GREEN BETEL LEAF DECOCTION FOR DISCHARGE COMPLAINTS OF TEENAGE GIRLS IN HIDAYATULLAH ISLAMIC BOARDING SCHOOL TERNATE CITY

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ABSTRACT

One of the problems related to reproductive health is the risk of vaginal discharge. Vaginal discharge is an abnormal vaginal secretion in women. Excessive and abnormal can be an early symptoms of cervical cancer. the reality in society is that there are still many women who are reluctant to seek treatment because of prudence and consider it taboo to keep it secret. So, an alternative in the treatment of abnormal vaginal discharge would be to use traditional medicines that are cheaper and easier to find. The purpose of this study was to determine the effect of green betel leaf stew on complaints of vaginal discharge in adolescent girls at the Hidayatullah Islamic Boarding School, Ternate City. This type of research used an experimental Quasy design with One Group Pretest Posttest design. The sampling technique used was a total sample of 32 young women. The research was carried out from September to November 2019. The statistical test was non-parametric (Wilcoxon test). The Wilcoxon sign rank test statistic results obtained a p-value of 0.000 ($p < 0.05$). Conclusion: there is a significant difference before and after administration of green betel leaf decoction on pathological vaginal discharge in teenage girls.
Keywords: Betel Leaf; Discharge; Teenage Girls.

INTRODUCTION

In the development of the human life cycle, puberty is a very important period after passing childhood to adulthood which occurs between the ages of 10-19 years. During this period, many problems arise such as reproductive health. This is because adolescence is a period of rapid growth and development both physically, biologically, psychologically, and intellectually.[1]

Discharge (leukorrhea/fluor albus/vaginal discharge) is the secretion of non-blood liquid from the female genitals (vagina). Pathological vaginal discharge happens due to infection mostly caused by *bacterial vaginosis, Trichomonas vaginalis* and *Candidiasis*.[2] Excessive and abnormal vaginal discharge can be an early symptom of cervical cancer. Data obtained from the IMS Clinic of the Kalumata Health Center, Ternate City, from January to December 2018, found 198 cases of candidiasis. This infection can lead to infertility, ectopic pregnancy, and cervical cancer which is the number one killer for women. The incidence of cervical cancer is estimated at 100 per 100,000 population per year, which can lead to death.

The vaginal discharge tends to occur due to the lack of awareness to maintain health, especially the health of the genital organs. In addition, vaginal discharge is often associated with acidity in the area around the vagina, which can occur due to an unbalanced vaginal pH. External factors include lack of personal hygiene, tight underwear, and the use of public toilets that are contaminated with bacteria.[3]

The boarding school usually prioritizes simplicity for students so that it can be one of the factors that influence health behavior habits such as lacking personal hygiene and can cause the low quality of adolescent health. On other hand, students have a very hectic activity. These activities start from before dawn until they go back to sleep, causing the students to be less concerned about their personal hygiene, especially their genitalia which results in vaginal discharge.[4]

Abnormal vaginal discharge can be treated with the use of medicines that effectively can against antifungals. However, there are still many women who are reluctant to seek treatment for reasons of shame and it is taboo so that it must be kept secret. Thus, an alternative in the treatment of candida vulvovaginal fungus would be to use traditional medicines that are easier to find and cheaper so that it is necessary to extract alternative medicines from traditional medicinal plants which are empirically often used by the community.

The diversity of plants in Indonesia has been used as a source of traditional medicine. One of them is Green Betel Leaf. Green betel leaf contains essential oils that consist of betlephenol, kavikol, sesquiterpene, hydroxycavinol,

cavibetol, estragole, eugenol, and carvanol. Literature states that green betel leaf also contains diastase enzymes, sugars, and tannins. While tannin is an astringent that reduces the secretion of fluid in the vaginal canal. The purpose of this study was to determine the effect of green betel leaf decoction on complaints of vaginal discharge in teenage girls at the Hidayatullah Islamic Boarding School, Ternate City.

