

Social media and pornography access behavior among adolescents

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ABSTRACT

Adolescents were vulnerable to problems related to reproductive health. Generation Z was the largest proportion in Indonesia who was born with internet and technology literacy. Internet and social media were meaningful for them. In 2018, 57% of adolescents worldwide search out porn using the internet. This study's goal was to analyze pornography access among males and female's adolescent. This was a quantitative study with a cross-sectional approach. The study population was high school students in Yogyakarta. A multistage random sampling was employed, involving 80 respondents. The data were analyzed using the Chi-square test, and logistic regression. The results showed that all the respondents had smartphones and accessed media social. WhatsApp, Instagram, and YouTube were the most accessed. Most of them (57.5%) had access to pornography through films, short videos, and also pictures. Multivariate analysis showed that male adolescents (Exp B=13.7) had a greater risk of accessing pornography compared to females. Access to more than 4 types of social media also increases access to pornography (Exp B=6.8). Adolescence needs more information, and also guidance from family, school also community related to their use of smartphones and social media to prevent access to pornography as the opening gate for sexual risk behavior.

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1. INTRODUCTION

World Health Organization (WHO) defines adolescents as the aged 10-19 years [1]. Generation Z is a population born in the period 1996-2012 and it's currently the largest proportion of Indonesia's population based on the results of the 2020 population census. The ratio of the number of Generation Z is 27.94% of the 270.2 million population souls. Most of Generation Z are teenagers [2].

Adolescence was high-risk of the threat of death, illness, and injury. However, this period is also the most important period to provide the basics for good health. In this phase, adolescents have a certain behavior related to physical activity, diet, drug use and sexual activity that can protect or harm their own health now and in the future [1]. In general, there are three threats towards adolescents include sexuality, human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) and narcotics, psychotropics, and addictive substances (NAPZA) [3].

Sexuality problems indicated by adolescents risk behavior. Sexual behaviors are related to negative health consequences including sexually-transmitted infection (STIs) including HIV/AIDS and substance use. Most common adolescents' sexual behaviors are often conceptualized as markers along a continuum of

sexual development (e.g, from kissing and making out to premarital sex such as oral, vaginal, and anal sex) [4].

Yogyakarta has the title of the city of students but also has sexual problems related to adolescent reproductive health. Previous research data showed that 18.5% of the 481 respondents from high school students in Yogyakarta stated that they had premarital sex [5]. A qualitative study in analysis on adolescent risk behavior showed that there are two things that influence adolescent behavior, namely internal and external factors. Internal factors that influence are age, knowledge, attitudes, norms, and lifestyle. External factors are the negative influence of friends, the influence of family, and the environment [6].

Lifestyles of adolescents, especially of their sexual habits affect by Pornography access. Pornography has a significant influence on adolescents' sexual attitudes and behaviors [7]. In 2018, 57% of adolescents worldwide search out porn at least monthly using the internet. Around 71% of them hide their online behavior from their parents [8]. The main reasons of adolescents consume pornography are curiosity, a stimulus to masturbation, new knowledge, dating, exposure and exploration of (virtual) sex [9].

There are differences between male and female adolescents in sexual attitudes and behaviors, because there are fundamental differences in the reproductive organs and the structures. A study describe the differences in brain structure and hormones in male and female adolescents [10]. The previous study in East Java conducted on 1,040 junior high school students in 2015 found that as many as 514 teenagers or 49.4% of respondents were active in risky sexual behavior. Of the 514 teenagers, the proportion of males was 56.6% higher than that of females, which was 43.7%. This risky sexual behavior from touching, kissing, and masturbating [11]. Access to pornography is also done mostly by teenage boys, which is 53.6% [12].

Pornography is associated with a wide range of concerning psychological phenomena. Perceived pornography addiction is associated with greater reported levels of psychological distress such as depression or anxiety disorders, impulsivity, compulsivity [7], [13]. Pornography use may have a negative effect on the quality of social relationships as well as negatively affect psychosocial development in childhood and adolescence [14], [15]. Perceived pornography addiction influences overall well-being [9].

