

The Mediation Effect of College Freshmen's Communication Ability between SNS Addiction Tendency and College Life Adaptation

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신입생의 SNS 중독성과 대학생활적응의 관계에서 의사소통능력의 매개효과

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Abstract The purpose of the study was to examine whether the relationship between SNS addiction tendency and adaptation to college life is mediated by communication ability. A total of 225 college freshmen participated in the study and completed the survey including adaption to college life, SNS addition tendency, and communication ability. As a result of the study, SNS addiction showed a negative correlation with communication skills and adaptation to college life, but communication skills were positively associated with adaptation to college life. In addition, there was the mediation effect only for females by performing Bayesian independent samples t-test to compare each variable by gender. Hence, a mediation analysis was conducted for female students using SNS addiction as an independent variable, communication ability as a mediator, and adaptation to college life as a dependent variable. So, the communication ability's goal-setting influences the relationship between control failure/daily life difficulties and the various factors of adapting to college life. In addition, the message switching of communication ability serves as a mediating factor in the correlation between control failure/daily life disorders and personal mentality. Lastly, virtual world orientation and withdrawal of SNS addiction directly influence interpersonal relationship of adaption to college life. Therefore, it is necessary to develop SNS addition prevention program for college students.

요약 본 연구는 의사소통능력이 SNS 중독 경향과 대학생활적응과의 관계를 매개하는지를 살펴보는 데 목적이 있다. 총 225명의 신입생이 연구에 참여하였고 대학생활적응, SNS 중독성, 그리고 의사소통능력에 관한 온라인 설문 작성을 완료하였다. 본 연구의 결과로, 신입생의 SNS 중독성은 의사소통능력과 대학생활적응에 부정적 영향을 미쳤고, 의사소통능력은 대학생활적응에 긍정적 영향을 미치는 것으로 나타났다. 또한, 각 요인의 성별 차이를 비교하기 위해 베이지안 독립표본 t검정을 수행하여, 여학생에서만 매개효과가 있는 것을 발견하였다. 따라서 SNS 중독성을 독립변수로, 의사소통능력을 매개변수로, 대학생활적응을 종속변수로 하여 여학생의 매개분석을 실시하였다. 그 결과, 의사소통능력의 목표설정요인이 SNS 중독성 조절실패 및 일상생활장애 요인과 대학생활적응의 각각의 요인들을 매개하고 의사소통능력의 메시지전환 요인이 SNS 중독성의 조절실패 및 일상생활장애 요인과 개인심리 요인을 매개하는 것으로 나타났다. 마지막으로 SNS 중독성의 가상세계지향성 및 금단요인이 대학생활적응의 대인 관계요인에 직접적으로 영향을 주는 것으로 나타났다. 따라서 SNS 중독성을 예방할 수 있는 프로그램을 개발할 필요가 있다.

Keywords : College Life Adaptation, Communication Ability, SNS Addiction Tendency, College Freshmen, Female Students

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1. Introduction

Human relationships hold significant meaning throughout all stages of life, but the university student phase marks the initiation into the early stages of adulthood where individuals experience a broad spectrum of relationships. Students entering university, having spent their adolescence primarily focused on entrance exams and forming relatively limited interpersonal connections, now encounter complex and deep relationships previously unexplored. Within these relationships, university students gradually form a mature self-concept and cultivate healthy interpersonal relationships based on their identity[1].

University students' interpersonal relationships vary in satisfaction based on the extent to which personal expectations are fulfilled within relationships with parents, friends, teachers, and others in their surroundings[1]. Moreover, communication plays a vital role in this satisfaction and significantly influences adaptation to college life. Specifically, communication ability impacts not only academic adaptation and achievement but also satisfaction with interpersonal relationships among university freshmen.

