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## The effectiveness of reproductive health education to increase knowledge among adolescents

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### Abstract

**Background:** Discussion about sexual and reproductive health issues among teenagers and parents is still shadowed by taboos in some cultures. Ignorance and myths surrounding these issues make teenagers vulnerable to the consequences of inappropriate sexual behavior, which in turn exposes them to risky behavioral problems. The lack of knowledge regarding teaching strategies used to educate teenagers can result in their indifferent attitudes and decreased motivation in receiving educational materials.

**Purpose:** To determine the characteristics, age, gender, participants knowledge levels regarding adolescent reproductive health, and the influence of leaflet and booklet media on the level of adolescent reproductive health knowledge.

**Method:** A quantitative research using a quasi-experimental design with a posttest-only design. The sample consisted of 50 teenagers divided into 2 intervention groups. The media used for education were booklets and leaflets.

**Results:** The analysis results for the booklet group with a mean of  $67.48 \pm 14.060$  and the leaflet group with a mean of  $54.20 \pm 6.331$  yielded a p-value of 0.001. Therefore, there is a difference in the impact of health education intervention on the level of reproductive health knowledge among teenagers.

**Conclusion:** Providing education using booklets can be one of the more effective educational strategies.

**Suggestion:** Both adolescent boys and girls are encouraged to properly maintain their reproductive health and participate in every available health education activity to enhance their knowledge and health status.

**Keywords:** Adolescent; Booklets; Health Education; Leaflet; Reproductive Health

### INTRODUCTION

Adolescence is a phase bridging childhood and adulthood, its definition has long been puzzling. It encompasses biological growth and significant social role transitions, both of which have changed over the past century. Earlier puberty has accelerated the onset of adolescence in nearly all populations, while understanding continuous growth has extended the endpoint of adolescence into the twenties. Compared to the age range of 10–19 years, defining it as 10–24 years is more related to adolescent growth and common understanding of this life phase, facilitating broader investment in various

environments (Sawyer, Azzopardi, Wickremarathne, & Patton, 2018).

Adolescents receive comprehensive sexual health education through the California Personal Responsibility Education Program (CA PREP), a federally funded initiative aimed at reducing unwanted teen pregnancies and STIs through evidence-based programs. The Maternal, Child, and Adolescent Health Division of the California Department of Public Health supported 22 agencies serving 20 high-need areas to implement this program in 2018–2019. During that time, CA PREP

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served young people in more than 300 unique locations (Decker, Zárate, Atyam, & Saphir, 2023).

Adolescence (defined in this article as ages 10–19 years) is a unique and critical phase in one's life. Representing the transition between childhood and adulthood, it is marked by significant physical and psychosocial changes that bring risks and opportunities to impact young people's life prospects. Therefore, issues affecting adolescents have long-term health and social implications and require clear attention (Liang, Simelane, Fillo, Chalasani, Weny, Canelos, & Snow, 2019).

Adolescent reproductive health refers to a healthy condition concerning the reproductive system, function, and processes possessed by adolescents. Health, in this context, not only means disease-free or devoid of disability but also mental and socio-cultural wellness (Indonesian Pediatric Society, 2013).

Adolescent Sexual and Reproductive Health (ASRH) remains a significant public health challenge in Sub-Saharan Africa, where child marriage, teen childbirth, HIV transmission, and low modern contraceptive coverage are common in many countries. Existing evidence remains limited regarding ASRH disparities based on gender, education, urban-rural residence, and household wealth in crucial areas like sexual initiation, fertility, marriage, HIV, condom use, and modern contraceptive use for family planning (Melesse, Mutua, Choudhury, Wado, Faye, Neal, & Boerma, 2020).

Young people in many developing countries are at acute risk of sexually transmitted infections (STIs) and human immunodeficiency virus (HIV) transmission, as well as unwanted pregnancies. Approximately half of those currently infected with HIV are women in developing countries aged <25 years. Moreover, over 13 million adolescent girls experience unwanted births each year in developing countries (Speizer, Magnani, & Colvin, 2003).

Issues of adolescent reproductive health are suspected to be related to the information adolescents obtain through media. Generally, adolescents utilize mass media as a sexual information source more than parents because mass media offers a more engaging portrayal of adolescent desires and needs (Solehati, Rahmat, & Kosasih, 2019).

One necessary effort to improve the status of adolescent reproductive health is through continuous health promotion activities. Using media during health promotion activities greatly helps enhance adolescent girls understanding of menstruation. Based on preliminary study results, the media needed for menstruation preparation health promotion activities is a booklet, as it contains concise visuals and explanations about the necessary material. The aim of this research is to design a booklet media about menstrual preparation for use in health promotion activities (Wiwin, & Siti, 2018).

