

THE EFFECTIVENESS OF *PIPER BETLE LINN* DECOCTION ADMINISTRATION WITH PATHOLOGICAL VAGINAL DISCHARGE

Rahmi¹, Rieh Firdausi¹

¹School of Nursing, Faculty of Medicine and Health Science, Lambung Mangkurat University.

Abstract

Background Behind: limited access to sanitation facilities in some wetland areas could have exacerbated the problem of vaginal discharge, as inadequate personal hygiene facilitated the spread of bacteria or fungi causing infection. If vaginal discharge was not treated promptly, it could have had a spreading impact on the reproductive organs, such as cervical cancer, leading to infertility. One of the non-pharmacological therapies used to treat vaginal discharge was a decoction of *Piper Betle linn*. *Piper betle* Linn contains compounds that were believed to have the potential to be antimicrobials without disrupting the normal flora balance. **Objective:** This study aimed to apply nursing care through *Piper beetle linn* decoction intervention in managing pathological vaginal discharge in Ms U, a resident of Sungai Kitano Village. **Method Study:** the research method used was a case study design on Ms U involving the use of *Piper Betle Linn* decoction for vaginal discharge. Nursing care for Ms U was provided from November 30 to December 6, 2024, twice a day, following the Standard Operating Procedure for *Piper beetle linn* decoction. **Result:** This case study demonstrated that the use of *Piper Betle Linn* decoction as a nursing intervention can be an effective option in managing pathological vaginal discharge. In the patient, the symptoms of pathological vaginal discharge significantly decreased after 7 days of application, and the vaginal discharge status changed to physiological.

Keywords: Pathological vaginal discharge, Teenager, *Piper Betle linn* decoction, Case study

*Corresponding author:
Email correspondence:
rieh.firdausi@ulm.ac.id

Introduction

Reproductive health was defined as a complete state of physical, mental, and social well-being, and not merely the absence of disease or infirmity,¹ but also the ability to enjoy a satisfying and safe sex life, the capability to reproduce and the freedom to decide when and how often to do so. It also includes the ability to live an entire and productive life (Etnis and Maay, 2021). One of the most common reproductive health problems experienced by adolescent girls is vaginal discharge (Pratiwi, Novita and Hanif, 2024). According to WHO data in 2021, cases of vaginal discharge in Indonesia reached 75%, of which 50% occurred in adolescents and 25% in women of reproductive age (Andjani Arsyad *et al.*, 2023). If vaginal discharge is not treated promptly, it can spread to reproductive organs such as the cervix and even cause infertility (Miskiyah Tamar, 2024).

One of the non-pharmacological therapies that were used to treat vaginal discharge was a decoction of *Piper Betle linn*. Herbal medicine made from natural

ingredients was considered safer than modern medicine because the side effects of herbal medicine were relatively low when used correctly. *Piper betle* Linn contained phytochemicals such as flavonoids, essential oils, tannins, alkaloids, and saponins, which were believed to have antimicrobial potential. The activity of flavonoids could disrupt the integrity of bacterial cell membranes by forming complex compounds with extracellular proteins. Additionally, alkaloids also possessed antibacterial properties, working by interfering with the components of peptidoglycan in bacterial cells. Consequently, the bacterial cell wall layer was not formed perfectly, which could lead to the death of these cells (Farlikhatun and Masluroh, 2020).

The use of *Piper betle linn* extract for one week could help reduce complaints of vaginal discharge by decreasing the amount of mucus without disrupting the balance of normal flora, making it safe to use for treating vaginal discharge

(Etnis and Maay, 2021). A study conducted by (Miskiyah Tamar, 2024) found that the median incidence of vaginal discharge before the intervention was 7.00 and decreased to 6.00 after the intervention, with a p-value of 0.000. This proves that the Piper Betle linn decoction affected vaginal discharge in adolescents.

A study conducted by (Suyenah and Dewi, 2022) obtained a p-value of 0.000, which was less than 0.05, indicating that Piper betle Linn decoction was effective in reducing the incidence of vaginal discharge. In this study, it was also found that vaginal discharge, which was previously abundant, had a strong odour, and caused itching, decreased after the administration of Piper Betle linn decoction. Vaginal douching was found to be more effective than oral administration, as vaginal douching could directly clean the vagina, thus maintaining vaginal hygiene. According to Yanhendri and Yenny (2012), in the field of pharmacy, the direct application of Piper Betle Linn decoction to the vaginal surface provided a faster effect, approximately 5-30 minutes, compared to oral administration (Maulidiyah, 2020).

