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THE RELATIONSHIP OF THE PHYSICAL QUALITY OF THE HOUSE AND PERSONAL HYGIENE WITH DERMATITIS IN JUAI DISTRICT

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ABSTRACT

The Relationship of The Physical Quality of The House and Personal Hygiene with Dermatitis in Juai District. Dermatitis is a skin disorder that appears inflamed and irritated. There are two factors that influence the occurrence of dermatitis: exogenous factors (chemicals, microorganisms, temperature, and humidity) and endogenous factors (personal hygiene, skin thickness, age, gender, and disease history). In 2020, the Balangan District Health Office recorded data showing dermatitis as the 6th most common disease among the community from various sub-districts in Balangan Regency, with Juai being the sub-district with the highest number of dermatitis cases. In Juai, the Balangan District Health Office recorded 519 cases of dermatitis in 2020. This study was aimed at determining the relationship between the physical environment of the house, personal hygiene, and dermatitis in the community. We conducted this research as an analytical survey, utilizing a case-control research design. The sample consisted of 43 cases and 43 controls. The instruments used were a thermohygrometer, a lux meter, and a questionnaire. Some cases involved the use of data analysis. Statistical test results In Juai District, Balangan Regency, Somers'd revealed a significant correlation between the physical environment of the house (temperature p = 0.001, humidity p = 0.004, and lighting p = 0.002), personal hygiene (p = 0.018), and dermatitis. Patients with dermatitis should avoid allergen-triggering substances found in daily products and improve habits that can trigger dermatitis.

INTRODUCTION

According to Hendrik L. Blum, there are four factors that influence a community's or individual's health. These influencing factors include more prominent personality factors, such as lifestyle and personal hygiene, compared to environmental factors [1]. The government prioritizes the Clean and Healthy Living Behavior Program (PHBS) because environmental conditions and clean and healthy living behaviors are still lacking in society. According to data obtained from the World Health Organization (WHO) in the American Academy of Allergy, Asthma, and Immunology (AAAAI) survey in 2013, dermatitis is a common skin disease problem with 5.7 million doctor visits per year [2].

In 2010, in hot and humid climates, dermatitis affected approximately 230 million people worldwide, or 3.5% of the world's population. The female group dominates the distribution level of dermatitis cases, especially during the reproductive period, namely aged 15–49 years.

In the United Kingdom and the United States, children with group dermatitis predominate at approximately 20% and 10.7% of the population, respectively, while adults in the United States comprise approximately 17.8 million (10%) people [3].

Several causal factors cause dermatitis, an inflammation that occurs in acute and subacute non-inflammatory skin [4]. Unstable temperature and humidity factors, among other factors, influence the occurrence of allergic contact dermatitis, irritant contact, and occupational contact [5]. Other factors that influence the transmission of skin diseases include low socioeconomic status, poor personal hygiene, an unhygienic environment, and unhealthy behavior [6].

Skin diseases, also known as dermatitis, have become more prevalent in Indonesia, ranking among the most common outpatient diseases in general hospitals. We recorded 122,076 cases in 2014, with women accounting for 73,500 of these cases, followed by men with 73,500 cases. 48,576 cases. In 2014, according to data obtained from the Directorate General of Medical Services, Ministry of Health of the Republic of Indonesia, 15.6% of skin diseases and dermatitis reached 66.3%.

According to data from the Balangan District Health Service in 2020, dermatitis is the sixth most common disease suffered by the public, with 2,059 cases of atopic dermatitis and allergic contact dermatitis.

Of the various sub-districts in Balangan Regency, Juai District has the highest number of cases of dermatitis, with 519 cases. Based on the description above, researchers are interested in conducting research that aims to analyze the relationship between physical environmental conditions at home and personal hygiene and dermatitis in Juai District, Balangan Regency.

MATERIALS AND RESEARCH METHODS

This type of research is analytical, and survey based. The research design used was case control. The study's case unit sample consists of individuals with dermatitis in Juai District, selected from data on dermatitis sufferers during the last five months (September, October, November, December 2021, and January 2022), while the control unit sample consists of individuals in excellent health. In the past five months (September, October, November, December 2021, and January 2022), individuals have been living in Juai District.

In this study, the sample size was 43, with a ratio of 1:1, indicating the need for 43 case samples and 43 control samples. The total number of samples required would be 86 if you add up the case and control samples. This study employed simple random sampling as its sampling technique.

The data collection methods in this research were interviews, questionnaires, and measurements at the respondent's house using tools such as a thermohygrometer and lux meter. This study employed the Somers'd correlation test as its statistical test.

