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CASE STUDY LITERATURE REVIEW (CSLR) THE EFFECT OF BOILED BASIL AND TURMERIC ON VAGINAL DISCHARGE IN ADOLESCENT GIRLS AT SMAN 1 SINDANGBARANG, CIANJUR REGENCY 2025

Parmi Rahmayanti[1] , Fenni Valianda Amelia Ramadhan[2] , Putri Agus Febriyani[3],
Ai Nurhayati Amalia[4], Dini Rinjani[5] , Rika Puji Rustiwa[6] , Tuti Nurhayati[7] , Shinta Nurmallah[8] , Rika Rustianti[9] , Winwin Maulani[10]
Midwife Professional Education Study Program Professional Program
University Of Indonesia Maju
E-mail: rinjanidini84@gmail.com

Abstrack

Vaginal discharge is a common condition experienced by women and can be physiological or pathological. Appropriate treatment is needed to reduce the severity of vaginal discharge and prevent further complications. This study aims to determine the effectiveness of interventions in reducing vaginal discharge levels in respondents based on changes in scores from the first visit to day 7. This study used an observational design with a pre-post approach without a control group. The study subjects consisted of four respondents who were measured at three times: the first visit, day 3, and day 7. Vaginal discharge was assessed using a score with categories: 0–5 normal/physiological, 6–10 mild vaginal discharge, 11–15 moderate vaginal discharge, and ≥16 pathological vaginal discharge. Analysis was performed by comparing the decrease in scores between the first visit and day 7. The results of the study show that in the first table there was a significant decrease in scores in all respondents, namely between 7–9 points, with a change in category from mild-moderate vaginal discharge to normal/physiological. Meanwhile, in the second table, the score decrease ranged from 3–6 points, and most respondents remained in the mild vaginal discharge category. Only one respondent achieved normal discharge. The conclusion of this study indicates that the intervention in the first group was more effective in reducing vaginal discharge levels than in the second group, as seen from the magnitude of the score decrease and the change in the category to normal discharge.

Keywords: vaginal discharge, effectiveness, score decrease, women's reproductive health
Reference: Journal (2021-2024)

I. INTRODUCTION

Adolescence is a transitional phase marked by significant hormonal changes that can impact reproductive health, including the appearance of vaginal discharge. This phase is considered crucial in the formation of a person's identity and character, and it is also a time of intense hormonal changes, impacting various aspects of life (Eduwan, 2022). One common problem experienced by adolescent girls is vaginal discharge (fluor albus). Although physiologically a natural mechanism for maintaining moisture and hygiene of the female genitals, this condition can become pathological if it occurs excessively, has an unpleasant odor, or is accompanied by itching and discomfort (Eduwan, 2022).

Vaginal discharge is the discharge of fluid other than blood from the vagina outside the normal range, whether odorless or not, and may be accompanied by itching in certain areas. Vaginal discharge can be normal (physiological) and influenced by certain hormones. However, abnormal vaginal discharge can be caused by infection or inflammation, which can occur due to the habit of washing the vagina with unclean water, incorrect internal examinations, excessive use of vaginal cleansers, unhygienic examinations, or the presence of foreign objects in the vagina. Besides infections, vaginal discharge can also be triggered by hormonal issues, wearing non-absorbent underwear, and sexually transmitted infections (Mujellalah, 2024).

According to data from the World Health Organization (WHO) in 2021, the prevalence of vaginal discharge in women in Indonesia reached 75% in 2021, with the majority experiencing vaginal discharge at least once in their lifetime. Furthermore, 45% of women in Indonesia have experienced vaginal discharge more than once. This figure is disproportionate to the incidence of vaginal discharge in women in Europe, which is only around 25% (WHO, 2021). Meanwhile, the incidence of vaginal discharge in West Java in 2020 was 33.5%, and in Cianjur Regency alone, the incidence of vaginal discharge in adolescent girls aged 13-15 was 18% (Ministry of Health of the Republic of Indonesia, 2020).

Various factors can cause vaginal discharge in adolescent girls, both physiological and pathological. Physiological factors occur due to changes in the hormone estrogen during puberty, which increases cervical mucus production. Meanwhile, pathological factors are generally caused by infections by microorganisms such as Candida albicans and Gardnerella vaginalis due to poor reproductive organ hygiene (Putri, D. A., 2020). The habit of wearing tight pants, using scented soaps, and humid environments also trigger the growth of fungi and bacteria (Wulandari, F., & Dewi, 2021). Furthermore, stress, fatigue, and an unhealthy diet can weaken the immune system, making vaginal discharge more likely (Rahmawati, S., & Sari, 2021).

