

Analysis Of Risk Factors For Contact Dermatitis In Patients

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ABSTRACT

Epidemiological data in Indonesia shows that 97% of 389 skin disease cases are contact dermatitis, with 66.3% being irritant contact dermatitis (ICD) and 33.7% allergic contact dermatitis (ACD). In Bandar Lampung, a 2012 annual surveillance by the local health office reported that contact dermatitis accounted for approximately 63% of skin disease cases. Contact dermatitis is often associated with several risk factors, including gender, age, history of skin disease, personal hygiene, and chemical exposure. To analyze the risk factors associated with the incidence of contact dermatitis at the Dermatology and Venereology Clinic of RSUD Dadi Tjokrodipo, Bandar Lampung. This quantitative research used a cross-sectional design involving 322 respondents selected through purposive sampling. Data were collected through structured interviews and direct observation using questionnaires and observation sheets. Statistical analysis was conducted to determine the relationship between risk factors and contact dermatitis. The study found significant associations between contact dermatitis and gender ($p = 0.013$), history of skin disease ($p = 0.000$), and chemical exposure ($p = 0.000$). Chemical exposure was identified as the most dominant risk factor, with a Prevalence Ratio of 14.061, indicating that individuals exposed to chemicals were over 14 times more likely to develop contact dermatitis. There is a significant relationship between gender, history of skin disease, and chemical exposure with the incidence of contact dermatitis. Chemical exposure is the most dominant factor influencing the incidence, posing a risk more than 14 times greater than in those not exposed. Recommendations include the development of standard operating procedures (SOPs) for prevention, provision and monitoring of personal protective equipment (PPE), routine education programs, increased screening and monitoring, cross-sector collaboration, and advocacy for protective regulations.

Keywords: age; chemical exposure; contact dermatitis; gender; history of skin disease; personal hygiene

INTRODUCTION

The prevalence of dermatitis ranges from 0.3% to 20.5% in 56 countries (Yustati et al., 2022). This disease continues to become a major health problem in many countries, including Indonesia. Epidemiological data in Indonesia shows that 97% of 389 cases of skin disease were irritant contact dermatitis and 33.7% were allergic contact dermatitis. In Bandar Lampung, 63% of cases of contact dermatitis occurred according to an annual survey conducted by the Lampung Provincial Health Office (Fitria Saftarina, Hendra Tarigan Sibero, Muhammad Aditya, 2022). Contact dermatitis can significantly impact worker productivity because the symptoms, such as itching, pain, or inflammation, can disrupt work activities. In developed countries like the United States, the costs of treating work-related skin disorders are substantial. These costs include lost income, decreased productivity, employee diversion, workers' compensation, and medical and insurance costs (Wulansari, 2017). Chemical exposure is one of the main causes of contact dermatitis. Prolonged or continuous exposure to chemicals in high concentrations can cause skin damage in the form of irritant contact dermatitis, which in some cases can progress to allergic contact dermatitis (Lestari & Utomo, 2007).

Therefore, effective preventative measures are needed, such as the use of personal protective equipment (PPE), managing a safe work environment, and educating workers to minimize the risk of chemical exposure. Contact dermatitis can be prevented by avoiding exposure to irritants or allergens that have the potential to trigger skin reactions. The first step is to identify substances that can cause irritation, such as detergents, certain chemicals, metals (e.g., nickel), and skin care products containing hazardous substances. Using personal protective equipment, such as gloves or protective clothing when working

with chemicals, is essential to reducing the risk of exposure. Furthermore, maintaining skin cleanliness and moisture is also crucial. Using an appropriate moisturizer can help strengthen the skin's protective barrier and prevent irritation. Choosing hypoallergenic and fragrance-free skin care products is highly recommended to reduce the risk of allergic reactions. For individuals with a history of contact dermatitis, consulting a medical professional is highly recommended for appropriate advice and treatment. This is important to prevent recurrence and avoid more serious complications in the future.

METHOD

The study population consisted of 2,489 patients, with an average of 8-10 visitors per day. Purposive sampling was used, resulting in 322 samples meeting the inclusion and exclusion criteria. The study was conducted at the Dermatology and Venereology Clinic of Dadi Tjokrodipo Regional Hospital. Two variables were used: the incidence of dermatitis was the dependent variable, while gender, age, history of skin disease, personal hygiene, and chemical exposure were the independent variables. Other factors were not included in the study. The study was conducted between March and April 2025. The cross-sectional design used a questionnaire as the research instrument, and both primary and secondary data were collected. Data analysis used the chi-square test for bivariate analysis, logistic regression for multivariate analysis (to determine dominant factors), and the calculation of the prevalence ratio (PR).

