SMARTPHONE ADDICTION AND ITS CONSEQUENCE ON THE PERCEIVED THREAT IN HEALTH, FAMILY SOCIAL AND ECONOMIC AREAS

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Abstract

This study deals with the relationship between subjective perceptions of smartphone addiction and the perceived threat in health, family life, social and economic areas. Subjective perceptions of smartphone addiction were measured by experiencing the discomfort of missing a mobile phone. The sample consisted of respondents (a total of 2,952) who reported using a smartphone. The hypotheses were tested using a one-way ANOVA test. The research found that respondents who often missed their smartphone most strongly perceived the threat in health, family and social areas. These people are not constantly dependent on smartphone use, but they perceive the threat of overuse very strongly in the three areas mentioned. Respondents nervous about missing their smartphone perceived the threat most strongly in the economic area. This group is at strong risk of nomophobia or fear of missing out on a mobile phone (FoMO) due to the loss of critical reflection and control of smartphone addiction. The results of this study complement other studies and may predict smartphone addiction.

Keywords

Smartphone, addiction, nomophobia, FoMO, threats

INTRODUCTION

Using mobile phones has become part of many people's lives, including seniors. It was found that this frequent using has a negative impact on people's well-being and life satisfaction (Volkmer and Lermer, 2019). Obsessive use of a smartphone leads to phone

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addiction. For example, previous research in the USA shows that 75 % of Americans check their phones within five minutes of receiving a notification, and they check their phones 144 times per day (Kerai, 2023). The anxiety one experiences when one does not have one's smartphone and the fear that results from being unable to use one's smartphone are referred to as nomophobia (Buctot, Kim and Kim, 2020). Nomophobia is a disorder of the modern world which describes the discomfort or anxiety caused by the non-availability of a mobile phone, personal computer, or any other virtual communication device in individuals who use them habitually (King et al., 2013). Similarly, a phenomenon connected with missing smartphones is FoMO. '... FoMO is characterized by the desire to stay continually connected with what others are doing' (Przybylski et al., 2013). It is '... a pervasive apprehension that others might be having rewarding experiences from which one is absent' (Przybylski et al., 2013). This fear of missing smartphones similar as nomophobia is associated with discomfort, which can predict smartphone addiction. As an example of discomfort, people can experience stress and anxiety, or even fear or panic when their phone is lost, the battery runs out, or they are in an area with no cell service. They feel helpless when they are separate from their phones and they are constantly checking their phone, carrying it everywhere (including showers and bathrooms), spending many hours a day using it. These symptoms of addiction are sometimes compared to gambling. Users who used their phones excessively also reported feeling more stressed (Daniyal et al., 2022). They turn to the internet or smartphones to escape difficult and stressful situations.

THEORETICAL BACKGROUND

A meta-analysis of 24 countries revealed that China and Saudi Arabia have the highest rates of smartphone addiction while Germany and France have the lowest (Olson et al., 2022). It is evident that mobile phones influence our daily life. They can have impact in four areas – social, health, family and economic.

In social area it was found that especially the young generation has a tendency to avoid social interaction and has a fear in case of interpersonal and social situations (Ran et al., 2022). Social anxiety makes it difficult for individuals to form good relationships in the real world and control cell phone use (Ran et al., 2022). When they are short of time without their mobile phones, they experience anxiety (Annoni et al., 2021; Cheever et al., 2014). Differences also exist across generations in ways of using mobile phones. The younger generation, named as digital natives, who were born in the digital era, take mobile phones not as a means of communication but also as a means of expression, while the older generation, known as digital immigrants, who were born before the digital era use mobile phones for their social or business purposes (Zulkefly and Baharudin, 2009). Mobile phone dependence was also evident during the COVID-19 Pandemic, where social isolation played a key role (Zhen et al., 2021). Despite the many interactions that mobile devices and the virtual world offer, people feel increasingly lonely (Tan, Pamuk and Dönder, 2013). The higher persons score in loneliness, the higher the likelihood

they would be addicted to a smartphone (Bian and Leung, 2015). Adolescents who struggle with mobile phone addiction tend to underperform their peers and are more likely to suffer from learning burnout (Hao et al., 2021). Mobile phone addiction was a vital predictor for adolescent poor school performance (Bai, Chen and Han, 2020). Another study proved the connection between low grades, impulsivity, PTSD or sexual activity of university students (Grant, Lust and Chamberlain, 2019). It was found out also positive aspects related to using mobile phones during the Covid-19 Pandemic. The most significant increase in ICT skills occurred among primary and secondary school students (Olecká and Pospíšil, 2022a).

