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ASSOCIATION FACTORS OF DERMATITIS IN THE COASTAL AREAS

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Abstract

Dermatitis is a skin disease that affects the quality of life, appearance and comfort of the sufferer. Dermatitis is related to various factors and causes such as infection, consumption of drugs and food, psychosomatic, and exposure to chemicals. The research method used is systematic review with a total sample of 152,996 samples. Risk factors for dermatitis in coastal areas include genetics, type of food, personal hygiene, duration of contact, disease history, years of work, personal protective equipment use, occupational history, protein

contact, insect paederus, allergic history, exclusive breastfeeding status, age, education, administration of formula milk, infection and inflammation. The most studied factors are personal hygiene, history of illness and years of work.

Keywords

Association Factors, Dermatitis, Coastal Areas

1. Introduction

Dermatitis is a skin disease that affects the quality of life, appearance and comfort of the sufferer. Dermatitis is related to various factors and causes such as infection, consumption of drugs and food, psychosomatic, and chemical exposure (KEMENKES RI, 2011). Dermatitis affects basic human needs such as discomfort, pain, itching, disruption of social interaction due to physical changes (Ministry of Health, 2000).

The data of Central Bureau of Statistics in 2011 shows that in Indonesia there are around 8,090 coastal villages scattered in 300 coastal districts / cities. Of the 234.2 million people in Indonesia, there are 67.87 million people who work in the informal sector and around 30% of them are fishermen. Other data, 31 million poor people in Indonesia, around 7.78 million people (25.14%) of them are fishermen and coastal communities (Ministry of Health, 2013).

Health problems in coastal areas must be considered. One health problem that needs to be considered immediately is inflammation of the skin or in the world of health known as dermatitis. In the work area of Kulisusu Health Center, North Buton District, prevalence rates were recorded, in 2007 skin allergy sufferers were 2.7% of the population with a total of 533 patients. In 2008 was 1.9% of the population with a total of 373 patients and in 2009 increased to 4.1% of the population with a total of 851 patients.

The results of the Based Health Research 2007 of the Ministry of Health Research and Development Agency showed that the national prevalence in cases of dermatitis was 6.8%. There are 14 provinces that have a prevalence above prevalence. Based on these prevalence figures, it is considered necessary to treat dermatitis by the community (Ministry of Health, 2011).

According to a study conducted by Imma Nur Cahyati (2010), there are several factors that significantly cause skin diseases in fishermen, namely working period, use of personal protective equipment, tracking work, personal hygiene, skin disease research, and tracking bacteria. This study discusses the research conducted by Arie Retnoningsih

(2017), where the topic of disease, personal hygiene and the use of personal protective equipment has a significant relationship that causes dermatitis in fishermen.

Dermatitis is a significant health problem in the Coastal area. However, special research on dermatitis in coastal areas is very minimal, so research is needed. Because research in coastal areas is very minimal, this study tries to collect some previous studies to address risk factors for dermatitis. The purpose of this study was to find out the most dominant risk factors for dermatitis in coastal areas. The method used by researchers is a systematic review. Systematic review is systematic research (in literary publications), explicit (in approval of objectives, materials and methods) and development (in research experiments and conclusions). The advantage of using this systematic renewal obtained valid findings and could be applied from several previous studies on certain phenomena. The purpose of this systematic review consideration is to determine the factors that influence the prevalence of dermatitis in the coastal areas.

2. Method

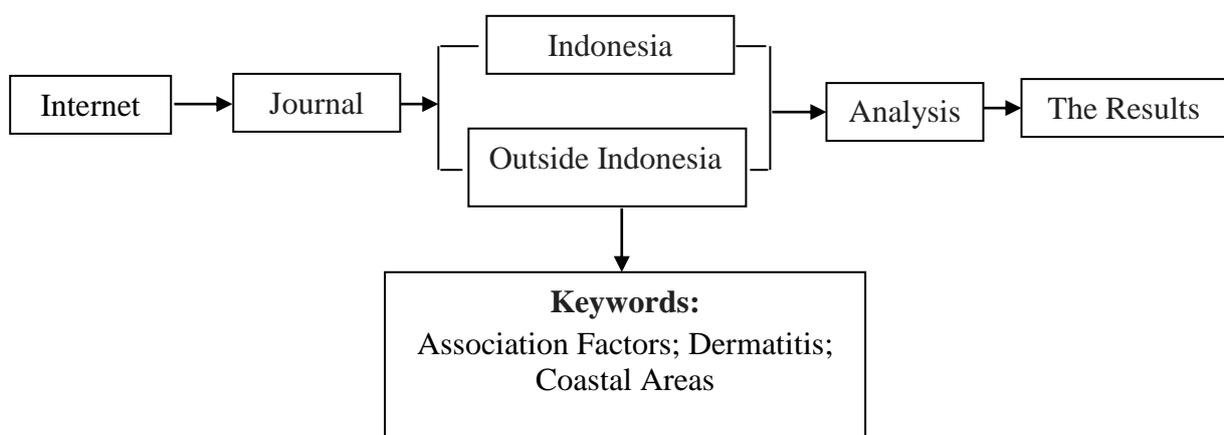


Figure 1: *Method of Obtaining Results*

The research method used is systematic review. The source of this research data comes from literature obtained through the internet in the form of research results on the incidence of dermatitis in coastal areas published on the internet from 2010 - 2017. A total of 13 studies of the incidence of dermatitis in the pesisirdari area from 2010 - 2017 have been successfully accessed via the internet network.

