Journal Of Nursing Practice
https://thejnp.org/
ISSN: 2614-3488 (print); 2614-3496 (online) Vol.7 No.2. April 2024. Page.368-377

The Effect of Giving Water Extract Boiled Beluntas Leaves on the Prevention of Vaginal Discharge in S1 Public Health Students at the STRADA Indonesia Institute of Health Sciences

Eri Puji Kumalasari[1*], Devy Putri Nursanti[2], Enjeles Sri Purnama Zet[3]
[1,2,3] *Department of Midwifery, Institut Ilmu Kesehatan STRADA Indonesia, Kediri, Indonesia*
**Corresponding author: ery21021989@gmail.com*

ABSTRACT
Background: The high rate of vaginal discharge in women is caused by infection of various fungi in the vagina by bacteria Thricmonas vaginalis and candida albicans. Excessive and abnormal vaginal discharge can be an early symptom of cervical cancer that can lead to death in women**.**
Purpose: The purpose of this study was to determine the effect of giving water extract of boiled beluntas leaves on the prevention of vaginal discharge in S1 Public Health students at the STRADA Indonesia Institute of Health Sciences.
Methods: This study used a pre-experimental method with a type of research one group pre test post test. The population in this study was all S1 Public Health students at the STRADA Indonesia Institute of Health Sciences and sampling using the simple random sampling method with a total of 84 respondents. Data analysis techniques used to test hypotheses are the Wilcoxon Test and data collection using questionnaires.
Results: Data analysis using the Wilcoxon test shows that the significance level is 0.000< α = 0.05 so that H0 is rejected and H1 is accepted which means that there is an effect of giving beluntas leaf boiled water extract on the prevention of leucorrhoea in S1 Public Health students at the STRADA Indonesia Institute of Health Sciences.
Conclusion: It is expected that female students who experience vaginal discharge can apply water extract of beluntas leaf decoction as a non-pharmacological drug that can be used if experiencing vaginal discharge.

Keywords: beluntas leaf, extract boiled, whiteness

Received February 10, 2024; Revised March 12, 2024; Accepted April 3, 2024
DOI: https://doi.org/10.30994/jnp.v7i2.457

ISSN: 2614-3488 (print); 2614-3496 (online) Vol.7 No.2. April 2024. Page.368-377

BACKGROUND

Vaginal discharge (Flour albus, leukorea, vaginal discharge) is a fluid that comes out of the genetalia of women is clear to white, lasts up to 6 days and is inconspicuous in color. This situation can turn pathological so that it becomes an infectious disease in the genitals if not treated at an early stage (Vangani & Kakkar, 2019). The risk of vaginal discharge can be experienced by sharing ages. Women of childbearing age have a higher risk of vaginal discharge compared to adolescents because in women of childbearing age often occur PID or pelvic Inflammatory Disease. In addition, excessive and abnormal vaginal discharge can also be an early symptom of cervical (Firmanila et al., 2016). There are two types of vaginal discharge, namely Normal vaginal discharge (physiological) is indeed a natural thing, however, abnormal vaginal discharge (pathological) can be a clue to a disease that must be treated (Djuanda, in Putri, 2018).

WHO says that adolescents in the world are almost 20% of the total world population. As many as 85% of adolescents in the world live in developing areas. The increasing adolescent population causes the need for improved health and social services for adolescents to increasingly become a concern in all corners of the world. BKKBN said that in 2016 the population of adolescents aged 10-24 years amounted to 66.3 million people out of a total population of 258.7 million so that one in four residents was teenagers. Based on data from the World Health Organization (WHO), the number of cases of leucorrhoea (flour albus) in East Java that occur in women of childbearing age is 70%. In Indonesia, as many as 75% of women have experienced vaginal discharge at least once in their lives and 45% of them experience vaginal discharge twice or more. Improper external genetalia treatment can be a trigger for vaginal discharge, especially pathological vaginal discharge. In East Java, adolescents who experience Fluor Albus by 75% (Muji Sulistyowati & Cici Kurniawati, 2014). The incidence of vaginal discharge in Indonesia continues to increase every year to reach 70% (Melina & Ringringringulu, 2021).