In health area it was found out that those who feel lonely also experience high levels of stress (Liu, Novotný and Váchová, 2022; Wang et al., 2021) and depression (Alhassan et al., 2018; Park et al., 2019). Some authors described lower levels of anxiety in college students who did not have a smartphone in class (Huey and Giguere, 2023). Last but not least, phone addiction has a negative impact on sleep quality (Liu et al., 2017; Zhang et al., 2022). Phone addiction also among seniors can lead to problems with their sleep and also can lead to depression, and loneliness (Tian and Wang, 2023). Sleep quality worsens with increasing mobile phone addiction levels (Sahin et al., 2013). People remain up late at night. Excessive smartphone use can be associated with other negative phenomena in young age, such as the use of cigarettes, alcohol, and other substances (Claesdotter-Knutsson et al., 2021). Notable is also the potential danger of suicide (Chen et al., 2020; Shinetsetseg et al., 2022). Cell phone addiction can cause also back pain, eye strains, wrist strain, weight gain or mood disorders (Daniyal et al., 2022).

Phone (or smartphone) addiction also negatively impacts family life. Family dysfunction is positively correlated with mobile phone addiction (Liu et al., 2020). Smartphone usage has a negative association with peer relations and family relations (Chui, 2015). A significant relationship was found between the sex of married couples and mobile phone addiction. Males gender were found to be more addicted to mobile phones than females (Jomy, Sharma and Fatima, 2019). Parents with lower levels of education are less likely to know the severity of smartphone addiction and are more likely to give their children smartphones. This leads to an increase in smartphone dependence (Park and Park, 2014). In communication with their children, parents prefer voice calls to text messages, as text messages can be sent by anyone (Devitt and Roker, 2009). Parent–child relationships can negatively predict mobile phone addiction tendency among adolescents. A negative parenting style can increase the degree of smartphone dependence, while a positive parenting style can reduce smartphone dependence (Lian et al., 2016). Also, time spent with children is a factor that can impact mobile phone addiction. Seniors usually use mobile phones to maintain contact with their family (Hurme, Westerback and Quadrello, 2010). Grandchildren are usually those who teach seniors how to use mobile phones.

Mobile dependence also has economic impacts. During the COVID-19 pandemic, it was evident that low-income parents could not work from home and stay with their children because their job required them to work in person (Lee et al., 2021). They didn't keep

track of what their kids were doing. Another problem is economic strain due to excessive data usage, which is especially for low-income families very expensive (Bhattacharya et al., 2019).

Previous studies have focused on the fear of missing a mobile phone and nomophobia. Both phenomena are connected with discomfort. This discomfort may manifest in four areas 1) not being able to communicate with others, 2) feeling generally disconnected, 3) not being able to access information and 4) giving up a convenience (Yildirim and Correia, 2015). The level of discomfort predicts craving, which is an important factor in developing mobile phone addiction. It manifests as urgency, abstinence, dependency, difficulty of control, and increased use (De-Sola et al., 2017). Individuals cannot reduce their craving for a mobile phone (Yang et al., 2022).

In our research, we analysed smartphone dependence by measuring the degree of discomfort of missing a smartphone in relation to perceived threats in the areas of health, family, social and economic. The reason for examining the discomfort of missing a smartphone is its direct effect on addiction. The level of discomfort was measured through the unavailability of a smartphone. We defined the following hypotheses:

H1: The degree of subjectively experienced smartphone dependence, as measured by the indicated level of discomfort felt when a smartphone is unavailable, significantly influences perceptions of health-related threats.

H2: The degree of subjectively experienced smartphone dependence, as measured by the indicated level of discomfort experienced when a smartphone is unavailable, significantly influences the perception of family threat.