Wetlands generally had moist and watery environmental conditions, such as swamps, peatlands, or river deltas. The high humidity in these environments could have impacted women's health, particularly in terms of infections which were often the primary cause of abnormal vaginal discharge. The habits and lifestyles of people in wetland areas frequently did not support good hygiene practices, which exacerbated the problem of vaginal discharge. (Hutagalung and Harahap I, 2019).

Sungai Kitano Village was a wetland area adjacent to the Martapura River. The assessment found that Ms U suffered from pathological vaginal discharge due to a lack of vulvar hygiene. Based on this, the researcher was interested in conducting nursing care research on Ms U through the intervention of Piper betle linn decoction to treat vaginal discharge in Sungai Kitano Village, East Martapura.

Method

This study used a case study approach to describe the application of Piper betle linn decoction in overcoming discomfort in maternity nursing care related to vaginal discharge issues. The study was conducted in Sungai Kitano Village, East Martapura District, Banjar Regency, South Kalimantan, within the working area of the East Martapura UPT. The research subject was a client with a problem of discomfort due to vaginal discharge symptoms. Data was collected through maternity assessment using interviews, observation,

physical examination methods, and identification of nursing problems and interventions based on Evidence-Based Nursing regarding the influence of Piper betle linn decoction use on discomfort related to vaginal discharge symptoms. The research was conducted from November 30, 2024, to December 6, 2024. The green Piper betle linn decoction was given twice a day, with each dose being 100cc.

Results And Discussion

The results of the assessment

Ms U, aged 15, complained of feeling uncomfortable due to vaginal discharge that occurred daily since she started menstruating at the age of 12. The discharge was thick, milky white, with a volume of less than 1 teaspoon, accompanied by vaginal itching and redness. In her daily life, Ms. U would scratch her vagina when it itched. Ms U also mentioned that after urinating or defecating, she would only rinse her vaginal and anal areas with water from the front without cleaning them with her hands, a habit she had been doing for a long time. Ms U also said that during her menstrual period, she would only change her sanitary pad once a day because she only showered once a day, but she would change it when the blood leaked through. Ms. U used cotton underwear and only changed it once a day. Additionally, she used river water for bathing and washing. Ms U inquired about the cause of her vaginal discharge and had not taken any action to address it.

Nursing Care Plan

Based on the NANDA (Nursing Diagnoses Definitions and Classification), the nursing diagnoses were discomfort and deficient knowledge. The primary nursing intervention for the diagnosis of pain based on evidence-based nursing was the administration of Piper betle linn decoction twice a day. The outcome of discomfort using the NOC (Nursing Outcomes Classification) was symptom relief. After 7 days of nursing interventions, it was expected that discomfort (vaginal discharge and itching) would decrease from a scale of 3 (moderate) to 4 (mild), the

intensity of symptoms (itching and vaginal discharge) would decrease from a scale of 3 (moderate) to 5 (none), and the frequency of symptoms (vaginal discharge and itching) would decrease from 2 (quite severe) to 4 (mild).

Implementation

Nursing implementation was carried out using NIC (Nursing Interventions Classification) for discomfort, specifically pruritus management. This involved assessing the patient's vaginal discharge symptoms using an observation sheet, explaining to the patient the benefits and usage of Piper betle linn decoction, and providing non-pharmacological therapy with Piper betle linn decoction twice a day. Deficient knowledge was addressed by explaining the disease process, including the causes, signs and symptoms, impacts, and management of vaginal discharge, identifying potential causes of vaginal discharge in the client, discussing necessary lifestyle changes to control vaginal discharge, instructing on actions to minimize vaginal discharge, and assessing changes in the client's vulvar hygiene practices.