A booklet is a media form classified as below-the-line media. Consistent with the inherent nature of below-the-line media, the messages written on this media adhere to several criteria: using short, simple, brief, concise sentences in bold large font size not less than 10pt, presented attractively, and using economical language (Arief, Sadiman, & Haryono, 2012).

The influence of menstruation education using booklet and leaflet media reveals a difference in the effectiveness of the education, showing that booklet media is more effective than leaflet media in enhancing knowledge and attitudes of female students in facing menarche (Lubis, Pramana, & Kasjono, 2022).

Preliminary studies conducted through interviews with students at SMP Muhammadiyah 5 Kerjo and SMP Bhakti Karya Mojogedang revealed that most of them lack adequate knowledge about reproductive health, with much of their information coming from social media. Therefore, this research aims to explore the characteristics, age, gender, and participants level of knowledge regarding adolescent reproductive health, as well as the effectiveness of leaflet and booklet media in improving their knowledge on this topic.

## RESEARCH METHOD

This was a quantitative study with a quasi-experimental design, utilizing pre and post test design. The study sample consisted of 50 individuals divided into two intervention groups: 25 junior high school students from SMP Muhammadiyah 5 Kerjo and 25 junior high school students from SMP Bhakti Karya Mojogedang. The study has been approved by

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the ethical commission of Muhammadiyah University Surakarta with the number 1.916/X/HERC/2023.

Sample selection was carried out through purposive sampling with inclusion criteria of adolescents who were active students and willing to participate, while exclusion criteria involved participants who did not complete the health education program. The instrument used in this study was a knowledge questionnaire developed by the researcher, which has undergone validity and reliability tests, with the questionnaire being assessed as valid and reliable. The media used for providing education were leaflets and booklets. Data analysis involved univariate analysis to describe age, gender, and knowledge level characteristics. Bivariate analysis was used to illustrate differences in the level of knowledge by calculating (mean, standard deviation, mean difference, 95% CI confidence interval, p-value). Independent sample T-test analysis was performed to analyze the influence

of providing booklet and leaflet media on the level of adolescent reproductive health knowledge.

In this research, data collection was conducted through observation, identification, interviews, and filling out a questionnaire consisting of 40 items, including a willingness-to-participate sheet. The questions in the questionnaire covered participant characteristics such as age and gender. Furthermore, the questionnaire contained questions about participant knowledge regarding adolescent reproductive health. Participants were then asked to complete the questionnaire. After filling out the questionnaire, an assessment was conducted, with the assessment indicators for participant knowledge about adolescent reproductive health based on the answers provided. This includes categorizing knowledge as low if the score is <55%, fair if the score is 56-75%, and good if the score is 76%-100%.

The data obtained were processed by discussing the problem statements as a basis and then presented in tabular form to draw conclusions.

## RESEARCH RESULT

**Table 1. Participant Demographic Characteristics (N=50)**

Variables	Groups	
	Leaflet	Booklet
<b>Age (Mean <math>\pm</math>SD) (Range)</b>	(14.06 $\pm$ 0.793) (13-16)	
13-14	37/74.0	
15-16	13/ 26.0	
<b>Gender (n/%)</b>		
Male	37/74.0	
Female	13/26.0	
<b>Level of Knowledge (n/%)</b>		
Good	1/4.0	10/40.0
Moderate	9/36.0	9/36.0
Poor	15/60.0	6/24.0

Table 1 displays the participants age with a mean and standard deviation of 14.06  $\pm$  0.793 and a range between 13-16 years. The majority of them were 14 years old, constituting 25 participants. Furthermore, there were 12 participants aged 13, 11 aged 15, and the smallest group comprised 2 participants aged 16.

Most of the participants were male, totaling 37 individuals (74.0%), while the female participants amounted to 13 (26.0%).

Regarding the level of understanding among the intervention groups, approximately 15 individuals (60.0%) who received leaflet intervention had a low level of knowledge, 9 (36.0%) had a moderate level, and 1 (4.0%) had a good level. Meanwhile, in the group that received the booklet intervention, there were 10 individuals (40.0%)

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with good knowledge, 9 (36.0%) with moderate knowledge, and 6 (24.0%) with poor knowledge. These findings indicate a difference in the number of participants after receiving education using each medium, with the group that received health education through booklets showing a more significant improvement in understanding, particularly regarding reproductive health.

