

Intermittent Addiction and Double Sidedness of Thought Suppression: Effects of Student Smart Phone Behavior

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Abstract

Purpose – This study investigates the effects of thought suppression on depression and uneasiness among college students likely to be influenced by smart phone addiction.

Research design, data, and methodology – A total of 151 valid questionnaires were collected. The following analyses were conducted using SPSS 19.0 and AMOS 19.0: frequency, descriptive statistics, correlation, simple regression, and multiple regression.

Results – Smart phone addiction increased uneasiness, depression, impulsiveness, and aggression. Moreover, uneasiness, depression, impulsiveness and aggression from smart phone addiction, had a negative influence on psychological wellbeing resulting in potential delinquent behavior. In addition, the addiction treatment relied heavily on drugs; therefore, such psychological treatment should be strengthened to control intermittent addiction.

Conclusions – The results indicate that various kinds of research are needed to investigate personality and environmental factors that influence smart phone addiction. Additionally, studies on lessening smart phone addiction and living healthy lifestyles are needed. Moreover, psychological rehabilitation and treatment should be developed to lessen the rebound effect after thought suppression, to verify the effects of clinical application, and to prevent intermittent addiction.

Keywords: Double Sidedness, Intermittent Addiction, Thought Suppression, Psychological Wellbeing, Deviant Behavior.

JEL Classifications: I12, I31, M10, M15.

1. Introduction

The smart phone has become daily essentials in Korea that has more than 40 million users. Time of use of smart phone has been extended at distribution of the phone. "Investigation into Use of Mobile Internet in 2014" that not only Korea Internet Security Agency but also Ministry of Science, ICT and Future Planning said that smart phone users cognized daily smart phone use time of 2 hours and 51 minutes to be 38 minutes up than previous year. In particular, ratio of daily 3-hours or more smart phone use users accounted for 45.7% to be 18.7% up, and increase ratio of the 20s and the 30s accounted to be 22.5% (the 20s) and 23.0% (the 30s) than previous year (KISA, 2015). The smart phone had affirmative influence owing to high distribution and more use, and had various kinds of losses and damages such as smart phone addiction: For instance, not only Ministry of Science, ICT and Future Planning but also NISA said that 14 percent of the Korean people belonged to smart phone addiction risk group because of excessive use of the phone to have difficulties at daily life. In 2014, smart phone addiction risk group accounted for 14.2% to be 11.8% up than previous year because Internet users made use of smart phone instead of PC (KISA, 2015). Young people were found to have high smart phone addiction to let the government support Internet and smart phone addiction expenses.

This study paid attention to repeated addiction after medical treatment and/or punishment. Such a phenomenon can be disease to play psychological mechanism. For instance, the ones who committed not only serious criminal offense such as gambling and drug but also habitual drink-driving were punished at crackdown could not give up the crimes not by diseases but by psychological mechanism.

This study investigated effects of smart phone addiction upon psychological wellbeing and delinquent behavior of college students. College students without economic independence were given limitation on economic activities than adults did to be important and good member of the society. This study verified double sidedness of the thought suppression. Precedent studies said that smart phone addiction might increase uneasiness, depression, impulsiveness and aggression, and thought suppression between psychological wellbeing and delinquent behavior could produce addiction. This study investigated effects of thought sup-

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pression upon depression and uneasiness of college students who were likely to be influenced by smart phone's addiction.

The findings were: Investigation into causes of behavior at losses and damages made by addiction was likely to remind of warning against smart phone addiction. And, investigation into role of the thought suppression is likely to verify psychological alternative on smart phone's intermittent addiction.

2. Theoretical background

In 1994, WHO said that addiction was temporary and/or chronic intoxication in repeated use of natural and/or artificial chemicals (Corsini, 1994) that was oriented to material addiction: The addiction was related to problem and behavior of the material. The addiction has been extended to include gambling, video game, physical exercise, sex, Internet and impulse control disorder (DSM-IV¹), 1994). The addiction has shown eager desire, tolerance and withdrawal symptom to produce social and occupational disorder and to include material addiction such as drug and alcohol and behavior addiction such as gambling and Internet use (NIA, 2011).

