



Systematic Literature Review: The Role of Parental Phubbing on Smartphone Addiction in Adolescents

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ABSTRACT

Smartphone addiction is a phenomenon that often occurs in adolescents. This phenomenon can be caused by phubbing behavior carried out by parents. This systematic review aims to analyze 11 international journals to see what variables can mediate and/or moderate this relationship. The results of this systematic observation show that loneliness, FoMO, boredom, depression, deviant peers, parent-child relationships, social anxiety, core self-evaluation, intensity of cell phone dependence, perceived norms of cell phone dependence, child self-esteem, parental- children attachment, and social sensitivity can be mediating variables. Meanwhile, variables that can moderate include refusal self-efficacy, sensation seeking, self-control, and friendship quality

Keywords: parental phubbing, smartphone addiction, adolescents.

1. Main text

The growth of increasingly sophisticated technology provides various conveniences for humans to socialize and search for information. Nowadays, the use of the Internet on handheld mobile phones has become an important tool and a lifestyle, including for teenagers. Teenagers use smartphones to surf the Internet to understand the world, learn, entertain and socialize. CNN Indonesia (2021) revealed that there is a survey stating that 19.3% of Indonesian teenagers experience smartphone addiction. Although smart phones can provide convenience for the community, improper use of mobile devices has the potential to cause adverse effects. For example, many people use smartphones frequently, leading to smartphone addiction (Elhai et al., 2021; Hong et al., 2019).

Smartphone addiction is described as a compulsive habit of avoiding reality or generating excitement through smartphone use (Lin et al., 2014). Symptoms such as being overly absorbed with the device, loss of control over use, socially harmful use, feelings of anger or tension when the phone is inaccessible, anxiety over ringing, constant worry about battery drain, craving, and poor performance with social isolation may indicate smart phone addiction (Nikhita et al., 2015). Various types of studies have shown that smartphone addiction has significant negative consequences on physical pain, mental health problems, and academic performance (Namwongsa et al., 2019; Huang et al., 2021; Rathakrishnan et al., 2021).

Factors that influence smartphone addiction in adolescents include internal factors that come from within and external factors that come from the surrounding environment. Internal factors that can affect smartphone addiction in adolescents are nomophobia (the fear of individuals if they cannot communicate using cellphones), self-control and anxiety (Güner & Demir, 2021). While in external factors, parental behavior can affect smartphone addiction in adolescents. Researchers have proven that parent phubbing is a confirmed predictor of smartphone addiction in adolescents (Hong et al., 2019; Xie et al., 2019).

Phubbing refers to the habit of individuals focusing on their smartphones and ignoring others in social environments (Seo et al., 2021). Meanwhile, parent phubbing refers to parents being distracted by their cell phones while interacting with their teenagers or children (Zhao et al., 2022). According to social learning theory, parents are role models for children who will learn attitudes, behaviors, and social norms from their parents (Grusec, 1992). When adolescents observe and experience frequent parent phubbing around them, they may conclude that phubbing is socially acceptable (Chotpitayasonondh & Douglas, 2016). Such adolescent thinking may increase the risk of smartphone addiction in adolescents (Zhao et al., 2022).

Examining the correlation between parent phubbing and smartphone addiction in adolescents will be useful, especially in terms of improving the quality of parenting in parents and overcoming parent phubbing behavior. This study aims to determine the relationship between parent phubbing and smartphone addiction in adolescents and other factors that may mediate and/or moderate the relationship between them. This is an important topic to explore, as a good parental role can produce a quality young generation.

2. Methods

2.1 Literature Search Strategy

In this study, a literature search was conducted for publications written in English from Google Scholar, Pubmed, and Scopus databases and then the studies were then published following PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). The studies were limited to the most recent studies in the 2019-2024 timeframe (last five years) to ensure that they were modern and acceptable. The study population was included in the search strategy, which included terms and keywords obtained through a scoping search as well as existing knowledge in the topic area. Publish or Perish software was used to determine the article search terms. The keywords used to search this study were (1) parent phubbing or parental phubbing, (2) smartphone addiction or problematic smartphone use, and (3) adolescents. The Rayyan website was used to eliminate duplication of research and sort the studies to be included in this literature review.

