

ISSN 2597- 6052DOI: <https://doi.org/10.56338/mppki.v7i11.6296>**MPPKI****Media Publikasi Promosi Kesehatan Indonesia**
*The Indonesian Journal of Health Promotion***Research Articles****Open Access**

Analysis of Factors Related to the Incidence of Dermatitis in Adolescents in Namo Buaya Village Sultan Daulat District

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ABSTRACT

Introduction: Contact dermatitis is a common inflammatory condition of the skin due to exposure to allergens or irritants that trigger an immune response and inflammation of the skin and mucous membranes.

Objective: This study aims to determine the factors associated with contact dermatitis in Namo Buaya Village Sultan Daulat District, Subulussalam City in 2024. Based on data from the Sultan Daulat Health Center in January Until May 2024, 1 08 adolescent patients were recorded diagnosed with contact dermatitis.

Method: This study was an analytical observational study with a case control design. The sample of this research was 194 respondents were divided into 97 case groups and 97 control groups (1:1 ratio). Data collection was conducted on June 3-8, 2024 using a questionnaire and analyzed using the Chi-Square test.

Results: Univariate results showed that (50%) of respondents suffered from dermatitis, (57.2%) had unqualified water, (50.5%) were exposed to chemicals, (55.7%) were female, (52.6%) had secondary education, (51%) were unemployed and (56.2%) had poor personal hygiene. Bivariate results showed that there was a relationship between water characteristics (p -value = 0.006, OR = 0.444), chemical exposure (p - value = 0.022, OR = 0.514), gender (p - value = 0.021, OR = 0.509), parental education (p -value = 0.028, OR = 0.570), occupation (p - value = 0.031, OR = 0.536), and *personal hygiene* (p -value = 0.002, OR = 0.409) with dermatitis.

Conclusion: This study concludes that all variables have a relationship with dermatitis in Namo Buaya Village, Sultan Daulat District, Subulussalam City in 2024. It is hoped that health workers will provide education about dermatitis, water characteristics, exposure to chemicals, gender, education, occupation, personal hygiene, and the community maintains personal hygiene to prevent the disease.

Keywords: Dermatitis; Physical Characteristics of Water; Personal Hygiene; Chemical Exposure; Adolescents

INTRODUCTION

Contact dermatitis is one of the most common inflammatory dermatological conditions and is caused by exposure to exogenous substances that elicit an immune response resulting in inflammation of the skin and mucous membranes. Contact dermatitis can occur due to exposure to allergens and irritants (1).

Dermatitis or often called eczema, is a non-inflammatory skin inflammation that can be acute or sub-acute, and is influenced by various factors (2). This inflammation is caused by external factors (exogenous) such as detergents, acids, bases, oil, cement, and other chemicals. In addition, physical factors such as sunlight and temperature, as well as microorganisms such as bacteria and fungi also contribute. Internal factors (endogenous) such as atopic dermatitis can cause various skin changes and itching. The severity of dermatitis depends on the individual's reaction, although the cause is the same. In severe cases, blisters can appear on the skin and become infected, which can be risky for skin health (3).

Irritant contact dermatitis is caused by direct cellular toxicity leading to inflammation and activation of the innate immune system, whereas allergic contact dermatitis is caused by delayed or type IV hypersensitivity involving both innate and acquired immune responses. After initial exposure to an allergen that produces a proinflammatory skin environment (but no clinical signs or symptoms), allergic contact dermatitis lesions develop during subsequent exposures following activation of antigen-specific effectors and memory T cells (4). The causative factors of contact dermatitis are direct causes (chemical exposure and duration of exposure) and indirect causes (age, gender, race, personal hygiene, use of personal protective equipment/PPE), and knowledge (5).