Nowadays, adolescents as Generation Z also called the i-generation are born with internet and technology literacy. The role of the internet and social media was meaningful for them. The intensity of using internet facilities can cause behavioral changes in adolescents. A total of 95% of internet users access social media. The most teenagers use the internet for a thing that is not appropriate, as many as 24% of adolescents admit to using the internet to interact with strangers, 14% access pornographic content, and the rest to online games, and other interests. Internet users in Indonesia have increased in the last three years, from 34.9% in 2014 to 54.68% in 2018. The most accessed internet service is social media [16].

Internet and social media are like a double-edged sword, they can be used as access to information but also become an issue of pornography, provocation, unsafe sex, bullying, and other risky behavior if done without parental supervision [17]. Since pornography appeared on the internet, pornographic use has increased and attracted millions of users [18]. Previous studies showed that 42.2% of adolescents accessing pornography [19]. Pornography consumption was predicted by being male, being in a relationship, engaging in online activities, and watching movies [20]. Access to pornography and environmental influences related to the incidence of premarital sex [21]. Online videos were the most often used form in the total surveyed population that they can currently be easily reached with any device with internet access [14]. This study's goal was to analyze the pornography access among males and females adolescent.

2. RESEARCH METHOD

The study conducted in Yogyakarta. Yogyakarta is an area known as the city of students. Yogyakarta has dynamics of problems towards adolescents' reproductive health. This study was a quantitative descriptive analytic study with a cross-sectional approach and conducted in July-August 2022. The population in the study was high school students in Yogyakarta. The theoretical framework used in Lewin's Field Theory proposed that behavior is the result of the individual and the environment [22].

A multistage random sampling technique was used to identify study subjects. The first stage was to choose the high school that will be used and the second stage was to select respondents from each school. All of these stages use a random technique. The sample was 80 adolescents consisting of 40 males and 40 females from 5 senior high school grade XI in Yogyakarta Province. Data were collected by questionnaires. Ethical approval for this study was e-KEPK/POLKESYO/0530/VI/2022 from ethical committee Poltekkes Kemenkes Yogyakarta. Data was analyzed by statistical testing software. The data were analyzed using the frequency distribution and the Chi-square test and logistic regression.

3. RESULTS AND DISCUSSION

Respondents in this study were adolescents aged 15-17 years. All of them had smartphones. Adolescents constantly used their smartphones to access media social. No statistical differences between male and female adolescents based on four types of media social everyday. Male adolescents had more frequent accessing pornography than female adolescents. The video was the most pornograph access for male adoslescents. Sex ($p=0.000$), social media access ($p=0.002$), and kind of social media Facebook ($p=0.000$) were the factors related to pornography access among male and female adolescents. Sex and social media access significantly affect pornography access among adolescents with a p -value <0.05 .

3.1. Respondent characteristics

The respondents in the study were high school students in Yogyakarta. Respondents in this study were adolescents aged 15-17 years consisting of 40 male students and 40 female students. According to WHO, adolescence is the phase of life between childhood and adulthood, from ages 10 to 19 years [1]. Based on Table 1, the educational program at school, 55% of students were in the science class and 45% were in the social studies class. The majority of students have parents with income above the minimum standard in Yogyakarta. Socioeconomic status was a latent variable measured by four indicators, one of which is family income. From the previous study, socioeconomic status was a relevant determinant of health behaviors in adolescents [23].

The majority of the respondents do not follow the school organization (95%). But, almost half of students join the organizations outside of school with a percentage of 43.8%. It is important to identify the characteristics of youth in terms of organizational participation. Adolescents can form formal and informal friendships including an organization. Likewise, in adolescents, sexual behavior is not only related to biological processes but also social, emotional, and spiritual processes that are strongly influenced by the community around their lives [24]. The results from a systematic review in 2019 highlight a body of evidence supporting the importance of peer networks on adolescent health behaviors through social processes [25].

Table 1. Respondents characteristics

Variables	F	%
Age groups		
Min	15 years old	
Max	17 years old	
Mean	15.99 years old	
Sex		
Male	40	50
Female	40	50
Educational program		
Science	44	55
Social	36	45
Parent's income		
≤standar_minimum	30	37.5
>standar_minimum	50	62.5
School organization		
No	76	95
Yes	4	5
Outschool organization		
No	45	56.3
Yes	35	43.8

3.2. Smartphone used among male and female adolescents

Table 2 shows that all adolescents had smartphones. After identification at the time of starting to use a smartphone, no differences between male and female adolescents. The average age of adolescents using a smartphone since the age of 12 years. Female adolescents started using smartphones earlier. Most the adolescents used an android type of smartphone for both of gender. No difference in the merk of the smartphone among male and female adolescents.

