

Original Article

Difference in Knowledge regarding Reproductive Health and HIV/AIDS between Students in Natural Sciences Major and Social Sciences Major

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ABSTRACT

Knowledge regarding HIV/AIDS in Papua among adolescents is still very limited, while there is a 3% HIV prevalence among adolescents. This study aims to determine the difference in knowledge regarding reproductive health and HIV/AIDS between students in Natural Sciences major and Social Sciences major at urban and rural senior high schools in Papua Province. This was a cross-sectional study. The Slovin formula was applied for sample calculation to obtain a total sample of 159 students in Natural Science and Social Sciences majors at SMA Negeri 4 of Jayapura City and SMA Negeri 1 of Keerom District in Papua Province. The study samples were selected using a purposive sampling technique. Statistical tests in this study applied the Mann-Whitney test. The results of the study showed that there was a difference in the level of knowledge regarding HIV/AIDS between students in the Natural Sciences major and Social Sciences major at urban and rural senior high schools ($p=0.003$). It can be concluded that the level of knowledge of students in natural Sciences majors was higher than that of students in natural Sciences majors at urban and rural senior high schools. Students in Natural Sciences major had a more positive attitude towards HIV/AIDS prevention than students in Social Sciences major studies at urban and rural senior high schools. It is expected that further researchers can develop research variables and research subjects as well as research methods to explore the topic related to the incidence of HIV/AIDS among adolescents.

Keywords: HIV/AIDS, Knowledge, Attitude, Adolescents.

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INTRODUCTION

Papua often experiences complex health problems. An infectious disease that is still a concern is HIV/AIDS. The cumulative number of HIV infection cases reported as of June 2016 placed Papua in the top ten provinces with the most cases by 22,426 cases. As for AIDS cases, Papua was one of the provinces that reported the most AIDS cases from 1987 to June 2016, namely 13.335 cases. Meanwhile,

the highest incidence of AIDS cases or AIDS Case Rate per 100,000 populations in Papua was 416.9 cases per 100,000 population¹.

A study conducted by Asti (2019) showed that most of students at urban and rural senior high schools had a low level of knowledge regarding HIV/AIDS by 55.2%, followed by the moderate category by 24.7%, and the high category by 20.1%. Furthermore,

most of students at urban senior high schools had a moderate level of knowledge, while most of students at rural senior high schools had a high level of knowledge². The level of knowledge, attitudes, and self-motivation had an effect on HIV/AIDS preventive behavior among students at urban senior high schools in Sragen District³.

HIV prevalence among students aged 15-24 in Papua is 3%. The main cause of the HIV epidemic in Papua is unsafe sexual intercourse. In addition, it is due to the low level of education and knowledge regarding HIV. According to UNICEF (United Nations International Children's Emergency Fund), knowledge regarding HIV has increased but is still limited⁴. The 2010 RISKESDAS survey showed that 42% of the population aged 15 years and over had never heard of HIV/AIDS⁵.

WHO declared AIDS as a global problem. The dominant AIDS transmission in Indonesia is currently related to sexual behavior⁴. In 2015, AIDS-related deaths reached 110,000 among children in the age group of <15 years. In 2016, there were 1,872 AIDS sufferers in Indonesia, including school-aged children and university students⁶. According to data derived from the Indonesian Child Protection Commission (KPAI) it is known that as many as 32% of students aged 14 to 18 years in big cities in Indonesia (Jakarta, Surabaya and Bandung) have had premarital sex. Furthermore, it was proven that 62.7% of students had lost their virginity while still studied in junior high school⁷.

Most cases of HIV infection occur in productive age of 25-49 years, followed by 20-14 years and 15-19 years. According to UNICEF, the number of deaths due to AIDS among students around the world increased by 50% in 2005 – 2012 and it shows an alarming trend. Around 71,000 students aged 10-19 years died due to AIDS in 2005 which increased to 110,000 in 2012. Among new HIV cases in 2011, 18% of them were children in the age group of 15-24 years⁴.

Intervention of counseling on student reproductive health was found to be effective to increase the knowledge and attitudes of students both in the Natural Sciences and Social Sciences groups and there was no significant

difference in the mean score of knowledge and attitudes between the two groups of students. In addition, there was a difference in knowledge regarding reproductive health between students in the Natural Sciences and Social Sciences groups and there was no difference in attitudes towards premarital sexual intercourse between the two groups of students at SMAN 1 of Temanggung. Moreover, there was no correlation between knowledge regarding reproductive health and attitudes towards premarital sexual intercourse among the two groups of students at SMAN 1 of Temanggung⁹.

Furthermore, based on the results of other study, there was a difference in knowledge regarding reproductive health between students in Natural Sciences major and Social Sciences major. In contrast, there was no significant difference in attitude des between the two groups of students and there was no correlation between knowledge and attitudes of students regarding reproductive health¹⁰.

