

*Original article*

## The Relationship between Vulva Hygiene and the Occurrence of Vaginal Discharge in 10<sup>th</sup> Grade High School Students in The 3-State High School

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### Abstract

Leucorrhoea, also spelled leukorrhea, is a common problem for young women. Leucorrhoea describes a whitish vaginal discharge that may be normal or abnormal, and thus may or may not be sign of reproductive health problem. Not many young women know about vaginal discharge and sometimes may not realize be able to distinguish between normal, healthy vaginal discharge and pathological, abnormal vaginal discharge. Vaginal discharge may indicate health problems such as infection, pelvic inflammatory disease and infertility. One of possible cause of vaginal discharge is lack of knowledge about how poor vulva hygiene can cause vaginal discharge. The purpose of this study was to explore the relationship between vulva hygiene practices and the occurrence of vaginal discharge in 10th grade female high school students in Tuban 3. This study conducted a cross-sectional study of 77 10th grade students at SMA 3 Tuban High School in 2019. We used simple random sampling. We collected data using questionnaires and checklists. We conducted contingency coefficient tests with type 2 error ( $\alpha$ ) of 0.05. The results showed that 45.5% (n=35) of the female students practiced incorrect vulva hygiene and a majority of female students (66.2%, n=51) experienced leucorrhoea. Using a contingency test, we found a strong association between incorrect vulva hygiene and the occurrence of leucorrhoea in 10th grade high school students in Tuban 3 ( $p < 0.001$ ). Based on our study results, we recommend that female students at Tuban State High School receive better resources and education on proper vulva hygiene to prevent pathological vaginal discharge. We recommend that the health education and medical personnel provide more books about vulva hygiene, reproductive magazines about the importance of vulva hygiene, and be available to answer questions that students may have about vulva hygiene.

**Keywords:** Leucorrhoea, Vulva hygiene, High school students, young women

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## Introduction

As adolescents grow, they interact more with adult society. They no longer feel below the level of older people, but instead feel that they are at the same level. Young women have very complex problems, one of which is proper care of their reproductive health systems. This problem needs to be dealt with seriously, because adolescents still have insufficient access to information about reproductive health (Pudiastuti, 2011). Adolescent reproductive health includes physical and mental well-being related to the functioning of reproductive processes of adolescents (Nugroho, 2012). Our study focuses on investigating whether female adolescents that have sufficient knowledge and information about how to clean their vulva, and if this knowledge enables them to better clean their vaginal area, and therefore have less pathological vaginal discharge (Notoadmojo, 2010).

Improper vulva hygiene is a factor that can cause abnormal vaginal discharge. Without good vulva hygiene, bacteria and fungi can grow quickly in the moist vaginal area. This can cause infections and pathological vaginal discharge. Good knowledge about vaginal discharge and a positive attitude about vulva hygiene can help young women adopt behaviour to prevent pathological vaginal discharge. Leucorrhoea is a symptom of a disease characterized by the discharge of fluid from the reproductive organs which does not contain blood (Diar, 2009). Leucorrhoea occurs due to infections caused by germs, bacteria, fungi, or mixed infections. Abnormal vaginal discharge due to continuing infection can cause health problems. Vaginal discharge is one of the symptoms of reproductive tract infections (Dwiana, 2008). Vaginal infections affect 100 million women, roughly 10-15% of women worldwide. About 15% of adolescents are affected by *Candida* bacteria and experience vaginal discharge.

From the beginning, it is very important for young women to learn appropriate vulva hygiene. Reproductive

organs often get less attention in everyday life. In the Indonesian culture, we are sometimes uncomfortable talking about sexual and reproductive health problems. In fact, these organs really need attention, especially health and hygiene. Before a person carries out the behaviour to maintain the cleanliness of the genital organs, there are 3 stages that must be passed: 1) attitude, 2) knowledge, and 3) practice or action. Knowledge and attitudes are dominant in shaping a person's behavior (Notoadmojo, 2010).

