

# Parental Anxiety and Children's Smartphone Addiction in a Remote Indonesian Island Community

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## Abstract

**Background:** Excessive smartphone use among children has raised concerns regarding parental anxiety, particularly in rural and remote communities with limited psychosocial resources. This study examined factors associated with parental anxiety and children's smartphone addiction in a remote Indonesian island community. **Methods:** A cross-sectional study was conducted among 72 parents in Pulo Aceh District, Indonesia. Parental anxiety was measured using the Generalized Anxiety Disorder-7 (GAD-7), and children's smartphone addiction using the Smartphone Addiction Scale—Short Version (SAS-SV). Data were analysed using Chi-square tests and Pearson correlation. **Results:** Family conflict was significantly associated with parental anxiety ( $p = 0.003$ ). Parental age correlated positively with children's smartphone addiction ( $r = 0.505$ ;  $p = 0.046$ ). Parental education level was also associated with addiction severity, while gender and economic status were not. **Conclusion:** Family conflict and parental characteristics play a critical role in parental anxiety and children's smartphone addiction in remote settings, highlighting the need for family-centered digital parenting interventions.

**Keywords:** Parental anxiety, Smartphone addiction, Family conflict, Remote Island community

## Introduction

Smartphone use has become deeply embedded in children's daily lives, influencing learning, social interaction, and leisure activities. While smartphones offer educational and communication benefits, excessive use has been linked to adverse psychological outcomes, including anxiety, sleep disturbances, emotional dysregulation, and behavioral problems among children and adolescents (Sohn et al., 2019; Yogesh et al., 2024). Smartphone addiction — characterized by compulsive and unregulated use that interferes with daily functioning — has become a growing mental health concern among children and adolescents globally (Giansanti, 2025).

Parents play a central role in shaping children's digital behavior and emotional adjustment. Empirical evidence suggests that parental behaviors, including problematic screen use and technology-related distraction, are associated with children's risk of developing problematic smartphone use and emotional difficulties (Deneault et al., 2024; Li et al., 2022). Moreover, parental anxiety and stress may indirectly influence children's digital habits through reduced supervision and impaired parent-child interactions (Doo and Kim, 2022; Li et al., 2022). Beyond individual behaviours, family dynamics are increasingly recognized as important contextual determinants of both parental mental health and children's technology use. Strained family relationships, low emotional cohesion, and unresolved conflict have been associated with elevated psychological distress and anxiety among parents (Repetti et al., 2002; Whisman, 1999). Similarly, family conflict and poor communication have been linked to higher levels of problematic smartphone use among adolescents (Yang, 2025).

Despite growing evidence, studies focusing on these interrelated issues in remote and geographically isolated communities remain scarce. Such settings often face limited access to mental health services and digital parenting support, potentially amplifying family stressors. This brief report addresses this gap by examining family and sociodemographic factors associated with parental anxiety and children's smartphone addiction in a remote Indonesian island community.

## Methods

A cross-sectional study was conducted between May and June 2025 in Pulo Aceh District, a remote island area in Indonesia. Participants were parents or primary caregivers of children aged 10–17 years who had used smartphones for at least six months. Of 129 eligible households identified through village records, 72 parents met the inclusion criteria and provided informed consent.

Parental anxiety was assessed using the Generalized Anxiety Disorder-7 (GAD-7), a validated seven-item instrument measuring anxiety symptoms over the past two weeks. Children's smartphone addiction was measured using the Smartphone Addiction Scale—Short Version (SAS-SV). Both instruments demonstrated acceptable internal consistency in this study (Cronbach's  $\alpha$  = 0.774 for GAD-7; 0.740 for SAS-SV).

Data were collected through face-to-face interviews to minimize literacy barriers. Descriptive statistics summarized participant characteristics. Associations between categorical variables and parental anxiety were examined using Chi-square tests, while Pearson correlation was used to assess relationships between parental age and smartphone addiction scores. Statistical significance was set at  $p < 0.05$ . Ethical approval was obtained from the Faculty of Nursing Ethics Committee, Universitas Syiah Kuala.

