

ANALYSIS OF KOREAN ADOLESCENTS' SEXUAL EXPERIENCE AND SUBSTANCE USE

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We investigated the relationship between Korean adolescents' sexual experience—including, kissing, petting, and sexual intercourse—and their alcohol consumption and use of illegal drugs and tobacco. We analyzed data taken from the responses of 74,186 adolescents who had participated in the 2012 Korean Youth Health Behavior Online Survey. Variables regarding sexual experiences, experience of contraception, and substance and alcohol use were extracted and analyzed using descriptive statistics, chi-square tests, and logistic regression. The results showed that fewer than 30% of the respondents reported always using contraception, and almost half reported rarely using contraception. The number of boys and girls reporting having had sexual experiences increased from 2 to 4 times when they also reported use of illicit drugs, smoking tobacco, or alcohol consumption. The results highlight a need for school-based sex education supported by a national policy and the provision of basic resources to reduce the incidence of unprotected sex and to improve healthy behavior of adolescents.

Keywords: adolescent, alcohol consumption, sexual experience, tobacco smoking, illicit drug taking.

Korean adolescents have recently exhibited a tendency toward initiation of sexual experiences of kissing, petting, and sexual intercourse at a younger age, which causes particular concerns (Korean Statistical Information Service, 2014; Peltzer, 2010). A series of incidents involving unwanted pregnancy and childbirth among Korean adolescent girls has drawn increased attention to issues concerning the importance of adolescents' behavior in regard to sexual health (Lee & Kang,

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This work was supported by a grant from the National Research Foundation of Korea funded by the Korean government (MSIP: No. 2014R1A2A2A01005995). There is no conflict of interest in this report.

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2011). Results of a survey in which Korean adolescents' sexual experiences were examined have shown that the rate of having sexual experiences in adolescents has increased from 4.3% in 2012 to 5.2% in 2006 (Korean Statistical Information Service, 2014). Studies conducted in Asian countries close to Korea, such as China and Japan, have yielded results showing that the current rates of sexual experiences in adolescents are similar; from 1% to 2% of middle school students and from 3% to 5% of high school students in China (Yu, 2012) and from 2% to 5% of middle school students in Japan reported having sexual experiences (Japanese Sex Education Council, 2011). These rates were lower than those reported by American adolescents in the Youth Risk Behavior Survey, in which 46.8% of high school students had sexual experiences (Centers for Disease Control and Prevention, 2013; Kost & Henshaw, 2014).

The percentage of Korean adolescents using contraception has been reported to have risen from 39.1% in 2007 to 41.8% in 2009 in a study conducted by Lee and Kang (2011). In addition, the condom was the most frequently used method of contraception, and use of condoms increased from 35.7% to 39.6% during this period. The percentage of Korean adolescents using contraception was lower than that of American adolescents, which reportedly rose from 46.2% in 1991 to 60.2% in 2011 (Centers for Disease Control and Prevention, 2013). Coitus interruptus has been reported as Korean adolescents' second most frequently used method of contraception (Kim & Cho, 2012; Lee & Kang, 2011), and this could be related to the increase in pregnancy rates in this group.

The percentage of Korean boys having sexual experience has been reported to be higher than that of Korean girls (Kim & Cho, 2012), which may be related to boys' behavior with respect to viewing obscene material via the Internet or mobile phones, as boys' use of sexually deviant information and the resultant sexual stimulation are thought to be associated with teen pregnancy and induced abortion in their sexual partners (Finer & Zolna, 2011; Upchurch & Kusunoki, 2015). Male adolescents generally express permissive and active attitudes regarding their sexual behaviors (Frost, Lindberg, & Finer, 2012; Rahman et al., 2015). However, they have passive and inactive attitudes regarding their partners' unwanted pregnancy, which means that they do not provide any support for the girl (Haldre, Rahu, Rahu, & Karro, 2009; Kim, Kwon, & Chung, 2004).

Influenced by Korean culture that emphasizes the importance of virginity in women before marriage (Lee & Kang, 2011), Korean female adolescents hold conservative sexual attitudes and have a low level of sexual knowledge. This contrast between the attitudes and knowledge of adolescent boys and girls leads to conflict and confusion regarding sexual behavior (Rahman et al., 2015), and requires the identification of factors related to sexual experiences—such as alcohol consumption and use of tobacco and illicit drugs—and the development of interventions to protect adolescents from risky sexual behavior (De Graaf, Vanwesenbeeck, & Meijer, 2015).

