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The effect red betel leaves (Piper Crocatum) on vaginal discharge (Fluor Albus) in teenagers

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ABSTRACT

Vaginal discharge (fluor albus) is a physiological thing that can occur in teenage girls, but if it is not treated immediately it will cause various female diseases. One complementary treatment that is believed to be able to reduce the symptoms of vaginal discharge is using boiled water from red betel leaves (piper crocatum) (Firmanila et al., 2016). This study aims to evaluate the effect of giving boiled red betel leaves on vaginal discharge in adolescents. The research design took the form of a quasi-experiment with a two-group pre-post test design. Sampling used purposive sampling technique with a total of 64 people. The results of the study in the case group were 23 people (71.9%) with light scale vaginal discharge and 9 people (28.1%) with moderate scale, 31 people (69.9%) in the control group medium scale and 1 person (3, 1%) on the weight scale. Statistical test results p-value = 0.000 (case) and 0.005 (control) where p-value < 0.05, meaning there is an effect of red betel leaves on reducing vaginal discharge. Teenagers with vaginal discharge can use boiled water from red betel leaves as a treatment.

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INTRODUCTION

Reproductive health is stated in the Republic of Indonesia Government Regulation no. 61 of 2014 has a general meaning, namely optimal physical, mental and social health, not only in the absence of disease or disorders, but also in the reproductive system, function and process (Nurlatifah, 2019). This includes aspects such as fertility, healthy sexuality, protection from sexually transmitted diseases, safe pregnancy, psychological support, and the right to make decisions regarding their own body and reproductive health (Rahayu et al., 2017) (Irwanto, 2024).

According to the World Health Organization (WHO) in Hernita et al., (2023) 75% of women around the world experience fluor albus and 95% of cervical cancer cases in Indonesia are found to have fluor albus. Data from the Indonesian Adolescent Reproductive Health Survey (SKRRI) in 2021 shows that women aged 15 to 24 years experience fluor albus 70% every year, with details of 50% in teenagers and 20% occurring in women of childbearing age (WUS) (Hernita et al. al., 2023).

Adolescents aged 10-24 years are at higher risk of fluor albus due to lack of sensitivity to caring for genitalia (personal hygiene), lack of access to information and knowledge about health. Apart from that, the transition of education and learning methods from high school (SMA) to college causes stress so that it can cause the immune system to decline and weaken (Suralaga, 2021), therefore, fungi or bacteria can easily enter and reproduce. in the body, especially in folded areas such as the thighs, groin, and others (Hastuty et al., 2023).

In 2023, Indonesia will have 38 provinces stretching from Sabang to Merauke with different temperatures for each province (Herdiana et al., 2023) (Rijal, 2023). As of August 2023, Banten is one of the provinces in Indonesia which has the 5 hottest areas based on iNews Cilegon news. The Serang area is the 2nd hottest with a temperature of 33oC during the day (Sari, 2023). In October 2023, Indonesia will experience the impact of the El Nino phenomenon which is so powerful that there are 10 hottest cities in Indonesia according to the Meteorology, Climatology and Geophysics Agency (BMKG) and Serang City is ranked 8th with temperatures that can reach 360C (Putri, 2023). Due to hot weather, the body will excrete by sweating. This allows folded areas such as the thighs (groin) to become more moist, which can invite bacteria to breed. As a result, women have the potential to experience fluor albus (Hastuty et al., 2023).

Vaginal discharge, which is also known as white discharge or vaginal discharge, or leukorrhea or fluor albus can appear naturally or indicate an abnormal condition in women (Silva Pinto & Sudarma Adiputra, 2023). There are 2 types of vaginal discharge, namely: physiological vaginal discharge (normal) and pathological vaginal discharge (abnormal) (Dewi, 2018). Normal or physiological fluoride albus occurs along with a woman's reproductive cycle or based on a woman's body cycle (Tria, 2024). On the other hand, fluor albus which is pathological or abnormal can be recognized by the discharge in excessive amounts, white in color like spoiled milk, greenish yellow or gray, often accompanied by itching, burning, even pain and having an unpleasant or foul odor (RAHMA SIHOMBING, 2020). The type and color of fluor albus can vary depending on the cause. Abnormal fluoride albus is often caused by bacteria, fungi or parasites (Hastuty et al., 2023). Fluorus albus is not a diagnosis of disease, however, it leads to the gateway to disease. Some of the fatal impacts that result if fluor albus is not treated immediately can result in infertility, pelvic inflammation, ectopic pregnancy and cervical cancer in the future (Yulfitria et al., 2022).