Based on the explanation above, it can be known that HIV/AIDS is a threat to students with low knowledge and attitudes about HIV/AIDS. In addition, HIV transmission is caused by a lack of knowledge. This study aims to determine the difference in knowledge regarding reproductive health and HIV/AIDS between students in natural Sciences major and Social Sciences major at urban and rural senior high schools in Papua Province.

METHOD

This was a cross sectional study. The current study was conducted in June 2020 with a population of students in natural science and social Sciences major s at SMA Negeri 4 of Jayapura City and SMA Negeri 1 of Keerom District. It was obtained a total sample of 159 who were selected using a purposive sampling technique. Data were collected by distributing questionnaires to students in natural science and social Sciences major s at SMA Negeri 4 of Jayapura City and SMA Negeri 1 of Keerom District. Data were analyzed using the Mann Whitney test.

RESULTS

Table 1. Distribution Characteristics of Students in Natural Science and Social Sciences majors at Urban and Rural Senior High Schools.

Characteristic	Natural Sciences	Social Sciences	Total
	n (%)	n (%)	n (%)
Age (years)			
14 -17	103 (97.2)	49 (46.2)	187 (100.0)
18 -19	3 (2.8)	4 (3.8)	7 (100.0)
Gender			
Male	39 (66.1)	20 (33.9)	59 (100.0)
Female	67 (67.0)	33 (33.0)	100(100.0)
Grade			
X	16 (34.7)	30 (65.2)	46 (100.0)
XI	17 (73.9)	6 (26.)	23 (100.0)
XII	73 (81.1)	17 (18.9)	90 (100.0)
Location			
Urban	41 (50.6)	40 (49.4)	81 (100.0)
Rural	65 (83.4)	13 (16.7)	78 (100.0)
Total	106 (66.7)	53 (33.3)	100 (100.0)

Table 1 showed that most of respondents in the Natural Sciences major and in the Social Sciences major were at the age of 17 years (82.89) and 15 years (62.50), respectively. Based on gender, there were more

female respondents, both in Natural Sciences majors (67.00%) and Social Sciences major (33.00%). Furthermore, there were more students in Natural Sciences major, both in urban and rural areas.

Table 2. Distribution of Information Sources regarding HIV/AIDs.

Characteristic	Natural Sciences	Social Sciences	Total
	n (%)	n (%)	n (%)
Teachers	77 (72,6)	29 (27,4)	106 (100.0)
Parents	47 (68,1)	22 (31,9)	69 (100.0)
Healthcare Workers	74 (73,3)	27 (26,7)	101 (100.0)
Friends	30 (76,9)	9 (23,1)	39 (100.0)
Newspaper	18 (85,7)	3 (14,3)	21 (100.0)
Magazine	6 (66,7)	3 (33,3)	9 (100.0)
Television	0 (0,0)	1 (100,0)	1 (100.0)
Radio	3 (50,0)	3 (50,0)	6 (100.0)
Internet	78 (75,5)	25 (24,3)	103 (100.0)

Table 2 revealed that based on the Source of Information regarding HIV/AIDS, students in Natural Sciences major in urban and rural areas got a lot of information from the Internet (75.58%), teachers (72.64%), and healthcare

workers (73.27 %). Meanwhile, students in Social Sciences major in urban and rural areas got a lot of information regarding HIV/AIDS from teachers (27.36%), the Internet (42.8%), and healthcare workers (26.73%).

Table 3. Bivariate Analysis Using Mann Whitney Test on the Difference in the Level of Knowledge regarding HIV/AIDS among Students at Urban and Rural Senior High Schools.

Level of Knowledge	Natural Sciences	Social Sciences	Total	p-value
	n (%)	n (%)	n (%)	
High	16 (84.2)	3 (15.8)	19 (100.0)	0.003
Moderate	82 (71.9)	32 (28.1)	114 (100.0)	
Low	8 (39.77)	18 (69.2)	26 (100.0)	
Total	106 (66.7)	53 (33.3)	159 (100.0)	

Table 3 shows the results of bivariate analysis to determine the difference in the level of knowledge and attitudes regarding HIV/AIDS between students in natural sciences and social studies majors in urban and rural areas using the Mann Whitney test, since the data were not normally distributed. The result of the analysis for the level of knowledge variable obtained a p-value of (0.003) <0.05 which meant that there was a difference in the level of knowledge regarding HIV/AIDS between students in Natural Sciences major and Social Sciences major in urban and rural areas. Meanwhile, the result of the analysis for the difference in attitude variable between students in Natural Sciences major and Social Sciences major in urban and rural areas used a paired t test since the data were normally distributed. It was obtained a p value of (0.002) < 0.05 which meant that there was a difference in attitude between students in Natural Sciences major and Social Sciences major in urban and rural areas.