Research conducted by Apriliani (2022) shows that there is a relationship between age and the incidence of contact dermatitis (6). However, in research conducted by Sumita (2019), the results of the analysis test of the relationship between age and the incidence of contact dermatitis produced a p -value = 1,000 more than $\alpha = 0.05$, meaning that the age of the respondents was not related to the incidence of contact dermatitis in farmers (7). Other factors such as gender are also related to skin diseases. Every human skin has a different level of sensitivity, in women the skin surface is thinner and more sensitive than men's skin which makes women more susceptible to skin diseases. This happens because women's skin does not produce much oil to provide protection and keep the skin moist (8).

Dermatitis has a high prevalence of around $\pm 60\%$ worldwide, especially in tropical areas with hot and humid climates. Contact dermatitis, which includes irritant and allergic, accounts for 72.5% of cases, while the remaining 27.5% are caused by other types of dermatitis. The United States records the highest cases of irritant contact dermatitis, with 15 million sufferers. The occurrence of dermatitis is influenced by environmental factors, allergies, and family genetic factors (9).

Based on the data of dermatitis case description in Indonesia, dermatitis is ranked third (86%) of the ten most common diseases in Indonesia among 192,414 cases of skin disease. The field of Indonesian epidemiological studies argues that 97% of the 389 cases of skin disease are contact dermatitis, of which 66.3% are irritant contacts, and 33.7% are allergic contacts (9,10).

Sultan Daulat Health Center has 19 villages in its working area, 5 of which have the highest coverage of dermatitis sufferers in the working area of Sultan Daulat Health Center, namely Baru Napal village has 132 cases of dermatitis, Rikit village has 97 cases of dermatitis, Namo Buaya village has 159 cases of dermatitis, Copare-Pare Tengah village has 108 cases of dermatitis and Copare-Pare Timur village has 72 cases of dermatitis (11).

Namo Buaya Village has certain risk factors, such as dependence on dug wells as a water source. Dug wells are often not equipped with adequate filtration systems, making the water susceptible to contamination by bacteria, viruses, or hazardous chemicals from the surrounding environment, such as household or agricultural waste. This contamination can cause health problems, including dermatitis, which is skin inflammation caused by irritation or infection due to unclean water. In addition, limited access to clean water sources and proper sanitation infrastructure also increase the risk of skin diseases in the area.

Based on the results of observations conducted by researchers at this time, the biggest problem in the Namo Buaya Village area, Sultan Daulat District, Subulussalam City Regency is that most of the people of Namo Buaya Village throw away their garbage close to dug wells or rivers, because the accumulation of garbage or throwing it carelessly into open areas adjacent to dug wells and rivers will result in water pollution, which has an impact on public health, especially complaints of itching in people living around the river, it was recorded that there were 159 patients who were treated at the Sultan Daulat Health Center, Subulussalam City until May 2024 with complaints of itching. Because there is no PDAM in Namo Buaya Village, the people of Namo Buaya Village use dug wells and rivers as sources of clean water as well as clean water facilities for bathing, washing and even for cooking purposes and water used without going through a processing process first. Thus, it is possible that there will be a negative impact on the health of people who use dug well and river water as a source of clean water if the dug well and river water used does not meet the requirements.

METHOD

This study is an observational analytical study with a case control approach, which can be used to assess how big the role of risk factors is in the occurrence of disease. In a case control study, the study begins with identifying patients with effects (cases) and groups without effects (controls), then retrospectively tracing the risk factors that can explain why cases are affected while controls are not (12).

RESULTS

Univariate Analysis

Table 1. Distribution of Respondents Based on Univariate Analysis

Description	Frequency	Percentage
Respondent Age		
10-15 years	85	43.8
16-19 years	109	56.2
Total	194	100
Water sources		
River	55	28.3
Dug Well	139	71.6
Total	194	100
Dermatitis Disease		
Case	97	50
Control	102	52.6
Total	194	100
Characteristics of Water		
Qualify	83	42.8
Not eligible	111	57.2
Total	194	100
Chemical Exposure		
Qualify	96	49.5
Not eligible	98	50.5
Total	194	100
Gender		
Man	86	44.3
Woman	108	55.7
Total	194	100
Parent Education		
Tall	82	42.3
Intermediate	102	52.6
Base	10	5.2
Total	194	100
Work		
Work	95	49.0
Doesn't work	99	51.0
Total	194	100
Personal Hygiene		
Good	85	43.8
Not good	109	56.2
Total	194	100

table shows that out of 194 respondents, 85 (43.8%) respondents were aged 10-15 years and 109 (56.2%) respondents were aged 16-19 years in Namo Buaya Village, Sultan Daulat District, Subulussalam City Regency in 2024.

