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The Effect of Steamed Raja Banana on Reducing Dysmenorrhea Intensity among Adolescent Girls at Cinta Youth Posyandu, Pegiringan Village, Bantarbolang Sub-district, Pemalang Regency

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ABSTRACT

Dysmenorrhea is a common reproductive health problem among adolescent girls that may interfere with daily activities and reduce quality of life. Non-pharmacological therapy such as consuming potassium-rich foods, including steamed Raja banana, may help reduce menstrual pain. Dysmenorrhea is a common reproductive health problem among adolescent girls that may interfere with daily activities and reduce quality of life. Non-pharmacological therapy such as consuming potassium-rich foods, including steamed Raja banana, may help reduce menstrual pain. The proportion of moderate pain decreased from 22 respondents (64.71%) to 5 respondents (14.71%), and severe pain decreased from 5 respondents (14.71%) to 2 respondents (5.88%). Meanwhile, respondents reporting no pain increased from 0 to 12 (35.29%). The Wilcoxon test showed a significant reduction in dysmenorrhea intensity ($p = 0.000$; $p < 0.05$). Steamed Raja banana significantly reduces dysmenorrhea intensity among adolescent girls.

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1. INTRODUCTION

Dysmenorrhea is one of the most common reproductive health problems experienced by adolescent girls. The World Health Organization reported that approximately 90% of women worldwide experience menstrual pain, with 10–16% experiencing severe dysmenorrhea[1]. In Indonesia, the prevalence reaches approximately 55%, indicating that dysmenorrhea remains a significant adolescent health concern[2].

Menstrual pain may impair cognitive function, concentration, and daily productivity. Severe cases may result in school absenteeism and decreased academic performance[3].

Management strategies include pharmacological therapy, such as non-steroidal anti-inflammatory drugs (NSAIDs), and non-pharmacological approaches including relaxation, warm compresses, and nutritional therapy[4]. Raja banana contains potassium (approximately 400 mg per fruit), magnesium, and vitamin B6, which contribute to muscle relaxation and prostaglandin regulation[5].

Previous studies demonstrated that Raja banana consumption significantly reduced primary dysmenorrhea intensity[6–8]. However, most studies combined banana intake with other interventions.

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Therefore, this study aims to examine the isolated effect of steamed Raja banana on dysmenorrhea intensity among adolescent girls.

2. RESEARCH METHOD

This study employed a quantitative pre-experimental design using a one-group pretest–posttest approach. The research was conducted at Cinta Youth Posyandu, Pegiringan Village, Bantarbolang Sub-district, Pemalang Regency, in 2025. The population consisted of adolescent girls who experienced dysmenorrhea and were registered as active members of the youth Posyandu. A total of 34 respondents who met the inclusion criteria were selected using purposive sampling.

The intervention involved administering steamed Raja banana during the menstrual period. Each participant consumed steamed Raja banana according to standardized preparation procedures during episodes of dysmenorrhea. Pain intensity was measured before the intervention (pretest) and after the intervention (posttest).

Dysmenorrhea intensity was assessed using the Numerical Rating Scale (NRS), which ranges from 0 (no pain) to 10 (worst possible pain). The scale was used to categorize pain into no pain, mild, moderate, and severe levels.

Data analysis was conducted in several stages. First, a normality test was performed using the Shapiro–Wilk test to determine data distribution. Because the data were not normally distributed ($p < 0.05$), non-parametric analysis was applied using the Wilcoxon Signed-Rank Test to evaluate differences between pretest and posttest pain scores. The Wilcoxon test statistic was calculated using:

$$Z = \frac{T - \mu T}{\sigma T}$$

$$\mu_T = \frac{n(n+1)}{4}$$

$$\sigma_T = \sqrt{\frac{n(n+1)(2n+1)}{2n}}$$

Statistical significance was determined at a confidence level of 95% ($\alpha = 0.05$). Ethical considerations were maintained throughout the study, and informed consent was obtained from all participants prior to data collection.

3. RESULT AND DISCUSSIONS

This section presents the findings of dysmenorrhea intensity before and after steamed Raja banana intervention.

1. Univariat Analysis

Table 1. Distribution of Dysmenorrhea Intensity Before Intervention

Category	Frequency (n)	Persentase (%)
No Pain	0	0
Mild Pain	7	20,59
Moderate Pain	22	64.71
Savere Pain	5	14.71
Very Savere Pain	0	0
Total	34	100

Based on the table, most respondents experienced moderate pain prior to the intervention (64.71%). A smaller proportion reported mild pain (20.59%) and severe pain (14.71%), while none of the participants experienced either no pain or very severe pain.This distribution indicates that dysmenorrhea was prevalent among the respondents, with the majority experiencing clinically

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meaningful discomfort that could potentially interfere with daily activities. The dominance of moderate pain suggests the need for effective non-pharmacological interventions.

Table 2 Distribution of Dysmenorrhea Intensity After Intervention

Category	Frequency (n) before	Persentase (%) before	Frequency (n) after	Persentase (%) After
No Pain	0	0	12	35,29
Mild Pain	7	20,59	15	44,12
Moderate Pain	22	64.71	5	14,71
Severe Pain	5	14.71	2	5,88
Very Severe Pain	0	0	0	0,00
Total	34	100	34	100

After the administration of steamed Raja banana, there was a noticeable shift in pain intensity categories. The proportion of respondents experiencing no pain increased, while cases of moderate and severe pain decreased substantially. This pattern suggests that the intervention contributed to a reduction in dysmenorrhea intensity. The decrease in higher pain categories reflects a positive therapeutic effect of steamed Raja banana consumption.

2. Bivariat Analysis

Table Wilcoxon Signed – Rank Test Results

		N	Mean Rank	Sum of Ranks	P-Value
Data_ Postest - Data_ Pretest	Negative Ranks	27	14.00	378.00	**.000**
	Positive Ranks	0	.00	.00	
	Ties	7			
	Total	**34**			

The Wilcoxon Signed-Rank Test demonstrated a statistically significant difference between pretest and posttest pain scores ($p < 0.05$).

This result indicates that steamed Raja banana significantly reduced dysmenorrhea intensity among adolescent girls. The statistical evidence supports the clinical findings observed in the frequency distribution tables.

Discussion:

The findings indicate that steamed Raja banana significantly reduces dysmenorrhea intensity. Potassium plays a role in muscle relaxation and reduces uterine hypercontractility[5]. Magnesium contributes to prostaglandin regulation, decreasing uterine ischemia[7].

These results are consistent with previous studies showing banana consumption effectively reduces primary dysmenorrhea[6–8]. Limitations include the absence of a control group and small sample size. Future research should employ randomized controlled trials.

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4. CONCLUSION AND RECOMMENDATION

Steamed Raja banana significantly reduces dysmenorrhea intensity among adolescent girls. This intervention can be implemented as a simple, affordable, and safe non-pharmacological therapy in community health programs.

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