



STRENGTHENING KNOWLEDGE OF FEMALE ADOLESCENTS AT MIDDLE SCHOOL THROUGH REPRODUCTIVE HEALTH EDUCATION

Maulia Rusyda Permanasari^{1*}, Adelse Prima Mulya², Ahmad Yamin²

¹Faculty of Nursing, Universitas Padjadjaran, Jl. Raya Bandung Sumedang KM. 21, Hegarmanah, Jatinangor Sumedang, Jawa Barat 45363, Indonesia

²Community Health Nursing Department, Faculty of Nursing, Universitas Padjadjaran Jl. Raya Bandung Sumedang KM. 21, Hegarmanah, Jatinangor Sumedang, Jawa Barat 45363, Indonesia

*maulia21001@mail.unpad.ac.id

ABSTRACT

Adolescence is a transitional period marked by physical, psychological, and social changes, including development of reproductive health. Insufficient knowledge among adolescents regarding reproductive health potentially increase risk of health problems. Health education is a promotive strategy to increase knowledge and foster awareness among adolescents. This study aimed to describe the effectiveness of reproductive health education in improving the knowledge of IX-grade female student at middle school in Bandung. The method used was a pre-experimental with a one-group pretest-posttest design. A total of 101 IX-grade female student selected through total sampling. The intervention involved reproductive health education through lectures and interactive discussions. Data were collected using a reproductive health knowledge questionnaire administered before and after intervention and analyzed using Wilcoxon Signed Rank-Test. Result showed an increase in average knowledge score from 91,2 to 98,2. The Wilcoxon test indicated a significant difference in the level of knowledge among adolescents following the intervention, with a p-value of 0.000 ($p < 0.05$). The results indicate that health education is effective in both strengthening and improving adolescents' understanding of reproductive health. Reproductive health education should be implemented continuously through collaboration and integrated into school health programs to promote better reproductive health behaviors among adolescents.

Keywords: female adolescents; health education; reproductive health

How to cite (in APA style)

Permanasari, M. R., Mulya, A. P., & Yamiin, A. (2026). Strengthening Knowledge of Female Adolescents at Middle School Through Reproductive Health Education. *Indonesian Journal of Global Health Research*, 8(5), 195–204. <https://doi.org/10.37287/ijghr.v8i5.2499>.

INTRODUCTION

Adolescent is a transitional periode from childhood to adulthood that occurs between the ages of 10-19 (WHO, 2024). During this period, rapid growth and development is marked by biological changes in the form of puberty, cognitive changes reflected in the advancement of more complex thinking abilities, and new social roles and responsibilities (Steinberg, 2023). The changes that occur during adolescence can affect health and increase vulnerability to various health issues, including reproductive health.

According to Permenkes (2014), reproductive health is defined as a state of overall well-being encompassing physical, mental, and social aspects, and is not merely the absence of disease or disability related to the reproductive system, function, and processes. Reproductive health is a critical aspect to prioritize during adolescence, as it plays a vital role in supporting adolescents' physical, psychological, and social well-being. Comprehensive reproductive health helps adolescents meet their reproductive health needs, enhances their ability to make more responsible and health decisions, and supports optimal development and well-being (Allison & Wilkinson, 2026). Although reproductive health play a vital role in supporting adolescent development, the physiological changes during puberty often lead to issues related to reproductive health. Common reproductive health issues among adolescents, particularly female adolescent, include vaginal

discharge, menstrual disorders, dysmenorrhea, and sexually transmitted infection (Agarwal et al., 2024).

