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Research Article

Cybersex Behavior in Indonesian Adolescents: Factors, Impacts, and Strategies for Reproductive Health Preservation in a Digital Age

Dien Gusta Anggraini Nursal[1*], Gebby Afrila[1], Mutia[2], Sabillah Nasitoh[3], Muhammad Sakhi Baretta[4]

[1]Department of Public Health, Faculty of Public Health, Universitas Andalas, Padang, Indonesia
[2]Social Health Insurance Administration Body Central Jakarta Branch, Jakarta Indonesia
[3]Department of Medicine, Faculty of Medicine, Universitas Baiturahmah, Padang, Indonesia
[4]Department of Medicine, Faculty of Medicine, Universitas Andalas, Padang, Indonesia

ORCID
Dien Gusta Anggraini Nursal: https://orcid.org/0000-0002-0714-1522

Corresponding Author: Dien Gusta Anggraini Nursal; email: diennursal@ph.unand.ac.id

Abstract.
Cybersex behavior in Indonesia has increased since 2012 in West Sumatra . I t was found that the number of teenagers who had watched and read porn sites which are categorized as passive cybersex was 35.98%. This study aim ed to determine the factors that influence cybersex behavior in adolescents and suppress the impact on reproductive health. This research was an analytic study with a cross-sectional research design and a total sample of 88 people. The research was conducted from April to July 2023 at Senior High School (SHS) X Pariaman City. Data was collected using a questionnaire which contained questions about the factors that influence cybersex behavior, namely accessibility and access costs. Data analysis used SPSS, namely univariate and bivariate analysis. Less than half (27.3%) of students at SHS X Pariaman City engaged in cybersex behavior in the high-risk category. The results of the bivariate analysis showed that there is a relationship between attitude (p-value=0.004), and the role of peers (p-value=0.002). There wa s a relationship between attitudes and the role of peers in cybersex behavior. For this reason, it is expected that adolescents will choose peers who can have a positive influence and utilize the media to develop their abilities positively.

Keywords: Adolescents, Behavior, Attitude, Role of Peers, Cybersex

1. Introduction

The ease of accessing the internet features offered makes teenagers dependent on social media. The ease of forming social networks, getting the latest information as promotional media, making it easier to access school lessons and as a medium of entertainment. However, with all the advantages presented, social media has a negative

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impact, one of which is that it is easy for users to access pornographic content on the Internet. This problem is often called a phenomenon of cybersex. Cybersex is an activity to satisfy sexual desires involving two or more people that is done virtually (1,2).

The behavior of cybersex in Indonesia has increased since 2012, when the Ministry of Communication and Informatics reported that 80% of respondents conducting a survey were internet users (3). A survey of 2309 respondents from 31 provinces in Indonesia using Kimberley Young's Internet Addiction Test (IAT) found that 25% of respondents were indicated with Internet addiction. High school students and college students tend to have a 1.7% higher risk of addiction.(4)Adolescents are quite a vulnerable group to the negative impact of behavior cybersex because it can increase the risk of sexually transmitted infections (STIs), unwanted pregnancies, and psychological problems such as depression and anxiety. Besides, cybersex behavior may also increase the risk of sexual exploitation and exposure to age-inappropriate content (5–8).

The negative impact caused by cybersex makes the Indonesian Child Protection Commission (KPAI) feel worried that up to now, 1,002 children have identified the number of victims of pornography and online crimes. Victims of pornography online as much as 28%, child pornography online as much as 21%, child prostitution is carried out illegally online 20%, pornographic CD objects 15%, 11% of child victims of online sexual violence, and 24% of children possess pornographic material (9).

The phenomenon that occurred in West Sumatra is related to cybersex found that teenagers who have watched and read porn sites are categorized as cybersex 35.98% passive, 47.13% of adolescents who engage in sexual activity themselves such as masturbation and masturbation, and 37.93% of adolescents engage in sexual activity against other people (10).

Based on the results of the researcher's interview with the counseling teacher at **SHS** X Pariaman **City**, it was found that one student in each class, class X, XI, or XII, had pornography by downloading pornographic videos on his cell phone. The preliminary study that the researchers conducted by interviewing ten students at **SHS** X Pariaman **City** found that most of the students said they had encountered pornographic content on the Internet, such as advertisements containing pornographic elements while browsing the Internet, such as websites and social media even though they have no desire to view pornographic content. Not only that, most students often get sexually tempting jokes and often receive photos or videos that are considered indecent from friends chatting that they know in cybersex.