H3: The degree of subjectively experienced smartphone dependence, as measured by the indicated level of discomfort experienced when a smartphone is unavailable, significantly influences the perception of social threat.

H4: The degree of subjectively experienced smartphone dependence, as measured by the indicated level of discomfort experienced when a smartphone is unavailable, significantly influences the perception of threat in the economic domain.

METHODOLOGY OF RESEARCH

The research design is a cross-sectional ex-post-facto study, and data collection was conducted across the Czech Republic using a structured questionnaire. The research focused on values, leisure, social threats, and proficiency in information technology and was conducted using the internal Department of Christian Social Work Research Protocol for Quantitative Research. The questionnaire was distributed online through the Social Survey Project (Pospíšil, 2018). Assisted completion was conducted with respondents who could not complete the questionnaire themselves. A total of 10 percent of the questionnaires were assisted and completed. The research was conducted from September 2020 to January 2022. In total, we obtained 3,451 fully completed questionnaires. In the first conditional question, respondents reported whether they use a smartphone. The sample of respondents is representative of the country's

population by gender and age. The target group was respondents aged 15 years and older. The sample consisted of respondents (a total of 2,952) who reported using a smartphone (a total of men 1,442, which is 48.85 % and women 1,510, which is 51.15 %). Respondents chose from three possibilities of smartphone use: 1. smartphone use with internet and apps (2,584), 2. smartphone use with apps without internet (107), and 3. smartphone use as a regular phone (261).

To measure smartphone dependence, respondents answered a question asking whether they felt uncomfortable when their smartphone was not available. They chose from four answers: 1. The unavailability of the smartphone makes me extremely nervous. 2. I often feel uncomfortable when my smartphone is unavailable. 3. I sometimes feel uncomfortable, but I can be separated from my smartphone from time to time. 4. I never feel uncomfortable.

Next, we asked these respondents whether phone overuse threatened their social (e.g., social status, prestige, relationships in the community, at work, at school, with friends, etc.), economic, health, and family (relationships with parents, siblings, grandparents, their own children, and extended family) life. We focused on the subjective experience of threat because we perceive it to be more important in terms of the respondent's safety and security and threat prevention. Threats were measured on scales for each area separately. The scales were designed so that the respondent accurately indicated the item expressing the threat level. The left side indicated 'no or low threat'. 'Very high threat' was indicated on the right-hand side. The point indicated by the respondent was converted in the database to a number on a scale of 1 (no threat) to 10 (very high threat). The scale was continuous with a sensitivity of 0.1 degree/step. The respondent was free to express his/her opinion without being bound to the numbers marked to confuse him/her. This measurement gave an accurate picture of the threat level of each respondent (Olecká and Pospíšil, 2022b):

Indicate this if you perceive low or no threat in this area ,_____

Indicate this if you perceive a very high threat in this area _____,

Indicate this if you perceive a medium threat in this area _____,_____

Indicate this if you feel a rather higher threat in this area _____,____

Dependencies between the subjective experience of smartphone missing and feeling of threat in each of four dimensions (family, social, economy, health) were tested using a one-way ANOVA test (Sheskin, 2011). Dependencies, where the calculated probabilities (p) were less than .001 were marked as significant (Tab. 1).

RESULTS

In the subjective experience, smartphone dependence measured by the indicated level of discomfort was found the highest mean score for the group that reported experiencing discomfort (3.5119). These respondents often felt uncomfortable when their smartphone was unavailable. As expected, the lowest mean score was reported by the respondents who never experienced discomfort when a smartphone was missing (2.1983).

The respondents who often experience discomfort (n = 452) when their mobile phone is missing showed the highest mean scores in all the areas studied (health, family, social and economy). The respondents who experienced the missing smartphone very negatively (n = 140) had the second highest average. This was followed by the group that said they sometimes experience missing a smartphone negatively (n = 1,762), but these moments alternate with times when they do not miss their smartphone. The lowest averages were reported by the group that never experiences negative feelings when a smartphone is missing (n = 598).

In the area of smartphone addiction risk, the highest averages were found in family area. This reflects the highest level of experienced threat. The second group with the highest averages was the health domain, followed by the social and economic areas.

