Journal of Public Health and Pharmacy
2775-4952 (Online - Elektronik)
Research Articles Open Access

Determinants of Contact Dermatitis Among Fishermen: A Study on Barrang Lompo Island, Indonesia

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ARTICLE INFO

Manuscript Received: 14 Oct, 2024
Revised: 06 Jan, 2025
Accepted: 26 Jan, 2025
Date of publication: 01 Jul, 2025
Volume: 5
Issue: 2
DOI: 10.56338/jphp.v5i2.6873

KEYWORDS

Contact Dermatitis;
Fishermen;
Personal Hygiene;
PLS-SEM;
Occupational Health

ABSTRACT

Introduction: Contact dermatitis is a common health issue among fishermen caused by exposure to harsh working environments, including seawater, chemicals, and suboptimal use of personal protective equipment (PPE). Factors such as personal hygiene, history of skin diseases, and access to clean water can influence the incidence of contact dermatitis. The novelty of this study is combining environmental sanitation and occupational health factors of fishermen that influence contact dermatitis, which have previously been studied only partially. The results of this study also found that the PPE (Personal Protective Equipment) variable acts as a moderating factor influencing contact dermatitis. This study aims to investigate the causal relationships between personal hygiene, history of skin diseases, PPE use, and access to clean water with the incidence of contact dermatitis among fishermen on Barrang Lompo Island.
Methods: This study employed a cross-sectional using Structural Equation Modeling (SEM) to analysed the relationships between personal hygiene, skin disease history, PPE use, and access to clean water. SEM effectively evaluates interactions among latent variables, offering a robust approach to occupational health issues and providing insights into how individual and environmental factors influence dermatitis prevalence. Data were collected through structured interviews and validated questionnaires.
Results: The analysis showed that personal hygiene and history of skin diseases had significant relationships with the incidence of dermatitis ($p < 0.05$). However, PPE use and access to clean water did not show a significant direct effect.
Conclusion: Improving personal hygiene practices and targeted interventions for individuals with a history of skin diseases are essential for reducing contact dermatitis among fishermen. Education on proper hygiene techniques and optimizing PPE use are recommended for maximum protection.

Publisher: Pusat Pengembangan Teknologi Informasi dan Jurnal Universitas Muhammadiyah Palu

INTRODUCTION

Contact dermatitis is a dermal irritation resulting from direct exposure to irritants or allergens. This illness frequently occurs among fishermen due to a damp working environment, sun exposure, and interaction with aquatic organisms. Factors include inadequate personal cleanliness, extended exposure, and insufficient utilization of personal protective equipment (PPE), elevating the incidence of contact dermatitis (1).

Contact dermatitis is a skin condition with a notably high frequency in numerous countries. The global annual prevalence of allergic contact dermatitis is expected to be 15–20% of the population (2). In Indonesia, epidemiological data indicates that contact dermatitis is the third most prevalent disease among the top ten, with a prevalence rate of 6.78%. The prevalence of dermatitis differs by province; for instance, it is 68.8% in Aceh and 53.2% in South Sulawesi (3).

Makassar City comprises 12 minor islands, 10 of which are populated. Lae-lae Island is situated 1.5 kilometers from Makassar and encompasses an area of 6.5 hectares. In 2017, the population was documented at 1,784 individuals residing in 346 houses (4). Barrang Lompo Island is a highly populated landmass encompassing 19.23 hectares, situated 16 kilometers from Makassar. The population of Barrang Lompo was 4,572, distributed across 1,270 families. Lumu-lumu Island, the furthest island from Makassar, is situated 30.7 kilometers away and encompasses an area of 3.65 hectares, housing a population of 984 individuals among 224 families (5).

Barrang Lompo Island is situated within the Spermonde Archipelago and is governed by the Barrang Lompo Sub-district, Ujung Tanah District, Makassar City. Dermatitis ranks among the ten most prevalent diseases documented on Barrang Lompo Island. In 2023, the Barrang Lompo Community Health Center reported 450 cases of dermatitis throughout all age demographics.

