Journal Of Nursing Practice
https://thejnp.org/ Vol. 10 No.1 October. Page 71-78
ISSN: 2614-3488 (print); 2614-3496 (online) https://doi.org/10.30994/jnp.v10i1.1051

The Effect of Reproductive Health Education on Adolescents' Knowledge Improvement at SMAN 10 Maros: A Pre-Experimental Study

Feby Purnamasari[1]*, Syafruddin Syafruddin[1], Selvia Selvia[1], A. Eka Ridha Suhartini Yusuf[1]
[1] *Salewangang Maros College of Health Sciences, Maros, Indonesia*
***Corresponding author:** febypurnamasari934@gmail.com*

ORCID: **Feby Purnamasari**: https://orcid.org/0009-0000-5264-9272 ; ORCID: **Syafruddin**: https://orcid.org/0000-0003-3686-628X ; ORCID: **Selvia**: https://orcid.org/0000-0003-4736-3696

ABSTRACT

Background: Adolescence is in addition to physical changes, adolescents are also identical to searching for identity, tend to take actions without careful thought so that the problems experienced by adolescents are also unique, related to sexuality or reproductive health so that it requires a process of introduction and knowledge of reproductive health that actually begins at this time.

Methods: This study employs a pre-experimental design involving 20 female students at SMAN 10 Maros. In this study, the level of knowledge was measured twice within the same group: before the intervention (pre-test) and after the intervention (post-test). The results from both measurements were then compared to determine whether there was an improvement in knowledge scores following the educational intervention. The study was conducted at SMAN 10 Maros. The sample consisted of 20 female students aged 16–18, selected using purposive sampling—a non-probability sampling method that allows researchers to choose participants based on specific characteristics and criteria relevant to the study's objectives. A reproductive health knowledge questionnaire served as the research instrument. This questionnaire covered aspects of reproductive health that align with the educational material provided. Data analysis involved descriptive analysis and a comparison of pre-test and post-test results using the Wilcoxon signed-rank test.

Results: The results of the study obtained there is an effect of adolescent reproductive health education on adolescent knowledge at SMAN 10 Maros with a value of $\rho < 0.001$.

Conclusion: This activity is expected to help parents, teachers, and midwives or health workers in preventing and reducing the number of early marriages, adolescent sexual violence by providing adolescent reproductive health counseling at SMAN 10 Maros.

Keywords **:** Adolescent Knowledge; Adolescent Reproductive Health

BACKGROUND

Adolescence is a transitional period from childhood to adulthood, characterized by physical, psychological, and social changes. Adolescence is characterized by, in addition to

The Journal of Nursing Practice, its website, and the articles published there in are licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

Received: December 14, 2025; Revised: October 17, 2026; Accepted: October 20, 2026; Available Online: October 22, 2026
Copyright © [2026] Author.

physical changes, a search for identity, a tendency to act without careful thought. Therefore, the problems experienced by adolescents are also unique, related to sexuality or reproductive health. Therefore, the process of recognizing and understanding reproductive health actually begins at this stage. Adolescent reproductive health is a state of health that affects the functioning of an adolescent's reproductive system and processes. (Mareti & Nurasa, 2022; Kasim & Kadrianti, 2022; Sari et al., 2023; Abdiani & Mubayyina, 2023; Azzah S, 2024; Nessi M, Maryanah, dan Willa F., 2019).

Many teenagers are already sexually active so that the current problems of teenagers are very worrying so that many cases experienced by teenagers include, pregnancy outside of marriage, partners who do not want to take responsibility, consumption of illegal drugs, use of contraceptives, HIV / AIDS and sexually transmitted infections, abortion, and further can cause complications in the form of mental and personality disorders in teenagers, so it is important to know about reproductive health, teenagers need to get enough information, so that teenagers know the things that should be done and what should be avoided. Improving adolescents' knowledge regarding sexual behavior begins with health education. (Ernawati, 2018; Ningtias R.P, 2024).