Vaginal discharge and dysmenorrhea are common complaints identified as reproductive health issues among female adolescents. According to World Health Organization (WHO), 75% of female worldwide will experience vaginal discharge at least once, and most experience it during adolescence. Additionally, 90% of female in Indonesia are at risk of developing vaginal discharge due to country's tropical climate, which promotes fungal growth (Juniar et al., 2023). In Indonesia, the prevalence of vaginal discharge among adolescents is reported to range from 48.5% to 81% (Wulan et al., 2024). Regarding dysmenorrhea, the result of a systematic review and meta-analysis involving 336 studies from 70 countries indicate that the global prevalence of dysmenorrhea among adolescents reaches 70.5% (Arruda et al., 2026). In Indonesia, the prevalence reaches 64.5% (Zulimartin et al., 2025).

This high prevalence indicates that reproductive health issues remain a concern that requires attention in efforts to improve adolescent health and well-being. This situation was also observed among adolescents at the school. Based on the School Health Nursing (SHN) assessment conducted on May 18-19, 2026, among 211 ninth-grade students, various adolescent health issues related to reproductive health were identified. The result showed that the majority of female adolescents experience reproductive health issues, with 86 out of 104 (82.7%) affected. The issues identified included 65.4% reporting itching in the genital area and 87.5% experience vaginal discharge. Additionally, the results also reported symptoms of abnormal vaginal discharge, approximately 28.8% describe discharge resembling cottage cheese, 30.8% experience itching, and 26.9% had an abnormal odor. The assessment also found that there remains a gap between knowledge and reproductive health practice among female adolescents in schools. Based on interviews with the teachers, it was found that some adolescents still lack an understanding of menstrual hygiene management. Teacher also noted that reproductive health programs in school have not been implemented optimally. This situation risks limiting female adolescents' access to accurate and comprehensive reproductive health information.

Limited access to reproductive health information can affect adolescents' knowledge of changes during puberty. Adequate knowledge contributes to the development of healthy behavior among adolescents. Low level of knowledge have the potential to hinder adolescents' ability to adopt behaviors that support optimal reproductive health and the risk of engaging in risky sexual behavior, sexually transmitted infections, and other reproductive health issues may increase (Yuliani & Nalova, 2026). Study by Ningtias et al., (2024) indicates that 46.7% of adolescents have adequate knowledge of reproductive health, 40% have insufficient knowledge, and 13.3% have good knowledge. Study by Sartika et al., (2024) also show that 51.7% of female adolescent have insufficient knowledge. These findings indicate that female adolescents' knowledge regarding reproductive health remains relatively low and is not yet optimal. A lack of knowledge can affect adolescents' ability to maintain reproductive health and lead to unhealthy health behaviors. Reproductive health behaviors resulting from a lack of knowledge have the potential to have long-term impacts on adolescents' physical, psychological, and social well-being (Wahyuningsih et al., 2024). Conversely, study by Rohi et al., (2026) suggests that good knowledge play a crucial role in fostering more positive attitude toward reproductive health.

To minimize the various problems and impacts identified, enhancing reproductive health knowledge through health education programs that are tailored to adolescents' need and characteristics is essential. Health education is a strategy aimed at enhancing individuals' ability to influence health determinants, thereby improving their health status (Marlina et al., 2021). According to Piaget (1952), children's knowledge and understanding develop over time through interaction with their environment. Adolescents have entered the formal operational stage, a phase

of cognitive development characterized by the ability to think abstractly, analyze the environment, and move beyond concrete facts toward problem-solving (Scott & Cogburn, 2026). At this stage, they possess the ability to receive, process, and evaluate information obtained from their surroundings. Additionally, Preced-Proceed Model by Lawrence Green states that predisposing, enabling, and reinforcing factors influence health behavior. Knowledge falls under predisposing factors, serving as the foundation and primary driver for shaping healthy behavior and a good quality of life (Kim et al., 2022). Kemenkes (2022) also stated that effort to reduce the high incidence of reproductive health issues among adolescents involve providing health education to enhance knowledge and foster awareness among adolescents of the importance of reproductive health issues. Based on this introduction, intervention based on reproductive health education need to be designed with consideration of the adolescents' cognitive and emotional development. The purpose of health education is to improve female adolescents' knowledge of reproductive health through a health education program at middle school in Bandung. This study is expected to provide insights into the effectiveness of reproductive health education for female adolescents and to encourage the development of positive reproductive health behavior.

