

# Mladá veda

## Young Science



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# PARENTAL BEHAVIORAL MODELING AND THE DEVELOPMENT OF SMARTPHONE ADDICTION AMONG YOUTH

MODELOVANIE RODIČOVSKÉHO SPRÁVANIA A ROZVOJ ZÁVISLOSTI  
OD SMARTFÓNOV U MLÁDEŽE

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## Abstract

The research aim is to analyse relationship between parental smartphone use and children's smartphone addiction, with particular attention to family digital behaviour and parental control practices. Data were collected from mothers and their children using the Smartphone Addiction Scale–Short Version (SAS-SV) and additional items assessing smartphone-related habits, parental monitoring, and online activities. Descriptive statistics, Spearman correlation analysis, and path analysis were employed to examine associations between variables. The findings revealed that children reported higher levels of problematic smartphone use than mothers across most indicators of smartphone addiction. The largest differences were observed in gaming behaviour, constant smartphone checking, inability to function without a smartphone, and perceptions of excessive smartphone use. In contrast, mothers reported higher levels of passive online engagement, including social media checking and purposeless

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scrolling. Significant correlations were identified between mothers' smartphone addiction and parenting practices, particularly daily monitoring of smartphone use ( $r = 0.67, p = 0.001$ ) and the use of parental control applications ( $r = 0.61, p = 0.001$ ). Among children, smartphone addiction was associated with hiding smartphone use from parents ( $r = 0.47, p = 0.004$ ), deactivating parental controls ( $r = 0.42, p = 0.007$ ), and engaging in online activities without parental supervision ( $r = 0.31, p = 0.005$ ). Path analysis further demonstrated that mothers' smartphone addiction significantly predicted both the initial level of children's smartphone addiction ( $\beta = 0.264, SE = 0.037, p < 0.001$ ) and its rate of change over time ( $\beta = 0.114, SE = 0.028, p < 0.001$ ). These findings support the assumption that parental digital behaviour functions as an important determinant of children's smartphone use through behavioural modelling and the family digital environment.

Key words: smartpone adiction, parental manner, online habit

### Abstrakt

Cieľom výskumu je analyzovať vzťah medzi používaním smartfónov rodičmi a závislosťou detí od smartfónov, s osobitným dôrazom na digitálne správanie rodiny a praktiky rodičovskej kontroly. Údaje boli zozbierané od matiek a ich detí pomocou Škály závislosti od smartfónov – skrátená verzia (SAS-SV) a ďalších položiek hodnotiacich návyky súvisiace so smartfónmi, rodičovský monitoring a online aktivity. Na preskúmanie súvislostí medzi premennými bola použitá deskriptívna štatistika, Spearmanova korelačná analýza a analýza dráhy. Zistenia ukázali, že deti hlásili vyššiu úroveň problematického používania smartfónov ako matky vo väčšine ukazovateľov závislosti od smartfónov. Najväčšie rozdiely boli pozorované v hernom správaní, neustálom sledovaní smartfónov, neschopnosti fungovať bez smartfónu a vnímaní nadmerného používania smartfónov. Naproti tomu matky hlásili vyššiu úroveň pasívnej online interakcie vrátane kontroly sociálnych médií a bezúčelného rolovania. Boli identifikované významné korelácie medzi závislosťou matiek od smartfónov a rodičovskými praktikami, najmä denným monitorovaním používania smartfónov ( $r = 0,67, p = 0,001$ ) a používaním aplikácií rodičovskej kontroly ( $r = 0,61, p = 0,001$ ). U detí bola závislosť od smartfónov spojená so skrývaním používania smartfónov pred rodičmi ( $r = 0,47, p = 0,004$ ), deaktiváciou rodičovskej kontroly ( $r = 0,42, p = 0,007$ ) a zapájaním sa do online aktivít bez dozoru rodičov ( $r = 0,31, p = 0,005$ ). Path analýza ďalej ukázala, že závislosť matiek od smartfónov významne predpovedala počiatočnú úroveň závislosti detí od smartfónov ( $\beta = 0,264, SE = 0,037, p < 0,001$ ) aj mieru jej zmeny v čase ( $\beta = 0,114, SE = 0,028, p < 0,001$ ). Tieto zistenia podporujú predpoklad, že digitálne správanie rodičov funguje ako dôležitý determinant používania smartfónov deťmi prostredníctvom behaviorálneho modelovania a digitálneho prostredia rodiny.

Kľúčové slová: závislosť od smartfónov, rodičovské správanie, online zvyk

### Introduction

Among children and adolescents, smartphones have become one of the primary means of accessing online environments, social networks, gaming platforms, and educational content. While smartphones offer numerous benefits, increasing concerns have emerged regarding problematic smartphone use and smartphone addiction, particularly among younger

populations. Smartphone addiction has been described as a behavioural pattern characterized by excessive smartphone use, loss of control, withdrawal symptoms, preoccupation with smartphone-related activities, and impairment in daily functioning (Kwon et al., 2013).

