



VARIATION IN LENGTH OF CONTACT WITH WATER AND FREQUENCY OF WASH HANDS ON DERMATITIS IN HOUSEWIVES

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ABSTRACT

The high incidence of dermatitis reaches 15-20% and the prevalence of contact dermatitis in Indonesia is 66.3%. Contact dermatitis due to contact with materials/tools used in each activity. One of the activities that are often in contact with water and washing hands is housewives. The purpose of this study was to analyze the effect of variations in the length of contact with water and hand washing on dermatitis in housewives in the Astambul District. The research is quantitative with an observational analytic design with a cross-sectional design. The sample in this study amounted to 100 respondents with purposive sampling. The instruments used are questionnaires and observations. Data analysis used multiple logistic regression tests. The results showed that 23% of housewives experienced dermatitis, the variation factor of contact with water (p value = 0.004), and hand washing times (p value = 0.000). And the multivariate results showed that the variation in the length of contact with water was the most influential factor in the incidence of dermatitis (OR = 0.181). In conclusion, the most influential variable on the incidence of dermatitis in housewives is the variation in the length of contact with water (> 2 hours).

Keywords: dermatitis; housewives; variations in the length of contact with water; washing hands

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INTRODUCTION

Dermatitis is a non-communicable disease unless a secondary infection has occurred in the lesions on the patient's skin (deWit et al, 2017). The incidence of dermatitis is estimated to occur in 15-20% of the general population in one the developed countries, namely Germany, who suffer from contact allergies (Peiser et al., 2012). As for the case of contact dermatitis in Indonesia, 97% of the 389 cases were contact dermatitis, 66.3% of them were irritant contact dermatitis, and 33.7% were allergic to contact dermatitis (Nanto, 2015). Preliminary study reports conducted by researchers found that contact skin disease data was a disease with a category six of the ten most common diseases at the Astambul Health Center with a total of 1,015 patients.

Contact dermatitis is a type of dermatitis which is defined as a delayed allergic response involving cell-mediated immunity. Allergens that come into contact with the skin will bind to carrier proteins and form antigens, then T cells become sensitive to antigens. Local skin irritation is seen within hours or days after exposure to the antigen. Erythema and swelling, pruritus, and the appearance of vesicular lesions will present as signs and symptoms (deWit et al, 2017).

It is known that there are two types of contact dermatitis, namely allergic contact dermatitis and irritant contact dermatitis. Allergic contact dermatitis is a delayed immunological response to a small molecule activating antibody (haptens) that requires prior sensitization and elicitation on exposure to the same haptens. Irritant contact dermatitis is a direct response that occurs on the skin to injury from friction, chemicals (acids, alkalis, detergents, or solvents), or environmental factors (eg, prolonged water contact) (Alavi et al., 2021).

Water is a potential irritant and can penetrate the stratum corneum with relative ease. Frequent exposure to water causes swelling and shrinkage of the stratum corneum and can cause dermatitis. Household cleaning, washing dishes, health sector work, hairdressing, food preparation, metalworking, farming, and flower arranging are examples of occupations that may experience increased exposure to water, mixed water, and wet objects (Behroozy & Keegel, 2014).

Other activities exposed to liquids are hand washing and the use of hand sanitizers which are important interventions in preventing the spread of viruses and bacteria. Due to the coronavirus disease (COVID-19) pandemic, hand hygiene has been intensified. However, there are reports of increased dermatological effects of increased hand washing, such as hand irritation leading to dermatitis (Hui-Beckman et al., 2022).

The existence of these problems prompted researchers to research the effect of variations in the length of contact with water and hand washing on dermatitis with the main aim of analyzing variations in the length of contact with water and washing hands on dermatitis. The results of this study are expected to be a contribution to science, especially medical surgical nursing, and to become the basis for innovation in case management in adult patients in the application of complementary nursing, especially in cases with integumentary disorders.

METHOD

The research is quantitative with an observational analytic design with a cross-sectional design. The independent variables in this study were variations in the length of contact with water and hand washing. The dependent variable in this study was the incidence of dermatitis. The research location is in Astambul District, Banjar Regency.

The sample in this study were some of the housewives who lived in the Astambul sub-district totaling 100 respondents. So that the subjects obtained are homogeneous, restrictions are made in the form of inclusion criteria, namely: willing to become respondents, housewives who do not have a household assistant, housewives who have at least 1 year of household life, and housewives aged 45 years. Exclusion criteria, namely housewives who have a history of allergies to soap, and detergents, housewives who have a previous history of dermatitis, and mothers who are not at home when the study is conducted. By using purposive sampling.

The instrument used is a questionnaire. The questionnaire used in this study was to determine variations in the length of contact with water and washing hands. In this questionnaire, respondents answered the researcher's questions by choosing the available answers. To determine the diagnosis of dermatitis by history taking and observing the palms. Multivariate data analysis using multiple logistic regression tests.

RESULTS

Table 1.