METHODS

This study used an experimental Quasy research design with the type of One Group Pretest Posttest design, where the researchers conducted research on only one intervention group which was measured before and after being treated with green betel leaf decoction, there was no comparison group (control). The design in this study aimed to identify the effect of green betel leaf decoction on complaints of vaginal discharge in teenage girls before and after treatment. The study was carried out at the Hidayatullah Islamic Boarding School, Ternate City from September to November 2019. The population was all young women who had complaints of pathological vaginal discharge. The sampling technique used a total sampling method of 32 respondents. Data collection was obtained through observation sheets and structured interviews, the intervention of green betel leaf decoction was given for 7 days, used in the morning and evening by rinsing on the genitalia. Beforehand, respondents were explained about the benefits, objectives, research processes and guarantees of data confidentiality. Then, respondents who wanted to participate were asked to sign an informed consent.

RESULTS

Table 1. Distribution of Respondents by Age in Islamic Boarding Schools Hidayatullah

Respondent Age	n	%
14 years old	7	21.9
15 years old	13	40.6
16 years old	8	25.0
17 years old	3	9.4
18 years old	1	3.1
Total	32	100

Table 1, it shows that the age distribution of the most respondents is 15 years old which is 13 people (40.6%) while the age distribution of the least respondents is 18 years that is only 1 person (3.1%).

Table 2 Frequency Distribution of Respondents based on complaints of vaginal discharge before treatment at the Hidayatullah Islamic Boarding School

Discharge Complaints	n	%
Itching	30	93.8
Unpleasant Odor	27	48.4
Excessive Liquid	31	96.9
Colored Liquid (Yellow/Green/Grey)	17	53.1
Painful and Heat	18	56.3
Thick Liquid	30	93.8
Disturbing the activities	25	78.1
Complaints more than 7 days	24	75
Sticky and Spotting	30	93.8
Irritation	18	56.3

Table 2 shows that before the treatment, all respondents had complaints of vaginal discharge, and most of the respondents complained of a lot of discharge from the vagina (96%), itching (93.8%), thickened liquid (93.8%) and sticky and left spots on the underwear. (93.8%).

Table 3 Frequency Distribution of Respondents based on complaints of vaginal discharge after treatment at the Hidayatullah Islamic Boarding School

Discharge Complaints	n	%
Itching	4	12.5
Unpleasant Odor	0	0
Excessive Liquid	2	6.3
Colored Liquid (Yellow/Green/Grey)	0	0
Painful and Heat	0	0
Thick Liquid	3	9.4
Disturbing the activities	2	6.3
Complaints more than 7 days	3	9.4
Sticky and Spotting	4	12.5
Irritation	2	6.3

From table 3 it can be explained that after the treatment, almost most of the respondents stated that the complaints of vaginal discharge were reduced and there were no complaints at all. This is shown in the disappearance of complaints, namely the genital organs are odorless (0%), no yellow/greenish/grey (0%), and no longer feel pain and heat (0%).

Table 4 Distribution of Respondents based on the comparison before and after being given treatment along with the value of the Wilcoxon Test at the Hidayahtullah Islamic Boarding School

Discharge Complaints	Before		After		p
	N	%	N	%	
Itching	30	93.8	4	12.5	0.000
Unpleasant Odor	27	48.4	0	0	
Excessive Liquid	31	96.9	2	6.3	
Colored Liquid (Yellow/Green/Grey)	17	53.1	0	0	
Painful and Heat	18	56.3	0	0	
Thick Liquid	30	93.8	3	9.4	
Disturbing the activities	25	78.1	2	6.3	
Complaints more than 7 days	24	75	3	9.4	
Sticky and Spotting	30	93.8	4	12.5	
Irritation	18	56.3	2	6.3	

Table 4 above provides an overview of the changes in the number of respondents who experience complaints of vaginal discharge, this can be seen from the comparison of the percentage before and after the respondents were treated. To test whether the changes were significant, a statistical test (Wilcoxon sign sitest) was performed. The results showed a significance level (p) of 0.000, then compared with an alpha value (α) of 0.05. The decision making criteria was rejected to H0 : $p < \alpha$. H0: The change was not significant, while Ha: The change was significant and meaningful.
Thus, it can be decided that by looking at the comparison of the *Wilcoxon sign sitest* value with an alpha value of $0.000 < 0.05$, the decision was rejecting H0 and accepting Ha or it can be explained that the change after being given treatment with decoction of betel leaf was significant and it reduces the symptoms of vaginal discharge.