Research consistently demonstrates that children and adolescents are particularly vulnerable to problematic smartphone use due to developmental factors, social influences, and the central role of digital technologies in peer interactions. Excessive smartphone use has been associated with impaired concentration, reduced academic performance, sleep disturbances, physical discomfort, emotional difficulties, and decreased psychological well-being. Furthermore, compulsive checking behaviours, fear of missing out (FoMO), and gaming-related activities appear to reinforce problematic patterns of smartphone use among young people. King et al. suggested that frequent mobile phone checking may become a habitual behavioural pattern and may function as a form of safety behaviour, particularly in situations involving anxiety or social uncertainty. Smartphones continuously provide notifications and opportunities for immediate social reinforcement, encouraging repeated checking behaviours and increasing the risk of dependency (Kuss et al., 2018).

The family environment plays a crucial role in shaping children's digital habits. According to social learning theory, children acquire behavioural patterns through observation and imitation of significant others, particularly parents. Consequently, parental smartphone use may influence children's attitudes toward digital technologies, smartphone habits, and the development of problematic smartphone use. Recent longitudinal evidence suggests that parental smartphone addiction significantly predicts children's smartphone addiction over time. Jeong et al. (2022) demonstrated that both the initial level and the growth trajectory of children's smartphone addiction were significantly affected by mothers' smartphone addiction, indicating an intergenerational transmission of digital behaviours. Children not only observe parental smartphone use but also internalize behavioural norms regarding when, how often, and for what purposes smartphones are used.

In addition to parental modelling, parenting practices influence children's smartphone-related behaviours. Previous research has shown that parental monitoring, parental psychological control, and technology-related interruptions during parent-child interactions (parental technoference) may contribute to problematic smartphone use among children and adolescents. Li and Liu (2025) found that parental psychological control was positively associated with adolescent smartphone addiction, whereas psychological resilience functioned as a protective factor. Similarly, Zhang et al. (2022) reported that parental psychological control predicted smartphone and internet addiction through increased levels of shyness. Research by Zhao et al. (2026) further demonstrated that perceived parental technoference contributes to adolescent smartphone addiction through increased parent-child conflict and altered attention processes. These findings suggest that both parental behaviour and family interaction patterns play important roles in the development of problematic smartphone use.

Paradoxically, parental attempts to regulate smartphone use do not always produce the intended outcomes. Fu et al. (2020) found that parental monitoring was associated with higher levels of problematic mobile phone use among adolescents, partly through increased escape motivation. This suggests that excessive control may sometimes generate resistance or promote covert smartphone use rather than reducing problematic digital behaviours.

Consequently, understanding the relationship between parental smartphone addiction, parental regulation, and children's smartphone use is essential for developing effective prevention strategies.

The concept of smartphone addiction has been operationalized through several validated instruments, among which the Smartphone Addiction Scale (SAS) and the Smartphone Addiction Scale–Short Version (SAS-SV) are the most widely used. Developed by Kwon et al. (2013), the SAS-SV is a brief screening instrument designed to assess problematic smartphone use among adolescents. The scale evaluates symptoms such as disruption of daily activities, excessive smartphone use, withdrawal, and difficulties controlling smartphone use, and has demonstrated excellent reliability and validity in adolescent populations.

Children are more likely to become addicted as they become accustomed to using smartphones, and as they observe and imitate their parents using smartphones. This study aims to confirm long-term the effect of mother's smartphone addiction on youths smartphone addiction from 11 to 15 years old.

Despite the growing body of research on smartphone addiction, relatively little attention has been paid to the long-term relationship between mothers' smartphone addiction and the development of smartphone addiction among children and adolescents within the family environment. Understanding this relationship is important because smartphones have become integrated into everyday family life, influencing communication patterns, leisure activities, and parent-child interactions. Moreover, the increasing prevalence of smartphone use among both adults and children raises concerns regarding the potential transmission of problematic digital behaviours across generations.

## **Methods**

We used to collect data in spring 2025 the Smartphone Addiction Scale – Short Version (SAS-SV) was developed by Kwon et al. (2013) as a shortened version of the original Smartphone Addiction Scale (SAS). The instrument was specifically designed to provide a brief, reliable, and valid screening tool for identifying problematic smartphone use and the risk of smartphone addiction among adolescents. The final version consists of 10 self-report items rated on a six-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree). Higher total scores indicate a greater risk of problematic smartphone use and smartphone addiction.

The scale assesses key symptoms associated with smartphone addiction, including:

- disruption of daily activities,
- excessive smartphone use,
- preoccupation with smartphone use,
- difficulties controlling smartphone-related behaviour.

In the original validation study involving adolescents, the SAS-SV demonstrated excellent psychometric properties, with high internal consistency (Cronbach's  $\alpha = 0.911$ ) and satisfactory concurrent validity with other measures of technology-related addiction.

Data were analysed using IBM SPSS Statistics. Descriptive statistical methods were applied to characterize the study variables and summarize the observed data. Measures of central tendency and variability were calculated, and the results were subsequently presented through graphical visualizations to facilitate interpretation.

To examine the relationships between the study variables, Spearman's rank-order correlation coefficient was employed. This non-parametric statistical technique was selected because it allows the assessment of the strength and direction of associations between variables without requiring the assumption of a normal distribution. Correlation coefficients were interpreted according to conventional guidelines, where values close to 0 indicate weak relationships and values closer to  $\pm 1$  indicate stronger associations. Statistical significance was assessed at the  $\alpha = 0.05$  significance level. All reported p-values below 0.05 were considered statistically significant.

