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THE EFFECTIVENESS OF GIVING BETEL LEAF DECIL IN REDUCING WHITENING IN STUDENTS STIKES AL INSYIRAH PEKANBARU

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ABSTRACT

Leucorrhoea is an excessive discharge from the vagina other than menstrual blood. This vaginal discharge is a common complaint among women in the world, especially in Indonesia. Research data on women's reproductive health shows that 75% of women in the world must suffer from vaginal discharge at least once in their lifetime and 45% of them can experience it twice or more. Non-pharmacological therapy is considered more effective because it does not cause side effects. One of them is by giving boiled betel leaf water. The purpose of this study was to determine the Effectiveness of Betel Leaf Decoction in Reducing Leucorrhoea in Al Insyirah Pekanbaru School Students. This type of research was quantitative with a Quasi-Experimental research design with one group pretest-posttest research design with a total of 36 respondents where samples were taken by total sampling. The analytical test used was univariate and bivariate analysis with paired T-test which showed a value of $p = 0.002 < 0.05$, meaning that giving betel leaf decoction was effective in reducing leucorrhoea. Researchers suggest that the results of this study can be an alternative non-pharmacological therapy to reduce vaginal discharge.

Keywords : Vaginal discharge and betel leaf decoction.

INTRODUCTION

Adolescence is a special and important period, because it is a period of maturation of the human reproductive organs. Adolescence is also called puberty, a unique transition marked by various physical, emotional and psychological changes. What is called adolescents are those who are in the transitional stage between childhood -kids and adults. The age limit for teenagers is 12 to 24 years. Adolescents are children aged 10-24 years who are the age between childhood and adulthood and are the starting point for the reproductive process, so they need to be prepared from an early age (Romauli, 2019).

Reproductive health of female adolescents, especially in maintaining and caring for the reproductive organs is influenced by self-knowledge, level of education and the role of parents, especially mothers in providing reproductive health education so that female adolescents can know and care for the reproductive organs. Unhygienic behavior such as dirty water, dirty

underwear in not absorbing sweat, the use of improper pads is a cause of reproductive health problems, one of which is the cause of vaginal discharge (Ningsih A, et al, 2010).

Leucorrhoea is discharge other than blood from the vaginal canal that is out of the ordinary, whether it smells or not, and is accompanied by itching. The cause of vaginal discharge can be normal (physiological) which is influenced by certain hormones. The liquid is white, odorless, and if a laboratory examination does not show any abnormalities. Leucorrhoea is a condition that is often experienced by women throughout their life cycle, starting from adolescence, the reproductive period and menopause. Leucorrhoea is divided into 2 types, namely normal or physiological vaginal discharge and abnormal or pathological vaginal discharge. Normal or physiological vaginal discharge occurs according to the female reproductive cycle or according to the female body cycle with the type of discharge that is clear, odorless and does not cause itching or burning.

Meanwhile, pathological or abnormal vaginal discharge is characterized by a large amount of discharge, white like stale milk, yellow or greenish, itchy, sore, and accompanied by a fishy or rotten odor. The color of discharge from the vagina will differ according to the cause of the vaginal discharge. The most common causes of abnormal vaginal discharge are bacteria, fungi and parasites. The most important prevention of leucorrhoea that must be done is to maintain the cleanliness of the reproductive organs in the right way, balance between activity and rest, reduce the psychological tension experienced. (Wulan S, 2021)

Cleanliness is very important and must be considered because cleanliness will affect one's health and behavior. Personal hygiene or personal hygiene is an action to maintain a person's cleanliness and health, to maintain physical and psychological well-being. One of the effects of not maintaining personal hygiene is the occurrence of vaginal discharge. One of the habits that is often carried out by adolescents and adults alike is the lack of care for the genital organs such as washing the vagina with a small amount of water, using vaginal rinses that contain excessive perfume, wearing pants with materials that do not absorb sweat, rarely change underwear, and do not change pads frequently during menstruation. (Ningsih A, et al, 2010)

Even though it is a simple disease, in fact vaginal discharge is a disease that is not easy to cure. This disease affects about 50% of the female population and affects almost all ages. Research data on women's reproductive health shows that 75% of women in the world must suffer from vaginal discharge at least once in their lifetime and 45% of them can experience it twice or more (Putu, 2009).