Factors linked to contact dermatitis in fishermen, emphasizing the significance of personal hygiene and prior skin disease history in the onset of dermatitis. The results indicate that fishermen with a history of skin ailments are at a heightened risk for dermatitis. Consequently, this study seeks to identify and prioritize ways to mitigate the occurrence of contact dermatitis among fishermen on Barrang Lompo Island Birawida et al., (2020). The research will concentrate on formulating effective measures to reduce the occurrence of contact dermatitis in this high-risk group, including fishermen, and has identified personal hygiene and a history of skin illness as key factors affecting dermatitis prevalence. This investigation indicates that, notwithstanding the utilization of PPE, these elements significantly contribute to the emergence of skin disorders (6).

Structural Equation Modeling (SEM) is a robust statistical method enabling researchers to examine intricate interactions among variables, especially for the evaluation of theoretical models. Structural Equation Modeling (SEM) techniques have demonstrated efficacy in examining intricate interactions among many risk variables for contact dermatitis, especially in fishermen. Structural Equation Modeling (SEM) techniques can be employed to investigate multiple variables that influence contact dermatitis, including the behavior associated with personal protective equipment (PPE) usage, ambient conditions, and individual characteristics (7).

The current study employs Structural Equation Modeling (SEM) as an analytical tool to explore complex causal relationships between personal hygiene, history of skin diseases, PPE use, and access to clean water. SEM is particularly suited for evaluating multifaceted interactions among latent variables, making it an innovative and robust choice for examining occupational health issues. However, the rationale for adopting SEM extends beyond its methodological advantages—it enables a comprehensive understanding of how individual and environmental factors collectively influence dermatitis prevalence, thereby filling critical gaps in existing research (8).

The novelty of this study is that it combines environmental sanitation and occupational health factors of fishermen with their influence on contact dermatitis. So far, previous studies have only partially examined these two variables. In addition, from the results of this study, it was found that there was a PPE variable which became a moderate variable as an influential factor on contact dermatitis.

In light of this context, the researcher opted to undertake a study in the Barrang Lompo Island region to discover and delineate techniques for mitigating the prevalence of contact dermatitis among fishermen.

METHOD

This research is an observational cross-sectional study. The study's population consisted of communities on Barrang Lompo Island, with a sample size of 110 respondents distributed around the island. This study included dependent, moderating, and independent variables. The dependent variable is the occurrence of contact dermatitis

among fishermen on Barrang Lompo Island, the moderating variable is the utilization of Personal Protective Equipment (PPE), and the independent variables include work time, personal cleanliness, access to clean water facilities, and history of skin illness. This study employs a non-probability sampling technique, namely accidental sampling. Accidental sampling involves interviewing fishermen found incidentally during research activities. This study employed inferential data analysis via Structural Equation Modeling (SEM) with the Smart-PLS software.

Population and Sample/Informants

The research population comprised all fishermen living on Barrang Lompo Island, amounting to 110 respondents. The employed sampling technique was non-probability sampling, specifically accidental sampling, wherein samples were obtained by interviewing fishermen encountered serendipitously.

Accidental sampling was employed to select fishermen as participants due to several considerations. First, this method offers greater flexibility, as fishermen are often difficult to reach given their long and irregular periods at sea. Second, it is a more efficient use of time and resources, considering the challenges in accessing small and remote islands included in the study area

Research Location

This research was carried out on Barrang Lompo Island, Makassar City, in January 2024.

Instrumentation or Tools

This study instrument employs a questionnaire to gather data on respondents' characteristics and their history of skin disorders, alongside an observation sheet to assess the utilization of Personal Protective Equipment (PPE) and the conditions of the working environment.

The instruments used in this study were pre-tested to ensure validity and reliability. A pilot study was conducted with 30 participants who shared similar demographic and occupational characteristics with the study population. The content validity of the questionnaires was assessed by a panel of experts in occupational health and environmental sanitation.

Data Collection Procedures

The data were gathered via interviews utilizing questionnaires during the study activities, encompassing three critical stages in data processing: editing, coding, and cleaning, which are interrelated to guarantee data quality prior to analysis. Editing is the preliminary phase focused on verifying the completeness and consistency of data by detecting incomplete, inconsistent, or erroneous responses in the questionnaire. Following data editing, coding is executed by transforming qualitative data into a numerical format to enable processing with statistical software. The concluding phase is data cleansing, which entails verifying the coded information to eliminate duplicates, rectify entry errors, and address any missing data, ensuring the validity and reliability of the data utilized in the study.

Data Analysis

The data analysis employed the Structural Equation Modeling (SEM) technique utilizing the SMARTPLS tool, capable of elucidating the interactions among independent variables, moderating variables, and dependent variables in the manifestation of contact dermatitis in fishermen.

