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Prevalence and characteristics of dermatitis cases in Dermatology Clinics (2020–2024): A retrospective analysis

Rima Melati[1]*, Evy Aryanti[2], Muhammad Subhan Alfaqih[3], Ineke Winda Ferianasari[4], Reza Yuridian Purwoko[5]

[1,3,4,5]Faculty of Medicine, Universitas Presiden, Indonesia
[2]RSUD Bekasi, Indonesia

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ABSTRACT

Dermatitis is a common inflammatory skin condition that can significantly impact patients' quality of life. Studies on the prevalence and risk factors of dermatitis in Indonesia remain limited. To analyze the prevalence, demographic distribution, and the relationship between occupation and types of dermatitis in a dermatology clinic from 2020 to 2024. This retrospective study utilized medical record data of dermatitis patients who visited a dermatology clinic from 2020 to 2024. The variables examined included age, gender, occupation (2020–2023), case type (new/existing), and dermatitis diagnosis. Statistical analysis was conducted using the chi-square test to identify the relationship between occupation and dermatitis diagnosis. There was a significant decrease in dermatitis prevalence from 9.75% during the 2020–2023 period to 4.63% in 2024. The 25–44 year age group had the highest number of cases, with a predominance of female patients. The chi-square test showed a significant association between occupation and dermatitis diagnosis ($\chi^2 = 70.259$; $p < 0.05$). Dermatitis remains a significant health issue with a distinct demographic distribution. Improvements in data collection and diagnosis classification are necessary for a better understanding and the development of effective prevention strategies. These findings have important implications for clinical practice and health policy in Indonesia, particularly in terms of workplace prevention and management of dermatitis.

Corresponding Author:

Rima Melati,
Faculty of Medicine,
President University,
Jl. Ki Hajar Dewantara, RT.2/RW.4, Mekarmukti, Kec. Cikarang Utara, Kabupaten Bekasi, Jawa Barat 17530, Indonesia.
Email: rima.melati@president.ac.id

INTRODUCTION

Dermatitis is a skin inflammation characterized by symptoms such as itching, redness, and rash, which can significantly affect an individual's quality of life (Kadyk et al., 2003). Dermatitis is a global public health problem with a prevalence of 10-20% in children and 1-3% in adults (Akbar,

2020). The prevalence of dermatitis varies globally and is influenced by genetic, environmental, and occupational factors (Kasemsarn et al., 2016). In Indonesia, epidemiological data on dermatitis, particularly related to occupational risk factors and demographic distribution, remain limited. According to the Ministry of Health of Indonesia, the prevalence of skin diseases reached 8.46% in 2018, with dermatitis being one of the leading causes (Kemenkes RI, 2019).

Previous research has shown that dermatitis can affect various age groups with variations in prevalence and risk factors (Lee et al., 2019). Gender differences in the incidence of dermatitis have also been reported, although the underlying mechanisms are not yet fully understood (Urban et al., 2021). Additionally, the relationship between occupation and dermatitis has become an important focus in dermatological research due to its impact on work productivity and individual well-being (Diepgen & Coenraads, 1999).

Research Objectives: To analyze the prevalence and trends of dermatitis cases from 2020 to 2024 in a dermatology clinic. To identify the demographic distribution of dermatitis cases based on age and gender. To investigate the relationship between occupation and the types of dermatitis diagnosed.

RESEARCH METHOD

This study is a retrospective study that analyzes the medical record data of dermatitis patients in dermatology clinics from 2020 to 2024. The design of this study focuses on demographic distribution, work-related risk factors, and types of dermatitis cases. The population and sample in this study were all patients diagnosed with dermatitis in the clinic during the study period. Patient Inclusion Criteria with complete data on age, gender, occupation (for 2020–2023), type of case (new/old), and diagnosis of dermatitis. Exclusion Criteria for patients with incomplete data or non-specific diagnoses.

Data collection was collected from electronic medical records that included several key variables: 1) Age: Categorized in age groups (5–14, 15–24, 25–44, 45–64, >65 years). 2) Gender: Male or female. 3) Occupation: Patient occupation information (available for 2020–2023). 4) Case Type: New or old (recurrent) case. 5) Dermatitis Diagnosis: Based on the relevant ICD-10 code. Incomplete or missing data is handled by the complete case analysis method, where only cases with complete data are included in the analysis. This method ensures the accuracy of the analysis even if it reduces the sample size.

