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The Relationship of Knowledge and Attitude for the Prevention of Leucorrhoea in Adolescent Women

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ABSTRACT

Introduction: Leucorrhoea is a discharge from the genitalia that is not blood but a clinical manifestation of various infections, malignancies, or benign tumors of the reproductive organs. Leucorrhoea is still considered not a serious thing for adolescents, therefore, in maintaining the cleanliness of the genital organs, it is still not good. Taking care of the external genitalia that is not good can make vaginal discharge occur, such as maintaining cleanliness, washing the vulva every day, and keeping it dry to prevent the growth of bacteria and fungi. If this problem is not taken seriously, it will have a negative impact in the future. To determine the relationship between knowledge and attitude to prevent leucorrhoea in adolescent girls at Al Muhadjirin 2 Senior High School Bekasi. **Methods:** This research is quantitative research with a cross sectional design. The sample in this study were students of class X, XI, XII as many as 130, using total sampling. The instrument used an instrument of demographic data, knowledge, attitude, and prevention of leucorrhoea that has been tested for validity and reliability by previous researchers. **Results:** The results of the study used the chi-square statistical method, which showed that there was a relationship between prevention of leucorrhoea and knowledge and attitudes in adolescent girls with p value = 0.000 <0.05, with an average age of 16 to 19 years, have more knowledge about leucorrhoea and have a good attitude toward preventing leucorrhoea. **Conclusion:** Knowledge and attitudes are significantly related to the prevention of leucorrhoea in adolescent girls. It is hoped that health workers can cooperate with schools in providing information to students about reproductive health, especially the problem of leucorrhoea.

Keywords: Knowledge of Leucorrhoea; Attitude; Prevention of Leucorrhoea

INTRODUCTION

Adolescent reproductive health is a condition or state of total well-being in all areas pertaining to the function, role, and reproductive process that adolescents possess. This includes their physical, mental, and social well-being. In adolescents who lack knowledge and information about the cleanliness of genital devices will also have an impact on the attitude of adolescents in maintaining the cleanliness of their genitalia because knowledge and attitude of good care is a determining factor in maintaining the cleanliness of genitalia tools (Nanlessy, Hutagaol & Wongkar, 2013). Attitudes and knowledge are lacking in the care of the cleanliness of genitalia externa (outer genitalia), as well as poor behavior become the trigger of vaginal discharge (Azizah, 2015).

The weather in Indonesia is highly humid, which eventually becomes one of the elements accelerating the formation of fungal infections. Therefore, Indonesian women must have vaginal discharge because there are 75% of women who encounter minimum vaginal discharge throughout their lifetime (Subiyatun & SiT, 2018).

Vaginal discharge is caused by the Candidosis vulvovagenetis bacteria. The other causes of vaginal discharge are bacterial vaginitis and trichomonas vaginalis. This is caused by the large number of women who do not know how to

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clean their female areas (Republic of Indonesia Ministry of Health, 2014). In addition to the main causes described above, pathological vaginal discharge can also be caused by a lack of care for the reproductive organs, for example, by washing the vagina in an old bucket, using excessive rinses or soap, wearing underwear or pants that cannot absorb sweat, or using pads that are too long or not changing pads during menstruation (Putro *et al.*, 2022; Torres-Deas, Habibe Burgos & Vassilakis, 2023).

According to Indonesian statistics in 2013 (Statistik, 2017) from the age range of 15-24 years who behave unhealthily there are 45.3 million adolescents. Statistical data on the number of residents in West Java Province reached 11,358,740 people and among them fertile women aged 10-24 years who experienced vaginal discharge of 27.60%. The results of the calculation of the number of teenagers in the city of Bekasi in 2018 amounted to 517,712 people and divided into 287,742 for teenage boys and 232,970 girls. Based on the 2014 population census in bekasi regency there are 318,864 people of all women there are 29.48% who experience vaginal discharge in Bekasi Regency according to (Trisnawati, 2018).