Ethical Approval

The Health Research Ethics Committee at Hasanuddin University has accepted this research, as shown by letter number (045/UN4.14.1/TP.01.02/2024). The study is scheduled for January 2025 on Barrang Lompo Island, Makassar City.

Informed consent was obtained from all participants prior to their inclusion in the study. Participants were provided with detailed information about the study objectives, procedures, and their rights, including the right to withdraw at any time without penalty. Confidentiality was ensured by anonymizing data and securely storing all records.

RESULTS

The data processing method employing Structural Equation Modeling (SEM) grounded in Smart Partial Least Squares (PLS) yielded the following analysis:

Table 1 presents the outcomes of examining the relationships among variables using the Partial Least Squares Structural Equation Modeling (PLS-SEM) technique. The "Original Sample (O)" column displays the path coefficients indicating the direction and magnitude of the relationships. The "Sample Mean (M)" column represents the average of the bootstrapping outcomes, reflecting the stability of the coefficient estimates. The "Standard Deviation (STDEV)" highlights the variability within the data, while the "T-Statistics" and "P-Values" assess the statistical significance of the associations.

Table 1. Path Coefficient Values Derived from Bootstrapping

Variabel	Original Sample (O)	Sample Mean (M)	Standard Deviation	T Statistics (|O/STDEV|)	P Values
PPE -> Occurrence of Dermatitis	0,286	0,284	0,087	3,270	0,001
Duration of work -> PPE	-0,018	-0,021	0,091	0,197	0,844
Hygiene -> PPE	0,249	0,251	0,084	2,969	0,003
Work Period -> PPE	-0,144	-0,146	0,084	1,715	0,086
History of Skin Disease -> PPE	-0,182	-0,180	0,089	2,047	0,041
Clean Water Facilities -> PPE	-0,022	-0,024	0,094	0,231	0,818
Age -> PPE	0,158	0,163	0,094	1,687	0,092

The findings indicate significant correlations ($p < 0.05$) between personal hygiene and the incidence of dermatitis, as well as between the history of skin diseases and dermatitis. Conversely, factors such as PPE use and access to clean water did not show significant direct effects on dermatitis incidence ($p > 0.05$). These findings suggest that while hygiene and medical history play crucial roles in dermatitis occurrence, other environmental and behavioral factors might mitigate the expected impact of PPE use and water access.

The results highlight that personal hygiene and history of skin disease are major determinants in dermatitis prevalence. Individuals with poor hygiene practices and a history of skin conditions are significantly more likely to develop dermatitis. In contrast, PPE usage and access to clean water, despite their theoretical importance, did not show a statistically significant impact, suggesting potential gaps in usage compliance or effectiveness. One possible explanation is the incorrect or inconsistent use of PPE by fishermen, which diminishes its protective potential. Similarly, while clean water facilities may be available, their utilization for hygiene purposes may not be optimal.

The significant relationship between personal hygiene and dermatitis aligns with existing literature, emphasizing the critical role of hygiene practices in preventing skin disorders. Fishermen with better hygiene awareness and practices exhibit lower dermatitis rates, highlighting the importance of targeted health education interventions.

The strong correlation between a history of skin disease and dermatitis suggests that individuals with prior conditions are more susceptible to recurrent episodes. This finding underscores the necessity of continuous dermatological monitoring and tailored preventive measures for high-risk individuals.

The non-significant results for PPE use and access to clean water suggest that their effectiveness in preventing dermatitis may be influenced by various factors, such as inconsistent usage, lack of proper training, or inadequate supply. Future research should explore the practical challenges faced by fishermen in utilizing PPE and maintaining proper hygiene practices.

Additionally, integrating the findings with broader occupational health perspectives highlights the need for comprehensive workplace interventions that address both behavioral and environmental factors. Providing easy access to hygiene facilities, reinforcing PPE training, and conducting regular health screenings could play a critical role in reducing dermatitis incidence.