Based on the results of a preliminary study, data was obtained from S1 Public Health students at the Strada Indonesia Health Imu Institute as many as 106 people. The results of a preliminary study of 18 female students there were 10 female students who experienced vaginal discharge, 6 female students said they felt itchy on their genitals so they felt worried about their condition, and 2 other female students complained of greenish-yellow discharge like phlegm and there were also those who complained of clear and watery discharge at certain times only. The main cause of vaginal discharge is due to infection of the vagina by the bacteria Thiricmonas vaginalis and candida albicans. Factors causing vaginal discharge are infectious factors caused by germs, fungi, viruses and parasites. Non-infectious factors are caused by the entry of foreign objects into the vagina such as poor vaginal hygiene, rarely changing underwear and rarely changing pads during menstruation. The cleanliness of the genetalia area has an important role in triggering infection. Lack of knowledge of adolescent girls about genetalia care will affect the lack of awareness about the importance of caring for the cleanliness of the reproductive organs and this affects adolescent habits which result in problems in the female area (Indrawati & Pitriyani, 2012). Vaginal discharge can also be caused by hormonal disorders, stress, fatigue, chronic inflammation of the genitals, and there are diseases in the reproductive organs and cervical cancer, it will cause discomfort and affect self-confidence in women (Fadilla et al., 2014). Beluntas (Pluchea indica L.) is a plant belonging to the herbaceous family Asteraceae that grows wildly in dry areas on hard and rocky soils or planted as a hedge. Beluntas is often used as traditional medicine, namely to eliminate body and mouth odor, overcome lack of appetite, overcome digestive disorders in children, eliminate pain in rheumatism, bone pain and lumbago, reduce fever, overcome

vaginal discharge and irregular menstruation, this is due to the content of phytochemical compounds in beluntas leaves (Halim 2015).

Based on several studies, it is known that beluntas plants have pharmacological activities such as anti-oxidant, anti-inflammatory and analgesic. It can be known that beluntas leaves are useful as an anti-leucorrhoea treatment caused by fungi, therefore beluntas leaves have anti-fungal therapy. The beneficial content contained in beluntas leaves include alkaloids, flavonoids, tannins, essential oils, chlorogenic acid, sodium, potassium, magnesium, and phosphorus while the roots contain flavonoids and tannins (Agoes, 2014). The bioactivity content of beluntas leaves includes antioxidants, anti-inflammatory, antimicrobial, antinosiceptor, antituberculosis, antiproliferation of cancer cells, antidiarrheal, and antitussive (Suriyaphan, 2014).

Efforts to prevent vaginal discharge that can be given such as consuming traditional herbs such as betel leaf boiled water, sour turmeric, kencur rice, counseling, providing knowledge about reproductive health and providing adolescent health services including services for reproductive health (pusdatin, 2015).

Based on the above phenomenon, the researcher is interested in conducting research by formulating in the title: "The Effect of Giving Beluntas Leaf Boiled Water Extract on Public Health Students related to Whiteness Prevention at the STRADA Indonesia Institute of Health Sciences".

METHOD

This study used a pre-experimental method with a type of research one group pre test post test. The sample in this study was some S1 Public Health students at the STRADA Indonesia Institute of Health Sciences and sampling using the simple random sampling method with a total of 84 respondents. This study conducted at the STRADA Indonesia Institute of Health Sciences in April 2023. Instrument and Data collection using questionnaires and SOPs. The data analysis technique used to test the hypothesis is the Wilcoxon Test to determine the significant level of $\alpha = 0.05$ if P value > 0.05 then H1 is rejected or H0 is accepted and if P value ≤ 0.05 then H1 is accepted and H0 is rejected.

RESULTS

General Data

Age	Frequency	Percentage (%)
17 Years	19	22.6
>17-25 Year	44	52.4
>25 Year	21	25.0
Total	84	100.0
History of the disease	Frequency	Percentage (%)
None	57	67.9
Disminorea	14	16.7
Stomach	11	13.1
High tension	2	2.4
Total	84	100.0

Based on the table above, it shows that the age of respondents is known to most respondents with the age of >17-25 years, which is as many as 44 (52.4%) respondents. History of disease is known that most respondents with a history of disease are absent, namely as many as 57 (67.9%) respondents.