RESULTS OF RESEARCH AND DISCUSSION

UNIVARIATE ANALYSIS

Table 1. Frequency distribution of respondents' personal hygiene in Juai District, Balangan Regency in 2022

No.	Personal Hygiene	Frequency (f)	Percentage (%)
1	Not good	28	32.6
2	Good	58	67.4
	Total	86	100

Table 1 shows the largest percentage of good personal hygiene, namely 58 respondents (67.4%).

Table 2. Frequency distribution of respondents' house temperature in Juai District, Balangan Regency in 2022

No.	Temperature	Frequency (f)	Percentage (%)
1	Not eligible	68	79.1
2	Qualify	18	20.9
	Total	86	100

Table 2 shows that the largest percentage of house temperatures that do not meet the requirements is 68 respondents (79.1%).

Table 3. Frequency distribution of humidity in respondents' homes in Juai District, Balangan Regency in 2022

No.	Humidity	Frequency (f)	Percentage (%)
1	Not eligible	79	91.9
2	Qualify	7	8.1
	Total	86	100

Table 3 shows that the largest percentage is home humidity that does not meet the requirements, as many as 79 respondents (91.9%)

Table 4. Frequency distribution of respondents' home lighting in Juai District, Balangan Regency in 2022

No.	Lighting	Frequency (f)	Percentage (%)
1	Not eligible	75	87.2
2	Qualify	11	12.8
	Total	86	100

Table 4 shows that the largest percentage is home lighting that does not meet the requirements, as many as 75 respondents (87.2%)

Table 5. Frequency distribution of dermatitis in the community in Juai District, Balangan Regency in 2022

No.	Dermatitis	Frequency (f)	Percentage (%)
1	Case	43	50
2	Control	43	50
	Total	86	100

Based on table 5, it can be seen that the number of respondents who suffered from dermatitis was 43 people (50%) and those who did not suffer from dermatitis were 43 people (50%).

BIVARIATE ANALYSIS
THE RELATIONSHIP BETWEEN PERSONAL CLEANLINESS AND DERMATITIS

Table 6. Frequency distribution based on personal hygiene with Dermatitis disease in Juai District, Balangan Regency Year 2022

No.	*Personal Hygiene*	Dermatitis				Amount	%
		Case	%	Control	%		
1	Not good	19	22.1	9	10.5	28	32.6
2	Good	24	27.9	34	39.5	58	67.4
	Amount	43	50	43	50	86	100
		p = 0.018 α = 0.05 r = 0.265					

Statistical tests show that there is a relationship between personal hygiene and dermatitis in Juai District, Balangan Regency, with a p-value of 0.018, or < 0.05.
The respondents have routinely implemented personal hygiene by bathing twice a day or more, using soap, and using clean water from PDAM. Apart from that, respondents have also implemented handwashing behavior using soap and clean running water after defecating.

However, it is known that there is still a lack of awareness among some respondents regarding the importance of maintaining personal hygiene, especially skin cleanliness. Skin that is clean and well maintained will be free from dermatitis. Regular bathing and changing clothes after activities can also reduce the risk of dermatitis. However, some respondents usually change clothes if the activity they have been doing has been going on for too long; if the activity has only been done for a short time, participants usually don't change clothes and continue to wear the same clothes.

Apart from that, the habit of regularly washing and drying mattresses, pillows, bolsters, and towels in the sun can also reduce the risk of dermatitis. However, in reality, respondents rarely dry mattresses, pillows, bolsters, and towels under the sun, as they typically only clean them. You should clean mattresses, pillows, and bolsters using a broomstick or rattan mattress racket instead of drying them in the sun, as this can lead to the development of germs that cause skin diseases.

Skin diseases can spread easily if maintaining cleanliness, particularly personal hygiene, is not a habit. Personal hygiene can prevent the causes of skin diseases, one of which is dermatitis [7]. Keeping clothes, towels, pillows, and bedding clean is one way to prevent dermatitis. Clothes absorb a lot of sweat and dirt that the body releases. Clothes come into direct contact with the skin; if they are wet from sweat and dirt, they can become a breeding ground for bacteria on the skin. The cleanliness of clothing is crucial in the process of spreading dermatitis. This is influenced by physical contact with a dirty environment; the bacteria that cause dermatitis settle and multiply on clothes, so it is important to keep clothes clean to prevent acne.