Al Muhadjirin 2 Senior High School Bekasi, Indonesia, on November 4, 2019, where researchers did a preliminary investigation by interviewing. It is known that of the 10 students (aged 15-16 years) 7 people said they did not experience vaginal discharge and 3 of them had experienced vaginal discharge. Some students said they were not trying to take precautions because they thought it was a natural thing to happen. The attitude of teenagers who are often done so that triggers vaginal discharge is that they say not to dry the area of womanhood after urinating and large, they also use tight panties that are not of cotton material and often also use tights. Based on this data, at Al-Muhadjirin 2 Senior High School Bekasi, the researchers are interested in examining the association between knowledge and attitudes regarding preventing vaginal discharge in adolescent girls.

The aim of this research is:

1. To find out the description of the age characteristics of young female respondents.
2. To find out the description of young women's knowledge about vaginal discharge at Al Muhadjirin 2 Senior High School Bekasi.
3. To get an overview of the attitudes of young women about vaginal discharge at Al Muhadjirin 2 Senior High School Bekasi.
4. To get an overview of the prevention of leucorrhoea at Al Muhadjirin 2 Senior High School Bekasi.
5. To analyze the relationship between knowledge and prevention of vaginal discharge in young women at Al Muhadjirin 2 Senior High School Bekasi.
6. To analyze the relationship between attitudes and prevention of vaginal discharge in young women at Al Muhadjirin 2 Senior High School Bekasi.

METHODOLOGY

This type of research is quantitative with a cross-sectional design with a sample size of 130 people, namely from class X, XI and XII students at Al Muhadjirin 2 Bekasi high school. The sampling technique used was Total Sampling.

The inclusion criteria for this study sample were female students of grades X, XI, XII at Al-Muhadjirin 2 Bekasi High School who were willing to be respondents, were less than 20 years old, and had menstruated. The exclusion criteria for this sample were those who were not present during the data collection process.

Data collection tools used 4 types of questionnaires: questionnaires for demographic data, knowledge questionnaires, attitude questionnaires, and vaginal discharge prevention questionnaires.

Questionnaire A: This questionnaire contains characteristics, consisting of age.

Questionnaire B: This questionnaire is related to the knowledge of young women about preventing leucorrhoea which consists of 20 statements with the following answer choices: favorable 1 = true, 0 = false, unfavorable statements: wrong = 1, true = 0. A person's knowledge can be identified and measured by categories: good knowledge > 50%, poor knowledge < 50%.

Questionnaire C: This questionnaire is related to the attitude of young women regarding the prevention of leucorrhoea which consists of 15 statements with a choice of answers. Favorable statements agree (S) = 1 (TS) = 0, Unfavorable statements: agree (S) = 0, disagree (TS) = 1. Personal hygiene attitude is good if > 8 attitude statements are answered correctly, personal hygiene attitude is bad if < 8 attitude statements are answered correctly.

Questionnaire D: This questionnaire is related to the prevention of leucorrhoea which consists of 15 statements with the choice of favorable or unfavorable statements as answers 1 = true, 0 = false, Unfavorable statements: wrong = 1, true = 0. True (never prevented leucorrhoea) > 8, false (never prevented vaginal discharge) < 8.

Ethical Consideration

This research has passed the ethical clearance from Bani Saleh School of Health Sciences, Indonesia on 10th July, 2020 with reference number 011/KEPK-LPPM/STIKES-BS/VII/2020.

RESULTS

1. Univariate Analysis

Table 1: Frequency Distribution Based on Age Characteristics

No.	Age	n	Percentage%
1.	Middle teens	23	17.7
2.	Late teens	107	82.3
	Total	130	100

From the data in Table 1, it is known that 107 people (82.3%) are late teens, the remaining 23 people (17.7%) are middle teens. The majority of respondents are in their late teens.