Day number	Vaginal discharge	Pruritus	Consistency	Color
1	Unreduced	Unreduced	Thick	Milk white
2	Unreduced	Unreduced	Thick	Milk white
3	Decreased a little	Unreduced	Thick	Milk white
4	Same	Decrease	Thick	Milk white
5	Decrease	Dwindle	Liquid	Clear
6	Nothing	Nothing	-	-
7	Dwindle	Nothing	Liquid	Clear

Table 1. Evaluation of the intervention of administering Piper beetle linn decoction

Based on Table 1, there was a change from pathological to physiological vaginal discharge. The amount of vaginal discharge began to decrease on the 3rd day and was absent on the 6th day. Changes in colour and consistency occurred on the 5th day, from previously milky white and thick to clear and watery. Additionally, itching began to subside on the 4th day and was no longer felt on the 6th day. This proves that giving Piper Betle linn decoction for 7 days can address the pathological vaginal discharge experienced by Ms U. Ms U stated that she no longer felt uncomfortable due to the resolved pathological vaginal discharge, thus determining the nursing diagnosis of discomfort.

This was also influenced by Ms U's increased knowledge about vaginal discharge, leading her to practice good vulvar hygiene. According to Roifah, by providing education on genital hygiene, at least adolescents can reduce their vaginal discharge, and this approach is effective in preventing vaginal discharge

among adolescent girls, increasing prevention efforts by 26.7% (Suyenah and Dewi, 2022). During the 7-day education implementation on the concept of vaginal discharge, especially its management, there were changes in Ms U's lifestyle. These changes included changing her underwear twice a day, cleaning from front to back after urinating and defecating, and no longer scratching her vagina when it itched. This is in line with the research conducted by Wiwin Muliawati (2018), which showed a correlation between the level of knowledge and the incidence of vaginal discharge, with a correlation coefficient of 0.204 and a significance level of 0.038 ($p < 0.05$).

The research conducted by (Suyenah and Dewi, 2022), which involved giving Piper beetle linn decoction and encouraging good hygiene practices, was proven effective in reducing vaginal discharge in adolescents. The average level of vaginal discharge before being given Piper beetle linn decoction was 6.70, and after being given Piper beetle linn decoction was 2.90, with a significance value of $0.000 < 0.05$, thus the null hypothesis (H_0) was rejected, and the alternative hypothesis (H_a) was accepted. In this research, the researchers also stated that Piper betle linn decoction was proven to be effective in reducing the occurrence of vaginal discharge. Initially, the discharge was abundant, had a strong odour, and caused itching, but these symptoms decreased after the administration of Piper betle linn decoction. Pathological vaginal discharge could be reduced if supported by good hygiene practices. However, the discharge could decrease over a more extended period. It would undoubtedly increase discomfort in daily activities, thus necessitating other alternatives to treat vaginal discharge, such as Piper betle linn decoction (Etnis and Maay, 2021).

Piper betle linn decoction was effective in treating vaginal discharge due to the compounds contained in Piper betle linn, such as chavicol, phenol, eugenol, and astringents. Kavicol can kill bacteria five times more strongly than ordinary phenol. Astringents can reduce vaginal fluid secretion, while eugenol functions to kill the fungus that causes vaginal discharge (Miskiyah Tamar, 2024). The use of Piper betle linn extract for up to a week was able to reduce complaints of vaginal discharge by reducing the amount of mucus without affecting the normal flora, thus being safe and reactive in reducing vaginal discharge. The use of a

decoction of 6 Piper Betle linn for 14 days was able to reduce the level of vaginal discharge, but the dosage was still low, so the content was less than optimal.

Meanwhile, the use of 10 Piper Betle linn with 250cc of water and reduced to 100cc was effective in treating vaginal discharge (Etnis and Maay, 2021). Table 1 shows that Ms U did not experience any vaginal discharge on the 6th day, but physiological vaginal discharge occurred on the 7th day. From the interview results, Ms U had entered her menstrual cycle.

Conclusion

The decoction of Piper betle linn was effective in addressing the nursing problem of impaired comfort in Ms U due to pathological leukorrhea. This was evidenced by changes in consistency and colour, the absence of itching, and a decrease in the amount of discharge. Additionally, providing education on the concept of leukorrhea was able to change Ms U's behaviour regarding vulvar hygiene, thus resolving the nursing problem of deficient knowledge.

Suggestion

It was hoped that adolescents with pathological leukorrhea could perform good vulvar hygiene to minimize pathological leukorrhea and apply Piper beetle linn decoction to overcome it. This research was also expected to be applied by nurses as one of the non-pharmacological therapies for managing pathological leukorrhea in adolescents. In addition, further research could be conducted by subsequent researchers regarding the use of Piper Betle linn decoction by combining oral administration and vaginal washing to determine its effectiveness.

Thanks To

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