Cybersex activity, self-control, and premarital sexual behaviors among adolescents

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Abstract

Rapidly growing internet use among adolescents had positive and negative effects. It offers benefits, such as facilitating communication, but it also has negative impacts, including premarital sexual behaviors. The purpose of this study was to determine the relationship between cybersex activity and premarital sexual behaviors, as well as the association between self-control and premarital sexual behaviors in adolescents. The research employed a descriptive-analytic approach with a cross-sectional design, and the total sample consisted of 147 adolescents. The independent variables were cybersex activity and self-control, while the dependent variable was premarital sexual behaviors. The instruments used were the Internet Sex Screening Test (ISST), the Self-Control Scale (SCS), and the Adolescent Sexual Activity Index (ASCI). Data were analyzed using the Spearman correlation test. The majority of students involved in cybersex activities were at-risk users: 43.5% (64 respondents) had low self-control, and 27.2% (40 respondents) reported having early sexual activity. Additionally, there was a significant relationship between cybersex activity and premarital sexual behaviors (p=0.001) and between self-control and premarital sexual behaviors (p=0.001). These findings underscore the necessity of promoting positive internet usage among adolescents to mitigate cybersex activity, as it correlates with premarital sexual behaviors. Parents can encourage adolescents to have good self-control to avoid premarital sexual behaviors. Further, educators and policymakers can use these findings to develop programs that teach teenagers responsible internet use, enhance their self-control, and promote safe online behavior. Additionally, they can incorporate lessons and establish rules that support healthy internet habits.

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Introduction

The rapid growth of internet use has had both positive and negative effects. It offers many benefits, such as making communication easier, building social networks, and providing quick access to information.[1] However, it also presents negative effects, especially for adolescents, including involvement in cybersex activities.[2] Cybersex activities refer to sexual behaviors conducted online, such as engaging in sexual conversations, sharing sexual images or videos, and seeking sexual satisfaction through social media.[3] These activities can lead to negative outcomes such as addiction, sexual crimes, and premarital sexual behaviors.[4]

Premarital sexual behavior includes various actions such as sexual intercourse, kissing, and petting.[5,6] These behaviors pose significant risks to adolescents, including Sexually Transmitted Diseases (STDs), early pregnancies, and negative social and psychological impacts.[5] According to the Indonesian Health Demographic Survey in 2018, many adolescents engage in these behaviors while dating, with 33% reporting hugging, 50% kissing, 22% petting, and 8% engaging in sexual intercourse.[6]

Internet use among adolescents in Indonesia has significantly increased. From 2021 to 2022, internet usage reached 77.02%, with the Java region contributing the highest percentage at 43.92%. Among these users, adolescents aged 13 to 18 years accounted for 99.16% of the total internet users.[7] A survey of young people aged 18-23 years revealed that 29% of respondents engaged in cybersex behaviors, with 75.6% of them being unmarried adolescents. Additionally, global statistics show that, in developing countries, 11.3% of boys and 7.7% of girls have engaged in premarital sexual behavior, highlighting the need for local and cul-

turally relevant strategies to address this issue.[8,9] Self-control is a critical factor in preventing the negative outcomes of internet use,[10,11] particularly in reducing the likelihood of engaging in cybersex activities and premarital sexual behavior. Self-control refers to an individual's ability to regulate their impulses, emotions, and actions.[12] Adolescents with low self-control are more likely to engage in risky behaviors, including premarital sexual activities. Conversely, strong self-control acts as a protective factor, helping adolescents avoid behaviors such as dating, kissing, petting, and sexual intercourse.[13,14]

Cybersex activities, premarital sexual behavior, and self-control are interconnected. Cybersex activities may influence adolescents to engage in premarital sexual behaviors driven by curiosity, peer pressure, or social motives.[15] Meanwhile, self-control plays a vital role in breaking this connection by enabling adolescents to resist these impulses and make healthier decisions.[10,11] Adolescents who lack self-control are at higher risk of experiencing premarital sexual behavior and severe consequences such as unwanted pregnancies, abortions, STDs, HIV, depression, substance abuse, and even suicidal tendencies.[16]

Given the increasing prevalence of internet use and its associated risks, attention must be directed toward preventing cybersex activities and premarital sexual behavior among adolescents, particularly in Indonesia. Despite the increasing prevalence of internet use among adolescents and its associated risks, there is limited research focusing on the specific relationships between cybersex activities, self-control, and premarital sexual behavior, particularly in the context of Indonesia. While previous studies have explored premarital sexual behaviors and internet usage trends, they often lack a comprehensive examination of how cybersex activities and self-control influence these behaviors. This study aims to explore the relationship between cybersex activity and premarital sexual behavior, as well as the relationship between self-control and premarital sexual behavior. By highlighting the protective role of self-control, this study seeks to emphasize its importance in the context of adolescent sexual health and inform strategies tailored to Indonesia's youth population.