Water shows that out of 194 respondents, 55 (28.3%) respondents used river water and 139 (71.6%) respondents used dug well water in Namo Buaya Village, Sultan Daulat District, Subulussalam City Regency in 2024.

Dermatitis disease shows that out of 194 respondents, 97 (50%) respondents had dermatitis and 97 (50%) respondents did not suffer from dermatitis in Namo Buaya Village, Sultan Daulat District, Subulussalam City Regency in 2024.

The physical characteristics of water show that out of 194 respondents, 83 (42.8%) had water characteristics that met the requirements and 111 (57.2%) had water characteristics that did not meet the requirements in Namo Buaya Village, Sultan Daulat District, Subulussalam City Regency in 2024.

Chemical exposure shows that out of 194 respondents, 96 (49.5%) had chemical exposure that met the requirements and 98 (50.5%) had chemical exposure that did not meet the requirements in Namo Buaya Village, Sultan Daulat District, Subulussalam City Regency in 2024.

Gender shows that out of 194 respondents, 86 (44.3%) were male and 108 (55.7%) were female in Namo Buaya Village, Sultan Daulat District, Subulussalam City Regency in 2024.

Education shows that out of 194 respondents, 82 (42.3%) respondents had higher education, 102 (52.6%) respondents had secondary education and 10 (5.2%) respondents had primary education in Namo Buaya Village, Sultan Daulat District, Subulussalam City Regency in 2024.

Occupation shows that out of 194 respondents, 95 (49.0%) respondents were working and 99 (51.0%) respondents were not working in Namo Buaya Village, Sultan Daulat District, Subulussalam City Regency in 2024.

Personal hygiene shows that out of 194 respondents, there were 85 (43.8%) respondents with good personal hygiene and 109 (56.2%) respondents with poor personal hygiene in Namo Buaya Village Sultan Daulat District, Subulussalam City Regency in 2024.

Bivariate Analysis

Table 2. Analysis of Factors Related to the Incidence of Dermatitis in Adolescents in Namo Buaya Village Sultan Daulat District

Variables	Dermatitis				Total	OR	CI 95%	P-value	
	Currently		Tall						
	n	%	n	%					n
Physical Characteristics of Water									
Not eligible	65	67.0	46	47.4	111	100	0.444	0.248 - 0.794	0.006
Qualify	32	33.0	51	52.6	83	100			
Chemical Exposure									
Not eligible	57	58.8	41	42.3	98	100	0.514	0.290 - 0.909	0.022
Qualify	40	41.2	56	57.7	96	100			
Gender									
Woman	62	63.9	46	47.4	108	100	0.509	0.287 - 0.905	0.021
Man	35	36.1	51	52.6	86	100			
Parental Education									
Base	5	5.2	5	5.2	10	100			
Intermediate	60	61.9	42	43.3	102	100	0.570	0.346 - 0.939	0.028
Tall	32	33.0	50	82	82	100			
Work									
Doesn't work	57	58.9	42	43.3	99	100	0.536	0.303 - 0.947	0.031
Work	40	41.2	55	56.7	95	100			
Personal Hygiene									
Not good	65	67.0	44	45.4	109	100			
Good	32	33.0	53	54.6	85	100	0.409	0.228 - 0.732	0.002
Total	97	100	97	100	194	100			

The statistical table above shows based on the water characteristic variables that respondents who suffer from dermatitis are higher in respondents with water characteristics that do not meet the requirements of 67.0% compared to respondents with water characteristics that meet the requirements of 33.0%, while respondents who do not suffer from dermatitis are higher in respondents with water characteristics that meet the requirements of 52.6% compared to respondents with water characteristics that do not meet the requirements of 47.4%.

