

## BETWEEN CONNECTION AND ISOLATION: THE INFLUENCE OF DIGITAL TECHNOLOGY ON ADOLESCENTS' SOCIAL RELATIONSHIPS

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**Abstract:** *This paper examines how digital technology influences adolescents' social relationships, starting from the idea that online and offline spaces complement one another but may also generate tensions. Particular attention is given to Fear of Missing Out (FoMO), phubbing, and their relationship with social connectedness. The research was designed as a simulated descriptive study using a mixed-methods approach and a sample of 60 adolescents aged 15 to 18. The quantitative component included sociodemographic data, the Fear of Missing Out Scale, the Generic Scale of Phubbing, and the Social Connectedness Scale-Revised, while the qualitative component consisted of two focus groups. The simulated findings indicate a positive association between time spent using digital technology and FoMO, as well as negative associations between FoMO, phubbing, and offline social connectedness. The qualitative analysis reveals an ambivalent experience: technology maintains contact and facilitates support, but it also creates pressure to respond immediately, social comparison, and fragmented face-to-face conversations. The paper highlights the need for digital education focused not only on-screen time, but also on the quality of interactions and the relational norms of adolescent peer groups.*

**Keywords:** *adolescents; digital technology; social relationships; FoMO; phubbing; social connectedness; digital socialization.*

### **Introduction**

In adolescents' lives, digital technology is no longer merely a communication tool; it has become a social space in which friendships are formed and maintained, group belonging is negotiated, and self-image is constructed. Messages, group chats, video platforms, and social networks extend school-based interactions beyond the daily

schedule and keep adolescents continuously connected to peer-group dynamics. At the same time, this connectivity may intensify fear of exclusion, social comparison, and the difficulty of giving full attention to the person physically present.

International data confirm the importance of this topic. The Health Behaviour in School-aged Children report shows that problematic social media use among adolescents increased from 7% in 2018 to 11% in 2022, suggesting that not only access to technology, but also patterns of use, require careful analysis (World Health Organization Regional Office for Europe, 2024). However, recent literature does not support a simplistic explanation according to which any intensive use automatically produces isolation or lower well-being. Effects vary according to the adolescent, the content, the type of interaction, and pre-existing vulnerabilities (Beyens et al., 2020; Odgers & Jensen, 2020; Valkenburg et al., 2022).

For the sociological interpretation of the phenomenon, I drew on several theoretical frameworks. Social identity theory explains how group membership influences an individual's self-evaluation and behaviour (Tajfel & Turner, 1979). In digital environments, visible indicators of popularity—likes, followers, views, or reactions—may function as status signals. Goffman's (1959) dramaturgical perspective helps explain the online profile as a space for the controlled presentation of the self, while social comparison theory shows why repeated exposure to selected images from other people's lives may intensify the evaluation of one's own social position (Festinger, 1954). A central concept is Fear of Missing Out, defined as the concern that other people are having rewarding experiences from which one is absent, together with the desire to remain continuously connected to what others are doing (Przybylski et al., 2013). FoMO is not equivalent to screen time alone because it includes an affective and relational component. Adolescents check their phones to make sure they have not missed a conversation, an invitation, or a change in group dynamics. This mechanism may explain why technical availability sometimes develops into social pressure.

Another dimension examined in this paper is phubbing, namely ignoring a conversation partner by directing attention toward a smartphone. Research shows that phubbing may become a reciprocal norm: one person checks the phone because others are doing the same, while face-to-face conversation becomes fragmented (Chotpitayasunondh & Douglas, 2016, 2018). From a sociological perspective, the issue lies not only in the presence of the device, but also in the meaning of the gesture: the other person may perceive that

the online interaction is being prioritised over the relationship taking place in the present moment.

Studies on digital well-being recommend avoiding technological determinism. Active use oriented toward conversation and support may strengthen relationships, whereas passive use, comparison, and compulsive checking may be associated with loneliness or reduced well-being (Nowland et al., 2018; Verduyn et al., 2017). Large-sample analyses have identified only small average effects of digital use on well-being, indicating that mechanisms and context are more important than duration considered in isolation (Orben & Przybylski, 2019).

