

THE EFFECT OF SIMEPAS LEAFLET ON STUDENTS READINESS FOR MENARCHE

Yuni Widiastuti¹, Siti Patimah², Shandy Kusumawardhani³

^{1,2,3} Bachelor of Midwifery, Faculty of Midwifery, Citra International Institute, Pangkalpinang,
Bangka Belitung Island
Email : yuniwidia35@gmail.com

ABSTRAK : PENGARUH LEAFLET SIMEPAS TERHADAP KESIAPAN SISWI MENGHADAPI MENARCHE

Latar Belakang: *Menarche* merupakan peristiwa penting dalam perkembangan reproduksi remaja putri yang sering kali menimbulkan kecemasan akibat kurangnya pengetahuan dan kesiapan dalam menghadapinya. Berdasarkan studi pendahuluan di SD Negeri 2 Simpang Rimba, diketahui bahwa sebagian besar siswi belum memiliki pengetahuan yang memadai tentang *menarche* dan belum menerima informasi dari sumber terpercaya, termasuk orang tua dan guru. Upaya pendidikan kesehatan melalui media *leaflet* dinilai strategis untuk meningkatkan kesiapan siswi.

Tujuan: Penelitian ini bertujuan untuk mengetahui pengaruh *leaflet* SIMEPAS (Siap Menghadapi Menstruasi Tanpa Cemas) terhadap kesiapan menghadapi *menarche* pada siswi kelas V dan VI di SD Negeri 2 Simpang Rimba tahun 2025.

Metode: Penelitian ini menggunakan desain *quasi-eksperimental* dengan model *nonequivalent control group design*. Sampel terdiri dari 36 siswi kelas V dan VI berusia 10–13 tahun, masing-masing 18 responden dari SDN 2 Simpang Rimba (kelompok eksperimen) dan SDN 1 Simpang Rimba (kelompok kontrol). Pengumpulan data dilakukan dengan kuesioner pengetahuan dan sikap, dan analisis menggunakan uji *Wilcoxon* dan *Mann-Whitney*.

Hasil: Hasil menunjukkan bahwa intervensi *leaflet* SIMEPAS berpengaruh signifikan terhadap peningkatan pengetahuan dan sikap siswi dalam menghadapi *menarche*. Uji *Mann-Whitney* menunjukkan nilai signifikansi $p = 0,000 < \alpha = 0,05$ untuk kedua kategori.

Kesimpulan: *Leaflet* SIMEPAS efektif meningkatkan kesiapan siswi menghadapi *menarche* melalui peningkatan pengetahuan dan sikap positif.

Saran: Disarankan agar sekolah dan orang tua berperan aktif dalam memberikan edukasi tentang *menarche* kepada remaja putri.

Kata Kunci: *Menarche*, *Leaflet*, Remaja Putri, Edukasi

ABSTRACT

Background: *Menarche* is a significant event in the reproductive development of adolescent girls, often causing anxiety due to a lack of knowledge and readiness. A preliminary study at SD Negeri 2 Simpang Rimba revealed that most students lacked sufficient information about *menarche* and had not received guidance from reliable sources such as parents or teachers. Health education through leaflets is considered a strategic effort to improve students' preparedness.

Objective: This study aimed to determine the effect of the SIMEPAS leaflet (Ready to Face Menstruation Without Anxiety) on the readiness to face *menarche* among fifth- and sixth-grade students at SD Negeri 2 Simpang Rimba in 2025.

Methods: This research employed a quasi-experimental design with a nonequivalent control group model. The sample consisted of 36 female students aged 10–13 years, with 18 students from SDN 2 Simpang Rimba (intervention group) and 18 from SDN 1 Simpang Rimba (control group). Data were collected using knowledge and attitude questionnaires, and analyzed using the Wilcoxon and Mann-Whitney tests.

Results: The results showed that the SIMEPAS leaflet intervention had a significant effect on improving students' knowledge and attitudes in facing *menarche*. The Mann-Whitney test indicated a significance value of $p = 0.000 < \alpha = 0.05$ for both categories.