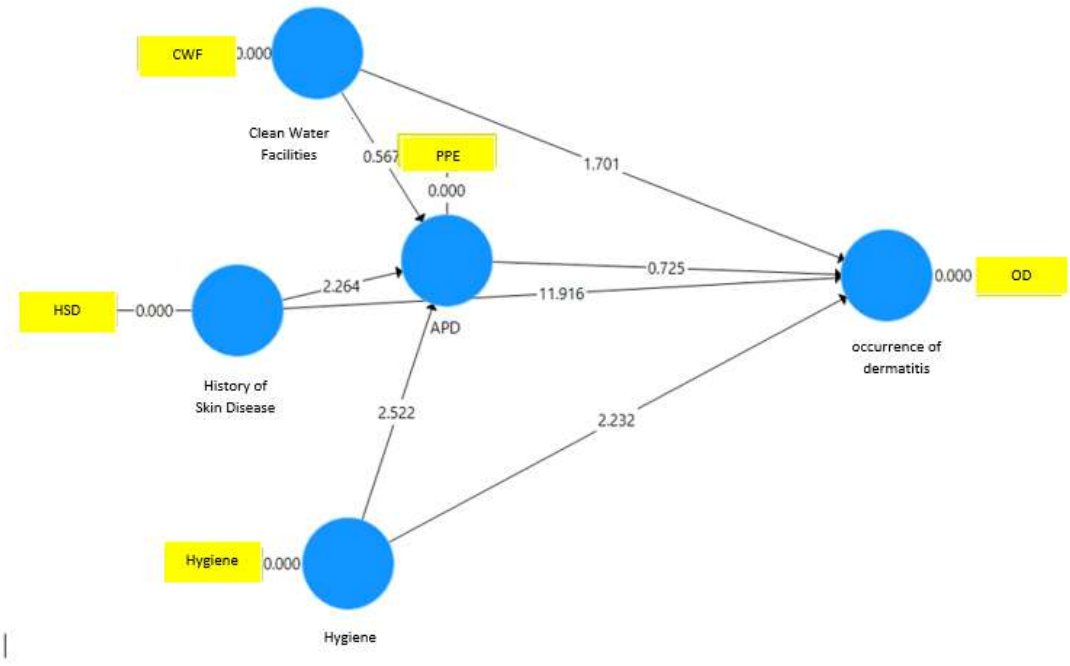

Image 1. T-Value from Bootstrapping Results

Figure 1 illustrates that the analysis model (SEM) employing the Partial Least Squares (PLS) method is utilized to examine the causal linkages among factors influencing the incidence of contact dermatitis in fishermen on Barrang Lompo Island. The path map depicts the associations among latent variables and presents the t-value outcomes derived from bootstrapping.

The analysis revealed a strong positive correlation (0.725) between personal protective equipment (PPE) use and the occurrence of dermatitis, indicating that higher PPE use is associated with a higher likelihood of dermatitis. A moderate correlation (0.567) was observed between access to clean water and PPE use, suggesting that better water facilities may promote greater PPE adherence, likely by improving comfort and awareness. A significant effect of skin disease history was found, with a coefficient of 2.264 for PPE use and 11.916 for dermatitis occurrence, indicating that individuals with a history of skin diseases are more likely to experience dermatitis and use PPE as a preventive measure. Additionally, hygiene was positively correlated with both PPE use (2.522) and dermatitis occurrence (2.232), implying that better hygiene practices contribute to reduced dermatitis incidence and encourage more consistent PPE use.

DISCUSSION

The correlation between the utilization of Personal Protective Equipment (PPE) and the occurrence of dermatitis is statistically significant, evidenced by a p-value of 0.001 ($p < 0.05$) and $t = 3.270$. This suggests that the utilization of PPE markedly affects the decrease of dermatitis risk in the examined population. This study pertains to Aisyah & Arrazy, (2023), indicating that appropriate PPE use can avert direct skin contact with irritants or allergens in the workplace, thus diminishing the occurrence of dermatitis (9). Recent research corroborates this association by Ayu, (2016) identified a significant correlation between PPE utilization and the incidence of dermatitis among fishermen, with a p-value < 0.05 (10). Research by Asfihani, (2022) indicated that employees who failed to adhere to PPE usage were at an increased risk of acquiring irritating contact dermatitis (11). A study by Idris, (2021) indicated a significant prevalence of contact dermatitis among workers who did not utilize personal protective equipment, with an incidence rate of 65.5% (12).

This study revealed a marginally significant link between employment tenure and the utilization of Personal Protective Equipment (PPE), with a p-value of 0.086 ($p > 0.05$). Despite not achieving conventional significance levels ($p < 0.05$), these data suggest a potential correlation between employment tenure and PPE utilization.