According to the "2022 Internet Usage Survey" released by the Ministry of Science and ICT, the utilization rate of social media has consistently increased, reaching 69.7% in 2022, an 0.8%p increase from the previous year[2]. The MZ generation, with 83.5% using social media, particularly heavy users spending more than 2 hours a day, comprises the majority of university students[3]. Likewise, as college students' SNS addiction tendency is getting high and has a negative impact on their communication ability. These days, SNS platforms have spread through various applications and has become a basic means of establishing relationships. In particular, SNS played an effective role as a non-face-to-face communication method and later became the main method of self-expression

and communication for the MZ generation. As students who are familiar with such SNS enter universities where they are given more freedom and autonomy, SNS seems to have become a fundamental tool for social connectivity. College students consider SNS as their primary means of communication and their preferred method.

Efficient adaptation to college life holds importance for freshmen, as it directly correlates with academic success and career readiness. Therefore, examining the relationship between freshmen's SNS addiction tendency and communication abilities in adapting to college life will help design support programs to enhance college students' college life.

This study was conducted in September, but since the subjects of the study were first-year students, we consider them to be still freshmen and define them as college freshmen.

1.1 Communication Ability

Communication encompasses all means through which individuals influence and understand each other through mutual dialogue[1]. Social media and communication through SNS are likely among the most frequently used methods of communication for university students, especially those accustomed to online classes during the COVID-19 pandemic. Apart from recording personal daily activities, these students use SNS for information exchange, knowledge sharing, event sharing, and socializing.

1.2 SNS Addiction Tendency

SNS addiction tendency refers to the development of withdrawal symptoms and tolerance due to excessive SNS use, leading to mental fatigue, physical health issues, stress, depression, dependency, and impaired concentration[4]. The reasons for using SNS include socializing and companionship, examining content posted by others, and sharing personal interests[2]. Excessive use of SNS affects

various aspects of university students' lives, and also their study indicates that the addiction level is higher among female students compared to males students[5,6].

1.3 Need for the Study

University freshmen face the challenge of achieving functional and emotional independence from parents, leading to high psychological stress related to communication issues. This period is crucial for the development of self-concept and identity during the psycho-social developmental stage of emerging adulthood[7]. The primary communication tool for university freshmen can be identified as SNS, used for overall interpersonal relationships maintenance and adaptation to college life. However, excessive use of SNS puts the risk of addiction and can have negative effects on the self-control of college students. Furthermore, it is essential to examine how the usage rates of SNS based on gender may influence the level of adaptation to university life. Research targeting university freshmen has shown variations in levels of self-control, adaptation, and satisfaction based on gender, with previous studies indicating that female students, in particular, exhibit higher levels of smartphone addiction compared to their male counterparts[8]. Investigating these findings in the context of a study focused on university freshmen would provide valuable insights.

1.4 Objectives of the Study

This study aims to examine the mediating role of communication ability in the relationship between university freshmen's SNS addiction tendency and their adaptation to college life. The significance lies in understanding the potential impact of communication ability on the adaptation and SNS addiction of university freshmen, considering the high psychological stress they experience in communication issues. The results will show gender-specific differences,

providing valuable insights into college life adaptation levels among freshmen.

Therefore, the study results will contribute to recognizing the reality of SNS addiction among university students, identifying its causes, and enhancing their adaptation levels. Ultimately, the study can serve as a foundation for designing various programs aimed at strengthening balanced and healthy communication skills, with the potential for developing effective programs based on gender differences.

2. Method

2.1 Participants

A total of 225 freshman of D university located in Cheonan of Chungnam province participated in this study. There were 85 male(37.8%) and 140 female(62.2%) students and their age ranged from 18 to 23($M=19.6$, $SD=.98$). 55 students(24.4%) major in humanities and foreign languages, 62 students(27.6%) in social and health sciences, 36 students(16%) in sciences and engineering, and 72 students(32%) in arts and sports. The participants were asked to complete the survey only if they agreed to participate in this study and survey was conducted online from September 4th, 2023 to September 6th, 2023.

