



# Relationship Between the Personal Hygiene and The Occurrence of Pityriasis Versicolor In Students of State Senior High School 1 Medan 2020

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## ABSTRACT

**Background:** Pityriasis versicolor (PV) is a superficial fungal infection on the outermost layer of skin caused by *Malassezia furfur* or *Pityrosporum orbiculare*. This infection is often chronic with mild inflammation that mostly affects the face, neck, body, upper arm, axilla, thigh, and groin. PV is often found in tropical areas and may occur in all ages, but are mostly found on teenager aged between 16-20 years. Self-care maintenance could be done by maintaining the good personal hygiene, because a poor personal hygiene was the risk factor that trigger pityriasis versicolor. **Objectives:** This study aimed to seek the relationship between personal hygiene and pityriasis versicolor in State Senior High School 1 Medan students in 2020. **Methods:** This was an observational study with cross sectional design on 100 students in State Senior High School 1 Medan in 2020 using simple random sampling. The data was gathered using online questionnaire. **Results:** Most of the participants in this study had good personal hygiene (62%). The incidence of PV in this study was 17%, and the relationship between personal hygiene and PV was analyzed using chi square with the p value=0.013 ( $p \leq 0.05$ ). **Conclusions:** There is a meaningful relationship between personal hygiene and pityriasis versicolor.

**Keywords:** Personal Hygiene, Pityriasis versicolor, Student

## ABSTRAK

**Pendahuluan:** Pitiriasis versikolor adalah infeksi jamur superfisial pada lapisan tanduk kulit yang disebabkan oleh *Malassezia furfur* atau *Pityrosporum orbiculare*. Infeksi ini bersifat kronis dan cenderung menyebabkan peradangan ringan yang sering mengenai wajah, leher, badan, lengan atas, ketiak, paha, dan lipatan paha. Pitiriasis versikolor banyak dijumpai di daerah tropis dan dapat menyerang semua usia, namun paling banyak pada remaja usia 16-20 tahun. Pemeliharaan perawatan diri dilakukan dengan menjaga higiene perseorangan yang baik karena higiene perseorangan yang buruk adalah faktor yang memicu pitiriasis versikolor. **Tujuan:** Penelitian ini bertujuan untuk mengetahui hubungan antara higienitas dan pityriasis versicolor pada siswa SMAN 1 tahun 2020. **Metode:** Penelitian ini merupakan jenis penelitian observasional dengan rancangan cross sectional. Sampel pada penelitian ini siswa-siswi SMAN 1 Medan tahun 2020 sebanyak 100 dan menggunakan metode simple random sampling. Data yang diperoleh melalui pengisian kuesioner secara online. **Hasil:** Mayoritas subjek penelitian dalam studi ini memiliki higiene perseorangan yang baik (62%). Insidensi PV dalam studi ini adalah 17%, dan analisis hubungan antara higiene perseorangan dan PV menggunakan metode chi square, didapati hasil nilai  $p=0,013$  ( $p \leq 0,05$ ). **Kesimpulan:** Terdapat hubungan yang bermakna antara higiene perseorangan dengan kejadian pitiriasis versikolor.

**Kata Kunci:** Higienitas Perseorangan, Pitiriasis versikolor, Siswa



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## 1. Introduction

Pityriasis versicolor (PV) is a fungal infection by *Malassezia furfur* or *Pityrosporum orbiculare* that affect body surface. *Malassezia furfur* already production at human skin with normal amount and it does not cause health problems. But the fungi also can reproduce outside normal limits which can affect the color or natural

pigmentation of the skin.<sup>[1]</sup> Pityriasis versicolor is chronic, mild, and usually without inflammation. PV can affect the face, neck, body, upper arm, axilla, thigh, and groin.<sup>[2]</sup> *Malassezia* is lipophilic dimorphic fungus which classified flora normal and can be isolated from skin scrapings that come from almost all areas of the body, especially in areas rich in sebaceous glands.<sup>[3]</sup>

Normally pityriasis versicolor does not give complaints or often asymptomatic. The patient usually complained of mild itching and will see doctor because of hypopigmentation spots. The patches on the skin are usually followed by itching when you sweat. These patches can be white, brown or red depending on the patient's skin color.<sup>[4]</sup> The 2010 Indonesia Health Profile data shows that the skin diseases are in the 3rd ranked of the top ten diseases in outpatient hospital in Indonesia. The incidence of skin disease in Indonesia still high and a significant problem. It was because of the lack of awareness and public ignorance of the environment which causes skin disease transmission very quickly.<sup>[5]</sup>

