THE EFFECT OF BAKED BASIL LEAF WATER (OCIMUM BASILICUM) ON TEENAGERS' VAGINAL DISCHARGE AT SMK FATHUL ULUM GABUS GROBOGAN

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A B S T R A C T

Background One of the reproductive health problems of women is vaginal discharge. Vaginal discharge does not actually need to be treated if women know how to prevent it, most women do not know how or the cause of vaginal discharge itself, so if not treated properly will experience infertility and is an early symptom of uterine cancer. 75% of women have the potential to experience vaginal discharge, one of which is with non-pharmacological therapy, namely giving boiled basil leaf water (ocimum basilicum). Methodology: The research design used a quasi-experimental with one group pretest-posttest design. The results of the study using the Wilcoxon Signed Rank Test obtained a p value of 0. 00 <0. 05. This shows that Ho is rejected and Ha is accepted, so it can be concluded that there is an effect of giving boiled basil leaves (ocimum basilicum) on vaginal discharge in female adolescents at SMK Fathul Ulum Gabus. Conclusion: it is hoped that adolescents will give boiled basil leaves (ocimum Basilicum) to treat vaginal discharge, because if vaginal discharge is not treated it will cause cervical cancer and infertility.

I. INTRODUCTION

One of the clinical disorders and infections of the female reproductive system is vaginal discharge, which can be dangerous if not properly treated. Vaginal discharge can be classified into two categories: normal and abnormal (Henna, 2021). Abnormal vaginal discharge occurs continuously, in large amounts, and may cause pain, itching, a burning sensation, odor, and changes in color to yellow, green like yogurt, or gray. In contrast, normal vaginal discharge is clear and odorless, does not cause itching, burning, or pain, and may appear before and after menstruation, during fatigue, and in times of stress.

Abnormal vaginal discharge has signs such as appearing continuously, in large numbers, pain, itching, burning, smelling and experiencing yellow, green, or gray discoloration (Henna, 2021). However, abnormal vaginal discharge left unchecked by a doctor can interfere with reproductive function such as inflammation and pelvic pain, ectopic pregnancy and vaginal inflammation (vuvovaginitis). As a result, untreated vaginal discharge can lead to infection until infertility occurs. In 2019, the World Health Organization (WHO) reported that vaginal discharge is one of the thirty-three diseases suffered by women worldwide and poor female reproductive health problems account for 33% of the diseases (WHO, 2019), 75% of women in the world have experienced vaginal discharge, while 25% of European adolescents. This figure is higher than male reproductive problems which are only 12.3% at the same age as women.

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Basil leaves, also known as Ocimum basilicum, are one of the widely used traditional medicinal plants in Indonesia. The chemical constituents of basil leaves, also known as Ocimum basilicum, include essential oils, glycosides, saponins, flavonoids, triterpenoids, steroids, and tannins (Arina, 2016). Essential oil is a type of chemical that can inhibit bacterial growth. According to Enni Wiliyanti (2020), this compound has bactericidal and bacteriostatic capabilities. This study shows that a decoction of basil leaves can reduce pathological vaginal discharge more effectively than store-bought anti-discharge remedies when consumed regularly twice a day for seven consecutive days. This is due to the various compounds found in basil leaves.

One of them is eugenol, which can kill fungi that cause vaginal discharge, as well as tannins and zinc, which can reduce vaginal fluid secretion. In addition, flavonoid components in basil leaves such as orientin and vicenin protect cell structure, and flavonoids such as cineole, myrcene, and eugenol act as natural antibiotics and anti-inflammatory agents. Preliminary survey data conducted at Fathul Ulum Gabus Vocational High School (SMK), out of 40 female adolescents in grades X, XI, and XII aged 15-19 years, 28 experienced vaginal discharge, and 12 did not. Observations and interviews revealed that most adolescents experiencing vaginal discharge did not receive treatment and allowed their vaginal discharge to resolve on its own (ESLAN 2021, n.d.). The study found that all respondents (100%) experienced vaginal discharge before receiving basil leaves, and most (73%) experienced physiological vaginal discharge after receiving basil leaves. The effect of administering basil leaves (Ocimum basilicum) on vaginal discharge in adolescents in Silandit sub-district, South Padang Sidipuan in 2021 was measured by administering ten to fifteen fresh basil leaves as a side dish three times a day for seven days.