Based on WHO data (2012), the prevalence rate for 2009 was 25% - 50% candidiasis, 20% - 40% bacterial vaginosis and 5% - 15% trichomoniasis. All women of all ages can experience vaginal discharge. (Trinawati, et al, 2018)

In Indonesia, about 90% of women have the potential to experience vaginal discharge because Indonesia is an area with a tropical climate, so that fungi easily develop which results in many cases of vaginal discharge. Symptoms of vaginal discharge are also experienced by unmarried women or young women aged 15-24 years, namely approx. 31.8%. This further indicates that teenagers have a great risk of vaginal discharge (Azizah, et al, 2015)

The Minister of Health said the use of traditional medicines is a promotive, preventive, curative and rehabilitative effort in order to improve public health status. Betel leaf (*piper betel*) is one of the medicinal plants that grows a lot in Indonesia. Indonesian people themselves have used betel leaf a lot as a medicine. traditional medicine such as to strengthen teeth, heal small wounds in the mouth, eliminate body odor, stop bleeding gums, and as a mouthwash (Muyuno, et al, 2013).

The betel leaf plant has several types, the first is green betel leaf (*piper batlel*) which is one type of plant that is widely used for medicine. The betel plant is a plant that thrives throughout tropical Asia to East Africa, spreading to almost all parts of Indonesia, Malaysia, Thailand, Sri Lanka, India to Madagascar.

The use of natural materials as traditional medicines has recently increased, and some natural ingredients have been manufactured on a large scale. The use of traditional medicines is considered to have fewer side effects compared to the use of chemical drugs, besides that the use of these natural ingredients is much more expensive. more affordable (Noventi, et al, 2016).

Some literature says that betel leaf contains enzymes , sugar, and tianin. *Eugenol compounds* in betel leaves have been shown to kill the *candida albicans fungus* that causes vaginal discharge, while tianin compounds are astringents, which reduce fluid secretion in the vaginal canal.

The use of betel leaf extract for up to one week can reduce complaints of vaginal discharge by reducing the amount of mucus without affecting the normal flora, so it is reactive and safe for reducing leucorrhoea. The use of boiled betel leaves as many as 6 pieces used for 14 days can reduce the level of vaginal discharge, but the dose is still low so the content is less maximum. Meanwhile, using 10-12 pieces of betel leaf with 2 liters of water and leaving up to 1.5 liters and given 2 times a day is effective in dealing with leucorrhoea (Ethnic, BR, 2021)

The results of Mulan S's research in 2019 entitled the effect of giving red betel leaf decoction to pathological vaginal discharge in young women. Based on the results of the analysis, it was found that the most age (51.4%) 20-30 years and the most education (51.4%) SMP experienced pathological vaginal discharge before being given betel leaf decoction (74.3%) and after being given betel leaf decoction had physiological vaginal discharge (82.9%). The results of the paired t test obtained a p value of 0.000 (<0.05). It was concluded that betel leaf decoction was effective in reducing vaginal discharge (p value <0.05).

Another thing is supported by BR Ethnic research regarding the effect of green betel leaf decoction on reducing pathological vaginal discharge in women of childbearing age, the results of pretest respondents conducted on the case group (15 respondents) and controls (15 respondents) before being given intervention as many as 100% experienced pathological vaginal discharge. While the posttest results of respondents who had been carried out by giving boiled water of green betel leaves to respondents who experienced a decrease in symptoms of pathological vaginal discharge were 14 respondents (93.3%), and those who still had vaginal discharge were 1 respondent (6.7%). Meanwhile, 4 respondents (26.7%) experienced pathological vaginal discharge who had been given a placebo and experienced a decrease in pathological vaginal discharge and 11 respondents (73.3%) had persistent vaginal discharge. The results of the *Wilcoxon test for* vaginal discharge in the case group before and after being given green betel leaf boiled water showed a *p* -value = 0.001, which means ($p < 0.05$) so it can be concluded that there is an effect of green betel leaf boiled water on reducing symptoms of pathological vaginal discharge in women aged fertile. Whereas in the control group before and after being given placebo showed a *p* -value = 0.014, which means ($p < 0.05$) there was an effect of giving placebo on reducing vaginal discharge symptoms in women of childbearing age. The results of the two groups (cases and controls) showed that giving green betel leaf boiled water was more effective in reducing vaginal discharge in women of childbearing age.