2.2 Measurements

2.2.1 Adaptation to college life

To measure adaption to college life, we used the college adaptation scale developed and validated by Jeong and Park[9]. The original scale consists a total of 19 items and 5-point Likert scale ranged from 1(not at all) to 5(very much) was used for each response. The original scale is composed of 5 sub-factors: interpersonal relationships (4 items), academic activities(4 items), personal mentality(4 items), social experience(3 items), and career preparation(4 items). We, however,

excluded career preparation since only freshmen participated in this study. To establish the internal reliability of the 15 item scale Cronbach's α was used and the reliability coefficient was .87(interpersonal relationship: $\alpha=.8$, academic activities: $\alpha=.79$, personal mentality: $\alpha=.81$, social experience: $\alpha=.79$).

2.2.2 Communication ability

To measure communication ability, we used the scale that Lee[10] revised the scale developed by Lee et al.[11] for college students. The original scale of Lee et al.[11] is composed of a total of 5 factors: communication interpretation ability, role performance ability, self-presentation ability, goal setting ability, and message switching ability. The scale used in this study consisted of self-presentation ability, goal-setting ability, and message switching ability and each sub-factor had 7 items. 5-point Likert scale ranged from 1(not at all) to 5(very much) was used for each response and a higher overall score indicated a higher communication ability. To establish the internal reliability of the 21 item scale Cronbach's α was used and the reliability coefficient was .9(self-presentation: $\alpha=.72$, goal-setting: $\alpha=.82$, message switching: $\alpha=.84$).

2.2.3 SNS addiction tendency

To measure SNS addiction tendency, we used the scale developed and validated by Jung and Kim[12]. The scale used in this study consisted of 4 sub-factors: control failure and daily life difficulties, immersion and tolerance, avoidance of negative emotion, and virtual world orientation and withdrawal. 4-point Likert scale ranged from 1(not at all) to 4(very much) was used for each response and a higher overall score indicated a higher tendency toward SNS addiction. To establish the internal reliability of the 24 item scale Cronbach's α was used and the reliability coefficient was .93(control failure and daily life difficulties: $\alpha=.85$, immersion and tolerance:

$\alpha=.74$, avoidance of negative emotions: $\alpha=.86$, virtual world orientation and withdrawal: $\alpha=.74$).

2.3 The study model and statistics

The research model of this study is presented in Fig. 1. The research question of the study was to investigate whether the relationship between SNS addiction tendency and adaptation to college life is mediated by communication ability. We used Jamovi 2.3.21 for reliability test, Bayesian independent samples t-test, descriptive and bivariate correlation analyses. We also performed General Linear Model (GLM) mediation model by using Medmode module of Jamovi 2.3.21. To test the mediation effect with sub-factors of each variable, we performed Mediation Analysis using JASP 0.18.1.

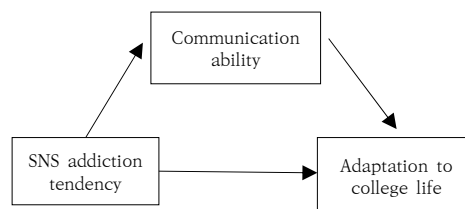


Fig. 1. The study model

3. Results

3.1 Bivariate and Descriptive Analyses

Bivariate correlation and descriptive analyses of the research variables are shown in Table 1. As a results of skewness and kurtosis to verify the normality of all variables, it can be seen that normality is assumed (skewness<2, kurtosis<7). In general, SNS addiction tendency was negatively correlated with communication ability and adaptation to college life, while communication ability was positively correlated with adaptation to college life. Since one sub-factor of adaptation to college life, social experience was not significantly correlated with all sub-factors of SNS addiction tendency, we performed mediation

Table 1. Pearson's correlation coefficients on research variables and descriptive analysis