Conclusion: The SIMEPAS leaflet is effective in enhancing students' readiness to face *menarche* by improving their knowledge and positive attitudes.

Suggestion: It is recommended that schools and parents take an active role in providing education about *menarche* to adolescent girls.

Keywords: *Menarche*, *Leaflet*, Adolescent Girls, Education

INTRODUCTION

Adolescence is known as puberty, which is a period marked by rapid physical development, psychological changes, menarche, and the appearance of secondary sexual characteristics such as breast development, the growth of hair in the armpits and pubic area, as well as pelvic development (Kholifah, 2024).

Adolescence, according to the World Health Organization (WHO), is the age period between 10–19 years. The United Nations (UN) defines youth as those aged 15–24 years. Meanwhile, according to the guidelines from the U.S. Health Resources and Services Administration, adolescence ranges from 10–21 years, which is divided into three phases: early adolescence (10–14 years), middle adolescence (15–17 years), and late adolescence (18–21 years) (Sari, 2021). In Indonesia, based on the Indonesian Ministry of Health Regulation No. 25 of 2014, individuals aged 10–18 years are classified as adolescents. According to the National Population and Family Planning Board (BKKBN), adolescents are individuals aged 10–24 years who are unmarried (Putri, 2024).

According to WHO (2021), the number of adolescents aged 10–19 years reached 1.2 billion or 18% of the world's total population. WHO (2022) reported the same figure of 1.2 billion adolescents aged 10–19 years (Rany, 2022). WHO (2023) reported 7.2 billion adolescents in this age group (Deswita et al., 2023). In Indonesia, the Central Bureau of Statistics (BPS) estimated that the number of adolescents aged 10–19 years in 2021 was 44.31 million, in 2022 was 44.25 million, and in 2023 was 44.19 million (BPS, 2024). In Bangka Belitung Province, BPS estimated the number of adolescents aged 10–19 years in 2021 to be 251,107, in 2022 to be 249,950, and in 2023 to be 246,970 (BPS, 2024). In South Bangka Regency, the number of adolescents aged 10–19 years was 35,319 in 2021, 35,100 in 2022, and 34,470 in 2023 (BPS, 2024).

According to UNICEF (2018), puberty is characterized by various physical and psychological changes in adolescents. One of the most notable physical changes in adolescent girls is menarche, the first menstruation, which results from a series of primary and secondary changes in the body, marking the maturity of the female reproductive system (Arrahma, 2023).

Adolescents generally experience menarche between the ages of 12 and 16 years. In females, the first menstruation usually occurs within this age range, with a normal cycle every 22–35 days and lasting for about 2–7 days (Nainar et al., 2024).

In developed countries, the average age of menarche among adolescent girls varies but tends to be lower compared to developing countries. For example, in the United Kingdom, the average age is 13.1 years, in Saudi Arabia 12.46 years, in Japan 12.2 years, in South Korea 12.6 years, in Germany 12.5 years, and in the United States even lower, at 11.9 years. Overall, the average age of menarche in developed countries is around 12 years (Lubis, 2023).

In developing countries, the average age of menarche is generally around 13 years. In Indonesia, the average is 13 years, while in Papua New Guinea it is higher at 18.8 years. Other countries show variations, such as the Philippines (13.11 years), Sudan (13.16 years), Yemen (13.80 years), India (13.48 years), Egypt (12.97 years), Turkey (13.20 years), Ghana (15 years), and Colombia (12.81 years). Generally, in developing countries, menarche occurs between the ages of 12–14 (Lubis, 2023).

According to the Indonesian Basic Health Survey (Riskesdas) 2010, the average age of menarche was 12.96 years, with 78.6% of adolescents aged 10–19 years already experiencing it. Specifically, 42.8% experienced menarche at age 12, 96.2% at age 15, and 99.6% at age 18 (Sadjaja et al., 2020).