METHOD

This study was conducted at a middle school in Bandung using a pre-experimental method and a one-group pretest-posttest design. The purpose of this study was to describe the effectiveness of reproductive health education in improving the knowledge of IX-grade female student at middle school in Bandung. The intervention was held in Monday, May 25, 2026 in in the school auditorium. A total of 104 female adolescents were identified through the School Health Nursing (SHN) assessment using total sampling as participant of this study, however only 101 adolescents completed the study procedures.

This study was conducted in three phases, preparation, implementation, and evaluation. The preparation phase involved identifying reproductive health issues among adolescents through a School Health Nursing assessment, coordinating with school staff, preparing educational material, creating educational media such as PowerPoint presentation and posters, and developing pre-test and post-test instrument to measure participants' knowledge. The implementation phase began with administering a pre-test to measure participants' baseline knowledge, followed by reproductive health education using interactive lectures and discussions method, and educational media in the form of PowerPoint slides as learning aids. The material covered included the definition of reproductive health, the importance of maintaining reproductive health, personal hygiene practices, signs and symptoms, common reproductive health problems during adolescence and their management, the risks of sexual activity during adolescence, and iron supplementation. In addition, educational posters summarizing the key topics were displayed throughout the school to reinforce reproductive health education and serve as a continuous reminder and accessible health promotion resource for students after the intervention. The evaluation phase involved administering a post-test using the same instrument as the pre-test to measure changes in participants' knowledge level following the intervention. Knowledge levels were assessed using a reproductive health knowledge questionnaire developed by the researchers based on the literature regarding reproductive health concepts for female adolescent. The material presented in the education session served as the basis for developing the questionnaire. The questionnaire contained five multiple-choice questions formulated using language appropriate for adolescents' developmental level and designed to avoid ambiguous interpretations. Knowledge scores were calculated based on the number of correct answers, which were then converted into numerical scores.

The data were analyzed using univariate and bivariate analyses. Univariate analysis was conducted to describe the characteristics of the respondents and the distribution of knowledge level before and after the intervention. A normality test was performed using the Shapiro-Wilk test with the result showed a p-value of 0.000, indicating that the data were not normally distributed ($p < 0.05$);

therefore, the analysis of difference in knowledge levels was conducted using the Wilcoxon Signed-Rank test. This test was used to determine the difference in knowledge scores before and after the intervention and to demonstrate the significance of the intervention ($p < 0.05$). Bias was controlled by using the same participants and instruments for the pre-test and post-test, which were administered at the same time, and providing a uniform intervention to all participants. The analysis results are presented in tabular form and interpreted narratively to provide an overview of respondent characteristics and changes in reproductive health knowledge level following the intervention.

RESULT

The reproductive health education session was carried out as planned. The intervention took place in three stages; completing a pre-test questionnaire, followed by the presentation of educational material, and completing a post-test questionnaire after the material was presented. Throughout the intervention, the participants cooperatively participated in the entire educational program. The participants took part in the activity with enthusiasm and demonstrated active engagement throughout the educational process. This observed through their participation in discussion session, their ability to respond to questions, and their willingness to share their opinions and experiences regarding reproductive health. The study results are presented using descriptive and inferential analyses. Descriptive statistics were used to summarize participants' characteristic and knowledge scores before and after intervention, and Wilcoxon signed-rank test was performed to evaluate difference between pre-test and post-test scores. Based on the results of the study, 101 participants were female adolescent.

Table 1.
Respondent characteristics (n=101)

Respondent characteristics	f	%
Age		
14 years old	12	11.9
15 years old	80	79.2
16 years old	9	8.9

Based on table 1, the majority of female students were 15 years old (79.2%). The age distribution indicates that middle adolescence was the most common age group among the participants.