The results of the statistical test using chi-square obtained a p value of $0.006 < 0.05$, meaning (H_0) was rejected. The results of the OR calculation showed that respondents whose water characteristics did not meet the requirements were 0.444 times at risk of experiencing dermatitis compared to respondents with water characteristics that met the

requirements (CI 0.248 - 0.794) in Namo Buaya Village, Sultan Daulat District, Subulussalam City Regency in 2024.

The chemical exposure variable shows that respondents who suffer from dermatitis are higher in respondents whose chemical exposure does not meet the requirements at 58.8% compared to respondents whose chemical exposure meets the requirements at 41.2%, while respondents who do not suffer from dermatitis are higher in respondents whose chemical exposure meets the requirements at 57.7% compared to respondents whose chemical exposure does not meet the requirements at 42.3%.

The results of the statistical test using chi-square obtained a p value of $0.022 < 0.05$, meaning (Ho) was rejected. The results of the OR calculation showed that respondents whose chemical exposure did not meet the requirements were 0.514 times at risk of experiencing dermatitis compared to respondents with qualified chemical exposure (CI 0.290-0.909) in Namo Buaya Village, Sultan Daulat District, Subulussalam City Regency in 2024.

The gender variable shows that respondents who suffer from dermatitis are higher in female respondents at 63.9% compared to male respondents at 36.1%, while respondents who do not suffer from dermatitis are higher in male respondents at 52.6% compared to female respondents at 47.4%.

The results of the statistical test using chi-square obtained a p value of $0.021 < 0.05$, meaning (Ho) was rejected. The results of the OR calculation showed that female respondents were 0.509 times more at risk of experiencing dermatitis compared to male respondents (CI 0.297-0.905) in Namo Buaya Village, Sultan Daulat District, Subulussalam City Regency in 2024.

The education variable shows that respondents who suffer from dermatitis are higher in respondents with secondary education at 61.9% compared to respondents with higher education at 33.0%, while respondents who do not suffer from dermatitis are higher in respondents with higher education at 82% compared to respondents with secondary education at 43.3%.

The results of the statistical test using chi-square obtained a p value of $0.028 < 0.05$, meaning (Ho) was rejected. The results of the OR calculation showed that respondents with secondary education were 0.570 times more at risk of experiencing dermatitis compared to respondents with higher education (CI 0.346-0.939) in Namo Buaya Village, Sultan Daulat District, Subulussalam City Regency in 2024.

variable shows that respondents who suffer from dermatitis are higher in respondents who are not working at 58.9% compared to respondents who are working at 41.2%, while respondents who do not suffer from dermatitis are higher in respondents who are working at 56.7% compared to respondents who are not working at 43.3%.

The results of the statistical test using chi-square obtained a p value of $0.031 < 0.05$, meaning (Ho) was rejected. The results of the OR calculation showed that respondents who did not work were 0.536 times more at risk of experiencing dermatitis compared to respondents who worked (CI 0.303-0.947) in Namo Buaya Village, Sultan Daulat District, Subulussalam City Regency in 2024.

personal hygiene variable shows that respondents who suffer from dermatitis are higher in respondents with poor personal hygiene at 59.6% compared to respondents with good personal hygiene at 37.6%, while respondents who do not suffer from dermatitis are higher in respondents with good personal hygiene at 62.3% compared to respondents with poor personal hygiene at 40.3%.

The results of the statistical test using chi-square obtained a p value of $0.002 < 0.05$, meaning (Ho) was rejected. The results of the OR calculation showed that respondents with poor personal hygiene were 0.409 times at risk of experiencing dermatitis compared to respondents with good personal hygiene (CI 0.228-0.732) in Namo Buaya Village, Sultan Daulat District, Subulussalam City Regency in 2024.

