

# THE EFFECTIVENESS OF HEALTH EDUCATION AND MEDIA USING LOCAL LANGUAGE IN IMPROVING REPRODUCTIVE HEALTH KNOWLEDGE AMONG ADOLESCENTS

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**Abstract:** Health education and media have been identified as strategies to improve adolescents' reproductive health knowledge, but barriers can be influenced by cultural context, including language. This study aims to assess the effectiveness of health education and media using the local language in improving reproductive health knowledge among adolescents in Bhuana Giri Village, Karangasem. The research design is a quasi-experimental two-group pre-posttest design, and purposive sampling was used to select the samples. A total of 50 students aged 12 to 17 years participated in the study. The first group received health education and media in the local language on reproductive health topics, while the other group received the same topics in the national language. Data analysis used the Wilcoxon signed-rank test and Mann-Whitney test with a significant level of 0.05. The results showed that both interventions led to significant improvements in reproductive health knowledge. There was an effect of giving health education and media using the local language ( $p < 0.001$ ) and the national language ( $p = 0.004$ ). Based on the results of the Mann-Whitney test, there was a significant difference in effectiveness with  $p = 0.005$ , and using the local language proved more effective in increasing adolescents' knowledge about reproductive health. Health education and media using the local language enable effective communication and interaction to avoid misunderstandings that can arise. The study's findings underscore the potential of culturally tailored educational materials to enhance learning outcomes in public health initiatives for adolescents.

**Keywords:** health education; media; local language; reproductive health; adolescents

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## Introduction

Reproductive health is a crucial aspect of an individual's life, particularly during adolescence, a critical period characterized by rapid physical, psychosocial, cognitive, and emotional development. The significance of reproductive health during this stage cannot be overstated, as it lays the foundation for a healthy and fulfilling adulthood. Addressing reproductive health is a global concern, reflected in its inclusion as a target in the Sustainable Development Goals (SDGs). The third target of the SDGs aims to ensure a healthy life and promote well-being for people of all ages, with a specific focus on reproductive health (Howden-Chapman, et al., 2017; WHO, 2018). Reproductive health is

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the state of physical, mental and social wellbeing not merely the absence of disease or infirmity, also in whole aspect of the reproductive system function and process (WHO 2023).

According to Statistics Indonesia (2020), Indonesia is currently characterized by a significant proportion of its population within the productive age group (15-24 years old), which consists of approximately 191 million individuals, highlights the importance of reproductive health. However, the findings from the Indonesia Demographic and Health Survey (2017) reveal that the knowledge of adolescents regarding reproductive health is still relatively low. Specifically, their understanding of crucial aspects such as fertility awareness, pregnancy risks, and anaemia is reported to be below 50% on average. Moreover, it is only 12 percent of women and 6 percent of men are aware of the locations or platforms where they can engage in discussions or access information related to reproductive health. This highlights a significant disparity in the availability and accessibility of reproductive health resources and services, especially for young individuals seeking guidance and support in making informed decisions about their reproductive well-being. More specifically, it is said that, on average, they know less than 50% about important topics including anemia, pregnancy dangers, and fertility awareness. Furthermore, only 12% of women and 6% of men know where to find forums or other places where they can participate in conversations or obtain reproductive health information. This highlights a significant disparity in the availability and accessibility of reproductive health resources and services, especially for young individuals seeking guidance and support in making informed decisions about their reproductive well-being.

The lack of reproductive health education among adolescents leads to various ongoing health issues. One of the major concerns in Indonesia is the high rate of teenage pregnancies, with a prevalence rate of 21.84% (Statistics Indonesia 2020). The incidence of early marriages is notably more prevalent in rural areas, accounting for 3.02% of cases, twice the rate observed in urban areas, which stands at 1.37%. This trend is further compounded by the fact that a majority of Indonesian teenagers in rural regions, about 61.31%, have completed only junior high school or possess lower educational qualifications, with no further pursuit of formal education (Statistics Indonesia, 2020). Many persistent health problems are caused by adolescents' lack of education about reproductive health. According to Statistics Indonesia 2020, a significant issue in Indonesia is the high prevalence of teenage pregnancies, which stands at 21.84%. When it comes to early marriages, the rate in rural areas is twice as high as in urban areas (i.e., 3.02% of instances versus 1.37% in urban areas). The majority of Indonesian teenagers in rural areas, or roughly 61.31%, have only completed junior high school or have lower educational credentials and have not pursued further formal education, which contributes to this trend (Statistics Indonesia, 2020). Moreover, the prevalence of sexually transmitted infections (STIs) remains a significant issue among Indonesian adolescents. Based on the data from the Integrated Biological and Behavioural Surveillance (IBBS) in 2015, there was an annual increase in

