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## The Effect of Infusion of Basil Leaves (*Ocimum Basilicum L*) on Pathological Flour Albus in Women of Childbearing Age

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### ABSTRACT

Flour albus is one of three women's problems that were originally considered a common problem but eventually become severe and even cause infection. The problem of this research was the high incidence of pathological flour albus. The purpose of this study was to determine the difference in pathological flour albus before and after administration of basil leaf infusion (in women of childbearing age (WUS) at Independent Midwifery Practice Ny. Aida Hartatik, S.ST Dlanggu-Deket-Lamongan. This research applied pre-experimental research design with one-group pre-test-post-test-design approach. The population was all women of childbearing age who experienced flour albus at BPM Ny. Aida Hartatik, S.ST in February-June 2019. The samples were twenty-five women obtained by incidental sampling. The research variables were pathological flour albus and treatment with basil leaf infusion. The data were taken by interview and observation. Then, the data were analyzed by Wilcoxon Signed Rank statistical test with a significant level of  $\alpha = 0.05$ . The results showed that 64% of women of childbearing age before being given basil leaves increased while 72% of women of childbearing age after being given basil leaf infusion decreased. There were differences in pathological flour albus before and after infusion of basil leaves in women of childbearing age with  $Z = -2,800$  and  $p = 0,000$ . In addition to being given basil leaf infusion (*Ocimum Sanctum L*), another effort to overcome this problem is through the participation of health workers in providing early information about the prevention and treatment of pathological flour albus.

Keywords: Infusion, Basil leave, WUS, Flour Albus

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## INTRODUCTION

Reproductive health has become a government concern and is a serious problem throughout life. The target of reproductive health programs in Indonesia is for all adolescents and their families to have responsible behavior<sup>1</sup>. For women, one thing that is most important and needs special attention is reproductive health, namely the part of the intimate organs (vagina), especially in terms of cleanliness. The vagina is very sensitive because it is hidden, closed and has normal flora (microorganisms) that must be kept in balance. If this cannot be done, it will cause disturbances such as vaginal discharge (fluor albus)<sup>2</sup>

Women of childbearing age are women who have experienced menstruation at the age of 15-49 years, are still in their reproductive age, have reproductive organs that can work well and have the potential to have offspring<sup>3</sup>. Health problems in Women of Childbearing Age will not only have an impact on health but also on the fetus and or baby when the person is pregnant or breastfeeding<sup>4</sup>. Lack of information and knowledge about changes in the reproductive system in adolescents and women of childbearing age causes anxiety. This has resulted in various problems related to their reproductive organs. One of them is the appearance of vaginal discharge<sup>5</sup>.

Vaginal discharge or flour albus is a vaginal condition when it secretes fluid or mucus that resembles pus. Vaginal discharge is a classic problem for most women. Ironically, most women do not know about vaginal discharge and the causes of vaginal discharge. If not treated properly, vaginal discharge can be fatal, which lead to infertility, ectopic pregnancy, and cancer<sup>6</sup>. Vaginal discharge is a condition that is often experienced by women throughout their life cycle, starting from adolescence, reproduction and menopause<sup>7</sup>. Normal or physiological vaginal discharge occurs in accordance with the female reproductive cycle or in accordance with the cycle of the female body with the type of discharge that is clear, not excessive, odorless and does not cause itching or burning. While 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 foul odor. The color of discharge from the vagina will vary according to the cause of the discharge. The most common causes of abnormal vaginal discharge are bacteria, fungi and parasites<sup>8</sup>.

