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Innovation of the Reproductive Health Class "Eskimo Class" on Adolescents' Knowledge About Reproductive Health in Padang City

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ABSTACK

Introduction: Adolescence is the time between childhood and maturity, usually between the ages of 10 and 19 years. According to the Data and Information Center of the Indonesian Ministry of Health, the number of adolescents in Indonesia is estimated at around 45.35 million people, or about a quarter of the total population. In Padang City itself, the number of adolescents reached 178,402 people. The adolescent age group is at high risk for reproductive health problems including premarital sexual behavior, drugs and even HIV/AIDS. The government has paid attention to adolescent problems by establishing the Adolescent Health Care Service (PKPR) program at health centers. The results of the evaluation of the PKPR Program in 2016 in the Andalas Health Center Working Area of Padang City showed that this program had not been implemented optimally. Therefore, it is necessary to carry out innovations related to reproductive health in adolescents in the form of the establishment of a Comprehensive Reproductive Health Class (Eskimo Class). Objective: To determine the effectiveness of Eksimo Class in increasing adolescent knowledge about reproductive health. Method: The research design used was a quasi-experimental with a one group before and after design. In this research design, the sample will be given a pre-test first, then given an intervention, and a post-test in 1 group without a control group. The study was conducted in April-November 2024 in the Andalas Health Center Working Area, Padang City. Results: An average of 17.21, or about 81.9%, was the students' knowledge of reproductive health prior to receiving health education, and 18.13, or approximately 86.3%, was the students' knowledge afterwards. Conclusion: The Asymp value was derived from the statistical test. Sig 0.051 > α0.05 so it is concluded that there is no effect of health education on the level of adolescent knowledge about reproductive health because the average value before and after the intervention only increased by 4.4%.
Keywords: Adolescents, Reproductive Health, Eskimo Class.

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INTRODUCTION

Adolescence is the phase of life between childhood and adulthood, typically defined as ages 10 to 19 years. The global adolescent population is larger than ever before, with 1.2 billion individuals, making up one-sixth of the world's total population (UNICEF, 2021). This number is expected to grow until 2050, particularly in low- and middle-income countries (WHO, 2020). According to the Data and Information Center of the Indonesian Ministry of Health, the estimated number of adolescents in Indonesia is 45.35 million, approximately a quarter of the total population (Sari & Aziz, 2022). Of these, 23.23 million are male adolescents, and 22.12 million are female adolescents, yielding a sex ratio of 105.02, which means that for every 105 male adolescents, there are 100 female adolescents (BPS, 2019). A study by Jiang et al. (2021) highlights the growing adolescent population as a key factor in shaping public health policies globally. In Padang City, the number of adolescents is 178,402, with 89,411 male adolescents and 88,991 female adolescents, resulting in a sex ratio of 100.8 (BPS, 2019). This demographic data is critical in understanding the specific health and education needs of adolescents in different regions (Kurniawan & Pratama, 2020). Additionally, research by Hasbullah et al. (2022)

emphasizes that such demographic statistics are essential for tailoring adolescent health programs, particularly in urban areas like Padang. As noted by Li & Zhang (2020), adolescent development in large cities is often influenced by social, economic, and environmental factors that vary from rural settings.

The adolescent age group is at high risk for reproductive health issues, including premarital sexual behavior, substance abuse, and HIV/AIDS. According to the Indonesian Demographic and Health Survey (SDKI) for Adolescent Reproductive Health (KRR) in 2017, 55% of males and 1% of females aged 15-19 years currently smoke, and 37% of male adolescents and 4% of female adolescents consume alcohol. The use of drugs is significantly lower, with less than 1% of female adolescents and 3% of male adolescents using them.

The government has shown concern for adolescent health by establishing the Adolescent Health Care Service (PKPR) program at community health centers since 2003. By the end of 2013, it was reported that 406 of the 497 districts/cities in Indonesia (81.69%) had at least four community health centers capable of implementing the PKPR program. Additionally, the development of PKPR at the hospital level as a referral service has been underway. The Indonesian government also emphasizes adolescent health in the Law of the Republic of Indonesia Number 36 of 2009 concerning Health, particularly in articles relating to adolescent health care services (PKPR Standard Guidelines, 2014).