	UA1	UA2	UA3	UA4	COM1	COM2	COM3	SNS1	SNS2	SNS3	SNS4
UA1	-										
UA2	.48***										
UA3	.53***	.58***									
UA4	.41***	.3***	.29***								
COM1	.37***	.34***	.56***	.2**							
COM2	.53***	.53***	.69***	.38***	.69***						
COM3	.39***	.49***	.58***	.28***	.55***	.64***					
SNS1	-.19**	-.25***	-.29***	-.05	-.22***	-.25***	-.27***				
SNS2	-.08	-.17*	-.21**	-.03	-.12	-.12	-.18**	.81***			
SNS3	-.12	-.16*	-.23***	.04	-.17*	-.16*	-.17**	.7***	.72***		
SNS4	-.02	-.09	-.11	.06	-.11	-.04	-.16*	.61***	.68***	.67***	-
M	3.34	3.88	4.0	2.68	3.85	3.56	3.99	1.79	2.23	1.89	1.87
SD	.86	.69	.7	1.02	.58	.67	.6	.59	.52	.69	.54
Skewness	-.03	-.5	-.36	.21	-.02	-.1	-.34	.34	.13	.45	.21
Kurtosis	-.57	-.2	-.35	-.57	-.12	-.14	-.1	-.51	-.31	-.61	-.75

p<.05, ** p<.01, *** p<.001
 UA: Adaptation to college life(1: interpersonal relationship, 2: academic activities, 3: personal mentality, 4: social experience
 COM: Communication ability(1: self-presentation ability, 2: goal-setting ability, 3: message switching ability)
 SNS: SNS addiction tendency(1: control failure and daily life difficulties, 2: immersion and tolerance, 3: avoidance of negative emotions, 4: virtual world orientation and withdrawal)

analysis excluding ‘social experience’ as a dependent variable.

3.2 Testing a mediation effect

First, we performed Bayesian independent samples t-test to compare each variable by gender. As shown in Table 2, BF₁₀ value for only one sub-factor of adaptation to college life, interpersonal relationship, was 1.33, in which the likelihood of

supporting the alternative hypothesis over the null hypothesis was 1.33 times higher. In addition, all sub-factors of SNS addiction tendency showed a high probability to support the alternative hypothesis, with BF₁₀ values of 27.17, 186.6, 1.96, and 3.04, respectively. Therefore, there was a gender difference for those factors, especially SNS addiction tendency. Due to this finding, we performed mediation effect of communication ability in the relationship between SNS addiction tendency and adaptation to college life by separating gender.

The results of GLM mediation model showed that both direct(Z=.254, p=.8) and indirect(Z=1.101, p=.271) effect was not significant for males. However, indirect effect was significant(Z=-3.86, p<.001), but direct effect was not significant (Z=-1.34, p=.18) for females. Since we found the mediation effect only for females, we analyzed the mediation effect with sub-factors of each variable for females students. We performed the mediation analysis of female students(N=140), using SNS addiction tendency as an independent variable, communication ability as a mediating

Table 2. Bayesian independent samples t-test

Variable	Sub-factor	BF ₁₀	error%
Adaptation to college life	Interpersonal relationship	1.33	.01
	Academic activities	.17	.07
	Personal mentality	.31	.04
	Social experience	.17	.07
Communication ability	Self-presentation	.15	.07
	Goal-setting	.25	.05
	Message switching	.17	.07
SNS addiction tendency	Control failure/daily life difficulties	27.17	.001
	Immersion/tolerance	186.6	1.33e-8
	Avoidance of negative emotions	1.96	.01
	Virtual world orientation/withdrawal	3.04	.007

variable, and adaption to college life as a dependent variable. As we mentioned earlier, we excluded 'social experience' of adaptation to college life because there was no correlation with SNS addiction tendency. The bold lines in Fig. 2 indicate the significant effect and Table 3 shows significant indirect and direct effects of the mediation analysis. We found that goal-setting of communication ability mainly mediated the relationship between control failure/daily life difficulties and each factor of adaptation to college life. Message switching of communication ability also mediated the relationship between control failure/daily life disorders and personal mentality. Finally, virtual world orientation and withdrawal had a direct effect on interpersonal relationship.

4. Discussion

The purpose of the study was to examine how communication ability mediate between SNS addiction tendency and adaption to college life in college freshmen. A total of participants was 225 freshmen and completed the survey if they agreed to participate in this study. The results we found in this study were as follows. First, SNS addiction showed a negative correlation with communication skills and adaptation to college life. In contrast, communication skills were positively associated with adaptation to college life.