Based on these theoretical perspectives, the aim of the paper was to analyse the relationship between digital technology use, FoMO, phubbing, and offline social connectedness among adolescents. I examined two hypotheses: H1—high daily use is positively associated with FoMO; H2—higher levels of FoMO and phubbing are associated with lower offline social connectedness.

### **Methodology**

The research was designed as a simulated descriptive survey using a mixed-methods approach. I selected this design in order to combine quantitative indicators with the explanations provided by adolescents' discourse. The sample comprised 60 adolescents aged 15 to 18, corresponding to grades 9–11, from an urban upper-secondary school. Gender distribution was balanced: 30 girls and 30 boys. The mean age was 16.35 years ( $SD = 1.13$ ).

Four categories of data were used for the quantitative component. The sociodemographic form included age, gender, grade, and self-reported daily screen time. FoMO was assessed using the 10-item Fear of Missing Out Scale, with responses recorded on a five-point Likert scale (Przybylski et al., 2013). Phubbing was measured using the 15-item Generic Scale of Phubbing, with responses recorded on a seven-point scale (Chotpitayasunondh & Douglas, 2018). Social connectedness was analysed using the Social Connectedness Scale–Revised, which assesses interpersonal closeness, belonging, and distance (Lee et al., 2001).

The qualitative component consisted of two focus groups with six participants each. The questions explored the role of the phone in maintaining friendships, pressure to respond immediately, experiences of online exclusion, phone use during conversations, and situations in which the digital environment provides support. Responses were analysed through thematic coding, following the general stages proposed by Braun and Clarke (2006).

Quantitative data were summarised using descriptive statistics, Pearson correlations, group comparisons, and a multiple linear regression model. The results and graphical representations presented below were generated from a simulated dataset created exclusively to demonstrate methods of analysis and reporting. These values do not represent responses collected from real students. In an actual study, institutional approval, informed consent from parents and adolescents, data anonymisation, and ethical approval of the procedures would be required.

| Instrument                         | Content                                                                | Indicator used                               |
|------------------------------------|------------------------------------------------------------------------|----------------------------------------------|
| Sociodemographic form              | Age, gender, grade, daily screen time                                  | Sample description and grouping variable     |
| FoMOs                              | 10 items, 1–5 Likert scale                                             | Higher score = more intense FoMO             |
| Generic Scale of Phubbing          | 15 items, 1–7 Likert scale                                             | Higher score = more frequent phubbing        |
| Social Connectedness Scale–Revised | 20 items assessing belonging and closeness                             | Higher score = stronger social connectedness |
| Focus group                        | Questions about friendships, response pressure, exclusion, and support | Themes and contextual explanations           |

Table 1. Research instruments and variables

## Results

The simulated results reveal a high but uneven level of digital use. Of the 60 adolescents, 5 reported less than two hours of daily use, 32 reported between two and four hours, and 23 reported more than four hours. Mean daily use was 3.73 hours ( $SD = 1.38$ ). The mean FoMO score was  $M = 2.72$  ( $SD = 0.62$ ), the mean phubbing score was  $M = 3.27$  ( $SD = 0.88$ ), and the mean social connectedness score was  $M = 4.26$  ( $SD = 0.55$ ).

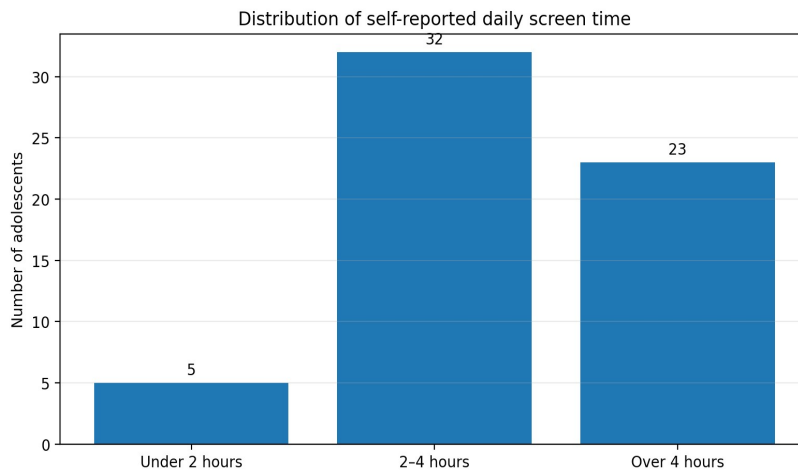


Figure 1. Distribution of self-reported daily screen time (N = 60). Source: author's processing based on simulated data.