Table 2: Frequency Distribution Based on Knowledge about Leucorrhoea

No.	Knowledge	n	Percentage %
1.	Good	95	73.1
2.	Poorly	35	26.9
	Total	130	100

From the data in Table 2, it is known that out of 130 respondents, on average, 95 (73.1%) have good knowledge, 35 (26.9%) have poor knowledge, and the majority of respondents have good knowledge.

It is said to have good knowledge when the results obtained from filling out the respondent's questionnaire about knowledge about vaginal discharge obtained results > 50% good. It is said that the knowledge is not good because the results of filling out the respondent's questionnaire about vaginal discharge get < 50%.

Table 3: Frequency Distribution Based on Attitudes about Leucorrhoea

No.	Attitude	n	Percentage%
1.	Good	116	89.2
2.	Poor	14	10.8
	Total	130	100

From the data in Table 3, it is known that 116 respondents (89.2) have a good attitude, 14 people have a poor attitude (10.8), and the majority of respondents are good.

It is said to have good results when the results obtained from filling out the respondent's questionnaire about leucorrhoea prevention attitudes show > 8 questions answered correctly. It is said to be a bad attitude because the results of filling out the respondent's questionnaire about leucorrhoea prevention attitudes get < 8 questions answered correctly.

Table 4: Frequency Distribution Based on the Prevention of Leucorrhoea

No .	Prevention	n	Percentage (%)
1.	Correct	119	91.5
2.	Incorrect	11	8.5
	Total	130	100

Based on Table 4, it is known that there were 119 respondents (91.5%) who did the wrong kind of prevention, and 11 people (8.5%) who did the wrong kind of prevention. The majority of respondents are correct about prevention.

It is said to have been the right prevention of leucorrhoea when the results obtained from filling out the respondent's questionnaire about leucorrhoea prevention obtained results > 8 questions were answered correctly. it is also said to be a bad attitude because the results of filling out the respondent's questionnaire about leucorrhoea prevention resulted in < 8 questions being answered correctly.

2. Bivariate Analysis

Table 5: The Relationship between Knowledge and Prevention of Leucorrhoea

Knowledge	Prevention of Leucorrhoea				Total		*p* Value	OR (95%CI)
	Correct		Incorrect					
	N	%	N	%	N	%		
Good	118	90.0	3	10.0	121	100	0.023	1.500
Poorly	7	77.8	2	22.2	9	100		
Total	119	91.5	11	8.5	130	100		

According to Table 5, which shows the percentage of knowledge on the prevention of vaginal discharge, 118 students from Al-Muhadjirin 2 Senior High School Bekasi have good knowledge in the prevention of vaginal discharge (90.0%), while 3 students have poor knowledge (10.0%). While the knowledge is not correct in the prevention of vaginal discharge, namely as many as 7 respondents (77.8%) and students with less knowledge of 2 respondents (22.2%) are wrong in the prevention of vaginal discharge. Based on statistical analysis using the Chi Square test with the assistance of SPSS version 20, a signification value of sig = 0.023 was obtained. The value is less than a = 0.05, so it can be concluded that there is a significant relationship between knowledge and the prevention of vaginal discharge (*p* value = 0.000). With an OR (Odd Ratio) = 1.500, this means that respondents with good knowledge are 1.5 times more likely to have the correct prevention for vaginal discharge.

Table 6: The Relationship between Knowledge and the Attitudes of Leucorrhoea

Attitude	Prevention of Leucorrhoea				Total		*P* Value	OR (95%CI)
	Correct		Incorrect					
	N	%	N	%	N	%		
Good	111	95.7	5	4.3	116	91.5	0.000	16.650
Poor	8	57.1	6	42.9	14	8.5		
Total	119	91.5	11	8.5	130	100		

Based on Table 6, which shows the percentage of attitudes associated with preventing leucorrhoea in Al-Muhadjirin 2 Senior High School Bekasi, the most are students with the right good attitude to prevent vaginal discharge, as many as 111 respondents (95.7%), while at least students with good attitudes who wrongly prevent vaginal discharge are as many as 111 respondents. 5 respondents (4.3%), and bad attitudes among respondents who correctly prevent vaginal discharge are as many as 8 respondents (57.1%), while bad attitudes among respondents who incorrectly prevent vaginal discharge are 6 respondents (42.9%). Based on statistical analysis using the chi square test assisted by SPSS version 20, the signification value of sig = 0.000 is less than the *p* value = 0.05, indicating that views regarding the prevention of vaginal discharge are linked. With an OR (Odd Ratio) value = 16.650. It means that respondents who behave well have a chance of having the correct vaginal discharge prevention 16.650 times.

