Prevalence and factors associated with sexual activities among high school students in Kendal regency of Indonesia

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Abstract

Purpose - Sexual activities are a part of reproductive health risk indicator. The risk among adolescents is high globally. Unwanted pregnancy, the early sexual debut, inconsistent of condom use, sexually transmitted infection, and HIV are still the big problem in young people and drug & alcohol user include in the risks. These problems are significantly occuring in teenagers. The low of knowledge about the effect of these negative attitudes have been identified as factors where increase the opportunities of youth engaged in risk of sexual behaviors. The aim of this study was conducted to examine the prevalence and factor associated with sexual activities among high school students.

Design/methodology/approach - A cross-sectional study was conducted among 145 male students and 315 female students. A multistage random sampling technique was used to select 460 students. A self-reported questionnaire was used including Illustrative Questionnaire for Interview-Surveys with Young People, Sexual Activity Scale and Sex Education Inventory, adopted in according to Indonesian context. Descriptive statistics, Chi-square test, and multivariate logistic regression were used to analyze the data.

Findings - The prevalence and factors associated with sexual activities were separated in 4 groups to be 60.8% of male students, 21.4% of female students, 32.9% of rural area, and 35.2% of urban area. Factor associated with sexual activities were pornography $p<0.001$, substance use $p<0.001$, and smoking $p<0.001$, accessed sexual activities by internet $p<0.001$. The multivariate analysis, pornography [OR: 7.50, 95% CI = 2.50-22.50], knowledge of reproductive health [OR: 6.49, 95% CI= 2.29-18.35], substance use [OR: 2.67, 95% CI= 1.02-6.97) were significant factor associated with sexual activities among adolescents.

Originality/value - The study found several factors associated with sexual activities among youth. These findings could become to aid the comprehensive sexual and HIV-AIDS education programs where are extremely needed for adolescents. There are need to provide some learning services in schools and community including health clinics for adolescent to increase knowledge of reproductive health and to reduce negative attitude of sexual activities.

Keywords Sexual Behaviors, Adolescent health, Adolescent, Urban & Rural Area, Indonesia

Paper type Research paper

Introduction

Sexual activities are part of reproductive health [1]. For female teenagers, marriage is a milestone importantly related with the onset of sexual behavior, and consequently with the risk of pregnancy. Early sexual activities are prone to STIs (Sexually Transmitted Infections), including HIV (Human Immunodeficiency Virus), unplanned pregnancies, and coerced sex by older spouses [2-4]. The CDC (Centers for Disease Control and Prevention) has estimated that about 19 million new infections of STIs in each year [5]. Roughly 50,000 Americans have been diagnosed with HIV every year, with regard to HIV-AIDS [6]; whereas adult population had HIV infection to reveal 39% for women and men mostly aged > 25 years old, then adolescent and young people also took HIV to show 11% for boys and girls especially aged 15-24 years old [7].

The sexual behavior data of PKBI (Indonesian Planned Parenthood Association) of Central Java found that male adolescent indicated masturbation 16.78%, cyber-sex 4.69%, necking 4.87%, touching 4.78%, kissing 15.09%, hug 19.68%, watching porn video 32.80%, sexual intercourse 0.94% and kissing & hug 7.31% and female adolescent got watching porn video 18.18%, kissing 10.59%, hug 16.03%

masturbation 1.31%, sexual intercourse 0.09%, and kissing & hug 3.47% [8]. For active and not-active sexual activities, the previous study indicated that 49.4 percent of not-active, such as 43.3 percent for males and 56.3 percent for females. Furthermore, previous study found that that 50.6 percent of active, such as 56.6 percent for males and 43.7 percent of females. The detail of active sexual activities indicated 39.2 percent of touching (43% for males & 36.2% for females), 13.2 percent of kissing (16.2% for males & 10.7% for females), and 13.9 percent of masturbation (23.1% for males & 6.6% for females). Not active sexual behaviors could be defined as no having of any of 3 behaviors (touching, kissing, and masturbation) and active sexual behaviors could be defined as having in any of those 3 behaviors (touching, kissing, and masturbation) [9].