2.2 Eligibility Criteria

To be included in this literature review, the article had to report the influence of parent phubbing on smartphone addiction in adolescents. Studies should also include a correlational research design, be written in English, have mediating and/or moderating factors, and use clinical and/or nonclinical samples. This limited our review to studies that included information on the influence of parent phubbing on adolescent smartphone addiction.

2.3 Analysis Process

In each review process, reviewers searched for sources of information and assessed the eligibility of the studies found for inclusion using predefined criteria. The entire text of the study was examined. Data were then presented in tabular form to enable quantitative and qualitative comparison of the influence of parent phubbing on adolescent smartphone addiction.

2.4 Study Selection

The relevance of each article was first determined based on the data provided in the abstract. reviewers independently assessed the abstracts using this study's search criteria and then selected publications for full-text review. Full-text articles were evaluated for eligibility using predefined criteria. Studies had to use an observational research design to explore adolescent smartphone addiction caused by parent phubbing to be included in the final analysis.

2.5 Data Extraction

Data were extracted using Microsoft Excel to assess inclusion criteria and test all predefined articles. Reasons for exclusion of full-text articles were recorded on the Excel sheet.

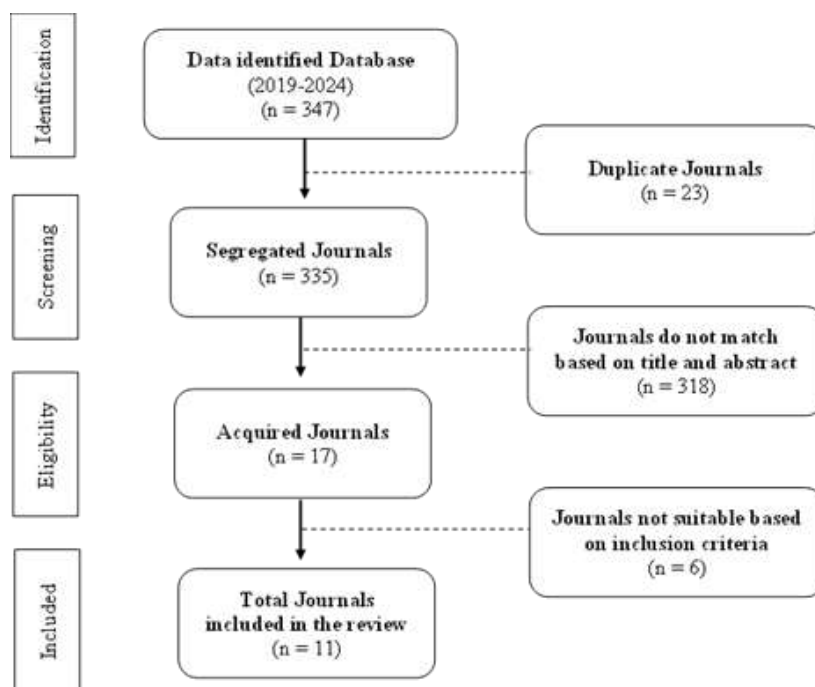


Figure 1. PRISMA Graph for Journal Selection Flow

3. Result and Discussion

In this literature review, 11 journals were reviewed and analyzed to explain the relationship between parent phubbing and smartphone addiction in adolescents and other factors that may mediate and/or moderate the relationship between them. For a more detailed explanation, please see the table below:

