E-ISSN: 2987-209X
International Journal of Midwifery and Health Sciences
Vol. 2, Issue 3 (2024), November

The Effect of A Boiled Betel Leaf and Turmeric on Vaginal Discharge in Women of Childbearing Age

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Abstract
Vaginal discharge is the most common complaint in women of childbearing age, with 8 0% of cases occurring between the ages of 15 and 45 years. Physiological vaginal discharge is at risk of developing into pathological vaginal discharge and can lead to complications, such as vaginitis and cervicitis. Betel leaves have the potential to be a natural remedy because of the content of eugenol chemical compounds that can ward off the fungus candida albicans. Turmeric contains curcumin that inhibits growth and kills pathogenic bacteria and fungi. This study aims to determine the effect of betel leaf and turmeric decoction on vaginal discharge in women of childbearing age. Quasy-Experimental Research Pretest Posttest with Control Group Design. The number of respondents was 30 women of childbearing age who experienced pathological vaginal discharge, selected by purposive sampling technique. The instruments used were a whitish questionnaire and an observation sheet. The average vaginal discharge value of women of childbearing age in the intervention group was obtained with a pretest score of 3.80 and a posttest score of 2.13. The average rate of vaginal discharge of women of childbearing age in the control group had a pretest score of 4.27 and a posttest score of 4.13. In the Paired Sample T Test, the p-value of the intervention group was 0.000. In the Independent T Test, the mean difference between the posttest group was 2.00 and the p-value was 0.000. There is an effect of betel leaf decoction and turmeric on vaginal discharge in women of childbearing age.

Keywords: betel leaf and turmeric, vaginal discharge, women of childbearing age

Introduction

Reproductive health problems, such as vaginal discharge, are a significant part of the global burden of disease that women experience. Vaginal discharge, or leukore, is the discharge of fluid from the vagina that can become a serious problem if not treated properly[1]. Vaginal discharge is a common complaint in women of childbearing age, with

a prevalence of up to 80% in women aged 15 to 45 years. The risk of infections such as candidiasis, trichomoniasis, and gonorrhea is higher in this age group[2].

The global prevalence of vaginal discharge shows that about 75% of women experience this condition at least once in their lifetime. In Indonesia, the prevalence of vaginal discharge reaches around 90%, much higher compared to other countries, such as Europe, due to climatic conditions that favor the growth of fungal infections[3,4]. This figure shows the urgent need for effective and affordable treatment methods.

Treatment of vaginal discharge can be done both pharmacological and non-pharmacological. Pharmacological methods include the use of antibiotics such as metronidazole and fluconazole[5]. However, non-pharmacological treatments, such as the use of betel leaf decoction and turmeric, have also shown significant potential in overcoming vaginal discharge. Betel leaves and turmeric are known to have antiseptic and anti-inflammatory properties that can help reduce symptoms of vaginal discharge[6].

Previous studies have shown the effectiveness of betel leaf and turmeric decoction in reducing vaginal discharge symptoms. For example, a study by Amin et al. (2023) and Aprianisa et al. (2023) shows that betel leaf decoction can reduce vaginal discharge in women of childbearing age[7,8]. In addition, research by Oktaviana et al. (2020) and Suyenah & Dewi (2022) shows that turmeric is also effective in overcoming vaginal discharge[9,10].

Against this background, this study aims to evaluate the effect of betel leaf decoction and turmeric on vaginal discharge in women of childbearing age at the Karya Mulya Husada Clinic, Bekasi Regency, in 2024. This research is expected to provide further insight into safe and effective treatment alternatives for vaginal discharge.

Method

This research is a quasi-experimental quantitative with Pretest Posttest with Control Group Design. The research was carried out at the Mulya Husada Clinic, Bekasi Regency, from May to July 2024. The population of this study includes 33 women of childbearing age who experience pathological vaginal discharge at the Karya Mulya Husada Clinic, Bekasi Regency. Samples are taken using the purposive sampling technique, which is the selection of samples based on predetermined criteria. The inclusion criteria include women of childbearing age aged 20-45 years who experience

pathological vaginal discharge, are not on special medication (HIV, syphilis, and other infectious diseases), are not allergic to betel leaves and turmeric, and are not pregnant. Using the Slovin formula, the sample used was 30 respondents from a total of 33 women of childbearing age, with a margin of error of 5% and a confidence level of 95%. The independent variable in this study was the administration of betel leaf decoction and turmeric and the bound variable in this study was vaginal discharge. In this study, the data was analyzed using a univariate method to identify the level of vaginal discharge of women of childbearing age presented in the frequency and percentage tables. In addition, bivariate analysis was carried out to test the effect of giving betel leaf decoction and turmeric on vaginal discharge in women of childbearing age using the Paired Sample T Test and Independent T Test.