In Indonesia, according to the 2023 Indonesian Health Survey (SKI) Report, 64.4% of women aged 10-19 have ever been pregnant, and 12.8% are currently pregnant. Unintended pregnancies in Indonesia account for 40 percent. Meanwhile, data from the National Population and Family Planning Agency (BKKBN) indicates that the high rate of unwanted pregnancies (KTD) in Indonesia reached 17.5% in 2023. Among the adolescent population (aged 14-19), 19.6% of cases of unwanted pregnancies (KTD) were recorded (Kemenkes RI, 2023). The trend of teenage pregnancies in several Indonesian provinces in 2023 was highest in South Papua, with 2.3% of pregnancies among teenagers aged 10-14 and 35.2% among teenagers aged 15-19. Meanwhile, in South Sulawesi, 1.3% of first-time pregnancies were among teenagers aged 10-14 and 28.2% among teenagers aged 5-19 (Kemenkes RI, 2023).

Through this research activity, adolescents' knowledge related to adolescent reproductive health was assessed by giving pre-tests and post-tests, as well as being provided with education and understanding about reproductive health. The activity was carried out at SMAN 10 Maros with the aim of determining the Influence of Reproductive Health Education on Adolescent Knowledge at SMAN 10 Maros, so that it can provide an understanding of the importance of adolescent reproductive health and what is allowed and not to do as well as the impact that will occur later and reduce the prevalence of cases of unwanted pregnancies in adolescents.

METHODS

Design and setting

Research Design This study employs a quantitative design, specifically a pre-experimental, one-group pretest-posttest design. This design is used to determine changes in students' knowledge levels before and after receiving reproductive health education. Measurements are taken twice—before the intervention (pre-test) and after the intervention (post-test)—within the same group of respondents. The difference in knowledge scores before and after the education is analyzed to assess changes in the students' knowledge following the intervention.

Research Setting This study is conducted at SMAN 10 Maros, Maros Regency, South Sulawesi. The location was selected based on its suitability for the target population: school-aged adolescents who require information regarding reproductive health. The study involves 20 students as respondents. Data collection is carried out by having participants complete a knowledge questionnaire both before and after the reproductive health education session. The timing of the study aligns with the data collection schedule established by the researcher.

Participants and Sampling

This study employs a pre-experimental design involving 20 female students at SMAN 10 Maros. selected using a purposive sampling technique—a non-probability sampling method that allows researchers to select participants based on specific characteristics and criteria relevant to the study's objectives.

Instruments and Data Collection

A questionnaire on reproductive health knowledge was used as the research instrument to assess the participants' knowledge levels both before and after the intervention. The questionnaire covered aspects of reproductive health that align with the educational material provided.

Data Analysis

Data analysis was performed to describe the participants' knowledge levels and to evaluate the differences in scores before and after the reproductive health education, utilizing both descriptive analysis and a pre-test/post-test comparison via the Wilcoxon signed-rank test.

RESULTS

The researcher conducted several activities as previously planned. The results obtained are as follows

a. Pre-Test and Post-Test Results on Adolescent Reproductive Health

Table 1. Univariate Analysis Results

	Table column subhead	N	Mean Rank	Sum of Ranks
Post-test – Pre-test	Negative Ranks Positive Ranks Ties	0[a]	0.0	.00
		19[b]	9.50	140.00
		1[c]		
	Total	20		

Source: Univariate Analysis Results

The Wilcoxon Negative Ranks test results showed a value of 0 for N, Mean Rank, and Sum of Ranks, indicating no decrease in scores from the pre-test to the post-test. Positive Ranks showed 19 students experiencing an increase in their pre-test to post-test scores. Tiens showed one students with the same score in the pre-test and post-test.

Wilcoxon Statistical Test Results on Adolescent Reproductive Health

Table 2. Results of the Wilcoxon Statistical Test

Z	ρ Value
Asymp. Sig. (2-tailed)	-3.000[b]
	.000[a]

Source: Results of the Wilcoxon Statistical Test

Based on the statistical test obtained Asymp. Sig. (2-tailed) with a value of $\rho < 0.001$. Because the value of $\rho < 0.001$, there is a difference between the knowledge results for the pre-test and post-test, so it can also be concluded that there is an influence of adolescent reproductive health education on adolescent knowledge at SMAN 10 Maros.



Figure 1. Activities to provide reproductive health education to adolescents

DISCUSSION

This study aims to evaluate the effect of reproductive health education on adolescents' knowledge improvement at SMAN 10 Maros. The study employs a pre-experimental design with a one-group pre-test–post-test approach, involving 20 female students aged 16–18 in the twelfth grade, selected using a purposive sampling technique. Knowledge was assessed both before and after the delivery of reproductive health education.