**Table 2. Bivariate Analysis Results (N=50)**

Variables	Mean	SD	Mean Diff	95% CI	p-value		
Before Intervention							
Booklet	58.44	13.085	11.20	7.07-19.55	0.001		
Leaflet	47.24	5.661					
After Intervention							
Booklet	67.48	14.060	13.28				
Leaflet	54.20	6.331					

Table 2 shows the analysis results indicating that the average knowledge of participants before receiving intervention through a booklet on Reproductive Health was 58.44 with a standard deviation of 13.085. Meanwhile, participants' knowledge before receiving intervention through a leaflet on reproductive health was 47.24 with a standard deviation of 5.661. Hence, the difference between the two media before being given to participants reached 11.20.

Moreover, the average knowledge of participants who received intervention through a booklet media about adolescent reproductive health was 67.48 with a standard deviation of 14.060, while participants who received intervention through a leaflet had an average knowledge about adolescent reproductive health of 54.20 with a standard deviation of 6.331. Consequently, the difference between the two media reached 13.28, with a confidence level ranging from 7.07 to 19.55. After further analysis, a p-value of 0.001 ( $< 0.05$ ) was found, indicating rejection of the null hypothesis ( $H_0$ ). The conclusion drawn is that there is a significant difference in the impact of health education intervention using booklet and leaflet media on the level of adolescent reproductive health knowledge.

## DISCUSSION

The adolescent phase marks the transition from childhood to adulthood, a period crucial for reproductive health education. Lack of awareness in this domain leads to unwanted consequences like sexually transmitted diseases, early pregnancies, and abortions, resulting in adolescent fatalities (Kasim & Kadrianti, 2022).

Effective programs for adolescent sexual and reproductive health services require youth-friendly facility-based approaches integrated with community acceptance and demand-generating activities. More research is needed to determine optimal ways to deliver these services beyond facilities, especially for vulnerable and marginalized groups (Denno, Hoopes, & Chandra-Mouli, 2015).

Comprehensive sexuality education encompasses cognitive, emotional, physical, and social aspects of sexuality, aiming to empower

children and adolescents with knowledge, skills, attitudes, and values for their health, well-being, and dignity. It focuses on fostering respectful social and sexual relationships, considering the consequences of their choices on personal and others' well-being and ensuring lifelong rights protection (World Health Organization, 2018).

Adolescent reproductive health is a critical concern in development. This phase, situated between childhood and adulthood, sets the stage for life patterns. Risks associated with adolescence diminish with age, but many actions during this time have long-term consequences. Acquiring knowledge, skills, and behavioral habits in adolescence shapes adult expectations and outcomes (Senderowitz, 2000).

Teen birth rates in the US have declined over decades, yet the 2013 rate of 26.5 births per 1,000 adolescents aged 15–19 remains higher than in

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other developed countries. One in nine US teens gives birth before age 20 (Manlove, Fish, & Moore, 2015).

Adolescent reproductive health education programs have shown effectiveness in instilling positive changes and attitudes among middle school students. Training significantly enhances adolescent knowledge. Widespread adoption of reproductive health education programs in schools is crucial to prevent risky behaviors. It is recommended that middle school curricula include reproductive and sexual health education (Başar, Yavuz, & Sağlam, 2021).

Disseminating information, both formally and informally, enhances knowledge. Booklets and leaflets are often used non-formal information tools in health education. Booklet media can efficiently disseminate various information, especially on wider subject matters (Murtiyarini, Nurti, & Sari, 2019).

There is a significant difference in the level of knowledge among prospective spouses regarding reproductive health after receiving health education between the intervention and control groups. This aligns with research findings indicating a knowledge difference after the intervention between the intervention and control groups, with the average knowledge score of the booklet group being higher than the lecture method group (Irawati, Kartini, & Nugraheni, 2019)..

Based on statistical results regarding knowledge, attitudes, and practices, it can be concluded that audiovisual media are more effective than leaflets in changing knowledge, attitudes, and practices regarding reproductive health (Aisy & Rahayuningsih, 2022).

The improvement in adolescents knowledge about adolescent reproductive health after receiving education occurs in both groups (booklet media and other media), yet statistically, it is not significant. There is no difference in implementation between the two media; therefore, both groups experience an increase in knowledge. Booklet media and other media can be used for adolescent reproductive health education to prevent the complexity of adolescent issues (Sahertian & Latumenasse, 2017)..

## CONCLUSION

Health education media such as booklets and leaflets can serve as tools for conveying information,

but the use of booklets is more effective in enhancing adolescents knowledge compared to leaflets. This effectiveness is attributed to the booklet's ability to present more detailed and specific information

## SUGGESTION

For schools providing reproductive health education, it is expected to collaborate with local health centers to conduct reproductive health education. For adolescent boys and girls, it is encouraged to maintain reproductive health properly and participate in all available health education activities to enhance their knowledge and overall health. For future researchers, they could further develop studies by comparing the effectiveness of booklets with other media.

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