Frequency distribution of respondents based on variations in the length of contact with water among housewives (n=100)

Variations in the length of contact with water	f	%
≤ 2 hours	70	70
> 2 hours	30	30

Based on the table 1, the majority of variations in the length of contact with water 2 hours are 70%.

Table 2.

Frequency distribution of respondents based on hand washing times for housewives (n=100)

Frequency of washing hands	f	%
>20 times	6	6
16-20 times	7	7
11-15 times	7	7
6-10 times	13	13
<5 times	67	67

The data of table 2 showed the majority of times washing hands with water < 5 times is 67%.

Table 3.

Frequency distribution of respondents based on the incidence of dermatitis among housewives (n=100)

Dermatitis	f	%
Yes	23	23
No	77	77

The data of table 3 is showed that the incidence of dermatitis is 23% of all respondents in Desa Astambul.

Table 4.

The relationship between variations in length of water contact and hand washing times with the incidence of dermatitis in housewives (n=100)

		Dermatitis						p-value
		Yes		No		Total		
		f	%	f	%	f	%	
Variation in length of water contact	<2 hours	10	14,3	60	85,7	70	100	0,000
	>2 hours	13	43,3	17	56,7	30	100	
Frequency of washing hand	>20 times	6	100	0	0	6	100	0,004
	16-20 times	3	42,9	4	57,1	7	100	
	11-15 times	5	71,4	2	28,6	7	100	
	6-10 times	1	7,7	12	92,3	13	100	
	<5 times	8	11,9	59	88,1	67	100	

Table 5.

The first step is the selection of multivariate variables that affect dermatitis in housewives (n=100)

Variable	ρ value
Variation in length of water contact	0,004
Frequency of washing hand	0,000

Table 5 showed both of variables enter into multivariate candidates because they have value <0.05.

Table 6.

Logistic regression model affects dermatitis (n=100)

variable	B	SE	Wald	Exp B (OR)	P value
Variation in length of water contact	-1,709	0,676	6,399	0,181	0,011

Table 6 showed the results of the multivariate with logistic regression can be seen that the most influential variable on the incidence of contact dermatitis in housewives is the result of variations in the length of contact with water with a p-value of 0.011 and an exp B (OR) value of 0.181.

DISCUSSION

Dermatitis is an inflammatory disease of the skin with signs of intercellular edema in the layers of the skin. One type of dermatitis, namely contact dermatitis, is caused by the interaction between chemicals when in contact with the skin, there are two types of contact dermatitis, namely allergic contact dermatitis and irritant contact (Kodumudi & Feng, 2022). Table 3 shows the incidence of dermatitis in housewives as much as 23%. Research conducted in America states that there is a 2% incidence of dermatitis by examination of glucoside patches in a population that frequently comes into contact with fluids and chemicals (Warshaw et al, 2022). This shows that the incidence of Dermatitis in Astambul is much higher than the findings in 2009-2018 in America. Dermatitis can occur when a person is in contact with fluids for more than 2 hours and washes their hands more than twenty times a day (Bahroozy, 2104).

Table 6 shows the results of the logistic regression test on the incidence of dermatitis to variations in the length of contact with wet conditions in housewives < 0.05 with an OR value of 0.181 which means that variations in contact length > 2 hours have a 0.181 times risk of dermatitis incidence. Research conducted by Warshaw, et al. (2022). stated that women had more dermatitis (39.5%) than men (39.5%) which was detected through patch examination. There are still many housewives in rural areas who wash clothes manually, besides that they often clean the house without using tools for protection such as gloves. Irritant contact dermatitis usually occurs in health care, dentistry, restaurant workers, hairdressing, and household chores that involve “wet work”. Water alone can be an irritant especially when water is mixed with chemicals and detergents, low humidity environments, and abrasive actions, inflamed and painful skin often occurs (Twedel, 2010).

Education on how to use gentle but effective hand-washing techniques, use moisturizer frequently, and protect hands from irritation is important. One of the most important functions of the skin is to act as a barrier. Dry, cracked, and chapped skin is impaired in its

ability to keep out bacteria and other harmful substances. Skin care techniques such as using warm or cold water and mild cleansers without additives such as perfumes, dyes, or antibacterial agents can help protect the skin. Consider using bar soap at home as it tends to contain fewer preservatives, which can irritate the skin, than liquid soap (Twedell, 2010).

CONCLUSION

There is an effect of variations in the length of contact with wet conditions of more than two hours on the incidence of dermatitis with a value of <0.05 with an OR value of 0.181, which means that variations in contact duration >2 hours have a 0.181 times risk of dermatitis incidence. The existence of data showing the incidence of dermatitis in the sample, it is hoped that housewives are more careful in carrying out daily activities, especially those in contact with wet conditions, the use of protective equipment, the selection of detergents and soaps used are needed to minimize the causes of inflammation of the skin. Health workers and health cadres can increase advice on how to prevent injuries to the skin caused by irritants and how to treat skin to avoid skin diseases

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