Result

The study on the effect of betel leaf decoction and turmeric on vaginal discharge in women of childbearing age was carried out at the Karya Mulya Husada Clinic, Bekasi Regency 2024 with a total of 30 respondents of women of childbearing age, the results of the study were as follows:

Univariate Analysis

Table 1.
Average Vaginal Discharge Rate in Women of Childbearing Age in the Betel and Turmeric Leaf Feeding Group (Intervention Group)

Intervention Groups	Mean	Mean Difference	Min	Max
Pretest	3,80	1,67	3	6
Posttest	2,13		0	5

Based on the results of the descriptive analysis in Table 1, there was a difference in values in the pretest intervention group which was characterized by a minimum whiteness value of 3, a maximum whiteness value of 6, and an average whiteness value of 3.80. In the posttest intervention group, there was a decrease which was characterized by a minimum whiteness value of 0, a maximum whiteness value of 5, and an average whiteness value of 2.13. There was a decrease of 1.67.

Table 2.
Average Vaginal Discharge Rate in Women of Childbearing Age in the Betel and Turmeric Leaf Feeding Group (Control Group)

Control Group	Mean	Mean Difference	Min	Max
Pretest	4,27	0,14	3	6
Posttest	4,13		3	6

In contrast to the results of the pretest control group with a minimum whiteness value of 3, a maximum whiteness value of 6, and an average whiteness value of 4.27. In the posttest control group, a minimum whiteness value of 3, a maximum whiteness value of 6, and an average whiteness value of 4.13 were obtained. There was a decrease of 0.14. So descriptively there was a difference in the value of vaginal discharge in women of childbearing age in both intervention and control groups.

Bivariate Analysis

Table 3.
The Effect of a Boiled Betel Leaf and Turmeric on Vaginal Discharge in Women of Childbearing Age

Group	*Pretest*		*Posttest*		*p-value*
	Mean	SD	Mean	SD	
Intervensi	3,80	1,014	2,13	1,407	0,000
Control	4.27	1,223	4,13	1,246	0,164

Based on Table 3, it is known that the p-value of the intervention group is 0.000 < 0.05. So it can be said that there is an effect of giving a decoction of betel leaf and turmeric on vaginal discharge in women of childbearing age at the Karya Mulya Husada Clinic in 2024. Meanwhile, in the control group, a p-value of 0.0154 >0.05 was obtained, which means that there was no difference between the pretest and posttest in the control group.

Table 4.
Differences in the Effect of a Boiled Betel Leaf and Turmeric Giving in the Intervention and Control Groups

	Intervention	Kontrol	SD	Mean Difference	*P-value*
	Mean				
Pretest	3,80	4,27	1,014 1,407	0,47	0,265
Posttest	2,13	4,13	1,223 1,246	2,00	0,000

Based on Table 4, it is known that the calculation of the mean difference in vaginal discharge pretest in women of childbearing age is 0.47. The results of the Independent T Test in the pretest of both groups with p-values of 0.265 > 0.05. If the significance value of the p-value is greater than the alpha value of 5% (0.05), it is concluded that there is no difference in the average vaginal discharge of women of childbearing age before being given a decoction of betel leaf and turmeric against vaginal discharge in women of childbearing age at the Karya Mulya Husada Clinic, Bekasi Regency.

This is different from the calculation of the mean difference in vaginal discharge posttest in women of childbearing age of 2.00. The results of the Independent T Test in the posttest of the two groups with p-values of 0.000 < 0.05. If the significance value of the p-value is less than the alpha value of 5% (0.05), the author can assume that there is a difference in the average vaginal discharge of women of childbearing age after being given a decoction of betel leaf and turmeric at the Karya Mulya Husada Clinic, Bekasi Regency.