Substance use is considered to be a factor strongly related to adolescents' sexual experiences (Claxton, DeLuca, & van Dulmen, 2015), especially to a decrease in the age of sexual intercourse initiation, and an increase in the frequency of sexual experiences (Kågesten & Blum, 2015). It has been found that when female adolescents consume alcohol or smoke tobacco they are exposed to a greater number of opportunities to engage in sexual experiences and risky sexual behavior relative to those who do not drink alcohol or smoke (Claxton et al., 2015). In addition, girls who consume alcohol or smoke tobacco are also apt to use illegal recreational drugs and girls who use illicit substances have reported having a higher number of sexual experiences than have those who do not use them (Rahman et al., 2015).

Our purpose with this study was to investigate Korean adolescents' sexual experiences, and to identify associations between the adolescents' sexual experiences and substance use according to gender, with the aim of increasing understanding regarding Korean adolescents' sexual behavior, and providing empirical results to inform the development of policies and services to improve healthy sexual behavior of Korean adolescents.

Method

Participants

Data used in this study were obtained from the responses of middle and high school students throughout South Korea to the 2012 Korean Youth Health Behavior Online Survey (Korean Ministry of Education, Science and Technology, Korean Ministry of Health and Welfare, and Korean Center for Disease Control and Prevention, 2013). Since 2005, the survey has been conducted annually by the Korea Ministry of Education, Science and Technology, Korea Ministry of Health and Welfare, and Korea Center for Disease Control and Prevention, in accordance with the National Health Promotion Law. In the first survey, the domains investigated were smoking, alcohol consumption, substance use, obesity, eating behavior, physical activities, safety, hygiene, and mental health. Health equity, asthma, Internet addiction, and violence domains were added in 2006, 2007, 2008, and 2012, respectively. The variables for the survey were developed by professionals from each specialist field, such as medical, psychological, nutritional, or social (Park, Jeong, Kim, Bae, & Kwun, 2009). The reliability and validity of the survey were demonstrated in 2009. The test-retest reliability analysis showed that 87.3% of the responses displayed a moderate-level kappa value, which was a similar finding to that of the American Youth Risk Behavior Survey (Brener, Collins, Kann, Warren, & Williams, 1995; Park et al., 2009). The validity of the survey was examined by comparing respondents' urine tests and actual measurements for weight and height (Park et al., 2009). The results indicated that validity was high ($k = .80$).

The sampling process for the 2012 survey involved three steps: (a) population stratification, (b) sample allocation, and (c) sampling. Sample classes were randomly selected from each grade of the 797 sample schools. All of the students in the sample classes took part in the survey. Students who were unable to complete the survey because of developmental disorders or long-term absences from school were excluded from the study. Homeroom teachers of the sample classes explained the purpose and process of the survey to the participants. At the end of the school day, the participants entered the computer room, chose a computer at random (at which they sat alone), accessed the online survey system, and completed the self-report survey, which took from approximately 45 to 50 minutes. The online self-report survey was completed by 7th- to 12th-grade students (age range 13 to 18 years). The response rate was 92.7%, and data were collected from 74,186 students (38,221 males and 35,965 females).

Research Variables

We employed a cross-sectional research design and 2012 Korea Youth Health Behavior Online Survey to investigate factors associated with adolescents' sexual behaviors and experiences using secondary data.

Sexual experiences. Sexual experiences included heterosexual and homosexual intercourse (for which the response options were *yes* or *no*), heterosexual and homosexual kissing and petting (for which the response options were *yes* or *no*).

Experiences of contraception. Experiences of contraception included use of contraception (for which the response options were *always*, *mostly*, *sometimes*, or *rarely*) and method of contraception (for which the response options were *condom*, *regular contraceptive pill*, *emergency contraceptive pill*, *loop intrauterine device*, *safe period in menstrual cycle*, or *coitus interruptus*).

Substance use. Substance use included illegal recreational drug use (for which the response options were *yes* or *no*), alcohol consumption (for which the response options were *yes* or *no*), and tobacco smoking (for which the response options were *yes* or *no*).

Ethical Considerations

The secondary data from the 2012 Korean Youth Health Behavior Online Study were used in the study with the permission of the Korea Center for Disease Control and Prevention. The Institutional Review Board for the Protection of Research Subjects at a university in Seoul, South Korea approved the study.

Data Analysis

The selected data were analyzed using the Statistical Package for Social Sciences version 21.0. Cell percentages were calculated to produce weighted percentages using survey sample weights. Numbers, means, standard deviations, and percentages were calculated for sexual experiences, educational factors,

family characteristics, and substance use. Chi-square tests were conducted to examine the relationships between sexual experience and gender, educational factors, family characteristics, and substance use. Factors that predicted sexual intercourse experiences were determined using logistic regression.

