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THE RELATIONSHIP OF KNOWLEDGE AND PERSONAL HYGIENE BEHAVIORS TO THE PREVALENCE OF PITHIRIASIS VERSICOLOR IN CONSTRUCTION WORKERS IN SERANG CITY

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ABSTRACT

Pityriasis versicolor (PV) is a disease caused by Malassezia fungus infection with a prevalence of 50% in countries with tropical climates. Pityriasis versicolor is influenced by various factors such as heat, humidity and personal hygiene. This study aims to assess the relationship between knowledge and personal hygiene behavior on the prevalence of Pityriasis versicolor in construction workers in Serang City. This research uses an observational analytical method with a cross-sectional design. The subjects studied were 95 construction workers around Serang City who were taken using consecutive sampling. Data collection was carried out using questionnaires, observation sheets, and sampling using cellophane tape and will be analyzed using the Fisher's Exact Test. The prevalence of Pityriasis Versicolor among construction workers in Serang City is 10.1%. There is a statistically significant relationship between the level of knowledge and personal hygiene behavior on the prevalence of PV among construction workers in Serang City (p<0.001) where workers who experience PV have a poor level of knowledge and behavior. Therefore, it was concluded that there was a relationship between the level of knowledge and personal hygiene behavior on the prevalence of PV among construction workers in Serang City.

Keywords: *Pityriasis Versicolor, Construction workers, Level of knowledge and personal hygiene behavior.*

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INTRODUCTION

Pityriasis versicolor (PV) is a disease caused by Malassezia fungus infection. The most common Malassezia species in Indonesia is Malassezia furfur. Risk factors for Pityriasis versicolor include malnutrition, immunosuppressive conditions, genetics, high humidity and high temperature. Pityriasis versicolor has a prevalence of 50% in countries with tropical climates, while in cold countries the prevalence only reaches 1.1%. Data on the prevalence of PV in Indonesia cannot yet be known with certainty, but data from the Skin and Venereology Polyclinic of the Hajj Hospital, East Java Province for the 2019-2021 period showed that 120 patients were positive for PV.[1-4]

Construction workers are a group of workers who work in places that are often unhygienic. This makes construction workers very susceptible to disease, especially skin diseases. One factor that influences this is exposure to excessive heat. High temperatures can increase the growth of the Malassezia fungus which will have an impact on increasing the incidence of PV. Apart from that, high temperatures can also cause itching in PV patients. Symptoms of itching can have an impact on reducing sleep quality and significantly reducing work productivity. One way of preventing PV is by having literacy and knowledge about good personal hygiene.[5-6]

The clinical manifestations of PV are hyperpigmented or hypopigmented spots/macules, round or oval in shape, smooth scaly, well-defined which generally attack areas with high sebum production such as the upper arms, neck, trunk and back. These lesions have fine scales which can be detected by stretching or scraping the lesion (evoked scale sign). Generally patients do not feel any symptoms, but some patients can have symptoms of itching which can worsen in hot and humid conditions. Pityriasis versicolor has varying color lesions, namely hypopigmentation and hyperpigmentation. Hypopigmented lesions will be pale in color and generally occur in dark-skinned patients, while hyperpigmented lesions will be reddish in color and generally occur in white-skinned patients.[7]

The lack of prevalence data and research on PV in Banten Province, especially Serang City among construction workers, makes it important to carry out research to prevent an increase in the incidence of PV, so researchers want to find out more about the relationship between knowledge and personal hygiene behavior on the prevalence of Pityriasis versicolor among construction workers in Serang City.

METHOD

This research uses an observational analytical method with a cross-sectional design. The

population studied was construction workers around Serang City, taken by consecutive sampling, totaling 95 construction workers. Data were collected using instruments in the form of a questionnaire on the level of knowledge and personal hygiene behavior, clinical observation sheets, and sampling using cellophane tape. Data collected from the questionnaire was analyzed using the 27th version of the statistical package for social sciences (SPSS) program by editing, coding, scoring, tabulation and entry, while samples taken using cellophane tape would be examined at the FK Untirta Laboratory using KOH. Data will be analyzed univariately and bivariately. Variables that will be studied univariately include respondent characteristics, knowledge, behavior, incidence of PV, age and gender, while data that will be analyzed bivariately are knowledge and personal hygiene behavior on the prevalence of Pityriasis versicolor using the Fisher Exact Test. This research uses humans as respondents, so it requires ethical permission from the Ethics Committee of the Faculty of Medicine and Health Sciences, Sultan Ageng Tirtayasa University. This research has met ethical requirements with letter number 3 /UN43.20/KEPK/2024.

