



# Academic stress and Internet addiction from general strain theory framework



Sangmin Jun<sup>a,1</sup>, Eunsil Choi<sup>b,\*</sup>

<sup>a</sup> Department of Industrial Psychology, Hoseo University, Cheonan, South Korea

<sup>b</sup> Department of Family and Housing Studies, Yeungnam University, Gyeongsan, South Korea

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## ABSTRACT

The goal of this study was to examine the mediating role of negative emotions in the link between academic stress and Internet addiction among Korean adolescents. We attempted to extend the general strain theory to Internet addiction by exploring psychological pathways from academic stress to Internet addiction using a national and longitudinal panel study. A total of 512 adolescents completed self-reported scales for academic stress, negative emotions, and Internet addiction. We found that academic stress was positively associated with negative emotions and Internet addiction, and negative emotions were positively associated with Internet addiction. Further, the results of structural equation modeling revealed that adolescents' academic stress had indirectly influenced Internet addiction through negative emotions. The results of this study suggest that adolescents who experience academic stress might be at risk for Internet addiction, particularly when accompanied with negative emotions. These findings provided significant implications for counselors and policymakers to prevent adolescents' Internet addiction, and extended the general strain theory to Internet addiction which is typically applicable to deviant behavior.

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## 1. Introduction

Internet use has become very common and important in the daily lives of Korean adolescents. More than 85% of Korean adolescents have been reported to use the Internet for over 1.5 h a day (Korean National Statistics, 2005). Specifically, National Information Society Agency (2014) reported that 38.1% of Korean adolescents used social networking services (SNSs) and 21.2% of them used online games. 75% of Korean adolescents reported that they used SNS every day for information exchange, entertainments, and keeping peer relationships (Lee, Sung, & Jeong, 2012). In addition, 96.1% of middle school students and 97.5% of high school students reported that they had experiences to use Internet for online games (National Internet Development Agency of Korea, 2006). According to a survey in 2013, 10.7% of Korean adolescents are involved in Internet addiction and who show an inability to control their

Internet use and also have withdrawal symptoms of psychological distress such as depression and anxiety (MSIP, 2013). In particular, Internet addiction during adolescence is an important social issue due to its adverse effects on physical and psychological outcomes (Christensen, Orzack, Babington, & Patsdaughter, 2001; Jang, Hwang, & Choi, 2008; Oh, 2005; Park, Kim, & Cho, 2009).

Previous research has revealed that stress is one of the crucial antecedents of Internet addiction for adolescents (Ah & Jeong, 2011; Cho, 2006; Suh & Lee, 2007; Suler, 2004). The general strain theory provides a theoretical basis for the association between stress and Internet addiction. This theory suggests that a variety of strain or stress experienced by adolescents might cause negative emotions, which subsequently causes problem behaviors (Agnew, 1992). Among the various types of stress, academic stress is the most salient and prevalent stressor for Korean adolescents due to the competitive university entrance examination in the country (Ah & Jeong, 2011; Lee & Larson, 2000; Shin, 2002). Substantial research has consistently shown that academic stress is related to psychological problems such as depression, anxiety, and insomnia for Korean adolescents (Kim, Lee, & Chung, 2011; Moon, 2008). In addition, Internet addiction has been identified to be linked to stress (Ah & Jeong, 2011; Ju, 2011) and negative emotions (Jang et al., 2008; Kim et al., 2011; Lee, Joo, & Choi, 2013) among Korean adolescents. However, less is known regarding the

\* Corresponding author at: Department of Family and Housing Studies, Yeungnam University, 280 Daehak-Ro, Gyeongsan, Gyeongbuk 712-749, South Korea. Tel.: +82 53 810 2861, cell: +82 10 8425 1171.

E-mail addresses: [smjun@hoseo.edu](mailto:smjun@hoseo.edu) (S. Jun), [echoi@yu.ac.kr](mailto:echoi@yu.ac.kr) (E. Choi).

<sup>1</sup> Address: Department of Industrial Psychology, Hoseo University, 12 Hoseodae-gil, Cheonan, Chungnam 330-996, South Korea. Tel.: +82 41 560 8378, cell: +82 10 2352 5030.

psychological mechanism associated with academic stress and its link with Internet addiction. The aim of the current study is to examine the mediating role of negative emotions in the association between academic stress and Internet addiction among Korean adolescents based on the general strain theory.

### 1.1. Academic stress and Internet addiction

Internet addiction has been referred to by various terminologies in the literature, with labels varying from Internet addiction (Block, 2008; Chou & Hsiao, 2000; Young, 1999) to Internet Addiction Disorder (Goldberg, 1996), pathological Internet use (Davis, 2001), problematic Internet use (De Leo & Wulfert, 2013), and Internet dependency (Sherer, 1997). The term *Internet addiction* will be used in the current study because we think that it can properly describe and reflect the attributes and components of problematic Internet use among Korean adolescents. According to Block (2008), Internet addiction can be defined as the excessive use of Internet that leads to withdrawal symptoms in times when the Internet is inaccessible, the need for better computer-related equipment, and negative effects on social, psychological, and physical problems. In particular, Internet addiction is one of its most serious public health issues in South Korea (Ahn, 2007); 1.2 million adolescents in Korea were found to be at risk for Internet addiction and in need of counseling (Kim, 2007). In addition, there is growing concern regarding Internet addiction, because it has been closely associated with psychological and social problems as well as deviant cyber behavior (Ah & Jeong, 2011; Ju, 2011; Kim et al., 2011; Kraut et al., 1998).