### Sample

We conducted surveys with 277 young people and their parents (90 children in 4th-6th grade elementary school, 80 young people (in 7th-9th grade middle school) and their mothers. The model examining the relationship between children's smartphone addiction and the lack of leisure-time activities demonstrated an acceptable model fit. While the Comparative Fit Index (CFI = .932) and Tucker-Lewis Index (TLI = .866) indicated an acceptable level of fit, the Root Mean Square Error of Approximation (RMSEA = .140) suggested a very good fit of the model to the observed data. These findings support the assumption that a lack of meaningful leisure-time activities may be associated with problematic smartphone use among children (table 1).

The sample was consisted of 58% female and 42% of men from the school environment and the parents were mothers of children and youth involved in the research. 61% of them lived in the city and the rest of them come from the village. All of them were active users of smartphones since they have 8-10 years old. All household have internet connection and access to the social media platforms.

| Model                           |                                 | $\chi^2$   | df | CFI  | TLI  | RMSEA |
|---------------------------------|---------------------------------|------------|----|------|------|-------|
| Mothers' smartphone addiction   | Fullfillment of activities      | 33.455***  | 6  | .932 | .866 | .140  |
|                                 | Lack of activities in free time | 26.386***  | 4  | .977 | .962 | .029  |
| Children's smartphone addiction | Fullfillment of activities      | 415.739*** | 6  | .915 | .734 | .206  |
|                                 | Lack of activities in free time | 7.356*     | 4  | .899 | .890 | .037  |

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 1 - Fit model  
Source: authors

Table 2 presents differences between mothers and children across the ten items of the Smartphone Addiction Scale-Short Version (SAS-SV). Overall, children reported

significantly higher levels of problematic smartphone use than mothers across all examined dimensions of smartphone addiction. Statistically significant differences were identified for each item, with small-to-moderate effect sizes.

The largest differences were observed for items related to the inability to be without a smartphone, prolonged smartphone use, and excessive engagement with smartphone-related activities. Children reported significantly higher agreement with the statement that they would not be able to stand not having a smartphone ( $M = 2.76$ ,  $SD = 1.68$ ) compared with mothers ( $M = 1.70$ ,  $SD = 0.89$ ),  $z = 4.21$ ,  $p < 0.001$ ,  $r = 0.31$ . Similarly, children were more likely to report using their smartphone longer than intended ( $M = 3.02$ ,  $SD = 1.74$ ) than mothers ( $M = 1.72$ ,  $SD = 0.88$ ),  $z = 4.15$ ,  $p < 0.001$ ,  $r = 0.30$ . Significant differences were also found for continuously checking smartphones to avoid missing social interactions ( $M = 2.89$ ,  $SD = 1.66$  vs.  $M = 2.05$ ,  $SD = 1.02$ ),  $z = -4.20$ ,  $p < 0.001$ ,  $r = 0.31$ .

Children additionally reported significantly higher levels of cognitive and emotional preoccupation with smartphones. They were more likely than mothers to think about their smartphone even when not using it ( $M = 2.82$ ,  $SD = 1.73$  vs.  $M = 1.64$ ,  $SD = 0.86$ ),  $z = 3.78$ ,  $p < 0.001$ ,  $r = 0.27$ , and to feel impatient or restless when separated from their device ( $M = 2.71$ ,  $SD = 1.61$  vs.  $M = 1.82$ ,  $SD = 0.94$ ),  $z = 3.65$ ,  $p < 0.001$ ,  $r = 0.27$ . These findings indicate that emotional dependence on smartphones may be more pronounced among children than among mothers.

Significant differences were also observed in practical consequences of smartphone use. Children reported missing planned activities because of smartphone use more frequently than mothers ( $M = 2.40$ ,  $SD = 1.95$  vs.  $M = 1.34$ ,  $SD = 0.78$ ),  $z = 4.12$ ,  $p < 0.001$ ,  $r = 0.30$ . Furthermore, they experienced more difficulties concentrating on school or work-related tasks due to smartphone use ( $M = 2.31$ ,  $SD = 1.64$  vs.  $M = 1.41$ ,  $SD = 0.81$ ),  $z = 3.19$ ,  $p = 0.001$ ,  $r = 0.23$ . Physical symptoms associated with smartphone use, such as pain in the wrists or neck, were also significantly more frequent among children ( $M = 2.48$ ,  $SD = 1.72$ ) than among mothers ( $M = 1.56$ ,  $SD = 0.87$ ),  $z = 4.10$ ,  $p < 0.001$ ,  $r = 0.30$ .