Table 1. Systematic Literature Review Results

No	Author	participant age (Mean)	N (Sample Size)	Measurement Tool	Mediator and/or Moderator	Results
1	Geng et al. (2021)	10-19 years old (M: 16,15)	1447 M: 572 F: 875	- The Father Phubbing (FPhubbing) scale and the Mother Phubbing (MPhubbing) scale that were modified from the Generic Scale of Being Phubbed (Chotpitayasunondh & Douglas, 2018) - The Three-Item Loneliness Scale (Hughes et al., 2004) - Fear of Missing Out scale (Przybylski et al. (2013) - Smartphone Addiction Scale (Kwon et al., 2013)	- Loneliness - FoMo	Early paternal phubbing (fphubbing) and maternal phubbing (mphubbing) predicted adolescents' subsequent problematic smartphone use. Loneliness mediated the relationship between early fphubbing/mphubbing and adolescents' problematic smartphone use, and loneliness and fear of missing out sequentially mediated the relationship between early fphubbing/mphubbing and adolescents' subsequent problematic smartphone use.
2	Zhao et al. (2022)	11-16 years old (M: 13, 54)	931	- parents phubbing scale (Ding et al., 2024) - Refusal Self-Efficacy Scale (Xu et al., 2012) - Smartphone Addiction Index Scale (Huang et al., 2014) - Boredom Proneness Scale (Li et al., 2016)	- Boredom - Refusal self-efficacy	Parental phubbing has a positive impact on smartphone addiction. Boredom prone plays a mediating role in this relationship. In addition, refusal self-efficacy moderates the influence of parental phubbing on smartphone addiction. Refusal self-efficacy moderates the effect of boredom proneness on smart phone addiction.
3	Ma et al. (2023)	11-16 years old (M: 13,17)	786 M: 417 F: 369	- Parental Phubbing Scale (Robert & David, 2016) - Deviant Peers Affiliation Questionnaire (Wang et al., 2017)	- Deviant peers - Sensation seeking	Deviant peer affiliation may partially mediate the relationship between parental phubbing and problematic smartphone use among adolescents and this indirect path may be moderated by Sensation Seeking. Notably, the effect of deviant peer affiliation on problematic smartphone use is greater in adolescents with

				- Mobile Phone Addiction Index (Leung, 2008)		higher sensation seeking than in adolescents with lower sensation seeking.
				- Sensation Seeking Questionnaire (Steinberg et al., 2008)		
4	Chen et al. (2023)	-	728 M: 362 F: 366	- Parental Phubbing Scale (Robert & David, 2016)	- Parent-child relationship	Significant perceptual differences were found between parents and adolescents regarding parental phubbing. These perceptual differences positively predicted adolescents' smartphone dependence and negatively impacted the parent-child relationship. In addition, the parent-child relationship had a negative influence on adolescents' smartphone dependence. The parent-child relationship serves as a mediator between perceived differences in parental phubbing behavior and adolescent smartphone dependence.
				- Smartphone Addiction Scale (Xiang et al., 2019)		
				- The Parent-Child Closeness Scale (Buchnan et al., 1991)		
5	Niu et al. (2020)	12-18 years old (M: 14,55)	726 M: 374 F: 352	- Parental Phubbing Scale (Robert & David, 2016)	- Parent-child relationship	parent-child relationship partially mediated the relationship between parental phubbing and adolescent problematic cell phone use. Moreover, both the direct relationship between parental phubbing and adolescent problematic cell phone use as well as the mediating effect of parent-child relationship were moderated by self-control, specifically these two effects were stronger in individuals with low levels of self-control.
				- Parent-Adolescent Child Relationship Questionnaire (Bao et al., 2014)	- Self-Control	
				- Self-Control Scale (Dong & Lin, 2011; Liu et al., 2018)		
				- Mobile Phone Addiction Index (Leung, 2008)		
6	Zhang et al. (2021)	11-16 years old (M: 13,46)	471 M: 189 F: 282	- Parental Phubbing Scale (Robert & David, 2016)	- Social anxiety	Social anxiety and core self-evaluation play dual mediating roles in the relationship between parental phubbing and adolescents' cell phone addiction, with parental phubbing influencing adolescents' cell phone addiction through three mediating pathways.
				- Social Anxiety Scale for Children (La Greca et al., 1988)	- Core self-evaluation	
				- Core Self-Evaluation Scale (Du et al., 2012)		
				- Mobile Phone Addiction Scale (Hong et al., 2012)		