the prevalence rate of sexually transmitted infections (STIs), specifically syphilis, from 5% to 6%, while the number of human immunodeficiency virus (HIV) cases has also risen and is projected to continue growing until 2025 (Helda and Muchlisa 2021).

Insufficient education and knowledge about reproductive health can trigger health problems, including the existence of taboos surrounding reproductive health topics within families, friends, communities, and schools (Susanto et al., 2016). Therefore, health education through various media is essential to increase knowledge and awareness, encouraging healthy behaviours to maintain the reproductive system and create an environment supportive of reproductive health. Reproductive health education serves as a crucial preventive measure by enhancing individuals' understanding (Breuner and Mattson, 2016). By equipping adolescents and young adults with knowledge about reproductive health system, puberty, sexual practices and their associated risks to make decisions about their reproductive well-being. Efforts to improve reproductive health through health promotion media should also be based on social, cultural, and religious values (Susanto et al., 2016). By incorporating these values into health promotion media, the message becomes more relatable and accepted by the community, contributing to healthier reproductive behaviours and overall well-being. By educating adolescents and young adults about the reproductive health system, puberty, sexual practices, and associated dangers, they will be able to make informed decisions regarding their reproductive health. Social, cultural, and religious values should also serve as the foundation for initiatives aimed at promoting reproductive health via the media (Susanto et al., 2016). These concepts make the message more relatable and socially acceptable when they are presented in health promotion content, that encourages healthy reproductive practices and general wellbeing.

Indonesia is a linguistically diverse country with over 700 languages. Language is one of the crucial points to ensure that health promotion information conveyed through media is easily understood (Fry, D., 2020). The use of local languages can be an approach to enable adolescents, particularly in rural areas, to better comprehend reproductive health materials. Local languages are preferred as they have the potential to influence and enhance understanding of health topics (Abrar, E. A., 2022; Amponsem-Boateng, 2021; Abdullah, A., 2020). Given the vast linguistic diversity in Indonesia, tailoring health promotion information in local languages becomes vital for effective communication and comprehension. Adolescents, especially in rural areas, can benefit significantly from such an approach, as local languages resonate more deeply with their cultural context and facilitate a stronger connection to reproductive health materials. With more than 700 languages spoken there, Indonesia is a multilingual nation. One of the most important factors in ensuring that information about health promotion in the media is understandable is language (Fry, D., 2020). The use of local languages can help adolescents from rural regions to have better understanding about reproductive health

informations. Local languages can impact and improve comprehension of health-related themes, it is preferred (Abrar, E. A., 2022; Amponsem-Boateng, 2021; Abdullah, A., 2020). Customizing health promotion materials in regional tongues is essential for efficient communication and understanding given Indonesia's great linguistic diversity. This kind of approach can be quite beneficial for adolescents, particularly those who live in rural regions, as local languages enable individuals to connect with reproductive health information firmly and resonate more closely with their cultural setting. Despite the widespread recognition of language's role in health education, there is a lack of evidence on the effectiveness of using local languages in reproductive health education within Indonesia's diverse linguistic landscape. This research aims to evaluate the effectiveness of using the local language in reproductive health education and media among adolescent groups in Bhuana Giri Village, Karangasem Regency by assessing the knowledge improvement.

