


Factors Affecting Condom-Use Behaviors Among Female Emerging Adults in South Korea

Jungmin Lee 

School of Nursing, Hallym University, Chuncheon-si, Gangwon-do, South Korea

Correspondence: Jungmin Lee, Tel +82-33-248-2710, Fax +82-33-248-2734, Email j_lee0624@hallym.ac.kr

Purpose: To date, no studies have examined the association between gender-driven power dynamics and the decision-making process for condom use in South Korea. This study aimed to identify predictors of condom-use behaviors among female emerging adults in South Korea.

Participants and Methods: This study used a cross-sectional design and recruitment was conducted using social network services. The participants comprised 169 female college students aged 18–25 years who were actively engaging in sexual intercourse.

Results: The results showed that attitudes toward condom use was a stronger predictor of condom-use behaviors than sexual double standards. A significant implication of this study is the need for novel approaches to address condom use in female emerging adults. Potential approaches should consider gender dynamics and have cultural and social relevance for South Korean society.

Conclusion: The current findings offer insight into developing future interventions tailored to the population to promote condom use, thereby preventing STDs/HIV, unwanted pregnancies, abortions, and other negative consequences in female emerging adults in South Korea.

Keywords: condoms, nursing theory, sexual behavior, sexually transmitted diseases

Introduction

Globally, *sexually transmitted diseases (STDs)* and *human immunodeficiency virus (HIV)* have a significant impact on sexual and reproductive health, which is one of the top five categories for which people seek healthcare.^{1,2} Most STDs are contracted through unprotected sexual intercourse with infected partners.³ The global data on STD infections indicates an increasing trend, with young people incurring the highest infection rates.⁴ A study showed that young people aged 16–24 years are at a higher risk of contracting STDs than adults.⁵ The World Health Organization² reported that over one million people are infected with STDs each day. Each passing year adds approximately 20 million new STD cases, with young people aged 15–24 years accounting for nearly half of the patients.⁶ Another study showed that one of two sexually active youths will acquire an STD by age 25 years.⁷ Thus, the future of young people's sexual health may be affected by the particularly severe consequences of STDs.⁸

The number of new STDs and HIV infections in South Korea and other Eastern and Western countries^{9,10} continues to rise, with the highest rate of increase reported among people in their 20s.^{3,11} In South Korea, the number of people infected with STDs increased by 1.45% from 2012 to 2016; for those aged 20–30 years, the reported cases increased by 2.5%, from 3000 in 2012 to 7600 in 2016.¹² Additionally, 33.7% of all new HIV cases diagnosed in 2017 affected individuals in their 20s, and this emerging adult group accounted for the highest proportion of cases.³

Emerging adulthood is a period of development spanning 18–29 years.¹³ At this stage, values are being established, and people attain sufficient physical and mental maturity to experience intimate sexual relationships and sexual behavior without interference.^{14,15} In college, students can participate in romantic relationships and sexual activities without interference from their parents.¹⁴ Efforts to improve sexual health are essential for this age group because the number of college students engaging in sexual activities is increasing while the age sex initiation is decreasing.¹⁶ Furthermore, because of increased curiosity and exploration of sexual behaviors, they may also be at a higher risk of negative health outcomes.¹⁷ Research has

shown that people under the age of 25 years are vulnerable because they often engage in risky sexual activities such as having multiple sexual partners.⁴⁻⁶ The frequency of changing partners, in this developmental stage, is higher than that of the general population, which can increase the risk of STDs, including HIV transmission.¹⁸⁻²⁰