Discussion

The results of the descriptive analysis showed a significant decrease in cases of vaginal discharge in women of childbearing age after the use of betel leaf and turmeric decoction. This data is consistent with research by Anggraini & Wulandari (2020) and Ellisa & Rahmayanti (2021), which revealed that betel leaf decoction given twice a day for six days was effective in reducing vaginal discharge[11,12]. This study shows that regular administration of betel leaf decoction can improve the condition of vaginal discharge by reducing the symptoms and frequency of vaginal discharge in women of

childbearing age.

The study showed that before the use of betel leaf decoction and turmeric, all respondents experienced vaginal discharge with characteristics such as yellowish liquid color and itching. After the use of the decoction, a decrease in vaginal discharge began to be seen on the third day, with a significant improvement on the seventh day. Although some women still experience vaginal discharge, its amount and intensity are significantly reduced, suggesting that this therapy can be effective in addressing vaginal discharge problems[13].

The mechanism of action of betel leaf decoction in overcoming vaginal discharge is related to the content of its active compounds. Betel leaves contain eugenols, cavicol, and tannins, which have antimicrobial, anti-inflammatory, and astringent properties. Eugenol fights bacteria and fungi such as Candida albicans, while tannins reduce fluid secretion and relieve inflammation[6]. The research of Kabuhung & Handayani (2022) supports this finding by showing that the active compounds in betel leaves are effective in overcoming vaginal discharge[14].

In addition to betel leaves, turmeric also shows effectiveness in reducing vaginal discharge. Research by Sari (2019) and Oktaviana et al. (2020) shows that turmeric decoction can reduce the symptoms of vaginal discharge from severe to mild, and in some cases, eliminate vaginal discharge altogether[9,13]. Turmeric contains curcumin and demethoxycurcumin which have anti-inflammatory and antimicrobial properties, which help overcome infections and inflammation[15,16].

A literature review by Maulidiyah (2019) concluded that the combination of betel leaf decoction and turmeric is effective as a non-pharmacological treatment for vaginal discharge, with a duration of administration between 3 to 14 days. This study reinforces the assumption that these two natural ingredients, each with their antimicrobial and anti-inflammatory mechanisms, can effectively reduce vaginal discharge in women of childbearing age. Based on these results, the researchers assumed that the decrease in vaginal discharge was caused by the synergistic effect of the active compounds in betel leaf and turmeric which function complementarily in relieving vaginal discharge symptoms[17].

The results of the Paired Sample T Test showed a p-value of 0.000 ($p < 0.05$), indicating that a decoction of betel leaf and turmeric has a significant effect on the

reduction of vaginal discharge in women of childbearing age at the Karya Mulya Husada Clinic in 2024. Research by Aprianisa et al. (2023) also supports this finding, where the administration of betel leaf decoction routinely for 5 days showed significant results with a p-value of 0.000. This proves that betel leaf decoction can effectively reduce vaginal discharge[8].

The interaction between betel leaves and turmeric shows a synergistic effect in overcoming vaginal discharge. Noor & Putri (2021) and Mustika et al. (2024) explained that the combination of eugenol from betel leaves and curcumin from turmeric has a stronger antimicrobial effect, inhibiting the growth of bacteria and fungi that cause vaginal discharge. In addition, kavikol and sesquiterpenes in betel leaves along with curcumin in turmeric reduce inflammation and irritation, while tannins in betel leaves help reduce fluid secretion. This combination speeds up healing and reduces vaginal discharge symptoms[18,19].

The choice of betel leaf decoction and turmeric as non-pharmacological therapies is based on various advantages over pharmacological drugs, such as lower side effects, natural antimicrobial effectiveness, more affordable cost, and lower risk of drug resistance[20,21,22]. Based on the results of the study, researchers assume that the decrease in vaginal discharge is influenced by the technique and frequency of giving decoction, which is 3 times a day for 7 days, which makes this therapy a useful alternative in overcoming vaginal discharge in women of childbearing age.

Conclusion

Based on the results of the study, the researcher concluded that there was a decrease in the value of vaginal discharge before and after giving boiled betel leaves and turmeric to women of childbearing age. The results of the study also stated that there was an effect of boiled betel leaves and turmeric on vaginal discharge in women of childbearing age at the Karya Mulya Husada Clinic, Bekasi Regency in 2024. The suggestion that can be given is that women of childbearing age can use boiled betel leaves and turmeric as an alternative natural treatment to overcome vaginal discharge.

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