DISCUSSION

Frequency of tenaage girls age at Hidayatullah Islamic Boarding School Ternate

In this study, it was found that the age distribution of the majority of respondents was 15 years old who were categorized as middle teens and underwent education in grade 1 Madrasah Aliyah Ulul Albaab (Hidayatullah Putri Islamic Boarding School). According to the Indonesian Ministry of Health (2015), the age factor in early and middle adolescents can influence a person to gain knowledge because it is caused by the cognitive maturity factor which is still lacking compared to late adolescence. Statistical data in Indonesia in 2011, from 43.3 million adolescents aged 15-24 years behaved unhealthy, which is one of the causes of vaginal discharge. This is in line with research conducted by Nana & Erry (2013) at the Hasanatul Barokah Islamic Boarding School, Tambusai District regarding vaginal discharge, that the majority of middle-aged adolescents have less knowledge and only a few have good knowledge. The knowledge in question is certainly correlated with personal hygiene behavior, where the incidence of pathological vaginal discharge is more common in women who have poor hygiene behavior.

Complaints of vaginal discharge before giving the decoction of green betel leaves

The fact shows that all women experience vaginal discharge at certain times, such as during pregnancy, before menstruation, after menstruation, during the postpartum period (after giving birth), being fertile (less than 2 weeks before the next menstruation), and after intercourse. This is normal vaginal discharge. Vaginal discharge is considered to be abnormal if the discharge have excessive liquid and continuously produced by vagina, the color of the liquid is not clear like yellow or green, itching, unpleasant odor that interfere with daily activities.[5]

According to the results of interviews, from the 32 respondents before being treated by the decoction of green betel leaf, there are 30 respondents experienced itching, 31 respondents had excessive liquid, 27 respondents had odor complaints, 17 respondents had yellowish discharge, 18 respondents felt painful, 30 respondents complained of thick discharge, 25 respondents complained of disturbing activities, 24 respondents experienced discharge for more than 7 days, and 18 respondents complained of irritation. This State occurred because many respondents do not understand the importance of maintaining the cleanliness of their female organs. Besides that, respondents said they rarely get information and knowledge about reproductive health, especially the problem of vaginal discharge, even some respondents said that they are ashamed to submit complaints and ignore these complaints because they consider vaginal discharge as a problem which is normal for women. Whereas the symptoms of vaginal discharge if not handled properly will cause reproductive health problems.[6]

Poor hygiene behavior is one of the triggers for pathological or abnormal vaginal discharge. This is in line with Sari's research (2012) showing that there is a relationship between hygiene behavior and the incidence of pathological vaginal discharge. The results of the interview with researchers, respondents said that they did not get used to drying the vagina after urinating or defecating, they also did not apply the way to clean the vagina from front to back, rarely changed panties twice a day. A part of that, the condition of the washroom in school was inadequate which can be a source of bacteria and fungi. Also, the routine activities carried out by students are very dense. This activity starts before dawn until you go back to sleep, causing a tired body condition. These inappropriate behaviors and inhygienic washroom can cause someone to get infected by fungi easily so that abnormal discharge may happened in those states.[7]

According to Kuncoro (2012), another factor that can affect vaginal discharge is physical fatigue where the condition experienced by a person is due to the increased energy expenditure because the body have to work excessively which results in suppression of the hormone estrogen, decreased secretion of the hormone estrogen causes a decrease in glycogen levels. Glycogen is used by Lactobacillus doderlein for metabolism, the by-product of this metabolism is lactic acid which is used to maintain vaginal acidity. If a small amount of lactic acid is produced, bacteria, fungi, and parasites can easily grow and cause vaginal discharge. Furthermore, an exhausted body physically and psychologically stress due to the density of daily activities can affect the work of hormones in a woman's body, including triggering an increase in the hormone estrogen, the influence of the hormone can trigger vaginal discharge in women. In addition, the nutritional adequacy factor also plays a role, because a person's lack of nutrition makes the immune system weak and will be more susceptible to disease. Therefore, researchers also provide education about vaginal discharge including signs and symptoms of vaginal discharge, its causes and consequences as well as prevention efforts and can distinguish between physiological and pathological vaginal discharge in addition to helping the problems experienced by respondents to deal with the problem of vaginal discharge, one of which is alternative or non-pharmacological methods, by using decoction of green betel leaves to rinse directly into the female organs.[8] According to (Andareto, 2015) green betel leaf is often used as an alternative medicine because of the minimal side effects, easy to obtain and economical.[9]