The necessity of conducting this study, in contrast to existing research, is predicated on its tailored focus on the adolescent cohort at **SHS** X Pariaman **City**. While extant

literature has addressed the prevalence and perils of cybersex among youth in various settings, the proposed research endeavors to unveil the intricate determinants underpinning this conduct within the localized educational milieu. (11–16)

Furthermore, prevailing scholarship often presents general trends and statistical data concerning cybersex behavior without delving into the underlying psychological and socio-cultural catalysts. This study seeks to bridge this gap by providing an intricate comprehension of the multifaceted interplay of factors contributing to cybersex conduct amidst adolescents in a specific educational institution. By accentuating the regional context of **SHS** X Pariaman **City**, the research proffers insights into the unique challenges, pressures, and influences students confront within this distinctive academic environment.

Additionally, antecedent investigations have primarily focused on the deleterious impacts of cybersex on adolescents' mental and physical well-being, often emphasizing the prevalence of adverse outcomes such as psychological coercion and heightened susceptibility to sexual exploitation. However, this study aims to elucidate the underlying motivations propelling involvement in cybersex among teenagers to discern the social, cultural, and psychological stimuli at play.

Through a comprehensive understanding of the particular factors shaping cybersex behavior among adolescents at **SHS** X Pariaman **City**, this study can furnish invaluable insights for the formulation of targeted intervention and prevention programs that address the fundamental roots of this phenomenon. This localized approach has the potential to inform the development of more effective strategies geared toward promoting healthy online conduct and shielding adolescents from the hazards associated with cybersex, ultimately fostering a secure and nurturing online environment for teenagers in this specific educational domain.

2. Methods

This type of research is quantitative research by design cross-sectional and sampling techniques proportional random sampling. This research was conducted at **SHS** X Pariaman **City**, which was held in April to July 2023. The population in this study was 288 students in class XI specializing in Sains and Social, with a total sample of 88 respondents.

The data source in this study is primary data, in which the researcher obtains data directly from the respondents using a questionnaire. The questionnaire was constructed based on previous research and relevant theoretical frameworks. Subsequently, validity

and reliability tests were conducted on 30 students from another school. The results of the validity and reliability tests indicated that all item questions yielded an r-value greater than 0.3, affirming the validity of the questionnaire items. Furthermore, the questionnaire underwent a reliability test, and the Cronbach Alpha value exceeded 0.60, confirming the questionnaire's validity and reliability, thereby substantiating its applicability for use in this study.

Secondary data obtained from the vice principal of the student affairs department, who was assisted by the Administrative Officer of **SHS** X Pariaman **City**, such as school profiles, recapitulation of the number of students, and a list of student names for **SHS** X Pariaman **City**. Not only that, but data was also obtained from books, journals, and website agencies related to harmful content from the Ministry of Communication and Informatics, Indonesian Child Protection Commission data, association of Internet service providers in Indonesia data, ECPAT data, and The Ministry of Women Empowerment and Child Protection (MoWECP) data. Data analysis was carried out using univariate and bivariate methods.

3. Results

Table 1 presents the frequency distribution of respondent characteristics based on gender, revealing a dominance of female respondents (56.8%), with the majority falling within the minor age group (31.8%) of 16-year-olds. All respondents (100%) reported daily internet access, although a minority (25.0%) confirmed subscribing to an internet network at home

Based on the findings in Table 2 from the univariate analysis, it was observed that less than half (27.3%) of the students exhibited cybersex behavior in the high-risk category. Concerning knowledge, less than half (29.5%) of the students demonstrated low knowledge. Additionally, over half (63.3%) of students displayed a negative attitude. Regarding accessibility, half (50.0%) of the students possessed high accessibility. Assessing the role of parents, more than half (52.3%) of the students indicated that their parents played a less significant role. Regarding peer influence, half (50.0%) of the students reported that their peers played a less significant role.

The results Table 3 of the bivariate analysis showed an attitude relationship (p-value=0.004), the role of peers (p-value=0.002) with behavior cybersex, and there is no knowledge relationship (p-value=0.757), accessibility (p-value=0.473), parental role (p-value=0.983) with behavior cybersex.

TABLE 1: Characteristics of Respondents.

Characteristics of Respondents	Frequency (n)	Percentage (%)
Gender		
Man	38	43.2
Woman	50	56.8
Age		
16 years	28	31.8
17 years	60	68.2

TABLE 2: Behavior Frequency Distribution cybersex, Knowledge, Attitude, Accessibility, Role of Parents, and Role of Peers.