Almost 83% of the causes of vaginal discharge are *Candida albicans* bacteria which mostly occur in women of childbearing age. If abnormal vaginal discharge (pathological) is left untreated or given late, the infection can spread into the uterus to infect the ovaries. Therefore, patients need to check their organs and reproductive tract<sup>9</sup>. Based on the initial survey at Independent Midwifery Practice Ny. Aida Hartatik, S.ST conducted by researchers on January 29, 2019 researchers found data that out of 10 WUS, 70% or 7 people had pathological flour albus. From the data above, the research problem was concerning the occurrences of flour albus in women of childbearing age. Two-way efforts which can be performed to overcome the problem of vaginal discharge are pharmacologically and non-

pharmacologically. In terms of non-pharmacological efforts, WHO recommended each country to take advantage of the use of traditional medicine in the health sector.

The Indonesian government also supports traditional medicinal plants as alternative treatments because Indonesia is a country rich in traditional plants<sup>10</sup>. Some studies focused on natural ingredients that are safe for human and environment. In the past, basil is known as plant used as vegetable and eaten raw or even processed as medicine. Throughout literature records, basil contains active ingredients such as eugenol, avonoid, Tannin<sup>11</sup>. Eugenol can kill the fungus that causes pathological vaginal discharge, as an anti-bacterial stigmasterol can stimulate ovulation (egg maturation). The tannin and zinc components can reduce vaginal secretions<sup>12</sup>. Regarding this situation, researchers are interested in conducting research on the effect of giving basil leaf infusion on pathological flour albus in women of childbearing age at Independent Midwifery Practice Ny. Aida Hartatik, S.ST.

## METHOD

The research design was pre-experimental method with a one-group pre-test-post-test approach. The population of this study were all married women of reproductive age (WUS) aged 20-40 years at Independent Midwifery Practice Ny. Aida Hartatik, S.ST who had pathological flour albus, while the sample of the study was some WUS who were married aged 20-40 years at Independent Midwifery Practice Ny. Aida Hartatik, S.ST who experienced pathological flour albus with an examination range from February to June 2019 using 25 WUS. Before being given the WUS treatment, the discharge was studied including the number of colors and odors and their consistency, then given a treatment by being given one glass size 250 cc Infusion of Basil Leaves was given a day three times for one week then postest Data was taken by giving basil leaf infusion 3 times for one week. Data the analysis using the Sign Rank Test Wilcoxon using the SPSS for Windows Version 16.0 program on the effect of basil leaf infusion on pathological Flour albus in Women of Childbearing Age on one week.

## RESULTS

Table 1. Frequency distribution Characteristics of Age, Parity, Educational And Occupation

Variabel	category	n	(%)
Age	20-25 years	5	20%
	26-30 years	8	32%
	31-35 years	9	36%
	36-40 years	3	12%
Parity	Nullipara	3	12%
	Primipara	4	16%
	Multipara	18	72%
Education	Primary School	0	0%
	Junior High School	6	24%
	Senior High School	14	56%
	Higher Education	5	20%
Occupation	Housewife	9	36%
	Entrepreneur	6	24%
	Civil Servant	5	20%
	Farmer	5	20%

Based on table 1 above, it shows that almost half or 36% of women of childbearing age 31-35, 72% of women of childbearing age have more than 2 children, the educational background of mothers who experienced pathological flour albus is mostly high school 56% and the occupation of Women of Childbearing Age who experienced pathological flour albus: 36% of them are housewives.

**Pathological Flour Albus Before Infusion of Basil Leaves**

Table 2. Distribution of Pathological Flour Albus Before Infusion of Basil Leaves in WUS

No	Category	Frequency	Percentage (%)
1.	Mild	0	0%
2.	Moderate	7	28%
3.	Severe	18	72%
<b>Total</b>		25	100%

Based on table 2 above, it shows that most the women (72%) before being given basil (Ocimum Sanctum L) leaves were experiencing severe *Flour Albus*.

**Pathological Flour Albus After Infusion of Basil Leaves**

Table 3. Distribution of Pathological Flour Albus After Infusion of Basil Leaves in WUS

No	Category	Frequency	Percentage (%)
1.	Mild	15	60%
2.	Moderate	10	40%
3.	Severe	0	0%
<b>Total</b>		25	100%

Based on table 3 above, it shows that most or 60% of women of childbearing age after being given an infusion of basil leaves (Ocimum Sanctum L) were experiencing mild *Flour Albus*.