Custom Data

No	PRE	Frequency	Percentage (%)
1	No vaginal discharge	0	0
2	Mild vaginal discharge	55	65.5
3	Moderate vaginal discharge	29	34.5
4	Heavy vaginal discharge	0	0
	Total	84	100.0
No	POST	Frequency	Percentage (%)
1	No vaginal discharge	47	56.0
2	Mild vaginal discharge	33	39.3
3	Moderate vaginal discharge	4	4.8
4	Heavy vaginal discharge	0	0
	Total	84	100.0

Based on the table above, it shows that the incidence of vaginal discharge in S1 Public Health students at the STRADA Indonesia Institute of Health Sciences before using water extract boiled beluntas leaves is known that most respondents in the mild vaginal discharge category as many as 55 (65.5%) respondents. After using water extract of boiled beluntas leaves, it was known that almost half of respondents with a non-whitish category, namely as many as 47 (56.0%) respondents.

Cross-tabulated results between variables

			Whitish POST								Total	
			No vaginal discharge		Light		Keep		Heavy			
			F	%	F	%	F	%	F	%	F	%
Vaginal discharge PRE	Light	Frequency	42	50.0%	13	15.5%	0	0.0%	0	0.0%	55	65.5%
	Keep	Frequency	5	6.0%	20	23.8%	4	4.8%	0	0.0%	29	34.5%
	Heavy	Frequency	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Total			47	56.0%	33	39.3%	4	4.8%	0	0.0%	84	100.0%

Based on the table above, it shows that half of the respondenst who experienced mild vaginal discharge before giving beluntas leaf boiled water extract experienced no vaginal discharge after giving beluntas boiled water extract, namely as many as 42 (50.0 %) people out of total of 84 respondent.

Data Analysis

Wilcoxon Statistical Test Results

Variable	Significant value
The Effect of Beluntas Leaf Decoction Water Extract on the Prevention of Whiteness in Public Health Students at the STRADA Indonesia Institute of Health Sciences	0,000

Based on the table above, the results of the statistical test analysis carried out are known to be significant values (Wilcoxon p = 0.000<0.05) so that H0 is rejected and H1 is accepted, which means that there is an Effect of the Effect of Beluntas Leaf Boiled Water

Extract on the Prevention of Whiteness in Public Health Students at the STRADA Indonesia Institute of Health Sciences.

DISCUSSION

Vaginal discharge in S1 Public Health students at the STRADA Indonesia Institute of Health Sciences before using water extract boiled from Beluntas leaves

Based on research conducted, it is known that leucorrhoea in S1 Public Health students at the STRADA Indonesia Institute of Health Sciences before using water extract of beluntas leaf decoction is known that most respondents in the mild vaginal discharge category are as many as 55 (65.5%) respondents. This is supported by the statement of some female students do not know herbal ingredients such as water extract boiled water beluntas leaves in preventing vaginal discharge. The statements of some students also said that they often use vaginal cleansing soap only because they are persuaded by advertisements in the mass media and most of them just follow with other friends without knowing the extent of vaginal cleansing used and the benefits obtained. Using vaginal cleansing soap is indeed one way to treat and prevent vaginal discharge with proper indications. However, the demukian in the use of cleaning soap is not right in addition to killing harmful bacteria but can also kill normal bacteria around the female genitals, even though normal bacteria must be there that function as a defense system from bad bacteria. With the death of good bacteria, vaginal discharge will easily occur.

In addition, there are also some female students who consume pharmacological drugs such as metronidazole, nystatin, miconazole, clotrimazole, friconazole, antiseptic solution, and dexametazone to drink so that the use of boiled water extract of beluntas leaves is not optimal because female students also simultaneously use pharmacological drugs. Therefore, to find out the maximum results on the use of beluntas leaf water extract, female students must first stop using pharmacological drugs so that the use of boiled water extract of beluntas leaves becomes more optimal.

Vaginal discharge or also called white discharge or vaginal discharge, or leukore or flour albus. Vaginal discharge that occurs in women can be both normal and abnormal. Normal vaginal discharge occurs according to the menstrual process. Normal symptoms of vaginal discharge are odorless, clear, not itchy, and not sore. Abnormal vaginal discharge occurs due to infection from various micro-organisms, including bacteria, fungi, and parasites. Abnormal vaginal discharge is characterized by a large amount of milk, 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 differ according to the cause of vaginal discharge (Gusti Ayu Marhaeni, 2016).