With the detrimental effects of Internet addiction, studies have shown that adolescents used Internet as a means of relieving their stress (Hong, 2002; Lavoie & Pychyl, 2001; Suh & Yoo, 2001; Velezmoro, Lacefield, & Roberti, 2010) and regulating their negative moods (Caplan, 2007). Among the various types of stress, academic stress has been almost notorious among Korean adolescents, and is even termed “examination hell” (Lee & Larson, 2000). Many empirical findings have documented the link between high levels of academic stress and Internet addiction among Korean adolescents. For example, adolescents who have high levels of stress reported to be more addicted to Internet gaming (Ju, 2011). Internet addiction played a mediating role in the link between academic stress and school maladjustment among adolescents (Ah & Jeong, 2011). In addition, high levels of academic stress were associated with high levels of Internet addiction despite social support (Suh & Lee, 2007). These findings suggest that high levels of academic stress among Korean adolescents can influence Internet addiction.

### 1.2. Negative emotions and Internet addiction

As Internet addiction has increased, recent findings that document the association between negative emotions and Internet addiction have accumulated in the literature (Caplan, 2007; Gámez-Guadix, Villa-George, & Calvete, 2012; Özdemir, Kuzucu, & Ak, 2014). Caplan (2003) found that individuals who have psychological problems were more likely to be involved in online interaction than offline communication. In addition, substantial research has concluded that Internet addiction is correlated with depression (Morrison & Gore, 2010; Özdemir et al., 2014), anxiety (Bernardi & Pallanti, 2009), and obsessive–compulsive disorder (Jang et al., 2008; Zhang, Amos, & McDowell, 2008). In particular, the strong association between Internet addiction and depression were found in systematic reviews (Carli et al., 2012) as well as in neurobiological studies, which showed differential resting state EEG patterns in Internet addiction (Lee et al., 2014). These findings indicate that negative emotions can increase Internet addiction.

### 1.3. Academic stress and negative emotions

Academic stress refers to perceived pressure or strain due to academic achievement (Lee, Choi, & Kong, 2011). Research has consistently documented that academic stress is associated with negative emotions such as depression and anxiety (Bergdahl & Bergdahl, 2002; Schraml, Perski, Grossi, & Simonsson-Sarnecki, 2011; Spada, Nikčević, Moneta, & Wells, 2008; van Eck & Nicolson, 1994; Wilks, 2008). In particular, substantial studies that investigate the link between academic stress and negative emotions have been conducted in Korea, where most adolescents experience academic stress and there is a high prevalence of depressive symptoms due to academic achievement among adolescents (Kim & Park, 2013; Lee & Larson, 2000). This is because, in Korea, academic achievement is considered as the primary means of attaining social status and wealth, which is due to the influence of Confucianism; this subsequently causes academic stress and negative emotions among students (Haboush, 1991; Han, 1990). Adolescents with high levels of academic stress were more likely to display more depressive symptoms (Park & Chung, 2011). Moreover, Korean adolescents have been found to experience more academic stress than American adolescents (Lee & Larson, 2000). In addition, there has been an increase in depressive symptoms and high rates of suicide due to academic stress in Korea (Lee et al., 2011). Indeed, these findings suggest that academic stress is a significant factor in the development of psychological problems among students.

### 1.4. The general strain theory and the mediating role of negative emotions in the link between academic stress and Internet addiction

The general strain theory can be a useful framework for understanding the associations between academic stress, negative emotions, and Internet addiction. Agnew (1992) argued that various kinds of strain, including life stress and negative social relationships, can cause negative emotions and subsequently lead to deviant behavior or addiction to something to escape from negative emotions. Given that Internet addiction is considered to be associated with academic stress and negative emotions among Korean adolescents and that academic stress has detrimental effects on the mental health of Korean adolescents, the general strain theory can be an appropriate theoretical basis for explaining the mediating role of negative emotions between academic stress and Internet addiction. In addition, numerous studies have supported the links between academic stress and Internet addiction (Ah & Jeong, 2011; Suh & Lee, 2007), the association between negative emotions and Internet addiction (Bernardi & Pallanti, 2009; Carli et al., 2012; Lee et al., 2014), and the association between academic stress and negative emotions (Bergdahl & Bergdahl, 2002; Lee et al., 2011; Spada et al., 2008; van Eck & Nicolson, 1994). Based on both theoretical basis and empirical findings, it is possible that negative emotions might play a mediating role in the link between academic stress and Internet addiction among Korean adolescents. However, little is known about the psychological pathways of how academic stress influences Internet addiction.

### 1.5. The current study

The purpose of the current study is to examine the mediating role of negative emotions in the association between academic stress and Internet addiction among Korean adolescents based on the general strain theory. Based on the literature, we anticipate that academic stress would be positively associated with negative emotions among Korean adolescents, and expect that negative emotions would be positively related to Internet addiction. In addition, we hypothesize that academic stress would be positively

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