Smart phone addiction has produced plenty of problems: traffic accidents in the use of smart phone, suicide at linguistic violence, exposure to porno, violence and infringement upon phishing that have shown smart phone users' excessive use, dependence and addiction. (Ko et al., 2012).

College students' excessive use of media and technologies have negative influence upon mental health to create uneasiness, depression and other psychological problems (Rosen et al., 2011). The smart phone addiction was found to produce problems of human relations and mental health (Choi et al., 2012).

In this study, intermittent addiction has relations with recurrence. 'Intermittent' means occurrence with specific time interval to recur despite being given treatment by legal punishment after cognizing addiction. Not only common citizens but also well-known persons reported by the press produced evoked social criticism at drug and/or sex addiction to return to the society after specific time and to produce same problem again. In this study, intermittent addiction was caused by thought suppression to investigate adverse effects of college students' smart phone addiction, and thought suppression between psychological wellbeing and delinquent behaviour.

Everyone has preferred thought and/or emotional state to suppress unwanted thought and to avoid uncomfortable emotional experience and to be concentrated on specific subject and to distribute attention from pains and to have influence upon their own psychological state (Wegner & Pennebaker, 1993). But, men often fail to control their mind to feel frustrated and threaten self-esteem and have adverse influence upon psychological and physical health (Pennebaker et al., 1997). So, suppression may be used to control unwanted thought.

The thought suppression is said to make effort to think of

specific thought: Active control of specific thought adheres to the thought to produce ironic monitoring (Wegner et al., 1987). The thought suppression's ironic effect has two hypotheses. The hypothesis is based on both processes, that is to say, intentional operating process to keep wanted state and ironic monitoring process to retrieve not only wanted state but also inconsistent sense and thought at the same time: Both processes promote feedback mechanism. The intentional operating process is conscious to require efforts and to control and to be damaged by cognitive load, stress and uneasiness: But, ironic monitoring is unconscious to require less efforts not to be suppressed at psychological control and to be given no influence at psychological control and to be given no influence from cognitive load (Wegner, 1994). The hypothesis says that conscious effort can control situation to be damaged by uneasiness and others and to function unconsciously and automatically under specific situation.

The ironic monitoring of thought suppression is: The delayed rebound effect gives order of specific thought and informs thought than under remaining control conditions by delayed rebound effect (Cioffi & Holloway, 1993; Clark et al., 1991; Davies & Clark, 1998; Macrae et al., 1998), and informs thought more than control conditions by immediate enhancement effect (Lavy & Van den Hout, 1990; Salkovskis & Cambell, 1994; Trinder & Salkovskis, 1994).

Intentional effort of control of the thought may produce adverse effects (Ansfield et al., 1996; Borkovec, 1982; Macrae et al., 1997; Palfai et al., 1997; Sullivan et al., 1997; Wegner et al., 1997; Wenzlaff et al., 1991): Men may be addicted by thought suppression at time elapse after treatment and/or actions by oneself and/or others that is intermittent addiction.

A lot of researchers defined wellbeing (Andrew & Withey, 1976; Fordyce, 1988; Lee & Kim, 2011; McDowell & Newell, 1987): Initial concepts of individual's wellbeing are based on limited theory to miss important area of psychological health (Ryff, 1989; Ryff & Keyes, 1995).

Subjective life quality and wellbeing level accounted for individuals' satisfaction with life, and state of positive and/or negative emotion so that individual's member in the society should be standard to evaluate wellbeing from point of view of multi-dimensionmulti-dimension (Ryff, 1989). Researchers said, for instance, self-actualization of Maslow(1943), fully functioning person of Rogers(1963), individuation of Jung, maturation of Allport(1961), psychological and social stage model of Erikson(1980), trend of the basic life of Buhler(1971), and changes in the nature of Neugarten(1985) to develop 6 levels of psychological wellbeing scales that could measure self-accept, individual growth, goal of life, affirmative relations with others, environment control and autonomy (Ryff, 1989).