Strategies to address problems related to STD and HIV transmission primarily focus on prevention. The prevention of STDs, including HIV, encompasses factors, such as abstaining from sex with strangers, delaying sexual intercourse, and using condoms during sexual intercourse.²¹ One of the most effective strategies for STD prevention is to promote condom use for safe.²² To prevent STDs/HIV, avoiding risky sexual behaviors and using condoms are suggested whenever individuals engage in vaginal, anal, or oral sexual intercourse.²¹ Sexual intercourse without condom use or other prophylactic sexual behaviors is referred to as unsafe, risky, or unprotected sex, which can increase the possibility of contracting STD/HIV infections.²³ Condoms are considered crucial, cost-effective, and easily accessible for preventing STDs and HIV.^{24,25} However, condom use by young people is extremely low in South Korea; previous studies show that about 50–80% of emerging adults do not use condoms during sexual intercourse.^{26,27}

To date, there is little information about the factors that influence non-condom use during sexual intercourse among South Korean college students, most of whom are emerging adults. This study fills this gap by examining factors related to condom use among heterosexual female college students in South Korea. We limited the participant variable considering the social nature of life in South Korea, where lesbian, gay, bisexual, transgender, and queer (LGBTQ) participants may hesitate to share their sexual orientation.²⁸ An additional reason for limiting the sample to heterosexual women is that STD/HIV and pregnancy risks are much lower for women in homosexual relationships owing to the nature of their relationships. Identifying and exploring the relevant factors that affect South Korean college students' condom use will allow for more efficient interventions to be developed for the target population. In an increasingly globalized and connected world, the long-term impact of this study could potentially prevent the domino effect of STD infections, thus averting a future "STD pandemic."

Theoretical Framework

This study draws on theoretical concepts from the theory of gender and power (TGP) that includes sexual double standards, assertiveness, and security, as well as from the theory of planned behavior (TPB) that includes attitudes, subjective norms, perceived behavioral control, and barriers to condom use. Connell's TGP²⁹ explains the role between relationship power dynamics and condom use among unmarried heterosexual young people in South Korea. Traditional gender norms and power imbalances in relationships, indirectly or directly, increase vulnerability to condom non-use. Fishbein and Ajzen's TPB³⁰ addressed youth sexual behavior. In previous studies, the TPB was frequently used to understand, predict, and change risky sexual behavior across at-risk populations while explaining the decision-making process for condom use among youth. Using these theoretical frameworks will help generate new knowledge on heterosexual relationship patterns and power imbalances related to condom use in South Korea. Additionally, it will aid healthcare providers in designing gender-specific and culturally appropriate interventions in the future.

Purpose

The purpose of this study is to examine the predictors (sexual double standards, sexual assertiveness, sexual security, attitudes, subjective norms, self-efficacy, and barriers) of condom-use behaviors among female, heterosexual, and unmarried college students in South Korea.

Methods

Design

This study used a cross-sectional correlational design to investigate the predictors of condom-use behaviors.

Setting and Participants

Convenience sampling was employed to recruit respondents, primarily through Facebook. Additionally, snowball sampling was used at the end of the survey to ask participants if they would recommend others who would potentially qualify to participate in the study. The inclusion criteria were as follows: (a) self-identifying as female, (b) enrolled in

college for the current academic year, (c) between 18 and 25 years of age, (d) actively engaging in sexual intercourse, (e) unmarried, (f) heterosexual, (g) able to communicate in Korean, and (h) able to access the Internet.

Our sample size for multiple linear regression, using a fixed-model R^2 deviation from zero, was calculated using G*Power 3.1.9.2.³¹ The analysis revealed that the study required 160 participants for an effect size of 0.15 (medium), power of 0.80, and significance level of 0.05. A total of 224 participants were recruited. The final sample consisted of 170 participants, after excluding survey questionnaires with incomplete data and those that were completed in less than five minutes.

Instruments

Sexual Double Standards

Sexual double standards were measured using the Double Standards Scale (DSS), originally developed by Caron et al,⁷ and cross-culturally adapted and validated in Korean by Nam.³² The DSS consists of 10 items rated on a five-point Likert scale, with responses ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The total score for the instrument is obtained by summing all item scores. The possible scores range from 10–50, and higher scores indicate higher double standards for sexuality. Cronbach's alpha for the total scale score was 0.72 in the original study and 0.77 in the South Korean sample reported by Nam.³² In this study, Cronbach's alpha for the total scale score was 0.77, and the greater lower bound (GLB) was 0.91.