Numerous research conducted in the previous three years has investigated the correlation between employment tenure and PPE compliance. A study by Husein et al., (2021) identified a strong correlation between employment tenure and PPE compliance at PT. At PLN ULP Martapura, employees with greater tenure exhibited a higher compliance rate in the utilization of personal protective equipment (PPE) (13). Likewise, it was demonstrated that employees with over three years of tenure exhibited superior PPE compliance levels in comparison to their less-tenured counterparts. Nonetheless, not all research has identified a substantial correlation. Research conducted by Rahmawati, (2024) found no significant correlation between employment tenure and PPE compliance in the industrial sector (14). The discrepancies in outcomes may stem from disparities in workplace safety culture, training initiatives, and organizational policy about PPE utilization.

In theory, extended employment duration can enhance workers' experience and understanding of the significance of PPE utilization, thereby augmenting compliance (15). Nonetheless, additional factors, including education, attitude, supervision, and the comfort of personal protective equipment, significantly influence worker compliance. Consequently, while this study indicates a nearly significant correlation between job tenure and PPE utilization, additional research is required to account for other variables that may affect PPE compliance in the workplace (16).

This study demonstrated a statistically significant link between personal hygiene and the use of Personal Protective Equipment (PPE), with a p-value of 0.003 and t = 2.969. This suggests that effective hygiene procedures substantially impact the heightened utilization of PPE among participants.

The theoretical framework corroborates this finding, indicating that proper personal hygiene signifies an individual's recognition of the need for health and safety maintenance, including the utilization of personal protective equipment (PPE). Effective hygiene procedures typically coincide with PPE adherence, as both seek to avert exposure to pathogenic agents, particularly dermatological conditions.

Recent research corroborates this association. Research by Suteja et al., (2023) indicated a substantial correlation between excellent personal hygiene and the consistent usage of personal protective equipment (PPE) among waste pickers at the Suwung Landfill, with persons exhibiting good hygiene habits being more inclined to utilize PPE regularly (17). A study by Rahmagina et al., (2024) indicated that proper personal hygiene and the utilization of personal protective equipment (PPE) were strongly associated with a decrease in skin disease complaints among waste pickers at the TPA Sampah dump (18).

Furthermore, a study conducted by Rahmagina et al., (2024) demonstrated that proper personal hygiene and the utilization of personal protective equipment (PPE) were strongly correlated with a reduction in skin disease symptoms among waste pickers at the Suwung landfill (19). These findings align with prior research indicating that proper personal hygiene and the use of personal protective equipment are essential in preventing skin disorders among workers in high-risk situations. Empirical evidence from multiple studies conducted in the previous three years indicates that proper personal hygiene is substantially correlated with heightened PPE utilization. This underscores the need for education and the promotion of appropriate hygiene practices within occupational health and safety programs to enhance PPE compliance among employees.

The study findings demonstrate a substantial correlation between personal hygiene and the utilization of Personal Protective Equipment (PPE), as evidenced by a p-value of 0.003 and t = 2.969. This data indicates that individuals with high cleanliness standards are more likely to adhere to PPE usage. Optimal hygiene practices are frequently linked to heightened awareness of the necessity of safeguarding oneself from health threats in the workplace. Recent research, including that by Rahmagina et al., (2024) on employees at the Cold-water Landfill in Padang (20), indicated that proper cleanliness correlated with a diminished incidence of skin disorders Sarfraz et al., (2022) identified a notable correlation between personal hygiene and reduced skin disease symptoms among garbage pickers at the Terjun Landfill, Medan Marelan (21).

The correlation between work tenure and PPE utilization in this study neared significance, with a p-value of 0.086 ($p > 0.05$). Despite not achieving conventional statistical significance, a trend was observed indicating that employees with extended employment tenure exhibited greater compliance with PPE usage. This may be associated with extended job experience, which likely enhances understanding of the significance of workplace safety. Research conducted by Baeda et al., (2022) identified a favorable correlation between job tenure and adherence to handwashing and personal protective equipment usage in occupational settings; however, it is not consistently statistically significant (22). The history of skin illness demonstrated a notable correlation with PPE utilization, evidenced by a

p-value of 0.041 and t = 2.047. Individuals with a history of dermatological conditions are more cognizant of the necessity for self-protection through personal protective equipment, given the potential for recurrent health complications from occupational exposure. Astutik, (2020) indicated that individuals with a prior history of dermatological conditions were more inclined to utilize personal protective equipment as a means of self-defense (23). Rahmagina, (2024) identified a strong correlation between the utilization of personal protective equipment (PPE) and a diminished incidence of skin diseases among landfill workers (9).

