Psychological Traits, Addiction Symptoms, and Feature Usage as Predictors of Problematic Smartphone Use among University Students in China

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ABSTRACT

This study investigates the effects of psychological traits (i.e., procrastination, leisure boredom, and impulsivity) and addiction symptoms on problematic smartphone use. Data were collected from a multistage random sample of 649 university students. The results showed that procrastination, impulsivity (including sensation seeking and lack of perseverance), symptoms of addiction (e.g., inability to control craving, withdrawal, and complaints), and frequent usage of smartphone features for instrumental, relational, expressive, and informational purposes were significant predictors of problematic smartphone use.

KEYWORDS

Feature Usage, Impulsivity, Leisure Boredom, Problematic Use, Procrastination, Smartphone Addiction Symptoms

INTRODUCTION

New mobile technologies have influenced the daily lives of their users. According to a study conducted by the Pew Internet and American Life Project in 2015, nearly two-thirds of adults in the US own a smartphone, which is an increase of 35% since 2011 (Smith, 2015). The study revealed that although talking, texting, emailing, and going online were the primary applications, three-quarters of smartphone owners reported using their smartphones for social media, 60% took pictures or a video, about 50% watched videos, 47% played online games, and 41% consulted maps. It is also interesting to note that about 46% of smartphone owners reported that their smartphone is something “they couldn’t live without.” Today, mobile phones are indispensable and their use is widespread in Chinese society. According to the Ministry of Industry and Information Technology (2014) of the People’s Republic of China, the adoption rate of mobile phones in Mainland China was 94.5%, and about 85.8% of netizens were connected to Internet service via their advanced mobile devices (CNNIC, 2015). Similarly, according to the Office of the Communications Authority (2015), mobile subscribers in Hong Kong were 227.9% of the entire population, which indicated that many citizens had more than one mobile phone. Among these subscribers, 85.52% were smartphone users (including 2.5G, 3G, and 4G).

According to Smith (2015), young adults, the affluent, and the well-educated are among the most likely to own a smartphone, and they are the most active users of smartphones. There are many reasons for this phenomenon. First, young people generally are receptive of new technology (e.g., Charness & Bosman, 1992). Moreover, the young generation has a strong need to use new technology to extend
their social domains because they are starting to build their identities and establish relations outside their families (e.g., Lanthier & Windham, 2004). However, the relative lack of mature self-regulation and insufficient information may result in the risk for addictive smartphone use among young adults (e.g., Chiu, 2014; Leung & Lee, 2012). Previous research has consistently found that compared with other life stages, adolescence is characterized by the heightened potential for recklessness, sensation seeking, impulsiveness, and risk-taking behaviors, which have been implicated in drug use and delinquency (Arnett, 1992). As the penetration rate of smartphone continues to increase, the negative outcomes of the problematic use of this media technology have attracted attention in the field of addiction research. For instance, previous studies have revealed key symptoms of mobile phone addiction in young people (Leung, 2008), and measurement scales have been created in the Western context (e.g., Bianchi & Phillips, 2005). However, in Asian countries, systematic investigations of this new media addiction are relatively scarce.

With the aim of providing empirical evidence to fill this gap in the research, a survey was conducted in China to determine the typical components of smartphone addiction symptoms among Chinese university students. Because of the limited amount of research in this area, theoretical constructs in psychology, such as procrastination, leisure boredom, and impulsivity, were used to explain addiction symptoms and problematic smartphone use. By linking problematic smartphone use in daily circumstances to potential predictors, this study gained new insights into understanding how psychological traits, symptoms of addiction, and patterns of smartphone feature usage influence the lives of young people (Burnay, Billieux, Blair, & Larøi, 2015). As shown in Figure 1, this study focuses on the impact of procrastination, leisure boredom, and impulsivity (including urgency, premeditation, perseverance, and sensation seeking), as well as the symptoms of addiction on problematic smartphone use.

**PROBLEMATIC SMARTPHONE USE**

A study conducted by the Pew Research Center found that 52% of adolescents in the US aged 16 and 17 years who owned mobile phones said they had talked on a mobile phone while driving (Madden & Lenhart, 2009). Previous research also found that the adopters of mobile phones blurred public and private behaviors in public spaces and talked loudly at formal meetings, libraries, and crowded buses/trains, concert halls, and theatres (Wei & Leung, 1999). Technological advances and the miniaturization of the smartphone have made it easier for users to capture their voyeuristic fantasies on camera. Recently, increasing numbers of “upskirting” (i.e., images of the view up a woman’s skirt) and “downblousing” (i.e., images of the view down a woman’s blouse) incidents have been reported in the news and more voyeurs have been caught, especially when these images have been posted on social media sites. Furthermore, booksellers blame “digital shoplifting” for lost profits. Consumers go to bookstores to take pictures of the pages of their favorite books and read them at home. These anecdotes demonstrate that as smartphones proliferate, so do their abuses. However, the reasons that smartphone users do not exercise self-control or adhere to proper protocol are unclear. Their use of their smartphones might be inappropriate, improper, or simply problematic.

**LITERATURE REVIEW**

**Symptoms of Smartphone Addiction**

Traditionally, the concept of addiction was based on a medical model of bodily and psychological dependence on a physical substance. The concept did not refer to a behavioral pattern. However, recent studies have advocated that the concept of addiction should be widened to cover a broad range of behaviors (Lemon, 2002; Orford, 2001; Shaffer, 1996). Griffiths (1996) proposed the concept of technological addiction, which is operationally defined as human-machine interaction and is non-
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