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DESCRIPTION OF NAIL FUNGUS ON PLANTATION WORKERS IN BOJONG SARI KAMPUNG, JATISARI KELURAHAN, JATIASIH DISTRICT, BEKASI CITY

Abstract

Introduction: Onychomycosis is a fungal nail infection that causes various types of fungi such as *Candida* sp. and dermatophytes. Species that usually cause nail fungal infections in humans are *Epidermophyton floccosum*, *Microsporium canis*, *Trichophyton concentricum*, *Microsporium gypseum*, *Epidermophyton floccosum* sp., *Trichophyton mentagrophytes* and *Trichophyton rubrum*. The prevalence of onychomycosis infection has increased quite high from 2% to 14% in the last 20 years. Factors that affect nail fungus infection are age, individual hygiene, and environmental hygiene. Therefore, it is necessary to conduct research on the description of nail fungus on plantation workers in Bojong Sari Village, Jatiasih District, Bekasi City.

Method: This type of research is descriptive with a cross sectional design. The sample in this study amounted to 40 plantation workers who live in Bojong Sari Village, Jatiasih District, Bekasi City. The sampling technique used was the 20% Potassium Hydroxide (KOH) method. Data analysis was carried out with a descriptive approach.

Results: The results of this study showed that 5 (12.5%) respondents were positively infected with nail fungus, while 35 (87.5%) respondents were negative for nail fungus infection.

Conclusion: In this study it can be concluded that the description of nail fungus infection in plantation workers in Bojong Sari Village, Jatiasih District, Bekasi City as many as 5 (12.5%) respondents were positive for nail fungus, and 35 (87.5%) negative people. The risk factors that have the potential to cause plantation workers to get nail fungus infection are not using footwear, not using gloves, not cutting nails regularly and not keeping the house clean. Suggestions for further research can be done by analyzing the relationship of risk factors for nail fungus infection to the incidence of nail fungus infection with the SDA culture method.

Key words : Nail Fungus, Individual Hygiene, Environmental Hygiene, Plantation Workers, Age

INTRODUCTION

Onychomycosis is a fungal nail infection caused by various types of fungi such as *Candida* sp. and dermatophytes. Species that usually cause nail fungal infections in humans are *Epidermophyton floccosum*, *Microsporium canis*, *Trichophyton concentricum*, *Microsporium gypseum*, *Epidermophyton floccosum*, *Trichophyton mentagrophytes* and *Trichophyton rubrum* (Sutanto, 2013). According to Science et al. (2012) one of the factors that influence nail fungus infection is age. Age is one of the risks that affect the incidence of onychomycosis, while according to Chandra (2007) the level of personal hygiene is very important such as hand and toe nail care because it has the potential to cause nail fungus infection. Each condition of the fingernails and toenails will affect the incidence of nail fungus infection in a person.

According to Bhatia (2015) the prevalence of onychomycosis infection has increased quite high from 2% to 14% in the last 20 years. Nail fungal infections can cause discoloration of the nails such as white, yellow, brownish, and the nails become cracked and the nail surface is uneven, in addition, onychomycosis infection can cause clinical disorders such as reducing the appearance of nails and nail fungus infection is difficult to treat. This has an impact on reducing the quality of life and comfort of people with nail fungus infection.

Considering the problems and impacts caused by nail fungus infection, it is necessary to do research on the description of nail fungus infection, especially in plantation workers. The selection of the subject of farmers and

plantation workers is because they have a habit of not using footwear when working, so that when working, mud easily gets into the nails and has the potential to cause nail fungus infection (Widiati et al. 2016). According to Tabri (2016) infections that occur on the nails can be caused by someone who works or is in direct contact with a humid and dirty environment such as the work of farmers.