The study indicated no significant correlation between clean water facilities and PPE use, evidenced by a p-value of 0.818. The presence of clean water facilities at the workplace may not directly affect PPE compliance but may be more associated with overall personal hygiene practices. While research Prahayuni (2018) indicated a correlation between clean water access and decreased dermatitis in farmers, empirical evidence directly associated clean water facilities with PPE compliance is scarce (13).

The correlation between age and PPE utilization in this study neared significance, yielding a p-value of 0.092. The findings, while not highly significant, suggest that workers of specific age groups are more inclined to utilize PPE. Iddris, (2021) noted a significant correlation between age and skin disorder complaints among waste pickers at the Terjun Landfill; however, a direct connection to PPE compliance necessitates further investigation (6).

The study results underscore the significance of personal hygiene and the history of skin diseases in enhancing PPE compliance in the workplace. Although indicators like work tenure and age exhibit a propensity to affect compliance, they have not attained substantial significance. These characteristics should be taken into account when developing more effective occupational safety education and training programs.

A notable correlation exists between personal hygiene and the utilization of Personal Protective Equipment (PPE), as evidenced by a p-value of 0.003 and t = 2.969. This data indicates that individuals with high cleanliness standards are more likely to adhere to PPE usage. Optimal hygiene practices are frequently linked to heightened awareness of the necessity of safeguarding oneself against health hazards in the workplace. Recent research by Rahmagina et al., (2024) on employees at the Air Dingin Landfill in Padang indicated that proper hygiene correlated with a diminished incidence of skin disorders (9). Comparable findings were observed, indicating a substantial correlation between personal hygiene and reduced skin disease symptoms among scavengers at the Terjun Landfill in Medan Marelan.

The correlation between work tenure and PPE utilization in this study neared significance, with a p-value of 0.086 ($p > 0.05$). Despite not achieving conventional statistical significance, a trend was observed indicating that employees with extended employment tenure exhibited greater compliance with PPE usage. This may be associated with extended work experience, which could augment understanding of the significance of workplace safety. A study by Fonacier et al., (2015) demonstrated a positive correlation between employment tenure and adherence to handwashing and PPE usage in the workplace, but not consistently statistically significant (24).

The history of skin illnesses shows a notable correlation with PPE usage, yielding a p-value of 0.041 and t = 2.047. Individuals with a history of dermatological conditions seem to possess heightened awareness regarding the significance of personal protective equipment usage, given the potential for recurrent health complications stemming from occupational exposure. It has been reported that individuals with a history of dermatological conditions are generally more adherent to the utilization of personal protective equipment as a means of self-preservation. This finding corresponds with the research conducted Astutik et al., (2020), which identified a strong correlation between PPE utilization and a decreased incidence of skin diseases among landfill workers (25).

The study results demonstrated no significant correlation between clean water facilities and PPE use, with a p-value of 0.818. The presence of clean water facilities at work may not directly affect PPE compliance but is more strongly associated with overall personal hygiene practices. While research has shown a correlation between access to clean water and decreased dermatitis in farmers, practical evidence directly connecting clean water facilities to PPE compliance is scarce.

The correlation between age and PPE utilization in this study neared significance, yielding a p-value of 0.092. The findings indicate a tendency for workers in specific age groups to utilize PPE more frequently, although the significance was not robust. A notable correlation was reported between age and skin disorder complaints among scavengers at the Terjun Landfill; however, a direct link to PPE compliance necessitates further investigation.

This study underscores the significance of hygiene and skin disease history in enhancing PPE compliance in the workplace. Although characteristics like work tenure and age exhibit inclinations to exert influence, they have

not attained substantial significance levels Nopriyati et al. (2022). These characteristics should be taken into account when developing more effective occupational safety education and training programs (19).

The findings of this study strengthen the existing literature by confirming the significant influence of personal hygiene and a history of skin diseases on the incidence of contact dermatitis among fishermen. These results align with previous studies that emphasize the role of hygiene practices and pre-existing skin conditions in occupational skin health. However, this study makes a unique contribution by focusing on a specific high-risk population in coastal communities, addressing a critical gap in the literature regarding the environmental and occupational factors unique to fishermen.