Personal hygiene is a human self-care to maintain their health. Maintenance of personal hygiene is necessary for individual comfort, safety, and health. Hygiene practice equals improving health. As normal people maintain their health, and sick people or physical challenges need nurse to help them to maintenance theirs.<sup>[6]</sup> The general purpose of personal hygiene is to maintain self-care individually nor with assistance. Making a sense of comfort and relaxation can be done to relieve fatigue and prevent infection, prevent blood circulation disorders, and maintain tissue integrity.<sup>[7]</sup> Examples of personal hygiene practices including hair sanitation, eye, ear, nose, mouth, nail, genital, and hygiene appearance.<sup>[8]</sup>

Individual personal hygiene factors are very important to avoid skin diseases, one of which is skin disease caused by fungi.<sup>[9]</sup> *Malassezia furfur* will easily to infect the skin which has always been contaminated with water for a long time, poor environment sanitation, and lack of personal hygiene.<sup>[10]</sup>

Poor personal hygiene is a risk factor for pityriasis versicolor. Tropical areas with high temperature and humidity of the environment are suitable habitats for *Malassezia furfur*. State Senior High School 1 Medan is one of the best high schools in Medan and was an educational parameter of High School in North Sumatera. The school was located strategically in the center of Medan and was known for its curriculum, various extracurricular activities, as well as its organizations that would indicate long school hours and therefore longer time of uniform use. The uniforms that do not easily absorb sweat resulting in an increase in sebum glands and a slow rate of evaporation of sweat. This led to an increase population of *Malassezia furfur* and caused pityriasis versicolor.<sup>[11]</sup> Therefore, the researcher wanted to study the incidence of PV in State Senior High School 1 Medan and to see if there was a relationship with the personal hygiene of the students.

## 2. Method

This was an analytic observational study, that aimed to seek the relationship between personal hygiene and incidence of pityriasis versicolor with cross sectional approach. The population in this study were the students of State Senior High School 1 Medan in class XI and XII at 2020. The sample in this study were 100 students and using simple random sampling method. The location of this study is State Senior High School 1 Medan. This study was conducted from July till October 2020. The data was collected using primary data obtained from students who match the research criteria with a previously determined sample size. Data of students that have good or poor personal hygiene were collected by distributing online questionnaire. For the assessment of the dependent variable research that was pityriasis versicolor, if "Yes" means being suffering by skin disease and the score is 0. If "No" means not being suffering by skin disease and the score is 1. As for personal hygiene the assessment was given by categorizing them into good = 1, if the score > 75%, and poor = 0, if the score is ≤ 75%.

The processing of data that has been collected is done by editing, coding and cleaning the dataset. The data obtained were then analyzed using a chi square statistical test and p value was obtained with significance level of 0,5. The study with two variables said to be significant if it has the value  $p \leq 0,05$  which mean H1 accepted and it is said to be insignificant if it has the value  $p > 0,05$  which means H1 was rejected.

## 3. Discussion

This study has been conducted online using a google form questionnaires. The subjects of this study were students of SMA Negeri 1 Medan in class XI and XII who had been asked their willingness in filling out the questionnaire as a subject to be studied. Determination of the number sample of this study using the Slovin formula with significance level of 10%, so it takes 100 students in this study. And then the collected data will

be analyzed using SPSS. Therefore, the research will then discuss about the relationship between personal hygiene with the incidence of pityriasis versicolor in students of State Senior High School 1 Medan.

Respondents in this study were students of class XI and XII. An overview of respondents on this study was consist of gender, age, and class. Based on gender, there were more female respondents than male, there were 65 female respondents (65%), while male are 35 respondents (35%. According to age divided into 3 groups, at 16 years was the most widely with 62 respondents (62%), followed by 17 years old respondents as many as 28 respondents (28%), and the least respondents age 15 years as many 10 respondents (10%). According to class level, there were 48 respondents in class XII (48%), and at class XII there were 52 respondents (52%). This general data is used to find an outline of the respondents who were sampled.

**Table 1.** Frequency Distribution of Answer to Personal Hygiene Practic

No	Question	Answer	
		Yes (%)	No(%)
1	Do you shower 2 times a day?	71	29
2	Do you shower with soap?	100	-
3	Do you use towels alternately with your family?	11	89
4	Do you wash your hands before and after doing activities?	80	20
5	Do you wash your hands with soap and water flow?	73	27
6	Do you change your clean clothes everyday?	83	17
7	Do you use clothes alternately with your family?	13	87
8	Did you change your clothes after sweating?	83	17
9	Do you hang clothes that are already worn?	50	50
10	Are the clothes washed with detergent?	94	6
11	Are clothes that have been washed drying in the hot sun?	92	8

**Table 2.** Frequency Distribution of Respondents Characteristic based on Personal Hygiene

Personal Hygiene	Frequency	Percentage (100%)
Good	62	62
Poor	38	38
Total	100	100

Table 2 showed that personal hygiene at State Senior High School 1 Medan is in the good category there are 62 respondents or 62%, and 38 respondents or 38% other respondents is in poorly personal hygiene. Personal hygiene can be said good if the score from the questionnaires that has the correct answer is >75%.