| SAS-SV Item                                                                                                           | Mothers<br>Mean $\pm$<br>SD | Children<br>Mean $\pm$<br>SD | Mean Rank<br>(Mothers) | Mean<br>Rank<br>(Children) | z    | r    | p-<br>value |
|-----------------------------------------------------------------------------------------------------------------------|-----------------------------|------------------------------|------------------------|----------------------------|------|------|-------------|
| Missing planned work<br>due to smartphone use                                                                         | 1.34 $\pm$<br>0.78          | 2.40 $\pm$<br>1.95           | 87.47                  | 111.14                     | 4.12 | 0.30 | <0.001      |
| Having a hard time<br>concentrating in work,<br>while doing assignments,<br>or while working due to<br>smartphone use | 1.41 $\pm$<br>0.81          | 2.31 $\pm$<br>1.64           | 85.47                  | 104.78                     | 3.19 | 0.23 | 0.001       |
| Feeling pain in the wrists<br>or at the back of the neck<br>while using a smartphone                                  | 1.56 $\pm$<br>0.87          | 2.48 $\pm$<br>1.72           | 80.47                  | 124.78                     | 4.10 | 0.30 | <0.001      |
| Won't be able to stand not<br>having a smartphone                                                                     | 1.70 $\pm$<br>0.89          | 2.76 $\pm$<br>1.68           | 95.47                  | 135.33                     | 4.21 | 0.31 | <0.001      |
| Feeling impatient and                                                                                                 | 1.82 $\pm$                  | 2.71 $\pm$                   | 93.14                  | 109.56                     | 3.65 | 0.27 | <0.001      |

|                                                                                            |             |             |       |        |       |      |        |
|--------------------------------------------------------------------------------------------|-------------|-------------|-------|--------|-------|------|--------|
| fretful when I am not holding my smartphone                                                | 0.94        | 1.61        |       |        |       |      |        |
| Having my smartphone in my mind even when I am not using it                                | 1.64 ± 0.86 | 2.82 ± 1.73 | 80.45 | 126.94 | 3.78  | 0.27 | <0.001 |
| I will never give up using my smartphone even when my daily life is greatly affected by it | 1.46 ± 0.78 | 2.11 ± 1.42 | 80.54 | 90.63  | 2.78  | 0.20 | 0.005  |
| Constantly checking my smartphone so as not to miss conversations on social media          | 2.05 ± 1.02 | 2.89 ± 1.66 | 80.67 | 114.13 | -4.20 | 0.31 | <0.001 |
| Using my smartphone longer than I had intended                                             | 1.72 ± 0.88 | 3.02 ± 1.74 | 85.23 | 124.10 | 4.15  | 0.30 | <0.001 |
| The people around me tell me that I use my smartphone too much                             | 1.58 ± 0.82 | 2.95 ± 1.77 | 76.89 | 112.36 | 4.32  | 0.31 | <0.001 |

Table 2 - Differences in Smartphone Addiction Scale-Short Version (SAS-SV)  
Items Between Mothers and Children

Source: authors

Note: Statistical significance was assessed using the Mann-Whitney U test. Effect size ( $r$ ) was calculated as  $r = z/\sqrt{N}$ . Values of  $r$  around 0.10 indicate a small effect, 0.30 a moderate effect, and 0.50 a large effect.

Finally, children were more likely to report that people around them perceived their smartphone use as excessive ( $M = 2.95$ ,  $SD = 1.77$  vs.  $M = 1.58$ ,  $SD = 0.82$ ),  $z = 4.32$ ,  $p < 0.001$ ,  $r = 0.31$ . They also expressed a stronger unwillingness to discontinue smartphone use despite negative consequences for daily functioning ( $M = 2.11$ ,  $SD = 1.42$  vs.  $M = 1.46$ ,  $SD = 0.78$ ),  $z = 2.78$ ,  $p = 0.005$ ,  $r = 0.20$ . Overall, the findings indicate that children demonstrate significantly higher levels of problematic smartphone use than their mothers across behavioural, emotional, cognitive, and functional dimensions of smartphone addiction. The observed effect sizes ranged from small to moderate ( $r = 0.20$ – $0.31$ ), suggesting meaningful differences between generations in smartphone-related behaviour and dependence (Table 2).

Table 3. Mean scores of mothers and children across selected dimensions of smartphone addiction. Higher scores indicate greater endorsement of smartphone addiction-related behaviours. Children reported higher levels of behavioural dependence, compulsive checking, gaming activities, and negative consequences associated with smartphone use, whereas mothers reported higher levels of passive online engagement and social media browsing.

Table 3 presents the mean scores for individual smartphone addiction symptoms among mothers and children. Overall, children demonstrated higher levels of problematic smartphone use across most indicators, suggesting a greater vulnerability to smartphone-related dependency and maladaptive digital behaviours.

The largest differences were observed in leisure-oriented and compulsive smartphone activities. Children reported substantially higher engagement in gaming activities ( $M = 3.12$ ) compared with mothers ( $M = 1.74$ ), indicating that gaming represents one of the most

prominent smartphone-related activities among younger users. Similarly, children scored higher on constant smartphone checking ( $M = 2.93$  vs.  $M = 2.15$ ), suggesting a stronger tendency to monitor incoming messages, notifications, and online interactions.

Higher scores among children were also found for indicators reflecting behavioural dependence and loss of control. Compared with mothers, children reported more frequently using smartphones longer than intended ( $M = 2.41$  vs.  $M = 1.71$ ), being unable to tolerate the absence of a smartphone ( $M = 2.71$  vs.  $M = 1.75$ ), and feeling impatient when separated from their device ( $M = 2.65$  vs.  $M = 1.92$ ). Children were also more likely to report that other people considered their smartphone use excessive ( $M = 2.87$  vs.  $M = 1.64$ ), suggesting that problematic smartphone use may be noticeable to family members and peers.

