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THE EFFECT OF BOILED WATER OF THE RED BETEL LEAF TO REDUCING THE SYMPTOMS OF PATHOLOGICAL FLOUR ALBUS IN ADOLESCENTS IN MODERN BOARDING SCHOOLS IN KUTA BARO, THE DISTRICT OF ACEH BESAR

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Abstract

Background: Flour albus is a problem that is often encountered in adolescents. Female students who studied at modern Islamic boarding schools also complained about the same problem. Not maintaining personal hygiene and lack of knowledge is the main cause of flour albus in students. Handling flour albus can be done non-pharmacologically through the provision of red betel boiled water.
Method: This study a quasi-experiment method with a pretest-posttest control group design. The study involved 30 young women who experienced pathological flour albus. The respondents from two Islamic boarding schools. Fifteen teenager from Daruzzahidin Islamic Boarding School were given treatment and 15 teenager from Darul Hikmah Islamic Boarding School for the control group. The treatment was giving 100 ml of decoction of red betel leaf to wash the genitals. The treatment was carried out for 14 days. The sampling technique uses purposive sampling, according to the criteria set by the researcher.
Result: There were differences before and after the use of red betel boiled water and no differences before and after observation in the control group. Pretest results in the treatment group showed the incidence of pathological discharge in the moderate category of as many as 7 people (46.7%). For posttest results, the whitish category changed, where young women who were initially in the moderate category became whitish in the mild category, namely 9 people (60%).
Conclusion: There was an influence of the administration of boiled water of red betel on the incidence of pathological discharge. Hopefully, the policymakers will be able to increase adolescent knowledge about personal hygiene and non-pharmacological treatment to overcome flour albus.

Keywords : ***Fluor albus, red betel leaf, Adolescent, Boarding school***

Introduction

One of the critical areas in adolescent health is the reproductive organs. Reproductive health is an important component for women because women have a reproductive system that is sensitive to damage that can occur dysfunction or disease.1 Physical and sexual growth develops rapidly in adolescence. So it takes enough knowledge to take care of the reproductive organs.2 Improper treatment of reproductive organs can result in urinary tract infections, reproductive tract infections, scabies, cervical cancer, and flour albus. In 2017 WHO (World Health Organization) reported that the impact of the lack of knowledge of young women about reproductive organ care was UTI (urinary tract infection) disease as much as 30%, flour albus as much as 50%, and cervical cancer as many as 470,000.[3]

Flour albus is a discharge other than blood from the vaginal burrow out of the ordinary, whether smelly or not, accompanied by itching. The cause of normal (physiological) flour albus is influenced by certain hormones with the liquid being white and odorless and if a laboratory examination is carried out it does not show any abnormalities. While abnormal flour albus can be caused by infection or inflammation and cause itching.[4] The typical symptoms of pathological flour albus are condensed water, milky white in color or yellow or also green, liquid smells bad, feels itchy, and total fluid that comes out very much.[2]

The Indonesia Basic Health Research (Riskesdas) 2018 reported that the knowledge of adolescents aged 15-19 years related reproductive health was low, around 61% of them did not know about reproductive health and 21% did not know about how to maintain reproductive organs.[5] If the vagina is infected with germs of diseases such as fungi, parasites, bacteria, and viruses, the vaginal ecosystem will be disturbed, so that Soderling or lactobacillus bacteria eat glycogen produced by estrogen on the vaginal wall for growth and make the vaginal pH acidic, this cannot happen when the vaginal pH is alkaline. The acidic state of the vagina makes the germs of the disease develop and live lushly inside the vagina.[1]

The result of focus group discussion (FGD) in one of the largest Islamic boarding schools in Yogyakarta, showed that personal hygiene practices and student rooms were poor. The causes of poor sanitation in the Islamic boarding school environment are influenced by internal factors, such as the relatively young age of students, lack of independence in self-regulation, low awareness of hygiene and hygiene practices, laziness, stubbornness, and low sense of belonging to the facilities provided. In addition, external pressures contribute to poor hygiene practices, including the schedule of student activities, the influence of roommates and their willingness to maintain a common space, and the provision of items for the parents' necessities of life. The socioeconomic family may also have an impact on behavior.[8] Poor sanitation, can provoke the occurrence of infection in the area of genitalia.

One of the efforts that can be done to overcome flour albus is non-pharmacologically, namely by giving a decoction of red betel. Red betel contains antibacterial and antifungal. Chemical compounds found in red betel are known to have the potential to be antioxidants, anticancer, and antidiabetic. Meanwhile, the tannin content of red betel is proven to be used to treat flour albus, both pathological and physiological flour albus. Essential oils and ethanol extracts found in betel leaves have anti-fungal activity against *candida albican*.[6]

Several studies on the effect of boiled water feeding of betel leaves on the decrease in symptoms of flour albus in women of childbearing age, show almost similar results. The study used a type of green betel. There are very few studies that use red betel. The treatment given also varies, both in the number and duration of treatment.

The results of a study conducted by Lante et al, in 2019 showed that there was an influence of giving a decoction of green betel leaves on pathological flour albus in young women. The discharge that occurred at the Hidayatullah Islamic Boarding School in Ternate City was caused by this situation because many respondents did not understand the importance of maintaining the cleanliness of their female organs. In addition, respondents said they rarely get information and knowledge about reproductive health, especially the problem of flour albus.[7]

Islamic Boarding School (Islamic boarding school) Daruzzahidin and Darul Hikmah are located in Aceh Besar Regency. The level of education in the two islamic boarding schools is junior high school and high school. In a preliminary study, 38 students with pathological flour albus were found. Flour albus occurs due to a lack of personal hygiene and a lack of knowledge of maintaining genital organs. Most students do not seek treatment to treat flour albus.