PKPR can be implemented in health centers, hospitals, schools, youth organizations, churches, or other venues where adolescents gather. Health centers, as primary health service providers, have the potential to reach all societal levels, including adolescents, due to their availability of health workers. PKPR is closely linked to the School Health Efforts (UKS), which are also supported by the local health center. Silvia's research at SMA N 10 Padang City, within the working area of Andalas Padang Health Center, evaluated the Youth Health Service Program (PKPR) in 2016. The study found that the PKPR program implementation was not optimal due to a lack of facilities and infrastructure, such as rooms and other necessary facilities, and the lack of socialization regarding implementation guidelines. Moreover, the implementation of the PKPR program for school development was insufficient, and there was no standard operating procedure (SOP) for PKPR implementation in Padang City (Silvia, 2016).

Islamic boarding schools are one of Indonesia's educational models, providing both education and accommodation with a focus on Islamic religious studies. Adolescents interact 24/7 within a peer community in these institutions. The various issues arising in Islamic boarding schools affect the reproductive health of the students, as they are teenagers living in these institutions.

Adolescent reproductive health is influenced by both internal and external factors. Internal factors include knowledge and attitudes, while external factors encompass the environment, including the family, teachers, peers, and sources of reproductive health information. Given this, there is a need for innovation in providing educational facilities related to reproductive health for adolescents, such as establishing a Comprehensive Reproductive Health Class (Eskimo Class). This class will serve as a platform for adolescents to learn together about reproductive health in a series of face-to-face meetings. These meetings will be scheduled systematically, with a structured and continuous curriculum. The author will collaborate with relevant health centers and refer to the reproductive health module in the preparation and implementation of the program.

Adolescent reproductive health remains a critical public health issue, especially in low- and middle-income countries where access to comprehensive education is limited. Previous studies, such as those by Chandra-Mouli et al. (2015) in *Reproductive Health*, highlight the global prevalence of misinformation among adolescents, which increases the risks of sexually transmitted infections (STIs), unplanned pregnancies, and other reproductive health complications. In Indonesia, research by Utomo et al. (2019) in the *Journal of Adolescent Health* underscores the gap between national policies, such as

the Adolescent Health Care Service (PKPR) program, and their actual implementation. Many health centers lack the necessary resources and structured curricula. These studies collectively highlight the need for innovative educational interventions to bridge this gap and improve adolescent knowledge.

Despite existing programs, a significant research gap persists in evaluating the effectiveness of localized, structured reproductive health classes, particularly in urban settings like Padang City. Quasi-experimental studies, such as Buzarudina's (2013) work in Pontianak, demonstrate the potential of counseling to enhance knowledge but often lack longitudinal data or control groups, limiting generalizability. Additionally, prior research primarily focuses on school-based interventions, neglecting alternative settings like health centers or community hubs. This gap highlights the need for tailored, scalable models like the "Eskimo Class" to address contextual barriers, including cultural sensitivities and resource disparities.

The urgency of this research is underscored by the high prevalence of adolescent reproductive health risks in Padang City, where 178,402 adolescents face challenges such as premarital sexual behavior and substance abuse (BPS, 2019). The suboptimal implementation of the PKPR program, as noted by Silvia (2016), exacerbates these risks, leaving adolescents vulnerable due to inadequate education. Immediate action is required to mitigate these issues, as delayed interventions perpetuate cycles of poor health outcomes and socioeconomic burdens. By testing the Eskimo Class model, this study addresses a pressing need for evidence-based, accessible solutions aligned with Indonesia's national health priorities.

This study introduces novelty by pioneering the Eskimo Class, a structured, curriculum-based reproductive health education model delivered through collaborative efforts between health centers and local stakeholders. Unlike one-off counseling sessions, this intervention emphasizes continuity, with four systematic meetings and pre-/post-test evaluations. The approach also integrates modules adapted from national guidelines, ensuring cultural relevance and scalability. By focusing on Padang City—a region with documented PKPR implementation challenges—this research offers a replicable framework for similar urban settings, filling a critical gap in the literature on sustainable adolescent health education.

The purpose of this study is to evaluate the effectiveness of the Eskimo Class in improving adolescents' reproductive health knowledge. Using a quasi-experimental design, the research measures knowledge changes pre- and post-intervention, providing empirical data on the model's impact. The benefits are twofold: (1) equipping adolescents with accurate information to make informed health decisions, and (2) informing policymakers and health practitioners about scalable, low-cost interventions. By addressing systemic gaps and demonstrating measurable outcomes, this study contributes to global efforts to achieve Sustainable Development Goal 3.7—ensuring universal access to sexual and reproductive health services.