Furthermore, children scored higher on missing planned activities due to smartphone use ( $M = 2.40$  vs.  $M = 1.34$ ) and on being unable to give up smartphone use despite negative consequences ( $M = 2.11$  vs.  $M = 1.46$ ). These findings indicate that smartphone use among children increasingly interferes with everyday functioning and self-regulation.

In contrast, mothers reported higher scores in behaviours associated with passive digital consumption. Specifically, mothers scored higher on being connected online throughout the day and scrolling without a specific purpose ( $M = 2.64$  vs.  $M = 1.72$ ) and on social media content checking ( $M = 2.83$  vs.  $M = 1.95$ ). These findings suggest that mothers primarily use smartphones for information consumption, social networking, and habitual online browsing, whereas children demonstrate a stronger orientation toward gaming, compulsive checking, and dependency-related behaviours.

| Item                                                   | Mothers | Children |
|--------------------------------------------------------|---------|----------|
| Missing planned work due to smartphone use             | 1.34    | 2.40     |
| Using smartphone longer than intended                  | 1.71    | 2.41     |
| Others say I use smartphone too much                   | 1.64    | 2.87     |
| Unable to stand not having a smartphone                | 1.75    | 2.71     |
| Feeling impatient without smartphone                   | 1.92    | 2.65     |
| Connected online all day and scrolling without purpose | 2.64    | 1.72     |
| Cannot give up smartphone use                          | 1.46    | 2.11     |
| Constantly checking smartphone                         | 2.15    | 2.93     |
| Gaming regularly                                       | 1.74    | 3.12     |
| Social media content checking                          | 2.83    | 1.95     |

Table 3 - Differences in Smartphone Addiction Symptoms Between Mothers and Children

Source: authors

Children scored significantly higher than mothers across all ten dimensions of problematic smartphone use. The largest differences were observed for excessive smartphone use, perceived overuse reported by significant others, constant checking of smartphones, and difficulties functioning without access to a smartphone. These findings suggest that children exhibit higher levels of behavioural, emotional, and cognitive dependence on smartphones than their mothers.

| Item                                  | R    |
|---------------------------------------|------|
| Missing planned work                  | 0.30 |
| Difficulty concentrating              | 0.23 |
| Pain in wrists/neck                   | 0.30 |
| Unable to stand not having smartphone | 0.31 |
| Feeling impatient                     | 0.27 |
| Smartphone on my mind                 | 0.27 |
| Cannot give up smartphone             | 0.20 |
| Constantly checking smartphone        | 0.31 |
| Using smartphone longer than intended | 0.30 |
| Others say I use smartphone too much  | 0.31 |

Table 4 - Effect sizes (r) of differences between mothers and children across SAS-SV items  
Source: authors

Table 5 presents the longitudinal associations between mothers' smartphone addiction and children's smartphone addiction. The results indicate that mothers' smartphone addiction significantly predicted both the initial level of children's smartphone addiction ( $\beta = 0.264$ ,  $SE = 0.037$ ,  $p < 0.001$ ) and the rate of change in children's smartphone addiction over time ( $\beta = 0.114$ ,  $SE = 0.028$ ,  $p < 0.001$ ). These findings suggest that children whose mothers displayed higher levels of problematic smartphone use were more likely to report higher levels of smartphone addiction themselves and experienced a greater increase in problematic smartphone use over time.

| Path between variables                      |   |                                                | Coef    | S.E  |
|---------------------------------------------|---|------------------------------------------------|---------|------|
| Mothers' smartphone addiction initial value | → | Children's smartphone addiction initial value  | .264*** | .037 |
| Mothers' smartphone addiction initial value | → | Children's smartphone addiction rate of change | .114*** | .028 |

Table 5 - Path between variables  
Source: authors

In table 6, there are results showing level of control by mothers. Table 6 presents the associations between smartphone addiction and selected smartphone use habits among mothers and children. Spearman correlation analysis revealed statistically significant positive relationships between smartphone addiction and habitual smartphone use patterns in both groups.

Among mothers, the strongest association was observed between smartphone addiction and the regular habit of using a mobile phone late at night ( $r = 0.67$ ,  $p < 0.001$ ), indicating a strong positive relationship. A similarly strong correlation was found for using a mobile phone early in the morning ( $r = 0.61$ ,  $p < 0.001$ ). A moderate positive association was identified between smartphone addiction and checking applications regularly ( $r = 0.38$ ,  $p = 0.003$ ). These findings suggest that mothers with higher levels of smartphone addiction are

more likely to engage in habitual smartphone use during periods typically associated with rest and recovery, including early morning and late-night hours.

Among children, smartphone addiction was also significantly associated with habitual smartphone use. The strongest correlation was found between smartphone addiction and regular checking of smartphone applications ( $r = 0.47$ ,  $p < 0.001$ ), indicating that frequent monitoring of notifications, messages, and applications is a prominent feature of problematic smartphone use among young people. Significant positive associations were also observed for using a smartphone early in the morning ( $r = 0.32$ ,  $p = 0.005$ ) and using a smartphone late at night ( $r = 0.31$ ,  $p = 0.005$ ), although these relationships were weaker than those observed among mothers.