DISCUSSION

Relationship between Physical Characteristics of Water and Dermatitis Disease

The results of the statistical test using chi-square obtained a p value of $0.006 < 0.05$, meaning (Ho) was rejected. The results of the OR calculation showed that respondents whose water characteristics did not meet the requirements were 0.444 times at risk of experiencing dermatitis compared to respondents with water characteristics that met the requirements (CI 0.248-0.794) in Namo Buaya Village, Sultan Daulat District, Subulussalam City Regency in 2024.

This study is in line with the findings of Fitria and Hayani (2021), which stated that there is an influence between the availability of clean water facilities and the risk of contact dermatitis. Respondents who use clean water facilities that do not meet standards tend to have a higher risk of contact dermatitis. This is due to the condition of the water facilities that are not suitable, for example if the cover is not tight, the water can be contaminated by physical objects such as leaves, twigs, or other dirt. In addition, cracked tank walls can cause microbiological and chemical contamination. Lack of clean water to maintain personal hygiene also has the potential to cause various skin diseases, including contact dermatitis (13).

Rachmania (2021), in his research entitled "The Influence of Community Activities on Water Sources in Pasar Lama Village, Banjarmasin", revealed that littering is the main cause of water pollution, which is an important

problem in sustainable water management. This pollution is also a determining factor in whether river water is suitable for daily use. Based on the theory used, biological agents such as microorganisms and skin parasites act as triggers for skin diseases. These microorganisms and parasites can be found in river water, both in amounts that comply with water quality standards and those that exceed the permitted limits (14).

The researcher assumes based on the researcher's findings at the research site, that the behavior of littering in rivers can cause physical water pollution such as waste containing various bacteria in it which can change the physical characteristics of water including colored, smelly and cloudy water so that it greatly affects the occurrence of skin diseases, because water that does not meet the requirements that are good for use will trigger the occurrence of diseases, one of which is contact dermatitis.

Relationship between Chemical Exposure and Dermatitis Disease

The results of the statistical test using chi-square obtained a p value of 0.022 <0.05, meaning (H_0) was rejected. The results of the OR calculation showed that respondents whose chemical exposure did not meet the requirements were 0.514 times at risk of experiencing dermatitis compared to respondents whose chemical exposure met the requirements (CI 0.290 - 0.909) in Namo Buaya Village, Sultan Daulat District, Subulussalam City Regency in 2024.

Previous studies that are in line show that the average pH of community dug well water samples is 6.8, with a range between 6.8 to 7.2, which is still within the national standard limits set by WHO, namely 6.5-8.5. This finding is supported by the results of previous studies which stated that all well water samples have met the water quality standards according to Permenkes No. 416 of 1990, especially for pH parameters that are in the range of 7.35-7.42. The quality of dug well water that meets this pH standard indicates that well water users are protected from exposure to hazardous chemicals, thus preventing the risk of disease, especially skin diseases (15).

Based on the Regulation of the Minister of Health of the Republic of Indonesia Number 32 of 2017 concerning environmental health quality standards for water media used for sanitation purposes, the standard limit for pH parameters is set at 6.5-8.5. Previous research showed that the pH of dug well water is in the normal range, namely 7.58-7.73. The measurement results are in accordance with the clean water quality standards regulated in the Minister of Health Regulation No. 416/Menkes/PER/IX/1990, namely 6.5-8.5. Based on these results, the pH of well water can be said to be suitable as clean water because it is neutral. Conversely, water that is too acidic or alkaline can have a negative effect on health (16).

Water quality in pH parameters should be neutral, neither acidic nor basic, in order to prevent heavy metal dissolution and corrosion in water. The degree of acidity (pH) in a body of water indicates the balance between acid and base content, and functions as an indicator of hydrogen ion concentration in solution. pH plays an important role as an indicator of water quality because it affects the type and speed of reactions of various substances contained in water. There are two main functions of pH, namely as a limiting factor where each organism has a different tolerance to maximum, minimum, and optimum pH, and as an indicator of environmental conditions (17).

