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Factors Affecting the Incidence of Tinea Pedis in Palm Oil Plantation Workers in Sonomartani Village, Kualuh Hulu District, Labuhan Batu Utara Regency, Indonesia

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A B S T R A C T

Introduction: The condition of rice fields or plantations, which are dominated by humid conditions, greatly affects the high incidence of tinea pedis in oil palm workers. This cannot be separated from minimal knowledge about the importance of keeping feet clean while working. This study aimed to determine the factors that influence the incidence of tinea pedis in oil palm plantation workers in Sonomartani Village, Kualuh Hulu District, Labuhan Batu Utara Regency, Indonesia. **Methods:** Cross-sectional observational study. A total of 48 research subjects participated in this study. Observations on sociodemographics and factors of the risk of developing tinea pedis were carried out in this study. Data analysis was carried out using SPSS univariate and bivariate. **Results:** The results of the study showed that age <35 years and female gender were associated with the incidence of tinea pedis, p<0.05. Personal hygiene factors such as using their own towels, washing feet after activities, and the habit of drying shoes after use are associated with the incidence of tinea pedis, p<0.05. **Conclusion:** The habit of washing feet and keeping shoes dry is a factor risk that contributes to the incidence of tinea pedis in oil palm plantation workers in Sonomartani Village, Kualuh Hulu District, Labuhan Batu Utara Regency, Indonesia.

1. Introduction

Tinea pedis or often called athlete's foot, is a fungal infection (dermatosis) on the feet, especially between the toes and soles. Some sufferers feel disturbed when an unpleasant odor appears, and severe itching occurs and really interferes with work. Tinea pedis often affect adults aged 20-50 years who work in places wet like car and motorcycle washers, farmers, garbage men, or people who have to wear shoes every day. Humid and hot environmental conditions between the toes due to wearing shoes will also stimulate the growth of fungus. The incidence of tinea pedis increases with age because the older the immune system gets weaker, which causes the body's resistance to disease to decrease, besides that nutritional factors also have an effect and the most dominant factor is a person's socioeconomic status.[1-5]

Human life cannot be separated from the environment as a life support system, as well as farmers who make plantations a source of livelihood. It's just the condition of the rice fields or plantations dominated humid conditions greatly affect the risk of higher incidence of skin diseases such as tinea pedis. This cannot be separated from minimal knowledge about the importance of keeping feet clean while working.[6-10] This study aimed to determine the factors that influence the incidence of tinea pedis in oil palm plantation workers in Sonomartani Village, Kualuh Hulu District, Labuhan Batu Utara Regency, Indonesia.

2. Methods

This study was a cross-sectional analytic observational study and used primary data obtained by interviewing research subjects. A total of 48

subjects participated in this study, where the research subjects met the inclusion criteria. The research subjects in this study were oil palm plantation workers in Sonomartani Village, Kualuh Hulu District, Labuhan Batu Utara Regency, Indonesia, aged 15-50 years, and willing to take part in this study by signing an informed consent form. This study has received approval from the health research ethics committee of the Faculty of Medicine, Universitas Muhammadiyah Sumatera Utara, with number 363/KEPK/FKUMSU/2022.

This study observed sociodemographic data as a good factor suspected to be related to tinea pedis. As for factors, the risks observed were age, gender, education level, length of time wearing shoes, bathing, using a towel, washing feet, cleaning and scrubbing feet, storing shoes, and using soap. Data analysis was carried out using SPSS version 20 for windows. Univariate analysis was performed to present the frequency distribution of each data variable test. Bivariate analysis was carried out to determine the relationship between risk factors and the incidence of tinea pedis, with a p-value <0.05.

3. Results and Discussion

Table 1 presents a cross-tabulation variable with tinea pedis. The results of the study showed that age <35 years and female gender were associated with the incidence of tinea pedis, p<0.05. Personal hygiene factors such as using their own towels, washing feet after activities, and the habit of drying shoes after use are associated with the incidence of tinea pedis, p<0.05.

Table 1. Cross tabulation variable with tinea pedis.

Variable	Tinea pedis		P value*
	Yes	No	
Age			0,002
<35 years	24	6	
>35 years	6	12	
Gender			0,001
Female	25	6	
Male	4	13	
Level of education			0,818
Primary school	14	10	
Junior high school	12	8	
Senior high school	3	1	
Duration of shoe wear			0,061
> 8 hours	20	8	
< 8 hours	9	11	
Take a shower			0,488
Take a shower 2 times a day	20	10	
No shower 2 times a day	9	9	
Using a towel			0,001
Use their own towels	28	3	
Don't use towels	1	16	
Washing feet after activity			0,001
Yes	24	3	
No	5	16	
Cleaning & scrubbing feet			0,333
Yes	25	18	
No	4	1	
Keeping shoes exposed to sunlight			0,001
Yes	28	4	
No	1	15	
Using soap			0,488
Yes	6	3	
No	23	16	

*Chi-square test, p<0,05.

The results of this study indicate that personal hygiene becomes an important factor in risks associated with tinea pedis. The results of this study are in line with several studies which state the importance of personal hygiene aspects in the incidence of tinea pedis.[11-15] A study shows that habit

Individuals maintaining personal hygiene reduce the risk of tinea pedis by 65%.[16] The fungus that causes tinea pedis lives in moist conditions. Humid conditions are closely related to personal hygiene. The habit of washing and cleaning feet and the habit of keeping shoes still dry skin also play an important role in preventing the occurrence of tinea pedis.[17-20]

4. Conclusion

The habit of washing feet and keeping shoes dry is a factor risk that contributes to the incidence of tinea pedis in oil palm plantation workers in Sonomartani Village, Kualuh Hulu District, Labuhan Batu Utara Regency, Indonesia.

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