Attitude is the readiness to react to objects in a particular environment as an appreciation of objects (Notoatmodjo, 2010). Inappropriate attitudes can weaken a person's motivation to behave in a healthy life in the prevention of pathological vaginal discharge. Knowledge and the information obtained greatly enables one to adopt values and knowledge that can influence the mindset and action of one source of one's information is through health education according to Susanto (in Dian Eka Purnama). There is evidence that adolescents lack knowledge about problems concerning the reproductive organs (Utami ddk, 2014) and about prevention of harmful vaginal discharge. In one survey, researchers found that 43.22% of adolescents had "low" knowledge, 37.8% of adolescents had "sufficient" knowledge, while 19.50% of adolescents had "adequate" knowledge about how to care for reproductive organs and prevent reproductive diseases. In a study by Sulistianingsih (2012), female participants did not know how to differentiate between normal (physiological) vaginal discharge and abnormal (pathological) vaginal discharge. Thus, women in this study felt anxious they were suffering from a venereal disease. Or conversely, sometimes a woman ignored her suffering from vaginal discharge for so long that it caused a severe sexually transmitted infection (IMS).

Young women also need knowledge about what vulva hygiene practices are harmful and which are helpful. Young women should learn that water needs to be clean and directed properly at the genitals to cleanse them after

defecating or urinating. Adolescent women need education about avoiding harsh soap cleansers, fragrances or excessive rinsing, wearing tight panties that do not absorb sweat, rarely changing panties, and rarely changing pads. There need awareness about harmful practices such as improper washing of hands, exchanging pants with other people, using dirty public toilets, not maintaining vaginal hygiene, and changing towels with other people. Poor personal hygiene can lead to the emergence of vaginal infections (Sevil et al, 2013). An unhealthy vagina can be a cause of an imbalance in the ecosystem of bacteria in the vagina. Women also need to know that abnormal vaginal discharge may be caused by several factors including infection, foreign body, or a tumor (Ratna, 2010).

We conducted initial interviews in March 2019 with female students at Tuban 3 Public High School. At this time, 10 female students complained that they had white discharge in their genital areas. Based on these interviews, we found that: 3 female students often experienced vaginal discharge before and after menstruation. 3 female students were often stressed when they had many assignments. 4 female students did not know how to clean their vaginal areas.

Based on the background described above, we were interested in conducting research about whether there was a relationship between vulva hygiene and the occurrence of vaginal discharge in 10th grade female students of SMA 3 Tuban High School. We also recognized that it is especially important that young women know about abnormal vaginal discharge and its causes early (Aulia, 2012). In addition, health workers need to provide information on the importance of maintaining the cleanliness of the genital area. Good vulva hygiene can help prevent the occurrence of abnormal vaginal discharge. Though the reproductive health of adolescents is highly personal, the provision of information and

services about reproductive health education is needed (Husni, 2005).

### Research Methods

We conducted an observational, nursing research study examining the correlation between vulva hygiene and the occurrence of leucorrhoea in adolescents in Tuban State High School 3. We did not provide any intervention. We interviewed 10th grade female students of SMA Negeri 3 Tuban High School.

We gave a questionnaire to students asking them about their caravulva hygiene practices. For students that often experienced vaginal discharge, we also asked whether they were experienced characteristics of normal and abnormal vaginal discharge. We categorized students into categories of: 1) "had leucorrhoea," if they experienced characteristics of abnormal vaginal discharge, and 2) "had no leucorrhoea," if they experienced characteristics of normal vaginal discharge and/or did not experience characteristics of abnormal discharge. I assumed that you categorized women with normal vaginal discharge characteristics as "had no leucorrhoea." Please confirm or revise the explanation.