Men's emotional labour and emotional disharmony may have negative influence such as Bae & Kim(2011) upon psychological wellbeing (Hochschild, 1983; Morris & Feldman, 1996; Repetti & Crosby, 1984; Zapf., 2002) to be likely to have negative influence upon psychological wellbeing by smart phone addiction. The thought suppression with positive function is likely to lessen losses and damages caused by negative emotion.

The delinquent behavior is said to be crime violating laws

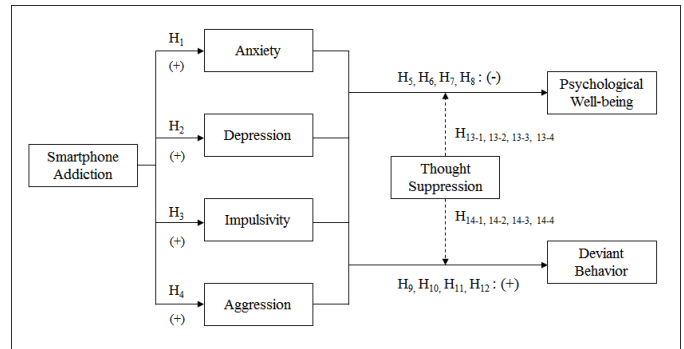
1) DSM: Diagnostic and Statistical Manual of Mental Disorders.

and regulations, abnormal behavior under standards of the value, and maladjusted behavior not adapting to the environment (Seo, 2006). The delinquent behavior can be examined by mutual reaction theories, for instance, Anomie Theory (Durkheim, 1972), Techniques of Neutralization Theory (Sykes & Matza, 1957), Social bond theory (Hirschi, 1998), labelling theory (Davis, 1972), and Differential Association Theory (Sutherland et al., 1995). The delinquent behavior that threatens social order to be influenced by social values and/or norms in the society during specific time is given attention when an individual's delinquent behavior exists regardless of time to threaten not only individuals but also the society and nation. (Seo, 2006). The delinquent behavior includes robbery, violence, vandalism, drug abuse, rudeness, shortage of the effort, early leave, late attendance and others (Christian & Ellis, 2011). A study on young people's cyber addiction said that delinquent behavior supplemented unstable self identity by cyber space to make friendliness and sense of belonging and to satisfy desire of separation from family and parents and to express frustration by aggressive impulse (Suler, 1996).

This study investigated delinquent behavior that depended upon will to synchronize by not only expectation of personal gain but also desire of expression of anger and/or frustration (Christian & Ellis, 2011). In this study, negative emotion at smart phone addiction may promote delinquent behavior, and thought suppression's positive function is likely to lessen delinquent behavior. Failure of the thought suppression may verify double-sidedness of the thought suppression to produce individuals' intermittent addiction.

3. Research Design, Data, and Methodology

The smart phone addiction had relations with aggressiveness, impulse, depression, sense of isolation and other pathological psychological symptoms (Hawi, 2012; Li et al., 2014; Lopez-Fernandez et al., 2014; Lu et al., 2011), and negative emotion at smart phone addiction had influence upon psychological wellbeing and delinquent behavior to produce research model that the thought suppression had influence. The models and hypotheses were (see Fig 1):



<Figure 1> Research Model & Hypotheses

To conduct this study, a total of 151 participants(110 males, 41 females) were recruited from Jangan University. Participants received course credit for their participation. Participants' age ranged from 17 to 25 years($M=20.09$, $SD=1.89$). Frequency analysis, descriptive statistic analysis, correlation analysis, simple regression analysis, and multiple regression analysis were conducted using SPSS 19.0 and AMOS 19.0.

The following self-report measures were used. Specifically, smartphone addiction was measured 15 items, anxiety, depression, impulsivity and aggression was measured each 8 items, Likert 4-point scale based on NISA(2011). Thought suppression was measured 15 items, Likert 5-point scale based on Wegner & Zanakos(1994). Psychological well-being was measured 34 items, Likert 5-point scale based on Ryff(1989), And deviant behavior was measured 14 itmes, Likert 5-point based on Aquio et al.(1999). All variables were converted into z-score to make correction of difference of the scales.