Complaints of vaginal discharge after being given a rinse of the green betel leaf decoction

Based on the results of interviews in this study that after being given a rinse of betel leaves decoction for 7 days, teenage girls stated that the complaints of vaginal discharge they experienced could be reduced and some even said that they had disappeared altogether. From the 32 respondents, there were 30 respondents (93.8%) who previously experienced symptoms of itching and after treatment only 4 (12.5%) felt complaints of itching. 27 respondents (48.4%) who previously experienced symptoms of smelly vaginal discharge and the treatment the respondents no longer felt a smelly complaint. Then, 31 respondents (96.9%) previously experienced complaints

of a lot of discharge and after treatment only 2 (6.3%) complained of a lot of discharge. 17 respondents (53.1%) who previously experienced complaints of yellowish/green/grey discharge and after treatment no longer felt these complaints. 18 of respondents (56.3%) who previously experienced symptoms of pain/heat and after treatment no longer felt any complaints of pain/heat. 30 respondents (93.8%) previously experienced thick discharge and after treatment only 3 (9.4%) felt the same complaint. 25 respondents (78.1%) previously complained about the disruption of their activities and after treatment only 2 (6.3%) felt these complaints. 24 respondents (75%) who previously experienced symptoms of vaginal discharge for more than 7 days and after treatment only 3 (9.4%) felt the same complaint. 30 respondents (93.8%) who previously experienced sticky vaginal discharge on underwear and after treatment only 4 (12.5%) felt it. 18 respondents (56.3%) previously experienced irritation and after treatment only 2 (6.3%) experienced irritation complaints.

In this study, discharge can be cured. There is a significant difference between before and after using green betel leaf because it has a chemical content of very strong antiseptic power so that it can overcome vaginal discharge. There are various substances contained in betel leaf including essential oils, hydroxykavicol, kavicol, cavibetol, alllyprokatekol, eugenol, caryofelen, phenyl propada, tannins, sugar and tanning substances that have germicidal, anti-oxidation and fungicidal, anti-fungal properties.[10]

Effectiveness after being given a decoction of green betel leaves

The results of the Wilcoxson sign rank test statistic obtained a p value of 0.000 (Table 4), these results indicate Ha is accepted and Ho is rejected, which means that there are differences between pre and post giving the decoction of green betel leaf.

Syahrinastiti reported that betel leaf is one of the natural ingredients that contains 12 substances that can treat vaginal discharge. Green betel leaf contains essential oils whose constituent components are phenolic compounds that are capable of being anti bactericidal, fungicidal, and germicidal compounds. Betel leaf essential oil and ethanol extract were reported to have anti-fungal activity against Candida albicans. Thus, betel leaf can be used as an alternative in the treatment of diseases caused by Candida albicans. The use of betel leaf extract (Piper betle L.) with concentrations of 80% and 100% was proven to greatly affect the growth of Candida albicans. Betel leaf contains phenol, which has a role as a poison for microbes by inhibiting their enzyme activity. Catechol, pyrogalol, quinone, eugenol, flavones and flavonoids are included in the phenol group and have some antimicrobial properties.[11]

Kustanti's research (2017), also showed that the efficacy of betel leaf is used to reduce vaginal discharge and maintain female organs, because one of the properties of betel leaf is as an antiseptic.[12] Adi's research showed that the ethanol extract of betel leaf has antibacterial ability against gram-positive and gram-negative bacteria, especially Staphylococcus aureus and Escherichia coli. Flavonoids work by forming complex compounds against extracellular proteins that disrupt the integrity of the bacterial cell membrane. Likewise, the alkaloids have the ability as an antibacterial. The suspected mechanism is by disrupting the peptidoglycan constituent components in bacterial cells, so that the cell wall layer is not fully formed and causes the death of the cell.[13]

Tannins have anti-bacterial activity with the estimated mechanism that the toxicity of tannins can damage bacterial cell membranes, astringent tannin compounds can induce the formation of complex compounds bonding to enzymes or microbial substrates and the formation of a complex bonding tannins to metal ions which can increase the toxicity of tannins. itself. Tannins also work by shrinking the cell wall or cell membrane, thereby disrupting the permeability of the cell itself. Due to the disruption of permeability, cells cannot carry out living activities so that their growth is inhibited or even dies. Essential oils act as antibacterial by interfering with the process of forming membranes or cell walls so that they are not formed or formed imperfectly.[14]

The results of the research conducted prove that the alternative hypothesis (Ha) is acceptable, which describes a significant difference between before and after administration of green betel leaf decoction against pathological vaginal discharge in adolescent girls at the Hidayatullah Islamic Boarding School, Ternate City in 2019. In another word, betel leaf is an effective non-pharmacological medicine in dealing with vaginal discharge.