RESULTS

Research was carried out at construction sites in the Serang City area, such as around KP3B, PUPR Banten, Maulana Yusuf Stadium, etc. The construction workers are divided into several teams consisting of 10 – 15 people. In each team there is 1 supervisor whose job is to supervise and maintain the smooth running of the work being carried out. Each team is divided into several locations and has different tasks. The respondents for this research consisted of 99 respondents, namely construction workers in Serang City. Based on Table 1, it was found that 65.7% of respondents were ≤35 years old, 48.5% of workers had completed elementary school, all workers were male (100%). The average temperature in Serang City is 31.57ºC ± 1.71ºC and humidity is 80% ± 2.67%. A total of 64.6% had a good level of knowledge, 80.8% had good behavior, and 10.1% were clinically diagnosed with PV. Complete information regarding this data is available in Table 1 below:

Table 1. Univariate analysis of construction workers in Serang City

Variables	Frequency (n)	Percentage (%)
Age		
≤ 35 years old	65	65,7
> 35 years old	34	34,3
Education Level		
No school	-	-

Not completed in primary school	-		-
Finished elementary school	48		48,5
Finished high school	14		14,1
Finished high school	34		34,3
Diploma / Bachelor's Degree	3		3
Gender			
Male	99		100
Female	-		-
Temperature, (Mean±SD)		31,57ºC ± 1,71ºC	
Moisture, (Mean±SD)		80% ± 2,67%	
Knowledge Level			
Not good	35		35,4
Good	64		64,6
Behaviour Level			
Not good	19		19,2
Good	80		80,8
Pityriasis Versicolor			
Positive (+)	10		10,1
Negative (-)	89		89,9

Source: Reswara Faza Abhinaya, 2024

The relationship between the level of knowledge and personal hygiene behavior on the prevalence of Pityriasis Versicolor was analyzed bivariately using the Fisher Exact Test. Based on Table 2, it is found that there is a statistically significant relationship between the level of knowledge and the prevalence of PV among construction workers in Serang City. Complete data can be seen in table 2 below:

Table 2. The Relationship between Knowledge Level and the Prevalence of Pityriasis Versicolor in Construction Workers in Serang City

Education Level	**Pityriasis versicolor**		**Total**	***P value***
	Positive (+)	**Negative (-)**		

	n	%	n	%	N	%	
Not good	10	28,6	25	71,4	35	35,4	<0,001
Good	0	0	64	100	64	64,6	
Total	10	10,1	89	89,9	99	100	

Source: Reswara Faza Abhinaya, 2024

Based on Table 3, based on Fisher's Exact Test analysis, it was found that there was a statistically significant relationship between the level of behavior and the prevalence of PV in construction workers in Serang City. Complete data can be seen in table 3 below:

Table 3. The Relationship between Behavioral Levels and the Prevalence of Pityriasis Versicolor in Construction Workers in Serang City

Behaviour Level	**Pityriasis versicolor**				**Total**		***P value***
	Positive (+)		**Negative (-)**				
	n	**%**	**n**	**%**	**N**	**%**	
Not good	10	52,6	9	47,4	19	19,2	<0,001
Good	0	0	80	100	80	80,8	
Total	10	10,1	89	89,9	99	100	

Source: Reswara Faza Abhinaya, 2024

DISCUSSION

The most common level of education for construction workers is completing elementary school, this is in line with data from the Ministry of Public Works and Public Housing in 2021 which states that the majority of construction workers' last education is elementary school or equivalent. Apart from that, according to the Ministry of Public Works and Public Housing, men are still the gender that dominates the number of existing workers, namely around 67% compared to female workers.[8-9]

In this study, the temperature in Serang City was obtained with an average of 31.57^{o}C ± 1.71^{o}C and humidity with an average of 80% ± 2.67%. This temperature and humidity are included in the high category based on previous research conducted by Wahid[10]. This research states that temperatures of more than 25^{o}C and humidity of more than 75% can increase the growth of Malassezia fungi and cause an increase in the incidence of PV. High temperatures can cause a person to sweat more easily, increase the growth of Malassezia fungus, and cause itching in PV sufferers. High humidity can cause clothes

that are wet from sweating to become difficult to dry so that someone exposed to high temperature and humidity can increase the risk of PV infection. High temperature and humidity also cause a change in the form of the Malassezia fungus from a saprophytic yeast form to pathogenic hyphae/mycelia that are localized in the stratum corneum layer, resulting in PV pathogenesis.[7]