DISCUSSION

The relationship of young women's knowledge with the prevention of vaginal discharge in Al-Muhadjirin 2 Senior High School Bekasi, based on the results of statistical tests using Chi-Square, obtained a *p* value = 0.000. This means that the value of ρ is less than the value of α (α = 0.05), so it can be said that there is a relationship between the knowledge of teens and the prevention of vaginal discharge in Al-Muhadjirin 2 Senior High School Bekasi. The results of this study are in line with research conducted by Juliana, Kuswanti & Melina (2015) and Puspitasari, Mulyono & Kusumawati (2019) on the relationship between young women's knowledge about vaginal discharge with vaginal prevention behavior in BOPKRI 2 Senior High School Yogyakarta. Students at BOPKRI 2 Senior High School Yogyakarta showed a correlation between young women's awareness of vaginal discharge and vaginal prevention behaviour, with the results of statistical testing through the chi square test yielding a probability value of 0.05. It is seen that knowledge and behavior are interconnected in individuals efforts to participate in health-enhancing behaviors, such as behaviors for a clean lifestyle, so the likelihood of vaginal discharge events is very small.

Vaginal prevention behavior is an attempt to maintain or improve health by maintaining the cleanliness of the reproductive organs. In everyday life, cleanliness is a very important thing and must be considered because it affects a person's health and psyche. One of the factors that influences behavior is the motivating factor, where motivation is an impulse from within humans to act or behave (Puspitasari, Mulyono, & Kusumawati, 2019; Notoatmodjo, 2010).

Other supporting articles reveal that there is a significant difference in the students' attitude and practice of pathological vaginal discharge prevention between the intervention and control groups. The students who have been exposed to the vaginal hygiene module for six months showed better attitudes and practices in pathological vaginal discharge prevention compared to their counterparts in the control group, who do not receive any module (Sumarah & Widyasih, 2017). Adolescents who have knowledge of vaginal discharge will have a good understanding of how to prevent vaginal discharge, while adolescents who have less knowledge about vaginal discharge will also have poor behavior in preventing vaginal discharge. This study also showed that there was a relationship between attitude and the prevention of vaginal discharge (Nanlessy, Hutagaol & Wongkar, 2013; Azizah, 2015; Subiyatun & SiT, 2018; Republic of Indonesia Ministry of Health, 2014).

Other research results in 2021 of the multivariate analysis showed that the variable poor personal hygiene behavior (*p*-value 0.018) was the most dominant variable associated with pathological vaginal discharge (PR = 3.305, 95% CI: 1.232-8.868), therefore poor personal hygiene behavior that occurs continuously can increase the risk of pathological vaginal discharge in young women (Krisdayanti & Hasyim, 2021).

This research is supported by another study conducted by Nurhayati (2013), "the relationship between attitudes and behavior to maintain vaginal hygiene in adolescent girls in the Pondok Cabe Ilir area in 2013," where there is a relationship between attitudes and prevention of vaginal discharge. Attitude with vaginal hygiene behavior, with *P* 0.262 (*p*-value > 0.05). Of the 70 respondents with a negative attitude, 61.4% had a bad attitude toward maintaining vaginal hygiene, while of the 60 respondents who had a positive attitude in maintaining vaginal hygiene, 51.7% had a poor attitude. This happens because it is influenced by parents, and the mass media. A central concept in social psychology is attitude, which is the propensity to act, perceive, think, and feel about events or ideals (Verkuyten, Yogeeswaran & Adelman, 2023). An attitude is a predisposition to behave in a particular way toward the target of the attitude than a behaviour. Objects of attitude can be objects, people, places, ideas, or situations. for example, attitudes toward maintaining reproductive health (Sukendar, 2017).