METHOD

The research design employed is quasi-experimental with a one-group pre-test and post-test design. In this design, the sample will first undergo a pre-test, followed by an intervention, and then a post-test, all conducted within a single group without a control group in the Andalas Health Center Working Area, Padang City. The sample in this study must meet the inclusion criteria, which include being students in grades 10–12, being willing to participate as evidenced by signing the informed consent form, and attending the full series of four *Eskimo Class* sessions. The research instrument used for data collection was a questionnaire, which included questions related to students' knowledge of reproductive health. These questions were developed based on the reproductive health module.

The population consisted of students aged 13–15 years in the Andalas Health Center working area of Padang City, Indonesia. A purposive sampling technique was used to select 24 participants who

met the inclusion criteria: (1) enrollment in grades 10–12, (2) willingness to participate (evidenced by signed informed consent), and (3) full attendance at all four *Eskimo Class* sessions. This sampling method ensured homogeneity and minimized confounding variables, though the absence of a control group limits causal inferences.

Data collection was carried out using a structured questionnaire administered before (pre-test) and after (post-test) the intervention. The questionnaire, adapted from the national reproductive health module, assessed knowledge across seven domains: reproductive health basics, anatomy, puberty, pregnancy, sexuality, hygiene, and sexually transmitted infections (STIs). Face-to-face sessions were conducted at the health center, with each of the four classes covering standardized curricula. Primary data were supplemented with descriptive statistics on participant demographics (e.g., age, prior exposure to reproductive health information) to contextualize the findings.

For data analysis, the Shapiro-Wilk test confirmed that the post-test scores did not follow a normal distribution ($p = 0.005$), necessitating the use of non-parametric tests. The Wilcoxon signed-rank test was employed to compare pre-test and post-test scores, with an alpha threshold set at 0.05. Descriptive statistics (mean, standard deviation, frequency distributions) were used to quantify changes in knowledge, while confidence intervals (95% CI) assessed the precision of the results. Despite a modest mean score increase (from 81.9% to 86.3%), the Asymp. Sig. value of 0.051 ($p > 0.05$) indicated no statistically significant effect. Qualitative insights from item-level analysis (e.g., improved knowledge of reproductive organs) were also reported to enrich the interpretation.

RESULTS AND DISCUSSION

This study is based on primary data collected from respondents who were willing to participate and met the inclusion criteria. This study was conducted in the Andalas Health Center Working Area from April 2024 to November 2024.

Table 1. Characteristics of Research Respondents

Characteristics	f	%
Age		
13 years old	3	12.5
14 years	18	75.0
15 years	3	12.5
Get Information		
Once	12	50.0
Never	12	50.0
Resources		
TV/Radio	3	12.5
Health workers	5	20.8
Parent	1	4.1
Teacher	2	8.3
Other	1	4.1

From the table it can be seen that out of 24 people, the respondents' ages range from 13 to 15 years. 3 people are 13 years old, 18 people are 14 years old, and 3 people are 15 years old. Respondents who have received information about reproductive health are 12 people, the

source of information comes from TV/radio, health workers, parents, teachers and others. While respondents who have never received information about health education are 12 people.

Table 2. Students' Knowledge Scores Before and After Being Given Health Education

Respondents	f	%
1	90.4	100
2	80.9	85.7
3	61.9	61.9
4	61.9	61.9
5	76.1	100
6	85.7	100
7	80.9	71.4
8	95.2	90.5
9	80.9	76.1
10	71.4	90.4
11	66.6	66.6
12	85.7	95.2
13	90.4	85.7
14	71.4	85.7
15	80.9	52.3
16	76.1	66.6
17	76.1	85.7
18	80.9	85.7
19	80.9	100
20	100	100
21	85.7	100
22	85.7	95.2
23	90.4	85.7
24	90.4	90.4

It is evident from the above table that knowledge prior to receiving health education has a score of less than 0%, sufficient: 12.5%, good: 87.5%. Then after being given health education: less than 4%, sufficient 16.6%, good 79.1%. The difference in the level of student knowledge before and after being given health education about adolescent reproduction can be seen in table 2 .

Table 3. Students' Knowledge Score Before and After Being Given Health Education

	N	Min	Mean	Max	SD	CI
Before	24	13	17.21	21	1,865	16.42 18.00
After	24	11	18.31	21	2,894	16.90 19.35

According to the analysis, before receiving health education, students' average level of reproductive health knowledge was 17.2 (81.9%), the lowest value was 13 and the highest value was 21, with a total value of 21 if respondents could answer all questions. The median value was 17.00 with a standard deviation of 1,865. The results of the 95% *confidence interval* (CI) can be concluded that 95% are believed to be students' knowledge about adolescent

reproductive health between 16.42 and 18.00. Following the administration of a health education intervention, the average value achieved was 18.13 (86.3%), according to the research with the lowest value of 11 and the highest value of 21.