Adolescent psychology is still unstable and the growth of sexual hormones in adolescents is still ongoing. If using smartphones and the internet earlier is not done wisely by them, without parental supervision, the information accessed through social media or the internet they do not filter anymore. Internet and social media can be used for access to pornography, provocation, unsafe sex, bullying, and other risky behavior if it's done without parental supervision [17]. The increased use of smartphones led to new ways of interacting with others through social media and engaging in other behaviors such as listening to music and watching streaming vidoes related to pornography content [20].

Table 2. Smartphone used among male and female adolescents

Variables	Male		Female		Total		p-value
	F	%	F	%	F	%	
Start used smartphone							0.245
≤12 years old	23	57.5	28	70	51	63.7	
>12 years old	17	42.5	12	30	29	36.3	
Total	40	100	40	100	80	100	
Min			7 years old				
Max			15 years old				
Mean			11.83 years old				
Standar deviation			1.682				
The kind of the smartphone							0.100
Android	39	52.7	35	47.5	74	100	
IOS	1	16.7	5	83.3	6	100	
Total	40	100	40	100	80	100	
Merk of the smartphone							0.018
Xiaomi/Redmi	15	37.5	4	10	19	23.8	
Samsung	5	12.5	12	30	17	21.3	
Oppo	8	20	4	10	12	15	
Realme	6	15	5	12.5	11	13.8	
Vivo	2	5	8	20	10	12.5	
Iphone	1	2.5	5	12.5	6	7.5	
Asus	1	2.5	1	2.5	2	2.5	
Infinix hot	1	2.5	0	0	1	1.3	
Zenfone	1	2.5	0	0	1	1.3	
Sony	0	0	1	2.5	1	1.3	
Total	40	100	40	100	80	100	

3.3. Media social access among males and female adolescents

Adolescents constantly used their smartphones to access media social. Based on Table 3, all of the adolescents accessed WhatsApp. The other media social that was more accessed by adolescents were Instagram and YouTube. Adolescents are active users of social media. In a virtual social network, social media is a form of internet service that becomes a forum for online communities such as YouTube, Facebook, Instagram, Twitter, and so on [16]. Social media is a channel for conveying health information effectively including health promotion, but it also has negative consequences. In general, the use of social media affects sexual health behavior [17]. One of the social media that can be used to disseminate information about adolescents' health is Instagram [26]. Social media plays an important role in the lives of adolescents.

Table 3. Media social access among males and female adolescents

Variables	Male		Female		Total		p-value
	F	%	F	%	F	%	
Media social							0.813
≤4 media social	13	48.1	14	51.9	27	100	
>4 media social	27	50.9	26	49.1	53	100	
The kind of media social							
Whatsapp	40	50	40	50	80	100	1.000
Instagram	40	50.6	39	49.4	79	100	0.500
Youtube	40	51.3	38	48.7	78	100	
Tiktok	29	47.5	32	52.5	61	100	0.431
Facebook	31	79.5	7	18.4	38	100	0.000
Twitter	16	42.1	22	57.9	38	100	0.179
Telegram	18	47.4	20	52.5	38	100	0.654
Snapchat	1	14.3	6	87.5	7	100	0.048

3.4. Pornograph access among male and female adolescents

Table 4 explains pornography access among male dan female adolescents. Male adolescents had more frequent accessing pornography than female adolescents. Our findings in line the other study indicate that there was significantly higher proportion of males than females in pornography access. The majority of adolescents reported accessing pornography through internet [27]. The growth trend in the prevalence of online pornography seems to be propelled mostly by the expanding reach of the Internet. Pornography content appeared on several kinds of sites, such as the YouTube platforms, allowing for free, on-demand streaming of pornographic materials. Private browsing modes on the use of internet using smartphones allow users to browse internet websites without leaving a trace [28].