Sexual Assertiveness

Sexual assertiveness was measured using the Sexual Assertiveness Scale (SAS), originally developed by Morokoff et al³³ and cross-culturally adapted into Korean by Choi.³⁴ The SAS consists of 18 items rated on a four-point Likert scale, with responses ranging from 1 (*never*) to 4 (*always*). The total score for the instrument is obtained by summing all item scores. The possible scores range from 18–90, and higher scores indicate higher sexual assertiveness and sexual autonomy. In the original study as well as Choi's,³⁴ Cronbach's alpha for the total scale score was 0.82. In this study, Cronbach's alpha for the total scale score was 0.53. However, in this study, GLB was 0.70, suggesting good internal consistency.

Sexual Security

Sexual security was measured using the Global Measure of Sexual Satisfaction (GMSEX) developed by Lawrance and Byers.³⁵ The GMSEX consists of five items, with lower scores indicating lower sexual satisfaction in sexual relationships. Responses range from *good* to *bad*, *pleasant* to *unpleasant*, *positive* to *negative*, *satisfying* to *unsatisfying*, and *valuable* to *worthless*, using a seven-point Likert-type scale. Participants are asked to circle the number that best describes their (main) sexual relationships. Ratings are summed, and possible scores range from 5–35; lower scores indicate less sexual satisfaction during a sexual relationship.³⁶ We cross-culturally translated this measure for our study following WHO guidelines. Cronbach's alpha for the entire scale was 0.96 in the original study.³⁵ In this study, Cronbach's alpha for the total scale score was 0.93, and the GLB was 0.94.

Sexual Behavior

We measured attitudes and norms related to, self-efficacy of, and barriers linked to condom use using the Sexual Risk Behavior Beliefs and Self-Efficacy Scale (SRBBS) developed by Basen-Engquist et al,³⁷ which we cross-culturally translated for use in this study following the WHO guidelines. The SRBBS consists of 22 items measured on a three- or four-point Likert scale. Ratings are summed, and possible scores range from 5–20 on attitude and subjective norms, 9–27 on self-efficacy, and 3–12 on barriers to condom use. Higher values reflect a greater intention to abstain from risky sexual behaviors, whereas for barriers to condom use, lower scores reflect an increase in awareness.³⁸ In the original study, Cronbach's alpha was 0.78 for attitudes toward sexual intercourse, 0.78 for norms related to sexual intercourse, and 0.70 for self-efficacy in refusing sex.³⁷ In this study, Cronbach's alpha for the total scale scores ranged from 0.54 to 0.76, whereas GLB ranged from 0.64 to 0.87.

Data Collection

A cross-sectional survey was conducted between November 25 and December 5, 2019, using the Qualtrics software. To recruit participants, we posted advertisements on the Facebook pages of the principal investigator (PI) and those of relevant large-sized college organizations, as well as in departmental and student association group chats. At the end of

the survey, participants were asked to forward the name and contact information of the PI to potential participants or share the advertisement containing a link to the survey with them. If the participants agreed to proceed with the survey, they were provided a closed-ended online questionnaire. The survey questions did not collect any personal information that could identify an individual.

Ethical Considerations

The institutional review board approved the study before commencement. The information sheet was posted on the first page of the Qualtrics Survey. Participants were notified that (a) there would be no negative consequences for non-participation, (b) the survey would be anonymous, and no individual responses would be recorded, (c) participants would have the right to withdraw from the study at any time without repercussions, and (d) personal privacy and confidentiality would be guaranteed. After reviewing the information sheet, students clicked “yes” if they agreed to participate in the study. When students were directed to the Qualtrics webpage, the Internet protocol addressing tracking was turned off.

Data Analysis

Descriptive and inferential statistical analyses were conducted using SPSS version 25.0.³⁹ Data were analyzed using descriptive statistics for general characteristics, general sex-related information, usage predictors, and condom-use behaviors. Gamma regression was used to determine factors affecting condom use.

