

A study on the Differences in Mental Health, Physical Symptoms and SNS Addiction Tendency of Male and Female College Students

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Abstract

This study was to identify differences in mental health, physical symptoms, and SNS addiction tendency according to the gender of college students and factors related to SNS addiction tendency. The research tools used were the Korean version of the General Mental Health Scale, physical symptom, and SNS addiction tendency presented by Maekyungeconomy. To measure the difference of SNS-related characteristics, mental health, physical symptom, and SNS addiction tendency according to gender, t-test was performed using the SPSS 22.0 program. The factors related to the tendency of SNS addiction were analyzed using logistic regression analysis. Of the total 297 college students, 44.4% were male students and 55.6% were female students. There was a significant difference in SNS-related characteristics between male and female students in smartphone usage time ($t=-2.73$, $p=.007$), average daily SNS usage time ($t=-4.24$, $p<.001$), and the number of daily SNS postings ($t=-2.08$, $p=.038$). The mental health of male and female students differed significantly in anxiety ($t=-2.16$, $p=.031$), depression ($t=-3.98$, $p<.001$), social maladjustment ($t=-3.90$, $p<.001$) and frequency of going out ($t=2.10$, $p=.036$) and the mental health level of female students was lower than that of male students ($t=-3.49$, $p=.001$). Physical symptoms between male and female students showed significant differences in all areas and female students experienced more physical symptoms than male students. ($t=-4.27$, $p<.001$) Female students were significantly more likely to be addicted to SNS than male students ($t=-6.35$, $p<.001$). The factors related to SNS addiction tendency were the number of posts uploaded per day ($OR=1.061$, $p=.007$), physical symptoms ($OR=1.045$, $p=.002$), and anxiety in mental health areas ($OR=1.296$, $p=.009$). It needs a special program focusing on female students to prevent SNS addiction tendency and strategies to reduce physical symptoms and anxiety among college students with high SNS addiction tendencies.

Keywords: SNS; Addiction; Mental health; Physical symptom; College students.

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Introduction

According to the Social Network Service (SNS) usage trend analysis in 2018, the SNS usage rate increased 2.4%p year-on-year to 48.2%, and 82.3% of them were in their 20s, the highest compared to other age groups. It was also reported that people in their 20s use SNS the most, with a daily average of an hour and 7 minutes compared to other age groups.[Kim, 2019] SNS addiction tendency means a state in which an individual experiences prohibition and tolerance by excessive use of SNS, mental damage, and physical problems such as stress, depression, dependence, decreased concentration, and obsessive compulsion occur, resulting in disability in his or her daily life.[Baik, 2019] It is a time when college students become independent from their parents and move away from limited relationships between their families and peers and become more important in a wide variety of interpersonal and social activities.[Kim, 2018] College students can be familiar with SNS because they are seeking close personal relationships, information sharing, and social relationships.[Kim, 2018] Thus, SNS addiction of college students can not only cause interpersonal problems, but also interfere with individual adaptation and daily life, and further affect social life after graduation.[Meena *et al.*, 2015] Domestic research on SNS addiction trends began in 2011 and the subjects were also conducted in various subjects, including elementary, middle, high school, college students, and adults.[Baik, 2019] In the preceding study, the factors related to the trend of SNS addiction were reported as psychological factors [Baik, 2019; Meena *et al.*, 2015; Lee and Cho, 2012] such as anxiety, depression, loneliness, stress, self-respect and introspective self-love, social characteristic factors [Baik, 2019; Lee, 2016] such as social support, interpersonal relationships, adaptation, communication, attachment, and motives for using SNS.[Lee and Park, 2018] On the other hand, prior researches [Baik, 2019; Lee and Cho, 2012; Lee, 2016] on the relationship between mental health and SNS addiction tendency has limitations in identifying the overall mental health level of the subject by investigating certain psychological factors such as anxiety, depression, and stress. Physical health was mostly studied about smartphone media or smartphone addiction, and eye problems, wrist and finger pain, musculoskeletal symptoms such as neck and shoulder jams, and body symptoms such as headache and sleep disorder were reported to be related to smartphone addiction.[Won, 2017] The use of smartphones and SNS activities is basically done online and SNS activities are often done through smartphones, so smartphone addiction and SNS addiction tendencies are closely related.[Kim and Lee, 2018] However, SNS addiction tendency is a sub-category of smartphone addiction, which is different from smartphone addiction. Therefore, it is necessary to find out more about physical symptoms related to SNS addiction. The purpose of the study is to determine the mental health

level of male and female college students by using the Korean version of the general mental health measure, which is widely used to determine the health level of ordinary people and the likelihood of mental illness. Secondly, it is to investigate the musculoskeletal symptoms of male and female college students and the tendency of SNS addiction. Third, it is to find out the factors related to the tendency of SNS addiction among college students.