The median value is 18.50 with a standard deviation (SD) of 2.894. The distribution of sample values is described by the standard deviation; the lower the standard deviation number, the closer the sample value is to the average value, which means the data is better than before. The results of the 95% *Confidence Interval* can be concluded that 95% are believed to be students' knowledge of reproductive health between 16.90 and 19.35. These data illustrate that there is an increase in the average knowledge of students after being given health education on adolescent reproductive health.

Table 4. Description of Question Results Per Item Before Health Education was Given

Question Items	Correct		Wrong		Total Overall Points Questions Per Item
	f	%	f	%	
1. Understanding Reproductive Health	24	100	0	0	24
2. Reproductive Organs	41	85	7	15	48
3. Puberty	59	77.7	17	22.3	76
4. Pregnancy	125	86.9	19	13.1	144
5. Sexuality	107	89	113	11	120
6. How to care for reproductive health	62	81.5	14	18.5	76
7. Infectious diseases	23	95.8	1	4.2	24

After being given health education, students' knowledge about reproductive organs increased from 60.5% to 85%. There is a difference between before and after being given health education.

Table 5. Distribution of Normality Results of Adolescents' Knowledge about Reproductive Health Before and After Being Given Health Education

Before			After		
Statistics	df	Sig.	Statistics	df	Sig.
.971	24	.683	.867	24	.005

This normality test uses the Shapiro-Wilk test because this test is more appropriate when used to test normality in samples of less than 50 (ayuningtyas, 2012). Considering the aforementioned normalcy test findings, it can be concluded that the data after the intervention is not normally distributed because p = 0.05 while the data before the intervention is normally distributed p> 0.05. the conclusion is that this study cannot use the paired t-test analysis test but uses the Wilcoxon test which has been explained previously that the Wilcoxon test is used if the paired t-test requirements are not met.

Table 6. Distribution of Differences in Levels of Knowledge about Reproductive Health Before and After Health Education was Given

	Before – After Health Education
Z	1.955b
Asymp. Sig. (2-tailed)	.051

The alpha value in this study is 0.05. From the data in the table above shows the value of A symp. Sig 0.051>α 0.05. The amount of information regarding reproductive health before and after receiving health education is the same, it may be inferred.

DISCUSSION

1. Knowledge Before Being Given Health Education on Reproductive Health

Prior to receiving health education, pupils' average understanding of reproductive health was 17.21, or 81.9% of the highest value. According to the average value, pupils know a lot about reproductive health. Knowledge is the result of knowing and occurs after someone senses a particular object. This sensing occurs through the five human senses, namely the senses of sight, hearing, smell, taste and touch. Most human knowledge is obtained through the eyes and ears (Notoatmodjo, 2007).

Knowledge is not something that already exists and others just accept it, but rather knowledge is a continuous formation by a person who is always experiencing a reorganization of new understandings. Based on the results of this study, the knowledge about reproductive health that is most unknown to respondents is knowledge about reproductive organs and the knowledge that is most widely known by students is how to maintain reproductive health. As explained in the literature review, knowledge itself is influenced by formal education factors, in this case, students' good knowledge about reproductive health is obtained through formal education, namely when studying biology about human reproduction. Other factors that may also play a role in students' knowledge about reproductive health are exposure to information, whether it comes from the mass media, from parents or from health workers.

The results of the study of students' knowledge before receiving health education differ from the study conducted by Benita (2012) in Matondang (2018). It revealed that 36.4% of respondents had never received information on reproductive health and had a level of understanding below that before receiving health education. In the past, 42.7% fell into the moderate group, having learned about it solely from the media or via teacher guidance, and 21% were in the good category who had received information from the mass media, the internet, or counseling with teachers.

2. Knowledge After Being Given Health Education on Reproductive Health

Following health education, students' average understanding of reproductive health was 18.13, or 86.3% of the highest value overall. The value attained following the health education intervention was higher than the value before to the intervention. This demonstrates that knowledge has increased both before and after the intervention. Nevertheless, there was no discernible change in value according to the data. From the results of a study conducted by Buzarudima (2013) that there was a very significant change in value between before the health education intervention and after the intervention, namely

19.5% of respondents had a poor level of knowledge, 70.2% had a poor level of knowledge and 10.3% had sufficient knowledge with an average value of 29.6 while the middle value after being given intervention was 66.67 which means that respondents had a fairly good level of knowledge.