One of the main contributions of this study is the identification of barriers to effective dermatitis prevention, particularly the non-significant impact of personal protective equipment (PPE) use and access to clean water. These findings suggest that while these factors are important, their effectiveness may be limited by behavioral, cultural, or economic constraints. The study highlights the need for interventions that go beyond simply providing PPE and clean water facilities by addressing the behavioral determinants of their usage. This contributes to the field of occupational health by providing evidence that policy interventions must be context-specific and culturally appropriate to be effective. The implications for public health policy and community-level interventions are significant. First, targeted educational programs focusing on proper hygiene practices and consistent PPE use should be developed and implemented at the community level. Policymakers should consider integrating these programs into existing community health initiatives to ensure better reach and sustainability. Additionally, healthcare providers should adopt a more proactive approach by conducting routine health screenings and offering personalized recommendations to fishermen at risk of dermatitis.

This study also underscores the importance of multisectoral collaboration involving local governments, health institutions, and fisheries industry stakeholders to create comprehensive intervention strategies. Specific actions may include developing financial assistance programs to provide affordable, high-quality PPE and conducting culturally-sensitive awareness campaigns to encourage behavioral change.

While the insights of this study are valuable, some limitations must be acknowledged. First, the cross-sectional design limits the ability to draw causal conclusions between variables, highlighting the need for longitudinal studies to establish temporal relationships. Second, reliance on self-reported data may introduce recall or response bias, potentially affecting the accuracy of the findings. Future research should include objective measures, such as clinical assessments, to validate self-reported data. Additionally, the focus of the study on a single island community may limit the generalizability of the findings to other fishing communities with different sociocultural contexts. Expanding the research to multiple coastal regions could provide a more comprehensive understanding of this issue.

Based on these points, this research makes a significant contribution to understanding work-related dermatitis among fishermen by highlighting the crucial role of hygiene and pre-existing skin conditions while identifying practical challenges in PPE use and access to clean water. Future interventions should prioritize behavioral change strategies, targeted policy implementation, and community-based approaches to effectively reduce the burden of contact dermatitis in this high-risk population.

CONCLUSION

The history of skin illnesses and personal cleanliness are critical factors affecting the prevalence of contact dermatitis among fishermen on Barrang Lompo Island. A history of dermatological conditions correlates with a heightened risk of dermatitis, whereas inadequate personal cleanliness may elevate the likelihood of skin irritation. Conversely, the utilization of personal protective equipment and clean water facilities did not demonstrate a substantial impact on decreasing the incidence of dermatitis. Enhanced education on appropriate hygiene practices and an upgrade in the quality of personal protective equipment are essential to mitigate the incidence of dermatitis among fishermen.

This study highlights the significant relationships between personal hygiene, history of skin diseases, PPE use, and access to clean water in influencing dermatitis prevalence among fishermen. These findings emphasize the need for integrated interventions, such as health education programs, provision of high-quality PPE, and improved access to clean water, to reduce dermatitis risks.

The study also contributes to understanding the broader occupational health challenges faced by fishermen and provides a foundation for future research to evaluate the effectiveness of these interventions and address barriers to their adoption, ensuring practical and sustainable health improvements in fishing communities.

AUTHOR'S CONTRIBUTION STATEMENT

All authors have read and agreed to the published version of the manuscript.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

DECLARATION OF GENERATIVE AI AND AI-ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

During the preparation of this article, the authors used generative AI and AI-assisted technologies (specifically ChatGPT by OpenAI) to support language refinement, grammar checking, and phrasing suggestions. The authors confirm that all intellectual content, including research design, analysis, interpretation, and conclusions, were created by the authors without AI assistance. The final version was reviewed and approved by all authors.

SOURCE OF FUNDING STATEMENTS

This research was funded by the 2024 Fundamental Collaborative Research Scheme (PFK) of Universitas Hasanuddin, supported by the Institute for Research and Community Service (LPPM), Universitas Hasanuddin.

ACKNOWLEDGMENTS

We extend our appreciation to the Research and Community Service Institute (LPPM) of Hasanuddin University for their guidance and support throughout this research process. Furthermore, we thank all parties who have contributed, directly or indirectly, to the completion of this study. Your support and cooperation are deeply valued.

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