The analysis was carried out with two types of approaches: Descriptive Analysis: The prevalence, age distribution, sex, and frequency of dermatitis diagnosis were calculated descriptively. Inferential Analysis: The chi-square test is used to test the relationship between occupation and the diagnosis of dermatitis. Statistical Software: All data analysis is performed using SPSS version 25 software. This research has received ethical approval from the Health Research Ethics Committee of the Bekasi Regency Hospital which was determined in Bekasi on August 19, 2024 with the number KP.06.01/ 6527/ RSUD/2024. The confidentiality of patient data is maintained in accordance with research ethical standards.

RESULTS AND DISCUSSIONS

Period 2020–2023: Of the total visits to the clinic, the prevalence of dermatitis was 97.5%. Year 2024: The prevalence decreased to 4.63%. This decline may be attributed to increased public awareness, health interventions, or changes in environmental and lifestyle factors (Dinakar et al., 2018)(Martony, 2023)(Nova et al., 2024)(Vilasari et al., 2024).

Age and Gender Distribution. The 25–44year age group had the highest number of cases during both periods, with female patients dominating (around 60% of total cases). In 2024, the age distribution showed an increase in the number of cases among older age groups.

The heatmap below illustrates the distribution of dermatitis cases by age group, with the highest concentration in the 25–44year age group. An increase in 2024 is particularly noticeable among older age groups.

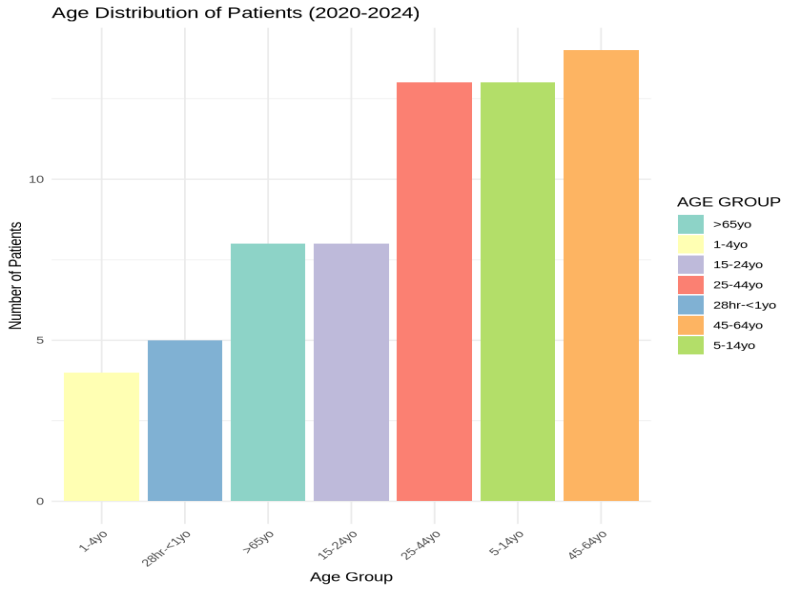

Figure 1. Age group vs. diagnosis heatma 1

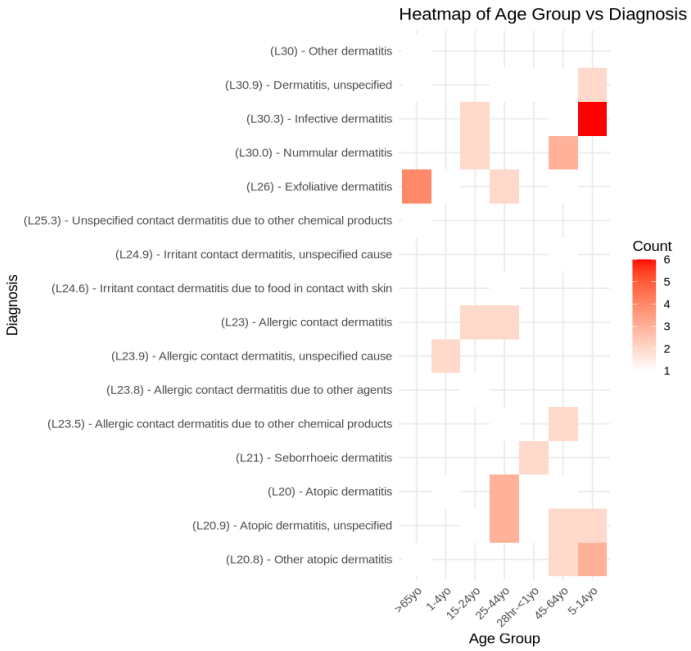

Figure 2. Relationship between age and diagnosis

These findings are consistent with research showing variations in dermatitis prevalence across different age groups and gender differences in dermatitis incidence (Lee et al., 2019; Urban et al., 2021).