Table 4. Wilcoxon Signed Rank Test on the effect of giving basil leaf infusion before and after being given basil leaf infusion

No	Before	After						Total	
		Mild		Moderate		Severe		Σ	%
		Σ	%	Σ	%	Σ	%		
1.	Mild	0	0%	0	0%	0	0%	0	0%
2.	Moderate	7	28%	0	0%	0	0%	7	100%
3.	Severe	8	32%	10	48%	0	0%	18	100%
<b>Total</b>		15	60%	10	40%	0	0%	25	100%

*P* = 0.000 *sign* *Z* = -4.562

From table 4 above, it can be seen that before being given the basil leaf infusion, most of the women (72%) were experiencing severe *Flour Albus* while after being given the basil leaf infusion, most of the women (60%) were experiencing mild *Flour Albus*.

The results of the analysis using the Sign Rank Test (Wilcoxon) using the SPSS for Windows Version 16.0 program on the effect of basil leaf infusion on pathological Flour albus in Women of Childbearing Age at Independent Midwifery Practice Ny. Aida Hartatik, S.ST it can be seen that the

value of  $P = 0.000$  sign  $Z = -4.5622$  where  $p < 0.05$  then  $H_1$  is accepted, meaning that there is a difference in pathological Flour Albus before and after the basil leaf infusion is given.

## DISCUSSION

### Pathological Flour Albus Before Infusion of Basil Leaves

Based on table 2 above, it shows that most the women (72%) before being given basil (*Ocimum Sanctum L*) leaves were experiencing severe *Flour Albus* it is influenced by age and parity. Based on table 1 above, it shows that most of the women of childbearing age (WUS) aged 31-35 years who experience vaginal discharge. This is not in accordance with the opinion expressed by<sup>13</sup> that the more mature a person's age, the level of knowledge of a person will be more mature or better in thinking and acting and the younger a person's age, it will affect the level of knowledge. Increasing age will increase knowledge and experience will be more mature so that they will be more understanding and experienced, including handling flour albus<sup>13</sup>. However, research conducted by<sup>14</sup> showed that there was no significant relationship between the level of knowledge and the incidence of pathological vaginal discharge<sup>14</sup>. People with good knowledge about vaginal discharge will still experience vaginal discharge if it is not balanced with changes in good behavior in maintaining the cleanliness of their genital organs. In adulthood, women begin to experience the aging process, so there is a regression or setback where the reproductive organs are not as good as normal<sup>15</sup>.

Based on table 1 above, it shows that most or 72% have more than 2 children. The more parity, the more likely the WUS will experience diseases. Women who give birth frequently are at risk of suffering from flour albus. This is associated with birth trauma, hormonal and nutritional changes during pregnancy. Postpartum infection and curettage can also be a source of risk for chronic pelvic infections, other reproductive disorders and infertility<sup>16</sup>. This is in line with research conducted by<sup>17</sup> that almost half (42.9%) of respondents who experienced flour albus were multipara<sup>17</sup>.

### Pathological Flour Albus After Infusion of Basil Leaves

Based on table 3 above, it shows that most or 60% of women of childbearing age after being given an infusion of basil leaves (*Ocimum Sanctum L*) were experiencing mild *Flour Albus* it is influenced by Education and Occupation. Based on table 1 above, it shows that 56% of women of childbearing age have high school education. Flour albus does not recognize the level of education, economy, and socio-culture, although it is mostly found in women with low education and socioeconomic status. Education is a learning process that has been taken formally in educational institutions. The higher a person's level of education, the higher the level of knowledge and awareness possessed by people in receiving information. The level of higher education will differ in the way a person evaluates, so that a person's desire or motivation is different for death due to diseases in his reproductive organs due to the low knowledge and awareness of women<sup>18</sup>.