The majority of male adolescents who claimed to have accessed pornography, got access to pornography through watching videos with a percentage of 62.9%. On the other hand, female adolescents got access to it from the film with a percentage of 52.6%. Online videos were the most often used because they can currently be easily reached with any device with internet access to access pornography based on the previous study. Videos may provide images of sexual intercourse and other activities with clarity [14].

Exposure to pornography increased the risk eight times to engage in risky sexual behavior. The fall of adolescents in sexually risky behavior, one of the reasons was their desire to try. It happened, after the adolescents are influenced other people such as friends, and also because they are affected by information accessed from various sources including pornography access [29]. Negative information about sexuality, is very easy to get by adolescents, especially through the internet. In the midst of reproductive hormones growing rapidly in adolescence, negative thoughts and images can influenced and then channeling it to negative things. A systematic review suggested that after watching pornography, male adolescents felt the need to try out what they had seen in real life. This study showed that male adolescents were more attractive for sexual adventurers than their female counterparts [30].

Table 4. Pornograph access among male and female adolescents

Variables	Male		Female		Total		p-value
	F	%	F	%	F	%	
Pornograph acces							0.000
No	8	23.5	26	76.5	34	100	
Yes	32	69.6	14	30.4	46	100	
The kind of pornograph access							
Film	9	47.4	10	52.6	19	100	0.793
Short video	22	62.9	13	37.1	35	100	0.043
Picture	17	63	10	37	27	100	0.098

3.5. Factor related towards pornograph access among adolescents

Table 5 showed that sex and social media access were the factors related to pornography access among male and female adolescents. There was a relationship between sex and pornography access behavior. The statistical test of both of them showed a p-value of 0.000. Male adolescents were more access to pornography than female adolescents with a percentage of 80%. The majority of female adolescents did not access pornography with a percentage of 65%. In line with a previous study in 2019 which also showed that male adolescents were more access to pornography [14]. Males and females differ in their patterns of pornography access. It can be explained by the greater tendency of males to rate sexual stimuli as more pleasant and arousing and to prove stronger neural responses derived from exposure to these sexual stimuli [31].

Social media access was a factor in pornography access among male and female adolescents. There was a relationship between social media access and pornography access behavior ($p=0.002$). Social media is a form of internet service. Access to pornography is easy and a wide variety to the public with minimal effort. Online pornography is growing rapidly. Not only is it easy to access, but also free of charge with new sites being created daily. There is no restrictions on the type of pornography that can be viewed [32]. The boom of technological advances, it means there is a bigger change the rate of people accessing pornography using the internet through social media. Access to social media through the internet frequently and diverse from many types of social media increases the opportunity to access pornography [33]. In identifying the various type of social media used by adolescents, the use of Facebook was associated with access to pornography with statistical test results p-value of 0.000. Access to Facebook also was mostly done by male adolescents. Pornography consumption was predicted by being male and engaging in online activities (such as using Facebook) [20].

3.6. Multivariat analysis related pornograph access among adolescents

Table 6 showed that sex and social media access affect to pornography access among adolescents. Sex and social media access significantly affect to pornograph access among adolescents with a p-value <0.05 . Sex was the factor that affect pornograph access with a p-value of 0.000, OR 13.71 (95% CI 3.727-50.457). Male adolescents were at risk to access pornography by 13.7 times compared to female adolescents. Males were consistently found to be the primary user of pornography in many studies elsewhere. From a biological perspective, a study utilizing functional brain magnetic resonant imaging (MRI) showed men were more sensitive in response to visual sexual stimuli than women [34].