Table 2.
Mean Pre-Test and Post-Test Scores (n=101)

Variable	Mean	Min	Max
Pre-test	91.2	20	100
Post-test	98.2	60	100

Based on table 2, the mean pre-test score for reproductive health knowledge among participants was 91.2 with minimum score of 20 and a maximum score of 100. Following the educational intervention, the mean post-test score increased to 98.2, with a minimum score of 60 and the maximum score remaining at 100. These findings indicate an improvement in participants' reproductive health knowledge after receiving the educational intervention.

Table 3.
Wilcoxon Signed-Rank Test Results (n=101)

Variable	Negative Ranks		Positive Ranks		Ties		Z	p-value
	f	%	f	%	f	%		
Post-test – Pre-test	2	2	26	25.7	73	72.3	-4.346	0.000

Based on table 3, the result of the Wilcoxon signed-rank test showed a statistically significant difference between pre-test and post-test knowledge scores following the reproductive health education ($p < 0.05$). Among the participants, 72.3% had unchanged scores, 25.7% showed an increased score, and 2% showed decreased scores. These findings indicate that the intervention was effective in strengthening and improving participants' reproductive health knowledge.

DISCUSSION

Based on the result, it was found that there was a significant difference in the level of knowledge among female adolescent before and after reproductive health education. These result were confirmed by the Wilcoxon Signed-Rank Test and an increase in the mean pre-test and post-test score. This findings indicate that participants generally hand a very good level of knowledge at baseline, even before receiving the educational intervention. However, the increase in post-test scores suggests that the intervention contributed ro strengthening participants' understanding of reproductive health. Most participants showed no change between pre-test and post-test score. This may indicate a ceiling effect, a condition in which participants achieves very high baseline scores, leaving limited room for further improvement (Staus et al., 2021). Therefore, the intervention may have functioned primarily as a reinforcement of existing knowledge rather than as the main source of new knowledge for most participants. Strengthening knowledge is an equally important aspect of health education because previously acquired information can fade if it is not periodically reviewed or reinforced. Through the educational process, adolescents have the opportunity to reaffirm their existing understanding, correct any misconceptions, and deepen their understanding of the reproductive health concepts they have learned.

Meawhile, some of participants showed an increase in scores, indicating that health education continues to be beneficial in providing or clarifying information that had not been fully understood. This improvement suggests that education intervention are effective in reaching participants whose knowledge level were not yet optimal. For this group, education serves as the primary source for acquiring new knowledge while also correcting any misconception they may have had previously. On the other hand, a small portion of participant experienced a decrease in scores after receiving health education. Several factors may contribue to these results, such as a lack of focus while completing the questionnaire, fatigue due to intervention being conducted alongside other activities, and potential environmental distraction during the evaluation. Additionally, individual factors such as learning motivation, attention span, physical and psychological condition and the evaluation itself may also have contributed to the decline in scores. Although there was a decline among a small portion of participants, overall, the results of this study still demonstrate that reproductive health education has a positive impact on strengthening and improving participants' knowledge.

Theoretically, the reinforcement and improvement in adolescents following health education can be linked to Jean Piaget's theory of cognitive development. All the adolescents who participated in this study were in the middle adolescence age group, ranging from 14 to 16 years old. At this age, adolescents are in the formal operational stage, which indicates that they are capable of abstract and logical thinking, and also understading the cause-and-effect relationships of health information. At this stage, adolescents also begin to precess received information, integrate new information into their prior knowledge, and make decisions regarding health behaviors, including maintaining reproductive health (Wojtowicz, 2021). This can occur through a process of interaction between assimilation and accomodation of innformation acquired during the intervention. Newly received information is integrated inro pre-existing cognitive structure acquired through school materials or social media, and then adjusted if there are differing concepts or understandings. This process fosters a more comprehensive understanding and enhances adolescnets' ability to interpret, apply, and evaluate information in their daily lives (Hanfstingl et al., 2021). Strong knowledge serves as the foundation for the formation of healthier behaviors, consistent with Lawrence Green's theory (Kim et al., 2022). The better adolescents' understanding of reproductive health, the greater their potential to adopt responsible behaviors in maintaining their own health, avoiding risky behaviors, and seeking appropriate health care when needed. In the context of this study, health education plays a role in enhancing predisposing factors, specifically adolescents' knowledge regarding reproductive health, so that through this reinforcement and improvement, it is hoped that better health behaviors will be fostered in the future. Therefore, providing reproductive health education to middle school students is appropriate given their developmental stage and tha need to establish

