

Knowledge about Reproductive Health among Students in Junior High School 3 Keruak, East Lombok

Intan Farida Yasmin¹, Dicky Adi Putra², Sayyid Abdil Hakam Perkasa³, Lia Fristka⁴, Jimmi Lihartanadi⁵, Matt Biondi⁶, Christiani⁷, Ayu Kartika Sari⁸, Alain Laurent⁹

¹ Faculty of Medicine, YARSI University, Jakarta

Jalan Letjend. Suprpto, Cempaka Putih, Central Jakarta 10510

²RSUD Koja, North Jakarta

³Resident of Neurosurgery Department, Faculty of Medicine, University of Indonesia, Central Jakarta

⁴Puskesmas Kosambi, Tangerang

⁵Resident of Internal Medicine Department, Faculty of Medicine, Gadjah Mada University, Sleman

⁶Mayapada Hospital Tangerang, Tangerang

⁷RSU Jampangkulon, West Java

⁸RSU Siloam, Tangerang

⁹RSPAD Gatot Soebroto, Central Jakarta

E-mail: intan.farida@yarsi.ac.id

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ABSTRACT ***Aims:** The study aimed to analyze the knowledge level on reproductive health among junior high school students in a rural district, Keruak, East Lombok. **Methods:** A cross-sectional, descriptive study was carried out among seventh and eighth-grade students (n=139) in Junior High School 3 Keruak, East Lombok, from March to April 2015. All participants answered a validated questionnaire consisting of 66 questions regarding reproductive health, STIs (sexually transmitted infections), and HIV-AIDS. **Results:** The students had low scores in all three topics. They obtained the highest score on a reproductive health topic and the lowest score on STIs topic. Students in the eighth grade had a better score in reproductive health and HIV-AIDS than those in the seventh grade. Male students had better knowledge of reproductive health and HIV-AIDS than female students (p<0.05). Only 3.6% of total students had adequate knowledge of reproductive health and HIV-AIDS, while only 0.7% had sufficient knowledge of STIs. **Conclusion:** The knowledge level of students in Junior High School 3 Keruak is generally low in reproductive health, STIs, and HIV-AIDS topics. Male and higher-grade students had a higher level of knowledge in reproductive health and HIV-AIDS, and very few students understood STIs. Promotion and education programs are expected to raise adolescent's awareness concerning reproductive health issues.*

INTRODUCTION

Adolescent health problems in Indonesia are complicated. The issues

include teenage pregnancy, drug abuse, abortion, HIV-AIDS, and sexually transmitted diseases (CERIA BKKBN,

2001; Kemenkes RI, 2017; Kusumawati *et al.*, 2015; Rahmawati, 2013). Those phenomena are associated with high-risk behaviors, such as free sex and drug abuse; these could occur due to social influence, especially social partners (Kusumawati *et al.*, 2015), and lack of knowledge concerning reproductive health (Kusumawati *et al.*, 2015; Suwandono, 2002) and dangerous effects of narcotics and psychotropic drugs (Kemenkes RI, 2013). The root of many health problems among adolescents associates with unprotected free sex behavior, which is closely related to peer-influence (Kusumawati *et al.*, 2015). Almost 35% of adolescent populations in Indonesia start dating at 15 years old (Kemenkes RI, 2013). Based on a survey by the Ministry of Health in 2009, 35.9% of adolescent populations in four big cities in Indonesia confirm to have friends who engage in premarital sex, and 6.9% of the respondents confessed that they already had done premarital sexual activity (Depkes RI, 2009). Furthermore, a national survey conducted in 2012 finds a 1.3-fold increase in the adolescent population who engage in premarital sexual activity in 2012 (Kemenkes RI, 2013). Meanwhile, another school-based study conducted in 2015 finds that 1.97% of junior and senior high school students in Indonesia have already engaged in a sexual relationship. The majority of them do not use condoms and have more than one sexual partner (Kusumawati *et al.*, 2015).