Water that does not meet quality standards can trigger skin health complaints. Water quality is greatly influenced by the cleanliness of the environment around its source. Contaminated water can cause disease, including skin diseases that can be transmitted to others. In addition, the lack of clean water for personal hygiene purposes also contributes to the spread of these diseases (18).

Researchers assume based on the findings of researchers at the research site, that the water quality for pH parameters should be neutral, pH is very important as a water quality parameter because pH controls the type and rate of reaction of several materials in water. If the pH parameter does not meet the requirements, it can be concluded that the water used is exposed to chemical pollutants so that it can cause diseases, especially skin diseases.

Relationship between Gender and Dermatitis Disease

The results of the statistical test using chi-square obtained a p value of 0.021 <0.05, meaning (H_0) was rejected. The results of the OR calculation showed that female respondents were 0.509 times more at risk of experiencing dermatitis compared to male respondents (CI 0.297-0.905) in Namo Buaya Village, Sultan Daulat District, Subulussalam City Regency in 2024.

This study is in line with research conducted by Eka (2020), which revealed a significant relationship between gender and the incidence of seborrheic dermatitis in the skin and genital polyclinic of Dr. H. Abdul Moeloek Bandar Lampung Regional Hospital in 2019 (19).

The activity of the sebaceous glands that play a role in sebum excretion tends to be higher in men due to the influence of androgen hormones. This hormone contributes to the enlargement of the sebaceous glands, stimulates sebum production, and triggers the proliferation of keratinocytes in the sebaceous gland ducts and acroinfundibulum. (20). Sebum is continuously produced by the sebaceous glands and is channeled to the skin surface through the pores of the hair follicles. The sebaceous glands secrete lipids through a holocrine secretion mechanism, which is controlled

by hormones. These glands are found throughout the body, but are most abundant in the face, back, chest, and shoulders. An imbalance between sebum production and its secretory capacity can cause blockage of the hair follicles. Therefore, diseases involving the sebaceous glands tend to be more common in men, who are also influenced by their high level of activity (21) .

The Relationship Between Education and Dermatitis Disease

The results of the statistical test using chi-square obtained a p value of 0.028 <0.05, meaning (H_0) was rejected. The results of the OR calculation showed that respondents with secondary education were 0.570 times more at risk of experiencing dermatitis compared to respondents with higher education (CI 0.346-0.939) in Namo Buaya Village, Sultan Daulat District, Subulussalam City Regency in 2024.

Research conducted by Sanders (2018), showed a significant relationship between education level and the incidence of dermatitis, with a p-value of 0.001 (22) . Education is a learning and teaching process based on what is expected by the community environment. Education is related to the development pattern and changes in a person's behavior. Education is also related to changes in knowledge, attitudes, beliefs, skills, and all aspects of community behavior to become better (23) .

The researcher assumes based on the researcher's findings at the research site, that respondents with higher education are less likely to suffer from dermatitis because they have a good understanding of the causes and how to prevent dermatitis, which influences their behavioral patterns in maintaining health, one of which is maintaining skin health, so that there is a small risk of dermatitis.

Relationship between Work and Dermatitis Disease

The results of the statistical test using chi-square obtained a p value of 0.031 <0.05, meaning (H_0) was rejected. The results of the OR calculation showed that respondents who did not work were 0.536 times more at risk of experiencing dermatitis compared to respondents who worked (CI 0.303-0.947) in Namo Buaya Village, Sultan Daulat District, Subulussalam City Regency in 2024.

This study is in line with the findings of Chafidz (2018), which stated that the type of work has a relationship with the incidence of dermatitis in Joho Village, Wates District, Kediri Regency, with a p value of 0.012 (20) . Work history is one of the factors that need to be considered as a cause of dermatitis. Types of work that have a high risk of developing dermatitis include industrial factory workers, Pertamina employees, workers at fish auctions, farmers, fishermen, mechanics in workshops, laboratory or medical staff, and scavengers (24) .