Occupation Distribution (2020–2023) The analysis of occupation distribution revealed variations in dermatitis cases across different professions. Certain occupations demonstrated a

higher risk of specific types of dermatitis. The following graph illustrates the relationship between occupation and types of dermatitis during the 2020–2023 period. Some professions showed a higher risk for particular types of dermatitis.

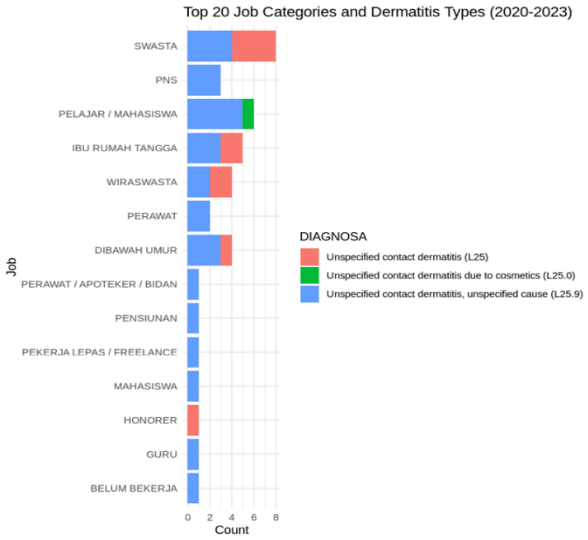

Figure 3. Job categories and dermatitis types (2020-2023)

Distribution of Dermatitis Types (2020–2024). During the 2020–2023 period, the most common diagnosis was "unspecified contact dermatitis" (L25.9), accounting for 70.13% of total cases. However, in 2024, the distribution of diagnoses became more diverse, with an increase in recurrent dermatitis cases. The distribution of dermatitis types for the 2020–2024 period is shown in the following graph. In 2024, there was a noticeable increase in diagnosis variation, including a higher prevalence of recurrent dermatitis cases compared to previous years.

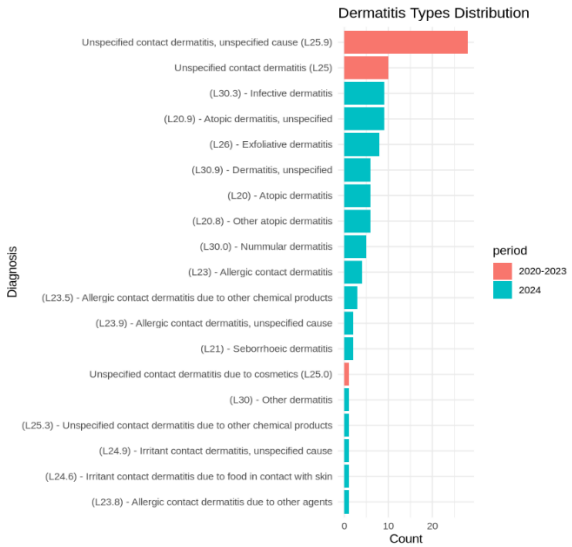

Figure 4. Dermatitis types distribution (2020-2024)

Distribution of New vs. Recurrent Cases (2024). In 2024, approximately 67.69% of the total cases were recurrent, while 32.31% were new cases. The following diagram shows the comparison

between the distribution of new and recurrent cases in 2024. The majority of cases were recurrent, indicating a high prevalence of chronic dermatitis at this clinic.

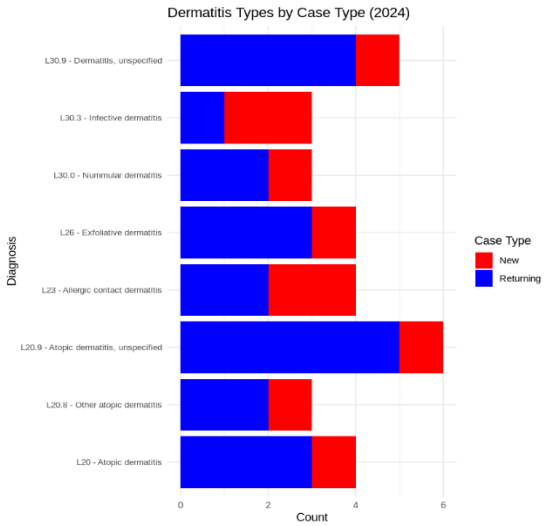

Figure 5. Case type and dermatitis types (2024)

Seasonal Trends in Dermatitis Cases. The data shows that the number of dermatitis cases increased in January, followed by fluctuations during the other months. The graph below illustrates the seasonal trend of dermatitis, with a peak in cases during January. These fluctuations may be related to weather conditions, changes in activities, or increased exposure to allergens during certain seasons.