Based on observations, Bhuana Giri Village, Karangasem is a village where the residents predominantly use the local language, which is Balinese language, as their primary means of communication, similar many rural areas in Indonesia. The findings of this study are expected to provide valuable insights into the impact of using the local language in adolescent reproductive health education. These findings can serve as a basis for policymakers, planners, and other relevant stakeholders to integrate the local language into adolescent reproductive health education programs in this region. Therefore, this research holds significant relevance in enhancing adolescent reproductive health knowledge and promoting overall community development for better health outcomes. This study measures the increase in knowledge among adolescent groups in Bhuana Giri Village, Karangasem Regency, Bali to examine the efficacy of applying the local language in reproductive health education and media. Bhuana Giri Village, located in Bebandem District, Karangasem Regency, is characterized by plains and hills with heights ranging from 300 to 1,750 meters above sea level. Observations reveal that, the majority of the population in this regency still uses their local language. The local language known as the Balinese language. Such a condition can still be found in many rural areas of Indonesia, where people use the native language as their major means of communication. It is expected that the study's conclusions will provide significant insight into the benefits of teaching teenage reproductive health in the local tongue. Policymakers, planners, and other relevant stakeholders can use these findings as a foundation to incorporate the local language into adolescent reproductive health education programs in this region. Therefore, this research is highly relevant to improving adolescents' understanding of reproductive health and fostering community development in general for improved health outcomes.

## **Materials and Methods**

This study used a quasi-experimental with pretest-posttest design to compare the effects of health education and media using local language in improving the knowledge about reproductive health. The sample included adolescents in Bhuana Giri Village, Karangasem Regency. This location was selected owing to cases of early marriages and limited access to reproductive health education resources. Sampling for samples was then based on purposive sampling approach.

Inclusion criteria were (1) aged 10 to 19 (2) adolescents who attended the health education program. Adolescents were excluded if (1) adolescents have severe medical conditions or disabilities (2) adolescent who do not express their agreement or willingness to participate (3) adolescents who have already received similar health education about reproductive health. The health education program was designed to cover various reproductive health topics, such as reproductive health system, puberty, sexual practices and their associated risks. Culturally appropriate materials and media were developed in the local language to enhance understanding and engagement among the target audience. These were reviewed by the head of the village to ensure their alignment with the community's cultural values.

For the assessment of participants' knowledge, we designed a structured questionnaire, which underwent a rigorous development process involving a thorough literature review and a pilot study to ensure its validity and reliability. The questionnaire was first piloted with a small group of adolescents from a similar demographic to refine the questions for clarity and cultural appropriateness. This pilot also allowed us to test the reliability of the questionnaire, making necessary adjustments based on the feedback received.

The health education program, supplemented with the use of local language media, was delivered through interactive sessions in a school where the health education program located. Participants were actively engaged in discussions and activities related to reproductive health. Following the intervention, the same questionnaire used in the pre-test assessment was administered again to evaluate any changes in reproductive health knowledge among the participants.

Quantitative data collected from the questionnaires were analysed using appropriate statistical methods. Pre-test and post-test knowledge scores were compared using Wilcoxon signed-rank test to determine the effectiveness of the interventions in enhancing reproductive health knowledge and the Mann-Whitney U test to compare the effectiveness between the experimental and control groups in enhancing reproductive health knowledge. Informed consent was obtained from all study participants or their guardians before data collection. Confidentiality and anonymity of the participants were maintained throughout the study.

## Results and Discussion

Table 1. Frequency and percentage distribution of demographic characteristics of the samples. N=50

Sample Characteristics	Experimental group		Control group	
	f	%	f	%
<b>Age in years</b>				
12 years	1	4,0	3	12,0
13 years	6	24,0	7	28,0
14 years	9	36,0	5	20,0
15 years	6	24,0	5	20,0
16 years	2	8,0	4	16,0
17 years	1	4,0	1	4,0
<b>Total</b>	<b>25</b>	<b>100</b>	<b>25</b>	<b>100</b>
<b>Sex</b>				
Male	12	48,0	13	52,0
Female	13	52,0	12	48,0
<b>Total</b>	<b>25</b>	<b>100</b>	<b>25</b>	<b>100</b>

f = Frequency, % = percentage, N = Number of samples

Table 1 shows the frequency and percentage distribution of demographic characteristics among the sample participants. Based on the result, the highest percentage of participants (36%) fell in the 14 years in the experimental group, whereas the highest percentage (28%) of participants were in the age group of 13 years in control group. Most (52%) of participants were female in experimental group, whereas most (52%) of participants were male in control group.