Riskesdas 2013 reported a decline in menarche age, with 5.2% experiencing it before 12 years old, 25.3% around 12 years old, and the youngest recorded at 9 years old. Indonesia ranked 15th out of 67 countries, with an average decrease of 0.145 years per decade. According to the Indonesian Demographic and Health Survey (SDKI) 2017, most girls (76.6%) experienced menarche between 11–14 years, with the earliest before age 8 and the latest at age 17 (Nuripa, 2021).

Riskesdas 2018 found the average age of menarche in Indonesia to be 13 years (20%), with some cases occurring before age 9 (Lestari et al., 2022). According to the Ministry of Health (2018), 60% of Indonesian girls experience menarche at an average age of 12.4 years, indicating a trend toward younger ages (Hartati et al., 2022).

In Indonesia, 28% experienced their first menstruation at age 13, followed by 26% at age 12, and 23% at age 14. Among 15-year-olds, 32% had menarche at age 12 and 31% at age 13. Among 24-year-olds, 30% experienced menarche at 13 and 25% at 14 (Silalahi, 2021).

Data from the Bangka Belitung Provincial Health Office and South Bangka District Health Office showed no recorded data on menarche.

Readiness to face menarche indicates preparedness for one of the stages of physical maturity, namely the first menstruation. This readiness is reflected through knowledge and understanding of the menstrual process, enabling adolescents to accept it as normal. Reproductive health knowledge is crucial, as inadequate information often prevents girls from maintaining proper hygiene during menstruation, increasing their risk of infection (Lestari et al., 2022).

Research conducted by Lee (2008) in Kuswati & Handayani (2016) on 155 adolescent girls showed that 12% of those who were unprepared for menarche felt dirty, disgusted, and disturbed when they found menstrual blood stains on their pants. This negative response from adolescent girls experiencing menarche is essentially a normal part of the growth and development process. Furthermore, research conducted by Ulfa & Agustina in 2014 also revealed that 65% of respondents held negative views of menarche. These negative attitudes can lead to adolescent girls feeling ashamed and inferior about the reality they must accept (Silalahi, 2021).

Discussing menstruation within the family is often considered taboo, resulting in adolescents entering puberty often lacking knowledge and understanding of the physical and psychological changes that accompany menarche. Feelings of confusion, anxiety, and discomfort often accompany adolescent girls experiencing their first period (menarche) (Danoer et al., 2022).

The reality is that many adolescent girls obtain information about menarche and puberty from teachers (61%) and friends (29%). However, approximately 25% of adolescents never discussed menstruation before experiencing it themselves. Research also shows that for many adolescent girls, menarche is often a shocking and frightening experience. In some countries, such as Nepal, India, and Uganda, menstruation is considered a curse, illness, or sin. Only 6% of 150 adolescent girls in Nepal realized that menstruation is a physiological process. In India, 64% of adolescent girls feared menarche, and 86% felt unprepared for it. A similar situation is also found in Indonesia, where adolescent girls in Asia generally lack knowledge about menstruation and are less prepared for menarche (Purbowati et al., 2021).

In Indonesia, approximately 75% of adolescent girls experiencing menarche feel afraid and unprepared because it is their first experience. Only 45% feel ready to face puberty. Approximately 70% of adolescent girls experience menarche-related problems due to a lack of knowledge about

pre-puberty health education (Deada et al., 2022). A study of 1,402 respondents from 16 schools in four provinces in Indonesia showed that many adolescent girls believe menstruation is dirty or unclean (Danoer et al., 2022).

This lack of knowledge about menarche results in feelings of anxiety, shock, sadness, disappointment, shame, worry, and confusion. The health of a woman's reproductive organs significantly impacts her future. However, when rapid physical changes occur, especially those related to the reproductive organs, many adolescents do not know how to respond appropriately. Some adolescents even perceive menarche as a symptom of illness, leading to panic, or they perceive their first period as dirty and embarrassing, making them less prepared for menstruation (Danoer et al., 2022).

Anxiety factors associated with menarche include a lack of knowledge, early age, negative attitudes toward menstruation, minimal parental support, and low self-preparedness. Lack of information and guidance can increase uncertainty, while poor perceptions and emotional unpreparedness exacerbate stress. Addressing this anxiety requires adequate health education, family support, and a positive attitude toward bodily changes (Nadila, 2023).