The difference between this study and previous research lies in the location, research subjects, and the number of research samples. In this study, located in Bojong Sari Village, Jatisari Village, Jatiasih District, Bekasi City, the subjects of this study were plantation workers totaling 40 respondents as research samples to be examined for the presence of nail fungus. The choice of subjects was due to the fact that some of the residents of Bojong Sari Village work on plantations and the workers' individual hygiene levels are still very low, such as not using footwear, not using gloves when they work, and these workers are in direct contact with soil, water, or mud. This research has conducted a preliminary survey and it was found that many plantation workers experience symptoms of nail fungus infection with the characteristics of yellow nails, uneven nail surface, and nails that do not look shiny. This is the basis of interest in conducting research on the description of the incidence of nail fungus infection in plantation workers in Bojong Sari Village, Jatisari Village, Jatiasih District, Bekasi City.

METHOD

The population in this study are plantation workers who live in Bojong Sari Village, Jatisari Village, Jatiasih District, Bekasi City. In Bojong Sari Village, Jatisari Village, Jatiasih District, Bekasi City, there are 2 RW, namely Rw 01 and Rw 02. In this study, the population was taken from Rw 01 because the number of residents who worked as plantation workers was more in Rw 01 than Rw 02. The sample used In this study, there were 40 samples from Bojong Sari Village, Jatisari Village, Jatiasih District, Bekasi City.

A. Tools and Materials

1. Tools
Plastic bag clip, Tweezers, Microscope (Olympus), Object glass, Deck glass, Gloves, Mask, Nail clippers
2. Materials
KOH solution potassium hydroxide 20% nail scrapings of plantation workers in Bojong Sari Village, Jatisari Village, Jatiasih District, 70% alcohol cotton

B. Procedure

1. Pre Analytic
Select a subject with the characteristics of discolored nails, uneven surface, and the nail plate is not shiny
Sutanto, (2013) Clean the nails with an alcohol swab on the surface area of the nail plate. Wait until it dries and take the nail scraping on the inside of the nail. Take a sample with a sterile razor and insert it the sample into a plastic bag clip with tweezers and give the identity according to the name and age, then the sample is ready to be brought to the STIKes Mitra Keluarga laboratory.
2. Analytic
The sample was taken from a plastic clip bag with tweezers, then took the sample and placed it on the object glass, then dripped it with 20% KOH solution, then heated it over low heat and did not let it evaporate, then covered it with a glass deck and examined it using a microscope with an objective magnification 40x.
3. Analytical post Run-on (ETS)
The sample was taken from a plastic clip bag with tweezers, then took the sample and placed it on the object glass, then dripped it with 20% KOH solution, then heated it over low heat and did not let it evaporate, then covered it with a glass deck and examined it using a microscope with an objective magnification 40x.

RESULTS

This research was conducted in Bojong Sari Village, Jatisari Village, Jatiasih District, Bekasi City in February 2022. The sample of this study consisted of 40 plantation workers' nail scrapings. Samples were examined using the direct preparation method at the Mycology Laboratory of STIKes Mitra Keluarga Bekasi.

This research has carried out a preliminary test of reagents between concentrations of 10% and 20%, at a concentration of 10% it is necessary to fixation with a Bunsen flame while at a concentration of 20% it is not necessary to fixation with a Bunsen flame. Based on table 4.1, the results of direct examination of the 40 samples examined were positive 5 (12.5%) and negative 35 (87.5). Sampling was based on the characteristics of nail fungus including changes in the color of the nails, this is in accordance with research conducted by Setianingsih, et al (2015) about the characteristics of nail fungal infections such as yellow, brown and white and nails can become cracked, uneven surface, and reduce the beauty of one's nails and can reduce the quality of life of a person affected.

by nail fungus infection. Based on Anggowarsito's research, (2018) Meanwhile, if healthy nails have the characteristics of healthy nails, the nails do not change color, the surface is smooth, there are no spots, no holes, and the surface is smooth.

Positive samples obtained in this study amounted to 5 (12.5%) with hyphae found in the five samples. Hyphae have a non-insulated structure or are called aseptate. The characteristics of the spores that are commonly found in nail scraping preparations are groups of yeast cells or spores that are unicellular oval or buds form. The characteristics of hyphae appear branched and septal, hyphae can be shaped into arthrospores on nail preparations that look like spores that are densely arranged (Sutanto, 2013).