Fluorine albus can be treated in various ways. One of them is with boiled water from red betel leaves (piper crocatum) which has been proven by several studies, two of which Ernawati (2018) and Novemi (2023) stated that rinsing water from boiled red betel leaves (piper crocatum) is efficacious for reducing or lightening vaginal discharge (flour albus).

Red betel leaves or piper crocatum contain alkaloids that green betel leaves do not because the antimicrobial and antiseptic power of red betel leaves is 2 (two) times higher than green betel leaves. Not only that, red betel leaves (piper crocatum) also contain carvacrol which functions as a disinfectant and anti-fungal (Lister, 2020). Thus, red betel leaves (piper crocatum) can be used as a non-pharmacological therapy to reduce unpleasant odors in the vagina and fluoride albus (Firmanila et al., 2016). Red betel leaf boiled water therapy for fluor albus involves rinsing the vagina 3 times a week. Simply boil 10 red betel leaves (piper crocatum) in 200 ml of water and boil for 5 minutes, then wait until the boiled water is warm (Hastuty et al., 2023).

Based on the results of a preliminary study of 60 female teenagers, it was found that 59 (98%) female teenagers experienced fluor albus. According to the color, 21 (35%) had yellowish-white fluor albus, 3 (5%) had yellow color, and 2 (3%) had brownish color. According to the texture, 39 (66%) female teenagers experienced lumpy fluor albus like cheese or crushed tofu and 3 (5%) like pus. According to the effects, 15 (25%) female teenagers experienced itching in the vaginal area due to fluor albus and 18 (30%) had rashes and even blisters or sores in the groin or vaginal area. Of the 59 female teenagers who experienced vaginal discharge, 2 people (3%) had an examination with a midwife and 7 people (11%) of them had done vaginal lavage with red betel leaves (piper crocatum) to treat fluor albus and succeeded in relieving fluor albus.

RESEARCH METHOD

This research uses a Quasy Experiment design with a one group pre-posttest design. Quasi Research Experiments to evaluate the effectiveness of treatment or intervention on subjects and measure the results of the intervention. The population in this study were all teenagers in their first semester studying at STIKe Salsabila Serang. The number of respondents was 64 people. The sampling technique uses probability sampling (based on chance) with stratified random sampling technique. Each respondent in the intervention group will be given water boiled from red betel leaves (piper crocatum) in the form of a bottle containing 150 ml with a dose of red betel leaves (piper crocatum) of 2.5 mg/kg body weight for each respondent. Data analysis in this study used two analyses, namely univariate analysis used to describe the data and summarize the observed data in the form of a frequency distribution. Analysis of frequency distribution results is presented in the form of tables and figures and then interpreted. In this study, bivariate analysis was carried out using statistical analysis and then used the non-parametric Wilcoxon Signed-rank test.

RESULTS AND DISCUSSIONS

Based on the results of this research, the description of the research data in the form of narratives or tables is explained as follows:

Table 1. Frequency distribution of adolescent characteristics

Variable	Group				Total	
	Case	%	*Control*	%	n	%
Age						
17-20 year	29	48,3	31	51,7	60	100
>20 year	3	75,0	1	25,0	4	100
Personal Hygiene Genetalia						
Yes	32	50	32	50	64	100
Total	32	50	32	50	64	100

Table 1 states that of the 64 people, in the case group the majority were aged 17-20 years, 29 people (48.3%) and a small portion were aged >20 years, 3 people (75.0%). Meanwhile, in the control group, the majority were aged 17-20 years, 31 people (51.7%) and a small proportion were aged >20 years, 1 person (25.0%). The table above also states that of the two groups, 32 people (50%) in each group implemented personal genetic hygiene.