Results

Participants' Demographic Characteristics

Participants' demographic characteristics are presented in [Table 1](#). Fifteen items were measured, including participants' sexual experiences. The average age of female participants was 20.97 (± 1.76) years; a majority were first-year students majoring in humanities and social sciences, non-religious, and lived with their families and relatives. Two-fifths of the respondents reported that their families' perception of sexual behavior was conservative. Half of the participants did not receive sex education in college; on average, three out of five reported having their first sexual intercourse between 16–20 years, and four out of five reported having sexual intercourse within the past three months. On average, one out of ten participants had experienced an unwanted pregnancy, forced sexual intercourse, or an STD. More than half of the respondents used condoms inconsistently during sexual intercourse.

Description of Instrument Scores

The average scores are listed in [Table 2](#). The sexual double standard score was low ($M=15.62$, $SD=4.93$), indicating open and progressive gender ideals and a positive outlook on gender equality. The scores for sexual assertiveness ($M=60.79$, $SD=4.56$), attitude ($M=13.98$, $SD=2.26$), subjective norms ($M=13.82$, $SD=2.44$), and barriers to condom use ($M=6.06$, $SD=1.92$) were moderate. These results suggest that participants have a moderate outlook on initiating sex if desired, refusing unwanted sexual practices or contact, and negotiating condom use to prevent pregnancy and STDs. The data also indicated moderate intention to abstain from risky sexual behaviors and a moderate likelihood to purchase or carry a condom. Finally, scores for sexual security ($M=27.46$, $SD=5.43$) and self-efficacy toward condom use ($M=22.48$, $SD=3.08$) were high, indicating that participants had high satisfaction during sexual relationships and a strong intention to abstain from risky sexual behaviors.

Association Between Factors Affecting Condom-Use Behavior

[Table 3](#) illustrates Spearman's Rho correlation and the p-values of the correlation between sexual behavior factors. A statistically significant negative correlation was found between sexual double standards and sexual assertiveness, sexual double standards and self-efficacy, sexual assertiveness and barriers to condom use, sexual security and attitude, and self-efficacy and barriers to condom use. In contrast, a statistically significant positive correlation was found between sexual double standards and barriers to condom use, sexual assertiveness and attitude, sexual assertiveness and subjective

Table 1 Demographic Characteristics of the Participants (N=169)

Demographics	Classification	N (%)	Mean \pm SD (Min-Max)
Age (years)	18–19	48 (28.2)	20.97 \pm 1.759 (18–25)
	20–21	52 (30.6)	
	22–23	57 (33.5)	
	24–25	13 (7.7)	
Year in college	Freshman	65 (38.2)	
	Sophomore	41 (24.1)	
	Junior	32 (18.8)	
	Senior	32 (18.8)	
Major	Humanities & Social Science	76 (44.7)	
	Science & Technology	24 (14.1)	
	Health & Medical	41 (24.1)	
	Arts & Physical Education	20 (11.8)	
	Other	9 (5.3)	
Religion	Protestant	29 (17.1)	
	Catholic	22 (12.9)	
	Buddhist	9 (5.3)	
	None	107 (62.9)	
	Other	3 (1.8)	
Type of residence (current)	Home or with relatives	119 (70.0)	
	Living alone	39 (22.9)	
	Dormitory	12 (7.1)	
Family's perception toward sexual behavior	Conservative	68 (40.0)	
	Neutral	81 (47.6)	
	Open	21 (12.4)	
Receiving sex education since becoming a college student	Yes	85 (50.0)	
	No	85 (50.0)	
Age at first sexual intercourse (years)	11–15	1 (0.6)	
	16–20	109 (64.1)	
	21–25	60 (35.3)	
Having had sexual intercourse over the past three months	Yes	143 (84.1)	
	No	27 (15.9)	
If yes, number of sexual partners over the past three months	1	124 (72.9)	

(Continued)

Table 1 (Continued).

