Vol 1 No 4 2024 || E-ISSN xxxx-xxxx

The Journal of Academic Science

journal homepage:
https://thejoas.com/index.php/

Relationship/Correlation of the Onset of Tinea Pedis Disease Due to Floods

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KEY W O R D S
Tinea pedis, Flood, Skin, Hygiene

A B S T R A C T
Floods are one of the most frequent natural disasters and have a significant impact on the environment and individual health. One of the health problems that often arise due to floods is skin diseases, such as tinea pedis. The purpose of this study is to determine the relationship between water cleanliness factors during floods and the incidence of tinea pedis. The research method used was to search for literature sources that focused on articles that discussed the impact of noise on mental health. Literature sources are obtained from google scholar, pubmed, and science direct. The sources of literature obtained were 98 journals and 5 articles were included in the review based on inclusion and exclusion criteria. The results of the study showed that flooding affected cases of tinea pedis. Thus, this study is expected to provide a better understanding to the public about the health impacts of floods, especially related to tinea pedis. This is expected to be the basis for the development of prevention and control strategies for the disease in the future.

1. INTRODUCTION

Indonesia is a coastal country that is one of the disaster-prone countries. One of the disasters that is prone to disasters in Indonesia is floods. Flood damage is very severe and includes health impacts. Among these health impacts, skin diseases are one of the most commonly encountered. Both infectious and non-infectious dermatological conditions contagious increased after floods (Dayrit et al., 2018). One of the most common diseases is tinea pedis. Tinea pedis, commonly known as athlete's foot, is the result of fungal infections of the skin of the feet caused by dermatophytes, including Trichophyton rubrum,Tmentagrophytes,Tinterdigitale, and Epidermophyton floccosum. This infection usually occurs through direct contact with the organism while walking barefoot in locker rooms, bathrooms, and swimming complexes (Nigam, Syed & Saleh., 2023). On the other hand, transmission can also occur through indirect contact with contaminated items (e.g. shoes, socks, bedding) from affected individuals (Leung et al., 2023). This causes the area around the affected place to have the possibility of being infected.

With the flood, the surrounding room becomes damp and our feet are constantly exposed to water. It is also related to environmental cleanliness, when floods environmental cleanliness is also not achieved. Wet and humid

environmental conditions, as well as plenty of shade are perfect for the growth of many organisms, including fungi (Noverita et al., 2018). This will cause the fungus that causes tinea pedis to develop rapidly and increase the likelihood of contact with a host that will infect the host aforementioned.

2. METHOD

The use of the method in this study is a literature review study, which is a study conducted to analyze literature selected from several sources so that it becomes a conclusion and becomes a new idea. search using Google Scholars with a publication deadline in the last 5 years (2018-2023). The journals used in this study were selected based on the inclusion and exclusion criteria as follows: Flood disaster inclusion criteria, communities infected with tinea pedis, Effect of water hygiene
flood.
Then on the exclusion criteria So from that, in literature Treatment of tinea pedis, influence of the region
In this review, we will discuss how the impactflood against Tinea pedis.
The goal is to identify the link between flooding and an increase in cases of tinea pedis, as well as to provide useful information for practitioners.

Table 1. Results of the Literature Review of the occurrence of floods, other skin diseases infected with fungi.

3. RESULT AND DISCUSSION

The Relationship between Floods and Health

Floods can have a significant impact on human life, especially on human health. Research conducted by several groups shows that floods have a negative impact on public health, including increasing the risk of injury, skin diseases, and in some cases floods can lead to death, especially if victims do not receive proper care.

According to the WHO, death also results from physical trauma, heart attack, electric shock, carbon monoxide poisoning or fire. Floods can have medium and long-term health impacts, including waterborne and vector-borne diseases, such as cholera, typhoid or malaria. Floods also have an effect on mental health related to emergency situations.

The Relationship between Flooding and Skin Health

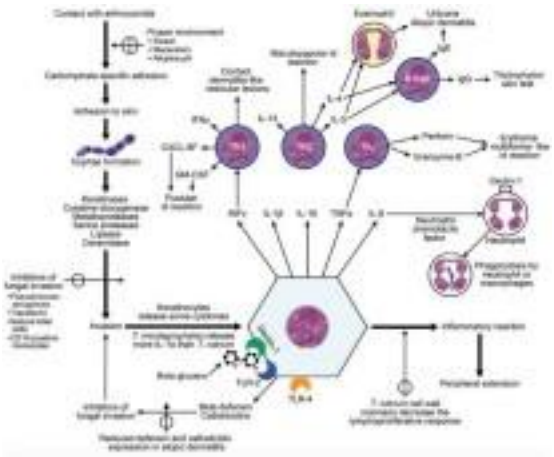
Floods have dire consequences for public health. After the flood, various conditions became a nest of diseases, one of which was skin disease. Based on the Journal of Community Service with the title "Skin Counseling for Flood Impact in Liang Julang Village, Dukuh Lamba Block", there were 40 respondents who were 12 men and 28 women. Based on their age, there are 2 children, 2 teenagers, 8 adults, 28 elderly. And based on the skin disease, there are 20 people who experience itching and redness, 5 people suffer from ringworm, and 15 people suffer from scabies (Yuwansah, 2021).