Another adolescent health problem is the transmission of HIV due to unprotected sexual activity. New cases of HIV-AIDS in adolescents and productive age groups increase every year (Ditjen P2P Kemenkes RI, 2018, 2019). The highest HIV positive cases were in the age group 25-49 years (70.4%), followed by

15-24 years (18.2%) (Ditjen P2P Kemenkes RI, 2019). Based on its pathogenesis, the symptoms of HIV appeared 5-10 years after infection; therefore, it is likely that the highest rate of transmission of the virus occurred in adolescents (Kaplan & Schonberg, 1994). The cases of HIV in adolescents show the iceberg phenomenon, in which the data collected is smaller than the reality. There are several reasons for this phenomenon; first, the test conducted while the adolescents are still in the window period, resulting in negative HIV antibody (Aggarwal & Rein, 2003; Judd *et al.*, 2018; Middelkoop *et al.*, 2008). Second, a lack of awareness to voluntarily undergo HIV screening tests due to the thought of not being infected despite risky behaviors (Emmanuel *et al.*, 2011; Inungu, 2011; Middelkoop *et al.*, 2008).

Health problems among adolescents come from a lack of knowledge and awareness of maintaining health and preventing diseases (Suwandono, 2002). There is no specific curriculum that addresses adolescents' health, HIV-AIDS transmission and prevention, prevention of sexually transmitted infections (STIs), safe sexual interaction, and adverse drug abuse effects in school. Through the Youth Care Health Service (PKPR), government efforts in collaboration with the Primary Health Care (PHC) do not seem to run effectively, especially in a rural area like Keruak District, East Lombok Regency.

Lombok is one of the tourist destinations in Indonesia, with many foreign and local tourists visiting. Keruak is a sub-district close to coastal tourism areas on the east and south of Lombok so that access to nightclubs, alcoholic drinks, and lodging is affordable. Also, adolescent health promotion and health prevention programs are still not

optimally implemented even though data from new cases of HIV in East Lombok and West Nusa Tenggara is increasing every year (Dinkes Prov NTB, 2019).

METHODS

The purpose of this study was to determine the knowledge level of reproductive health, STIs, and HIV-AIDS among students in junior high school 3 Keruak (SMP 3 Keruak), East Lombok. A cross-sectional, descriptive study was carried out from March to April 2015. A total of 139 students from seventh and eighth grade was included in this study using the consecutive sampling method. Students from ninth grade were excluded due to their focusing on the National Exam. All students were required to fill informed consent at the beginning of the study.

A validated questionnaire consisted of 66 questions assessing reproductive health knowledge (31 questions), STIs (8 questions), and HIV-AIDS (27 questions) was used in this study. All respondents completed answering the questionnaire within 60 minutes.

Univariate and bivariate analyses were performed using Microsoft Excel 2016 and SPSS 25. The normality test was done using the Kolmogorov-Smirnov test. Mann Whitney test was then used to determine whether the scores differed between male and female students and between seventh and eighth grades. Spearman's rho correlation test was also performed to investigate the relationship between knowledge, gender, and class.

Further analysis of each topic was carried out to determine the level of knowledge among students. The cut-off point for adequate knowledge was 66.67. Fisher Exact Test was used to compare

students' proportion with adequate knowledge according to gender and class. Results were significant if p values <0.05 .

RESULT

Of the 139 participants included in the study, the median age is 14 years. The proportion of male students is 53%, and seventh-grade is 54%. Moreover, 32% of participants had at-risk behavior, such as alcohol consumption and having a relationship. The details are in Table 1.

The knowledge scores of participants vary with the lowest score in the STIs topic (0, 0-12.5) and the highest score in the reproductive health topic (35.5, 22.6-45.2); meanwhile, the students' knowledge of HIV-AIDS topic is 22.2 (7.4-37.0, Table 2). Table 2 also shows that prior knowledge of male students and female students is considered the same in all three topics. Whereas according to class, students in eighth grade have a better score than students in seventh grade in reproductive health and HIV-AIDS topic.