Demographics	Classification	N (%)	Mean \pm SD (Min-Max)
Types of sexual partners over the past six months	Committed monogamous (steady)	138 (81.2)	
	Regular casual	29 (17.1)	
	Unexpected (hook-ups or one-night stands)	3 (1.8)	
Ever had any STDs	Yes	9 (5.3)	
	No	161 (94.7)	
Ever had an unwanted pregnancy	Yes	3 (1.8)	
	No	167 (98.2)	
Have ever been forced to have sexual intercourse with partner	Yes	20 (11.8)	
	No	150 (88.2)	
Condom-use behaviors in the past six months*	Never (0%)	18 (10.6)	
	Rare (25%)	21 (12.4)	
	Sometimes (50%)	14 (8.2)	
	Often (75%)	39 (22.9)	
	Always (100%)	78 (45.9)	

Note: *Dependent variable.

Table 2 Average Scores (N=169)

Instrument	n (%)			Mean \pm SD	Score Range	Median (Min-Max)
	Low	Moderate	High			
Sexual double standard score	75 (44.1)	22 (12.9)	73 (43.0)	15.62 \pm 4.928	10–50	15.0 (10–33)
Sexual assertiveness score	76 (44.7)	10 (5.9)	84 (49.4)	60.79 \pm 4.555	18–90	61 (50–71)
Sexual security score	84 (49.4)	10 (5.9)	76 (44.7)	27.46 \pm 5.429	5–35	28.0 (5–35)
Attitude score	56 (32.9)	44 (25.9)	70 (41.2)	13.98 \pm 2.26	5–20	14.0 (5–18)
Norm score	60 (35.3)	46 (27.1)	64 (37.6)	13.82 \pm 2.44	5–20	14.0 (5–18)
Self-efficacy score	81 (47.6)	18 (10.6)	71 (41.8)	22.48 \pm 3.08	9–27	23.0 (9–27)
Barrier score	61 (35.9)	43 (25.3)	66 (38.8)	6.06 \pm 1.92	3–12	6.0 (3–11)

Notes: The median was considered to be a moderate score, while participants with scores below the median (median – 1*IQR) were considered to have low scores, and scores above the median (median + 1*IQR) were considered to be high.

norms, sexual assertiveness and self-efficacy, sexual assertiveness and condom-use behavior, attitudes and subjective norms, attitudes and condom-use behavior, and subjective norms and condom-use behavior.

Predictors of Condom-Use Behavior

Table 4 presents the results of the gamma regression. The findings indicated that when the sexual double standard and attitude scores increased, the predicted average frequency of condom use also increased. If this study were performed repeatedly, using

Table 3 Illustrates Spearman's Rho Correlation and p-values (N=169)

	1	2	3	4	5	6	7	8
1. Sexual double standards								
2. Sexual assertiveness	-0.356*** ($<.001$)							
3. Sexual security	-0.027 (0.731)	0.045 (0.563)						
4. Attitudes	-0.081 (0.292)	0.166* (0.030)	-0.180* (0.019)					
5. Subjective norms	-0.143 (0.062)	0.152* (0.048)	-0.075 (0.329)	0.642*** ($<.001$)				
6. Self-efficacy	-0.383*** ($<.001$)	0.486*** ($<.001$)	0.077 (0.318)	0.131 (0.089)	0.147 (0.055)			
7. Barriers	0.271*** ($<.001$)	-0.223** (0.004)	-0.079 (0.307)	0.051 (0.506)	-0.006 (0.934)	-0.221* (0.004)		
8. Condom-use behaviors	0.001 (0.988)	0.197* (0.010)	-0.092 (0.231)	0.459*** ($<.001$)	0.380*** ($<.001$)	0.126 (0.102)	0.009 (0.909)	

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 4 Results of the Gamma Regression (N=169)

Variables		Exp (B)	95% CI	p-value
Condom use	Sexual double standard	1.017	1.002–1.033	0.022*
	Sexual assertiveness	1.011	0.994–1.027	0.202
	Sexual security	0.999	0.988–1.010	0.851
	Attitudes	1.081	1.040–1.123	$<0.001^{**}$
	Subjective norms	1.025	0.991–1.061	0.153
	Self-efficacy	1.011	0.987–1.036	0.380
	Barriers	1.006	0.973–1.041	0.711

Note: * $p < 0.05$, ** $p < 0.001$.