Variable	Frequency (n)	Percentage (%)
Behavior Cybersex		
High risk	24	27.3
Low Risk	64	72.7
Knowledge		
Low	26	29.5
Height	62	70.5
Attitude		
Negative	56	63.6
Positive	32	36.4
Accessibility		
Height	44	50.0
Low	44	50.0
The role of parents		
Lack of Role	46	52.3
Role	42	47.7
The Role of Peers		
Lack of Role	44	50.0
Role	44	50.0
Total	**88**	**100**

4. Discussion

Comprehensive overview of the respondent characteristics, shedding light on the gender distribution within the sample population. Notably, the dominance of female respondents suggests potential gender-specific implications regarding the prevalence of cybersex behavior. Furthermore, the substantial proportion of respondents belonging

Table 3: Final Results of Bivariate Analysis.

Variable	Behavior Cybersex						BY 99% CI	p-value
	High risk		Low Risk		Total			
	f	%	f	%	f	%		
Knowledge								
Low	6	6,8	20	22,7	26	29,5	1,733 (0,253-2,126)	0,757
Height	18	20,5	44	50,0	62	70,5		
Attitude								
Negative	9	10,2	47	53,4	56	63,6	2,217 (0,080-4,587)	0,004*
Positive	15	17,0	17	19,3	32	36,4		
Accessibility								
Height	14	15,9	30	34,1	44	50,0	1.587 (0,615-4,096)	0,473
Low	10	11,4	34	38,6	44	50,0		
The role of parents								
Lack of Role	12	13,6	34	38,6	46	52,3	1,882 (0,345-2.256)	0,983
Role	12	13,6	30	34,1	42	47,7		
The Role of Peers								
Lack of Role	19	21,6	25	28,4	44	50,0	5.928 (1,962-17.911)	0,002*
Role	5	5,7	39	44,3	44	50,0		
Total	**24**	**27,3**	**64**	**72,7**	**88**	**100**		

Information:
* There is a significant relationship between cybersex

to the minor age group underscores the vulnerability of younger individuals to the potential risks associated with cybersex engagement.

5. Cyber Sex Behavior

The results showed that less than half (27.3%) of the students at **SHS** X Pariaman **City** had the behavior of cybersex in the high-risk category. Behavior cybersex is activities carried out online, such as reading texts that contain pornographic elements, viewing erotic images, engaging in sex chats, and exchanging pictures or messages about sex (17). Based on the analysis that the researchers found in the field, there were still some students who were involved in the behavior of cybersex, such as using to hide sexual activity on computers, laptops, and smartphones. For this reason, it is hoped that schools can increase the provision of education about sexuality and risky

sexual behavior to students. Nursal's research (2023) reported a significant increase in students' knowledge after receiving education. Apart from that, we also collaborate with community health centers or experts in the field of sexuality to provide education about adolescent problems at school regularly and to conduct and hold a parent meeting at least once a month to discuss the use of the Internet or cyber sex. (18)

6. Knowledge

These results are in line with research by Rupi (2020), which states that there is no significant relationship between knowledge and behavior cybersex in Indralaya Utara High School students (p-value=0,542) (19). Knowledge is formed from the results of human sensing of objects that can be felt by the senses they have (20). Based on the analysis that the researchers found in the field, there were still some students who had low related knowledge of cybersex, such as the causes of teenagers visiting pornographic sites stemming from a strong sex drive and promiscuity, sending adult videos with chat friends, and recording themselves or watching other people's sexual recordings. It is hoped that schools can include learning materials in Internet and comunication technology and Conceling Guidance lessons, which include safe internet use, online privacy protection,n and the importance of maintaining boundaries in digital relations, holding educational campaigns through seminars, group discussions, as well Youth information and Counseling Center members and Counseling Guidance teachers socializing more related information cybersex such as the dangers of engaging in such behavior, providing counseling to adolescents at least once a month to assist students in understanding the risks cybersex, held a parent meeting to discuss related cyber sex.

7. Attitude

These results are in line with research by Rupi (2020), which states that there is a relationship between attitudes and behavior of cybersex in senior high school students in Indralaya Utara (p-value=0,000) (19). Teenagers who have good knowledge about sexuality will tend to have a positive attitude (tendency to avoid sexual behavior). On the other hand, teenagers who lack knowledge about sexuality tend to have a negative attitude (tendency to approach sexual behavior) (21). Based on the findings in the field, students like to read stories on the Internet that contain pornographic elements and feel happy while watching porn videos. For this reason, Schools can include learning

materials covering safe internet use, protecting online privacy, maintaining boundaries in digital relationships, holding educational campaigns through seminars and group discussions, and training peer counselors and Guidance Counseling teachers. Nursal and Aprianti (2019) conducted training to increase the knowledge of peer counselors and counseling guidance teachers. Also, by disseminating information related to cybersex, such as the dangers of engaging in this behavior, providing counseling to teenagers at least once a month to help students understand the risks of cybersex, and holding parent meetings to discuss cybersex.to students by using media pamphlets/pictures about the dangers of pornography. (22)