Adolescent had been defined as the period of age 10-19 years old [10], is a crucial period in a person's transition from childhood to adulthood. In Indonesian context, adolescents could be defined as young people age 15-24 years old [11]. Most sexually active behaviors related research in adolescents that were conducted urban and rural area in male and female students. Moreover, they focused on unmarried people in Junior and Senior High School. Adolescent had been defined as the period of age 10-19 years old, is a crucial period in a person's transition from childhood to adulthood. In Indonesia context, adolescents could be defined as young people age 15-24 years old [12], while the BKKBN (Indonesian Family Planning Organization) had defined adolescents as aged 10-24 years. Adolescent ranged age roughly 10-19 years. But in a recent study adolescence is defined as the age approximately 13-16 years where the adolescents take in Junior and Senior High School [13]. But in a recent study adolescence is defined as the age approximately 13-16 years where the adolescents take in Junior and Senior High School. The aims of this study examine factors associated with sexually active adolescent among high school student in Kendal Regency, Indonesia. The aims of this study examine factors associated with sexually active adolescent among high school students in Kendal, Indonesia.

Method

Sample and procedure

This is the school-based where cross-sectional study selected 5 state high schools in Kendal Regency, Indonesia. All 460 students were interviewed to join with multistage cluster sampling. This research reached ethical clearance from Ethical Committee of Health Research of Faculty of Sport Science of Semarang State University, Indonesia Number: 186/KEPK/EC/2017. Data collection was conducted from September to October 2017 through interviews, lasting between 45-60 minutes for each class.

Measurements

A self-reported questionnaire was improved, including Illustrative Questionnaire for Interview-Surveys with Young People [14], Sexual Activity Scale and Sex Education Inventory [15], and HIV Knowledge Questionnaire [16]. The questionnaire in English version was translated into Indonesian language. Forward-translations and panel back-translation from three experts were employed. Pearson's correlation items-total score was significant at the 0.05 level (p-value <0.05). In terms of internal consistency, Cronbach's Alpha test of scale reliability was used to test the reliability. Cronbach's Alpha test was 0.722 for knowledge and 0.750 for attitude. After data collection, Cronbach's Alpha test was 0.839 for knowledge and 0.733 for attitude.

Analysis

Descriptive statistics include frequency, percentage, and mean were used to describe the socio-demographic characteristics, prevalence of sexually active.

Table 1. Prevalence of sexually active among high school students

Sexual activities	Male n=145 (%)	Female n=315 (%)	Total n=460 (%)	Rural n=279 (%)	Urban n=181 (%)	Total n=460 (%)
Not active	39.2	78.6	66.2	67.1	64.8	66.2
Active	60.8	21.4	33.8	32.9	35.2	33.8
Kissing						
Yes	28.0	20.1	22.6	23.1	21.8	22.6
Petting						
Yes	15.4	1.9	6.1	5.1	7.8	6.1
Touching						
Yes	12.5	1.9	5.3	5.0	5.6	5.3
Masturbation						
Yes	40.3	2.6	14.4	12.2	17.9	14.4
Intercourse						
Yes	12.6	3.5	6.4	6.1	6.7	6.4

Table 2. Socio-demographic among high school students

Variables	Population groups				Total n = 460 (%)
	Male		Female		
	Urban (n = 66), %	Rural (n = 79), %	Urban (n = 115), %	Rural (n = 200), %	
Age (years)	(Missing data: 2, Mean: 1.99, SD: 0.840, min: 1, max:5)				
15	36.4	34.2	31.3	31.5	32.6
16	37.9	40.5	37.4	39.0	38.7
17 and older	25.8	25.3	31.3	29.5	28.7
Grade					
10th	44.0	45.6	35.7	33.0	37.4
11th	33.3	25.3	33.9	35.5	33.0
12th	22.7	29.1	30.4	31.5	29.6
Living arrangement					
Living in house with parents	95.5	89.9	94.8	92.0	92.8
Living in relative's house	4.5	10.1	5.2	7.5	7.2
Pocket money	(Missing data: 2, Mean: 1.41, SD: 0.510, min: 0, max:2)				
< 1 U\$ (<IDR 13,500)	53.0	70.9	47.0	59.5	57.9
> 1 U\$ (> IDR13,500)	47.0	25.3	53.0	40.0	42.1

The odds ratios with 95% confidence interval (CI) were assessed to determine the significance of correlated factors. A stepwise multivariate logistic regression was employed to identify the final significant factors associated with sexual activities.

Results

Table 1, the study found that male higher than female (60.8% and 21.4%) for sexually active among high school students. In terms of geographical location, urban ha higher sexual activities in comparison to rural areas. Some other variables of sexual behaviors, like percentage of kissing that male (28.0%) had higher than female (20.1%), but for area, rural area (23.0%) showed higher than urban area (21.8%). Then urban area indicated higher than rural area for sexually active students. Some other variables of sexual, behavior, like percentage of kissing that male (28.0%), had higher than female (20.1%), but for area, rural area (23.0%) showed higher than urban area 21.8%).