Using a score of 66.67 as a cut-off point to differentiate students who have adequate knowledge, figure 1a) shows that more male students have better knowledge in reproductive health and HIV-AIDS than female students (6.8% vs 0%, $p < 0.05$). Moreover, there are no female students with adequate knowledge of all three topics. Further analysis within the class group shows that more students in eighth grade have more insight into reproductive health than students in seventh grade (7.8% vs 0%, $p < 0.05$, Figure 1b). Nevertheless, the number of students with adequate knowledge is still under 10% of the total students. Even in the STIs topic, most students are inadequately knowledgeable.

Additionally, correlation analysis was performed to investigate whether

gender and class are related to students' scores and knowledge levels Table 3 shows that the higher class has a modest positive correlation with a reproductive health score and HIV-AIDS score. Besides, gender correlates slightly with the level of knowledge of participants.

To determine in-depth regarding each topic questioned, further analysis was performed. Table 4 shows that almost 50% of students have a good female and male puberty concept, while only 1.4% understand the fertility window in reproductive health topics. Further analysis shows that more male students understand female reproductive organs than female students (21.6% vs. 9.2%). Besides, there is a significantly higher number of students in eighth grade who have adequate knowledge of female

puberty and abortion. Overall, students in the seventh grade have less understanding of all subtopics in reproductive health.

Within the STIs topic, most students do not know about STIs symptoms, while only 13.4% understand the transmission and prevention of STIs. In general, there is a higher portion of male and eighth-grade students with adequate knowledge in all subtopics, although not statistically significant.

In the HIV-AIDS topic, less than 20% of students master it. More students understand HIV-AIDS prevention (18.7%) than how HIV is transmitted (5.8%). Again, students in eighth grade have more insight into definition, prevention, symptoms, and HIV-AIDS treatment, although not statistically significant.

Table 1. Characteristics of Participants

| Characteristics | Participants N (%) |
|-----------------------------------|-----------------------|
| Total students | 139 |
| Gender | |
| Male | 74 (53%) |
| Female | 65 (47%) |
| Class | |
| VII | 75 (54%) |
| VIII | 64 (46%) |
| Age | |
| 12 | 4 (2.9%) |
| 13 | 38 (27.3) |
| 14 | 57 (41%) |
| 15 | 39 (28.1) |
| 16 | 1 (0.7%) |
| Religion | |
| Islam | 139 |
| Students with at-risk behavior | |
| Alcohol consumption | 6 (4%) |
| Having Relationship | 39 (28%) |
| Students without at-risk behavior | 94 (68%) |

Table 2. Knowledge Score of Reproductive Health, Sexually-Transmitted Infections (STIs), and HIV-AIDS

| Topic/Group | Reproductive Health n = 139 | | STIs n = 139 | | HIV-AIDS n = 139 | |
|-----------------------|--------------------------------|-----------|-----------------|-----------------------|---------------------|-----------------------|
| | Median | 25th-75th | Median | 25th-75 th | Median | 25th-75 th |
| All students | 35.5 | 22.6-45.2 | 0 | 0-12.5 | 22.2 | 7.4-37.0 |
| By Gender | | | | | | |
| Male | 35.5 | 19.4-49.2 | 0 | 0-12.5 | 18.5 | 7.4-37.0 |
| Female | 35.5 | 29.0-45.2 | 0 | 0-12.5 | 25.9 | 11.1-40.7 |
| * <i>p</i> value | 0.787 | | 0.546 | | 0.216 | |
| By Class Grade | | | | | | |
| VII | 32.3 | 19.4-45.2 | 0 | 0-12.5 | 14.8 | 7.4-33.3 |
| VIII | 38.7 | 29.8-51.6 | 0 | 0-25.0 | 29.6 | 12.0-40.7 |
| * <i>p</i> value | 0.013 | | 0.202 | | 0.035 | |