Lack of knowledge and poor hygiene practices during menstruation can lead to health problems such as vaginal discharge, urinary tract infections (UTIs), pelvic inflammatory disease (PID), the possibility of cervical cancer, and even infertility. According to WHO data (2017), the highest incidence of reproductive tract infections (RTIs) worldwide occurs among adolescents (35%-42%) and young adults (27%-33%), including candidiasis (25%-50%), bacterial vaginosis (20%-40%), and trichomoniasis (5%-15%) (Dewi et al., 2025).

In Indonesia, approximately 75% of women experience vaginal discharge, a figure higher than in European countries, where the rate is only 25% (Nasution et al., 2022). Furthermore, this condition also carries a risk of developing cervical cancer. Based on data from the 2018 Basic Health Research (Riskesdas), the prevalence of cancer in Indonesia reached 1.79 per 1,000 population. Cervical cancer itself is the second-highest cancer case after breast cancer, with an incidence rate of 23.4 per 100,000 population and an average mortality rate of 13.9 per 100,000 population (Astani, 2020).

Based on data from the Bangka Belitung Islands Provincial Health Office in 2024, the number of adolescent girls who experienced reproductive

health problems during menstruation including menorrhagia, hypomenorrhea, polymenorrhea, oligomenorrhea, amenorrhea, metrorrhagia, dysmenorrhea, vaginal discharge/flour albus, endometriosis, gynecological cancer, HIV (Human Immunodeficiency Virus), PCOS (Polycystic Ovarian Syndrome), uterine myoma, urinary tract infections (UTI), and pelvic inflammatory disease (PID) in the Bangka Belitung Islands Province was 1.43%, Bangka 0.86%, Belitung 0.10%, West Bangka 0.36%, Central Bangka 2.82%, South Bangka 0.92%, East Belitung 0.45%, Pangkal Pinang 3.65% (Bangka Belitung Islands Provincial Health Office, 2024).

Based on data from the Bangka Belitung Islands Provincial Health Office and the South Bangka Regency Health Office, the prevalence of reproductive health issues among adolescent girls during menstruation is low, as many adolescents are reluctant to participate in youth health post (Posyandu) activities.

Health education or information provision can help shape positive attitudes and behaviors. This education utilizes leaflets, small paper pamphlets that serve as a short publication medium. Leaflets generally contain information that needs to be conveyed to the public and consist of 200 to 400 characters or letters, accompanied by supporting images. The advantage of using leaflets is that respondents can retain them and read them repeatedly. Furthermore, the information is delivered directly to the point without being wordy (Purbowati et al., 2021).

Research conducted by Yanti Nopita (2023) showed an increase in the average score related to the effect of health education through leaflets on adolescents' knowledge about menstruation. This finding aligns with research by Nivia Alda de Araújo Machado et al. (2024), which compared knowledge levels before and after health education.

Meanwhile, the adolescent Posyandu program in Simpang Rimba, South Bangka Regency, was only implemented in 2024 due to several internal constraints at the Simpang Rimba Community Health Center, which limited adolescent girls' knowledge and hygiene practices during menstruation. Although it has now been implemented, adolescents are quite enthusiastic and receptive to all information from health workers (Lestari, 2024).

According to data from the South Bangka Regency Education Office, in 2024, the number of female students at SD Negeri 1 Simpang Rimba was 13 in grade V and 15 in grade VI, and at SD Negeri 2 Simpang Rimba, there were 9 in grade V

and 22 in grade VI (South Bangka Regency Education Office, 2024).

According to the South Bangka Education Office (2024), the number of female students in SDN 1 Simpang Rimba was 13 in grade V and 15 in grade VI, while in SDN 2 Simpang Rimba there were 9 in grade V and 22 in grade VI. A preliminary study at SDN 2 Simpang Rimba showed that most girls aged 10–13 had not yet experienced menarche and had limited knowledge about menstruation, with many expressing feelings of fear, confusion, or shame.