Table 2. Frequency distribution of vaginal discharge scale (fluor albus) in the case group

No	Vaginal discharge	*Pre-Test*		*Post-Test*	
		n	%	n	%
1	Light	0	0	23	71,9
2	Currently	32	100	9	28,1
3	Heavy	0	0	0	0
	Amount	32	100	32	100

Based on table 2, it states that of the 32 respondents in the case group, all of them experienced vaginal discharge (fluor albus) on a medium scale, 32 people (100%) during the pre-test, while during the post-test the majority experienced a decrease in the vaginal discharge (fluor albus) on the scale. It was mild in 23 people (71.9%) and a small number did not experience a decrease in the vaginal discharge scale (fluor albus) or remained on a moderate scale in 9 people (28.1%) after being given the intervention.

Table 3. Frequency distribution of vaginal discharge scale (fluor albus) in the control group

No	Vaginal discharge	*Pre-Test*		*Post-Test*	
		n	%	n	%
1	Light	5	15,6	0	0
2	Currently	27	84,4	31	69,9
3	Heavy	0	0	1	3,1
	Amount	32	100	32	100

Based on table 3, it states that of the 32 respondents in the pre-test control group, the majority experienced vaginal discharge (fluor albus) on a moderate scale, 27 people (84.4%) and a small percentage experienced vaginal discharge (fluor albus) on a mild scale, 5 people (5 people). 15.6%). Meanwhile, during the post-test, the majority did not experience a decrease in the vaginal discharge scale (fluor albus) or remained on a medium scale, 31 people (96.9%) and a small number experienced an increase in the vaginal discharge scale (fluor albus) on the weight scale, 1 person (3, 1%).

Table 4. Effect red betel leaves (piper crcatum) on vaginal discharge (fluor albus) in teenagers

Variable	Mean	*p-value*
Case		
Keputihan *Pre-Test*	2	0,000
Keputihan *Post-Test*	1,44	
Control		
Keputihan *Pre-Test*	1,84	0,005
Keputihan *Post-Test*	2,25	

Based on table 4, the case group obtained p-value = 0.000 and the control group obtained p-value = 0.005, where this value is not greater than the α value (0.05). Based on the results of this statistical analysis, it can be concluded that H0 is rejected and H1 is accepted. This shows that there is a significant difference before and after being given boiled water from red betel leaves (piper crocatum), therefore there is an effect of giving boiled water on vaginal discharge (fluor albus) in teenagers.

Frequency of Vaginal Discharge Scale (Fluor Albus) in the Case Group

Based on the research results listed in table 2, it is stated that the vaginal discharge (fluor albus) of 32 respondents in the case group before the intervention experienced by the majority of these respondents was in the abnormal category. According to Hastuty et al., (2023) vaginal discharge (fluor albus) is divided into 2 types, namely normal/physiological vaginal discharge (fluor albus) and abnormal/pathological vaginal discharge (fluor albus). Abnormal vaginal discharge (fluor albus) has certain characteristics such as: fluid that comes out in large quantities and continuously, has a milky consistency, is yellowish, gray or even greenish in color, has a sensation of itching, pain, heat and has a distinctive aroma (rancid). According to Islam et al., (2021) and Hastuty et al., (2023), stress and fatigue are factors that cause vaginal discharge experienced by teenagers. Therefore, treatment in the form of boiled water from red betel leaves (piper crocatum) helps relieve the symptoms of vaginal discharge (fluor albus). The results of this study are the same as research by Novemi et al., (2023) which used a quasi-experiment method with a two group pre-post test design, stating that the case group experienced a decrease in the scale of vaginal discharge (fluor albus) from moderate to light by 60%. Likewise, in research by Sukini et al., (2020), 80% of respondents experienced a decrease in the vaginal discharge scale (fluor albus) from severe to mild. According to the researchers' assumption, the intervention in the form of boiled water from red betel leaves (piper crocatum) given for 7 days at this dosage really helped respondents in overcoming vaginal discharge (fluor albus) which disturbed the comfort of their activities, especially for all of them who are Muslims, where when performing prayers they must

be in a state of holy. Most of them are very happy when they don't have to bother changing their underwear when they want to pray and the use of boiled water does not cause irritation or pain.