To find out if measurement items are internally consistent, reliability was verified using Cronbach α . Nunnally(1978) argued that if Cronbach α is over 0.7, it is considered reliable. In this respect, the reliability of variables in this study was found to be 0.846~0.948. As a result of confirmatory factor analysis to verify validity of variables, all variables' AVE are over than 0.5 to confirm validity except impulsivity, thought suppression, psychological well-being and deviant behavior was less than 0.5 to confirm validity by comparing between coefficient of determination of R-square and AVE, respectively.

<Table 1> Reliability and Validity

Variables	first item	final item	Cronbach's α	Construct Reliability	AVE
Smartphone addiction	15	15	0.915	0.953	0.615
Anxiety	8	8	0.911	0.941	0.669
Depression	8	8	0.900	0.937	0.654
Impulsivity	8	8	0.846	0.881	0.485
Aggression	8	8	0.917	0.936	0.648
Thought suppression	15	15	0.948	0.932	0.478
Psychological well-being	34	17	0.890	0.937	0.477
Deviant behavior	14	13	0.863	0.894	0.398

<Table 2> Results of Correlation analysis(n=151)

	1	2	3	4	5	6	7	8
1. Smartphone addiction	(.615)							
2. Anxiety	.470**	(.669)						
3. Depression	.399**	.661**	(.654)					
4. Impulsivity	.523**	.589**	.574**	(.485)				
5. Aggression	.420**	.646**	.637**	.660**	(.648)			
6. Thought suppression	.260**	.498**	.447**	.412**	.550**	(.478)		
7. Psychological well-being	-.382**	-.267**	-.473**	-.344**	-.301**	-.189*	(.477)	
8. Deviant behavior	.408**	.378**	.401**	.526**	.502**	.463**	-.273**	(.398)
Mean	2.24	2.36	1.85	2.22	2.05	2.98	3.38	2.57
Standard Deviation	0.55	0.64	0.59	0.60	0.69	0.88	0.55	0.73

Note: * p<.05, ** p<.01, AVE marked in ().

The directional nature and possible causal relationship between variables were identified through confirmatory factor analysis and the results from correlation analysis which was carried out to identify the validity of variables whose validity was not identified were presented in <Table 2>.

4. Results

The demographic variables were controlled such as gender and age for the verification of the direct effect and the regression analysis was performed. According to its result, Smartphone addiction had statistically significantly positive influence upon anxiety($\beta=.476$, $p<.01$), depression($\beta=.367$, $p<.01$), impulsivity($\beta=.494$, $p<.01$), and aggression($\beta=.424$, $p<.01$), respectively. Therefore, hypothesis 1, 2, 3 and hypothesis 4 was adopted.

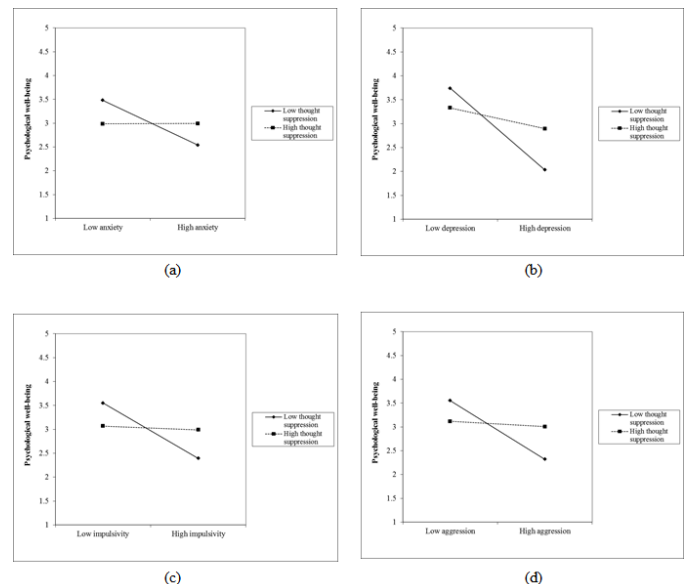
Anxiety($\beta=-.230$, $p<.01$), depression($\beta=-.438$, $p<.01$), impulsivity($\beta=-.321$, $p<.01$), and aggression($\beta=-.270$, $p<.01$) had statistically significantly negative influence upon psychological well-being, respectively. Therefore, hypothesis 5, 6, 7 and hypothesis 8 was adopted, too. Multiple regression analysis was done with control of same demographic variables to verify which factor had more significantly influence upon psychological well-being, depression($\beta=-.463$, $p<.01$) had only significantly negative influence upon psychological well-being.