*Mann-Whitney U Test, significant if $p < 0.05$

Table 3. Correlation between knowledge and gender and class

| Topic | Correlation | | | |
|---------------------------|-------------|----------|-------------|----------|
| | Gender | | Class | |
| | r^\dagger | <i>p</i> | r^\dagger | <i>P</i> |
| Actual Score | | | | |
| Reproductive Health | 0.02 | 0.39 | 0.21 | 0.01* |
| STIs | 0.05 | 0.27 | 0.11 | 0.10 |
| HIV-AIDS | 0.1 | 0.11 | 0.18 | 0.02* |
| Level of Knowledge | | | | |
| Reproductive Health | 0.18 | 0.02* | 0.21 | 0.01* |
| STIs | 0.08 | 0.17 | 0.08 | 0.18 |
| HIV-AIDS | 0.18 | 0.02* | 0.05 | 0.26 |

[†] Spearman's rho correlation, *significant if $p < 0.05$

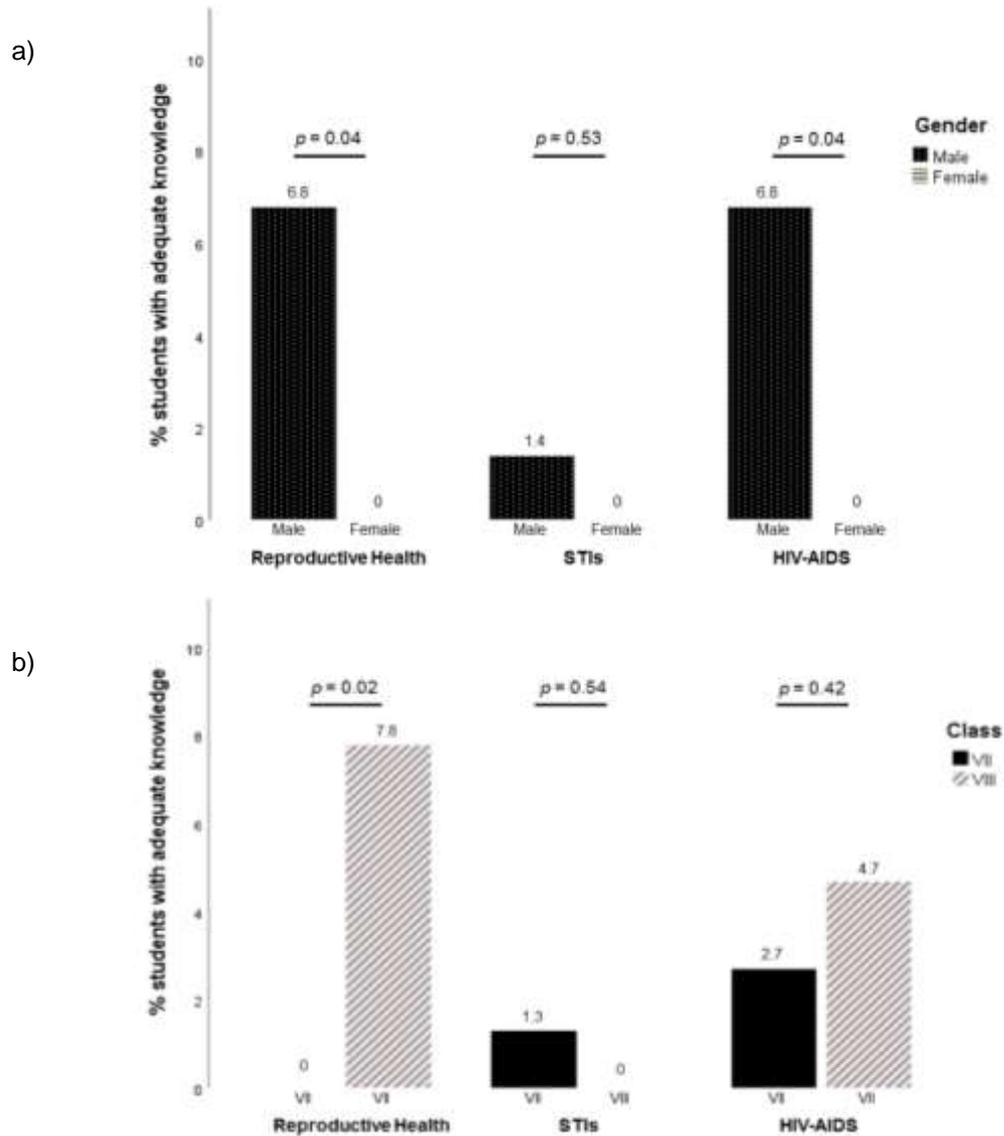


Figure 1. Comparison proportion of students with adequate knowledge based on a) gender and b) class in reproductive health, STIs, and HIV-AIDS topic. Statistical analysis done by Fisher's Exact Test, *significant if $p < 0.05$

Table 4. The Proportion of Students with Adequate Level of Knowledge

| Topic/Subtopic | Percentage of students with adequate knowledge (n=139) | | | | | | |
|---|--|---------------|-----------------|----------|-----------|------------|----------|
| | All students | Male students | Female students | P value† | Class VII | Class VIII | P Value† |
| Reproductive Health | | | | | | | |