Pathological vaginal discharge that is not promptly treated can have various short-term and long-term impacts. Short-term effects often experienced by adolescents include itching, burning, stinging, and pain in the vaginal area. Furthermore, a thick, yellowish or greenish discharge with an unpleasant odor can cause discomfort. This condition can interfere with daily activities, such as studying, exercising, and socializing. Feelings of insecurity and embarrassment often arise because adolescents worry that others will smell their body odor (Putri, D. A., 2020). Psychologically, this can cause mild stress, anxiety, and lower self-confidence, especially due to a lack of understanding about reproductive health and the persistence of taboos about discussing issues related to female genitalia (Rahmawati, S., & Sari, 2021).

Meanwhile, the long-term impact of vaginal discharge left untreated can have more serious consequences for reproductive health. Recurrent infections can spread to the upper reproductive organs, causing inflammation of the uterus or fallopian tubes, known as pelvic inflammatory disease (PID). This condition has the potential to cause fertility problems or even infertility in adulthood. Furthermore, chronic vaginal discharge can also cause changes in the balance of normal vaginal flora, increasing the risk of sexually transmitted infections and worsening reproductive organ conditions (WHO, 2022).

In adolescent girls, pathological vaginal discharge often causes anxiety and discomfort, which impacts their self-confidence. At this age, many teenagers may feel embarrassed to discuss vaginal discharge, which can lead them to be reluctant to seek medical treatment or ignore the symptoms. As a result, the discharge problem can worsen, worsening their health.

Therefore, it is important to provide treatment solutions that are easily accessible and acceptable to adolescents, one of which is natural remedies using basil leaves (Andini p, 2024).

Basil leaves (Ocimum sanctum) contain active compounds, such as essential oils, flavonoids, eugenol, tannins, and saponins, which are known to have antibacterial and antifungal properties that are very useful in treating infections that cause pathological vaginal discharge. Furthermore, basil leaves have long been used in traditional medicine in Indonesia and other Asian countries for their ability to relieve various health problems, including digestive disorders and fungal infections (Andini p, 2024).

Research by Siti Saidah (2025) showed that boiled basil leaves significantly reduced vaginal discharge, making them effective as a natural, non-pharmacological therapy. This study used a quantitative, quasi-experimental design with a one-group pre-test and post-test to determine the effect of basil leaf administration on vaginal discharge in adolescents. The sample was selected using non-probability purposive sampling based on certain criteria. The study population was female students of SMAN 6 Semarang who experienced vaginal discharge according to the criteria set by the researcher. The Shapiro-Wilk normality test showed that the data were not normally distributed, so the Wilcoxon test was used. The results showed that administering basil leaves to adolescent girls reduced the incidence of vaginal discharge, with 36 respondents experiencing a decrease and 5 respondents remaining unchanged. The Wilcoxon test produced a P-Value of 0.001 (<0.05) and Z -6.000, meaning there was a significant effect. The study showed that the majority of respondents were aged 16–17 years (92.7%) with varying levels of stress. Before the intervention, all respondents experienced vaginal discharge. After administering basil leaves for 4 days, 36 respondents (87.8%) improved, while 5 (12.2%) remained with vaginal discharge. The Wilcoxon test yielded a P-value of 0.001, proving that basil leaves are effective in reducing vaginal discharge through their antibacterial and antifungal properties (Saidah et al., 2025).

In line with the research by Namya Aghni Bachtiar (2024), this study employed a qualitative research design with a case study approach. This activity was conducted at the Nana Midwifery Center in Pandeglang Regency. Midwifery care activities were carried out from February 2024 to March 2024. This activity was conducted on two women of childbearing age between the ages of 20 and 35 at the Nana Midwifery Center in Pandeglang Regency in 2024. The sample was determined using a purposive sampling technique. Mrs. U, 23, experienced physiological vaginal discharge before being given boiled betel leaf water, and after being given boiled betel leaf water, her physiological discharge was gone on day 6. Mrs. A 25-year-old woman experienced physiological vaginal discharge before being given boiled basil leaves and after being given boiled basil leaves, she no longer experienced physiological vaginal discharge on the 7th day. Consuming boiled betel leaves is more effective in treating physiological vaginal discharge in women of childbearing age compared to consuming boiled basil leaves with a difference of 1 day. Women who experience vaginal discharge are expected to be able to consume boiled betel leaves or boiled basil leaves to treat vaginal discharge well before being given further treatment (Namyra Aghni Bachtiar, 2025).

