

# Influential Factors on Exposure to Pornographic Materials in Out-of-School Youths in Korea

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## ABSTRACT

This study was conducted to identify the predictors of exposure to pornographic materials among out-of-school youth (OSY) in order to provide foundational data for devising policies to improve their sexual health and prevent social harm caused by pornographic materials. This is a secondary data analysis of the 5th Panel Survey of School Dropouts in Korea. A total of 318 OSY were enrolled in the study, and the collected data were analyzed using descriptive statistics, t-test,  $\chi^2$ -test, and logistic regression using the SPSS/WIN 24.0 software. OSY who have been exposed to pornographic materials were at a lower economic status, used alcohol and cigarettes more often, had significantly poorer perceived health. Further, parental neglect, gaming addiction, and social network service (SNS) offending experience were significantly greater in this group. The predictors of exposure to pornographic materials were identified as the male sex (OR=9.75, 95% CI: 3.77, 25.18), history of SNS offending experience (OR=6.14, 95% CI: 1.02, 37.17), and poor subjective health status (OR=3.29, 95% CI: 1.58, 6.84). To reduce exposure to pornographic materials among OSY, strategies that encompass the use of wholesome online media and health promotion are needed, and sex-specific approaches should be taken.

**Keywords:** Pornographic material; Out-of-school; Youth; Problematic behavior; Health status

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## INTRODUCTION

In 2018 alone, 52,539 children and adolescents—a whopping 0.9% of the entire student population—dropped out of school in South Korea (Korean Educational Statistics Service, 2019). The cumulative out-of-school youth (OSY) population is estimated to be 670,000 (Baek et al., 2015). The school dropout rate is increasing every year (Korean Educational Statistics Service, 2019), so the OSY population is projected to continue to grow. Adolescence is an important period of life in which a variety of health risks may be in play. On the other hand, healthy lifestyle habits that will persist to adulthood can be established in this period through proper education and preventive interventions (Kleinert, 2007). However, OSY are subject to social prejudice, are given disadvantages outside the boundaries of school education, and suffer from a lack of growth and opportunities. Because they do not attend school, they are more vulnerable during their transition to adulthood compared to their in-school counterparts (Yoon et al., 2016). Ultimately, dropping out of school may hinder adolescents' growth and social independence at the individual level and lead to substantial socioeconomic burden due to problematic behaviors and physical and mental health problems at the national level (Cho et al., 2009).

As OSY do not attend school, they have more time on their hands compared to the general adolescent population and spend most of their time alone. A considerable number of adolescents use a smartphone or play internet games during their free time, and advances in internet technology and high penetration of computers and smartphones have made it easy to access to online pornographic materials. Pornographic materials are replete with distorted expressions of sex and thus raise concerns about instilling a distorted perception about sex, inducing copycat sexual crimes, and promoting a misunderstanding of sex based on the distorted behaviors shown in the materials (Peter *et al.*, 2006). As adolescents have high sexual curiosity but still have immature cognitive development, direct and indirect exposure to pornographic materials on the internet may lead to perpetration of sexual violence and deviant sexual behaviors (Lee *et al.*, 2017; Romito *et al.*, 2015), thus becoming a societal issue. OSY are relatively more exposed to harmful sexual contents compared to in-school counterparts (Romito *et al.*, 2015; Oh *et al.*, 2013), and so they require more attention.

Relationship with parents has an impact throughout one's life. It is an important factor in adolescent growth (Kim *et al.*, 2014) and is known to directly influence adolescents' deviation and delinquency (Allen *et al.*, 1990). In a study on the general adolescent population, adolescents with high parental attachment and appropriate parental control accessed pornographic websites significantly less (Park *et al.*, 2015), showing that parents' attitude has

a crucial impact on children's consumption of pornographic materials (Rostad *et al.*, 2019). Exposure to pornographic materials among adolescents is also associated with gender, peer relations, depression, impulsivity, and internet or gaming addiction (Rostad *et al.*, 2019). A Korean study on the general adolescent population reported that male adolescents, adolescents with serious depression and anxiety, and adolescents with poor peer relations show increased access to pornographic materials (Park *et al.*, 2015). Depression is reported to be associated with access or immersion in pornographic materials via online media, such as a smartphone, as shrinking social relationships in the real world caused by depression provoke individuals to pursue interpersonal relationships and social activities in a virtual space (Shon *et al.*, 2018). The use of social media is a new relational phenomenon evident among adolescents for maintaining social relationships. The media practice model, which describes the mechanism of media in adolescent growth, posits that behaviors demonstrated on social media factually reflects their actual behaviors and intentions (Brown, 2000). The use of social media expands one's social network and thus is significantly associated with self-esteem and psychological wellbeing (Valkenburg *et al.*, 2006), but it also raises concerns that users disclose their emotions and thoughts that they could not easily reveal in real life and that their immature judgment could provoke socially and sexually dangerous behaviors (Yager *et al.*, 2012).