| 1. Female reproductive organ | 15.8% | 21.6% | 9.2% | 0.04* | 12% | 20.3% | 0.14 |
| 2. Male reproductive organ | 12.2% | 8.1% | 16.9% | 0.09 | 10.7% | 14.1% | 0.36 |
| 3. Female puberty | 42.4% | 44.6% | 40% | 0.35 | 30.7% | 56.3% | 0.02* |
| 4. Male puberty | 45.3% | 51.4% | 38.5% | 0.09 | 41.3% | 50% | 0.19 |
| 5. Fertility window | 1.4% | 1.4% | 1.5% | 0.72 | 0% | 3.1% | 0.21 |
| 6. Pregnancy | 8.6% | 9.5% | 7.7% | 0.47 | 8% | 9.4% | 0.50 |
| 7. Abortion | 12.2% | 14.9% | 9.2% | 0.23 | 6.7% | 18.8% | 0.03* |
| 8. Impact of early pregnancy < 20yo | 21.6% | 20.3% | 23.1% | 0.42 | 17.3% | 26.6% | 0.13 |
| Overall | 3.6% | 6.8% | 0% | 0.04* | 0% | 7.8% | 0.02 |
| Sexually Transmitted Diseases | | | | | | | |
| 9. Symptoms of STIs | 0.7% | 1.4% | 0% | 0.53 | 1.3% | 0% | 0.54 |
| 10. Transmission and Prevention of STIs | 13.7% | 17.6% | 9.2% | 0.12 | 13.3% | 14.1% | 0.54 |
| Overall | 0.7% | 1.4% | 0% | 0.53 | 1.3% | 0% | 0.54 |
| HIV-AIDS | | | | | | | |
| 1. Definition of HIV-AIDS | 12.9% | 9.5% | 16.9% | 0.15 | 9.3% | 17.2% | 0.13 |
| 2. Transmission of HIV | 5.8% | 5.4% | 6.2% | 0.57 | 6.7% | 4.7% | 0.45 |
| 3. Prevention of HIV | 18.7% | 17.6% | 20% | 0.44 | 17.3% | 20.3% | 0.41 |
| 4. Symptoms of HIV-AIDS | 15.8% | 16.2% | 15.4% | 0.54 | 14.7% | 17.2% | 0.43 |
| 5. Treatment | 10.1% | 14.9% | 4.6% | 0.04* | 8% | 12.5% | 0.28 |
| Overall | 3.6% | 6.8% | 0% | 0.04* | 2.7% | 4.7% | 0.42 |