THE RELATIONSHIP BETWEEN HOME TEMPERATURE AND DERMATITIS DISEASE

Table 7. Frequency distribution based on house temperature with Dermatitis disease in Juai District Balangan Regency in 2022

No.	Temperature	Dermatitis				Amount	%
		Case	%	Control	%		
1	Not eligible	40	46.5	28	32.6	68	79.1
2	Qualify	3	3.5	15	17.4	18	20.9
	Amount	43	50	43	50	86	100
	p = 0.001 α = 0.05 r = 0.422						

Statistical tests show that there is a relationship between temperature and dermatitis in Juai District, Balangan Regency, with a p-value of 0.001, or < 0.05.

Measurements at the respondent's house revealed that the lack of a ceiling on the roof, inadequate ventilation, and a habit of only opening the windows in the morning were the causes of the high temperature. High temperatures can exacerbate dry skin conditions. Dry skin can accelerate the onset of skin diseases. Loss of moisture in the stratum corneum layer can result in dermatitis, and high temperatures and loss of skin moisture can cause an occlusive effect that disrupts the skin barrier effect [8].

THE RELATIONSHIP BETWEEN HOME HUMIDITY AND DERMATITIS

Table 8. Frequency distribution based on house humidity with dermatitis disease in Juai District, Balangan Regency in 2022

No.	Humidity	Dermatitis				Amount	%
		Case	%	Control	%		
1	Not eligible	43	50	36	41.9	79	91.9
2	Meet the requirements	0	0	7	8.1	7	8.1
	Amount	43	50	43	50	86	100
	p = 0.004 α = 0.05 r = 0.544						

Statistical tests show that there is a relationship between humidity and dermatitis in Juai District, Balangan Regency, with a p-value of 0.004, or < 0.05.

The measurements taken at the respondent's house indicate that obstructions in the ventilation system, such as paper-covered ventilation, caused the high humidity. The purpose of the respondent covering the ventilation with paper was to prevent mosquitoes from entering, but this could prevent air flow from entering, causing the body's metabolism to increase due to the excretion of the occupant's skin, so that the body becomes uncomfortable and the humidity in the room becomes high. In addition, the roofs of several respondents' houses lack ceilings, and despite having ample windows, they do not regularly open them.

High temperatures can cause dry skin, and high humidity will reduce the efficiency of the epidermal barrier [9]. Insufficient air humidity can cause various diseases, including fatigue, decreased ability to concentrate, tremors, and decreased muscle strength. Living in a scorching and humid environment reduces the body's physical fitness and causes fatigue. Meanwhile, a humid environment serves as an ideal habitat for the growth of dermatitis microorganisms. These microorganisms can enter the body through the air. In addition, high humidity can dry out the skin's mucous membranes, making them less effective at inhibiting microorganisms [10].

THE RELATIONSHIP BETWEEN HOME LIGHTING AND DERMATITIS

Table 9. Frequency distribution based on home lighting with dermatitis in Juai District Balangan Regency in 2022

No.	Lighting	Dermatitis				Amount	%
		Case	%	Control	%		
1	Not eligible	42	48.8	33	38.4	75	87.2
2	Meet the requirements	1	1,2	10	11.6	11	12.8
	Amount	43	50	43	50	86	100
	p = 0.002 α = 0.05 r = 0.469						

Statistical tests show that there is a relationship between lighting and dermatitis in Juai District, Balangan Regency, with a p-value of 0.002, or < 0.05.

Measurements at the respondent's house revealed that inadequate ventilation, the house's proximity to other nearby houses, and infrequent window openings, which could potentially block sunlight from entering the house, were the causes of the condition. In addition, some respondents suffer from allergies to dust, which is one of the substances that trigger skin allergies, leading to irritation and itching.

Long ago, light was known to have germicidal properties. Additionally, people often use UV rays from the sun to treat rheumatoid arthritis. On the other hand, excessive exposure to sunlight can lead to the development of skin cancer [11]. According to the University of Oregon's research, 12% of bacteria were able to live and reproduce in the dark, whereas 6.8% of bacteria were still able to live and reproduce in rooms exposed to direct light. Only 6.1% of bacteria live in ultraviolet light.

CONCLUSIONS AND RECOMMENDATIONS

The research results in Juai District, Balangan Regency, examining the relationship between the physical environment of the house and personal hygiene with dermatitis, revealed that poor behavior was associated with personal hygiene in 32.6% of cases, while inadequate house temperature was a factor in 79.1% of cases. In Juai District Balangan Regency, there is a statistically proven correlation between personal hygiene, house temperature, house humidity, and house lighting with dermatitis.

Dermatitis sufferers should avoid allergen triggers found in products they use daily and improve habits that can trigger dermatitis.

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