Materials and Methods

The subjects were 297 college students attending the S university of J city in Korea. The research tools used were the Korean version of the General Mental Health Scale (KGHQ-20) of Shin [2001], the physical symptom tool used by Won [2017], and the SNS addiction tendency tool presented by Maeil Business Newspaper[2012]. The Korean version of the General Mental Health Scale (KGHQ-20) is a four-point measure of 20 questions, including consisting of anxiety, depression, social non-adaptation, and frequency of going out. Higher scores mean lower levels of mental health, and the internal consistency reliability of the tool was shown to be Cronbach's $\alpha = .869$. The physical symptoms are a five-point scale of a total of 12 questions, consisting of 3 items each in four areas: headache, numbness in the hands, neck, and shoulder pain. the higher the score, the more problematic the physical symptoms. The internal consistency reliability was Cronbach's $\alpha = .928$. SNS addiction tendency is a five-point scale with a total of 10 questions. The higher the score, the higher the tendency to be addicted to SNS. It is classified into 4 groups as follows: Less than 25 points is normal, 26 points to 30 points is likely to be addictive, 31 points to 35 points is light, 36 points or more is addictive. The internal consistency reliability was Cronbach's $\alpha = .888$. The data analysis was performed using the SPSS 22.0 program. To measure the difference of SNS-related characteristics, mental health, physical symptom, and SNS addiction tendency according to the gender, t-test analysis was performed. The factors related to the tendency of SNS addiction were analyzed using dichotomous logistic regression analysis.

Results and Discussion

Of the total 297 college students, 132(44.4%) were male students, 165(55.6%) were female students. As shown in table 1, in terms of SNS-related characteristics, male and female students had significant differences in smartphone usage time ($t = -2.73$, $p = .007$), average daily SNS usage time ($t = -4.24$, $p < .001$), and the number of daily SNS postings ($t = -2.08$, $p = .038$). Study of university students [Jungbu Newspaper, 2016] showed that female students use smartphones significantly higher than male students and those female students are more interested in maintaining social networks than male students, making more use of SNS

functions on their smartphones. It consistently reports that the longer the smartphone is used, the higher the risk of smartphone addiction and that the higher the SNS usage time, the higher the possibility of SNS addiction. [Jungbu Newspaper, 2016; Lee, 2016] Therefore, it is necessary to educate female students about proper smartphone use and SNS use.

Table 1: SNS addiction tendency based on the SNS related characteristics by gender (N=297)

variables	Male (n=132)	Female (n=165)	t
	mean(\pm SD)	mean(\pm SD)	
Daily smartphone using the time (minute)	218.21(151.53)	269.67(168.10)	-2.73**
Daily SNS using the time (minute)	98.28(96.84)	153.40(126.82)	-4.24***
The number of daily SNS postings	2.28(5.62)	6.46(24.96)	-2.08*

* $p < .05$, ** $p < .01$, *** $p < .001$

As shown in table 2, the mental health of male and female college students differed significantly in anxiety ($t = -2.16$, $p = .031$), depression ($t = -3.98$, $p < .001$), social maladjustment ($t = -3.90$, $p < .001$) and frequency of going out ($t = 2.10$, $p = .036$) and the mental health levels were much lower in female students than in male students ($t = -3.49$, $p = .001$). This is similar to the result reported by Lee and Choi [2012], who used the same tools to measure the mental health of nursing students. However, total mental health levels appeared lower in the preceding study of nursing students compared to those of this study, so it is necessary to compare the differences in mental health levels related to the major in further studies.

Table 2: Mental health according to gender (N=297)

Variables	Male (n=132)	Female (n=165)	t
	mean(\pm SD)	mean(\pm SD)	
Total mental health	40.25(7.75)	43.23(6.93)	-3.49**
Anxiety	10.24(2.35)	10.80(2.12)	-2.16*
Depression	9.97(2.34)	11.05(2.28)	-3.98***
Social non-adaptation	17.91(3.62)	19.43(3.08)	-3.90***
Frequency of going out	2.12(.81)	1.93(0.67)	2.10*

* $p < .05$, ** $p < .01$, *** $p < .001$

As shown in table 3, physical symptoms by gender were significant differences in all areas,

such as headache ($t=-3.46$, $p=.001$), numbness of hands ($t=-4.49$, $p<.001$), neck ($t=-2.79$, $p=.006$) and shoulder pain ($t=-3.88$, $p<.001$), and female students experienced more physical symptoms than male students ($t=-4.27$, $p<.001$). In this study, female students had higher physical problems than male students. Compared to studies related to smart media or smartphone addiction as there are few studies on SNS addiction tendency and physical symptoms, prior studies also reported that excessive use of smart media can cause health problems such as impaired vision, sleep disorders and headaches, numbness, neck pain, and shoulder pain [Won, 2017] and that these physical symptoms are more appealing to women than men. [Lee, 2016]

Table 3: Physical symptoms according to gender (N=297)