Based on the above background, the researcher is interested in conducting a study entitled: **"The Effect of SIMEPAS Leaflet on Students Readiness for Menarche at SDN 2 Simpang Rimba"**.

RESEARCH METHODS

This quantitative study used a quasi-experimental nonequivalent control group design in two schools: SD Negeri 2 Simpang Rimba (experimental group) and SD Negeri 1 Simpang Rimba (control group). The total sample in this study consisted of 36 participants, divided into two groups: 18 participants at SD Negeri 2 Simpang Rimba and 18 participants at SD Negeri 1 Simpang Rimba. For analysis using the Wilcoxon and Mann-Whitney tests.

In the experimental group, 18 female students (grades V–VI, aged 11–13, pre-menarche) participated in interactive lectures, demonstrations, and group discussions using the SIMEPAS leaflet on April 24, 2025. Preparation included material development, leaflet distribution, scheduling, and a 30-minute pre-test. Activities consisted of material delivery, leaflet explanation, and discussion, followed by a post-test on May 14, 2025. At the control school, students received a short lecture, completed the same pre- and post-tests, but without the leaflet. Both groups' results were then compared to assess knowledge and attitudes.

RESEARCH RESULTS

Frequency Distribution of Respondents by Age SD Negeri 2 Simpang Rimba (Experimental Group)

Based on table 1, it shows that the majority of respondents were 12 years old, with a total of 10 students (55.6%) of the overall sample.

Table 1
Frequency distribution of respondents by age among female students at SD Negeri 2 Simpang Rimba in 2025

Age	N	%
11 years	3	16,7
12 years	10	55,6
13 years	5	27,8

SD Negeri 1 Simpang Rimba (Control Group)

Table 2
Frequency distribution of respondents by age among female students at SD Negeri 1 Simpang Rimba in 2025

Age	N	%
11 years	4	22,2
12 years	8	44,4
13 years	6	33,3

Based on table 2, it shows that the majority of respondents were 12 years old, with a total of 8 students (44.4%) of the overall sample.

Frequency Distribution of Respondents Based on Sources of Information About Menstruation SD Negeri 2 Simpang Rimba (Experimental Group)

Table 3
Frequency distribution of respondents based on sources of information about menstruation among female students at SD Negeri 2 Simpang Rimba in 2025

Source of Information	N	%
Books/Magazines	0	0
Internet/Brochures	2	11,1
Parents/Siblings	12	66,7
Health Workers	4	22,2

Based on table 3, the distribution of respondents according to sources of information about menstruation shows that most students obtained information from parents or siblings, as many as 12 students (66.7%), compared to those who received information from books/magazines, the internet/brochures, or health workers.

SD Negeri 1 Simpang Rimba (Control Group)

Table 4
Frequency distribution of respondents based on sources of information about menstruation among female students at SD Negeri 1 Simpang Rimba in 2025.

Source of Information	N	%
Books/Magazines	0	0
Internet/Brochures	0	0
Parents/Siblings	15	83,3
Health Workers	3	16,7

Based on table 4, the distribution of respondents according to sources of information about menstruation shows that most students obtained information from parents or siblings, namely 15 students (83.3%). Meanwhile, only 3 students (16.7%) received information from health workers.

Frequency Distribution of Respondents Based on Knowledge and Attitudes SD Negeri 2 Simpang Rimba (Experimental Group)

Table 5
Frequency distribution of respondents based on knowledge and attitudes among female students at SD Negeri 2 Simpang Rimba in 2025

Experimen				
Variabel	n	Mean	SD	Min-Maks
Knowledge (pretest)	18	14,39	1,819	12-18
Knowledge (posttest)	18	23,50	0,924	22-25
Atitude (pretest)	18	26,94	2,769	22-32
Atitude (posttest)	18	41,72	2,137	37-44

Based on table 5, there is a clear improvement in students' knowledge and attitudes before and after receiving education through the SIMEPAS leaflet regarding readiness for menarche. The average knowledge score increased from 14.39 (SD=1.819) before the intervention to 23.50 (SD=0.924) after the intervention. Similarly, the average attitude score rose from 26.94 (SD=2.769) to 41.72 (SD=2.137) following the intervention.