Table 2, the age of urban male (36.4%) had higher than rural male (34.2%) for 15 years old and 25.8% higher 25.3% for 17 years old, but rural female had higher than urban female for 15 years old (31.5 vs 31.3%) and 16 (39.0 vs 37.4%) years old. The Table 2 shows that age of urban male (36.4%) had higher than rural male (34.2%) for 15 years old and 25.8% higher 25.3% for 17 years old, but rural female had higher

Table 3. Bivariate analysis prevalence and factors associated with sexual activities

Sexual activities	Female				Male			
	Total	Not Active	Active	*p-value*	Total	Not Active	Active	*p-value*
Age (years)								
>15	214	164	50	0.21	69	23	46	0.17
<15	99	82	17		74	33	41	
Grade								
12th	99	70	29	0.02	37	8	29	0.01
10th & 11th	214	176	38		106	48	58	
Accommodation								
Living with parents	300	235	65	0.27	137	54	83	0.77
Others	12	11	1		6	2	4	
Pocket money								
<1 U$ (IDR 15,500,-)	172	142	30	0.06	91	31	60	0.11
>1 U$ (IDR 15,500,-)	140	103	37		50	24	26	
Communication with parents								
Never	161	135	26	0.02	88	36	52	0.59
Often	152	111	41		55	20	35	
Knowledge of HIV								
Low	226	185	41	0.02	111	48	63	0.06
High	87	61	26		32	8	24	
Knowledge of RH								
Low	230	194	36	<0.001***	77	35	42	0.10
High	83	52	31		66	21	45	
Attitude of RH								
Positive	103	81	22	0.97	68	25	43	0.58
Negative	209	164	45		75	31	44	
Accessed sexual activities								
No	257	215	42	<0.001***	92	49	43	<0.001***
Yes	54	30	24		49	6	43	
Substance use								
No	293	240	53	<0.001***	45	29	16	<0.001***
Yes	18	4	14		97	27	70	
Smoking								
No	300	240	60	<0.001***	48	30	18	<0.001***
Yes	10	3	7		95	26	69	
Alcohol								
No	298	242	56	<0.001***	107	48	59	0.016
Yes	13	2	11		36	8	28	
Pornography								
No	254	221	33	<0.001***	65	46	19	<0.001***
Yes	57	23	34		78	10	68	

than urban female for 15 years old (31.5 vs 31.3%) and 16 (39.0 vs 37.4%) years old. For grade of students revealed 10th and 12th grade higher for rural male than urban male, different for 11th and 12th grade higher for rural female than urban female. For living arrangement, the result reported almost students staying with their parents for urban male (95.5%), rural male (89.9%), urban female (94.8%), and rural female (92.0%). But for pocket money variable urban female (53.0%) had highest and rural male had lowest (25.3%) for >1U$ (>IDR 13,500) for in all areas. But for pocket money variable, urban female (53.0%) showed the highest and rural male indicated the lowest (25.3%) for >1U$ (IDR 13,500) for all areas. Furthermore, rural male (70.9%) had higher than other areas for < 1 U$ (< IDR 13,500).

Based on Table 3, male students showed association between independent variables and sexual activities (active or not active). The table revealed the grade variable became significant with *p*=0.01 [OR: 0.33, 95% CI: 0.14-0.80]. Furthermore, the relationship before marriage variable also revealed that the variable had significantly association with *p*=0.006 [OR: 2.63, 95% CI: 1.31-5.29].

Table 4. Multiple logistic regression of prevalence and factors associated with sexual activities

Variables	Female				Male			
	p-value	OR	95% CI Lower	95% CI Upper	*p-value*	OR	95% CI Lower	95% CI Upper
Knowledge of RH								
Low	0.000***	6.49	2.29	18.35				
High	1							
Relationship before marriage								
No relationship	1							
Courtship	0.000***	14.46	4.63	45.07				
Accessed reproductive system								
No	1							
Yes	0.033*	3.65	1.11	11.97				
Having alcohol								
No	1							
Yes	0.05*	7.96	0.990	63.62				
Having pornography								
No	1				1			
Yes	0.000***	7.50	2.50	22.50	0.000***	7.86	3.10	19.98
Accessed sexual activities								
No					1			
Yes					0.011**	4.1	1.38	12.16
Substance use								
No					1			
Yes					0.045*	2.67	1.02	6.97