Table 2. Wilcoxon signed-rank test for comparisons of intervention health education and media in experimental group and control group

Variable	N	Mean Rank	Z	p-value
Experimental group			-4.040	0.0001
Negative ranks	0	0.00		
Positive ranks	21	11.00		
Ties	4			
Control group			-2.903	0.004
Negative ranks	2	11.75		
Positive ranks	17	9.79		
Ties	6			

The results of this research showed in Table 2 indicate that the use of local language media significantly impacts the increase in reproductive health knowledge among adolescents. The Wilcoxon signed-rank test revealed that the intervention involving health education and media in the local language resulted in a higher number of respondents with positive ranks (N=21) compared to those with ties values (N=4). The positive ranks demonstrate that 21 respondents achieved higher

post-test scores than their pre-test scores, while the ties values indicate that 4 respondents obtained the same scores on both tests. Moreover, the study found a significant effect of providing health education and media in the local language on the improvement of reproductive health knowledge, with a p-value of 0.0001. These findings highlight the effectiveness of utilizing culturally appropriate media to enhance adolescents' understanding of reproductive health topics. In the control group, additional results of this research revealed that 17 respondents obtained higher post-test scores than their post-test scores, 2 respondents achieved lower post-test scores, and 6 respondents obtained the same scores in both tests. The intervention involving health education and media in the national language also demonstrated a significant effect on increasing reproductive health knowledge, with a p-value of 0.004. The substantial impact of local language media on increasing reproductive health knowledge, as demonstrated by our results, underscores the deep cultural relevance of language in educational strategies. Language is not merely a vehicle for communication but is deeply intertwined with cultural identity, affecting how information is processed and understood.

Knowledge, as a part of the behaviour domain is identified to be an outcome of understanding and knowing (Nanlohy et al., 2021). It is an innate sense and arises through the five human senses, namely sight, hearing smell taste as well as touch are all essential in acting on individuals. In addition to improving knowledge, sufficient information provision through various media is also essential (Nanlohy, Asrina, and Kurnaesih, 2021). One effective medium is posters, which offer a simple and cost-effective way of mass education (Kulkarni et al., 2022). Kulkarni, et al. (2022) conducted a study on the efficacy of posters in increasing knowledge about cancer among outpatient caregivers aged 18 years and above identified that using simple language for poster design resulted to effective health communication concerning cancer. This research is consistent with the intervention that used a poster as media in national and local language for sharing information about reproductive health among adolescents.

Table 3. Mann-Whitney U test for comparisons of intervention health education and media in experimental group and control group

<b>Group</b>	<b>N</b>	<b>Mean Rank</b>	<b>Z</b>	<b>p-value</b>
Experimental group	25	31.20		
Control group	25	19.80	-2.831	0.005

According to the data presented in Table 3, the Mann-Whitney U test was conducted to compare the effectiveness of health education and media interventions between the experimental group and the control group. The experimental group, which received health education and media using the local

language, obtained a higher mean rank score of 31.20. On the other hand, the control group, exposed to health education and media using the national language, achieved a lower mean rank score of 19.80. The results of the Mann-Whitney U test showed a significant difference between the two groups ( $Z = -2.831$ ,  $p = 0.005$ ), indicating that the health education and media interventions using the local language were more effective in increasing reproductive health knowledge among adolescents compared to the interventions using the national language. There are various methods that can be used to increase knowledge, and health education stands as one crucial approach in preventing reproductive health risks among adolescents. In this research, the researcher conducted health education using media posters in both local and national languages for two separate groups.