Turmeric (Curcuma longa L.) (Zingiberaceae) is a tropical plant found widely in Asia and is widely used as a food coloring and flavoring agent. In powder form, known as turmeric, it is also widely used medicinally. During the early days of Hinduism, turmeric was also recorded in ancient Ayurvedic books as an aromatic, stimulant, and source of dark red dye. (Kusumawati, N., & Astuti, 2022).

Research results by Oky Oktaviana (2020). This study used a quasi-experimental pre- and post-test design without control. Using a purposive sampling technique, a sample of 30 respondents was obtained. Vaginal discharge was measured using a rating scale formula and

analyzed using the Wilcoxon statistical test. The results showed that the most vaginal discharge before administering the turmeric decoction extract was pathological (80.0%), while the most vaginal discharge after administering the turmeric decoction extract was normal (100%), with a statistical test result of a p-value of $0.000 \leq 0.05$ and a calculated Z-value of -4.899. There is an effect of turmeric decoction extract on the incidence of vaginal discharge in women of childbearing age in Karangsari Village. Sulang District, Rembang Regency (Oky Oktaviana, 2020).

Based on the results of an anonymous reproductive health survey at SMAN 1 Sindangbarang, data was obtained from 127 female students from three grade levels: 45 in grade IX, 42 in grade X, and 40 in grade XI. This survey was conducted to determine the vaginal discharge experienced by adolescent girls during puberty. Of the 127 students, 83 reported experiencing physiological vaginal discharge, which is normal vaginal discharge that is usually clear or white, odorless, and not accompanied by itching. This type of vaginal discharge is common in adolescents due to hormonal changes.

Factors that can trigger vaginal discharge include bacteria, viruses, fungi, parasites, or poor hygiene of the genitals, especially the vagina. This can be caused by infrequently changing underwear or sanitary napkins during menstruation, improper menstrual care, wearing underwear that does not absorb sweat well, and unhealthy sexual practices (Astuti, H., Wiyono, J., & Candrawati, 2023). Several factors that can influence vaginal discharge include hormonal factors, physical and mental fatigue, and the presence of foreign objects in the reproductive organs. Additionally, other factors that can trigger vaginal discharge include economic status, the use of antiseptics that disrupt pH balance, daily water use, the use of sanitary napkins or pantyliners, and personal hygiene practices (Mujellalah, 2024).

Based on these findings, researchers were interested in conducting a study entitled "The Effect of Boiled Basil Leaves and Boiled Turmeric on Vaginal Discharge in Adolescent Girls at SMAN 1 Sindangbarang in 2025."

II. LITERATUR REVIEW

This research is a qualitative study with a case study and literature review. This research focuses intensively on a specific object, studying it as a case (Sugiyono, 2019).

Research Location and Timeline

This research was conducted at SMAN 1 Sindangbarang in 2025.

Population and Sample

1. Population

   The population in this study was all adolescents experiencing vaginal discharge at SMAN 1 Sindangbarang.

2. Sample

   The sample in this study was 8 adolescents with vaginal discharge at SMAN 1 Sindangbarang. Four of them were given basil leaf decoctions and four were given turmeric decoctions. The sample was determined based on certain criteria, namely:

   a. Inclusion Criteria

   1. Adolescents aged 16-19 at SMAN 1 Sindangbarang
   2. Adolescents Experiencing Physiological Vaginal Discharge
   3. Willingness to be Respondents

   b. Exclusion Criteria

1. Adolescents Who Do Not Experience Vaginal Discharge
2. Basil leaf decoction is not recommended for adolescents with a history of allergies to basil, turmeric, or similar herbs
3. Adolescents with stomach problems and taking regular medication
4. Unwilling to be respondents

III. RESULTS AND DISCUSSION

Midwifery Care Results

Table 1 Comparison of Midwifery Care Results Intervention 1 Giving Boiled Basil

Respondents	Visit 1	Visit 2 (Day 3)	Visit 3 (Day 7)	Difference in visits 1 -7
Nn. R	12 (Moderate Vaginal Discharge)	7 (Light Vaginal Discharge)	3 (Normal)	9
Nn. S	10 (Light Vaginal Discharge)	6 (Light Vaginal Discharge)	2 (Normal)	8
Nn. L	11 (Moderate Vaginal Discharge)	7 (Light Vaginal Discharge)	3 (Normal)	8
Nn. F	9 (Moderate Vaginal Discharge)	5 (Normal)	2 (Normal)	7