In the opinion of researchers that vaginal discharge that occurs in female students is caused by the use of vaginal cleansing soap that is not suitable or even because of a healthy lifestyle that is still low, as well as poor vulvar hygiene and the use of underwear that is too tight and not made of cotton so that it causes moisture and irritation around the female organs. By some of these things it becomes one of the triggers for vaginal discharge in female students. In addition, female students also do not know the use of herbal ingredients such as the use of water extract of boiled beluntas leaves to overcome vaginal discharge. The behavior of female students is only buying and using drugs from nearby pharmacies such as amoxicillin and dexametazone drugs to take.

Based on the results of cross-tabulation between age and the incidence of mild vaginal discharge in S1 Public Health students at the STRADA Indonesia Institute of Health Sciences before using water extract of beluntas leaf decoction, it was found that 32 (58.2%)

respondents aged > 17-25 years in the mild vaginal discharge category. This shows that as students get older, there will still be vaginal discharge which is caused by low healthy living behavior and lack of information about vaginal discharge. This is supported by the statement of one female student that she feels embarrassed to ask peers if she experiences vaginal discharge, because of the increasing age of female students only overcome the problem of vaginal discharge themselves. The results of a brief interview conducted also found that the personal hygiene attitude of female students is still less characterized by wearing nylon underwear which can cause excessive moisture that encourages the emergence of bad bacteria, and not precisely how to clean the vagina after defecation / BAK, where the correct way to clean the vagina is to clean from front to back (from the vulva to the anus).

Age is closely related to a person's knowledge in carrying out activities. Where the more mature a person's age, the more widespread knowledge and tend to be active in seeking health information about the handling of vaginal discharge that is being experienced. Sufficient knowledge will be able to change a person's attitude and behavior. Vice versa where if a person's knowledge is lacking, they will tend not to be active in seeking information about how to deal with vaginal discharge optimally, as well as the use of water extracts decoction of beluntas leaves. Thus, the more mature the age of female students, the more positive attitudes and behaviors will be towards handling leucorrhoea (Notoatmodjo, 2016). In the opinion of researchers that the increasing age of vaginal discharge, the female student feels embarrassed to ask about the correct handling of vaginal discharge. Female students only overcome vaginal discharge by consuming drugs purchased from pharmacies. The behavior of female students also does not see a doctor because of the perception that vaginal discharge is normal and will disappear by itself.

Based on the results of cross-tabulation between disease history in S1 Public Health Students at the STRADA Indonesia Institute of Health Sciences before giving water extract boiled beluntas leaves, it was found that almost half 36 (42.9%) respondents with a history of disease were not in the category of none. According to the CDC (2014) and Gerstman (2013), disease history is the course of the development of a disease in an individual, from exposure to the individual by the disease to the completion of the disease. History of the disease is not always directly related to the incidence of vaginal discharge in women, but in some cases a history of certain diseases can be a risk factor that increases the likelihood of vaginal discharge. For example, sexually transmitted infections such as fungal or bacterial infections, such as candidiasis or bacterial vaginosis, can cause vaginal discharge. If a person has a history of such infections, it is likely that they are more susceptible to vaginal discharge in the future. However, there are certain medical conditions such as diabetes, menopause, or hormonal disorders that can also affect the balance of vaginal flora and cause vaginal discharge. A history of diseases such as diabetes can affect sugar levels in the body and create a favorable environment for the growth of microorganisme in the vagina.

In the opinion of researchers, the history of diseases experienced by female students does not have a significant effect on the occurrence of vaginal discharge. The history of diseases associated with the incidence of vaginal discharge includes a history of diseases associated with sexually transmitted infections such as candidiasis or bacterial vaginosis can increase the risk of abnormal vaginal discharge. This infection can disrupt the balance of vaginal flora and cause changes in fluid output. Therefore, female students need to maintain a healthy lifestyle, correct personal hygiene in order to avoid various other dangerous diseases that can trigger vaginal discharge.

Leucorrhoea In S1 Public Health Students At The STRADA Indonesia Institute Of Health Sciences After Using Water Extract Boiled Beluntas Leaves

Based on the results of the study, it is known that the incidence of vaginal discharge in S1 Public Health students at the STRADA Indonesia Institute of Health Sciences after using water extract boiled beluntas leaves is known that there is a change that almost some respondents who experience mild vaginal discharge in the category of not vaginal discharge as much as 47 (56.0%). This is supported by the statement of one of the female students that immunizing boiled water extract of beluntas leaves is a new thing and previously students did not know the efficacy of the plant. The statements of some female students said that they felt that there was a change in the complaints experienced after consuming water extract boiled beluntas leaves. The behavior of female students after knowing the efficacy of beluntas leaves where female students look for these plants around the boarding house / house which are then processed and drunk when experiencing vaginal discharge.

