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EFFECTIVENESS OF RED BETEL LEAF (*PIPER CROCATUM*) IN REDUCING SYMPTOMS OF FLUOR ALBUS IN WOMEN OF REPRODUCTIVE AGE

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Abstract

Fluor albus is the presence of Trichomonas vaginalis and Candida albicans bacterial infections. Fluor albus itself is an excessive discharge from the vagina that is not menstrual blood. Red betel leaf is one of the potential medicinal plants that is empirically known to have properties to cure various types of diseases, including fluor albus. This research method employs a quantitative design, specifically the randomized pretest post-test control group design. The subjects selected in this study were women of childbearing age in Islamic boarding schools. The number of samples was 40 people. The data analysis used was univariate and bivariate using the sample t-test. Based on the results of statistical analysis using the t-test, a p-value of 0.000 < 0.05 was obtained. The result shows that Ho is rejected and Ha is accepted. So it can be concluded that there is an effect of boiled red betel leaf water (piper crocatum) on reducing fluor albus symptoms in women of childbearing age.

Keyword: *Betel leaf, Flour albus, Women of Reproductive Age*

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1. Introduction

Reproductive health encompasses complete physical, mental, and social well-being; it is not merely the absence of disease or physical disability but also involves aspects related to the reproductive system and its functions and processes [1,2] Women have many problems in the vaginal area [3,4]. Most cases that occur are problems with flour albus [5,6]. Flour albus is characterized by variations in consistency, color and odor [7,8]. Generally, women who experience Flour Albus produce too much mucus and it causes an unpleasant odo [9,10].

In general, the main causes of fluor albus stem from several factors, including a lack of attention to the cleanliness of female organs, washing them in the wrong direction, engaging in exhausting physical activity, failing to change sanitary pads promptly during menstruation, maintaining an unhealthy lifestyle, experiencing severe stress, using excessive amounts of feminine hygiene products, living in humid conditions, having unbalanced hormonal levels, and frequently scratching the genital area [8,11]. This condition can damage the internal reproductive organs and can also cause infertility [1,2].

Fluor Albus can be treated in various ways. The first is by cleaning personal hygiene, using underwear made of cotton or underwear that absorbs sweat, maintaining a diet, resting, exercising regularly, and avoiding stress [12,13]. In

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addition, fluor albus can also be treated with pharmacological drugs such as fluconazole and metronidazole [14].

Researchers conducted a preliminary study at the Fajar Dunia Islamic Boarding School in Palasari Village, Mampir District, Cileungsi, by distributing questionnaires to 50 female adolescents, 35 of whom had a history of fluor albus. The data obtained indicated that 25 participants utilized analgesic drugs to alleviate their symptoms, 5 opted to leave the condition untreated, and 5 chose to drink herbal medicine and apply a medicinal fluid. The goal of the researchers was to analyze the effectiveness of boiled red betel leaves in reducing the symptoms of fluor albus in women of childbearing age.

2. Methods

The research design used was pre-experimental, and using a two-group approach, the pre- and post-test designs express a causal relationship by involving one group of subjects. The subject group was observed before the intervention was carried out and then observed after the intervention. The treatment was control and observation after the intervention. The population in this study was women of childbearing age who experienced pathological fluor albus at the Fajar Dunia Islamic Boarding School, Kp. Palasari, Mampir Village, Cileungsi District, as many as 40 people. The sample is part of several characteristics possessed by the population used for the study. The sampling technique is a way to determine a sample that meets the criteria of the study. The sampling technique used in this study was simple random sampling.

3. Results and Discussion

Table 1. Respondents Characteristics

Characteristic Variables	Respondent Characteristics			
	Control		Intervention	
	n	%	n	%
Age				
16 years	10	25.0	10	25.0
17 years	10	25.0	10	25.0
BMI				
CED	6	15.0	6	15.0
Normal	13	32.5	13	32.5
Overweight	1	5.0	1	1
Total	**20**	**50.00**	**20**	**50.00**

Based on table 1, it can be seen that respondents aged 16 years were 20 people (50%) and 17 years were 20 people (50%). BMI with KEK were 12 people (30%), Normal were 26 people (65%), overweight were 2 people (5%).

Table 2. Distribution of Fluor Albus Incidence before intervention

Fluor Abus Variable	Fluor Albus characteristic before intervention			
	Control		Intervention	
	n	%	n	%
Persistent	20	50.0	0	0.0
Decreasing	0	0.0	20	50.0
Healed	0	0.0	0	0.0
Total	**20**	**50.00**	**20**	**50.00**

Based on table 2, it can be seen that the number of control respondents who experienced persistent Flour Albus was 20 people (50%) and the number of respondents who were intervened experienced a decrease in fluor albus by 20 people (50%).