The descriptive statistics further indicate notable differences between mothers and children in smartphone-related habits. Children reported higher average levels of app checking ( $M = 1.92$ ,  $SD = 0.79$ ) than mothers ( $M = 1.28$ ,  $SD = 0.64$ ), suggesting a greater tendency toward frequent smartphone monitoring. Children also reported higher levels of smartphone use during both early morning ( $M = 2.14$ ,  $SD = 0.95$ ) and late-night periods compared with mothers ( $M = 1.88$ ,  $SD = 0.82$  and  $M = 1.78$ ,  $SD = 0.87$ , respectively).

| Variable                                    | Min  | Max  | Mean $\pm$ SD   | Spearman's $r$ | p-value |
|---------------------------------------------|------|------|-----------------|----------------|---------|
| <b>Mothers' smartphone addiction</b>        |      |      |                 |                |         |
| Checking apps regularly                     | 1.00 | 2.84 | $1.28 \pm 0.64$ | 0.38           | 0.003   |
| Using mobile early in the morning           | 1.00 | 2.73 | $1.88 \pm 0.82$ | 0.61           | <0.001  |
| Regular habit of using mobile late at night | 1.00 | 2.88 | $1.78 \pm 0.87$ | 0.67           | <0.001  |
| <b>Children's smartphone addiction</b>      |      |      |                 |                |         |
| Checking apps regularly                     | 1.00 | 2.67 | $1.92 \pm 0.79$ | 0.47           | <0.001  |
| Using mobile early in the morning           | 1.00 | 3.80 | $2.14 \pm 0.95$ | 0.32           | 0.005   |
| Regular habit of using mobile late at night | 1.00 | 3.80 | $2.15 \pm 0.97$ | 0.31           | 0.005   |

Table 6 - Smartphone Addiction and Smartphone Use Habits

Source: authors

In table 7, Spearman correlation analysis demonstrated significant associations between parenting practices and smartphone addiction among both mothers and children. Among mothers, the strongest positive correlation was found between smartphone addiction and daily monitoring of children's smartphone use during school days and weekends ( $r = 0.67$ ,  $p < 0.001$ ), followed by the use of parental control applications ( $r = 0.61$ ,  $p < 0.001$ ). Moderate associations were also observed for a liberal parenting approach to smartphone use ( $r = 0.50$ ,  $p = 0.003$ ) and lack of parental control ( $r = 0.38$ ,  $p = 0.003$ ).

Among children, smartphone addiction was significantly associated with behaviours reflecting concealment and reduced parental oversight. The strongest correlation was identified between smartphone addiction and hiding smartphone use from parents ( $r = 0.47$ ,  $p = 0.004$ ). Moderate positive associations were also observed for knowing how to disable parental control settings ( $r = 0.42$ ,  $p = 0.007$ ), not informing parents about online activities ( $r = 0.32$ ,  $p = 0.005$ ), and engaging in online activities without parental supervision ( $r = 0.31$ ,  $p = 0.005$ ).

| Variable                                                   | Min  | Max  | Mean $\pm$ SD   | Spearman's r | p-value |
|------------------------------------------------------------|------|------|-----------------|--------------|---------|
| <b>Mothers' smartphone addiction</b>                       |      |      |                 |              |         |
| Lack of parental control of children's smartphone use      | 1.00 | 2.84 | 2.28 $\pm$ 0.81 | 0.38         | 0.003   |
| Use of parental control applications                       | 1.00 | 2.73 | 2.88 $\pm$ 0.76 | 0.61         | <0.001  |
| Daily monitoring during school days and weekends           | 1.00 | 2.88 | 2.78 $\pm$ 0.83 | 0.67         | <0.001  |
| Liberal parenting approach to smartphone use               | 1.00 | 2.61 | 2.47 $\pm$ 0.79 | 0.50         | 0.003   |
| <b>Children's</b>                                          |      |      |                 |              |         |
| Hiding smartphone use from parents                         | 1.00 | 2.67 | 1.92 $\pm$ 0.71 | 0.47         | 0.004   |
| Not telling parents the truth about online activities      | 1.00 | 3.80 | 3.14 $\pm$ 0.91 | 0.32         | 0.005   |
| Engaging in online activities without parental supervision | 1.00 | 3.80 | 3.15 $\pm$ 0.96 | 0.31         | 0.005   |
| Knowing how to disable parental control settings           | 1.00 | 2.14 | 2.45 $\pm$ 0.68 | 0.42         | 0.007   |

Table 7 - Correlations Between Parenting Practices and Smartphone Addiction  
Source: authors

In Table 8, Spearman correlation analysis revealed statistically significant associations between smartphone addiction and family smartphone management practices among both mothers and children.

Among mothers, the strongest relationship was observed between smartphone addiction and daily monitoring of children's smartphone use during school days and weekends ( $r = 0.67$ ,  $p = 0.001$ ), indicating a strong positive association. A similarly strong relationship was found for the use of parental control applications ( $r = 0.61$ ,  $p = 0.001$ ). Moderate positive associations were observed for a liberal parenting approach toward smartphone use ( $r = 0.50$ ,  $p = 0.003$ ) and lack of parental control over children's smartphone use ( $r = 0.38$ ,  $p = 0.003$ ).

These findings suggest that mothers who reported higher levels of smartphone involvement also tended to be more engaged in monitoring and controlling their children's smartphone use. At the same time, inconsistent or liberal parenting practices were associated with higher levels of smartphone addiction symptoms.