Method

This quasi-experimental study with a pre-Test and Post-Test control group design approach involved students in two Islamic boarding schools (Islamic Boarding School) located in the district of Aceh Besar. The purposive sampling technique use for recruit of participants or sample. The sample was obtained that met the criteria of 30 respondents. The respondents were students with symptoms of pathological flour albus. The treatment group was 15 students from Daruzzahidin Islamic Boarding School and the control group was 15 students from Darul Hikmah Islamic Boarding School.

The sample in the treatment group was given a decoction of red betel as much as 750 ccs for 14 days to rinse the vagina. The solution is obtained from a mixture of 100 gr of red betel boiled with 750 ccs of water. Meanwhile, the control group was not given any treatment. The research process is assisted by an enumerator, namely the teacher supervisor of the student dormitory. On day 15, an evaluation of the symptoms of flour albus was carried out with the help of questionnaires in both groups. The

questionnaire contains 4 questions about the symptoms of flour albus

Result

a. Average Value of Symptoms of Flour Albus

Table 1 shows that the average symptoms of flour albus in the red betel group before treatment was 2.87 and after treatment decreased to 1.27. Meanwhile, the average symptoms of flour albus in the control group increased (in the pretest the average value was 2.80, then rising to 3.00 after post test)

Table 1. The Mean of Flour Albus Symptoms of Red Betel Group and Control Group

Group	N	Minimum	Maximum	Mean	SD
Red Betel Group Pretest	15	2	4	2,87	0,743
Red Betel Group Posttest	15	0	3	1,27	1,033
Pretest Control Group	15	2	4	2,80	0,676
Posttest Control Group	15	2	4	3,00	0,655

b. Effect of Red Betel on the Incidence of Pathological Flour Albus

The results of the Wilcoxon test showed the P-Value of the flour albus in the treatment group, before and after being given boiled water of red betel leaf was 0.001 (P<0.05). It was concluded that there is an influence of boiled water of red betel leaf on the decrease in symptoms of pathological flour albus in students in Islamic boarding schools. Meanwhile, the control group did not show changes in whitish symptoms with a P-value of 0.180 (P>0.05). The results showed that giving boiled water of red betel was effective in reducing the symptoms of flour albus

Table 2. The Effect of Red Betel on the Incidence of Pathological Flour Albus in Young Women in Islamic Boarding School, Aceh Besar Regency in 2022

Group	Test	Z	*P* Value
Red Betel	Pretest Postest	-3.223	0,001
Control	Pretest Postest	-1.342	0,180

Discussion

The results of this study are in line with Ernawati's in 2018, about the effect of red betel leaf boiled water on the decrease in whitish symptoms in women of childbearing age, the results showed that there was an influence of giving boiled water of red betel on reducing whitish symptoms in women of childbearing age with a p-*value* of 0.000.[9] The study conducted by Ghofar's , conclude that betel leaves contain antibacterial and antifungal 4.2%. The essential oil where the main components consist of phenols and their derivative compounds such as *kavikol, cevibetol, carvacol, betehlphenol, eugenol and allipyrocatechol*, in addition to these essential oils, betel leaf plants contain *compounds carotene, thiamine, riboflavin, nocotinic acid, vitamin C, tannins and amino acids.*[10]

Betel leaf is one of the plants that grows a lot in Indonesia, the efficacy of betel leaf is widely used by the people of Indonesia. Betel leaf has very efficacious ingredients and millions of health benefits. Betel leaf is a medicinal plant that has many benefits with a plant height of up to 15 meters, the stem is greenish-brown, round-shaped, concave, and lumpy which is where the roots come out. Betel leaves are shaped like a heart, pointed-pointed, grow crisscrossed, and stemmed, the slightly rough

texture is palpable and emits a pleasant smell when kneaded, leaf length 6-17.5 cm and width 3.5 cm.[6]

According to the assumptions of researchers who have made observations of the occurrence of flour albus in Daruzahidin and Darul Hikmah Islamic Boarding School, it is likely caused because the water used for bathing and washing the female area the water is not clean, where the water is cloudy and accommodated in a bathtub and looks dirty. The results of interviews with students are known that changing underwear is one time a day and some are 2 times a day in the morning and evening. Symptoms of flour albus are reduced after being given boiled water of red betel for 14 days because the content in red betel effectively overcomes flour albus. In addition, the healing of whitish is also caused by students obeying and regularly using betel leaf decoction, young women also said that they are happy to use betel leaf decoction because the flour albus experienced is reduced and feel comfortable when using betel leaf decoction.

Whereas in the control group there was no reduction in whitish symptoms because there was no action given on the symptoms of flour albus and also no knowledge was given on how to prevent flour albus. In addition, it is also caused because young women do not do good *personal hygiene*, where young women prefer to use panties whose material does not absorb

The average rate of healing of flour albus occurs faster at the age of 16 years, this is due to discipline and obedience in washing the genitals with betel leaves, that is, washing the genitals with betel leaves at night when going to bed with boiled water in a warm state.

Conclusion

Symptoms of flour albus in the group of students who were given red betel to rinse the vagina experienced a decrease in symptoms with a mean difference of 1.6. Giving red betel decoction is effective in reducing the symptoms of flour albus with *a p-value* of 0.001.

Conflict of Interest Declaration

The authors stated that this study does not have a conflict of interest, and also does not create a conflict of interest against the agency in connection with the research that has been carried out, either based on authorship, or publication.

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