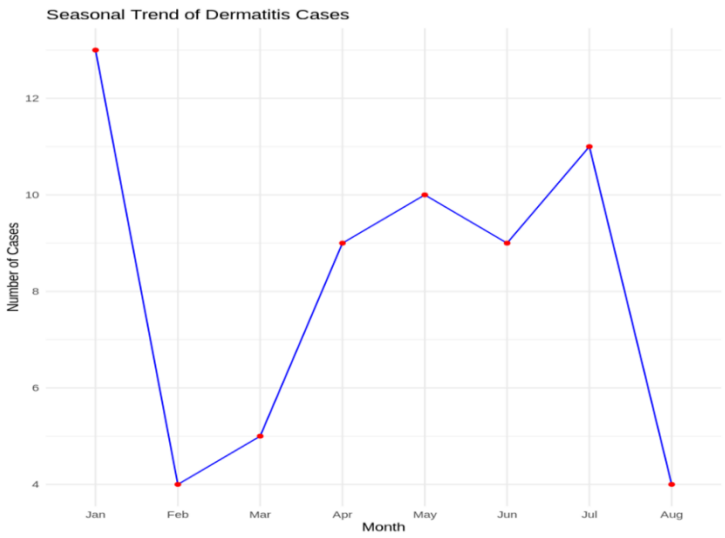

Figure 6. Seasonal trend analysis of dermatitis cases

Analysis of Dermatitis Case Types by Occupation (2020–2023). Certain occupations show a higher risk for specific types of dermatitis, such as contact dermatitis and allergic dermatitis. The graph illustrates that certain jobs are more likely to be associated with specific types of dermatitis, such as contact dermatitis. These findings reinforce the relationship between occupational exposure and the risk of developing dermatitis.

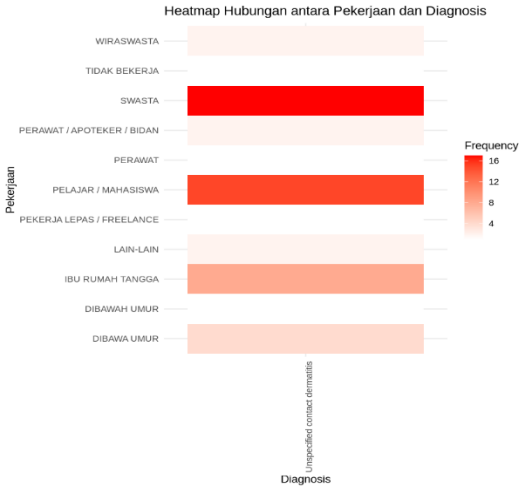

Figure 7. Relationship between work and diagnosis

Relationship Between Gender and Types of Dermatitis. Gender differences indicate that female patients are diagnosed with various types of dermatitis more frequently than male patients. The graph shows that the number of dermatitis cases is higher among female patients compared to male patients. This difference is observed across multiple types of dermatitis recorded during the 2020–2024 period.