Among the 20 respondents, 19 students (95%) showed an increase in their knowledge scores following the education, while 1 student (5%) had an unchanged score; no students experienced a decrease in their scores. The Wilcoxon test results reveal a significant difference in knowledge scores before and after the education ($p < 0.001$). Thus, reproductive health education has a positive impact on enhancing the knowledge of students at SMAN 10 Maros.

These results can be compared with a study by Setiawati (2022), which reported an increase in the average knowledge score from 53.51 before health education to 84.28 after the intervention. This difference in scores represents an increase of 30.77 points. These findings support the possibility that health education can contribute to improving participants' knowledge.

Furthermore, a study by Utami (2022), titled "The Influence of Reproductive Health Education on the Knowledge Level of Adolescents at SMP N Bukittinggi," reported a p-value < 0.001. This result provides statistical evidence of a difference in knowledge following the intervention, assuming that the statistical analysis and reporting in the study were conducted appropriately.

This study is consistent with Setiawati's 2022 study, which found a significant change in the average knowledge score before health education, namely 53.51, and after health education, namely 84.28. A study conducted by Utami in 2022, entitled "The Influence of Reproductive Health Education on the Level of Knowledge of Adolescents at SMP N Bukittinggi," obtained a ρ value < 0.001, indicating the influence of health education.

Research by Sutjiato (2022), as summarized in the reference you provided, reports that the majority of respondents possessed insufficient knowledge prior to receiving reproductive

health education, whereas following the intervention, the majority of respondents demonstrated a good level of knowledge.

Dewi and Sujianto (2022) state that knowledge can be acquired through education. In the context of reproductive health, education provides adolescents with the opportunity to receive more systematic information, rather than relying solely on informal sources.

Yusfarani (2020) identifies age as a factor related to an individual's knowledge. Differences in age can be linked to learning experiences, cognitive development, and exposure to information. However, age cannot be used as the sole explanation for differences in knowledge among adolescents.

Since this study involves 20 female students aged 16–18 (in the 12th grade) who were selected through purposive sampling, the characteristics of the respondents help clarify the context of the findings and the limits of their applicability. However, the relatively small sample size constrains the study's ability to definitively analyze the relationship between specific characteristics and changes in knowledge.

Dewi and Sujianto (2022), as well as Wahyudin and Zohriah (2023)—based on the references you provided—emphasize the role of education in shaping or influencing an individual's understanding.

Yunika et al. (2022) also highlight the need among adolescents for health-related information, particularly concerning reproductive health. This need warrants attention because adolescents are at a developmental stage that involves physical, psychological, and social changes.

Juwita et al. (2023), Nuryawati et al. (2023), Sumarni dan Amin (2024), Meilani dan Setiyawati (2022), Pinandari et al. (2023), Darmayani et al. (2025), Van Reeuwijk, Rahmah, dan Mmari (2023), Lahope dan Fathurrahman (2024), Putri, Maryati, dan Solehati (2025), Barriuso-Ortega, Fernández-Hawrylak, dan Heras-Sevilla (2024), Widiawati, S., & Selvi, S. (2022). This study, which examines changes in knowledge before and after the provision of reproductive health education to adolescents, employs a pre-experimental design; the results indicate an increase in students' knowledge following the reproductive health education intervention. This is highly relevant and aligns with our own research.

Limitations

A limitation of the study is that the sample size—consisting of only 20 female students—restricts the precision of the estimated results and the ability to detect small differences; furthermore, since the post-test was conducted immediately after the educational intervention, the findings primarily reflect short-term knowledge.

Our study is subject to two potential biases: first, a "testing effect," where the use of the same questionnaire both before and after the intervention may lead participants to recall specific questions or their previous responses; and second, the use of a purposive sampling technique, which involved 20 female students from a single school. Selecting participants based on specific criteria may result in a sample with characteristics that differ from those of the general adolescent population. Consequently, the findings may not necessarily be representative of all female students at SMAN 10 Maros.

Implications for Nursing Practice

Reproductive health education is highly necessary for adolescents as a preventive measure against sexual violence and unintended teenage pregnancies, while also providing them with further knowledge regarding the concepts of adolescent reproductive health.