Beluntas (Pluchea indica L.) is known to have pharmacological activities such as anti-oxidant, anti-inflammatory and analgesic. It can be known that beluntas leaves are useful as an anti-leucorrhoea treatment caused by fungi, therefore beluntas leaves have anti-fungal therapy. Beluntas plant contains pluchine compounds, saponins, polyphenols, tannins, sterols, sodium, amino acids, Vitamin C, flavonoids and others. Compounds that act as antifungals found in beluntas leaves include alkaloids, essential oils, flavonoids. Beluntas leaves have been scientifically proven to inhibit the growth of Candida albicans. The beneficial content contained in beluntas leaves include alkaloids, flavonoids, tannins, essential oils, chlorogenic acid, sodium, potassium, magnesium, and phosphorus while the roots contain flavonoids and tannins (Agoes, 2015). The bioactivity content of beluntas leaves includes antioxidants, anti-inflammatory, antimicrobial, antinosiceptor, antituberculosis, antiproliferation of cancer cells, antidiarrheal, and antitussive (Suriyaphan, 2015). In the opinion of researchers that drinking water extract boiled beluntas leaves is one way that can be done by students to be consumed when experiencing vaginal discharge. Because the water extract of beluntas leaves has anti-oxidant, anti-inflammatory and antifungal properties that have the ability to overcome and prevent vaginal discharge.

Based on the results of cross-tabulation between age and the incidence of leucorrhoea in S1 Public Health Students at the STRADA Indonesia Institute of Health Sciences after giving water extract boiled beluntas leaves, it was found that almost half of 27 (32.1%) respondents aged > 17-25 years in the category of not vaginal discharge. A person's age is one of the determining factors of a person's attitude and behavior in carrying out an activity where the older a person gets, the better his role will be and vice versa (Notoatmodjo, 2017). In the opinion of researchers that if the behavior of female students always maintain and apply a healthy lifestyle and provide some herbal plants to be stored and at any time can be used when experiencing leucorrhoea problems is one of the positive things done for the prevention of vaginal discharge.

Based on the results of cross-tabulation between disease history and the incidence of vaginal discharge in S1 Health Students People at the STRADA Indonesia Institute of Health Sciences after giving water extract boiled beluntas leaves found that almost half 33 (39.3%) Respondents with a history of disease were not in the None category. The history of the disease is course of the disease in individuals from pathological onset ("appearance") up to resulotion (either through complete recovery or ending in death) (Porta, M, ed. 2014).

In the opinion of researchers, the history of diseases experienced by respondents includes dysminorea, stomach, and high tension. In general, the history of the disease does not directly affect the incidence of vaginal discharge. In this case, the history of the disease has no effect on the administration of water extract of boiled beluntas leaves with the incidence of vaginal discharge in S1 Public Health students at the STRADA Indonesia

Institute of Health Sciences. Therefore, in order to avoid vaginal discharge and things that can worsen the condition of vaginal discharge which will then cause symptoms of pathological vaginal discharge, female students need to take preventive measures such as maintaining the cleanliness of the genital area and proper personal hygiene and applying a healthy lifestyle.

The Effect of Giving Beluntas Leaf Boiled Water Extract on the Prevention of Mild Vaginal Discharge in S1 Public Health Students at the STRADA Indonesia Institute of Health Sciences

Based on the results of data analysis shows that the significance level is 0.000< α = 0.05 so that H0 is rejected and H1 is accepted, which means that there is an effect of giving water extract boiled beluntas leaves on the prevention of vaginal discharge in S1 Public Health students at the STRADA Indonesia Institute of Health Sciences.