The ability of local language to convey complex health concepts in a manner that is culturally resonant and easily understandable cannot be overstated. In Indonesia, where cultural identity is often closely tied to language, delivering health education in a local tongue is not just a matter of translation but of contextualization—ensuring that the information is framed within the cultural norms, values, and understandings. This approach not only aids in comprehension but also fosters trust and relatability, which are crucial for the acceptance and integration of new knowledge, particularly in the field of reproductive health where cultural sensitivities are heightened. The significant findings in our study are a testament to the importance of cultural relevance in health education and the potential benefits of tailoring interventions to the linguistic and cultural fabric of the target population.

Several similar studies have been conducted to investigate the effectiveness of health education interventions on reproductive health knowledge and attitudes among adolescents. For instance, a study in Medan (Nasution, Erniyati, and Hariati, 2019) showed that health education significantly increased knowledge ( $p\text{-value}=0.0001$ ) and influenced attitudes ( $p\text{-value}=0.0001$ ) towards free sex behaviour. The research concluded that counseling and education could effectively improve adolescents' knowledge and attitudes regarding sexual behavior. In line with these findings, another study conducted among senior secondary school students in Rivers State (Bongilli et al., 2021) found that health education had a substantial impact on reproductive health knowledge. The intervention group had a significantly higher mean knowledge score ( $110\pm 16.0$ ) compared to the control group ( $92\pm 14.9$ ), indicating the positive influence of health education on reproductive health knowledge. Similarly, a separate study by Başar, Yavuz, and Yeşildere Sağlam (2021) reported similar results, with adolescents who participated in a reproductive health education program showing a higher mean knowledge score for reproductive health ( $27.51\pm 3.83$ ) compared to the control group ( $18.36\pm 5.88$ ). The study also highlighted a significant difference in posttest scores between the intervention and control groups ( $p\text{-value}<0.001$ ), further supporting the effectiveness of health education in enhancing reproductive health knowledge. Collectively, these studies provide strong evidence supporting the



role of health education interventions in positively impacting adolescents' reproductive health knowledge and attitudes.

Communication requires a language to convey information and in Indonesia, the existence of different local languages makes it essential that such consideration is given when communicating. In this study, the intervention was a health education and media using local language; therefore, it appeared that utilizing local languages were more efficient in enhancing adolescents' reproductive knowledge. These results corroborate the findings of Ningsih et al. (2021), which showed a significant difference in using Dayak language and national language to improve knowledge, cognition level among students  $p$ -value 0.01). Further, a study by Floyd and Sakellariou (2017) revealed that immigrant women in Canada were faced with challenges of accessing health services because they could not understand the language used which was foreign to their group. These results highlight the importance of local language in successfully communicating educational messages, especially where there is a disparity between local languages and either instructional or dominant ones. The delivery of health information in local language is not only to attract the attention of adolescents but also facilitates understanding, effective communication and knowledge acquisition (Suharti & Daryono 2020).

## **Conclusion**

In conclusion, this research aimed to assess the effectiveness of health education and media using the local language in improving reproductive health knowledge among adolescents in Bhuana Giri Village, Karangasem Regency. The quasi-experimental pretest-posttest design involved two groups, with one receiving health education and media in the local language and the other in the national language. Both interventions had a significant impact on enhancing reproductive health knowledge, but the use of the local language proved to be more effective, highlighting the importance of language in health promotion communication and media. Prior research emphasizes the significance of utilizing local languages, particularly in rural areas, where the local language is commonly spoken. By making health information more accessible and culturally relevant, tailored to the language of the target community, we can empower adolescents with essential knowledge for informed decision-making about their reproductive health. The research contributes to the existing body of knowledge on adolescent reproductive health and provides valuable insights for policymakers, educators, and health practitioners.

While this study sheds light on the immediate benefits of using the local language in health education, we must acknowledge its scope was limited by the small number of participants and its concentration on a specific village alone. To build on our findings, subsequent studies should recruit larger and

more diverse populations across different regions. It's also crucial to examine whether these educational impacts last over time. Moving forward, it's clear that incorporating local languages in teaching adolescents about reproductive health is not just beneficial but necessary for reaching communities effectively.

### **Declaration of Interest Statement**

The authors declare that they have no conflict of interest.

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