Second, SNS addiction tendency indicated gender difference for those factors. There was mediation effect only for female students by performing mediation effect by separating gender. Third, the communication ability's goal-setting influences the relationship between control failure/daily life difficulties and the various facets of adapting to college life. In addition, the message switching of communication ability serves as a mediating factor in the correlation between control failure /daily life disorders and personal mentality. Virtual world orientation and withdrawal directly impact interpersonal relationship.

In the study some pedagogical implications are drawn from findings. First, the difference of gender should be considered solving the psychological and social problems related to SNS addiction. Jeon's[13] study found that female students' SNS addiction tendency was higher than male students. Kim et al.[14] also highlighted that there is a greater tendency toward social media addiction among adolescent women in examining gender-based differences in social media addiction tendencies. It is consistent with the results of this study. Based on the research results, it is necessary to develop SNS addiction prevention program for college students, especially female students.

Second, among SNS, YouTube addition showed

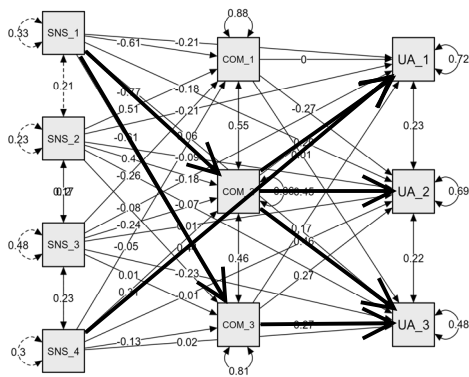


Fig. 2. The path diagram of mediation analysis results

Table 3. The results of mediating effect

Path	β	SE	Z	95% CI	
				Lower	Upper
SNS1→COM2→ UA1	-0.22	.1	-2.15*	-0.43	-.02
SNS1→COM2→ UA2	-0.34	.13	-2.68**	-.6	.09
SNS1→COM2→ UA3	-0.36	.12	-2.88**	-.6	-.11
SNS1→COM3→ UA3	-0.17	.08	-2.11*	-.32	-.01
SNS4 → UA1	.44	.19	2.34*	.07	.81

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

SNS: SNS addiction tendency (1:control failure and daily life difficulties, 4: virtual world orientation and withdrawal)

COM: Communication ability (2: goal-setting ability, 3: message switching ability)

UA: Adaptation to college life (1: interpersonal relationship, 2: academic activities, 3: personal mentality)

negative effect on social adjustment and also it can be the significant predictor for the students' college life adaptation[15]. In addition, the students who had higher scores for virtual life of smartphone addiction factors had lower interpersonal competence and students with higher smartphone addiction showed lower score of managing interpersonal conflict[16]. Therefore, educational institution needs to create an environment and provide institutional support that help students. Even students who have difficulty communicating in person can participate in online communities and interact with others. In class, instructors can use online tools to allow students to present their opinions or the results of group discussion.

Third, smartphone addiction treatment programs should be provided to students suspected of being addicted in the future. Smartphone addiction tendency could cause both mental and health problems. The phenomenological qualitative study on the smartphone additive use showed that students can have loss of self-regulation, emotional challenge, and disruptions to daily functionality[17]. To help successful college adaptation counselling and health experts's roles need to strength.

We suggest ideas for further investigation due to some limitations of this study. The participants of this study focused on the freshmen of college, so it can not be generalized. Thus, considering the various factors(ages, majors, regions, etc), the studies should compared and analyzed. Especially, degree of SNS addiction tendency may show differently depending on SNS usage time. In the future, the question of SNS usage time need to add in a survey. Second, due to the lack of test score, we did not investigate the relationship among SNS addiction tendency, adaption to college life, communication ability and academic achievement levels. Thus, it should be further investigated the relationship among academic achievement and those factors. Third, the methodology of the study was survey, so

there is a limitation of controlling the personal characteristics and factors. Therefore, further study should include in-deep interviews and longitudinal research. In conclusion, this study implies that SNS addition tendency influences the college life adaption and communication ability and even for female students.

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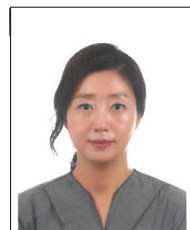
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