Table 3. Distribution of Fluor Albus Incidence after intervention

Fluor Abus Variable	Karatritik Flour Albus after intervention			
	Control		Intervention	
	n	%	n	%
Persistent	20	50.0	0	0.0
Decreasing	0	0.0	7	17.5
Healed	0	0.0	13	32.5
Total	**20**	**50.00**	**20**	**50.00**

Based on table 3, it can be seen that the number of respondents with flour albus that remained was 20 people (50%), which decreased by 7 people (17.5%) and disappeared by 13 people (32.5%). This shows that flour albus after being given therapy of drinking boiled red betel leaf water (piper crocatum) in

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respondents from before and after drinking red betel leaf water experienced changes.

Table 4. Analysis of the Effectiveness of Boiled Red Betel Leaf Water on Fluor Albus

Flour Albus	Mean	SD	P-*value*
Before Treatment	1.50	0.506	
After Treatment	1.83	0.903	0,000

Based on Table 4, the results of the statistical t-test, with α = 0.05, indicated a P-value of 0.000. This result indicates that the outcomes of the paired test were less than 0.05; thus, the null hypothesis (Ho) is rejected and the alternative hypothesis (Ha) is accepted. This value means there is a significant difference in fluor albus after consuming boiled water from red betel leaves (Piper crocatum). The study involved 40 respondents, yielding average values of 1.50 and 1.83, with standard deviations of 0.506 and 0.903. The obtained p-value of <0.05 (0.000) confirms the difference in fluor albus after drinking the boiled water of red betel leaves (Piper crocatum).

Before the participants consumed the boiled red betel leaf water, all 40 respondents (100%) exhibited fluor albus. Among them, 20 individuals (50%) in the control group experienced fluor albus, while the same number, 20 people (50%), in the intervention group also reported fluor albus. After drinking the boiled red betel leaf water (Piper crocatum), the number of people with fluor albus in the control group stayed the same at 20 individuals (50%). However, in the intervention group, the number of individuals with fluor albus decreased by 7 people (17.5%), and 13 individuals (32.5%) reported that their condition had resolved. Earlier studies also show that red betel leaves can help reduce fluor albus and support women's reproductive health, as red betel leaves are known to have antiseptic qualities. Red betel leaves are rich in phytochemical compounds, including essential oils, alkaloids, saponins, tannins, and flavonoids [16] where the chemical content is thought to have the potential to act as an antimicrobial agent [9,15].

The results of the study, as recorded on the observation sheet prior to administering boiled red betel leaf water, indicated that respondents felt uncomfortable and anxious about their condition. Following the treatment with boiled red betel leaf water, observations showed that nearly all respondents experienced a reduction in fluor albus symptoms. Respondents reported positive changes, such as the absence of itching and odor. Additionally, those who consistently used this treatment reported more effective symptom relief. This suggests that boiled red betel leaf water can indeed alleviate fluor albus symptoms. In this study, the average fluor albus scores before and after treatment were 1.50 and 1.83, respectively, with standard deviations of 0.506 and 0.903. A p-value of 0.05 (0.000) indicates a significant difference in fluor albus symptoms after consuming boiled red betel leaf water (Piper crocatum). The statistical analysis using a t-test with α = 0.05 yielded a p-value of 0.000, which confirms that the null hypothesis (Ho) is rejected, indicating a decrease in fluor albus symptoms following the administration of boiled red betel leaf water therapy. Chromatographic analysis revealed that the red betel leaf sample contains flavonoids, alkaloids, polyphenolic compounds, tannins, and essential oils. Supported by research conducted[1] that red betel leaf samples contain flavonoids, alkaloids, polyphenolic compounds, tannins, and essential oils and research by Syari et al. added that other chemical contents found in red betel leaves are hydroxycavicol, carvacrol, kavi-col, kavibetol, allyprocatechol, eugenol, p-cymene, cineole, caryofelen, kadimen estragol, terpenene, and phenyl propada [16].

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4. Conclusion

The conclusion of this study is that drinking boiled water from red betel leaves (Piper crocatum) is effective against fluor albus. This effectiveness is supported by statistical test results: p-value = 0.000 and p-value < 0.005. These findings indicate that boiled water from red betel leaves (Piper crocatum) has a significant effect on reducing symptoms of fluor albus in women of childbearing age at the Fajar Dunia Islamic Boarding School, located in Palasari Village, Mampir District, Cileungsi. It is recommended that women of childbearing age use boiled water from red betel leaves (Piper crocatum) to help reduce or eliminate fluor albus.

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