A large number of past studies on access to pornographic materials among adolescents examined the impact of use of pornographic materials on the perpetration of sexual violence or problematic behaviors. Some studies identified the predictors of use of pornographic materials among adolescents, but these adolescents were mostly in-school adolescents, which limits their generalization to OSY. Not much has been reported regarding the predictors of use of pornographic materials among OSY, and for this reason, there is little evidence for developing appropriate interventions for this population. Therefore, this study aims to identify the predictors of exposure to pornographic materials using the Panel Survey of School Dropouts, which is conducted to assist in policymaking, so as to provide foundational data for developing sexual education for this group of adolescents.

## **METHODS**

### **Research design and participants**

This study is a secondary data analysis study utilized data from the 5<sup>th</sup> panel survey and a study on the support plan of OSY in Korea in 2017. Data from 318 OSY were included in the analysis. Variables included in the analysis were demographic sociological characteristics, parental relationship, experience of problematic behavior and sexually obscene material

contact.

### **Participants and data collection**

A total of 318 OSY surveyed in the 2017 5<sup>th</sup> Panel Survey of School Dropouts conducted by the National Youth Policy Institute (NYPI) were enrolled in this study. The panel survey was conducted from June to August 2017 through 1:1 face-to-face interviews using a structured questionnaire. The purpose of the panel survey is to present data for developing effective policies for OSY, and the survey responses are kept confidential and are available after de-personalization of the data to protect their personal information per the Statistics Act.

### **Measurements**

In this study, we included items about demographic features, relationships with parents, experience of problematic behaviors, and exposure to pornographic materials based on the NYPI data user's guide.

### **General characteristics**

Demographic characteristics included gender, age, family economic status, smoking, drinking, subjective health status, and depression. Family economic status was rated on a 7-point scale using the question "How do you perceive your family's economic status?" ("very poor" 1, "very rich" 7). Smoking and drinking were rated based on the use of cigarettes and alcohol, respectively, in the past year. Subjective health status was rated on a 4-point scale using the question "How would you rate your health?" ("very unhealthy" 1, "very healthy" 4). Depression was assessed using the following 10 items using a 4-point scale ("strongly disagree" 1, "strongly agree" 4): "I have no energy," "I consider myself miserable and am sad and depressed," "I worry a lot," "I want to kill myself," "I cry often," "I often blame myself when things go bad," "I am lonely," "I am not interested in anything," "My future is gloomy," "Everything is so difficult for me." A higher score indicates more severe depression. The reliability of the tool as measured with Cronbach's alpha was .91 in this study.

### **Parental relationship**

Parental relationship included parental attachment and parental neglect. Parental attachment was assessed using the following 8 items on a 4-point scale ("strongly disagree" 1, "strongly agree" 4): "My parents know me well and understand me," "My parents treat me nicely," "My parents listen to my concerns," "My parents help me when I'm in trouble or going through difficulties," "My parents console me when I'm disappointed or discouraged," "My parents give me money," "My parents buy me things I need for studying and other purposes," and "My parents provide me a life free of financial worries." A higher score indicates higher parental attachment. The reliability of the tool as measured with Cronbach's alpha was .89 in

this study. Parental neglect was assessed using the following 5 items on a 4-point scale (“strongly disagree” 1, “strongly agree” 4): “My parents (guardian) consider me as more important than other things (work or other things),” “My parents have no interest in me, so they don’t give me compliments or scold me,” “My parents are not interested in what I think,” “My parents don’t care even when I come home late,” and “My parents don’t take me to the hospital even when I’m sick.” The first item was reverse scored. A higher score indicates higher parental neglect. The reliability of the tool as measured with Cronbach’s alpha was .69 in this study.