In maintaining reproductive health and the urinary tract, a person needs to pay attention to his attitude, which must be considered along with the cleanliness of the vagina and the environment. Vaginal hygiene should always be maintained. Segara dries the vagina after urinating and maintains moisture by using dry underwear that is able to absorb sweat (such as cotton material). This can prevent the growth of fungi and bacteria that can cause infection in the area (Emilia, Freitag & Gz, 2010; Wada & Hasiolan, 2020).

Implementation of health education to minimize the growth of disease and prevention is carried out through increased knowledge, initial handling, positive attitudes toward the principle of healthy living, and improved skills in carrying out matters related to maintenance, relief, health care, and disease prevention (Efendi & Makhfudli, 2009; Prima *et al.*, 2022).

The results of the statistical tests showed that there were significant differences in knowledge ($p = 0.000$), attitude ($p = 0.000$) and action ($p = 0.000$) after being given health education. Providing health education is an alternative in increasing the knowledge, attitudes, and actions of adolescents. It is expected that, after this, the respondent can understand the concept of leukorrhea and can prevent the occurrence of leukorrhea pathology (Iswatun *et al.*, 2021).

Teenagers already understand about attitudes to prevent vaginal discharge. This is seen in teenagers who practice good vaginal discharge prevention, such as washing the vagina in the correct direction and keeping the female area humid.

CONCLUSION

Characteristics of respondents based on age showed the age of the most dominant respondents, namely late teens aged 16–19 years. Good knowledge of vaginal discharge in adolescent girls at Al-Muhadjirin 2 Senior High School in Bekasi is greater than that of students who have less knowledge. Young women with good attitudes outnumber teenagers with bad or less good attitudes at Al-Muhadjirin 2 Senior High School Bekasi. This study shows that the prevention of vaginal discharge in teenagers is more important. There is a relationship between knowledge about vaginal discharge with the prevention of vaginal discharge in teenagers in Al-Muhadjirin in two Senior High School Bekasi with a *P* value = 0.000 < alpha = 0.05, and there is a relationship with attitude prevention in teenagers in Al-Muhadjirin 2 Senior High School Bekasi with *P* value = 0.000 < alpha = 0.05.

Conflict of Interest

The authors declare that they have no conflict of interests.

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REFERENCES

Azizah, N. (2015). Karakteristik remaja putri dengan kejadian keputihan di smk muhammadiyah kudus. *Journal Ilmu Keperawatan dan Kebidanan, 6*(1), 57-78.

Efendi, F., & Makhfudli, M. (2009). Community Health Nursing: theory and practice in nursing. *Jakarta: Salemba Medika*.

Emilia, O., Freitag, H., & S Gz, D. (2010). *Tetap bugar dan energik selama hamil*. AgroMedia.

Iswatun, I., Kusnanto, K., Nasir, A., Fadliyah, L., Wijayanti, E. S., Susanto, J., ... & Aris, A. (2021). The Effect of Health Education on Knowledge, Attitudes, and Actions in Prevention of Leukorrhea in Adolescent Girls. *Journal of International Dental & Medical Research, 14*(3).

Juliana, E., Kuswanti, I., & Melina, F. (2015). Hubungan Pengetahuan Remaja Putri tentang Keputihan dengan Perilaku Pencegahan Keputihan di SMK BOPKRI 2 Yogyakarta. *Journal Kesehatan Samodra Ilmu, 6*(2).