And, anxiety($\beta=.383$, $p<.01$), depression($\beta=.408$, $p<.01$), impulsivity($\beta=.543$, $p<.01$), and aggression($\beta=.503$, $p<.01$) had statistically significantly negative influence upon deviant behavior, respectively. Therefore, hypothesis 9, 10, 11 and hypothesis 12 was adopted, too. Multiple regression analysis was done with control of same demographic variables to verify which factor had more significantly influence upon deviant behavior, in order to impulsivity($\beta=.346$, $p<.01$), and depression($\beta=.250$, $p<.01$) had only significantly positive influence upon deviant behavior.

In order to verify the moderating effects of thought suppression, an interaction term with antecedents of each path was constructed for multiple regression analysis. As the result, it was found that thought suppression had a statistically significant pos-

itive moderating effect on the relationship between anxiety($\beta=.236$, $p<.01$), depression($\beta=.317$, $p<.01$), impulsivity($\beta=.270$, $p<.01$), aggression($\beta=.279$, $p<.01$) and psychological well-being, respectively. Therefore, sub-hypothesis of hypothesis 13 were all adopted.

However, it was found that thought suppression had a statistically significant positive moderating effect on the relationship between anxiety($\beta=-.053$, $p=.958$), depression($\beta=-.035$, $p=.640$), impulsivity($\beta=-.006$, $p=.931$), aggression($\beta=-.031$, $p=.673$) and deviant behavior, respectively. Therefore, sub-hypothesis of hypothesis 13 were all rejected.



<Figure 2> Moderation effect of Thought suppression

5. Conclusion

This study investigated effects of smart phone addiction upon

psychological wellbeing and delinquent behavior, and verified double-sidedness of the thought suppression. In this study, intermittent addiction was thought to be made by thought suppression. In other words, even after being free from addiction, double-sidedness of thought suppression made addiction again.

The implications were: First, smart phone addiction increased uneasiness, depression, impulse and attack. The findings supported precedent studies. Various kinds of researches were needed to investigate personal factors and environmental factors that had influence upon smart phone addiction.

Second, uneasiness, depression, impulse and attack, etc at smart phone addiction had negative influence upon psychological wellbeing to develop delinquent behavior. Uneasiness, depression, impulse and attack and other negative factors worsened self-acceptance, personal growth, goal of the life, affirmative relations with others, environmental control, autonomy and individuals' life quality to produce delinquent behavior. Studies on lessening of smart phone addiction and living healthy life were needed.

Third, findings of thought suppression control verified double sidedness of thought suppression. The thought suppression could control significantly uneasiness, depression, impulse, attack and psychological wellbeing not to control delinquent behavior. (Fig 2). The thought suppression may be damaged by cognitive load to keep composure by intentional efforts, and can positively increase psychological wellbeing at low level of uneasiness, depression, impulse and attack. However, delinquent behavior requires less effort not to suppress at psychological control and not to be influenced by cognitive load, and to function automatically and not to lessen delinquent behavior by thought suppression. The findings gave another point of view on current addiction treatment. Addiction treatment much relied upon drug so that psychological treatment shall be strengthened to control intermittent addiction. Psychological rehabilitation and treatment shall be developed to lessen rebound effect after thought suppression and to verify effects of clinical application and to prevent intermittent addiction.

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