This research was conducted on the STIKes Al Insyirah Pekanbaru campus because from the results of an initial study conducted by researchers on Monday the 10th of January 2022 using the interview method with 20 Stikes Al Insirah Pekanbaru students, from the interview results the researcher asked whether the respondent experienced vaginal discharge, and 15 respondents claimed to have vaginal discharge with a dense white consistency without smelling, 5 other people claimed to have vaginal discharge during the period approaching menstruation with a clear white consistency without smelling, the vaginal discharge that the respondent experienced did not show pathological symptoms, but respondents said the vaginal discharge they experienced made them uncomfortable .

In the second question, the researcher asked whether the respondents had ever heard of leucorrhoea using betel leaf decoction. They claimed to have heard of it but had never practiced betel leaf treatment. The third question, respondents were asked about the causes of leucorrhoea, and 2 respondents answered that one of the causes of leucorrhoea was lifestyle. unhealthy habits such as rarely changing underwear, using tight underwear, and rarely changing pads during menstruation.

So that in the initial survey the researchers gave boiled betel leaves to three respondents who experienced leucorrhoea. Giving boiled betel leaves began on January 17 2022 and was given for 5 consecutive days, the boiled betel leaves were used by respondents twice a day. On the sixth day, exactly on the 22nd January 2022 researchers conducted observations with three

respondents, two respondents said the betel leaf decoction used to remove unpleasant odors from the vaginal area and one person said vaginal discharge had begun to decrease than usual. Based on the background description above, the researcher is interested in researching the Effectiveness of Betel Leaf Decoction in Reducing Leucorrhoea in STIKes Al Insyirah Pekanbaru Students.

METHODS

Research design is a design used in carrying out research procedures. This research uses a *quasy experimental* research design with a *one group pretest-posttest research design*. In the design, one group of subjects is used. First, measurements are taken, then subjected to treatment for a certain period of time, then measured a second time.

RESULTS AND DISCUSSION

This research was conducted at STIKes Al Insyirah Pekanbaru. STIKes Al Insyirah Pekanbaru is one of the health science high schools in the city of Pekanbaru, Riau Province which is located at Jalan Amanah, Parit Indah No.38, Tangkerang Labuai Village, Bukit Raya District, Pekanbaru City, Riau. This health-based high school does a lot of field practice to increase knowledge and skills in the practice of health services. with the number of female students for the 2021/2022 academic year, a total of 194 active students in all study programs, it is very likely that many female students will experience vaginal discharge, as evidenced by the results of the initial survey which was conducted on Monday the 10th in January 2022 with 20 female students, 15 of them claimed to have vaginal discharge.

With these results, research was carried out at STIKes Al Insyirah Pekanbaru in February which began on Friday 11 February 2022 by giving pretest sheets followed by giving boiled betel leaf water starting on 12 February 2022 until 18 February 2022 then on February 19, 2022 a posttest observation sheet was given after administration.

RESULTS

Table 1 Distribution of the frequency of vaginal discharge of respondents before being given betel leaf boiled water

vaginal discharge Pretest	F	%
Seldom	18	50%

Often	18	50%
Total	36	100%

From table 4.2.1.1 the respondents experienced vaginal discharge before being given betel leaf decoction 50% often and 50% rarely experienced vaginal discharge. Frequency Distribution of Respondents' Leucorrhoea Values After Being Given Betel Leaf Boiled Water

Table 2 Distribution of the frequency of vaginal discharge of respondents after being given betel leaf boiled water

Post test vaginal discharge	F	%
Seldom	28	79%
There isn't any	8	22%
Total	36	100%

From table 2 vaginal discharge experienced by respondents after being given betel leaf boiled water was 22% for the non-existent category and 79% for the rare category.

Bivariate Analysis

Bivariate analysis is an analysis conducted on two variables that are suspected to be related or correlated. The analysis of this research was conducted to determine the effectiveness of giving betel leaf boiled water in reducing leucorrhoea in female students at STIKes Al Insyirah Pekanbaru. There were several stages of statistical tests in this study, namely:

Normality test

Before carrying out the parametric comparison test, a normality test is first carried out. The normality test aims to find out whether each variable is normally distributed or not. If this is violated, the statistical test becomes invalid and parametric statistics cannot be used.

The results of the data normality test using the *Shapiro Wilk test* because the sample size < 50 obtained data as in the following table:

Table 3. Normality test using the *Shapiro Wilk test*

Variable	N	P Value	Information
36	0.000	Abnormal	
Post test	36	0.000	Abnormal

Based on table 4.2.2.1, the results of the normality test using the *Shapiro Wilk test* show that the vaginal discharge value of STIKes Al Insyirah Pekanbaru female students before being given betel leaf boiled water is a P value of 0.000 while the vaginal discharge value of Al Insyirah Pekanbaru STIKes female students after being given betel leaf boiled water has a P value value 0.000. This result means that the distribution of vaginal discharge scores in STIKes Al Insyirah Pekanbaru female students is not normally distributed (P value < 0.05) so a nonparametric test is carried out, namely *the Wilcoxon signed rank test*.