Vaginal discharge is a problem often experienced by women caused by fungal infections. Vaginal discharge can occur normally (physiologically) or abnormally / disease (pathophysiological). Normal vaginal discharge is odorless or clear, odorless, not excessive and does not cause complaints (Eckert and Lentz, 2015). According to Bahari (2015) Vaginal discharge is a problem often experienced by women caused by fungal infections. Vaginal discharge can occur normally (physiologically) or abnormally / disease (pathophysiological). Normal vaginal discharge is odorless or clear, odorless, not excessive and does not cause complaints (Eckert and Lentz, 2015). According to Bahari (2015) states The cause of vaginal discharge is triggered due to the presence of viruses, bacteria, germs, too tired activity, hormonal and on vulvar hygiene. Susanto (2016) stated that the cause of vaginal discharge from fatigue is marked to appear only when the body condition is very tired and ordinary again when the body is back to normal. The cause of vaginal discharge is triggered due to the presence of viruses, bacteria, germs, too tired activity, hormonal and on vulvar hygiene. Susanto (2016) stated that the cause of vaginal discharge from fatigue is marked to appear only when the body condition is very tired and ordinary again when the body is back to normal. Unsanitary behavior such as unclean water, underwear does not absorb sweat, the use of poor sanitary pads is one of the factors causing vaginal discharge (Trisnawati, 2021). Discomfort in activities, low self-esteem, anxiety about the possibility of cancer, stories to friends due to vaginal discharge experienced cause some women to seek help from a doctor, but some dissolve in healing efforts with self-medication such as consuming herbs (Sianturi, 2018). The beneficial content contained in beluntas leaves includes alkaloids, flavonoids, tannins, essential oils, chlorogenic acid, sodium, potassium, magnesium, and phosphorus. This content makes beluntas leaf plants have antioxidant, anti-inflammatory, antimicrobial, antinosiceptor, antituberculosis, antiproliferation of cancer cells, antidiarrheal, and antitussive (Suriyaphan, 2014).

Prevention of mild vaginal discharge that can be given such as consuming herbal ingredients such as betel leaf decoction, honey turmeric, kencur rice, sour turmeric, as well as providing counseling and knowledge about reproductive health and providing health services to adolescents that can meet adolescent health needs including reproductive health services. So that both female students and adolescents who experience abnormal vaginal discharge can immediately see a doctor, so that further examination can be carried out to find out the cause of the vaginal discharge and then appropriate treatment and therapy can be given. Normal vaginal discharge is indeed a natural thing, but if abnormal discharge can be a clue that there are other diseases that must be treated. Students are expected to be able to regulate a healthy lifestyle and proper vulvar hygiene to prevent excessive vaginal discharge.

In the opinion of researchers, female students can make beluntas leaves as an

alternative to traditional medicine that can be used to prevent vaginal discharge. Where beluntas leaf plants have benefits as anti-oxidant, anti-inflammatory and antifungal that have the ability to overcome and prevent the occurrence of vaginal discharge.

CONCLUSION

Based on the results of the study, it can be concluded that the incidence of leucorrhoea in female students of S1 Indonesian Public Health at the STRADA Indonesia Institute of Health Sciences before using water extract boiled beluntas leaves is known that most respondents in the mild vaginal discharge category are as many as 55 (65.5%) respondents. The incidence of leucorrhoea in Indonesian Public Health S1 students at the STRADA Indonesia Institute of Health Sciences after using water extract boiled beluntas leaves is known that there is a change that most respondents who experience mild vaginal discharge in the non-whitish category as many as 47 (56.0%) respondents. The results of the data analysis showed that the significance level was 0.000< α = 0.05 so that H0 was rejected and H1 was accepted, which means that there was an effect of giving Beluntas leaf boiled water extract on the prevention of vaginal discharge in S1 Public Health students at the STRADA Indonesia Institute of Health Sciences. For respondents, it is hoped that S1 Public Health students at the STRADA Indonesia Institute of Health Sciences can take advantage of boiled water extract of beluntas leaves which can be made by themselves when experiencing vaginal discharge. For future researchers, this research is expected to be used as a guideline and basic data for future researchers and can examine other alternatives related to the prevention of leucorrhoea.

REFERENCES

Agoes, A. (2014). *Tanaman Obat Indonesia*. Salemba Medika.

Anggraini, E., & Wulandari, P. (2020). The Effectiveness of Giving Betel Leaves in Overcoming Flour Albus Teenagers. *Proceedings of the International Conference on Nursing and Health Sciences*, *1*(1), 123–128.

Bahari, H. (2016). *Cara Mudah Atasi Keputihan* (2nd ed.). Buku Biru.

CDC. (2019). *Centers for Disease Control and Prevention, National Center for Immunization and Respiratory Diseases, Division of Viral Diseases; Coronavirus disease 2019 (COVID-19). Are you at higher risk for severe illness?*.