healthy behaviors, as participants already possess sufficient cognitive abilities to receive, understand, and interpret the health information provided.

These findings are consistent with the results of various previous studies that report health education on reproductive health is effective in improving adolescents' knowledge. A study by Sutjiato et al., (2025) reported an increase in the average pre-test and post-test scores following reproductive health education, from 7.94 to 16.06. This increase indicates that teaching methods involving direct interaction and visual media can help adolescents better understand the material. A study by Muchtar et al., (2024) also shows that reproductive health education contributes to an increase in female adolescents' knowledge, as evidenced by an increase in average pre-test and post-test scores from 62% to 82%. This also supports the findings of Hesty et al., (2024), which shows an increase in female adolescents' knowledge regarding reproductive health from 47% to 87%. The study by Sidabalok et al., (2026) also suggests that lecture methods and educational media can play a role in improving adolescents' knowledge by reinforcing the information they receive. Interactive lecture methods can have various positive effects on the information absorption process, such as increased adolescent engagement during educational sessions. This is evidenced by the active participation of adolescents during lecture and discussion sessions, where they enthusiastically share their opinions and ask questions related to reproductive health. Through active participation in lecture and discussion sessions, adolescents do not merely act as recipients of information but also as active participants in the learning process. This active engagement makes the learning material more engaging and meaningful, thereby improving information retention (Texeira et al., 2024). Interactive learning also promotes greater motivation and attention during educational sessions, which may contribute to improved learning outcomes compared with conventional one-way information delivery. Individual knowledge can be enhanced through health education interventions, as these interventions provide access to new information and utilize educational media as stimuli to facilitate information processing and comprehension. The availability of adequate materials related to reproductive health, along with support from professionals, also contributes to improving adolescents' knowledge (Yadav & Kumar, 2023). Increased knowledge can encourage adolescents to adopt more systematic behavior and mindsets regarding the importance of maintaining reproductive health and making responsible and healthy decisions (Saida et al., 2024).

In addition to providing education, posters were created and displayed throughout the school to help improve understanding and serve as a reminder for students. The presence of posters in the school environment gives students the opportunity to review the information they have learned and serves as a long-term educational tool for the school to raise students' awareness of reproductive health and healthy living behavior. Posters present data in a more organized manner, aiming to help students absorb information in a simpler way. Furthermore, posters can convey information visually and engagingly, which can improve students' understanding and interest in the educational material (Utami et al., 2024). Information presented through a combination of text and images helps adolescents focus on the main message, facilitates the process of information retention, and improves their recall of educational material. Repeated exposure to posters in the school environment serves as a reminder that reinforces information retention, encourages the internalization of health messages, and increases adolescents' consistency in adopting behaviors that support reproductive health in their daily lives (Anggraini et al., 2026). Additionally, displaying posters in the school environment makes it easier for adolescents to access health information, particularly regarding reproductive health. The availability of easily accessible information from reliable sources helps adolescents acquire accurate knowledge and reduces the risk of misconceptions. Thus, the use of posters as an educational medium is not only effective in reinforcing and improving knowledge but also has the potential to support the development of positive health behaviors through continuous exposure to information.