Abbreviations: Exp (B), exponentiation of the B coefficient; 95% CI, 95% confidence interval.

170 participants each time, the true population slope depicting the multiple regression of the relationship between frequency of condom use and sexual double standard and attitude would be enclosed by the interval (1.002–1.033 and 1.040–1.123, respectively) approximately 95% of the time. Overall, the findings revealed that sexual double standards (Exp (B) = 1.017, 95% CI = 1.002–1.033, $p = 0.022$) and attitudes toward condom use (Exp (B) = 1.081, 95% CI = 1.040–1.123, $p < 0.001$) were significantly and positively associated with condom-use behaviors among female college students. Attitudes toward condom use were the strongest predictor of condom use.

Discussion

This study aimed to identify variables affecting condom use among female college students to provide basic data for developing effective sexual education programs for safe sexual behavior and sexual health management. The selected

predictors originated from an extensive literature review of condom-use behaviors among emerging adults, in combination with the theoretical concepts of TGP and TPB. This study identified condom-use behaviors in the context of gender-driven power dynamics and decision-making processes among female college students in South Korea.

Approximately half of the participants responded that they consistently used condoms during sex, similar to the findings of the Korean Women's Development Institute⁴⁰ and South Korea CDC,⁴¹ which reported that 59.2% and 46.7% of young sexually active individuals, respectively, engaged in condom use. However, in other studies, this percentage was much lower.^{42–44} Collectively, our findings indicate that approximately 50–80% of young adults currently do not use any form of contraception during sexual intercourse. In this study, 13% ($n = 39$) of the participants never or rarely used condoms. Since these participants were the most at-risk group of the total sample, further studies may be required to conduct an in-depth exploration of their cultural and psychological backgrounds concerning their condom-use behavior.

The results from this study demonstrated that sexual double standards and attitudes toward condom use were significantly and positively associated with condom-use behaviors. Condom use increased as sexual double standards and attitudes increased. Attitudes toward condom use were a stronger predictor of condom-use behaviors than sexual double standards. To the best of our knowledge, this study is the first to use sexual double standards and attitudes as variables that are predictors of condom-use behaviors in South Korea. Consequently, we could not compare our results with those of other studies. Outside South Korea, three studies showed that attitude was a predictor of condom use intentions, but not of tangible condom-use behaviors.^{45,46} Given that there are limited studies related to our specific predictors, further research should be conducted to establish the relevance of condom-use behaviors to confirm our results.

We recommend the development of effective sex education programs on condom use based on the knowledge of sexual double standards and attitudes toward condom use in South Korea. As described in the TGP, “sexual double standards” shape individuals' perceptions of sexual behaviors, creating different standards for men and women. In South Korea, women have less power in sexual relationships than men.^{23,47} Therefore, gender-based inequalities and disparities have to primarily be minimized at a national level in South Korea for effective sex education programs. To generalize these results, this study must be replicated with a much larger sample size in the future.

As described in the TPB, a positive or negative assessment of condom use influences college students' condom-use behaviors. The findings of our study showed that the more positive the attitudes toward condom use, the more likely the participants were to use condoms. Thus, contraception planning should incorporate educational programs to encourage positive attitudes toward condom use, particularly for female college students. Although previous studies have shown that knowledge is a weak and inconsistent predictor of individuals' behavioral changes, contrary evidence that knowledge is strongly related to attitudes toward sexual behavior among South Korean college students also exists.^{48,49} Therefore, knowledge of the adverse sexual health consequences of not using condoms may result in increased condom use among young South Korean women.