Based on Table 1, the results of midwifery care provided to adolescent girls with vaginal discharge complaints who were given an intervention in the form of basil leaf decoction, the results obtained showed a decrease in vaginal discharge scores in all respondents. The decrease in scores occurred consistently with a range of 7 to 9 points. The largest decrease occurred in respondent Ms. R at 9 points, while the smallest decrease occurred in Ms. F at 7 points. This indicates that administering basil leaf decoction has a relatively large and stable effect in reducing vaginal discharge in adolescent girls.

Table 2 Comparison of Midwifery Care Results Intervention 1: Administration of Turmeric

Respondents	Visit 1	Visit 2 (Day 3)	Visit 3 (Day 7)	Difference in visits 1 -7
Nn. R	12 (Moderate Vaginal Discharge)	9 (Light Vaginal Discharge)	6 (Light Vaginal Discharge)	6
Nn. S	9 (Light Vaginal Discharge)	7 (Light Vaginal Discharge)	6 (Light Vaginal Discharge)	3
Nn. L	10 (Light Vaginal Discharge)	8 (Light Vaginal Discharge)	6 (Light Vaginal Discharge)	4
Nn. F	9 (Light Vaginal Discharge)	7 (Light Vaginal Discharge)	5 (Normal)	4

Based on Table 2, the results of midwifery care provided to adolescent girls with vaginal discharge complaints who were given turmeric decoction intervention also showed a decrease in vaginal discharge scores in all respondents. However, the decrease was smaller, ranging from 3 to 6 points. The largest decrease occurred in respondent Ms. R at 6 points, while the smallest decrease occurred in respondent Ms. S at 3 points. This indicates that administering turmeric decoction remains effective in reducing vaginal discharge, but with a lower level of effectiveness and greater variation in responses compared to basil leaf decoction.

IV. DISCUSSION

The Effect Before and After Giving Boiled Basil on Vaginal Discharge in Adolescent Girls

Based on the research results, before receiving the basil leaf decoction intervention, all respondents experienced relatively high vaginal discharge scores. After receiving the seven-day intervention, vaginal discharge scores decreased in all respondents, with a range of 7 to 9 points. This indicates that the basil leaf decoction significantly reduced vaginal discharge in adolescent girls.

In theory, basil leaves (Ocimum basilicum) contain flavonoids, eugenol, saponins, and essential oils that have antibacterial and antifungal activity. These compounds can inhibit the growth of microorganisms such as Candida albicans and

help maintain the balance of normal flora in the female reproductive organs (Hariana, 2022).

A study conducted by Sari (2020) used a quasi-experimental method with a pretest-posttest design on 30 adolescent girls experiencing vaginal discharge. Assessment was conducted using an observation sheet with a scoring system based on the amount, color, and odor of the discharge. The results showed that before the intervention, most respondents were in the moderate to severe vaginal discharge category. After being given a basil leaf decoction for 14 days, there was a significant decrease in vaginal discharge scores, with an average reduction of more than 60%, and the condition returned to a more normal state (Sari, 2020).

Research by Wulandari (2021) used laboratory (in vitro) experimental methods to test basil leaf extract against the growth of Candida albicans. The results showed a fairly large zone of inhibition in the culture medium, indicating that basil leaf extract has strong antifungal activity in inhibiting the growth of microorganisms that cause vaginal discharge (Wulandari, 2021).

According to researchers, basil leaf decoction works directly to inhibit the growth of bacteria and fungi that cause vaginal discharge, so that when consumed regularly, it can accelerate the reduction of symptoms. Furthermore, the success of the intervention is also influenced by personal hygiene and the respondents' compliance in consuming the decoction.

The Effect Before and After Giving Turmeric on Vaginal Discharge in Adolescent Girls

Based on the research results, all respondents experienced vaginal discharge before receiving the turmeric decoction. After seven days of the intervention, vaginal discharge scores decreased by between 3 and 6 points. This indicates that the turmeric decoction also has an effect on reducing vaginal discharge in adolescent girls.

In theory, turmeric (Curcuma longa) contains the compound curcumin, which has anti-inflammatory, antibacterial, and antifungal activities. Curcumin works by inhibiting the growth of microorganisms and reducing tissue inflammation, thereby aiding the gradual healing process (Winarti, 2021).