DISCUSSION

According to the National Family Planning Coordinating Board (BKKBN), adolescence begins at the age of 10 years and ends at the age of 21 years¹. Adolescents belong to an age group that is vulnerable to exposure to HIV/AIDS. Based on the Ministry of Health in 2016, most cases of HIV infection occur in productive age of 25-49 years, followed by 20-14 years and 15-19 years¹. According to UNICEF, the number of deaths due to AIDS among students around the world increased by 50% in 2005 – 2012⁴.

Based on gender, most of the respondents in this study were female students, both in Natural Sciences majors and Social Sciences major in rural and urban areas. Furthermore, there were more students in Natural Sciences major, both in urban and rural areas. A study conducted by Cahyani, et al (2019) it was also found that distribution of respondents' characteristic by gender was dominated by female students by 57%, compared to male students by 42%¹¹.

The result of this study indicated that the Source of Information regarding HIV/AIDS, students in Natural Sciences and Social Sciences majors, both in urban and rural areas, was dominated by teachers and the Internet media. Such finding is in line with the

result of a previous study which found that the majority of sources of information regarding HIV/AIDS came from the media (47.7%)¹². A study conducted by Rahma (2018) showed that 64.3% of respondents had a low level of knowledge regarding sexuality¹³. Furthermore, it was found that the majority of students obtained information regarding sexuality from friends with a percentage of 38.6%. There was a significant correlation between knowledge regarding sexuality and sexual behavior. The results of a study conducted by Suminat, et al (2012) further showed that there was a correlation between sexual behavior in dating among adolescents and information sources from parents and peers. In contrast, there was no correlation between sexual behavior in dating among adolescents and information sources from media and teachers¹⁴.

Based on the results of this study, it was found that most of students in Natural Sciences major in rural and urban areas had a high level of knowledge regarding HIV/AIDS, while students in Social Sciences major in rural and urban areas had a low level of knowledge regarding HIV/AIDS. There was a difference in the level of knowledge regarding HIV/AIDS between students in natural Sciences major and Social Sciences major at urban and rural senior high schools. The level of knowledge was found to be higher among students in Natural Sciences major compared to students in Social Sciences major. The results of similar studies showed that most of respondents had a moderate level of knowledge regarding HIV/AIDS by 66.1%, the majority of information sources were from electronic media by 49.2%. Furthermore, most of respondents had a positive behavior towards HIV/AIDS prevention by 52.5%, the level of knowledge and attitudes of respondents were significant factors related to HIV/AIDS preventive behavior, and attitude was the most significant factor for students' behavior towards HIV/AIDS prevention¹⁵. The study finding is also in line with the study conducted by Wulandari (2019) which revealed that there was a significant difference in the level of knowledge and attitudes between before and after health education about HIV/AIDS among the students at Parongpong State SHS in Cihanjuang village¹⁶.

Based on a study conducted by Mentari, et al (2015), it was found that there was a significant difference in the level of knowledge regarding reproductive health between students

in natural Sciences major and Social Sciences major. Most of students in Natural Sciences major had a high level of knowledge regarding reproductive health, while most of students in Social Sciences major had a moderate level of knowledge¹⁰. Based on the result of a study conducted by Isnaini (2017), most of students at Gadjah Mada SHS of Bandar Lampung had a poor level of knowledge regarding HIV/AIDS by 49.5%, while the percentage in the good category was only 20%⁷. The results of a similar study showed that there was a significant difference in the level of knowledge regarding sexuality between students in rural and urban areas¹⁸.

A study conducted by Wiriyana, et al (2017) further showed that there were significant differences in the level of knowledge, attitudes and actions regarding HIV/AIDS prevention among members and non-members of the AIDS and Drug Concern Student Group (KSPAN)¹⁹. The level of knowledge, attitudes and actions of KSPAN members were better compared to non-members of KSPAN¹⁹. Moreover, a study conducted by Situmeang, et al (2017) showed that lack of knowledge regarding HIV/AIDS was related to negative stigma towards PLHIV²⁰.

Bivariate analysis on the level of knowledge regarding HIV/AIDS showed that there was a difference in the level of knowledge regarding HIV/AIDS between students in natural Sciences major and Social Sciences major at urban and rural senior high schools. Such finding is in line with the result of similar study which showed that there was a significant correlation between the provision of health education and changes in attitudes towards HIV/AIDS among high school students²¹. According to Lawrence Green and Marshall Kreuter in Sciavato (2007) a person's knowledge is one of the predisposing factors to changes in his or her behavior. High level of knowledge is expected to encourage a positive attitude about HIV/AIDS. Researchers realize that there were still limitations in this study including less varied research variables.

CONCLUSION

Based on the results of this study, there was a difference in knowledge regarding reproductive health and HIV/AIDS between students in natural Sciences major and social

Sciences major at urban and rural senior high schools in Papua Province. Educational institutions are expected to be able to organize activities for student knowledge improvement such as seminars, talk shows. In addition, further researchers should develop research variables and use other methods to observe the level of knowledge and attitudes of adolescents related to HIV/AIDS.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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