These findings indicate that health education is a form of promotive intervention in community nursing. Through the School Health Nursing (SHN) approach, nurses serve as educators by providing reproductive health information to raise students' awareness about preventing reproductive health problems. Moreover, nurses play a strategic role as health educators by providing evidence-based reproductive health information that strengthens and increases adolescents' knowledge and promotes healthy decision-making. In addition, nurses also play a key role in promoting healthier lifestyle among students by enhancing health literacy and fostering behaviors consistent with reproductive health principles (Tatiana et al., 2025). Therefore, school-based health education should not only be viewed as a one-time educational activity but also as an integral component of comprehensive adolescent health promotion. Overall, the results of this study indicate that the health education program implemented can strengthen and improve female adolescents' knowledge of the importance of reproductive health. The key to success of this intervention may be influenced by a combination of interactive teaching method, the use of educational media, and adolescents' cognitive abilities. From a practical perspective, schools should integrate reproductive health education into school routine activities rather than implementing it as an isolated intervention. Regular educational sessions may help maintain and reinforce students' knowledge over time while providing opportunities to address emerging reproductive health issues relevant to adolescents. Reproductive health education can be incorporated into existing school programs such as female student program, school health unit guidance, and guidance and counseling sessions. Such integration would ensure that students receive continuous, age-appropriate, and evidence-based reproductive health information throughout their school years. Furthermore, the findings of this study can serve as a basis for enhancing cross-sectoral collaboration among schools, community health centers, nurses, parents, and local health authorities in promoting adolescents' reproductive health. The collaboration can provide sustainable health education and support for adolescents, particularly in the area of reproductive health through regular education, mentoring, the provision of health information, and early detection of reproductive health issues. This collaborative approach has the potential to establish a more comprehensive and sustainable reproductive health promotion system for adolescents.

However, the limitation of this study is the evaluation focused solely on assessing effectiveness of health education in improving knowledge and did not measure changes in the adolescents' behavior and attitudes. The number of participants was relatively limited, therefore further research with a larger sample size and involving schools with diverse characteristics is needed to ensure that the results have better external validity. In addition, conducting the intervention concurrently with other activities may also affect participants' concentration and focus in following the entire series of interventions. Distraction from the surrounding environment may hinder the optimal absorption of the information provided.

CONCLUSION

This study shows that health education program implemented for ninth-grade female adolescents at middle school in Bandung was effective in strengthening and improving their knowledge of reproductive health, as evidenced by a significant difference in knowledge levels. Most participants already possessed a good level of knowledge prior to intervention, therefore the education program serves not only to provide new information but also to strengthen their existing understanding about reproductive health. Although a small portion experienced a decline, overall the educational intervention still had a positive impact on the participants' understanding. The success of this intervention was supported by the use of interactive educational methods, supporting media, and the adolescents' cognitive abilities, which were already at the formal operational stage, enabling them to understand and process health information effectively. The display of posters as supplementary educational media also contributed to strengthening the continuous delivery of health messages within the school environment. The implementation of reproductive health education in schools

plays a crucial role in enhancing knowledge and has the potential to raise awareness and encourage adolescents to adopt more positive health behaviors.