† Fisher's Exact Test, *significant if $p < 0.05$

DISCUSSION

According to data presented above, students' knowledge level in junior high school 3 Keruak, East Lombok, is generally low in reproductive health, STIs, and HIV-AIDS topics. Despite the highest score among the three issues, the students' score in reproductive health is still under 50%. Besides, the number of students who have adequate knowledge is still under 5%. Our result is lower than the study conducted in an urban area, which reported the prior knowledge of 60 students in junior high school in Bandung is 68% of total score (Syatiawati *et al.*,

2017) despite the lower number of participants analyzed. Another study said that the knowledge level of reproductive health among adolescents is higher in urban than in rural areas, even though the mean average age among participants is older than in our study (Susanto *et al.*, 2016). However, this supports that students in a rural area like our study are more likely to have lower reproductive health knowledge than students in an urban area.

On the contrary, Aiko *et al.* found that the knowledge level of reproductive

health among early adolescents is not significantly different between rural and urban participants (Aiko *et al.*, 2016). Moreover, the scores reach 70% of the total 100%, although the questions used to assess is limited to 10 queries and considered less comprehensive than we used in this study.

In the STIs topic, most students are not familiar with sexually transmitted infections, including the symptoms related to STIs, the transmission, and how to prevent them. A similar study found that even in high-school students, only 15.6% understand STIs (Sihite *et al.*, 2017). In a more prominent population-based research conducted in Sri Lanka, only 6% of a total of 2020 participants with a range of 16-19 years could identify how to prevent STIs (Rajapaksa-Hewageegana *et al.*, 2015).

Meanwhile, only a small portion of Indonesian teenagers know how to prevent HIV-AIDS. Only 9.4% of women and 4% of men aged 15-19 years know comprehensive knowledge of HIV-AIDS (Kemenkes RI, 2013). This fact is far below the national target, which stated 95% of adolescents aged 15-24 years should have comprehensive knowledge about HIV-AIDS. This finding is still relevant to our study, which obtains a low HIV-AIDS score in 139 students. Moreover, some of the students are at behavior-risk related to HIV-AIDS and drug abuse.

The comprehensive knowledge of HIV-AIDS among students in our study is low. Only 6.5% of 139 students have adequate knowledge (cut-off 67), which is lower than data from Sudikno *et al.* They reported that 51.1% of 14.355 teenagers in Indonesia have a sufficient understanding of HIV-AIDS (cut-off 71) (Sudikno *et al.*, 2010). Nonetheless, the question and sample size used in this study were

different. Nevertheless, they also reported that the knowledge of HIV-AIDS among adolescents living in an urban area is higher than those in a rural area (Sudikno *et al.*, 2010), same with other study (Kemenkes RI, 2013).

In terms of correlation, there is a slight positive relationship between the knowledge of reproductive health and HIV-AIDS with male gender and a higher grade of students in our study. A similar study also reported that a higher grade of education and male gender correlates with the level of knowledge of HIV-AIDS (Sudikno *et al.*, 2010). Perhaps, this is due to the higher class students being taught about reproductive health topics before. However, the newer study in Indonesia found that females have better comprehensive knowledge than male adolescents, although a massive discrepancy of sample size (6927 vs 28) and the male adolescent included in the study were all married and formally uneducated (Kemenkes RI, 2013).

This research's limitation is that we did not measure participants' attitudes and skills related to reproductive health, STIs, and HIV-AIDS. Despite all the boundaries, we hope that this study can give more insight into the low level of awareness of adolescents as at-risk populations regarding reproductive health dan HIV-AIDS in a rural area, especially in Keruak, East Lombok. Thus, this study will intensify the promotive program related to reproductive health and HIV-AIDS to target more adolescent populations at junior school.

CONCLUSION

In summary, the knowledge level among junior-high-school students in Keruak, East Lombok, is low in the field of reproductive health, STIs, and HIV-

AIDS. The male and eighth-grade students seem to have a better knowledge of reproductive health and HIV-AIDS than female and lower-grade students. However, a larger population is needed to provide a more reliable result. More health promotion programs to target adolescents in high schools are expected to increase their knowledge and awareness to prevent unwanted pregnancy, STIs, and HIV-AIDS.

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