Table 4. Results of the *Wilcoxon Signed Rank Test on the Effectiveness of Giving Betel Leaf Boiled Water in Reducing Leucorrhoea in Female STIKes Al Insyirah Pekanbaru Students*

Variable	mean	SD	P Value	N	Min	Max	Z
Pretest	2.50	7	0.000	36	2	3	-464
Post test	1.78	0.422		36	1	2	

Based on table 4.2.2.2, it shows the results of the Wilcoxon signed rank test calculation, the Z value is -4.564 with a $P_{\text{value}} = 0.000$ ($P_{\text{value}} < 0.05$) So the hypothesis is accepted that there is an effect of giving betel leaf decoction in reducing leucorrhoea in STIKes female students Al Insyirah Pekanbaru.

DISCUSSION

The results of research on 36 respondents showed that many respondents experienced vaginal discharge. According to Kusmiran (2012), in general, women's reproductive health is closely related to increasing age or the development of women's age. As women get older, reproductive health must be maintained. Women's reproductive health begins when women experience menstruation.

The results of this study are in accordance with Mustika W's research (2017) with the title use of betel leaf boiled water for physiological vaginal discharge among young female students of the Denpasar Poltekes, with the results of a study of 18 year-old respondents as many as 103 respondents (28.93%), 19 years old as many as 169 respondents (47.47%) and 20 years old as many as 84 respondents (23.60). A small portion of 5.62% of young female students majoring in nursing experienced vaginal discharge after using 94.38% betel leaf decoction. The results of the analysis using the help of a computer are $z=-4,000$ with $p=0,000$ ($p,0,05$). These results indicate that H_0 is rejected and H_a is accepted, which means that betel leaf decoction is effective in treating physiological leucorrhoea in Denpasar Poltekes students.

The results of the study found that female students at STIKes Al Insyirah Pekanbaru had leucorrhoea before being given betel leaf decoction of 2.50% with a standard deviation of 0.507. Symptoms of vaginal discharge experienced by respondents before giving betel leaf decoction were milky white, lumpy, vaginal discharge that smelled fishy/rotten.

According to Ningsih A (2010) Unhygienic behavior such as dirty water, underpants not absorbing sweat, the use of poor pads is a cause of reproductive health problems, one of which is the cause of leucorrhoea. Menstruation, which is yellow or milky white, clots and smells a little fishy/rotten.

The vaginal discharge of the respondents after being given betel leaf boiled water for 7 days was 1.78% with a standard deviation of 0.422. The decrease in leucorrhoea was felt by respondents on day 3 of giving the betel leaf boiled water intervention. Respondents who experienced vaginal discharge with lumpy white discharge and a fishy smell, the sign had diminished and even the fishy smell was no longer there and on the seventh day the amount of vaginal discharge was low and even disappeared.

The reduction in leucorrhoea is due to the content of green betel which is clinically tested to treat leucorrhoea. Green betel leaves are efficacious for reducing vaginal discharge and protecting female organs, because betel leaves contain an antiseptic as an antioxidant and anti-fungal. The use of betel leaves to reduce vaginal discharge is to boil 7-10 pieces betel leaves to boil then use to clean female organs (kustanti 2017).

The results of this study are in line with Beauty's research.NDdkk (2019) concerning the effectiveness of green betel leaf boiled water in treating leucorrhoea in Class IX SMA Muhammadiyah 1 Gombang with the results of the Wilcoxon statistical test results for the intervention group, there was a difference between pre and posttest obtained 0.000 ($p < 0.05$) which means that H_a is accepted, meaning that there is an effect of washing green betel leaf boiled water to overcome leucorrhoea, compared to the control group which was not given green betel leaf boiled water.