Materials and Methods

Study design

This study employed a descriptive-analytic design with a cross-sectional approach. The design was chosen to examine the relationships between cybersex activity, self-control, and premarital sexual behavior among adolescents by collecting data at a single point in time.

Sample size and sampling technique

The sample in this study consisted of 147 senior high school students from Surabaya, Indonesia. The sample was selected using the cluster simple random sampling technique. First, the total classes in this school were divided into clusters. A random selection of classes was made, and all eligible students within the selected classes were invited to participate. Inclusion criteria included students who were willing to participate and adolescents in grade 12. The exclusion criteria in this study were adolescents who withdrew in the middle of the study, did not complete the questionnaire, and students who were absent or ill during data collection.

Data collection

The data was collected using Google Form links by providing barcodes for students in each class. We explained to the respondents the purpose and objectives of the study, as well as the procedures and assessments to be carried out. Respondents had the right to withdraw if they were unwilling to answer the questionnaire. The researchers ensured the confidentiality of the respondents' data. Respondents who agreed to participate in the study were given a reward in the form of a tumbler.

Variables and instruments

Variables in this study were cybersex activity, self-control, and premarital sexual behavior. The instruments used in the study were the Internet Sex Screening Test (ISST) questionnaire to collect data related to cybersex activity. The questionnaire consists of 25 items, each assigned a score for favorable responses (1-15, 17, 18, 20): 4=always, 3=often, 2=seldom, and 1=never. For unfavorable items (16 and 19), the scoring is as follows: 1=always, 2=often, 3=seldom, and 4=never. Total score was categorized by recreational users (20-39), risk users (40-59), and compulsive users (60-80). The Cronbach's alpha of this questionnaire was 0.86, and the convergent validity is adequate with $p<0.05$ and $r=0.621$.[17] The Self-Control Scale (SCS) was utilized to collect data related to self-control; it comprises 24 items, with a score for each favorable item (1, 17, 24, 5, 25, 13, 22, 26, 27): 4=always, 3=often, 2=seldom, and 1=never. For unfavorable items, the scoring is as follows: 1=always, 2=often, 3=seldom, and 4=never. The total score was categorized into low (36-71), moderate (72-107), and high (108-144). The Cronbach's alpha of this questionnaire was 0.91, and the convergent validity is adequate with $p<0.05$ and $r=0.731$.[18] The Adolescent Sexual Activity Index (ASAI) was used to collect data related to sexual behavior. It had 13 items, with the following scores: 1=yes, 0=never. The total score was categorized into less risk (0-3), risk engaging in sexual intercourse (4-5), sexual intercourse (6), sexual beginnings (7), and sexually active (8-10). The Cronbach's alpha of this questionnaire was 0.91, and the convergent validity is adequate with $p<0.05$ and $r=0.537$.[19]

Study analysis

We analyzed the data using the SPSS software to determine the frequency distribution. The Spearman test was employed to assess the relationship between variables, with a significance level set at $p<0.05$.

Ethical clearance

This study was approved by the Ethical Clearance Committee of Stikes Hang Tuah Surabaya (No: PE/27/VI/2023/KEP/SHT). All procedures adhered to ethical guidelines, and informed consent was obtained from all participants before data collection. The study ensured participant confidentiality and voluntary participation throughout the research process.

Results

Table 1 shows the respondents' characteristics and descriptive variables. Regarding gender, 55.1% were male (81 respondents), and 44.9% were female (66 respondents). In terms of dating status, 67.3% (99 respondents) were in a relationship, while 32.7% (48 respondents) were not. Concerning parental attitudes, 61.9% (91 respondents) reported that their parents permitted dating during

school years, while 38.1% (56 respondents) did not. The frequency distribution of cybersex activity among respondents was categorized as at-risk users, accounting for 43.5% (64 respondents); recreational users, making up 37.4% (51 respondents); and compulsive users, comprising 19.0% (32 respondents). The frequency distribution of self-control indicated that 42.9% of respondents were categorized as low (63 respondents), 40.1% as medium (59 respondents), and 17.0% as high (25 respondents). The frequency distribution of premarital sexual behavior among adolescents indicated the following: 27.2% (40 respondents) reported having engaged in early sexual intercourse, 25.9% (38 respondents) experienced less risky sexual behavior, 19.0% (28 respondents) engaged in sexual intercourse, 15.6% (23 respondents) were identified as engaging in risky sexual behavior, and 12.2% (18 respondents) were classified as sexually active.