Krisdayanti, N., & Hasyim, H. (2021). Knowledge, Attitude, and Personal Hygiene Behaviors with Pathological Leukorrhea in Adolescent Girls at SMK'Aisyiyah Palembang. *Journal Ilmu Kesehatan Masyarakat, 12*(2), 181-191. https://doi.org/10.26553/jikm.2021.12.2.92-103

Nanlessy, D. M., Hutagaol, E., & Wongkar, D. (2013). Hubungan antara pengetahuan dan perilaku remaja puteri dalam menjaga kebersihan alat genitalia dengan kejadian keputihan di SMA Negeri 2 Pineleng. *Journal Keperawatan, 1*(1). https://doi.org/10.35790/jkp.v1i1.2175

Notoatmodjo, S. (2005). Teori dan aplikasi promosi kesehatan. *Jakarta: Rineka Cipta*.

Nurhayati, A. (2013). Hubungan Pengetahuan, Sikap, Dan Perilaku Vaginal Hygiene Terhadap Kejadian Keputihan Patologis Pada Remaja Putri Usia 13-17 Tahun Di Daerah Pondok Cabe Ilir.

Prima, A., Puspitasari, I., Andas, A. M., Shaoliha, M., Wada, F. H., & Yusrini, Y. (2022, April). Sekolah Siaga Penyakit Tidak Menular: Pemeriksaan Golongan Darah Serta Edukasi Diabetes Mellitus pada Siswa. In *Prosiding Seminar Nasional Pengabdian Kepada Masyarakat: Peduli Masyarakat* (Vol. 2, No. 1, pp. 155-158).

Puspitasari, I., Mulyono, S., & Kusumawati, D. N. (2019). The effect of interactive education with 3-dimensional puzzles on the injury-prevention behaviours of school-age children. *Comprehensive Child and Adolescent Nursing, 42*(sup1), 173-178. https://doi.org/10.1080/24694193.2019.1578438

Putro, R. S., Sunirah, S., Andas, A. M., & Wada, F. H. (2022). Faktor-Faktor yang Berhubungan dengan Perilaku Seksual Pranikah pada Remaja: Factors Related to Premarried Sexual Behavior in Adolescents. *Journal Surya Medika (JSM), 8*(1), 194-199. https://doi.org/10.33084/jsm.v8i1.3163

Republic of Indonesia Ministry of Health. Indonesia's health profile in 2014. Jakarta : Kemenkes RI: 2015.

Statistik, B. P. (2017). Laporan Survei Demografi dan Kesehatan Indonesia, 2017. *Jakarta: BPS*.

Subiyatun, S., & SiT, S. (2018). *Hubungan Tingkat Pengetahuan Remaja Putri Tentang Keputihan Dengan Perilaku Personal Hygiene Di Madrasah Aliyah Mu'allimat Yogyakarta1* (Doctoral dissertation, Universitas' Aisyiyah Yogyakarta).

Sukendar, M. U. (2017). *Psikologi komunikasi: Teori dan praktik*. Deepublish.

Sumarah, S., & Widyasih, H. (2017). Effect of vaginal hygiene module to attitudes and behavior of pathological vaginal discharge prevention among female adolescents in Slemanregency, Yogyakarta, Indonesia. *Journal of Family & Reproductive Health, 11*(2), 104.

Torres-Deas, L. M., Habibe Burgos, N. C., & Vassilakis, A. (2023). Vaginal Discharge. In *Handbook of Outpatient Medicine* (pp. 525-541). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-031-15353-2_27

Trisnawati, I. (2018). Faktor-faktor yang berhubungan dengan keputihan patologis pada wanita usia subur yang bekerja di pt unilever cikarang bekasi. *Journal Penelitian Kesehatan Suara Forikes, 9*(1), 45-50.

Verkuyten, M., Yogeeswaran, K., & Adelman, L. (2023). The social psychology of intergroup tolerance and intolerance. *European Review of Social Psychology, 34*(1), 1-43. https://doi.org/10.1080/10463283. 2022.2091326

Wada, F. H., & Hasiolan, M. I. S. (2020). The Influence of Oxytocin Massage with Uterus Involution Mother's Post Partum Primigravida in Panembahan Senopati Bantul's Public Hospital, Yogyakarta. *Journal Kesehatan, 9*(2), 33-46.