Frequency of Vaginal Discharge Scale (Fluor Albus) in the Control Group

The results of this study stated that the vaginal discharge scale (fluor albus) in the control group did not experience a decrease in scale. According to Hastuty et al., (2023) vaginal discharge (fluor albus) appears because the weather is hot so the body will excrete it by sweating. This allows folded areas such as the thighs (groin) to become more moist, which can invite bacteria to breed and vaginal discharge (fluor albus) to become worse. The results of this study are the same as research by Novemi et al., (2023) which used a quasi-experiment method with a two group pre-post test design, stating that the control group did not experience a decrease in the vaginal discharge scale (fluor albus) or remained at a moderate scale of 53.3 %. Likewise, the results of Wulan's (2019) research stated that in the control group there were no significant results. According to the researchers' assumptions, many respondents did not experience changes in the scale of vaginal discharge (fluor albus) because they did not receive treatment in the form of boiled water from red betel leaves (piper crocatum) even though they had implemented genital personal hygiene, however, it had not been done properly. This is also supported by the humid weather in the Banten area, making respondents more susceptible to experiencing vaginal discharge (fluor albus).

The Effect Red Betel Leaves (Piper Crocatum) on Vaginal Discharge (Fluor Albus) in Teenagers

The results of this bivariate analysis state that in the experimental group the p-value = 0.000 and in the control group the p-value = 0.005 ($p<0.05$) which means that there is an effect of giving boiled water from red betel leaves (piper crocatum) on vaginal discharge (fluoride albus) teenager. Providing intervention in the form of boiled water from red betel leaves (piper crocatum) proves that this therapy functions to reduce the symptoms of vaginal discharge (fluor albus). These leaves are widely used as a medicinal medium because they contain essential oils, tannins, polevenolad compounds, flavanoids, hydroxycavicol, kavikol, kavibetol, carvacrol, eugenol, psimen, cineol, karyophyllene, estragol cadimen, terpenes, and phenyl propanoids. (Lister, 2020). According to Nugroho & Hartini (2020) red betel leaves (piper crocatum) have the advantage of being an immunomodulator by suppressing or increasing the immune system against infection.

The results of this research are the same as the results of research by Sukini et al., (2020) with a p-value of 0.006 which states that red betel leaves (piper crocatum) can treat vaginal discharge (fluor albus) significantly and this leaf is one of the medicinal plants used ingredients for treating vaginal discharge (fluor albus) by rinsing or soaking. According to Novemi et al., (2023) who have conducted research on teenagers with vaginal discharge (fluor albus) showed a p-value of 0.001 that boiled water from red betel leaves (piper crocatum) has high effectiveness to help reduce the symptoms of vaginal discharge (fluor albus). This has also been proven that there is a significant change in the symptoms of vaginal discharge in teenagers which has been studied by Purwanti (2022) with a p-value of 0.000 stating that there is a significant change in the change in vaginal discharge symptoms (fluor albus) because the content of red betel leaves (piper crocatum) such as alkaloids, flavanoids, and so on which act as antibacterials, antifungals, and antiseptics can help reduce the symptoms of vaginal discharge (fluor albus).

According to researchers' assumptions, the majority of respondents said that the vaginal discharge (fluor albus) they experienced had occurred for a long time. They don't treat it because they lack knowledge and are embarrassed to tell their parents or even seek treatment from health workers. This red betel leaf (piper crocatum) boiled water treatment is available for those who need non-pharmacological treatment. This complementary medicine has long been believed to be able to treat women's problems because of the respondent's compliance in using water boiled with red betel leaves (piper crocatum), making the decoction according to the procedure and having

adjusted the dose, and the respondent implementing genital personal hygiene well, correctly, and appropriate.

CONCLUSION

Based on the research that has been carried out, it can be concluded that before the intervention was carried out in the case group respondents there were 32 people (100%) who had moderate scale vaginal discharge and in the control group 27 people (84.4%) had medium scale vaginal discharge (fluor albus). Based on research that has been conducted with a decrease in the vaginal discharge scale (fluor albus) 23 people (71.9%) were on a light scale and 9 people (28.1%) were on a moderate scale, while in the control group 31 people (96.9%) remained and 1 people (3.1%) weight scale. The results of this study indicate that there is an effect of giving boiled water from red betel leaves (piper crocatum) on vaginal discharge (flour albus) in teenagers.

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