SD Negeri 1 Simpang Rimba (Control Group)

Based on table 6, a picture of the changes in the level of knowledge and attitudes of female

students before and after without being given education through the SIMEPAS leaflet regarding readiness to face menarche is visible. The average knowledge score before without intervention was recorded at 11.06 (SD=2.461) and increased to 14.39 (SD=1.092) after without intervention. The average attitude score increased from 21.11 (SD=3.216) before without intervention to 23.61 (SD=2.090) after without intervention. However, for comparison, it can be seen that it was more significant in the experimental group or the group given the SIMEPAS leaflet intervention compared to the control group or the group that was not given the education.

Table 6
Frequency distribution of respondents based on knowledge and attitudes among female students at SD Negeri 1 Simpang Rimba in 2025

Variabel	n	Control		
		Mean	SD	Min-Maks
Knowledge (pretest)	18	11,06	2,461	8-18
Knowledge (posttest)	18	14,39	1,092	12-16
Atitude (pretest)	18	21,11	21,11	17-30
Atitude (posttest)	18	23,62	23,61	21-29

Wilcoxon Test
Knowledge and Atitudes Before and After the SIMEPAS Leaflet Intervention

Table 7
Results of the Wilcoxon Test on Knowledge and Attitudes among Female Students at SD Negeri 2 Simpang Rimba in 2025

	Test Statistic Z	Asymp. Sig. (2-tailed)
Knowledge and atitude	-3.732	0,000
Significance Level α	0,05	

Based on table 7, the Wilcoxon test results on knowledge and attitudes before and after the SIMEPAS leaflet intervention among female students at SD Negeri 2 Simpang Rimba showed a significance value (2-tailed) of $p = 0.000 < \alpha = 0.05$. This indicates that the educational intervention using the SIMEPAS leaflet had a significant effect on improving students' knowledge and attitudes

before and after the intervention at SD Negeri 2 Simpang Rimba.

Mann-Whitney Test
Knowledge in the Experimental and Control Groups

Table 8
Results of the Mann-Whitney Test on Knowledge among Female Students at SD Negeri 2 and SD Negeri 1 Simpang Rimba in 2025

Mann-Whitney U	0,000
Wilcoxon	171,000
Z	-5,195
Asymp. Sig. (2-tailed)	0,000

Based on the results of the Mann-Whitney test in table 8, the significance value (2-tailed) obtained was $p = 0.000 < \alpha = 0.05$. This indicates a significant difference in the average level of knowledge between female students at SD Negeri 2 Simpang Rimba (experimental group) and SD Negeri 1 Simpang Rimba (control group). Therefore, it can be concluded that the SIMEPAS leaflet had an effect on students' knowledge in facing menarche.

Attitudes in the Experimental and Control Groups

Table 10
Results of the Mann-Whitney Test on Attitudes among Female Students at SD Negeri 2 and SD Negeri 1 Simpang Rimba in 2025

Mann-Whitney U	0,000
Wilcoxon	171,000
Z	-5,160
Asymp. Sig. (2-tailed)	0,000

Based on the results of the Mann-Whitney test in table 9, the significance value (2-tailed) obtained was $p = 0.000 < \alpha = 0.05$. This indicates a significant difference in the average level of attitudes between female students at SD Negeri 2 Simpang Rimba (experimental group) and SD Negeri 1 Simpang Rimba (control group). Therefore, it can be concluded that the SIMEPAS leaflet had an effect on students' attitudes in facing menarche.