Table 2 presents the cross-tabulation of cybersex activity and premarital sexual behavior. The results indicated a significant relationship between cybersex activity and premarital sexual behavior in adolescents, with a p=0.00 and a correlation coefficient of 0.586. Table 3 shows a significant relationship between self-control and premarital sexual behavior in adolescents, with a p=0.00 and a correlation coefficient of -0.673.

Discussion

This study provides important insights into the relationships between cybersex activity, self-control, and premarital sexual behavior among adolescents. The findings revealed that most respondents engaged in at-risk cybersex activities, exhibited low self-control, and were at risk of premarital sexual behavior. These results highlight the critical role of online behaviors and self-regulation in shaping adolescent sexual decision-making, aligning with prior studies that identify similar risk factors for premarital sexual behavior.[13,20-24]

The study found a significant relationship between cybersex activity and premarital sexual behavior among adolescents. The majority of respondents were male and 17 years old, a developmental phase marked by increased curiosity regarding sexual activities due to puberty, which can incite sexual desires. Furthermore, the majority of respondents engaged in compulsive online sexual behaviors, with at-risk users being more likely to participate in premarital sexual activities. The findings of this study align with previous research, which indicates a positive correlation between cybersex activities and premarital sexual behavior categories.[25,26] Thus, the higher the level of engagement in cybersex, the greater the likelihood of involvement in premarital sexual behavior.

This study also identified a significant relationship between self-control and premarital sexual behavior. The findings indicate that men are usually more open to discussing sexual topics and tend to exhibit lower levels of self-control. Most respondents in the study reported low self-control and began dating at the age of 15. The present study showed that self-control can be developed to prevent risky sexual behaviors in adolescents.[27] Self-control is strongly influenced by parenting,[26,28] as parents play a vital role in instilling values and guiding their adolescents toward responsible decision-making.[29] Through proper guidance, parents help adolescents develop the ability to regulate their behavior effectively. Furthermore, previous studies have shown that poor self-control in individuals or parents can lead to negative behaviors.[30] Self-control is also closely tied to emotional regulation, as individuals with strong self-control are better equipped to manage their emotions.[11] In romantic relationships, adolescents often experience psychological and physiological reactions that evoke feelings of comfort and love. Without adequate self-control, these emotions may lead to premature sexual activity. Therefore, self-control is a crucial factor in managing and reducing the likelihood of engaging in premarital sexual behaviors.[13,31,32]

This study has some limitations that should be considered. The respondents were only adolescents in senior high school; therefore, the findings may not represent all young individuals in Indonesia.

Table 1. Characteristics of respondents and descriptive variables.

Characteristic	Frequency (N)	Percentage (%)
Gender		
Male	81	55.1
Female	66	44.9
Total	147	100.0
Dating or not		
Yes	99	67.3
No	48	32.7
Total	147	100.0
Parental response in terms of dating		
Allow	91	61.9
Not allow	56	38.1
Total	147	100.0
Cybersex activity		
Recreational users	51	34.7
At-Risk users	64	43.5
Compulsive users	32	21.8
Total	147	100.0
Self-control		
Low	63	42.9
Moderate	59	40.1
High	25	17.0
Total	147	100.0
Sexual activity		
Less risk	38	25.9
Risk engaging in sexual behaviours	23	15.6
Sexual intercourse	28	19.0
Early sexual intercourse	40	27.2
Sexual active	18	12.2
Total	147	100.0

Table 2. Relationship between cybersex activity and premarital sexual behaviors.

		Sexual activity
Cybersex activity	Correlation coefficient	0.586*
	Sig. (2-tailed)	0.001
	N	147

*p<0.05.

Table 3. Relationship between self-control and premarital sexual behaviors.

		Sexual activity
Self-control	Correlation coefficient	-0.673*
	Sig. (2-tailed)	0.001
	N	147

*p=<0.05.

However, the study revealed that premarital sexual behavior among adolescents is influenced by cybersex activities and levels of self-control.

Conclusions

Premarital sexual behavior among adolescents is common. The study found that cybersex activities among adolescents categorized as at risk were linked to low levels of self-control among students. Additionally, there is a connection between cybersex activities and sexual behavior, as well as a connection between self-control and sexual behavior in adolescents. These findings emphasize the importance of encouraging adolescents to use social media in a positive way. Parents and schools can encourage adolescents to develop self-control through counseling, helping them avoid premarital sexual behavior. Policymakers can use these findings to create programs that teach teenagers how to use the internet responsibly, improve their self-control, and promote safe online behavior. They should add lessons and establish rules that encourage healthy internet habits.

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