Other research studies conducted by Arinal (2016) showed that basil leaves can reduce leukorrhea in Women of Childbearing Age (WCA). Another study conducted by (Tita Ramadani, 2019 et al., n.d.) used basil leaf decoction which affected leukorrhea, administered for 7 days, 100 ml per day to IUD family planning participants at KJR Budi Asih, Turen, Malang. (Sulistiyowati et al., 2022) conducted research on the effect of infusion of basil leaves (Ocimum basilicum) on the pathology of leukorrhea in women of childbearing age at Muhammadiyah University Lamongan, showing that basil leaves reduce leukorrhea due to their

essential oil content. The study (Dwijaya et al., n.d.) found that consuming basil leaves in jelly form for 12 days can reduce leukorrhea problems among female adolescents at SMA Negeri 1 Prambanan, with the summary noting that decoction of betel leaves also affects the reduction of leukorrhea. Eny Wilianti. A et al., 2020, in their research titled 'Analysis of the Activity of Betel Leaf Decoction and Basil Leaf Decoction on the Growth of Streptococcus mutans,' found that the antibacterial properties in the decoctions of both leaves contain essential oils.

Based on this background, considering that the incidence of fluor albus in adolescents is quite high and noting the benefits of basil leaves for addressing vaginal discharge (fluor albus), the author is interested in researching 'the effect of basil leaf (Ocimum basilicum) decoction on the incidence in female adolescents at SMK Fathul Ulum Gabus, Grobogan Regency.'

II. METHODS

This research was conducted in July 2024 in the work area of UPTD Puskesmas Gabus II, specifically at SMK Fathul Ulum Gabus. This study is quantitative in nature with a quasi-experimental design, and the design used is a one-group pretest-posttest design because the study aims to compare the pretest results of the intervention group with the posttest results of the intervention group (Arikunto, 2016).

The population in this study consisted of female adolescents who experienced vaginal discharge, aged 15 to 19 years, at SMK Fathul Ulum in 2024, totaling 16 individuals, using a total sampling technique. The questionnaire used was adopted from (Harahap, 2021) entitled The Effect of Basil Leaf (Ocimum Basilicum) Boiling Administration on the Incidence of Vaginal Discharge in Adolescents in Silandit Village, South Padangsidimpuan in 2021, with a total of 10 questions. This questionnaire has been validated with a calculated r value ranging from 0.643, while based on the reliability test on the number of valid items, the Cronbach's Alpha value of the items ranged from 0.825, which is greater than 0.7. Therefore, it can be concluded that the test is reliable.

The normality test used in this study is the Shapiro-Wilk test, with the result that if the data are normally distributed, data analysis is performed using the paired t-test, whereas if the data are not normally distributed, data analysis is performed using the Wilcoxon test.

III. RESULT

A. Univariate Analysis

1. Characteristics based on respondents' age

Age	Frequency (n)	Percentage
15	2	12. 5

16	11	68. 8
17	3	18. 8
Total	16	100

Primary data source 2024 Based on the table above, it can be seen that most respondents were 16 years old, totaling 11 people (68.8%), 17 years old, totaling 3 people (18.8%), and 15 years old, totaling 2 people (12.5%).

B. Bivariate Analysis

1. Normality Test Results

	Kolmogrov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig	Statistic	df	Sig.
Before administration	. 398	16	. 000	. 621	16	. 00
After administration	. 276	16	. 002	. 779	16	. 00

From the normality test results, it was found that the Sig. value for the Paired sample t-test could not be performed, and instead, the Wilcoxon Signed Rank Test was used to determine whether there was a difference in vaginal discharge before and after administering basil leaf decoction to female adolescents at SMK Fathul Ulum Gabus. The p-values from the Kolmogorov-Smirnov and Shapiro-Wilk tests at 0.05 indicate that the alternative hypothesis (Ha) is accepted, meaning the data is not normally distributed.

2. Results of the Wilcoxon signed rank statistical test

	Responden (n)	**Delta**	***P value***
Before administration	16		
After administration	16	-294	0. 00

Based on the table above, it can be seen that the results of statistical analysis using the Wilcoxon Signed Rank Test obtained a p-value of 0.00 < 0.05. This indicates that Ho is rejected and Ha is accepted, so it can be concluded that there is an effect of giving basil leaf (ocimum basilicum) decoction on vaginal discharge in female vocational high school students at Fathul Ulum Gabus.