Based on the same table, the variable of accessed puberty by internet also became significant *p*=0.018 [OR: 2.28, 95% CI: 1.14-4.55] and the variable of accessed reproductive system showed significantly *p*=0.05 [OR: 1.97, 95% CI: 0.99-3.93]. According to the table, the variable of accessed reproductive system showed significantly *p*=0.05 [OR: 1.97, 95% CI: 0.99-3.93]

Then the table explained some variables to be significant for accessed sexual activities *p*<0.001 [OR: 8.17, 95% CI: 3.17-21.06]. In terms of substance use, the data reported significant *p*<0.001 [OR: 4.70, 95% CI: 2.21-10.00] associations. Then the table explained some variables to be significant for accessed sexual activities *p*<0.001 [OR: 8.17, 95% CI: 3.17-21.06]. In terms of substance use, the data reported significantly association *p*<0.001 [OR: 4.70, 95% CI: 2.21-10.00]. For the some variables, the results revealed significant for smoking *p*<0.001 [OR: 4.42, 95% CI: 2.11-9.25], alcohol use *p*=0.016 [OR: 2.85, 95% CI: 1.19-6.82] and the pornography *p*<0.001 [OR: 16.46, 95% CI: 7.02-38.61]. For the some variables of smoking *p*<0.001 [OR: 4.42, 95% CI: 2.11-9.25], alcohol use *p*=0.016 [OR: 2.85, 95% CI: 1.19-6.82] and the pornography *p*<0.001 [OR: 16.46, 95% CI: 7.02-38.61] also revealed significant association with sexual activities.

According to Table 3, female students showed association between independent variables and sexual activities (active or not active). The table revealed the grade variable became significant with *p*=0.02 [OR: 0.52, 95% CI: 0.30-0.91]. Furthermore, the communication with parents variable also revealed that the variable had significant with *p*=0.02 [OR: 1.92, 95% CI: 1.11-3.33]. Then, the variable of knowledge of HIV also became significant *p*=0.02 [OR: 1.92, 95% CI: 1.09-3.40] and the variable of knowledge of reproductive health also showed significant association *p*<0.001 [OR: 3.21, 95% CI: 1.829-5.68]. Then, the variable of knowledge of HIV also became significant with *p*=0.02 [OR: 1.92, 95% CI: 1.09-3.40] and the variable of knowledge of reproductive health showed significantly association *p*<0.001 [OR: 3.21, 95% CI: 1.829-5.68].

In terms of relationship before marriage variable, the data reported significant *p*<0.001 [OR: 14.50, 95% CI: 6.23-33.74] association. In terms of relationship

before marriage variable, the data reported significantly association with $p<0.001$ [OR: 95% CI: 6.23-33.74]. The substance use p<0.001 [OR: 15.85, 95% CI: 5.02-50.07], alcohol consumption $p<0.001$ [OR: 23.77, 95% CI: 5.12-110.25] and pornography use also showed significant with $p<0.001$ [OR: 9.90, 95% CI: 5.20-18.84]. The substance use $p<0.001$ [OR: 15.85, 95% CI: 5.02-50.07], alcohol consumption $p<0.001$ [OR: 23.77, 95% CI: 5.12-110.25], and pornography use also showed significant with $p<0.001$ [OR: 9.90, 95% CI: 5.20-18.84].

Multiple logistic regression was used by using Forward Conditional Method to create statistical model that can predict the probability of sexually active: 2 categories active and not active in sexual activities. Multiple logistic regression was used by using Forward Conditional Method to create statistical model that can predict the probability of sexually active that were 2 categories active and not active in sexual activities. According to Table 4, the finding showed that the result of multiple logistic regression indicated significant for male students in accessed sexual activities with $p=0.011$ [OR: 4.1, 95% CI: 1.38-12.16], substance use with $p=0.045$ [OR: 2.67, 95% CI: 1.02-6.97], and pornography consumption with $p<0.001$ [OR: 7.86, 95% CI: 3.10-19.98]. According to Table 4, the finding showed that the result of multiple logistic regression indicated significant for accessed sexual activities in male students with $p=0.011$ [OR: 4.1, 95% CI: 1.38-12.16]. In this case, there were 3 indicators including enabling factors all of indicators to be factor associated with sexual activities among high school students.

