

## THE EFFECT OF MENSTRUAL EDUCATION ON READINESS TO FACE MENARCHE

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### Abstract

*Menarche is the first menstruation that occurs in early adolescence. Based on data from the Indonesian Ministry of Health, the incidence of menarche in Indonesia is around 12.4 years. However, most adolescent girls lack understanding of how to maintain hygiene during menstruation. This unpreparedness can lead to anxiety and health problems. One of the effective educational methods is to use role play techniques to improve the readiness of adolescent girls in facing menarche. This study aims to determine the effect of menstrual education on readiness to face menarche in adolescent girls. This study used a pre-experiment design with a one group pre-test post-test design. The sample consisted of 30 female students at SDN 02 Banjarharjo who were given education about menstruation using the role play method. Readiness to face menarche was measured before and after the education was conducted. Before education, most schoolgirls (53.3%) had an unprepared level of readiness. After being given education, all female students showed readiness (100%). The results of statistical analysis showed a p-value of 0.000, which indicated a significant difference between the level of readiness before and after menstrual education. Menstrual education using the role play method was proven effective in improving the readiness of adolescent girls to face menarche.*

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### INTRODUCTION

Menarche is the first menstrual cycle, typically occurring in early adolescence before the start of the reproductive phase<sup>(1)</sup>. According to WHO (World Health Organization), The first menstruation in females typically occurs between the ages of 10 and 19. According to data from the Ministry of Health of the Republic of Indonesia in 2018, the average age of menarche in Indonesia is 12.4 years, with 60% of girls reaching it at that age. About 2.6% of children experience menarche between the ages of 9 and 10, 30.3% at ages 11 to 12, and 30% at age 13. The remaining girls experience menarche after age 13<sup>(2)</sup>.

Most adolescent girls who have experienced menarche still lack understanding about how to maintain hygiene during menstruation. The lack of understanding of adolescents about menarche can be caused by several factors such as age, level of knowledge, the role of parents, access to menstrual equipment, environment and culture<sup>(3,4)</sup>. The results of research by Sri

showed that 15 out of 18 students had a poor understanding of menstrual hygiene. Lack of understanding about the first menstruation in adolescent girls can affect the extent to which they are ready to face menarche<sup>(5)</sup>. This can cause them to have unusual fantasies and feel guilty, and attribute all of these things to problems with reproductive organs and the menstrual process<sup>(1)</sup>.

The results of community service conducted by Purwaningsih, it was found that before menstrual hygiene management education was carried out, most of the female students had a poor category of 63.9%<sup>(6)</sup>. This can cause unpreparedness for menarche, causing fear and anxiety. This can affect personal hygiene during menstruation and potentially cause infections in the reproductive organs<sup>(7)</sup>. The respondents in this study were elementary school students from grades 4, 5, and 6, with ages ranging from 9 to 12 years, and the majority were 11 years old. The objective of the research was to evaluate the effect of menstrual education delivered through a role-play method on

students' readiness to face menarche, which primarily targets the affective domain (emotional readiness and reduced anxiety), while also improving cognitive understanding and psychomotor skills such as practicing the use of sanitary pads. The instrument used in this study was an adopted questionnaire, developed by Jannah, not a self-constructed tool. Additionally, the references need to follow the appropriate journal guideline for APA formatting, ensuring consistency in year, title style, journal name, volume/issue, and "Available from:" placement<sup>(4)</sup>.

To overcome the unpreparedness of adolescents in facing menarche, health education can be carried out with the aim of increasing, improving, and maintaining health status and knowledge<sup>(8)</sup>. The World Health Organization emphasizes the importance of reproductive health education for younger adolescents, namely the age group of 10 to 14 years. because this age is a very important period for building a strong foundation in adolescents, which will affect their ability to make wise decisions in their behavior<sup>(9)</sup>.

One of the methods in education is role play. Role play is one of the educational methods and an offshoot of simulation techniques. Each participant who participates in this role play method must position themselves as another person. this method aims to try to understand what other people think and do<sup>(10)</sup>. The advantages of the role play method are that it allows students to learn actively by acting out the material discussed, increasing motivation, enthusiasm, and a sense of community, changing the classroom atmosphere to be more dynamic and full of enthusiasm, leaving a deep impression that lasts longer in the memory of students<sup>(11)</sup>. Media that can be used in the role play method are print media and electronic media that can help stimulate education.

The researcher chose SDN 02 Banjarharjo as the research location because demographically, Banjarharjo Village is on the outskirts of the city. The characteristics of parents of students at SDN 02 Banjarharjo mostly work as farmers or factory laborers. According to Khusaini's research, parents who live in rural areas tend to provide less attention, motivation, guidance and direction to their children, both in academic and non-academic aspects<sup>(12)</sup>.