In this research, it was found that the number of construction workers with a good level of knowledge was high, namely 64.6%. These results are in line with research conducted by Adiasta[11] and Fadillah[12], the results of this research state that the level of knowledge of construction workers regarding personal hygiene is included in the good category. The level of knowledge can be influenced by two factors, namely internal factors in the form of age and gender, and external factors in the form of education, work and interests. A person's age can affect their ability to remember things. There are differences in knowledge abilities between women and men, women find it easier to analyze and draw conclusions from information, while men are superior in knowledge related to coordination. In addition, the higher a person's level of education, the more trained he is in receiving information, so that the process of receiving information becomes easier for him. Someone who actively works can also increase the accumulation of experience and more information, someone who has a high level of curiosity will try to dig up more information so that the level of knowledge is higher.[13]

In this research, it is known that the level of behavior of construction workers in Serang City which falls into the good category is 80.8%. This is in accordance with previous research conducted by Pranoto, et al[14] which said that the majority of workers have a good level of personal hygiene behavior. A person's behavior can be influenced by several things, such as the person's beliefs, expectations, personality, perceptions and level of knowledge.[15-17]

Pityriasis versicolor has typical clinical manifestations in the form of hyperpigmented or hypopigmented spots/macules, round or oval in shape, well-defined and finely scaly which can be seen by stretching or scraping the lesion (evoked scale sign). The results obtained were that 10.1% of construction workers tested positive for Pityriasis Versicolor, while the other 89.9% did not experience Pityriasis Versicolor. This figure is lower than previous research conducted by Pranoto[14], where the study found 45% of PV positive patients. Apart from that, research conducted by Butar Butar[18] also stated that the prevalence of PV in construction workers was 10%. The prevalence of PV is higher in countries with tropical climates due to hot temperatures and high humidity. Indonesia, which is a country with a tropical climate, is a suitable place for PV to develop. Hot temperatures can cause the body to sweat quickly and high humidity can make it difficult to dry wet clothes, which can increase the production of sebum glands which can trigger the growth of the Malassezia fungus.[1-2,16]

There is a statistically significant relationship between the level of knowledge and the prevalence of PV among construction workers in Serang City ($p<0.001$) where all respondents who

experienced PV had a poor level of knowledge. This is in line with previous research conducted by Adiasta[11] which stated that there was a significant relationship between the level of knowledge and Pityriasis Versicolor. This can be caused by several things such as education level, occupation, age, gender and interests. The higher the education a person obtains, the person will be more accustomed to receiving information. Work also influences knowledge through work experience so that a person will get more information from the experience he has while working. A high level of education is usually associated with the ability to receive better information, so that the level of knowledge about tinea versicolor will increase. Work experience also plays an important role in increasing a person's knowledge through the experiences they have while working. The level of knowledge is related to personal hygiene behavior, where someone who has good knowledge of personal hygiene will practice good personal hygiene too. Therefore, construction workers with a good level of knowledge will have a reduced risk of PV compared to construction workers with a poor level of knowledge.[11,13]

The level of personal hygiene behavior on the prevalence of PV shows a significant relationship ($p<0.001$) with 100% of workers with poor personal hygiene behavior being diagnosed with PV. These results are in line with several previous studies regarding the level of personal hygiene behavior. Based on the results of research conducted by Prastian[19] in 2018, it was found that there was a relationship between personal hygiene and the incidence of PV with a value of $P = 0.001$. This is also supported by the results of research conducted by Pranoto[14] in 2023 which stated that the number of respondents with poor personal hygiene who suffered from PV was greater than respondents with good personal hygiene. In this study, the majority of respondents with poor behavior levels did not shower 2-3 times a day, did not change wet clothes, and did not dry wet towels to dry. This can cause construction workers in Serang City to become susceptible to PV infection due to increased production of sebaceous glands which causes increased growth of the Malassezia fungus, thereby increasing the risk of PV infection.[16]

CONCLUSION

In this study, it was found that the prevalence of Pityriasis Versicolor among construction workers in Serang City was 10.1%. The level of knowledge of construction workers in Serang City is statistically significantly related ($p<0.001$) to clinical cases of Pityriasis Versicolor. The level of personal hygiene behavior of construction workers in Serang City is statistically significantly related ($p<0.001$) to clinical cases of Pityriasis Versicolor.

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