The table also revealed that the finding of female students indicated significant in some variables such as, knowledge of reproductive health with $p<0.001$ [OR: 6.49, 95% CI: 2.29-18.35], relationship before marriage with $p<0.001$ [OR: 14.46, 95% CI: 4.63-45.07], accessed reproductive system with $p=0.033$ [OR: 3.65, 95% CI: 1.11-11.97], alcohol use with $p=0.05$ [OR: 7.96, 95% CI: 0.99-63.62], pornography consumption with $p<0.001$ [OR: 7.50, 95% CI: 2.50-22.50]. In this term, there were 5 indicators including predisposing factor for knowledge of reproductive health, reinforcing factor for relationship before marriage, and enabling factor for accessed reproductive system, alcohol use, and pornography consumption. The table revealed that the finding of female students indicated significant in some variables, such as knowledge of reproductive health with $p<0.001$ [OR: 6.49, 95% CI: 2.29-18.35], relationship before marriage with $p<0.001$ [OR: 14.46, 95% CI: 4.63-45.07], accessed reproductive system with $p=0.033$ [OR: 3.65, 95% CI: 1.11-11.97], alcohol use with $p=0.05$ [OR: 7.96, 95% CI: 0.99-63.62], pornography consumption with $p<0.001$ [OR: 7.50, 95% CI: 2.50-22.50]. In this terms, there were 5 indicators including predisposing factor for knowledge of reproductive health, reinforcing factor for relationship before marriage, and enabling factor for accessed reproductive system, alcohol use, and pornography consumption.

Discussion

This study had reported that the prevalence of sexually active among male students is 60.8% of male students and 21.4% of female students and 32.9% of rural area, and 35.2% of urban area. This study had reported that the prevalence of sexually active among male students is 60.8% of male students and 21.4% of female students, 32.9% of rural area, and 35.2% of urban area. According to the results, the urban group was higher than rural groups and male higher than female for active or not active in this prevalence of sexual behaviors. The previous study from Indonesia revealed that male group was higher than female group for sexually active 56.6% and 43.7% [9]. Furthermore, the other studies indicated where the grade of students was significant for sexually active with $p<0.006$ [OR: 1.17, 95%

CI: 1.05-1.30] and the urban area was significant with $p<0.008$ [OR: 1.23, 95% CI: 1.06-1.42] [17].

All sexual activities had been assessed by the participants such as kissing 28.0%, and touching 12.5% for male students and kissing 20.1% and touching 1.9%, for female students, but based on area groups, rural area had kissing 23.1% and touching 5.0%; whereas urban area also had kissing 21.8% and touching 5.6%. The any sexually active had been done by the participants such as kissing 28.0%, and touching 12.5% for male students and kissing 20.1% and touching 1.9%, for female students, but based on area groups, rural area had kissing 23.1% and touching 5.0%, whereas urban area also had kissing 21.8% and touching 5.6%. The other literatures explained that male students usually had higher percentage than the female students for sexually active, like the variable of kissing 16.2% of male groups and 10.7% of female group [9]. Then the other studies of Indonesian context revealed significant for several sexually active, such as lips kissing and touching male higher than female with p<0.01 [18]. The other sexual practices was masturbation where there was higher proportion on male than female 40.3% and 2.6% based on sex. In addition, the variable of masturbation also had been found with $p<0.05$ to give "yes" answer for sexually active [19].

The knowledge of HIV and reproductive health also influenced the sexual practices in adolescents. The prevalence of knowledge of HIV and reproductive health level was low among sexually active, adolescents in the previous research [9]. However, this study revealed low level of knowledge of HIV and reproductive health among female students who had sexual activities. The knowledge of HIV and reproductive health also influenced the sexual practices in adolescents. The prevalence of knowledge of HIV and reproductive health level was low among sexually active adolescent in the previous research. However, this study revealed low level of knowledge of HIV and reproductive health among female students who had sexual activities.

The indicator of pornography consumption had significant not only among male but also female students. The indicator of pornography consumption had significant not only among male but also female students. This study showed the students to have pornography usually to continue for sexual activities. This study showed the students to have pornography usually to continue for sexual activities. The finding are related to previous studies which showed the association between pornography and sexually active among high school students [9, 19-21]. The findings are similar to some studies that associate pornography and sexually active among high school students. The data revealed the higher proportion of male than female in the urban area to have pornography and the precise study related the percentage male (18.5%) higher than female (3.9%) [20]. The data revealed the higher proportion of male than female in the urban area to have and the precise study related the percentage male (18.5%) higher than female (3.9%).

Conclusion

Male students from urban areas had higher proportion of sexually active than female. According to the results of this research, male students from urban areas had higher proportion of sexually active than female. Finally, the lower level of knowledge of HIV and reproductive health were associated with sexual activities to be significant. To provide several availability learning services, including health clinic for youth and community, it means the comprehensive sexual and HIV-AIDS education programs are extremely needed for adolescents to increase knowledge and to reduce negative attitude from sexual activities.

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