Based on table 1 above, it shows that almost half or 36% of women of childbearing age who experience flour albus are housewives. The physical condition of women who are drained of energy and psychologically due to heavy work or other extra activities is one of the causes of vaginal discharge. The cause of vaginal discharge from fatigue is marked to appear only when the body condition is very tired and is normal again when the body is normal<sup>19</sup>.

### **Therapeutic Effectiveness of Infusion of Basil Leaves Against Pathological Flour Albus**

From the results of the examination on women of childbearing age at Independent Midwifery Practice Ny. Aida Hartatik, S.ST in February-June 2019 found that most or 60% of women of childbearing age (WUS) had flour albus, with 7 people experiencing moderate vaginal discharge and 18 people experiencing severe vaginal discharge. Several factors that could cause the condition of pathological vaginal discharge experienced by respondents include age (>31 years old), having a history of multiparity, education level and occupation.

The results of the Wilcoxon Sign Rank Test about the difference in flour albus before and after being given basil leaf infusion (*Ocimum Sanctum L*) with  $p = 0.000$  showed a significant value, ( $Z = -4.562$ ) where this means  $p \text{ sign} < 0.05$  so  $H_1$  is accepted meaning there is a difference in the reduction of pathological flour albus before and after being given basil leaf infusion in women of childbearing age (WUS) at Independent Midwifery Practice Ny. Aida Hartatik, S.ST

Based on research conducted by Desmara<sup>20</sup>, it was found that basil leaf extract (*Ocimum Sanctum L*) showed the presence of tannins, phenols, steroids, terpenoids, essential oils, eugenol and flavonoids. Basil leaves (*Ocimum Sanctum L*) have an effect on the growth of *Candida albicans*. This is because the active substances contained in basil leaves (*Ocimum Sanctum L*) act as antifungals<sup>20</sup> (Desmara et al., 2017). Basil leaves (*Ocimum Sanctum L*) have the effectiveness of essential oils and their components against antifungal drugs which are important in the fight against *Candida albicans*. Flavonoids and eugenol act as antioxidants that can neutralize free radicals, neutralize cholesterol, and have anti-cancer properties. This compound is also anti-microbial which can prevent the entry of bacteria, viruses, or fungi that harm the body. Basil leaves are very good for consumption by women, because the eugenol can kill the fungus that causes vaginal discharge<sup>20</sup>.

Currently, many anti-mycotic drugs are available for topical and systemic use for the treatment of vulvovaginal candidiasis. Treatment with imidazole antifungals including oral ketoconazole has opened up knowledge about the pathogenesis and duration of therapy for vulvovaginal candidiasis patients. The length of time required for treatment (more than 14 days) makes the results less effective and efficient for sufferers. As a result, as many as 50% of patients who seek treatment stop their treatment before the disease is completely cured<sup>20</sup>. Research<sup>21</sup> shows that the use of basil leaves is more effective for healing fungal diseases than the use of topical or systemic drugs, such as oral ketoconazole<sup>22</sup>.

From the results of the study above, it can be concluded that basil leaf infusion (*Ocimum*

Sanctum L) is a suitable alternative to reduce pathological flour albus with the essential oil content of basil leaves (*Ocimum sanctum L*) having antifungal and antimicrobial effects, namely the effect against *Stapylococcus aureus* and *Candida. albicans* causes vaginal discharge.

### CONCLUSIONS

From the results of the study above, it can be concluded that basil leaf infusion (*Ocimum Sanctum L*) is a suitable alternative to reduce pathological flour albus with the essential oil content of basil leaves having antifungal and antimicrobial effects, namely the effect against *Stapylococcus aureus* and *Candida. albicans* causes vaginal discharge. Based on the research conducted, it was found there was an effect of Infusion of basil leaves on pathological flour albus in women of childbearing age (WUS) at Independent Midwifery Practice Ny. Aida Hartatik, S.ST.

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