### **Problematic behaviors**

Problematic behaviors included experiences of gaming addiction and being victim or perpetrator on social media. Gaming addiction was assessed using the following 8 items on a 4-point scale (“Never true” 1, “Always true” 4): “Time flies when I play games all night,” “I can’t do things that I need to do because I’m always playing games,” “I spend more time on games as time goes by,” “As time goes by, I need to play games longer to be satisfied,” “It’s hard to stop playing games even when I have to,” “I try to cut the time I spend on games but fail,” “I promise to myself to quit playing games but I go back to it,” and “I can’t focus on my studies because I think about games all the time.” A higher score indicates more severe gaming addiction. The reliability of the tool as measured with Cronbach’s alpha was .94 in this study. Experience of victimization on social media was assessed using the following 5 items on a 4-point scale (“Never true” 1, “Always true” 4): “My personal information (phone number, job, school, etc.) has leaked through social media,” “I’ve heard someone say bad things about me,” “I’ve seen somebody write things to make fun of me,” “I’ve been bullied from someone,” and “I’ve seen posts that say unconfirmed stories about me (rumors).” A higher score indicates more experience of victimization on social media. The reliability of the tool as measured with Cronbach’s alpha was .71 in this study. Experience of perpetration on social media was assessed using the following 5 items on a 4-point scale (“Never true” 1, “Always true” 4): “I’ve bullied someone through social media,” “I’ve posted someone’s personal information without permission,” “I have said bad things about someone,” “I’ve made fun of someone,” and “I’ve posted unconfirmed stories about other people (rumors).” A higher score indicates more experience of perpetration on social media. The reliability of the tool as measured with Cronbach’s alpha was .65 in this study.

### **Exposure to Pornographic Materials**

Exposure to pornographic materials was determined based on either yes or no to “viewing pornographic materials (videos, images, books)” in the past year.

## Data analysis

The data analysis was conducted using IBM SPSS ® version 24. Demographic characteristics, parental relationship, and problematic behaviors of OSY were analyzed using descriptive statistics. The differences in exposure to pornographic materials according to demographic characteristics, parental relationship, and problematic behaviors were analyzed using t-test and chi-square test. To identify the predictors of exposure to pornographic materials, logistic regression was performed, and odds ratio (OR) and 95% confidence interval (CI) were computed.

## RESULTS

### Differences in general characteristics depending on exposure to pornographic materials

As shown in Table 1, 151 were female (47.5%), and 167 were male (52.5%). The mean age was 20.64 years. The mean household economic status was 3.67 out of 7, and mean depression score was 2.07 out of 4. A total of 175 (55.0%) participants were smokers, and 258 (81.1%) were alcohol users. Two hundred and thirty-nine (75.2%) considered themselves to be healthy.

As shown in Table 1, exposure to pornographic materials significantly differed according to gender, household economic status, smoking, drinking, and subjective health status. Exposure to pornographic materials significantly differed between male (88.9%) and female (11.1%) ( $\chi^2=34.51$ ,  $p<.001$ ). The mean household economic status score was significantly lower in the exposure group (3.39) compared to the non-exposure group (3.73) ( $t=2.04$ ,  $p=.042$ ). There was a significant difference in the percentage of smokers in the exposure group (72.2% smokers vs 27.8% nonsmokers) ( $\chi^2=7.77$ ,  $p=.005$ ), as well as in the percentage of alcohol users in the exposure group (92.6% alcohol users vs 7.4% nonusers) ( $\chi^2=5.58$ ,  $p=.018$ ). For subjective health status, there was a significant difference in the percentage of participants with good subjective health status (79.5%) and poor subjective health status (20.5%) in the non-exposure group ( $\chi^2=16.03$ ,  $p<.001$ ).

**Table 1 : Differences in exposure to pornographic material according to general characteristics**

Characteristics	Categories	No Exposure (n=264)	Exposure (n=54)	$\chi^2$ or t	p
		n (%) or M±SD	n (%) or M±SD		
Gender	Female	145 (54.9)	6 (11.1)	34.51	<.001
	Male	119 (45.1)	48 (88.9)		
Age (year)		20.60 ± 1.20	20.78 ± 0.98	-0.98	.326

Economic status		3.73 ± 1.09	3.39 ± 1.26	2.04	.042
Smoking habit	Yes	136 (51.5)	39 (72.2)	7.77	.005
	No	128 (48.5)	15 (27.8)		
Drinking habit	Yes	208 (78.8)	50 (92.6)	5.58	.018
	No	56 (21.2)	4 ( 7.4)		
Subjective health status	Poor	54 (20.5)	25 (46.3)	16.03	<.001
	Good	210 (79.5)	29 (53.7)		
Depression		2.06 ± 0.56	2.14 ± 0.61	-0.98	.326

### Differences according to parent-child relationships and problem behaviors

As shown in Table 2, exposure to pornographic materials significantly differed according to parental neglect, gaming addiction, and experience of perpetration on social media. The mean parental neglect score was 2.07 in the exposure group and 1.89 in the non-exposure group, showing a significantly higher score in the exposure group ( $t=-2.48, p=.014$ ). The mean gaming addiction score was 1.52 in the exposure group, which was significantly higher than 1.26 in the non-exposure group ( $t=-3.27, p=.002$ ). The mean score for perpetration on social media was 1.13 in the exposure group, which was significantly higher than 1.05 in the non-exposure group ( $t=-2.03, p=.046$ ).