Table 5. Factor related to pornograph access among adolescents

Variables	Pornograph access				Total		p-value
	No		Yes		F	%	
	F	%	F	%			
Sex							0.000
Males	8	20	32	80	40	100	
Females	26	65	14	35	40	100	
Total	34	42.5	46	57.5	80	100	
Educational program							0.440
Science	17	38.6	27	61.4	44	100	
Social	17	47.2	19	52.8	36	100	
Total	34	42.5	46	57.5	80	100	
Parent's income							0.559
≤Standar_minimum	14	46.7	16	53.3	30	100	
>Standar_minimum	20	40	30	60	50	100	
Total	34	42.5	46	57.5	80	100	
School organization							0.430*
No	33	43.4	43	56.6	76	100	
Yes	1	25	3	75	4	100	
Total	34	42.5	46	57.5	80	100	
Outschool organization							0.333
No	17	37.8	28	62.2	45	100	
Yes	17	48.6	18	51.4	35	100	
Total	34	42.5	46	57.5	80	100	
Start used smartphone							0.208
≤12 years old	19	37.3	32	62.7	51	100	
>12 years old	15	51.7	14	48.3	29	100	
Total	34	42.5	46	57.5	80	100	
Media social acces							0.002
≤4 media social	18	66.7	9	33.3	27	100	
>4 media social	16	30.2	37	69.6	53	100	
Total	34	42.5	46	57.5	80	100	
Whatsapp							-
No	0	0	0	0	0	0	
Yes	34	42.5	46	57.5	80	100	
Total							
Instagram							0.425*
No	1	100	0	0	1	100	
Yes	33	41.8	46	58.2	79	100	
Total	34	42.5	46	57.5	80	100	
Youtube							0.178*
No	2	100	0	0	2	100	
Yes	32	33.2	46	59	78	100	
Total	34	42.5	46	57.5	80	100	
Tiktok							0.120
No	11	57.9	8	42.1	19	100	
Yes	23	37.7	38	62.3	61	100	
Total	34	42.5	46	57.5	80	100	
Facebook							0.000
No	28	70	12	30	40	100	
Yes	6	15	34	85	40	100	
Total	34	42.5	46	57.5	80	100	
Twitter							0.154
No	21	50	21	50	42	100	
Yes	13	34.2	25	65.8	38	100	
Total	34	42.5	46	57.5	80	100	
Telegram							0.154
No	21	50	21	50	42	100	
Yes	13	34.2	25	65.8	38	100	
Total	34	42.5	46	57.5	80	100	
Snapchat							0.333
No	30	41.1	43	58.9	73	100	
Yes	4	57.1	3	42.9	7	100	
Total	34	42.5	46	57.5	80	100	

Table 6. Multivariat analysis related towards pornograph access among adolescents

Variables	Sig	Exp B	CI
Sex (Males)	0.000	13.713	3.727-50.457
Media social acces (>4 media social)	0.003	6.819	1.888-25.630

In terms of social media access behavior showed that social media access was associated with pornography access with a p-value of 0.000, OR 6.82 (95% CI 1.888-25.630). Adolescents who access media social more than 4 types of it every day increased their risk of pornography access by 6.8 times. The use of smartphones and social media through the internet affect to the pornographic access [35]. Heavy use of social media is more likely to perform risky sexual behaviors. Adolescents who have been exposed to media about sexual behavior are 2.6 times more likely to be at risk of sex behavior [36]. Pornography also makes viewers addicted. Pornography can stimulate the brains' reward system intensively, which can bring about significant changes in the brain. Pornography addiction caused severe or extreme mental health problems. Depression, anxiety, and stress were the three mental health parameters in both males and females [27].

Pornography addiction should not be taken lightly because it is can negatively affect one's self-control and the brain to commit sexual behavior that can be influenced by the pseudo-pleasures in pornographic videos. Pornography addiction has a negative effect on the development of the human brain at various age levels such as loss of shame, humiliation, depression, and others. It can be weakening bodily functions and impairs one's memory. Porn consumption possibly to give a negative effect on academic studies [37]. Pornography hours used per week is related to low grey-matter volume in the right caudate. It plays the most significant part in allowing humans to function normally daily [18]. Use porn more often tends to report less satisfaction with their sex life [38].

Our findings showed that factors related to pornography access were sex and social media access. Nevertheless, a study in 2020 suggested that higher quality time with biological parents predicted delayed debut of pornography access, masturbation, vaginal sex, and oral sex. Role of parents as related to delayed pornography access among adolescents [39].

4. CONCLUSION

Sex and social media access affect to pornographic access among male and female adolescents. Male adolescents were at risk to access pornography by 13.7 times compared to female adolescents. Adolescents who access media social more than 4 types of it every day were 6.8 times more likely to pornographic access. Access to pornographic may has a negative impact to adolescents. Adolescents was a vulnerable period and needs more information and also guidance from family, school also community related to their use of smartphones and social media to prevent access towards pornography as the opening gate for the sexual risk behavior.





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