Results

The respondents' sexual experiences according to gender are shown in Table 1. The number of adolescents who had engaged in homosexual or heterosexual intercourse was 3,112, which comprised 4.3% of the respondents. The number of boys who had engaged in intercourse was significantly higher relative to the girls. The adolescents' experiences of contraception are shown in Table 2. Fewer than 30% of the respondents reported always using contraception, and almost half reported hardly ever using contraception.

Table 1. *Korean Adolescents' Sexual Experiences*

Variable	Classification	Total <i>n</i> (%) [*]	Boys <i>n</i> (%) [*]	Girls <i>n</i> (%) [*]	χ^2 (<i>p</i>)
Heterosexual intercourse	Yes	2,860 (4.0)	2,025 (5.5)	835 (2.3)	492.41
	No	71,326 (96.0)	36,196 (94.5)	35,130 (97.7)	(< .001)
Heterosexual kissing/petting	Yes	10,583 (14.4)	6,233 (16.6)	4,350 (11.9)	333.93
	No	63,603 (85.6)	31,988 (83.4)	31,616 (88.1)	(< .001)
Homosexual intercourse	Yes	575 (0.8)	406 (1.1)	169 (0.5)	65.32
	No	73,611 (99.2)	37,815 (98.9)	35,796 (99.5)	(< .001)
Homosexual kissing/petting	Yes	882 (1.3)	519 (1.4)	363 (1.1)	15.67
	No	73,304 (98.7)	37,702 (98.6)	35,602 (98.9)	(< .001)

Note. ^{*} Weighted. *N* = 74,186.

Table 2. *Korean Adolescents' Use of Contraception*

Variable	Classification	Total <i>n</i> (%) [*]	Boys <i>n</i> (%) [*]	Girls <i>n</i> (%) [*]
Use of contraception (<i>n</i> = 3,112)	Always	883 (28.5)	646 (29.2)	237 (26.6)
	Mostly	410 (13.0)	272 (12.7)	138 (13.6)
	Sometimes	361 (11.9)	248 (11.5)	113 (12.9)
	Rarely	1,458 (46.6)	1,034 (46.6)	424 (46.9)
Method of contraception (<i>n</i> = 1,654)	Condom	1,213 (39.1)	875 (40.1)	338 (36.5)
	Regular contraceptive pill	131 (4.1)	86 (3.7)	45 (5.2)
	Emergency contraceptive pill	28 (0.8)	20 (0.9)	8 (0.5)
	Coitus interruptus	211 (7.0)	141 (6.8)	70 (7.5)
	Safe period in menstrual cycle	52 (1.6)	29 (1.3)	23 (2.5)
	Loop intrauterine device	19 (0.8)	15 (0.7)	4 (1.0)

Note. ^{*} Weighted.

Table 3. Differences Between Korean Adolescents' Sexual Experiences and Substance Use

Variable	Classification		Boys (n = 38,221)		Girls (n = 35,965)		$\chi^2(p)$
	No n (%) [*]	Yes n (%) [*]	No n (%) [*]	Yes n (%) [*]	No n (%) [*]	Yes n (%) [*]	
Illegal drug use	No	35,639 (94.4)	2,060 (5.6)	481.65 (<.001)	34,750 (97.7)	819 (2.3)	927.84 (<.001)
	Yes	382 (71.7)	140 (28.3)		303 (74.1)	93 (25.9)	
Alcohol consumption	No	18,411 (98.2)	323 (1.8)	1108.26 (<.001)	20,288 (99.2)	161 (0.8)	568.17 (<.001)
	Yes	17,610 (90.1)	1,877 (9.9)		14,765 (95.1)	751 (4.9)	
Tobacco smoking	No	25,119 (97.8)	529 (2.2)	1952.28 (<.001)	29,894 (98.9)	346 (1.1)	1590.52 (<.001)
	Yes	10,902 (86.4)	1,671 (13.6)		5,159 (89.8)	566 (10.2)	

Note. ^{*} Weighted.

Table 4. Association of Korean Adolescents' Sexual Experiences and Substance Use

Variables	Boys (n = 38,221)		p	Girls (n = 35,965)	
	OR	95% CI		OR	95% CI
Illegal drug use (No = 0, Yes = 1)	4.095	[3.234–5.186]	<.001	4.616	[3.267–6.523]
Alcohol consumption (No = 0, Yes = 1)	2.084	[1.806–2.404]	<.001	2.144	[1.750–2.627]
Tobacco smoking (No = 0, Yes = 1)	3.390	[3.047–3.772]	<.001	4.820	[4.055–5.730]

Note. OR = odds ratio; CI = confidence interval.