Based on preliminary studies conducted at SDN 02 Banjarharjo by interviewing teachers, it was found that female students had never been given education related to readiness to face menarche either from the school, puskesmas or other partners. It was found that 25th grade students and 66th grade students had experienced menarche. The results of interviews conducted with female students who have not had menarche found that the students did not know if they had to prepare for menarche and had never received education related to menstruation before. Meanwhile, the results of interviews with students who have experienced menarche found that students did not prepare for menarche and felt confused when they got menarche.

One of the efforts to overcome the impact of unpreparedness to face menarche is to conduct education with the roleplay method using print and electronic media which aims to improve the readiness of adolescent girls to face menarche.

## METHODS

This study employed a quantitative approach with a pre-experimental design, using a one-group pre-test and post-test method to assess the impact of menstrual education on the readiness for menarche among female students at SDN 02 Banjarharjo. The research was conducted on December 9, 2024, at SDN 02 Banjarharjo. The sampling method used was non-probability sampling with a saturated sampling technique, involving a total of 30 respondents. The inclusion criteria were female students who agreed to participate in the study and had not yet experienced menarche. The exclusion criteria included students who were unwilling to participate, those who were absent, or those who were sick or had excused absences.

The variables in this study consisted of menarche education as the independent variable and readiness to face menarche as the dependent variable. Menstrual used roleplay method education was given in 120 minutes, which began with a pre-test using a menarche readiness questionnaire. Next, an intervention was conducted which included the delivery of material on the menstrual cycle, menstrual disorders, physical changes, and menstrual hygiene management for 30 minutes, followed by an interactive discussion for 15 minutes. To break the ice, ice breaking was conducted for 10 minutes, and then the

participants were divided into 4 groups to conduct a role play on the use of sanitary napkins with the help of research assistants for 30 minutes. The activity ended with a post-test using the same questionnaire as the pre-test to measure changes in participants' readiness.

The measuring instrument used in this study was a readiness questionnaire developed by Jannah in a study entitled *The Relationship between Level of Knowledge about Menstruation and Readiness to Face Menarche*. This questionnaire consists of 22 questions with two answer options, namely true / not true or yes / no. According to the assessment results, respondents were classified into two categories. Those with a score below 60% were considered unprepared, while those with a score between 61% and 100% were considered ready<sup>(13)</sup>.

This study used data analysis with the Wilcoxon Signed Rank Test to test the significant difference between respondents' readiness before and after being given menstrual education. This research has obtained ethical approval with number 480/LPPM/ITS.PKU/XI/2024, which ensures that the rights of respondents are well protected during the research.

**RESULTS AND DISCUSSION**

The study involved 30 students as respondents. The demographic characteristics of the respondents analyzed include age, BMI, parental education, and parental occupation, as presented in the tables below.

**Table 1. The distribution of respondents based on age**

Characteristic	Frequency (f)	Percentage (%)
<b>Age</b>		
9	3	10 %
10	12	40 %
11	14	46,7 %
12	1	3,3 %
Total	30	100 %

Based on Table 1, the characteristics of the respondents by age show that the majority of respondents are in the 11-year-old age group, with a proportion of 46.7%. According to Nurfaziah and Rumiandini, age influences readiness to face menarche<sup>(3,4)</sup>. Unpreparedness can lead to anxiety, which impacts

personal hygiene and increases the risk of reproductive organ infections<sup>(7)</sup>.

Based on the questionnaire, students are more likely to seek information about menarche from friends rather than parents. Therefore, menstrual education at this age is very important to enhance readiness, knowledge, and good habits in maintaining reproductive health during menstruation to prevent misinformation.

**Table 2. The distribution of respondents based on BMI**

Characteristic	Frequency (f)	Percentage (%)
<b>BMI</b>		
Underweight	12	40 %
Normal	17	56,7 %
Overweight	1	3,3 %
Total	30	100 %

Based on Table 2, it can be seen that the majority of respondents have a normal BMI, which includes 17 individuals, or 56.7% of the total respondents. BMI affects the timing of menarche. Children with higher BMI tend to experience earlier menarche, while those with lower BMI often experience delayed menarche. This is related to body fat levels, which influence leptin hormone production, essential for reproductive maturation<sup>(14)</sup>.

Children with low BMI may lack enough body fat to support hormone production, while high BMI supports reproductive hormone activity. Therefore, maintaining a normal BMI through a healthy diet and balanced physical activity is crucial to support preparedness for menarche in pre-adolescent children.

**Table 3. The distribution of respondents based on parental education**

Characteristic	Frequency (f)	Percentage (%)
<b>Parental education</b>		
Elementary school	1	3,3 %
Junior high school	10	33,3 %
High school/vocational school	16	53,3 %
Bachelor degree	3	10 %
Total	30	100 %

Based on Table 3, the respondent characteristics based on parental education show that the majority of parents have completed high school/vocational school, with a total of 16 (53.3%). The education level of parents,

especially mothers, influences a girl's readiness to face menarche<sup>(3)</sup>. Parents with higher education levels are more likely to understand the importance of menstrual education and are more open to discussing reproductive health topics. They provide accurate information and support their children by seeking valid sources.