7	Liu et al (2019)	M: 15,09	605 M: 274 Pr 294	<ul style="list-style-type: none"> - Parental Phubbing Scale (Robert & David, 2016) - Subjective Norm of Mobile Phone Dependency Scale (Lu et al., 2009) - Dependency Intention Scale (Lu et al., 2009) - Mobile Phone Dependency Scale (Dong et al., 2016) 	<ul style="list-style-type: none"> - Intention of cell phone dependence - Perceived norms of cell phone dependence 	Parental phubbing is a significant indicator of adolescents' cell phone dependence and cell phone dependence intention plays a mediating role between them. In addition, perceived norms of mobile phone dependence of parents play a mediating role between parental phubbing and mobile phone dependence intention, and indirectly affect the level of mobile phone dependence behavior through the mediating effect of mobile phone dependence intention.
8	Hong et al (2019)	11-17 years old (M:13,39)	1721	<ul style="list-style-type: none"> - Parental Phubbing Scale (Robert & David, 2016) - Family Adaptability and Cohesion Evaluation Scale (Wang & Zhang, 2007) - Rosenberg Self-esteem Scale (Yang & Yang, 2007) 	<ul style="list-style-type: none"> - Parent-child relationship - Self-esteem 	Phubbing by parents is not only directly related to children's problematic cell phone use, but also indirectly related to problematic cell phone use through the mediating role of the parent-child relationship and children's self-esteem.
9	Xie et al (2019)	11-16 years old (M: 13,85)	1007 M: 489 F: 518	<ul style="list-style-type: none"> - Parental Phubbing Scale (Robert & David, 2016) - Inventory of Parent and Peer Attachment (Chen et al., 2015) - Adolescent affiliation with deviant peers Questionnaire (Kendler et al., 2007; Li et al., 2013) - Smartphone Addiction Scale (Su et al., 2014) 	<ul style="list-style-type: none"> - Parent-child attachment - Deviant peers - Gender 	The results showed that parental phubbing was positively associated with adolescents' cell phone addiction. Parent-child attachment and deviant peers were found to mediate the relationship between parental phubbing and adolescents' cell phone addiction, while gender was found to moderate the indirect impact of parental phubbing on cell phone addiction through deviant peers.
10	Mi et al. (2023)	M: 14,04	830 M: 387 F: 393	<ul style="list-style-type: none"> - Parental Phubbing Scale (Robert & David, 2016) - Mobile Phone Addiction Scale (Xiong et al., 2012) - Parent-child Scale (Zhang et al., 2006) - Friendship Quality Questionnaire 	<ul style="list-style-type: none"> - Parent-child cohesion - Quality of friendship 	Parental phubbing is not only directly related to adolescent cell phone addiction, but also indirectly through the mediating role of parent-child cohesion and the moderating role of friendship quality.

(Parker & Asher, 1993)

11	Liu et al (2020)	11-16 years old (M: 13,08)	3051	-	Parental Technoference Scale (McDaniel et al., 2018)	-	Social sensitivity Loneliness	Parental phubbing can positively predict adolescents' smartphone addiction tendency. Moreover, social sensitivity and loneliness mediated the relationship between parental technology and adolescents' smartphone addiction in a parallel and sequential manner. Specifically, this study suggests that parental phubbing may lead to higher social sensitivity and loneliness, which in turn result in increased tendency of smartphone addiction in adolescents.
				-	The self-report Social Sensitivity Scale (Chen, Fu, et al., 2018)			
				-	Short-Form Measure of Loneliness (Hays & Dimatteo, 1987)			
				-	Smartphone Addiction Scale (Su et al., 2014)			

Phubbing is a combination of phone and snubbing and can be defined as the act of ignoring someone in a social context by paying attention to a smartphone (Pancani et al., 2020). Research on phubbing impacts on human relationships. Existing studies seem to converge on the notion that phubbing causes negative impacts. The experience of phubbing by partners decreases relationship satisfaction which in turn impacts depression and life satisfaction (Roberts & David, 2016). Similarly, a study of married adults showed that spousal phubbing behavior was indirectly associated with depression and negatively impacted relationship satisfaction (Wang et al., 2017). Similar findings emerged in a study investigating phubbing in a different context, namely the relationship between supervisors and employees. Roberts et al. (2017) found that supervisors' phubbing negatively impacted employee engagement as it decreased their trust in their supervisor; therefore, similar to the romantic context, phubbing that occurs in the workplace will decrease relationship quality.

Relationship problems between parents and their children can arise from a variety of factors (e.g., quality of communication, parental warmth, attachment style, adolescents' externalization and internalization problems). Within this diversity, technology may represent one of the factors that always attracts parents' attention (e.g. while playing at home, while eating, while walking in the park), thus negatively affecting the parent-child relationship. Indeed, among various technologies (e.g., TV, computer), the ubiquitous presence of smart phones makes these devices the most likely source of parental distraction and deserves proper attention from academics. For children, the most important source of meaning and social support is their parents. Thus, the negative impact of phubbing may be stronger in parent-child relationships where parental communication and responsiveness play a central role in child and adolescent development (Baumrind, 1991; Caughlin & Malis, 2004; Kochanska & Aksan, 2004; Pinquart, 2017).