The percentage of adolescents who reported having sexual experiences differed significantly according to whether or not they reported substance use (see Table 3). A higher percentage of the adolescents who used illegal drugs reported having had sexual experiences relative to those who did not use illegal drugs. In addition, a higher percentage of adolescents who smoked tobacco and/or consumed alcohol reported sexual experiences relative to those who did not smoke tobacco or consume alcohol. To identify the association of adolescents' sexual experiences and substance use, a logistic analysis was performed (see Table 4). The number of boys and girls reporting sexual experiences increased from two to four times with use of illegal drugs, smoking tobacco, and alcohol consumption, respectively.

Discussion

In this research, the rates for sexual experiences recorded in a sample of Korean adolescents were slightly higher than those reported in a sample of Chinese adolescents (Yu, 2012) and lower than those reported in a sample of Japanese adolescents (Japanese Sex Education Council, 2011). Including the results of this research along with those of the other Asian studies, the rate of sexual experience in northeast-Asian high school students is lower than that reported for American high school students (Centers for Disease Control and Prevention, 2013; Kost & Henshaw, 2014). These differences between countries may reflect divergent attitudes and customs regarding sexual behavior, based on cultural background (Rahman et al., 2015). For example, in contrast to North American culture, Asian cultures have been influenced by the values of Confucianism, according to which, abstinence until marriage is a highly regarded virtue for women. Therefore, cultural differences between countries should be considered when interpreting or comparing data regarding adolescents' sexual experiences.

Our results showed that only 28.5% of sexually active Korean adolescents used contraception every time they engaged in sexual intercourse. That condoms were the preferred method of contraception, and coitus interruptus was the second most popular method, reflected findings from previous research involving Korean adolescents (Lee & Kang, 2011). According to our results, the rate of Korean adolescents' condom use was less than 40%, a percentage that has not risen since 2007 (Lee & Kang, 2011), whereas the rate of American adolescents' condom use was reported to have risen to more than 60% in 2011 (Centers for Disease Control and Prevention, 2013). This difference between Korean and American adolescents' rates of condom use may be a result of the formulation of national policies in the USA to promote adolescent sexual health by providing free condoms and by mounting a national campaign promoting condom use, along with the substantial financial support provided for multidimensional research activities in the USA (Frost et al., 2012; Kost & Henshaw, 2010).

Therefore, active political support of the provision of condoms and practical education regarding safe sex and condom use are required to increase Korean adolescents' condom use (De Graaf et al., 2015; Lee & Kang, 2011). In addition, improved government policies and establishment of better services to protect Korean adolescents from risky sexual behavior are required and should be based on further studies in which the process of Korean adolescents' risky sexual behavior is described with respect to psychological distress, coping, and problem solving (Haldre et al., 2009; Rahman et al., 2015).

The results of our study indicate that the Korean students' alcohol drinking, tobacco smoking, and illegal drug use were all strongly associated with the number of sexual experiences. Previous research findings have suggested that alcohol consumption and use of drugs, such as marijuana, are related to dopamine, a neurotransmitter that regulates the pleasure center in the human brain, so that adolescent substance use affects their sex drive, which promotes unprotected and unsafe sexual behavior (Claxton et al., 2015). Health professionals have warned against access to gateway drugs, such as alcohol and tobacco, which are associated with sexually permissive behaviors that are apt to become risky behaviors (Claxton et al., 2015; Kawabata, 2002). Our results could be interpreted to indicate that this gateway effect was identified in this study, as the frequency of the students' sexual experiences were associated with their substance use.

Adolescents' sexual behavior is affected by multidimensional factors, including the family, school, and peers (Haldre et al., 2009; Rahman et al., 2015), which suggests that in South Korea it is necessary to develop comprehensive sexual health education programs that include self-management, assertiveness training, and problem-solving skills, and that address multidimensional factors regarding adolescent's sexual behavior (De Graaf et al., 2015; Kim et al., 2004). The results of this study highlight a need for school-based sex education in South Korea supported by national policies and the provision of basic resources to reduce rates of unprotected sex and improve the healthy sexual behavior of adolescents.

The main limitation of this study is that the data were extracted from the Korean Youth Health Behavior Online Survey, so that the results should be carefully interpreted before they are applied in other cultural settings. Because the results were derived from cross-sectional analysis, the factors related to adolescents' sexual experience in this study may be one-dimensional and direct utilization may be limited by this. Further multidimensional studies and qualitative research are required on adolescents' sexual experience and substance use.

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