Variables	Male (n=132)	Female (n=165)	t
	mean(\pm SD)	mean(\pm SD)	
Total physical symptoms	28.28(9.67)	32.96(9.12)	-4.27***
Headache	6.68(2.59)	7.70(2.44)	-3.46**
Numbness in the hand	6.25(2.50)	7.58(2.56)	-4.49***
Neck pain	7.96(2.01)	8.89(2.86)	-2.79**
Shoulder pain	7.37(3.03)	8.75(3.05)	-3.88***

* $p<.05$, ** $p<.01$, *** $p<.001$

As shown in table 4, according to the SNS addiction tendency criteria, 5.7% (male: 1.0%, female: 4.7%) were in the addiction stage, 12.8% (male: 2.4%, female: 10.4%) were in the mild addiction stage, and 21.9% (male: 8.4%, female: 13.5%) were likely to be addicted to SNS in the near future. Also, female students were significantly more likely to be addicted to SNS than male students ($t=-6.35$, $p<.001$). 18.5% of the students were found to be above the light level of addiction to SNS in this study. This was lower than the report by Lee Sang-ho's study [2013] that 20.6 % of adults were addicted to SNS above the mild level. This result is due to different tools that measure SNS addiction and differences in the subjects. It is necessary to develop a standardized tool that measures the tendency of SNS addiction. The study found that female students are much better addicted to SNS than male students. It is consistent with the results reported by most prior studies [Kim and Lee, 2018; Lee, 2016] that women tend to be more prone to SNS addiction than men. It is reported that women use SNS or messenger conversations more often than men [Bianchi and Phillips, 2005] because of their relationship-oriented characteristics [Lee *et al.*, 2014], are more likely to be addicted to SNS. Therefore, it is

required to establish in-depth exploratory research and specialized strategies to prevent female students from becoming addicted to SNS.

Table 4: Classification of SNS addiction tendency according to the gender (N=297)

Score	Group	Total (n=297)	Male (n=132)	Female (n=165)	t
		n(%)	n(%)/ mean(\pm SD)	n(%)/ mean(\pm SD)	
≤ 25	Normal group	177(59.6)	97(32.7)	80(26.9)	
26 - 30	Potential risk group	65(21.9)	25(8.4)	40(13.5)	
31 - 35	mild addiction group	38(12.8)	7(2.4)	31(10.4)	
≥ 36	Addiction group	17(5.7)	3(1.0)	14(4.7)	
			21.20(7.08)	26.38(6.89)	-6.35***

*** $p < .001$

As shown in table 5, the factors related to SNS addiction tendency were the number of posts uploaded per day (OR=1.061, $p=.007$), physical symptoms (OR=1.045, $p=.002$) and anxiety in mental health areas (OR=1.296, $p=.009$). As the number of daily SNS postings increases in this study, SNS addiction tendency is higher. This result is in line with the report by TurelandSerenko[2012] that frequent posting of posts and photos and checking comments to show his positive image to a friend on SNS can cause SNS addiction. In this study, the more physical symptoms, the higher the tendency to be addicted to SNS. It is consistent with previous researches on college students that the higher the score of smartphone addiction, the more physical symptoms [Dan *et al.*, 2015], and students with health problems caused by using SNS tend to be highly addicted to SNS. [Lee, 2016] Anxiety is presented as an important factor related to SNS addiction tendency in prior studies of university students [Kim and Lee, 2018; Lee and Cho, 2012; Pfeil *et al.*, 2008], which is consistent with this study. The use of SNS has the effect of dispersing negative thoughts or emotions and relieving feelings such as loneliness, sadness, or anxiety [Hormes *et al.*, 2014], but it was reported that excessive use of SNS increases anxiety, depression, and stress. [Meena *et al.*, 2015] Therefore, it is necessary to provide guidance on the proper use of SNS by college students and to come up with programs to alleviate their anxiety.

Table 5: The factors related to the tendency of SNS addiction (N=297)

Variables	B	S.E	Wald	df	p	Exp(B)	95% CI	
							Low	High

The number of daily SNS postings	.060	.022	7.256	1	.007	1.061	1.016	1.108
Physical symptoms	.044	.016	7.211	1	.002	1.045	1.012	1.078
Anxiety	.259	.099	6.899	1	.009	1.296	1.068	1.572

CI: Confidence Interval

* $p < .05$, ** $p < .01$, *** $p < .001$

Conclusion

Female students were more vulnerable than male students in all areas, including physical symptoms, mental health, and social media addiction. In terms of SNS-related characteristics, female students had more average daily smartphone usage time, average daily SNS use time, and uploads of SNS posts than male students. The higher the number of SNS postings, the higher the anxiety, and the more problems with physical symptoms, the higher the tendency to SNS addiction. Therefore, specialized programs targeting female students who are vulnerable to SNS addiction tendency are required to prevent and manage SNS addiction tendency. Also, education is needed to determine and utilize the accuracy and usefulness of the information in the use of SNS by college students, and strategies are required to reduce physical symptoms and anxiety of college students with a high tendency to be addicted to SNS.

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