McDaniel & Radesky (2018) showed that maternal distraction with technological devices was associated with problematic externalizing and internalizing behaviors in their children (aged 5 years or younger). In line with these findings, Stockdale et al. (2018) showed that parental technology was associated with adolescents' negative psychological outcomes (i.e., higher anxiety and depression) and behaviors (i.e., cyberbullying).

Research conducted by Mulyaningrum & Kusumaningrum (2022) showed a positive correlation between parental phubbing and smartphone addiction in adolescents. There are several internal and external factors that affect the condition of dependence on smartphones. There are several internal and external factors that influence the condition of dependence on smartphones. Internal factors include self-control and low self-esteem (Agusta, 2016), physical and psychological problems suffered, and gender (Cha & Seo, 2018). External factors include family and parental environment (Kwon et al., 20131), socioeconomic status (Cha & Seo, 2018), types of smartphones and applications used (Shin, et al., 2012), media influence in smartphone marketing (Agusta, 2016), adolescent life at school (Kwon et al., 20132), and conditions of friendship and family environment (Yuwanto, 2010).

Families, in this case in particular, are parents who play an important role in the lives of every period of human development. Although adolescents in their developmental tasks have the task of growing into more emotionally independent human beings (Davis, 1985), it does not mean that the role of parents towards their teenage children is detached. Since long ago, many studies have revealed the importance of the active role and involvement of parents in raising adolescents. Baumrind (Alinaksi & Sari, 2015) explained that adolescents with parents who are competent and play an active role in parenting will focus on better developmental tasks.

Smartphone addiction disorders in adolescents are also inseparable from the role of parents. Some research results such as those conducted by Terras & Ramsay (2016) explain that problematic smartphone use behavior in parents will become a role model for their children. Wang et al. (2020) even explained that ignoring children's behavior in parents when using smartphones can endanger children's lives. McDaniel (2019) explained that adolescents generally feel negative emotions when their parents ignore them when using smartphones. These negative emotions are feelings of anger, wanting to say bad words or grumble, feelings of loneliness, and sadness.

The neglect behavior towards children due to mobile phone use is currently known as parental phone snubbing or parental phubbing for short. Parental phubbing constructively has only one aspect: the disrupted togetherness of parents and children due to parents' cell phone use (Liu et al., 2019; Roberts & David, 2016). This kind of parental behavior has an impact on their child's mobile phone use behavior. For example, Xie et al. (2019) and Liu et al. (2019) produced data that parental phubbing is positively correlated with smartphone addiction in adolescents.

Niu et al. (2020) showed a direct relationship between parental phubbing and adolescent problematic cell phone use and the mediating effect of parent-child relationship moderated by self-control. The study of Geng et al. (2021) mentioned that early parental phubbing of fathers and mothers predicts problematic adolescent smartphone use. The study of Zhang et al. (2021) proved that the relationship of parental phubbing with adolescent cell phone abuse was mediated by social anxiety and core self-evaluation. In the study by Zhao et al. (2022), there is a role of boredom tendency that mediates the relationship of parental phubbing has a positive effect on smartphone addiction and moderated by refusal self-efficacy in adolescents. depression more negative. Ma et al. (2023) in their study saw that parental phubbing provides a positive relationship to problematic cell phone use by adolescents and the effect of deviant peer affiliation mediates the relationship, and adolescents with higher sensation seeking will be more problematic in cell phone use than adolescents with lower sensation seeking.

4. Conclusions and Suggestions

The relationship between parental phubbing and adolescent smart phone addiction may be mediated and/or mediated by many variables. Variables that can mediate include loneliness, FoMO, boredom, depression, deviant peers, parent-child relationship, social anxiety, core self-evaluation, intention of cell phone dependence, perceived norms of cell phone dependence, children's self-esteem, parent-child attachment, and social sensitivity. Meanwhile, variables that can moderate include refusal self-efficacy, perceived school climate, sensation seeking, self-control, and friendship quality. These findings can be followed up by parents to be more aware of responsible cell phone use.

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