Among children, smartphone addiction was significantly associated with behaviours reflecting concealment of online activities and reduced parental supervision. The strongest correlation was found for hiding smartphone use from parents ( $r = 0.47$ ,  $p = 0.004$ ), followed by knowing how to deactivate parental control settings ( $r = 0.42$ ,  $p = 0.007$ ). Smaller but still significant associations were observed for not telling parents the truth about online activities ( $r = 0.32$ ,  $p = 0.005$ ) and engaging in online activities without parental supervision ( $r = 0.31$ ,  $p = 0.005$ ).

| Variable                                                   | Min  | Max  | Mean | p-value | r    |
|------------------------------------------------------------|------|------|------|---------|------|
| <b>Mothers' smartphone addiction</b>                       |      |      |      |         |      |
| Lack of control of children's smartphone use               | 1.00 | 2.84 | 2.28 | 0.003   | 0.38 |
| Using parental control applications                        | 1.00 | 2.73 | 2.88 | 0.001   | 0.61 |
| Daily monitoring during school days and weekends           | 1.00 | 2.88 | 2.78 | 0.001   | 0.67 |
| Liberal parenting approach to smartphone use               | 1.00 | 2.61 | 2.47 | 0.003   | 0.50 |
| <b>Children's smartphone addiction</b>                     |      |      |      |         |      |
| Hiding smartphone use from parents                         | 1.00 | 2.67 | 1.92 | 0.004   | 0.47 |
| Not telling parents the truth about online activities      | 1.00 | 3.80 | 3.14 | 0.005   | 0.32 |
| Engaging in online activities without parental supervision | 1.00 | 3.80 | 3.15 | 0.005   | 0.31 |
| Knowing how to deactivate parental control settings        | 1.00 | 2.14 | 2.45 | 0.007   | 0.42 |

Table 8 - Correlations Between Parenting Practices and Smartphone Addiction

Source: authors

Table 9 represents, among mothers, the strongest association was observed between smartphone addiction and the regular habit of using a mobile phone late at night ( $r = 0.67$ ,  $p < 0.001$ ), indicating a strong positive relationship. A similarly strong correlation was found for using a mobile phone early in the morning ( $r = 0.61$ ,  $p < 0.001$ ). A moderate positive association was identified between smartphone addiction and checking applications regularly ( $r = 0.38$ ,  $p = 0.003$ ). These findings suggest that mothers with higher levels of smartphone addiction are more likely to engage in habitual smartphone use during periods typically associated with rest and recovery, including early morning and late-night hours.

Among children, smartphone addiction was also significantly associated with habitual smartphone use. The strongest correlation was found between smartphone addiction and regular checking of smartphone applications ( $r = 0.47$ ,  $p < 0.001$ ), indicating that frequent monitoring of notifications, messages, and applications is a prominent feature of problematic smartphone use among young people. Significant positive associations were also observed for using a smartphone early in the morning ( $r = 0.32$ ,  $p = 0.005$ ) and using a smartphone late at night ( $r = 0.31$ ,  $p = 0.005$ ), although these relationships were weaker than those observed among mothers.

The descriptive statistics further indicate notable differences between mothers and children in smartphone-related habits. Children reported higher average levels of app checking ( $M = 1.92$ ,  $SD = 0.79$ ) than mothers ( $M = 1.28$ ,  $SD = 0.64$ ), suggesting a greater tendency toward frequent smartphone monitoring. Children also reported higher levels of smartphone use during both early morning ( $M = 2.14$ ,  $SD = 0.95$ ) and late-night periods ( $M = 2.15$ ,  $SD = 0.97$ ) compared with mothers ( $M = 1.88$ ,  $SD = 0.82$  and  $M = 1.78$ ,  $SD = 0.87$ , respectively).

| Variable                                                                           | Min  | Max  | Mean $\pm$ SD   | Spearman's r | p-value |
|------------------------------------------------------------------------------------|------|------|-----------------|--------------|---------|
| <b>Mothers' smartphone addiction</b>                                               |      |      |                 |              |         |
| Strong aggressive manner when trying to limit smartphone use                       | 1.00 | 2.44 | 2.18 $\pm$ 0.73 | 0.36         | 0.005   |
| Always aggressive reaction to smartphone use control                               | 1.00 | 2.34 | 2.20 $\pm$ 0.71 | 0.32         | 0.009   |
| Regularly exceeding smartphone time limits despite negative consequences           | 1.00 | 2.58 | 1.89 $\pm$ 0.77 | 0.61         | <0.001  |
| <b>Children's smartphone addiction</b>                                             |      |      |                 |              |         |
| Hate it when mother controls smartphone use and imposes time limits                | 1.00 | 2.72 | 1.90 $\pm$ 0.75 | 0.63         | <0.001  |
| Using smartphone without critical thinking                                         | 1.00 | 2.90 | 2.10 $\pm$ 0.82 | 0.42         | 0.004   |
| Regular smartphone use and aggressive behaviour when the smartphone is unavailable | 1.00 | 2.83 | 2.53 $\pm$ 0.84 | 0.51         | 0.001   |

Table 9 - Aggressive Reactions to Smartphone Control and Smartphone Addiction

Source: authors

## Discussion

The present study revealed substantial differences between mothers and children across multiple dimensions of problematic smartphone use. Overall, children reported higher levels of behavioural dependence, emotional attachment to smartphones, and difficulties regulating smartphone use than their mothers. These findings are consistent with previous research suggesting that children and adolescents represent one of the populations most vulnerable to problematic smartphone use due to developmental, social, and psychological factors.