We performed the contingency coefficient test for the association between self-reported vulva hygiene and self-reported leucorrhoea with a 95% confidence level using the SPSS 16.0 application. We also asked students if they participated in extracurricular activities at school such as UKS Cadre and the Student Council. We hypothesized that participation in these activities meant that students received more reproductive health education, and therefore more instruction on correct vulva hygiene. We also did a contingency coefficient test for the association between participation in UKS Cadre or OSIS with practicing correct vulva hygiene among 10<sup>th</sup> grade female students in SMA Negeri 3 Tuban

## Results

### Characteristics of Respondents

A very small portion (2.6%), respondents participated in a UKS cadre of 2 adolescents while not participating in a UKS cadre of 75 students (97.4%) (Table 1).

**Table 1.** Participation in UKS Cadres among female student respondents (n=77) at Tuban Public High School 3.

| No | UKS cadre                         | Frequency (N) | Percentage (%) |
|----|-----------------------------------|---------------|----------------|
| 1. | Joined UKS cadres                 | 2             | 2.6%           |
| 2. | Did not participate in UKS cadres | 75            | 97.4%          |
|    | <b>Total</b>                      | 77            | 100%           |

A small proportion (19.9%, n=15) of respondents joined the Student Council (Table 2). A large majority (80.0%) of respondents did not participate in the OSIS62, which is the Student Council.

**Table 2.** Participation in the Student Council among female student respondents (n=77) at Tuban 3 Public High School.

| No | Join The Student Council                   | Frequency (N) | Percentage (%) |
|----|--|---------------|----------------|
| 1. | Joined the Student Council                 | 15            | 19.5%          |
| 2. | Did not participate in the Student Council | 62            | 80.5%          |
|    | <b>Total</b>                               | 77            | 100%           |

A small proportion (22.1%, n=17) of grade 10 students practiced vulva hygiene appropriately. Of these 17 students practicing good vulva hygiene, 2 of them participated in UKS cadre activities and 15 of the other students took part in student council activities every 2 weeks. These extracurricular activities at school included various socialization and educational sessions about health, including what vulva hygiene is and how they could practice it correctly. A little more than half of the respondents (51.9%, n=40) practiced less precise vulva hygiene. Slightly more than one quarter of respondents (26.0%, n=20) practiced vulva hygiene that is not appropriate. All respondents reporting "less precise" (n=40) and inappropriate" vulva hygiene (n=20) did not take part in the UKS or Student Council activities

**Table 3.** Self-reported level of vulva hygiene based on questionnaire responses among female 10th grade students of SMA 3 Tuban High School (n=77)

| No.          | Vulva Hygiene                 | Frequency | Percentage (%) |
|--------------|-------------------------------|-----------|----------------|
| 1.           | Vulva hygiene is appropriate  | 17        | 22.1%          |
| 2.           | Vulva hygiene is less precise | 40        | 51.9 %         |
| 3.           | Vulva hygiene is not right    | 20        | 26.0 %         |
| <b>Total</b> |                               | 77        | 100 %          |

Most 10th grade students (80.5%, n=62) experienced leucorrhoea, which is defined as abnormal vaginal discharge. All 62 teenagers that had leucorrhoea did not take part in the UKS Cadre or Student Council activities. Almost one-fifth of respondents (19.5%, n=15) reported that they had no vaginal discharge (Table 4).

**Table 4.** Prevalence of self-reported leucorrhoea among female students in Class 10 at SMA 3 Tuban High School (n=77)

| No.          | Leucorrhoea        | Frequency | Percentage (%) |
|--------------|--------------------|-----------|----------------|
| 1.           | Had leucorrhoea    | 62        | 80.5 %         |
| 2.           | Had no leucorrhoea | 15        | 19.5%          |
| <b>Total</b> |                    | 77        | 100 %          |

Table 5 shows a cross tabulation of self-reported vulva hygiene with the self-reported occurrence of leucorrhoea in 10th grade high school students at Tuban High School. Only a small number of female students (n=2; 2.6%) doing vulva hygiene properly experienced leucorrhoea. Among the 51.9% of respondents (n=40) that reported that their vulva hygiene was “less precise,” all of them reported experiencing leucorrhoea. Among the 26.0% of respondents (n=20) that reported their vulva hygiene is “not appropriate,” all reported having leucorrhoea.