| Variable                   | M    | SD   | Observed range |
|----------------------------|------|------|----------------|
| Screen time (hours/day)    | 3.73 | 1.38 | 1.20–7.46      |
| FoMO (1–5)                 | 2.72 | 0.62 | 1.58–4.11      |
| Phubbing (1–7)             | 3.27 | 0.88 | 1.31–6.38      |
| Social connectedness (1–6) | 4.26 | 0.55 | 2.65–6.00      |

Table 2. Descriptive statistics for the simulated data

The first hypothesis was supported by the simulated data. The Pearson correlation between daily screen time and FoMO was positive and strong,  $r = .75$ ,  $p < .001$ . Adolescents who exceeded four hours of daily use had a mean FoMO score of  $M = 3.16$ , compared with  $M = 2.52$  in the two-to-four-hour group and  $M = 2.04$  in the group reporting less than two hours. The result suggests that more intensive use is accompanied by a stronger concern about missing what is happening within the social group.

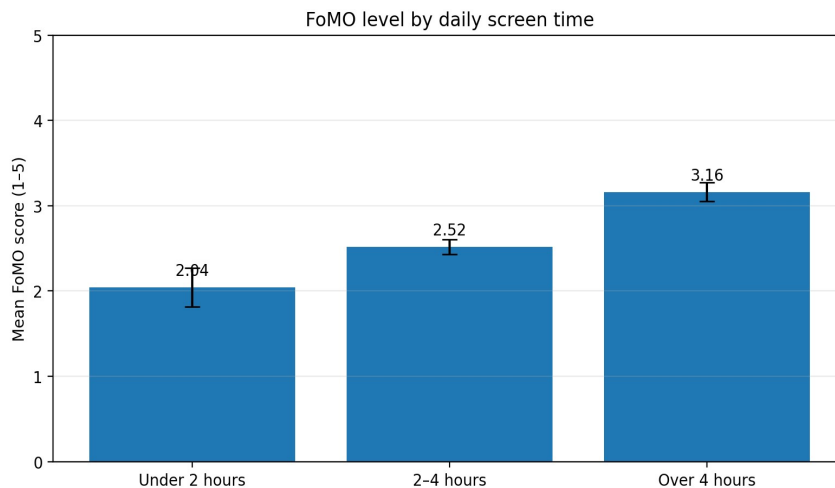


Figure 2. FoMO level by daily screen time. Error bars represent the standard error. Source: author's processing based on simulated data.

| Relationship examined           | Pearson's r | p      |
|---------------------------------|-------------|--------|
| Screen time – FoMO              | .75         | < .001 |
| FoMO – phubbing                 | .71         | < .001 |
| FoMO – social connectedness     | -.65        | < .001 |
| Phubbing – social connectedness | -.64        | < .001 |

Table 3. Correlations between the main variables

The second hypothesis was also supported. FoMO was negatively associated with social connectedness,  $r = -.65$ ,  $p < .001$ , and phubbing was negatively associated with social connectedness,  $r = -.64$ ,  $p < .001$ . The positive relationship between FoMO and phubbing,  $r = .71$ ,  $p < .001$ , indicates that pressure to remain connected may be accompanied by checking the phone during face-to-face interactions. In the regression model, FoMO and phubbing jointly explained approximately 49% of the variance in social connectedness ( $R^2 = .49$ ). This value should be interpreted solely for illustrative purposes because it is based on simulated data.