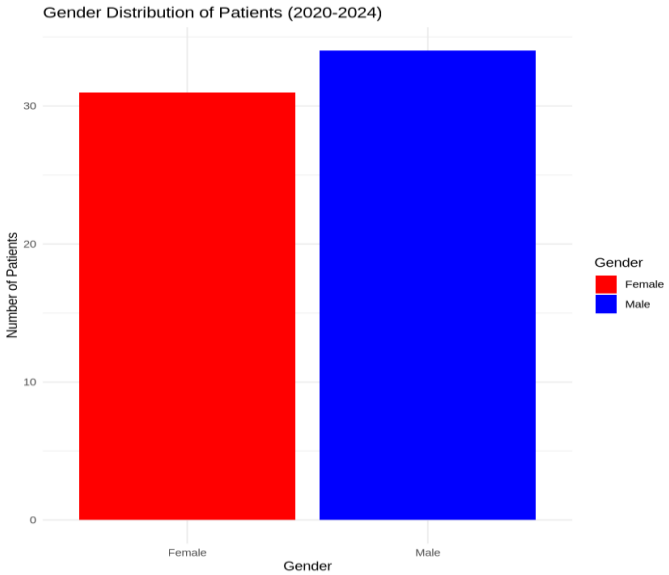

Figure 8. Relationship between gender and dermatitis types

Chi-square Test: Results: The chi-square test showed a significant relationship between occupation and dermatitis diagnosis ($\chi^2 = 70.259$; df = 10; $p < 0.05$). Interpretation: This indicates that the type of occupation influences the type of dermatitis experienced. Note: There was a warning regarding potential inaccuracy in the chi-square test due to low cell frequencies in the contingency table (McHugh, 2013).

Discussion

The significant decrease in dermatitis prevalence in 2024 may reflect the effectiveness of prevention programs, increased public awareness, or changes in environmental factors and

hygiene practices (Dinakar et al., 2018). However, further investigation is needed to determine whether this decline is due to methodological factors, such as changes in data collection or case definitions (Santoso & Madiistriyatno, 2021)(Mustafa et al., 2022)(suci Sukmawati et al., 2023).

The dominance of cases in the 25–44 year age group may be related to workplace exposure, stress, and lifestyle factors (Williams & Flohr, 2006)(Buanasari, 2021)(SRI, 2024)(Hamzah et al., 2021). The higher prevalence among women could be due to hormonal factors, the use of cosmetic products, or the dual roles in work and household duties that increase exposure to irritants (Zafrir et al., 2018).

The significant association between occupation and dermatitis diagnosis underscores the importance of workplace prevention measures, such as education on the use of personal protective equipment and the identification of irritants or allergens (Diepgen & Coenraads, 1999)(Corsita, 2022)(Liberty et al., 2023). However, the limitations in occupation data reduce the ability to identify specific high-risk occupations (Palilingan et al., n.d.)(Masrichah, 2023)(Nainggolan & Hendra, 2023).

The findings of this study have important implications for health policy in Indonesia. First, there is a need to improve dermatitis education and prevention programs, particularly targeting the productive age group and women. Second, it is important to develop more specific occupational health guidelines for industries with high dermatitis risks. Third, there is a need to enhance the capacity for diagnosis and reporting of dermatitis cases in primary healthcare facilities to obtain more accurate epidemiological data.

Study Limitations: Incomplete Occupation Data: Particularly for the year 2024, limiting the ability to conduct a comprehensive trend analysis related to occupation. Non-Specific Diagnoses: The high use of "non-specific contact dermatitis" diagnoses reduces the ability to identify specific risk factors and types of dermatitis. Low Cell Frequency: In chi-square tests, low cell frequency may affect the accuracy and interpretation of the results (McHugh, 2013).

CONCLUSION

Dermatitis remains a significant health issue with a distinct demographic distribution, particularly among the 25–44 age group and female patients. The decline in prevalence in 2024 is an important finding that requires further investigation to understand its underlying causes. The association between occupation and types of dermatitis highlights the need for targeted interventions in the workplace. Further research is necessary to explore specific risk factors, the effectiveness of preventive interventions, and the long-term impact of dermatitis on the quality of life of patients in Indonesia.

Recommendations: Improving Data Collection: Enhance the completeness and accuracy of data, particularly regarding occupation and specific diagnoses, to support more in-depth analyses. More Specific Diagnosis Classification: Use more detailed ICD-10 codes to improve diagnostic accuracy and the identification of risk factors. Education and Prevention: Develop educational programs for high-risk groups and implement preventive measures in the workplace. Further Research: Conduct prospective studies to evaluate risk factors and the effectiveness of interventions, including analysis of environmental, lifestyle, and genetic factors.

The results of this study showed a significant association between job type and dermatitis diagnosis, which emphasizes the need for more specific occupational health policies. The government and related institutions can use these findings to improve education on occupational dermatitis, strengthen the implementation of personal protective equipment (PPE), and develop occupational health guidelines for industries with a high risk of dermatitis.

The main implication for dermatology clinic management is the need for improvement in patient data recording, including occupational information and more specific diagnosis classification to support more accurate epidemiologic analysis. In addition, improved patient

education on risk factors and preventive measures is also important for the long-term management of dermatitis.

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