CONCLUSION

The research results indicate that providing reproductive health education to adolescents improves the knowledge of students at SMAN 10 Maros. Among the 20 respondents, 19 students (95%) showed an increase in their knowledge scores following the education, while 1 student (5%) had an unchanged score; no students experienced a decrease in their scores. The Wilcoxon test results reveal a significant difference in knowledge scores before and after the education ($\rho < 0.001$). Thus, reproductive health education has a positive impact on enhancing the knowledge of students at SMAN 10 Maros.

ACKNOWLEDGMENTS

The author expresses gratitude to Allah SWT for the gift of good health—both physical and mental—which made the completion of this research possible. The author also extends thanks to everyone who contributed to this work, as well as to the readers who have engaged with this article to broaden their knowledge. Furthermore, the author expresses appreciation to Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi (Kemdikbudristek) for providing a publication grant, which has greatly facilitated the process for us, as academic researchers, to publish our work in reputable, SINTA-indexed journals.

AUTHOR CONTRIBUTIONS

The first, second, third, and fourth authors collaborated on conducting a site survey, analyzing issues within the adolescent environment, identifying and determining interventions through adolescent health education, and engaging in discussions to complete this scientific article.

FUNDING

Incentive program for articles in reputable national journals under the 2026 publication grant scheme from the Ministry of Higher Education, Science, and Technology (Kemdiktisaintek).

CONFLICTS OF INTEREST

The authors report no potential conflicts of interest that could bias this study or its findings.

DECLARATION OF AI USE

The author did not use AI tools in the preparation of this manuscript.

REFERENCES

Abdiani, B. T., & Mubayyina, F. (2023). The relationship between adolescent girls' knowledge of reproductive health and reproductive organ care behavior. *Journal of Health and Pharmaceutical Sciences*, 11(1), 20–23.

Azzah S. N.A., Ardaniah N.P., Nasrullah, Rahmadi M.S., (2024), "Periodization of Child Development in Adolescence: A Psychological Review," Behavior: *Journal of Guidance, Counseling, and Psychology Education*, Vol. 1 (1)

Barriuso-Ortega, S., Fernández-Hawrylak, M., & Heras-Sevilla, D. (2024). Sex education in adolescence: A systematic review of programmes and meta-analysis. Children and Youth Services Review, 166, 107926. [https://doi.org/10.1016/j.childyouth.2024.107926](<https://doi.org/10.1016/j.childyouth.2024.107926>)

Darmayani, C. D., Kumboyono, K., Nugroho, F. A., & Supriati, L. (2025). The educational media to improve reproductive health knowledge among adolescents: A systematic review. Jurnal Ilmiah STIKES Yarsi Mataram, 15(2), 203–213. https://doi.org/10.57267/jisym.v15i2.494Mareti, S., & Nurasa, I. (2022). Level of adolescent knowledge about reproductive health in Pangkalpinang City. *Sriwijaya Nursing Journal*, 9(2), 25–32

Dewi, A. W. C., & Sujianto, U. (2022). *Overview of sexual knowledge and sexual behavior in adolescents*. Diponegoro University.

Ernawati, H. (2018). Pengetahuan kesehatan reproduksi remaja di daerah pedesaan. *Indonesian Journal for Health Sciences*, 2(1), 58–64. https://doi.org/10.24269/ijhs.v2i1.820 [1]

Juwita, H., Prihatini, S., Amal, A. A., Yusuf, S., & Sumarmi. (2023). Pengaruh health education terhadap pengetahuan kesehatan reproduksi remaja. Jurnal Ilmiah Keperawatan (Scientific Journal of Nursing), 9(1), 156–160. https://doi.org/10.33023/jikep.v9i1.1409

Kasim, J., & Kadrianti, E. (2022). Education on adolescent knowledge about reproductive health in Taraweang Village, Pangkep Regency. *J-abdi: Journal of Community Service*, 1(10), 2771–2776.

Kementerian Kesehatan Republik Indonesia. (2023). *Survei Kesehatan Indonesia (SKI) Tahun 2023 dalam Angka*. Badan Kebijakan Pembangunan Kesehatan, Kementerian Kesehatan RI.