REFERENCES

- Agarwal, M., Singh, S., Jyoti, C., Sinha, S., & Simran, S. (2024). Understanding Adolescent Gynecological Issues: A Cross-Sectional Study at a Tertiary Care Center. 16(4). <https://doi.org/10.7759/cureus.57713>
- Allison, B. A., & Wilkinson, T. A. (2026). Adolescent-Centered Sexual and Reproductive Health Communication. 333(7225), 250–251. <https://doi.org/10.1001/jama.2024.24246>. Adolescent-Centered
- Anggraini, N., Saputri, A. F., & Yuliana, A. (2026). Efektivitas Media Poster Dalam Pendidikan Kesehatan Putri Mengenai Personal Hygiene Saat Menstruasi. *Jurnal Ners*, 10(2), 3562–3573.
- Arruda, G. T. de, Barbosa-silva, J., Driusso, P., Pathmanathan, C., Armijo-Olivio, S., & Avila, M. A. (2026). Worldwide prevalence of dysmenorrhea: a systematic review and meta-analysis across. *Pain*, 167(1), 41–55.
- Hanfstingl, B., Arzen, A., Apschner, J., & Göllly, K. I. (2021). Assimilation and Accommodation A Systematic Review of the Last Two Decades. *European Psychologist*, 0.
- Hesty, Maimaznah, & Hidayat, M. (2024). Pendidikan Kesehatan pada Remaja Putri tentang Kesehatan Reproduksi di SMP Pertiwi 1 Kota Jambi. *Jurnal Abdimas Kesehatan (JAK)*, 6(3), 442–448. <https://doi.org/10.36565/jak>.
- Juniar, A. D., Simamora, A. Y., Manalu, C. N. P., Cathryne, J., & Ningsih, M. T. A. S. (2023). The relationship between level of knowledge and vaginal discharge prevention behavior for nursing student. *Revista Brasileira de Enfermagem*, 76(Suppl 2), 1–8.
- Kemenkes. (2022). Kesehatan Reproduksi Remaja: Permasalahan dan Upaya Pencegahan. https://keslan.kemkes.go.id/view_artikel/29/kesehatan-reproduksi-remaja-permasalahan-dan-upaya-pencegahan
- Kim, J., Jang, J., Kim, B., & Lee, K. H. (2022). Effect of the PRECEDE - PROCEED model on health programs: a systematic review and meta - analysis. *Systematic Reviews*, 11(1), 1–12. <https://doi.org/10.1186/s13643-022-02092-2>
- Marlina, H., Hayani, & Ismainar, H. (2021). Program Edukasi Kesehatan; Upaya Preventif Terhadap Penularan Covid-19 Di Sma Negeri 2 Siak Hulu Provinsi Riau. *Jurnal AbdiMas Nusa Mandiri*, 3(1), 23–28.
- Muchtar, A. S., Novianti, I., Fatimah, S., & Heriyana, D. (2024). Penyuluhan Kesehatan Reproduksi Pada Remaja Putri Di SMP Negeri 2 Sibulue Desa Sumpang Minangae Kabupaten Bone Reproductive Health Counseling For Adolescent Girls At SMP Negeri 2 Sibulue, Sumpang Minangae Village, Bone Regency. *Nat J Pelaks Pengabd Berger Bersama Masyarakat*, 2(1), 130–137.
- Ningtias, R. P., Noviati, E., Purwati, A. E., & Kurniawan, R. (2024). Pengaruh Pendidikan Kesehatan Reproduksi Terhadap Pengetahuan Remaja. *Jurnal Penelitian Perawat Profesional*, 6(6), 3117–3124.
- Permenkes. (2014). Peraturan Pemerintah Republik Indonesia Nomor 61 Tahun 2014 Tentang Kesehatan Reproduksi.
- Rohi, T. S., Ratu, K., Syahrir, & Buntoro, I. F. (2026). Hubungan Tingkat Pengetahuan Dengan Sikap Remaja Putri Tentang Kesehatan Reproduksi Pada Siswi SMP Di Kota Kupang. *Malahayati Nursing Journal*, 8(3), 44–53.
- Saida, Purnamasari, N. I., Rahmawati, Sukurni, Afrini, I. M., Hajri, W. S., & Rangki, L. (2024). Edukasi Kesehatan Reproduksi pada Remaja di SMPN 1 Kendari. *Society: Jurnal Pengabdian Masyarakat*, 3(6), 410–416.
- Sartika, D., Fauziah, & Azhara, S. (2024). Analisis Determinan Yang Mempengaruhi Kesehatan Reproduksi Remaja Putri Di Dayah Modern Darul Ulum Kota Banda Aceh Tahun 2024. *Jurnal Kesehatan Tambusai*, 5(4), 12232–12239.
- Scott, H. K., & Cogburn, M. (2026). Piaget. StatPearls Publishing.