The researcher's assumption is that female students who are still classified as teenagers are very susceptible to vaginal discharge due to insufficient personal hygiene, such as wearing long underwear from morning to evening, and using the wrong pads and cleaning soap. The results of this study there is a reduction in vaginal discharge experienced by female students. However, the factors that cause vaginal discharge that cannot be controlled by researchers such as personal hygiene factors, lecture activities and other busy outside activities that cause fatigue and stress cause vaginal discharge, as well as lifestyle and hormonal factors. Besides that, the intervention of giving betel leaf decoction only lasted 7 days so that it only reduced the symptoms of vaginal discharge, in other words, vaginal discharge was still there or had not disappeared, for this reason, students should maintain personal hygiene.

Based on the results of the analysis showed that vaginal discharge in respondents before giving betel leaf decoction was 2.50% with a standard deviation of 0.507, after giving betel leaf decoction there was a decrease in vaginal discharge to 1.78% with a standard deviation of 0.422. The results of the calculation of the Wilcoxon signed rank test, the Z value is -4.564 with $P_{\text{value}} = 0.000$ ($P_{\text{value}} < 0.05$) So the hypothesis is accepted that there is an effect of giving betel leaf decoction in reducing vaginal discharge in female STIKes Al Insyirah Pekanbaru.

According to Pulungan (2018), boiled water from green betel leaves contains an antiseptic or carvacrol which is a disinfectant and anti-fungal, so it can be used as an antiseptic to maintain oral health, cure vaginal discharge or an unpleasant odor in the vaginal area.

According to Savitri (2016) green betel leaves contain essential oils, one-third of the essential oils consist of phenol and most of it is kavikol. It is this kavikol that gives the betel leaf a distinctive odor and has five times the bacteria killing power of ordinary phenol. In addition, betel leaf can also relieve itching, while eugenol can kill the fungus that causes vaginal discharge and is analgesic, tannins function as an astringent which reduces secretion in vaginal fluids.

The results of this study are in line with research by Ethnic, BR(2021) entitled Effects of Green Betel Leaf Decoction on Reducing Pathological Leucorrhoea in Women of Reproductive Age with the results of the Wilcoxon test for vaginal discharge in the case group before and after

being given boiled water of green betel leaves showing a p-value = 0.001 which means ($p < 0.05$) so it can be concluded that there is an effect of green betel leaf boiled water on reducing symptoms of pathological vaginal discharge in women of childbearing age. Whereas in the control group before and after being given placebo showed a p-value = 0.014 which means ($p < 0.05$) there was an effect of giving placebo on reducing vaginal discharge symptoms in women of childbearing age. The results of the two groups (cases and controls) showed that giving green betel leaf boiled water was more effective in reducing vaginal discharge in women of childbearing age.

Other research that is in line is the research of Kustanti, C. (2017) The effect of giving green betel leaf decoction to the incidence of vaginal discharge with the result that in the post-test treatment of green betel leaf boiled water in women there was a significant decrease from 24.22 to 11.39. This means that there was an effect on decreased vaginal discharge after being given boiled betel leaf green.

The researcher's assumption is that decoction of green betel leaves is proven to reduce leucorrhoea because the essential oil in green betel leaves contains kavikol which can kill bacteria that cause leucorrhoea. Therefore, teenagers can use boiled betel leaves as an alternative medicine to reduce leucorrhoea, in addition to the simple way of making it. Betel does not have side effects like chemical antiseptics or feminine cleansers that are sold freely in shops or pharmacies.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of research that has been carried out under the title Effectiveness of Giving Betel Leaf Decoction in Reducing Leucorrhoea in Female STIKes Al Insyirah Pekanbaru, the conclusions are . which can be described in this chapter are:

1. Respondents experienced vaginal discharge before being given betel leaf decoction 50% often and 50% rarely experienced vaginal discharge
2. Vaginal discharge experienced by respondents after being given boiled water with a percentage of 79% for the rare category
3. The results of the calculation of the Wilcoxon signed rank test, the Z value obtained is -4.564 with a P value = 0.000 (P value < 0.05) meaning that there is an effect of giving betel leaf decoction in reducing leucorrhoea in female STIKes Al Insyirah Pekanbaru

From the results of research that has been conducted regarding the effectiveness of giving betel leaf decoction in reducing leucorrhoea in female students of STIKes Al Insyirah Pekanbaru, it is expected that:

For STIKes Al Insyirah Pekanbaru

For institutions, it can be used as input for increasing insight and developing knowledge about how to deal with vaginal discharge in adolescents.

For respondents

The results of the research are expected to add to the knowledge and insights of female students about leucorrhoea and can be applied in health services

For Further Researchers

This research can be used as additional input for future researchers who wish to conduct research related to the use of family medicinal plants (Toga).

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