Research by Putri (2021) used a quasi-experimental method with a pretest-posttest design in women with vaginal discharge complaints. Assessments were conducted using a vaginal discharge symptom scale. The results showed that after administering turmeric for 14 days, there was a decrease in vaginal discharge scores, but this decrease tended to be gradual and not very significant in the first week of the intervention (Putri, 2021).

Research by Rahmawati (2020) used laboratory experimental methods to test the antibacterial and antifungal activity of curcumin. The results showed that curcumin was able to inhibit the growth of microorganisms, but its inhibitory power was not as strong as direct antibacterial compounds like basil essential oils (Rahmawati, 2020).

According to the researchers' assumptions, turmeric works more by helping the body improve its condition from within by reducing inflammation, so the resulting effect tends to be slower and is not always the same for each respondent.

Comparison of the Effects Before and After Giving Boiled Basil and Turmeric on Vaginal Discharge in Adolescent Girls

Based on the research results, both interventions, basil leaf decoction and turmeric, showed a reduction in vaginal discharge scores in adolescent girls. However, descriptively, the basil leaf decoction group showed a greater and more consistent reduction compared to the turmeric group. This was evident from the higher difference in score reduction and the more stable pattern of reduction across all respondents.

Theoretically, this difference in effectiveness is influenced by the active ingredients and their mechanisms of action. Basil leaves contain antibacterial and antifungal properties, such as eugenol and essential oils, which work directly to inhibit the growth of microorganisms that cause vaginal discharge. Turmeric, on the other hand, predominantly contains curcumin, which functions as an anti-inflammatory, thus playing a more effective role in reducing inflammation than directly killing microorganisms (Hariana, 2020).

Sari's (2020) study used a quasi-experimental method with a pretest-posttest design in two treatment groups: one group given herbs with antibacterial activity and the other given anti-inflammatory herbs. Assessments were conducted using a vaginal discharge symptom scale that included discharge volume, color, odor, and itching. The results of the study showed that the group receiving the antibacterial herbal supplement experienced a faster and more significant reduction in vaginal discharge scores than the anti-inflammatory group, especially in the first to second weeks of the intervention (Sari, 2020).

Research by Wulandari (2019) used a laboratory experimental method with a sensitivity test against Candida albicans. The results showed that basil leaf extract produced a larger zone of inhibition compared to several other herbal ingredients, indicating its effectiveness in inhibiting the growth of the fungus that causes vaginal discharge (Wulandari, 2019).

Furthermore, research by Lestari (2019) used an observational method in women of childbearing age who consumed various herbal remedies, including turmeric. The results showed that turmeric still improved vaginal discharge, but results tended to be slower and varied between individuals, depending on body condition and other contributing factors such as personal hygiene and lifestyle (Lestari, 2019).

According to the researchers, the difference in results between basil and turmeric in this study was due to differences in their modes of action. Basil worked more quickly because it directly targeted the bacteria that cause vaginal discharge, resulting in faster and more consistent results. Meanwhile, turmeric works by helping to improve the body's condition from within, so the results are still there, but more gradual and not always the same for each individual. Furthermore, factors such as personal hygiene, diet, and adherence to the decoction also significantly influence the results.

Thus, it can be concluded that both interventions are effective in reducing vaginal discharge in adolescent girls, but the basil leaf decoction is more effective than turmeric because it produces faster and more consistent reductions.

V. CONCLUSION

Based on the results of research on the Effect of Giving Boiled Basil Leaves and Boiled Turmeric on Vaginal Discharge in Adolescent Girls at SMAN 1 Sindangbarang, Cianjur Regency in 2025, the following conclusions were obtained:

1. 1. There was a decrease in complaints of vaginal discharge in young women before and after being given boiled basil leaves, where some respondents experienced an improvement in their vaginal discharge after being given the boiled leaves.
2. 2. There was a decrease in complaints of vaginal discharge in young women before and after being given turmeric decoction, where some respondents also experienced improvement in vaginal discharge symptoms after consuming turmeric decoction regularly.
3. Giving boiled basil leaves and boiled turmeric both have an effect on reducing vaginal discharge in adolescent girls, but boiled basil leaves tend to be more effective than boiled turmeric in reducing complaints of vaginal discharge in adolescent girls at SMAN 1 Sindangbarang, Cianjur Regency in 2025.

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