Lahope, G., & Fathurrahman, R. (2024). Current state, challenges, and opportunities of the school-based sexual and reproductive health education in Indonesia: A systematic literature review. Preventia: The Indonesian Journal of Public Health, 9(1), 81–94. https://doi.org/10.17977/um044v9i12024p81-94

Meilani, N., & Setiyawati, N. (2022). The effectiveness of peer educators and guidance counselling teachers to the knowledge of reproductive health. Journal of Education and Learning (EduLearn), 16(4), 501–508. https://doi.org/10.11591/edulearn.v16i4.20286

Nessi Meilan, S. S. T., Maryanah, A. M., & Willa Follona, S. S. T. (2019). *Adolescent Reproductive Health: Implementation of PKPR in Peer Groups*. Wineka Media.

Ningtias R.P., Noviati E, Purwati A.E., Rudi K., 2024, The Effect of Reproductive Health Education on Adolescents' Knowledge. *Journal of Professional Nursing Research*, Vol. 6(6), e-ISSN 2715-6885; p-ISSN 2714-9757. http://jurnal.globalhealthsciencegroup.com/index.php/JPPP

Nuryawati, L. S., Idaningsih, A., Irawan, A. T., Fitria, C., & Azril. (2023). The influence of health education on adolescents knowledge of reproductive health in the working area of the

UPTD Munjul Health Center. EKSAKTA: Berkala Ilmiah Bidang MIPA, 24(3), 426–435. https://doi.org/10.24036/eksakta/vol23-iss03/407

Pinandari, A. W., Kågesten, A. E., Li, M., Moreau, C., van Reeuwijk, M., & Wilopo, S. A. (2023). Short-term effects of a school-based comprehensive sexuality education intervention among very young adolescents in three urban Indonesian settings: A quasi-experimental study. Journal of Adolescent Health, 73(1, Supplement), S21–S32. https://doi.org/10.1016/j.jadohealth.2023.01.030

Putri, Y. H. S., Maryati, I., & Solehati, T. (2025). Interventions to improve sexual and reproductive health related knowledge and attitudes among the adolescents: Scoping review. Risk Management and Healthcare Policy, 18, 105–116. https://doi.org/10.2147/RMHP.S490395

Sari, A. K., Meinarissa, M., & Mekeama, L. (2023). The relationship between reproductive health information literacy and the level of reproductive health knowledge and attitudes of junior high school adolescents in Jambi City. *Journal of Nursing*, 7(2), 1641–1651. https://doi.org/10.31004/jn.v7i2.16489

Setiawati D, Ulfa L, Kridawati A. The Influence of Reproductive Health Education on Knowledge of Adolescent Reproductive Health. *Journal for a Healthy Society (JUKMAS)*. 2022;6(1):80-85

Sutjiato M., 2022, The Effect of Reproductive Health Education on Adolescents' Knowledge at SMA Negeri 7 Manado. *Journal of Tropical Medicine*. Vol. 10(2), p:403-408

Sumarni, S., & Amin, D. R. (2024). Pengaruh pendidikan kesehatan reproduksi terhadap tingkat pengetahuan remaja tentang kesehatan reproduksi di MTs. Miftahul Falah Bekasi tahun 2023. Jurnal Rumpun Ilmu Kesehatan, 4(1), 263–276. https://doi.org/10.55606/jrik.v4i1.3536

Utami AS, Fidora I. The Effect of Reproductive Health Education on Adolescents' Knowledge Levels. *Abdurrab Health Journal*. 2022;5(2):73-82.

Van Reeuwijk, M., Rahmah, A., & Mmari, K. (2023). Creating an enabling environment for a comprehensive sexuality education intervention in Indonesia: Findings from an implementation research study. Journal of Adolescent Health, 73(1, Supplement), S15–S20. https://doi.org/10.1016/j.jadohealth.2022.07.016

Wahyudin, A., & Zohriah, A. (2023). The scope of educational management. *Journal On Education*, 6(1), 3822–3835.

Widiawati, S., & Selvi, S. (2022). Reproductive Health Education for Adolescents. *Journal of Mother's Hope Service (JPHI)*, 4 (1), 14. https://doi.org/10.30644/jphi.v4i1.631

Yunika, R. P., Umboro, R. O., Apriliany, F., & Al Fariqi, M. Z. (2022). Counseling, information, and education on reproductive health for adolescents. *Lentera Journal*, 2(2), 205–212.

Yusfarani, D. (2020). Knowledge and Attitudes of Female Students of the Early Childhood Islamic Education Study Program (PIAUD) Regarding Reproductive Health. *Aisyiyah Medika Journal*, 5(1).