CONCLUSION

According to the results and discussion, it can be concluded that there is an effect of giving green betel leaf decoction on complaints of vaginal discharge in the teenage girls at the Hidayatullah Islamic Boarding School, Ternate City. By giving green betel leaf decoction, most of the respondents reported that the complaints were reduced and some of them completely recovered from complaints of vaginal discharge. This means that treatment with green betel leaf decoction has a significant impact and can reduce the symptoms of vaginal discharge. Further research needs to be carried out by considering other factors that affect vaginal discharge, such as a history of

gynecological disease. Specific and measurable detection of pathological fluor albus is necessary, such as using laboratory tests so that the expected diagnosis can be more objective. As for teenagers, it is necessary to take better care of their reproductive health, especially the cleanliness of the genitalia.

REFERENCES

Kemenkes RI. (2015) Pusat Data Dan Informasi. Situasi Kesehatan Reproduksi Remaja. Jakarta Selatan;

Joseph , HK. (2010). Ginekologi dan Obsteri (Obsgyn) . Yogyakarta : Nuha Medika

Kusmiran & Eny. (2013) Kesehatan Reproduksi Remaja Dan Wanita. Jakrata: Salemba Medika;

Nana & Erry. (2013) Gambaran Pengetahuan Remaja Puteri Tentang Keputihan Di Pesantren Hasanatul Barokah Kecamatan Tambusai. Ilmu Keperawatan ;Volume 1

Irianto, Koes. (2015). Kesehatan reproduksi (reproductive health) teori dan praktikum. Bandung : Alfabeta.

Marhaeni, A. G. (2016) Keputihan Pada Wanita. Skala Husada; Volume 13 No.1.

Sari, Rita Purnama. (2012) Hubungan Pengetahuan Dan Prilaku Remaja Putri Dengan Kejadian Keputihan Di Kelas XII SMA Negeri 1 Seunuddon Kab. Aceh Utara. Jurnal Kesehatan Masyarakat;

Kuncoro, (2012). Kesehatan Reproduksi Untuk Mahasiswa Kebidanan Dan Keperawatan. Jakarta : Salemba

Andareto, O. (2015) Apotik Herbal di Sekitar Anda, Pustaka Ilmu Semesta;

Sulistiyowati, & Amalia, A. (2016). Perbedaan Efektifitas Penggunaan Daun Sirih Dan Bawang Putih;2016. 38-44. Vol. 08, No. 03.

Syahrinastiti T,A, et al. (2015) Perbedaan Daya Hambat Ekstrak Daun Sirih Hijau (Piper betle L.) dan Daun Sirih Merah (Piper crocatum Ruiz & Pav) terhadap pertumbuhan Escherichia coli. Kesehatan Andalas;

Kustanti, Ceciliya. (2017) Pengaruh Pemberian Air Rebusan Daun Sirih Hijau Terhadap Kejadian Keputihan.Keperawatan Notokusumo; .Vol V No 1 : Yogyakarta

Adi, Gunawan Et Al. (2015) Pengaruh Pemberian Ekstrak Daun Sirih (Piper Sp.) Terhadap Pertumbuhan Jamur Candida Albicans. Prossiding Seminar Nasional Biotik. Fakultas Terbiyah Dan Keguruan Uin Ar-Raniry;

Anas, R et al. (2018). Perbedaan Daya Hambat Antara Ekstrak Daun Sirh Merah (Piper Crocatum) Dan Ekstrak Daun Sirih Hijau (Piper Betle L.) Terhadap Bakteri Streptococcus Mutans (Study Eksperimental Laboratorium Mikrobiologi Fakultas Farmasi Umi 2016): Fakultas Kedokteran Gigi Universitas Muslim Indonesa: Makasar;2018 Vol 10 (01) :120-125.