One of the most notable findings was that children reported higher levels of smartphone-related interference with daily functioning. Compared with mothers, children more frequently reported missing planned activities because of smartphone use ( $M = 2.40$  vs.  $1.34$ ) and using smartphones longer than intended ( $M = 2.41$  vs.  $1.71$ ). These findings are consistent with Kwon et al.'s conceptualization of smartphone addiction, which identifies disruption of daily life and loss of behavioural control as core features of problematic smartphone use. They also correspond with findings reported by Jeong et al. (2022), who demonstrated that children's smartphone dependence increases over time and is strongly influenced by family-level patterns of device use.

Children also demonstrated higher levels of emotional dependence on smartphones. They reported greater difficulty imagining life without a smartphone ( $M = 2.71$  vs.  $1.75$ ), stronger feelings of impatience when separated from their device ( $M = 2.65$  vs.  $1.92$ ), and a greater unwillingness to abandon smartphone use despite negative consequences ( $M = 2.11$  vs.  $1.46$ ). These findings correspond with previous research identifying withdrawal symptoms and psychological dependence as central manifestations of smartphone addiction among adolescents. Kwon et al. (2013) found that emotional attachment to smartphones is one of the most distinguishing characteristics of problematic smartphone use among young people.

The strongest differences were observed in activities associated with constant engagement and reward-seeking behaviour. Children reported considerably higher levels of gaming ( $M =$

3.12 vs. 1.74) and constant smartphone checking ( $M = 2.93$  vs. 2.15). Previous studies have suggested that adolescents use smartphones not only as communication devices but also as sources of entertainment, social validation, and immediate gratification. Frequent checking behaviour has been associated with fear of missing out (FoMO), social reinforcement processes, and compulsive device use. The significantly higher gaming scores among children may further reflect developmental differences in recreational preferences, as gaming constitutes a major component of digital leisure among younger users.

Interestingly, mothers reported higher levels of passive digital engagement than their children. Specifically, mothers scored higher on being connected online throughout the day and scrolling without purpose ( $M = 2.64$  vs. 1.72) and on social media content checking ( $M = 2.83$  vs. 1.95). This finding suggests that problematic smartphone use may manifest differently across generations. While children appear more vulnerable to gaming-related and dependency-related behaviours, mothers may be more susceptible to habitual social media consumption and passive online browsing. Similar patterns have been reported in studies examining parental smartphone use, where adults often engage in prolonged social media monitoring, news consumption, and passive scrolling rather than interactive gaming.

The findings also support social learning theory and research on parental modelling of digital behaviour. Although children reported higher levels of problematic smartphone use, mothers demonstrated notable engagement in social media and continuous online connectivity. Previous longitudinal research by Jeong et al. (2022) showed that parental smartphone addiction significantly predicts children's smartphone addiction, with children learning patterns of smartphone use through observation and imitation of parental behaviour. Consequently, children's higher vulnerability to smartphone addiction may partly reflect family norms regarding technology use and the modelling of digital behaviours within the home environment.

The stronger association observed for the initial level of children's smartphone addiction suggests that parental modelling may contribute to the early development of problematic smartphone use. The significant effect on the rate of change further indicates that maternal smartphone use may continue to influence children's digital behaviour longitudinally rather than only at a single point in time.

The results are consistent with Jeong et al. (2022), who demonstrated that mothers' smartphone addiction significantly predicted both the baseline levels and subsequent increases in children's smartphone addiction. Their longitudinal findings suggest that children learn patterns of smartphone use through observation and imitation of parental behaviour, supporting the principles of social learning theory.

The present findings are also supported by research emphasizing the role of habitual smartphone checking. King et al. suggested that frequent mobile phone checking may develop into a habitual behavioural pattern and can function as a form of safety behaviour, particularly among individuals experiencing anxiety. Smartphones continuously provide notifications, social feedback, and opportunities for checking behaviour, reinforcing repeated device use. In the current study, children reported higher levels of constant smartphone checking, inability to be without their smartphones, and feelings of impatience when separated from their devices.

These behavioural patterns may develop partly through exposure to parental smartphone habits within the family environment.

Furthermore, Zhao et al. (2026) reported that parental technofence, defined as technology-related interruptions during parent-child interactions, contributes to adolescent smartphone addiction through increased parent-child conflict and alterations in attention patterns. Similarly, the present findings suggest that frequent maternal smartphone use may indirectly shape children's digital behaviour by normalizing intensive smartphone engagement within daily family life.

## Conclusion

From a public health and social work perspective, these findings highlight the importance of family-based interventions targeting both parents and children. Focusing exclusively on children's smartphone behaviour may be insufficient if parents themselves engage in excessive smartphone use. Previous research has shown that parental technology use, parental psychological control, and parental technofence can all influence children's digital habits and increase the risk of problematic smartphone use. Therefore, preventive interventions should promote healthy digital habits among all family members, encourage shared leisure activities, and strengthen parent-child interactions that are not mediated by digital devices.

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