On the other hand, parents with lower education levels may provide less education on this topic, causing children to feel anxious or fearful about facing menarche. This is evident from the fact that many students who are not ready for menarche have parents with lower education levels. Active parental involvement is crucial for a child's readiness to face menarche<sup>(4)</sup>.

**Table 4. The distribution of respondents based on parental occupation**

Characteristic	Frequency (f)	Percentage (%)
<b>Parental occupation</b>		
Civil servant	1	3,3 %
Private employee	13	43,3 %
Entrepreneur	2	6,7 %
Farmer	11	36,7 %
Merchant	3	10 %
Total	30	100 %

Based on Table 2, the characteristics of the respondents based on their parents' occupation show that the majority of parents are private employees, with 13 (43.3%) of them. Parent's occupations influence the family's socioeconomic status, which affects the child's well-being, including their nutritional<sup>(15)</sup>. Parents with stable jobs are generally able to provide nutritious food, access to healthcare, and education, all of which support the growth and development of the child, including timely sexual maturation.

On the other hand, families with lower incomes or unstable jobs are at risk of facing nutritional issues, which may lead to delayed menarche. The type of parents' occupation also affects the time available to provide education about menarche. Therefore, educational support for families, especially those facing time or financial challenges, is important for preparing children for menarche.

**Table 5. The distribution of readiness to face menarche before and after menstruation education.**

Readiness level	Pre-test		Post-test	
	f	%	f	%
Not ready	16	53.3	0	0
ready	14	46.7	30	100
Total	30	100	30	100

According to Table 5, before the menstrual education was provided, most respondents (53.3%) were not prepared to face menarche. As explained by Nurfazriah and Rumiandini, this lack of preparedness can be attributed to factors such as limited knowledge about menarche, parenting style, age, sources of information, access to menstrual products, and cultural influences<sup>(3,4)</sup>. Poor knowledge often leads students to feel anxious, confused, or scared when facing the physiological changes that occur during menarche, which can result in poor personal hygiene during menarche and may potentially cause infections in the reproductive organs. This statement aligns with the research of Ningru<sup>(7)</sup>. This condition highlights the importance of educational interventions as a step to address this knowledge gap.

After menstruation education was provided, the level of readiness to face menarche significantly increased, with all respondents (100%) in the "ready" category. This education, as in the study by Widayati, plays a crucial role in enhancing girls' knowledge about menarche, including understanding bodily changes, maintaining hygiene during menstruation, and managing anxiety<sup>(8)</sup>. The structured and interactive education provided offered a deeper understanding, more relevant to the students' needs, making them more confident and prepared to face menarche.

**Table 6. The effect of menstruation education on readiness to face menarche**

	Mean	SD	Min	Max	p-value
Pre-test	0,47	0,507	0	1	0,000
Post-test	1,00	0,000	1	1	

Table 6 illustrates the results of the analysis of the impact of menstruation education on readiness for menarche. The study results showed a significant increase in readiness to face menarche after

menstruation education. The average readiness score of respondents increased from 0.47 in the pre-test to 1.00 in the post-test. The standard deviation in the pre-test was 0.507, indicating variation, but in the post-test, the standard deviation became 0.000, showing that all respondents had the same score after the education. The lowest score in the pre-test was 0, which increased to 1 in the post-test. The p-value of 0.000 indicates that this result is statistically significant. Therefore, based on the Wilcoxon test analysis, menstruation education has proven effective in increasing girls' readiness to face menarche.

Knowledge level is an important factor in readiness to face major changes, such as menarche. Effective education can reduce anxiety, boost self-confidence, and prepare individuals both physically and emotionally. One effective educational method is role play, which allows participants to understand the material directly through experience and the roles they play, creating an active and interactive learning environment.

This study reveals that before the education, 53.3% of respondents were unprepared to face menarche, which was attributed to factors such as a lack of knowledge, age, parenting, and cultural influences. After the education was delivered using the role play method, all respondents (100%) were prepared. Statistical analysis using the Wilcoxon test showed a significant improvement with a p-value of 0.000, supporting the effectiveness of role play-based education in increasing students' readiness for menarche.

The role play method not only improves knowledge but also helps students understand bodily changes, develop practical skills, and build self-confidence, making it an effective approach in menstruation education.

## CONCLUSION

Based on the research involving 30 respondents, it can be concluded that menstruation education has a significant impact on readiness to face menarche. Before the education, the majority of respondents (53.3%) were not ready to face menarche, but after the education, all respondents (100%)

showed readiness. The statistical analysis results with a p-value of 0.000 confirm that this difference is significant.

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