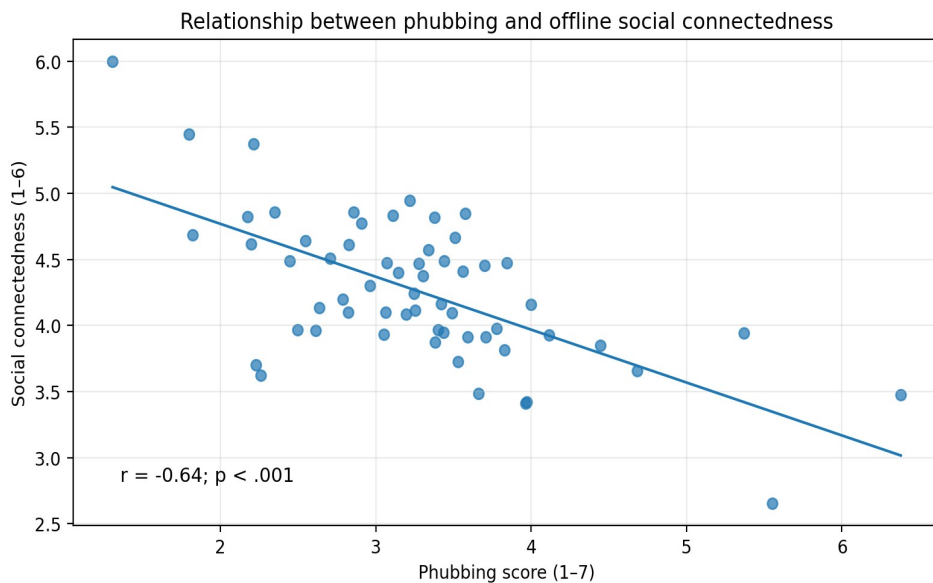


Figure 3. Relationship between phubbing and offline social connectedness. The line represents the linear trend. Source: author's processing based on simulated data.

### Qualitative analysis

The analysis of the two simulated focus groups generated six recurring themes. The first theme, continuity of contact, describes the positive role of messaging groups and social platforms in maintaining friendships after the school day ends. Participants emphasised that they could ask for help, clarify misunderstandings, and remain close to friends who were not in the same location.

The second theme was pressure to respond immediately. Adolescents described an unwritten expectation to view and answer messages quickly. Delayed responses, messages left "on seen," or absence from a conversation may be interpreted as disinterest or withdrawal from the group. This theme helps explain the relationship between connectivity and FoMO.

The third theme concerned exclusion and social visibility. Participants indicated that photographs, stories, and group conversations make visible the activities to which an adolescent was not invited. Exclusion does not remain solely a private experience; it becomes observable and repeated through content shared online.

The fourth theme was the fragmentation of face-to-face conversations. Checking the phone during meetings was perceived as a sign that the other person did not attach sufficient importance to the conversation. Nevertheless, participants acknowledged that they repeated the same

behaviour, supporting the idea that phubbing becomes a reciprocal norm.

The fifth theme highlighted online support. Adolescents mentioned situations in which they received encouragement, information, or emotional help through messages, especially when discussing a problem directly was difficult. The final theme, social comparison, brought together accounts of pressure to present an attractive image, interesting activities, and a visible social life.