RESULT AND DISCUSSION

Of the 322 respondents, 232 experienced dermatitis, with 165 (51.2%) female and 157 (48.8%) male. The respondents' ages were divided into two categories: 202 (62.7%) older adults and 120 (37.3%) young adults. 232 (72%) respondents diagnosed with contact dermatitis, while 90 (28%) did not. 220 (68.3%) patients had a history of contact dermatitis, while 102 (31.7%) did not. 53 (16.5%) respondents had good personal hygiene, while 269 (83.5%) respondents had poor personal hygiene. 221 (68.6%) respondents had been exposed to chemicals, and 101 (31.4%) respondents had not been exposed to chemicals. Based on the number of visits to the polyclinic and genital services at Dr. Soetomo General Hospital, According to Dr. A. Dadi Tjokrodipo, in 2022, according to the Lampung Provincial Health Office, there were 9,500 male patients visiting the outpatient clinic for treatment, and 9,323 female patients. This data covers all outpatient visits, including dermatology and genitalia. The dermatology and genitalia clinic contributes between 3-4% of all outpatient visits. According to data from the dermatology and genitalia clinic at Dadi Tjokrodipo Regional Hospital, the top 10 most common diseases in the dermatology and genitalia clinic in 2023 experienced a significant monthly increase, with dermatitis ranking first. This suggests potential for further analysis, particularly regarding contact dermatitis.

Researchers used this method for several reasons, including: the population size was not too large, the study focused on relevant subjects because it selected truly suitable respondents, it was time-efficient, and it allowed for in-depth information gathering compared to random sampling. However, despite its advantages, this study also has several limitations, including the possibility of selection bias because respondents were selected based on specific criteria, so not all individuals in the population had an equal opportunity to be selected. Furthermore, the results cannot be generalized to the wider population because the sample was not drawn randomly.

In this study, many respondents were still unaware of the risks of contact dermatitis prevention, especially the risks posed by frequent exposure to chemicals. Preventing chemical exposure is crucial, especially to protect skin health from dermatitis, inflammation, itching, rashes, and wounds caused by contact dermatitis. Furthermore, patients with contact dermatitis should avoid exposure to chemicals to prevent the skin condition from becoming chronic. Preventing exposure early helps halt the progression of the

disease.

After data analysis, it was found that 165 respondents (51.2%) were female, while 157 (48.8%) were male. The analysis of the relationship between gender and contact dermatitis incidence yielded a p-value of 0.13, indicating a relationship. Research (Widyaningsih, N. 2019) found that 75% of contact dermatitis cases occur in women, particularly those working as housewives and nurses. This is due to exposure to chemicals and cosmetics used by women. An international study (OECD, 2021) concluded that women are more susceptible to contact dermatitis due to occupational factors and skincare product usage habits.

CONCLUSION

Of the 322 respondents, 232 experienced dermatitis, with 165 (51.2%) female and 157 (48.8%) male. The respondents were divided into two age categories: 202 (62.7%) older adults and 120 (37.3%) young adults. 232 (72%) respondents diagnosed with contact dermatitis, while 90 (28%) did not. 220 (68.3%) had a history of contact dermatitis, while 102 (31.7%) did not. 53 (16.5%) respondents had good personal hygiene, while 269 (83.5%) had poor personal hygiene. 221 (68.6%) respondents were exposed to chemicals, and 101 (31.4%) were not exposed to chemicals. There is a relationship between gender and the incidence of contact dermatitis at Dadi Tjokrodipo Regional Hospital (p-value 0.013) and a prevalence ratio (PR) of 1.88. There is no relationship between age and the incidence of contact dermatitis at Dadi Tjokrodipo Regional Hospital (p-value 0.899). There is a relationship between a history of skin disease and the incidence of contact dermatitis at Dadi Tjokrodipo Regional Hospital (p-value 0.000) and a prevalence ratio (PR) of 3.52. There is no relationship between personal hygiene and the incidence of contact dermatitis at Dadi Tjokrodipo Regional Hospital (p-value 0.504). There is a relationship between chemical exposure and the incidence of contact dermatitis at Dadi Tjokrodipo Regional Hospital, Bandar Lampung (p-value 0.000) and a prevalence ratio (PR) of 10.28. Exposure to chemicals predominantly influences the incidence of contact dermatitis at Dadi Tjokrodipo Regional Hospital.

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