**Table 3.** Frequency Distribution of Respondents Characteristic based on Pityriasis versicolor

Pityriasis Versicolor	Frequency	Percentage (100%)
Yes	17	17
No	83	83
Total	100	100

Table 3 shows that 83% or 83 students in State Senior High School 1 Medan did not have pityriasis versicolor and 17% or 17 respondents suffered from pityriasis versicolor skin disease. 11 from 17 respondents who suffered from pityriasis versicolor were the respondents with poor personal hygiene.

**Table 4.** Relationship between Personal Hygiene with the Incidence of Pityriasis versicolor

Personal Hygiene	Pityriasis Versicolor				Total	P Value	
	PV		Not PV				
	n	%	n	%			
Good	6	10	56	90	62	100	
Poor	11	29	27	71	38	100	
Total	17	17	83	83	100	100	0.013

Based on analysis result using chi square test which is in table 4 regarding relationship between personal hygiene with with the incidence of pityriasis versicolor in State Senior High School 1 Medan, it shows that the respondents with poor personal hygiene and suffering pityriasis versicolor were 11 respondents (29%). While respondents who don't suffer pityriasis versicolor and do good personal hygiene were 56 respondents (90%). The results obtained from cross tabulation, that there were 11 respondents (29%) who had poor personal hygiene suffering from pityriasis versicolor. While respondents who had good personal hygiene were 6 respondents (10%).

Based on the analysis using chi-square test carried out in this study, it was found that there was a relationship between personal hygiene and the incidence of pityriasis versicolor in State Senior High School 1 Medan students with result p value of 0.013. This result is in accordance with study conducted by Irwanto and Prakoeswa in Surakarta. There was a significant relationship between personal hygiene and PV in Al-Muayyad Islamic Boarding School, Surakarta City with p value = 0,000 (sig  $p < 0.05$ ).<sup>[13]</sup>

In this study there were students who admitted that they didn't change clean clothes every day, didn't take showers 2 times a day, didn't wash their hands before and after do activities, didn't change clothes after sweating and didn't hang clothes after wearing them. There were some respondents who used clothes and towels alternatively within their families. These finding showed that some respondents have poor personal hygiene which was not much different from the results obtained by Wardana and Prastian.<sup>[8,12]</sup> As mentioned by Sajida that personal hygiene can affect complaints of skin disease, poorly personal hygiene will be source of disease.<sup>[14]</sup>

According to theory mentioned by Febriyanti the incidence of pityriasis versicolor can affect all age group from children to elderly, but mostly found on children to teenager because of on this stage of age are more often exposed to predisposing factors for pityriasis versicolor such as hyperhidrosis due to lots of activities plus lack of personal hygiene practice.<sup>[15]</sup>

This is in line with study conducted by Isa regarding the profile of pityriasis versicolor in the Dermatology and Venereology Polyclinic of RSUP Prof. Dr. R. D. Kandou Manado for period January-December 2013 which showed that of the 36 cases of pityriasis versicolor the most affected the 15-24 years and 25-44 years group of age (30,6%). As well as the study result by Chigozie (2016) mentioned that the most group of ages was 14-17 years 74%.<sup>[16]</sup> The study from Sajida states that most respondents are in the range of 10-13 year (36,5%).<sup>[12]</sup> The difference in age described above can be caused because in this study it was only limited to teenagers.

Although it is widely known that pityriasis versicolor are more likely found in the respondents with poor personal hygiene. There were respondents with good personal hygiene but still suffered from pityriasis versicolor. This result can be supported by students of State Senior High School 1 Medan who often had activities under the sun, causing excessive sweating and causing fungus to grow on the skin. In accordance with study by Mustofa, respondents who had good personal hygiene but suffered from pityriasis versicolor can be caused by other trigger variable that were not analyzed in the study.<sup>[11]</sup> In accordance with study by Harahap, poor personal hygiene can be one of the factors that caused occurrence of pityriasis versicolor. Poor personal hygiene can be the reason it is easy for someone to had a skin disease caused by fungus such as pityriasis

versicolor, because unclean and untreated skin is a good place for bacteria and fungus to live and growth and eventually cause skin disease.<sup>[17]</sup>

#### 4. Conclusions

Based on the result and discussion then it can concluded as follows: There is a meaningful relationship between personal hygiene and the incidence of pityriasis versicolor in State Senior High School 1 Medan students, the incidence of pityriasis versicolor in State Senior High School 1 Medan students is 17%, and there are 38% of State Senior High School 1 Medan students who had poor personal hygiene while students with good personal hygiene are 62% seen from the answers to the questionnaires regarding the personal hygiene practice of respondents.

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