Tab. 1 ANOVA test of independence: Smartphone dependence examined through the degree of discomfort of missing of a smartphone in relation to perceived threats in the areas of health, family, social and economic.

			Areas at threat from smartphone addiction			
			Health area	**Family life area**	**Social area**	**Economic area**
Subjective discomfort of missing a smartphone	The unavailability of the smartphone makes me extremely nervous.	*μ*	3.0636***	3.4193***	2.9564***	3.0407***
		sd	2.3456	2.5474	2.3138	2.6747
	I often feel uncomfortable when my smartphone is unavailable.	*μ*	3.4628***	3.5119***	3.1925***	2.9013***
		sd	2.3206	2.5212	2.2802	2.1791
	I sometimes feel uncomfortable, but I can be separated from my smartphone from time to time.	*μ*	3.0185***	3.0225***	2.7561***	2.5492***
		sd	2.1677	2.3443	2.0743	1.9790
	I never feel uncomfortable.	*μ*	2.3677***	2.4569***	2.2565***	2.1983***
		sd	2.0833	2.1824	1.8881	1.8645
	Total	***μ***	**2.9568**	**3.0017**	**2.7312**	**2.5554**
		sd	**2.2083**	**2.3725**	**2.1016**	**2.0392**
		F	**23.174**	**19.325**	**18.365**	**13.259**

**** Statistically significant result p < 0.001.*

DISCUSSION

In our research, we analysed smartphone dependence by measuring the degree of discomfort of missing a smartphone in relation to perceived threats in the areas of health, family, social and economic. Interesting findings emerged in two groups. For the group of people who reported that they often feel uncomfortable when they miss their smartphones, we see the highest perception of threat. The threat is perceived most strongly in the three areas examined – social, health and family. These people are not constantly dependent on smartphone use, but they perceive the threat of overuse very strongly in the three areas mentioned.

Studies show that fear of needing a mobile phone may also contribute to dependency (Seo et al., 2016). A study on nomophobia showed that fear of being away from mobile phones could lead to problematic addictive, prohibited, or dangerous use, each factor contributing to significant health risks (Kaviani et al., 2020). The most common health risks include sleep quality, diet, productivity, concentration and performance (Moreno-Guerrero et al., 2020).

Studies have also shown a connection between the fear of missing mobile phones and work-life and family conflict (Erdurmazli et al., 2022). Individuals with nomophobia may have cognitive and perceptual impairments that may prevent them from responding accurately and appropriately to their psychological and social needs and the expectations of their spouse and children. Other family members may feel sad, angry, heartbroken, or frustrated because they feel neglected and have not received due attention (Erdurmazli et al., 2022).

In our research, the group nervous about the unavailability of smartphones showed the highest perception of threat in the economic area. They do not perceive their threat as strongly in other areas. This group has a reduced ability to reflect on the level of discomfort and, therefore, the level of risk of addiction. This is due to the disparity between the degree of subjectively experienced smartphone dependence and the lower perception of threat in health, family, and social area. This result suggests that this group is strongly threatened by nomophobia because of losing the ability to critical reflection.

Studies indicate (Gezgin et al., 2018; Kuss and Griffiths, 2017) that fear of missing a mobile phone predicted nomophobia by 41%. Furthermore, these studies found a relationship between missing mobile phones and problematic mobile phone use and between missing mobile phones and smartphone addiction. Studies also demonstrate that people with a low income and ages 15 to 18 who start using mobile phones and check their phones more than 20 times a day are more affected by nomophobia (Abraham, Mathias and Williams, 2014).

Although our research examined smartphone addiction through the discomfort of missing a mobile phone, and other studies have examined the fear of missing out (FoMO), the results may predict smartphone addiction in both cases. More research would be needed.

CONCLUSIONS

This paper examined the relationship between smartphone addiction explored through the discomfort of missing a smartphone and experienced health, family, social, and economic threats. It would be suitable to move from the domain of experiencing to the individual symptoms of smartphone addiction and explore the whole domain of nomophobia, FoMO and mobile addiction syndrome (MAS). We see an opportunity to understand smartphone addiction more broadly and determine the levels of dependence. Further research investigations would develop and deepen our current findings and lead to a better understanding of the topic under exploration.

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