**Table 2 : Differences in exposure to pornographic material according to parent-child relationships and problem behaviors**

Variables	No exposure (n=264)	Exposure (n=54)	t	p
	M ± SD	M ± SD		
Parental attachment	2.84 ± 0.58	2.69 ± 0.72	1.64	.102
Parental neglect	1.89 ± 0.47	2.07 ± 0.56	-2.48	.014
Game addiction	1.26 ± 0.50	1.52 ± 0.55	-3.27	.002
SNS victimized experience	1.13 ± 0.26	1.20 ± 0.41	-1.12	.266
SNS offending experience	1.05 ± 0.14	1.13 ± 0.29	-2.03	.046

### Influencing factors on exposure to pornographic materials

To identify the predictors of exposure to pornographic materials, logistic regression was performed with the variables that were found to be statistically significant in the univariate analysis. The overall goodness of fit of the regression model was examined using the Hosmer-Lemeshow test, and the model had a good fit ( $\chi^2=5.42, p=.712$ ). As shown in Table 3, gender, subjective health status, and perpetration on social media were identified as the

statistically significant predictors of exposure to pornographic materials. The OR for exposure to pornographic materials in males was 9.75 against females (95% CI=3.77-25.18,  $p<.001$ ). The OR for exposure to pornographic materials in those with poor subjective health status was 3.29 against those with good subjective health status (95% CI=1.58-6.84,  $p=.001$ ). The OR for exposure to pornographic materials with more experience of perpetration on social media was 6.14 (95% CI= 1.02-37.17,  $p=.048$ ). In other words, exposure to pornographic materials increased among the male sex, among those with poor subjective health status, and among those with more experience of perpetration on social media. These three factors explained for 32.6% of the variance of exposure to pornographic materials (Nagelkerke  $R^2=.326$ ).

**Table 3 : Factors influencing exposure to pornographic material**

Variables	Categories	Odds ratio (95% CI)
Gender	Female	1
	Male	9.75 (3.77 ~ 25.18)
Economic status		0.83 (0.62 ~ 1.12)
Smoking	Yes	1
	No	1.17 (0.53 ~ 2.61)
Drinking	Yes	1
	No	0.31 (0.10~ 1.02)
Subjective health status	Poor	3.29 (1.58 ~ 6.84)
	Good	1
Parental neglect		1.43 (0.73 ~ 2.82)
Game addiction		1.32 (0.75 ~ 2.33)
SNS offending experience		6.14 (1.02 ~ 37.17)

## DISCUSSION

This study aimed to identify the predictors of exposure to pornographic materials among OSY by using the data from the 2017 5<sup>th</sup> panel survey and a study on the support plan of OSY in Korea. The results showed that exposure to pornographic materials increased with the male sex, poor subjective health status, and experience of perpetration on social media. This study is significant in that it explored the factors that impact exposure to pornographic materials among OSY, who are in a different environment than the general in-school adolescent population.

In this study, exposure to pornographic materials was more common among male adolescents.



Although direct comparison is difficult, this is similar to the results of the review of adolescents and their exposure to pornographic materials from 1995 to 2015 by Landripet, Buško and Štulhofer(Landripet *et al.*,2019), where the rate of intentional and unintentional exposure to pornographic materials out of curiosity were markedly higher among male adolescents than among female counterparts. In the present study, we only examined whether the participants had or had not been exposed to pornographic materials, so we cannot determine whether the rate includes unintentional exposure. Further, only a small number of our participants had been exposed to pornographic materials, which is one of limitations of this study. Nevertheless, gender-specific approaches should be taken for OSY as well, considering that most adolescents who had been exposed to pornographic materials were males.

