rarely causing discomfort to others. Moreover, feelings of guilt associated with the time spent on mobile phones appear to be confined to an increasingly smaller segment of the population.

The excessive use of electronic devices has become a major global issue, leading to unprecedented addictive behaviors that pose serious challenges for individuals, organizations, and society, thereby representing a significant public health concern.

Problematic smartphone use is becoming increasingly widespread across all age groups in contemporary societies and has serious effects on both mental health and social life. While younger individuals often exhibit lower self-control and find it more difficult to manage this form of addiction, adults should remain aware of their usage patterns and recognize when to set boundaries to prevent problematic smartphone use.

## **Study Limitations:**

- The gender variable was not proportionally distributed, with 67.92% of the study participants being female and only 32.08% male.
- Given the large sample size, the application of in-depth analytical methods was more challenging.

## **Competing interests**

The authors declare no competing interests.

## Ethics Committee Approval

The study received approval from the Ethics Committee of the Faculty of Orthodox Theology, “Alexandru Ioan Cuza” University of Iași, under certificate no. 178/19.02.2024.

## Consent to participate

The inclusion of participants in the study was done randomly, based on voluntary participation, following informed and freely given written consent. The study consistently followed the principles of anonymity and confidentiality, with subjects being able to withdraw from the study at any time.

## Acknowledgements

We express our gratitude to the study participants for their seriousness and commitment to this research topic.

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