8. Accessibility

Gayatri (2020) found that the frequency of pornography access was low or < 2x/day (68%), and the frequency of pornography access was high or ≥ 2x/day (32%). (23)These results are in line with research by Oktavia (2018), which states that there is no relationship between accessibility and accessing pornographic sites (cybersex) (p-value=0,015) (24). Accessibility is the ease with which individuals search websites 24 hours, seven days a week, to access sexual material via the Internet (25). Based on the findings in the field, some students feel excited when they see pornographic content and feel excited when they see pornographic material on the Internet. Therefore, the school can conduct counseling or peer counseling training about the risks and dangers of negative behavior, including unhealthy internet access, such as accessing pornographic content or being involved in cyber sex, by inviting resource persons who are experts in their fields.

9. The role of parents

The role of parents influences the formation of a child's self-character by instilling habits about what is good so that children understand what is right and wrong (26). Based on the findings in the field, students never get parental control, and parents do not provide education about the dangers of accessing pornographic content on the Internet. For this reason, the school can hold a parent meeting at least once a month to provide education related to behavior cybersex by inviting resource persons who are experts in their fields

10. The Role of Peers

This research is in line with research conducted by Rupi (2020), which states that there is a relationship between peer influence and behavior cybersex in senior high school students in Indralaya Utara (p-value=0,034) (19). Association with peers can influence individual behavior both positively and negatively. Positive influence occurs when individuals and their peers are involved in valuable activities, such as forming study groups and following social norms. On the other hand, negative influences can occur when individuals violate existing social norms due to interactions with peers (27-28). Based on the findings in the field, some students received support from their friends in accessing porn sites and often asked to exchange information related to porn sites via short messages. For this reason, the school can create a positive environment among students by activating and controlling the activities of school organizations such as Flag raisers, scouts, Youth Information and Counseling Center, and others, with a minimum of each student being required to participate in one organizational activity. Productive.

The prevalence of high-risk cybersex behavior, coupled with a significant proportion exhibiting a negative attitude, highlights the need for a more nuanced understanding of the underlying psychosocial factors driving such conduct. Moreover, the limited knowledge among a considerable portion of the students signifies potential gaps in the awareness and understanding of the implications associated with cybersex activities.

The interplay of parental influence and peer dynamics, as indicated in the data, underscores the significance of the social environment in shaping adolescents' perceptions and behaviors related to cybersex. The findings suggest a potential lack of guidance and support from both parents and peers, contributing to the susceptibility of adolescents to engage in cybersex behavior.

A significant association between attitude and peer influence with cybersex behavior underscores the pivotal role of social influences in shaping adolescents' attitudes and behaviors. Conversely, the lack of significant associations between knowledge, accessibility, and parental role with cybersex behavior suggests the need for further exploration to elucidate the nuanced dynamics that underlie these relationships.

These findings collectively emphasize the multifaceted nature of cybersex behavior among adolescents, necessitating a holistic approach encompassing comprehensive education, parental guidance, and targeted interventions aimed at fostering responsible digital conduct and mitigating the potential risks associated with cybersex engagement.

11. Conclusion

Based on the results of the study, it was observed that less than half of the students engaged in high-risk cybersex behavior, which correlated with their low level of knowledge on the subject. Additionally, more than half of the students demonstrated negative attitudes and reported insufficient parental involvement. Approximately half of the students had high accessibility to digital devices but experienced a lack of constructive peer influence. The study revealed a significant relationship between students' attitudes and peer roles with their cybersex behavior. However, no significant relationship was found between students' knowledge, accessibility, parental involvement, and their behavior. These findings underscore the importance of encouraging adolescents to associate with peers who can exert a positive influence and to utilize digital media to enhance their skills and abilities in a positive manner..

Ethics Approval and Consent to Participate

The research ethics committee of the Faculty of Public Health at Andalas University granted ethical approval (No: 8/UN16.12/KEP-FKM/2022) for this research on April 28, 2023 by Defriman Djafri, SKM., MKM, PhD and Dr. Dra. Sri Siswati, Apt, SH, M.Kes. Before any data was collected, informed consent was obtained. In response to their willingness to participate, stakeholders provided informed consent in the form of a letter.

Authors' Contribution

DGAN and GB. conceived of the presented idea. GB and M. developed the theory and performed the computations. DGAN. verified the analytical methods. DGAN. encouraged GB, M, SB and MSB to investigate and supervised the findings of this work. All authorsdiscussed the results and contributed to the final manuscript.

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