- Sidabalok, S. R. D. B., Magfirah, A. N., Pioh, V. E., & Sali, M. (2026). Membangun Generasi Hebat : Edukasi Kesehatan Reproduksi Remaja bagi Siswa MTs Negeri Plus Riset. 4(3), 3334–3340.
- Staus, N. L., Connell, K. O., & Storksdieck, M. (2021). Addressing the Ceiling Effect when Assessing STEM Out-Of-School Time Experiences. *Frontiers in Education*, 6(690431), 1–9. <https://doi.org/10.3389/feduc.2021.690431>
- Steinberg, L. (2023). *Adolescence : Thirteenth Edition* (13th ed.). McGraw Hill.
- Sutjiato, M., Mongi, T., & Lontoh, E. (2025). Pengaruh edukasi kesehatan reproduksi remaja terhadap pengetahuan siswa siswi Kelas VII SMP Negeri 2 Pineleng Kabupaten Minahasa. *Jurnal Kedokt Komunitas Trop*, 13(2), 717–722. <https://doi.org/10.35790/jkkt.v13i2.65171>
- Tatiana, B. J. I., Karina, B. J. J., & Elena, C. N. C. (2025). School nursing in children ' s health from a holistic perspective. *Revista Cuidarte*, 16(3).
- Texeira, G. J., Owa, M. G., Blegur, L., Yanto, Y. U., Guterres, D. M., & Correia, H. (2024). Effectiveness of Interactive Education in Improving Knowledge About Reproductive Health at Eskola Secundaria Geral 1912 *Jurnal Kesehatan Komunitas Indonesia*. *Jurnal Kesehatan Komunitas Indonesia*, 4(3), 274–288.
- Utami, N. L., Lestari, N. D., & Aradea, R. (2024). Efektivitas Penerapan Media Poster dalam Pembelajaran di Sekolah : Studi Literatur. *Journal of Innovation in Teaching and Instructional Media*, 5(1), 310–323.
- Wahyuningsih, S., Widati, S., Praveena, S. M., & Azkiya, M. W. (2024). Unveiling barriers to reproductive health awareness among rural adolescents : a systematic review. *Frontiers in Reproductive Health*, 6(1444111), 1–9. <https://doi.org/10.3389/frph.2024.1444111>
- WHO. (2024). The adolescent health indicators recommended by the Global Action for Measurement of Adolescent health: guidance for monitoring adolescent health at country, regional and global levels.
- Wojtowicz, A. (Ed.). (2021). *Developing Health Literacy Skills in Children and Youth: Proceedings of a Workshop*.
- Wulan, A. J., Hanriko, R., Fiana, D. N., & Rahmayani, F. (2024). Edukasi Kepada Remaja Putri Kelompok Usia 12-18 Tahun Mengenai Keputihan dan Cara Pencegahannya. 9, 78–83.
- Yadav, N., & Kumar, D. (2023). The impact of reproductive and sexual health education among school going adolescents in Andaman and Nicobar Islands. *Clinical Epidemiology and Global Health*, 24(May), 101416. <https://doi.org/10.1016/j.cegh.2023.101416>
- Yuliani, I., & Nalova, I. P. (2026). The Relationship Between Adolescents ' Knowledge , Attitudes , And Information Sources Towards Reproductive Health and Sexual Behavior At Sman 12 Bekasi In 2025. *Jurnal Ners*, 10(2), 5089–5097. <https://doi.org/https://doi.org/10.31004/jn.v10i2.54713>
- Zulimartin, H., Harzif, A. K., Shadrina, A., Harahap, J. S., & Tanjung, A. (2025). Prevalence , Severity , and Self-Medication for Dysmenorrhea among Female Adolescents in Indonesia. *Majalah Kedokteran Bandung*, 57(2), 104–110.