Researchers assume based on the findings of researchers at the research site, that work is one of the factors that can cause dermatitis, workers who come into contact with chemicals cause damage to the outer layer of skin cells, the longer the contact with chemicals, the more it will damage the deeper layers of skin cells and make it easier for dermatitis to occur.

The Relationship Between Personal Hygiene and Dermatitis

The results of the statistical test using chi-square obtained a p value of 0.002 <0.05, meaning (H_0) was rejected. The results of the OR calculation showed that respondents with poor personal hygiene were 0.409 times at risk of experiencing dermatitis compared to respondents with good personal hygiene (CI 0.228-0.732) in Namo Buaya Village, Sultan Daulat District, Subulussalam City Regency in 2024.

This study is in line with the study conducted by Pradananingrum, Lestantyo, and Jayanti (2018), which showed a relationship between personal hygiene and the incidence of irritant contact dermatitis in tofu craftsmen in Mrican Sematang, with a p value of 0.026 (25) . The results of this study are also in line with the study conducted by Apriliani (2022), which found a relationship between personal hygiene (including cleanliness of the skin, hands, feet, nails, and clothes) and the incidence of irritant contact dermatitis in scavengers at the Bantargebang TPA, Bekasi City (6) .

Personal hygiene is one of the important factors that can prevent dermatitis. Hand washing habits are a major aspect in maintaining personal hygiene. Improper hand washing practices can contribute to dermatitis. Therefore, people need to pay attention to habits such as maintaining clean clothes, bathing regularly using clean water and soap, using personal items, and maintaining environmental cleanliness. In addition, when washing hands or cleaning the body, it is best to use the right soap. The soap chosen should be one that does not irritate the skin and does not worsen contact dermatitis. It is recommended that the soap has a pH between 4.5 and 6.5. After washing, it is important to dry the body with a clean towel and use a moisturizer for the skin. All of these steps can help reduce skin contact with irritants and allergens (25) .

The researcher assumes based on the researcher's findings at the research site, that habits that must be observed by the community such as maintaining clean clothes, bathing regularly, bathing using clean water and soap, using one's own daily necessities, and maintaining a clean environment can prevent the occurrence of dermatitis.

CONCLUSION

Based on the analysis of factors related to the incidence of dermatitis in adolescents in Namo Buaya Village, the findings showed that substandard water quality ($p = 0.006$, $OR = 0.444$), exposure to substandard chemicals ($p = 0.022$, $OR = 0.514$), and female gender ($p = 0.021$, $OR = 0.509$) were significantly associated with an increased risk of dermatitis. In addition, low to medium parental education ($p = 0.028$, $OR = 0.570$), unemployed parental occupation ($p = 0.031$, $OR = 0.536$), and poor personal hygiene ($p = 0.002$, $OR = 0.409$) also increased the risk of dermatitis. In conclusion, these factors emphasize the need for public health interventions to improve water quality, education about hygiene, and management of chemical exposure to reduce the incidence of dermatitis among adolescents. Specific recommendations include providing access to clean water, health workshops on personal hygiene, education on the dangers of chemicals, training in maintaining environmental health, and the formation of monitoring groups for water quality testing. Implementation of these recommendations is expected to reduce the risk of dermatitis and improve public health in Namo Buaya Village.

SUGGESTION

Based on the results of the study, several important recommendations can be proposed to improve the prevention and treatment of dermatitis in Namo Buaya Village, Sultan Daulat District, Subulussalam City Regency. First, health workers at the local Health Center are expected to provide counseling on the causes and how to treat dermatitis, which can help reduce the incidence of this disease. In addition, respondents are advised to maintain personal hygiene, including clean clothes, bathe regularly with clean water and soap, and use personal items to prevent infection. Finally, for further researchers, it is recommended to explore other variables that have not been studied, such as household density and certain chemical contaminants, as well as the role of health workers, in order to gain a more comprehensive understanding of the factors that influence the incidence of dermatitis in the area. In addition, comparative studies in various communities are also recommended to gain a broader perspective on environmental factors that can contribute to the risk of dermatitis.

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