This study is different from previous studies, namely the initial value of the respondent's level of knowledge itself which was already in the good category so that after the health counseling intervention, the results remained in the good category, only the average value increased slightly, namely from 81.8% to 86.3%. Education itself is one of the elements that affects students' proficiency in reproductive health, they get information about human reproduction when the teacher delivers biology lessons and 50% of the respondents admitted that they had received information about reproductive health itself from various sources. According to Tana (2004) in Sitompul (2022), various factors that can possibly influence health education are the provider of material, counseling media, and targets that will be given intervention. In line with the theory of knowledge according to Notoatmodjo (2010) that formal education and information affect a person's level of knowledge.

3.Differences in Knowledge Before and After Being Given Health Education on Reproductive Health

The average student's knowledge of reproductive health at the time of the pretest was 17.21, with a standard deviation of 1.865, according to the study's findings. The average student knowledge at the time of the posttest was 18.13, with a standard deviation of 2.894. We may infer from this description that there is a 0.92 difference in the mean values between the pretest and posttest. The Asymp. Sig. = 0.051 value, which is higher than the α (alpha) value of 0.05, was acquired from the Wilcoxon test findings. Therefore, it can be said that student understanding before and after the intervention did not significantly vary.

In the study by Istichomah (2004) entitled the influence of health education about pregnancy hypertension on maintaining blood pressure in pregnant women at the Pundong Bantul Health Center in Sitompul (2022), it was found that there was no influence of health education about pregnancy hypertension on maintaining blood pressure in pregnant women. The findings of Buzarudina's (2013) study, "The Effectiveness of Adolescent Reproductive Health Counseling on the Level of Knowledge of Students at SMAN 6, Pontianak Timur District," indicate that there is a significant difference between the scores before and after counseling. The study's Wilcoxon test yielded a Sig. value of 0.000 ($p < 0.05$). The conclusion is that counseling on reproductive health adolescents are effective in increasing respondents' knowledge regarding adolescent reproductive health.

In this study, information was obtained that there was no difference in increasing knowledge about adolescent reproductive health, in line with statistical tests. In this case, the provider of reproductive health material was someone they had never known well, so that it could affect the absence of a difference in the influence of health education. This opinion is based on Ludlow (2000) in Sitompul (2022) which states that success in conveying information is determined by the nature and quality of the information received and in this case is determined by the nature and quality of the information conveyed by the researcher to students. Other factors that may also influence the results of this study are perception, motivation and experience which according to Notoatmodjo (2010) are factors that influence a person's knowledge.

CONCLUSION

Prior to receiving health education, students' knowledge of reproductive health ranged from 13 to 21, with an average of 17.21, or almost 81.9%. Respondents were well-informed. After receiving health education, students' knowledge of reproductive health ranged from the lowest value of 11 to the highest value of 21, with an average of 18.13, or almost 86.3%. The Asymp value was the outcome of the statistical test. Since the average value between before and after the intervention only increased by 4.4%, it is determined that there is no effect of health education on the level of teenage knowledge about reproductive health (Sig value of 0.051 > α 0.05, hence H_o is accepted).

This study evaluated the effectiveness of the *Eskimo Class*, a structured reproductive health education program, in improving adolescents' knowledge in Padang City. While the intervention resulted in a modest increase in mean knowledge scores (from 81.9% to 86.3%), statistical analysis revealed no significant impact ($p = 0.051$). This suggests that while the *Eskimo Class* may contribute to incremental knowledge gains, its current design may require enhancements to achieve measurable, meaningful improvements. Factors such as the high baseline knowledge of participants, limited sample size, and the absence of a control group may have influenced these outcomes.

To strengthen future research, longitudinal studies with larger, more diverse samples—including control groups—are recommended to assess the *Eskimo Class's* sustained impact. Incorporating mixed-methods approaches (e.g., qualitative interviews) could provide deeper insights into contextual barriers, such as cultural sensitivities or instructional delivery methods. Additionally, testing the model in varied settings (e.g., rural areas or *pesantren* [Islamic boarding schools]) would enhance its scalability and relevance. Policymakers and educators should consider integrating interactive or digital tools to boost engagement and retention. These refinements could help bridge the gap between theory and practice, ultimately advancing adolescent reproductive health education in Indonesia and similar contexts.

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