IV. DISCUSSION

A. Respondent characteristics based on age at SMK Fatul Ulum Gabus.

Respondent characteristics based on age at SMK Fatul Ulum Gabus in 2024: Based on personality surveys, 16 people (100%) were between the ages of 15 and 17. According to Sari (2017), age greatly influences the development, knowledge, and behavior of adolescents. This is because as a person ages, they gain more knowledge because they learn from their experiences. According to Notoadmodjo (2016), age also affects a person's cognitive and thinking abilities. A person's understanding and mindset

will improve with age, meaning that they will have more knowledge. People in their mid-teens (15-17 years old) are better prepared to adapt to old age and spend more time reading. The results of a survey conducted by SMK Fathul Ulum Gabus show that all (100%) respondents aged 15-17 years do not have adequate knowledge about reproductive health . Adolescents aged 15-17 years are more open in terms of self-disclosure, which has an impact on their learning and problem-solving abilities. With the existence of valued freedom, the knowledge gap among adolescents has decreased. This shows that they do not belong to the knowledge-deficient group. Age is a factor that influences the level of knowledge among adolescents.

B. **The Effect of Ocimum Basilicum (Basil Leaves) at SMK Fathul Ulum Gabus**.

The results of the bivariate analysis obtained from statistical testing (Wilcoxon signed rank test) showed a p-value of 0.00 < 0.05, which means that there is an effect of Ocimum Basilicum (basil leaf) decoction on vaginal discharge in adolescents at SMK Fathul Ulum Gabus. This is consistent with the results of research conducted by Desynta Dwijaya (2016), where the data obtained was statistically processed using the Wilcoxon signed rank test, which showed that in the intervention group, 28 adolescent girls (70%) experienced a reduction in vaginal discharge and 12 (30%) adolescent girls experienced no change in vaginal discharge. The analysis yielded a P value of 0.00 ($p<0.05$), indicating that consumption of basil leaves in the form of agar-agar had an effect on vaginal discharge.

Eugenol from basil leaves can kill the fungus that causes vaginal discharge. Its tannin and zinc components can reduce vaginal fluid secretion. Flavonoid components such as orientin and vicenin in basil leaves can protect the body's cell structure. Meanwhile, flavonoid components such as cinole, myrcene, and eugenol are useful as natural antibiotics and anti-inflammatories (Anggun, 2016). As a traditional medicinal plant based on previous research, the chemical content of basil in the form of essential oils acts as an antifungal.

The essential oil content in basil leaves that is suspected to be antifungal is methyl chavicol and linalool (Kardian, 2017). The antifungal effect of basil leaves is thought to be related to the activity of linalool, which works by disrupting ergosterol biosynthesis and the integrity of fungal cell membranes (Atikah, 2017).

The treatment of infections has traditionally involved the use of antibiotics, but long-term use of antibiotics can cause dangerous side effects, including: organ infections, digestive disorders, heart problems, headaches, and loss of appetite. Therefore, an

alternative medication with fewer side effects is needed. Treatment failure is caused by patients' failure to maintain reproductive organ hygiene, non-compliance with medication use, high drug prices, and the side effects of the drugs themselves.

According to the research assumptions, it has been proven that administering basil leaf decoction can be more effective and efficient in reducing pathological vaginal discharge than anti-vaginal discharge medications available on the market. Meanwhile, two adolescents (11.1%) still experienced vaginal discharge after consuming basil leaves due to several factors , namely two adolescents still liked to wear tight pants, one adolescent did not maintain genital hygiene or washed her vagina incorrectly, and two adolescents still liked to use vaginal soap and were overweight, so the thigh folds were often moist. In line with the research by Abrori, Hernawan, and Ermulyadi (2017), not drying the genitals after urinating, wearing tight clothing, not wearing cotton underwear, washing the female organs in the wrong direction, not immediately changing sanitary pads during menstruation, using vaginal cleansing soap, taking antibiotics, and stress are the causes of vaginal discharge. Women's health and well-being can certainly be influenced by factors that contribute to vaginal discharge.

II. CONCLUSION

1. Before being given basil leaf (Ocimum Basilicum) decoction, 16 female students at SMK Fathul Ulum Gabus (respondents) experienced abnormal vaginal discharge.

2. After being given basil leaf decoction (Ocimum Basilicum), 16 female students from SMK Fathul Ulum Gabus experienced normal vaginal discharge, while the remaining 2 respondents still experienced abnormal vaginal discharge.

3. The results of the Wilcoxon rank test statistical analysis obtained a ρ value = 0.00 < α = 0.05, so H0 was rejected, indicating that there was an effect of giving basil leaf decoction (Ocimum Basilicum) on female students at SMK Fathul Ulum Gabus.

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