Parents' attachment or monitoring of their children is known to contribute to lowering their problematic behaviors (Rostad *et al.*,2019). In our study, parental attachment or parental neglect was not a significant predictor of exposure to pornographic materials. However, a greater percentage of OSY who have consumed pornographic materials in the past experienced parental neglect. A previous study reported that parents' positive parenting attitudes and appropriate parental supervision reduce use of online pornographic materials and that governmental policies as well as parents' direct supervision and limit-setting for internet usage and formation of a bonding relationship at home would reduce adolescents' exposure to pornographic materials (Park *et al.*,2015). Therefore, it would be necessary to implement parental education programs that educate parents of OSY who had been exposed to pornographic materials to pay attention to the media their children use, build a positive parent-child relationship, and supervise their children.

The experience of perpetration on social media was more common among OSY with exposure to pornographic materials, and it was confirmed to be a predictor of exposure to pornographic materials. While social media is a routine channel of communication among adolescents, there are concerns that it may lead to risky social and sexual behaviors because adolescents have immature cognitive development(Yager *et al.*, 2012). Social media is also utilized as a platform for violence, such as stalking, sexual violence, and sexual harassment (Rhu, 2013). Therefore, it is reasonable to assume that pornographic materials will be consumed in social media. Guidance and monitoring systems are needed to promote appropriate social media usage among OSY, and particularly, there is a need for measures that promote parents' interest in children at home.

OSY who have been exposed to pornographic materials perceived themselves to be in poor

health, and poor subjective health status was a significant predictor of exposure to pornographic materials. Previous studies observed that internet addiction tendency is associated with poor subjective health status and negatively correlated with health-promoting behaviors (Kim *et al.*, 2005), and that it is likely to have an adverse impact on mental health (Kohut *et al.*, 2018). The mean gaming addiction score in our participants was 1.26–1.56 out of 4, which was higher than that reported among middle school students (1.22) and high school students (1.19) (Choi *et al.*, 2012). Gaming addiction was significantly more serious among OSY who had been exposed to pornographic materials (1.56) compared to those who had not been exposed to pornographic materials. While gaming addiction itself was not a predictor of exposure to pornographic materials, these study results suggest that internet usage or gaming addiction might have contributed to the poor subjective health status among OSY. Overindulgence in gaming has been reported to increase the risk for physical, mental, and behavioral problems (Hong *et al.*, 2015) and problematic behaviors (Choi *et al.*, 2017). However, in the present study, we did not include duration of internet usage other than gaming addiction and did not survey participants' preferred internet websites, so subsequent studies should include these variables and examine their association with exposure to pornographic materials.

Although the rate of smoking and drinking was significantly higher among OSY who had been exposed to pornographic materials, they were not predictors of exposure to pornographic materials. However, this may be relevant to the fact that a substantial number of OSY smoke cigarettes and consume alcohol, so subsequent studies should compare OSY with the general adolescent population regarding the correlation.

Exposure to pornographic materials leads to sexual violence and thus has been emphasized as an important societal issue. In response, the importance of educational effort to reduce or prevent dependence on or obsession with online pornographic materials has been stressed (Lee, 2013). However, most studies were conducted on adults or the general adolescent population, and so their findings had limited generalizability to the special context of OSY. The present study is significant in that it provided baseline data for developing sexual education programs or policies for OSY by analyzing data collected only from OSY as part of a national policy.

However, only the 2017 Panel survey data was analyzed, so it is difficult to clearly determine a causality among the variables. Furthermore, we did not conduct analysis in relation to the reason for dropping out of school or the current activities of OSY since dropping out of school, and socially withdrawn OSY were not included in the survey due to restricted access,

which calls for caution when interpreting the results. In addition, while the percentage of adolescents who have been exposed to pornographic materials was markedly higher among the male sex, the number of adolescents who reported exposure to pornographic materials was small; for this reason, we could not conduct gender-specific analyses. We suggest subsequent studies to explore the gender-specific predictors of exposure to pornographic materials among OSY.

## **CONCLUSION**

This study was conducted to promote their sex-related health by identifying factors affecting exposure of pornographic materials to OSY and to provide evidence for the development of related policies. The perception of parenting attitude, SNS were found to affect pornographic materials experience. Thus, in order to correct behavior on the use of pornographic materials, parental education on parenting and convergence intervention on physical health care and proper use of online media will have to be included and gender based strategies will be required. However, since the data used in this study was investigated based on experience in exposure to pornography after the fourth survey, it is necessary to be careful in interpreting the data as it may differ from the actual exposure experience. However, it is necessary to pay attention to the interpretation because the number of teenagers exposed to pornography was not large enough to be analyzed according to gender, and since only the results of the panel survey in the fifth year were used, it is difficult to say that it reflected all the characteristics of OSY. In further research, it is suggested that the trend of exposure to obscene materials should be determined through longitudinal research that includes socially withdrawn OSY.

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