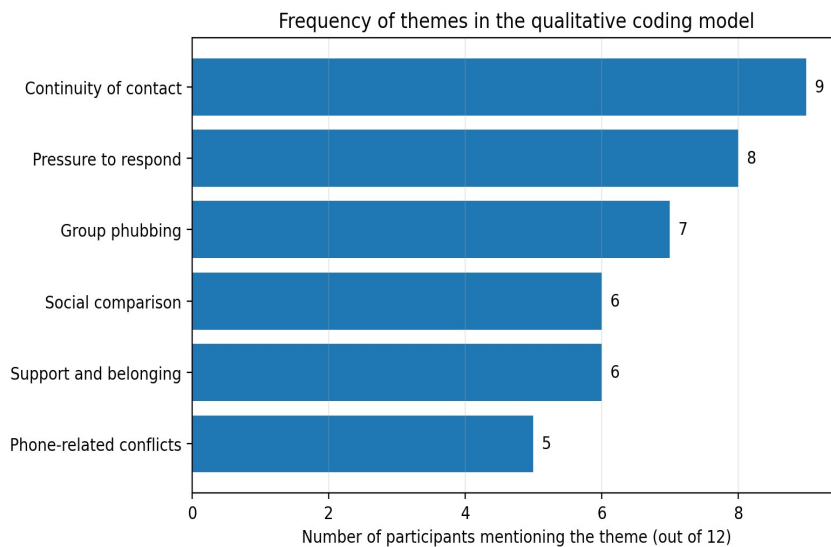


Figure 4. Frequency of themes identified in the focus-group model. The same contribution may include several themes. Source: author's processing based on simulated data.

## Discussion

The findings support the idea that the relationship between adolescents and technology should be analysed through social mechanisms, not only through duration of use. The association between screen time and FoMO suggests that prolonged presence in digital environments may reflect the need to continuously monitor peer-group dynamics. However, this association does not demonstrate a causal relationship: FoMO may lead to more frequent phone checking, while intensive use may, in turn, amplify fear of exclusion.

The negative relationship between phubbing and social connectedness is consistent with research showing that directing attention toward the phone reduces the perceived quality of interaction and may produce behavioural reciprocity (Chotpitayasunondh & Douglas, 2016, 2018). From Goffman's (1959) perspective, face-to-face interaction involves acknowledging the presence of the other person. When attention is

repeatedly transferred to the screen, this acknowledgement is interrupted, and the conversation partner may perceive a decline in relational respect.

The qualitative themes highlight the ambivalent character of technology. Maintaining contact and receiving online support confirm that digital environments may expand social capital and reduce distance. At the same time, visible exclusion, comparison, and pressure to respond immediately show that platforms transform the norms of friendship. This interpretation is consistent with studies that distinguish between active use oriented toward interaction and passive use oriented toward observing and comparing oneself with others (Verduyn et al., 2017).

The findings should be interpreted cautiously in relation to the literature. Orben and Przybylski (2019) identified only small average effects of digital use on well-being, while Beyens et al. (2020) showed that effects vary considerably from one adolescent to another. Therefore, it is not justified to label technology as an exclusively negative factor. It is more relevant to analyse the type of use, the relational context, and individual vulnerabilities.

From a sociological perspective, technology changes the infrastructure of relationships among adolescents. The peer group becomes permanently accessible, norms of availability intensify, and social status is measured through visible indicators. These changes may increase opportunities for belonging, but they may also make exclusion more persistent. Educational interventions should therefore aim not only to reduce screen time, but also to build communication norms that protect attention, respect, and autonomy.

### **Conclusions and recommendations**

The paper shows that digital technology may function simultaneously as a resource for connection and a source of distancing. Adolescents use online environments to maintain friendships, seek support, and participate in group life. However, the same connectivity may produce FoMO, social comparison, pressure to remain permanently available, and phubbing.

The simulated data support both hypotheses: more intensive use is associated with higher FoMO, while FoMO and phubbing are associated with lower offline social connectedness. The qualitative component complements these results by showing that the effects depend on the meaning attributed to interactions and on group norms.

Based on the conclusions, I propose the following directions: (1) introducing digital well-being education activities focused on FoMO, social comparison, and pressure to respond; (2) establishing rules for

phone use during conversations and group activities; (3) developing communication and online conflict-management skills; (4) involving the school counsellor in identifying exclusion, cyberbullying, and compulsive-use situations; and (5) collaborating with parents to build balanced rules that avoid both excessive control and a complete lack of guidance.

The main limitation of the research is the simulated nature of the data, which makes it possible to demonstrate an analytical structure but does not allow the findings to be generalised to the adolescent population. Future research should administer the instruments to a real sample, examine the psychometric properties of the Romanian-language versions, and include repeated measurements, individual interviews, and information about specific patterns of use. In its present form, the study provides a coherent model for investigating the relationship between technology and adolescents' social lives in upper-secondary school settings.

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