Eckert, L., & Lentz, G. (2015). *Genital tract infections: vulva, vagina, cervix, toxic shock syndrome, endometritis, and salpingitis. In: Gershenson DM, Lentz GM, Valea FA, Lobo RA, eds. Comprehensive Gynecology.* (8th ed.). Elsevier.

Fadilla, E., Mewengkang, M., & Wantania, J. (2014). Pengetahuan Ibu Tentang Keputihan Di Kota Manado. *E-CliniC*, *2*(2). https://doi.org/10.35790/ecl.2.2.2014.4696

Firmanila, F., Dewi, Y. I., & Kristiani, D. (2016). Pengaruh Penggunaan Air Rebusan Daun Sirih Merah terhadap Keputihan pada Wanita Usia Subur (WUS) di Wilayah Kerja Puskesmas Rawat Inap Tenayan Raya. *Jurnal Ners Indonesia*, *6*(1), 9–18.

Gerstman, B. B. (2013). *Epidemiology Kept Simple : An Introduction to Traditional and Modern Epidemiology*.

Halim, M. O., Widyawati, P. S., & Budianta, T. D. W. (2015). Pengaruh Proporsi Tepung Daun Beluntas (Pluchea Indica Less) Dan Teh Hitam Terhadap Sifat Fisikokimia, Sifat Organoleptik, Dan Aktivitas Antioksidan Produk Minuman (Effect of beluntas leaves (Pluchea indica less) and black tea powders proportion on physic. *Jurnal Teknologi Pangan Dan Gizi*, *14*(1), 10–16. https://media.neliti.com/media/publications/232287-pengaruh-proporsi-tepung-daun-beluntas-p-983554cb.pdf

Indrawati, & Pitriyani. (2012). Hubungan Personal Hygiene Organ Genitalia dengan Kejadian Kanker Serviks di RSUP Dr. Kariyadi Kota Semarang. *Dinamika Kesehatan: Jurnal Kebidanan Dan Keperawatan*, *2*(1).

Marhaeni, G. A. (2016). Keputihan pada Wanita. *Jurnal Skala Husada*, *13*(1). https://doi.org/DOI: https://doi.org/10.33992/jsh:tjoh.v13i1.67

Melina, F., & Ringringringulu, N. M. (2021). Gambaran Tingkat Pengetahuan Remaja Putri Tentang Keputihan Di Sekolah Tinggi Ilmu Kesehatan Yogyakarta Fitria Melina 1 , Nensi Maria Ringringringulu 2. *Sekolah Tinggi Ilmu Kesehatan Yogyakarta*, *12*, 1–12.

Muji Sulistyowati, & Cici Kurniawati. (2014). Aplikasi Teori Health Belief Model Dalam Pencegahan Keputihan Patologis. *Promkes*, *2*, 117–127.

Notoatmojo, S. (2016). *Health promotion and health behavior*. Rineka Cipta.

Porta. (2014). *A Dictionary of Epidemiology*. University Press.

Putri, P. S. (2018). *Jurnal Faktor-Faktor yang Berhubungan dengan Pencegahan Keputihan (Fluor Albus) pada Remaja Madya di SMA Al Ulum Medan* [Universitas Sumatera Utara]. http://repositori.usu.ac.id/handle/123456789/6476

Sianturi, D. (2018). , *Efektivitas Pemberian Daun Sirih Merah dalam Mengatasi Keputihan Patologis pada Wanita Usia Subur di SMA Santo Thomas 1 Medan*.

Suriyaphan, O. (2014). Nutrition, health benefits and applications of Pluchea indica (L.) Less leaves. *Mahidol University Journal of Pharmaceutical Sciences*, *41*(4), 1–10.

Susanto. (2016). *Teori Belajar dan Pembelajaran*. Prenada Media Group.

Trisnawati, I. (2018). Faktor-Faktor yang Berhubungan Dengan Keputihan Patologis pada Wanita Usia Subur yang Bekerja di PT Unilever Cikarang Bekasi. *Jurnal Penelitian Kesehatan Suara Forikes*, *9*(1), 45–50.

Vangani, A. K., & Kakkar, P. (2019). Efficacy of Homoeopathy in Case of Fluor albus-a Case Study. *International Educational Applied Research Journal (IEARJ)*, *03*(07), 100–104. http://iearj.com/upload/23-Dr. Anil Kumar Vangani.pdf