Implications for Healthcare Providers and Policies

This is the first study to combine the TGP and TPB as guiding theoretical frameworks to examine condom-use behaviors in South Korea. Our results showed that sexual double standards and attitudes toward condom use predicted condom-use behaviors among female emerging South Korean adults. Given the lack of opportunities to access systematic and practical sexual information before and after entering college, it is necessary to provide more specific and practical sex education that can enhance contraceptive behavior by considering the meaning of sex at the socio-cultural and personal level. Thus, including sexual double standards as a key component of sex education and intervention programs is crucial, unique, and innovative because the concept is significant and relevant to contemporary South Korean society. Novel interventions should be tested for their effectiveness in encouraging condom use. Their ultimate goal should be to prevent the adverse physical and psychological consequences of contracting STDs/HIV, unwanted pregnancies, and abortions in the target population.

Limitations and Strengths

Our study was limited by factors, such as convenience sampling, the unique nature of the sample, and a relatively small sample size compared with previous studies on sexual behaviors in South Korea. In addition, when running the regression, only the variables of the two theories used as the theoretical framework were considered, and the participants' demographic characteristics were not accounted. These limitations may restrict the generalizability of the findings.

However, the findings of this study have added new knowledge to the area of gender and power imbalances related to condom use among young South Korean women. The TGP used in this study introduces new concepts related to condom use, such as sexual double standards, sexual assertiveness, and sexual security. Future research should include these concepts when examining condom use. Moreover, the combination of the TGP and TPB is novel, generating a comprehensive theoretical framework that guides this investigation of condom-use behaviors. Finally, in contrast to most previous studies, we measured emerging adults' actual condom use rather than their intention to use condoms. Thus, the results of this study are powerful, practical, and more applicable to the target population's actual condom-use behaviors.

Conclusions

This study addressed factors impacting condom use among emerging female adults in South Korea. Local approaches to contraception and STD prevention should be informed by gender dynamics and be culturally and socially relevant for South Korean society. These findings offer insight into developing future interventions tailored to this specific population to promote condom use, thus preventing STDs/HIV, unwanted pregnancies, abortions, and other negative consequences in young South Korean women.

Abbreviations

DSS, Double Standards Scale; GMSEX, Global Measure of Sexual Satisfaction; GLB, greater lower bound; HIV, human immunodeficiency virus; LGBTQ, lesbian, gay, bisexual, transgender, and queer; PI, principal investigator; SAS, Sexual Assertiveness Scale; STDs, sexually transmitted diseases; SRBBS, Sexual Risk Behavior Beliefs and Self-Efficacy Scale; TGP, theory of gender and power; TPB, theory of planned behavior; WHO, World Health Organization.

Data Sharing Statement

The data that support the findings of this study are available from the corresponding author, Jungmin Lee, on special request.

Ethics Approval and Consent to Participate

The study's protocol complied with the Declaration of Helsinki⁵⁰ and was approved by the University of North Carolina at Greensboro's (UNCG) institutional review board. The reason that approval was not consulted in the local institutional review board in South Korea is that the author's affiliation was UNCG at the time, and the data collection was not conducted face-to-face, but rather as an online questionnaire using an SNS platform. This decision was made after thorough discussion with the UNCG IRB and committee members. After receiving approval, we posted advertisements on the Facebook pages of the first author, and those of relevant large college organizations' as well as by other mechanisms, such as departmental and student associations' group chats. Relevant organizations were contacted through their social media managers to obtain approval for the advertisement. Qualtrics (online survey software) was used to contact eligible participants directly to invite them to participate in the study. An information sheet was posted on the first page of the Qualtrics survey, detailing the basic eligibility requirements and instructing students to click on the link if they were willing to participate. The information sheet informed participants of the purpose of the study and explained the researchers' credentials, information regarding confidentiality, and the voluntary nature of participation.

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