The factors that cause nail fungus infection are individual hygiene and environmental hygiene, the table below is a percentage of the habits of individual plantation workers and environmental hygiene.

percentage of plantation workers how many times to bathe in one day. In plantation workers who were positive for nail fungus infection who only took 1 bath in one day as many as 4 (10%) people, for plantation workers positive for nail fungus infection who took 2 baths in one day as many as 1 (2.5%) people. This shows that plantation workers who only take 1 bath in a day have a high risk of nail fungus infection because people who bathe only 1x the body of the worker is dirty because of work that produces sweat and then becomes damp so that fungus can grow.

the percentage of 5 (12.5%) people infected with nail fungus. 2x plantation workers are not positive. Meanwhile, less than 2 plantation workers clean the floor in one. the plantation workers how many times to clean the floor of the house in one day. Plantation workers who are positive for nail fungus infection who do not clean the floor of the house are 4 (10%), for plantation workers who are positive for nail fungus infection who clean the floor of the house once in one day are 1 (2.5%), while workers who are positive for nail fungus infection who cleaned the floor of the house 2x there was no 0 (%).

percentage of plantation workers how many times to bathe in one day. In plantation workers who were positive for nail fungus infection who only took 1 bath in one day as many as 4 (10%) people, for plantation workers positive for nail fungus infection who took 2 baths in one day as many as 1 (2.5%) people. This shows that plantation workers who only take 1 bath in a day have a high risk of nail fungus infection because people who bathe only 1x the body of the worker is dirty because of work that produces sweat and then becomes damp so that fungus can grow.

percentage of plantation workers whether or not they use gloves at work. In plantation workers who were positive for nail fungus infection who did not use gloves at work, there were 5 (12.5%) for workers who were positive for nail fungus infection using gloves, there were 0 (0%) people.

DISCUSSION

According to the Ministry of Health. RI is the age of 45-65 is the age of the elderly, while the age of 68-67 years is the elderly. Based on table 9, the age of the nail fungus infection ranges from 45 - 67 years, this age category means that people infected with nail fungus have entered a young age, so it can be interpreted that age is one of the risk factors for nail fungus infection because they are getting older. A person's age, his health will decrease

The prevalence of onychomycosis is lower in children compared to adults this is due to reduced exposure to infected environments such as: shared baths, public changing rooms and saprophytic fungi, smaller nail surface area (Mpharmsc et al., 2010). Research conducted by Widasmara, (2018) said that elderly people tend to have circulation disorders that are associated with decreased nail growth rates. This increases the risk of colonization by dermatophytes and other organisms. Preliminary studies suggest that there is a correlation between age and onychomycosis. Approximately 20% of the population >60 years of age and up to 50% of subjects >70 years of age are reported to have onychomycosis (5,20). Another study says that age is correlated with nail fungal infection is Mpharmsc et al., (2010) correlation between increasing age and onychomycosis can be attributed to reduced peripheral circulation, inactivity, suboptimal immune status, diabetes, larger and distorted nail surface, slower growing nails. Rubrum infection that does not appear to be associated with interfamilial transmission. This research was conducted on 40 respondents of plantation workers in Bojong Sari village, Jatiasih sub-district, Bekasi city. Positive results are 5 (12.5%), this is because plantation workers are in direct contact with soil, water, mud. This is in accordance with research conducted by Widiati et al., (2016) who said that residents who work as farmers and plantation workers have an activity that is not using footwear, even they do not use footwear and direct contact with the mud becomes a problem. risk of fungal nail infection. Limitations in this study were not using LPCB (Lactophenol Cotton Blue) reagent so it could not determine the genus of nail fungus from samples of plantation workers' nail scrapings, mushroom culture method had not been carried out using SDA (Sabouraud Dextrose Agar) media so that it could not be determined to the genus level, and did not perform a correlation analysis on the relationship between nail fungus infection and individual and environmental hygiene factors. The advantages of this study are that it has complete subject data, including data on the frequency of working in one week, the use of footwear at work, the frequency of cutting nails in two weeks, the frequency of taking a bath in one day, the frequency of cleaning the floor in one day, workers after working to clean themselves or not, we3ggw use of gloves after work, and data on the age of respondents infected with nail fungus.

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