DISCUSSION
Knowledge and Attitude Levels of Female Students at SD Negeri 2 Simpang Rimba Toward Readiness for Menarche Before the SIMEPAS Leaflet Intervention

The respondents' knowledge before the educational intervention was relatively low (mean score 14.39; SD=1.819) due to limited understanding of the reproductive organs and the menstrual process, restricted school materials, and reliance on family or peers as primary information sources, which were not always accurate (Yunita, 2020; Narsih et al., 2021). This aligns with Jayanti & Purwanti (2012), who found that 51.92% of adolescents' information about menarche was incorrect, leading to negative perceptions. The respondents' attitudes were also low (mean score 26.94; SD=2.769), consistent with Jayanti & Purwanti (2012) and Ninawati & Kuryadi (2006), who highlighted that lack of understanding and emotional support increased anxiety. Cultural taboos, limited discussions in schools, and insufficient emotional support further reinforced these issues. The SIMEPAS leaflet is considered an effective solution as it contains concise, clear, illustrated information, is easy to read repeatedly, and can enhance knowledge while shaping positive attitudes (Yanti Nopita, 2023).

Knowledge and Attitude Levels of Female Students at SD Negeri 2 Simpang Rimba Toward Readiness for Menarche After the SIMEPAS Leaflet Intervention

Knowledge gained through the senses, particularly vision and hearing, plays a vital role in shaping open behavior, while attitudes views or judgments toward an object are influenced by experiences, knowledge, and emotional responses of like or dislike (Andayani, 2022). Health education, such as lectures supported by leaflets, is effective in delivering structured information and allows for continuous learning as the material can be reread. The study found that the educational intervention using the SIMEPAS leaflet at SD Negeri 2 Simpang Rimba significantly improved students' knowledge and attitudes ($p = 0.000 < 0.05$). These findings are consistent with Machado et al. (2024) in Timor-Leste in Patumbak, who confirmed the effectiveness of leaflets in reproductive health education. The researcher assumes that using leaflets not only broadens students' knowledge but also reduces anxiety and menstrual stigma, making them more confident and positive in facing menarche.

Analysis of the Effect of the SIMEPAS Leaflet on Readiness for Menarche at SD Negeri 2 Simpang Rimba

The educational intervention using the SIMEPAS leaflet provided to the experimental group

at SD Negeri 2 Simpang Rimba significantly improved students' knowledge and attitudes regarding menarche compared to the control group at SD Negeri 1 Simpang Rimba, which did not receive the intervention. Based on the Mann-Whitney test, the significance value (2-tailed) was $p = 0.000 (< \alpha = 0.05)$ for both knowledge and attitudes. Students who received the SIMEPAS leaflet demonstrated better understanding of reproductive organs, the menstrual process, and preparation for menarche, and showed more positive, confident, and ready attitudes, in contrast to their pre-intervention condition characterized by anxiety and negative perceptions. The effectiveness of the leaflet is in line with studies by Sitepu et al. (2025) and Purbowati et al. (2024), which revealed that printed and visual educational media significantly enhance adolescents' knowledge and attitudes. The researcher assumes that this success was influenced by the leaflet's concise, clear, and easily understood content, which could be reread at home and encouraged independent learning. Before the intervention, the students' low knowledge and attitudes were likely due to limited access to accurate information, as most relied on parents or peers whose explanations were not always correct. With the SIMEPAS leaflet designed to match the needs and comprehension level of elementary school students, the information became more structured, reduced fear, and fostered better psychological readiness. Thus, the combination of appropriate educational content and suitable media was the key factor in the success of this intervention.

CONCLUSION

Based on the findings, the SIMEPAS leaflet intervention was proven effective in improving the knowledge and attitudes of female students at SD Negeri 2 Simpang Rimba in preparing for menarche compared to the control group at SD Negeri 1. Prior to the intervention, both groups had low levels of knowledge and attitudes due to limited accurate information and lack of discussion at school. After the intervention, the experimental group showed a significant increase ($p < 0.05$), while the control group showed only minimal improvement. The SIMEPAS leaflet was considered effective because it presents concise, clear, and easy-to-understand information that can be reread, thus enhancing students' mental and emotional readiness for menarche.

SUGGESTION

Based on the results of this study, it is suggested that schools and teachers utilize the

SIMEPAS leaflet as an educational medium to improve students' knowledge and readiness in facing menarche. Parents are also expected to be more actively involved in providing information related to puberty and menarche. Future research may develop other educational media and involve a larger sample to strengthen the findings.

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