## Results

The mean age of participants was 40.1 years ( $SD = 7.1$ ), with most respondents being female (80.6%). Over half had completed basic education, and 56.9% reported low economic status. Family conflict was reported as low in 77.8% of households. More than half of parents reported no anxiety symptoms (51.4%), while 27.8% experienced mild anxiety and 20.8% moderate to severe anxiety. Most children were classified as having mild smartphone addiction (79.2%), with 20.8% categorized as severe (Table 1).

Family conflict was significantly associated with parental anxiety ( $p = 0.003$ ). Parents reporting moderate to high family conflict were more likely to experience anxiety symptoms. Parental age showed no association with anxiety but was positively correlated with children's smartphone addiction scores ( $r = 0.505$ ;  $p = 0.046$ ). Parental education level was significantly associated with addiction severity ( $p < 0.05$ ), whereas child gender and household economic status were not.

## Discussion

This brief report highlights the central role of family dynamics and parental characteristics in parental anxiety and children's smartphone addiction within a remote island community. The strong association between family conflict and parental anxiety aligns with evidence that strained family relationships and low emotional cohesion contribute to psychological distress among parents (Repetti et al., 2002; Whisman, 1999). In resource-limited settings, unresolved family conflict may represent a key stressor that amplifies parental anxiety.

The positive association between parental age and children's smartphone addiction suggests that generational differences in digital literacy may affect parents' ability to supervise and regulate children's smartphone use. Previous studies indicate that parental characteristics, including education level and parenting style, are associated with adolescents' risk of problematic smartphone use, likely reflecting differences in supervision and digital monitoring capacity (Bhanderi et al., 2021; Yogesh et al., 2024). Higher parental education levels have also been associated with differences in risk profiles for adolescent smartphone addiction, potentially reflecting variations in supervision, parental time, and digital attitudes (Doo and Kim, 2022).

Consistent with prior research, gender and economic status were not associated with smartphone addiction, supporting the view that psychosocial and relational factors may outweigh structural determinants in shaping children's digital behaviors (Sohn et al., 2019). These findings reinforce the conceptualization of smartphone addiction as a family-contextual issue rather than an isolated individual behavior.

## Conclusion

Family conflict is a key correlate of parental anxiety, while parental age and education are associated with children's smartphone addiction in this remote island community. These findings emphasize the importance

of family-centered and culturally responsive digital parenting interventions, particularly in rural and geographically isolated settings with limited mental health resources.

**Table 1. Demographic and Psychosocial Profile of Respondents (n = 72)**

Characteristic	Category	Frequency	Percentage (%)
<b>Age</b>	Mean ± SD	40.07 ± 7.14	—
<b>Gender</b>	Male	14	19.4
	Female	58	80.6
<b>Education Level</b>	No School	2	2.8
	Elementary/Junior High	46	63.9
	Secondary	17	23.6
	College	7	9.7
<b>Employment</b>	Working	22	30.6
	Not Working	50	69.4
<b>Income</b>	High (> Rp 4,000,000)	5	6.9
	Medium (Rp 3–4 million)	26	36.1
	Low (< Rp 3,000,000)	41	56.9
<b>Social Support</b>	Present	64	88.9
	Absent	8	11.1
<b>Physical Health Status</b>	No Complaints	47	65.3
	With Complaints	25	34.7
<b>Family Conflict Level</b>	Low	56	77.8
	Moderate	15	20.8
	High	1	1.4
<b>Parental Anxiety</b>	None	37	51.4
	Mild	20	27.8
	Moderate	10	13.9
	Severe	5	6.9
<b>Child Smartphone Addiction</b>	Mild	57	79.2
	Severe	15	20.8

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#### Conflict of Interest

There was no conflict of interest in this study.

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