**Table 5.** Cross Tabulation of Self-Reported Vulva Hygiene with Self-Reported Leucorrhoea among female students in the Class 10 at SMA 3 Tuban High School (n=77)

| Self-reported vulva hygiene   | Self-reported occurrence of leucorrhoea |                |            |
|-------------------------------|---|----------------|------------|
|                               | Had leucorrhoea                         | No leucorrhoea | Total      |
|                               | N (%)                                   | N (%)          | N (%)      |
| Vulva hygiene is appropriate  | 2 (2.6%)                                | 15 (19.5%)     | 17 (22.7%) |
| Vulva hygiene is less precise | 40 (51.9%)                              | 0 (0 %)        | 40 (51.9%) |
| Vulva hygiene is not right    | 20 (26.0%)                              | 0 (0 %)        | 20 (26.0%) |
| <b>Total</b>                  | 62 (80.5%)                              | 15 (19.5%)     | 77 (100%)  |

Contingency coefficient test results (p = <0.001)

All of the respondents that reported that their vulva hygiene was “less precise” or “not appropriate” did not take part in UKS Cadre or OSIS (Student Council) activities. Therefore, we infer that they did not receive the same health education about vulva education and may have felt that discussing vulva hygiene was taboo. As

a result, they may have lacked the necessary knowledge to practice good vulva hygiene. 60 of the 62 respondents that experienced leucorrhoea had “less precise” or “inappropriate” vulva hygiene. All 15 of respondents with no leucorrhoea carried out vulva hygiene appropriately

## Discussion

Our study of female adolescents from 3 SMA Tuban High School showed that 17 respondents (22.7%) reported practicing good vulva hygiene. Of these 17 students, 2 participated in the UKS cadre and 15 participated in the Student Council every 2 weeks. By participating in these extracurricular activities, the respondents received reproductive health promotion from the health staff. We found that 40 (51.9%) respondents and 20 (26.0%) respondents reported practicing vulva hygiene that was “less precise” and “not appropriate,” respectively. Of the 62 (80.5%) respondents that reported leucorrhoea, only 2 reported practicing correct vulva hygiene, UKS and OSIS = 0.05 and the calculation was carried out using the SPSS 16.0 application. 10th grade student in SMA Negeri 3 Tuban. We found that for teenagers that experienced normal vaginal discharge, their knowledge about vulva hygiene be good. For example, we found that the two respondents that reported leucorrhoea and having correct vulva hygiene experienced normal vaginal discharge which occurred before or after menstruation. The other 15 respondents did not report normal vaginal discharge, but reported pathological vaginal discharge. We observed that the 40 adolescent respondents with “less precise” vulva hygiene and 20 adolescent respondents with “not right”

vulva hygiene experienced abnormal vaginal discharge. 15 (10.5%) of respondents reported no leucorrhoea. All of these respondents reported practicing correct vulva hygiene adolescents were right and did not experience vaginal discharge.

## Conclusion and Recommendations

From the results of this study, we concluded that 10th grade female students of SMA 3 Tuban High School in 2019, they did not continue to do vulva hygiene and experience abnormal vaginal discharge. There is a strong relationship between vulva hygiene and the incidence of vaginal discharge in 10th grade students of Tuban 3 Senior High School in 2019 ( $p \leq 0.001$  and  $r = 0.617$ ). Based on the results of our study, we make the following recommendations for young women, we provided evidence that better knowledge about vulva hygiene and reproductive health education through extracurricular activities are some of the factors that influence occurrence of leucorrhoea. We encourage female teenagers to be more familiar with how correct vulva hygiene can reduce the incidence of abnormal vaginal discharge.

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