The Effect of Hygiene on Tinea Pedesis

Hygiene is one of the risk factors for Tinea pedis, this is because dermatophyte infections that cause Tinea pedis can occur when individuals are exposed to contaminated flood water. Based on the results of research conducted on the damage to the sanitation and clean water system of Panjang Wetan Village, Pekalongan City, which is one of the areas that is vulnerable to flash floods. The results of interviews with local people stated that the phenomenon of flash floods that occurred in the Panjang Wetan

Village area has had a significant impact, one of which is the onset of skin fungal diseases. The type of skin fungal disease that is moderate/has been experienced shows that more respondents have experienced athlete's foot due to flash floods (97.9%). Based on research conducted by Faiqoh, et al. (2017) showed the results that the most common type of disease related to rob is water lice. Chicken's lice disease occurs in most of the people of Panjang Wetan Village due to feet that are often submerged in water in doing daily activities. The dirty water can cause people to get chicken's head disease.

The Process of *Tinea Pedesis*



(Macit Ilkit,2014)

Dermatophytic infections are caused by arthrospora or conidia that reproduce asexually. High temperatures, alkaline pH, and hyperhidrosis facilitate pedal infection by these organisms. Host factors that can promote this infection include damaged skin, skin maceration and immunosuppression. However, Pseudomonas aeruginosa, transferin, natural killer cells, and CD14-positive monocytes inhibit fungal invasion. The most common dermatophytic infections are caused by the absence of sebum, which is a natural inhibitory secretion; Sebum is absent in the plantar region due to the absence of sebaceous glands.

Dermatophytes release various enzymes (e.g.keratinase, metalloprotease, cysteine dioxygenase, and serine protease), producing lipases and ceramides, and invading superficial keratin. Keratinocytes are not only a physical barrier to dermatophytes but also play a role in the skin's immune reaction. They express pattern recognition receptors, such as Toll-like (TLR) and dectin-1 receptors, which promote the release of various pro-inflammatory cytokines and chemotactic factors and cause inflammatory reactions, such as redness and swelling. Keratinocytes also release antimicrobial peptides, including defensins, cathelicidins, and psoriasin, which prevent fungal invasion.

Chemotactic factors recruit neutrophils and monocytes (macrophages), which are inflammatory phagocytes that engulf dermatophytes and release cytokines. They also produce reactive oxygen species (ROS), such as superoxide, hydrogen peroxide and hydroxyl radicals, which produce damaged proteins, lipids and DNA, thereby destroying pathogens that are phagocytosized. However, the cell wall mannan

T. The rubrum decreases the lymphoproliferative response. Local fungal infections induce the production of circulating antibodies and activate T-lymphocytes, leading to a variety of local or common inflammatory reactions (Macit Ilkit, 2014).

STRATEGY:

Education

Education of tinea pedis during floods is very important to prevent and reduce the risk of diseases that often occur after flood disasters. At the time of flooding, dirty and dangerous environmental conditions can increase the risk of being infected with tinea pedis. Dirty water conditions can increase the risk of tinea infection pedis through contact with dirty water and harmful materials.

Tinea pedis education can be carried out in various ways, such as direct counseling to the community, distribution of materials Preventionand the use of mass media to increase public awareness. The most important thing that must be emphasized is education on the importance of maintaining hygiene and health, as well as effective ways to prevent and treat tinea pedis.

Some ways that can be done to prevent tinea pedis during floods include: Washing your feet

regularly and using appropriate soap, Using clean and not too tight clothing, Improving environmental cleanliness by eliminating domestic waste and harmful chemicals, Using appropriate footwear that is not too narrow, Washing your hands regularly and using appropriate soap, Use medicamentosa medication if it is felt that tinea pedis disease is severe. There are several drugs that can be given to patients who are affected by tinea pedis: terbinafine 1% cream with a frequency of use 1-2 times a day for 1-2 weeks, ketoconazole 2% cream, miconazole 2% cream with a frequency of use 2 times a day for 4-6 weeks.

Prevention and Control of Tinea pedis

The prevention and control of tinea above there is no difference in the level of pedis to reduce the risk of tinea pedis. However, this is during or after the flood. Some methods cannot be a reference because factors that can be done to prevent others from internal and external and control tinea pedis can be the cause.

The influence that causes the difference in severity is seen from the condition of the flood water. The disease can also spread due to skin damage, poor lifestyle, and lack of access to medical care. Education
community about hygiene, sanitation, and how to prevent tinea pedis after Flooding is an important preventive measure. Therefore, it is hoped that a deep understanding as well as appropriate prevention measures can reduce the health impacts associated with flooding and improve the quality of life of people in disaster-prone areas.

4. CONCLUSION

Based on the discussion, it is evident that floods have a significant impact on public health, particularly in relation to the increased incidence of Tinea Pedis. Flooding, as a frequent natural occurrence, creates a favorable environment for the growth of the fungus responsible for Tinea Pedis due to the prolonged moisture and wet conditions that follow such events. Consequently, the risk of Tinea Pedis infection rises, especially in flood-affected regions. The comparison of infection rates between different areas also suggests that the severity and prognosis of the disease may vary, with influencing factors originating from both urban and rural settings.

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