The sample is 13 studies consisting of 9 national journals and 4 international journals from various sources such as google scholar, lafex, IPI, Scopus, Bielefeld Academic

Search Engine (BASE), crosscheck, copernicus, and DOAS. The total subject of the study based on the research obtained is 152,996 research samples namely people in coastal areas who experience dermatitis.

Data collection was carried out by determining the variables needed in this study by studying literature through the internet network using keywords dermatitis, coastal community diseases, risk factors for coastal dermatitis and dermatitis. The analysis of this study is the analysis of the data contained in the journal.

3. Result

The results of the analysis are shown in Table 1, which is a description of the study of the incidence of dermatitis in coastal areas carried out by researchers. Some of the journals we studied used a cross sectional study. The number of samples studied was quite diverse ranging from 40 to 145,293 people. From several journals that can be accessed there are several literatures used including health magazines, health bulletins, books, articles, theses, theses, websites, and health journals. The literature was published from 1988 - 2016.

This Systematic review uses the results of journal research from 2010-2016. The literature used can be a benchmark of research quality such as the year the literature used and the type of literature whether it comes from articles, journals or books. One of the good assessment criteria is the use of the latest journals with a large number as a basis for research.

Table 1: *Overview of Research on Risk Factors for Dermatitis in Coastal Areas During 2010 - 2016*

Authors	Sources and Years	Variables	SV	S	Research Design	Literature
Devi Puspanita Saleh, Ramadhan Tosepu, and Hariati Lestari	Public Health Journal, 2010	3 Hereditary risk Risk of food types Risk of physical condition of water	1	43	Cross Sectional	4 (2005 – 2009)

Safriyanti, Hariati Lestari, and Karma Ibrahim	Public Health Faculty Journal Halu Oleo Univers ity, 2016	3 Personal hygiene Contact time History of skin diseases	2	64	Cross Sectional	16 (2004 – 2015)
Imma Nur Cahyawati and Irwan Budiono	Public Health Journal Vol 6 No 2, 201, (134- 141), 2011	6 Years of work Personal Protective Equipment (PPE) Employment history Personal Hygiene History of skin diseases Allergy history	6	40	Cross Sectional	22 (2001 – 2009)
Nurfadilah Syarif, Andi Zulkifli, and Ansariadi	Epidemi ology Journal Public Health Faculty Hasanu ddinUni versity, 2014	4 Parent's (atopic) history Status of exclusive breastfeeding Formula feeding Expose cigarette smoke	3	18 7	Cross Sectional	12 (1989 – 2011)
Khadijah Azhar and Miko Hananto	Health Ecology Journal, Public Health Interven tion Technol	2 Working time (> 20 hours) Job type (nursery)	2	21 0	Cross Sectional	14 (1988 – 2009)

	ogy Center, Vol. 10 No. 1, 2011, (1- 9).					
Sarfia, Pitrah Asfia Ririn, and Teguh A.	Public Health Faculty Journal Halu Oleo Univers ity, tahun 2016	4 Personal hygiene Contact time History of skin diseases Previous work history	2	61	Cross Sectional	14 (2000 – 2014)
Andan Firmansyah and M. Syikir	2016	2 Length of working Personal hygiene	1	50	Cross Sectional	23 (2006 – 2014)
Meutia Nanda	JUMA NTIKJo urnal Vol. 1 No.1 Novem ber 2016	4 Age Education Length of stay Personal Hygiene	3	12 4	Cross Sectional	11 (2000 – 2013)
Arman, Ari Udiyono, M Sakundarn Adi	Public Health Journal Dipone goro Univers ity, 2017	2 History of skin diseases Water quality	2	10 5	Cross Sectional	14 (1988 – 2016)
Ray Lucas, Keith Boniface, and Michael Hite	Int Marit Health, 2010	3 Infection Inflammation Environment	1	12 5	-	13 (1995 – 2009)

Feng Xu, Shuxian Yan, Qile Zheng, Fei Li, Weihan Chai, Minmin Wu, Haidong Kan, Norback, Jinhua Xu and Zhuohui Zhao	Internas ional Journal of Enviro mental Researc h and Public Health, 2016	2 Personal factor (personal) Environm ental factors	2	66 24	-	27 (1996 – 2016)
B. Loddé, P. Cros, A. M. Roguedas- Contios, R.Pougnnet, D. Lucas, JD. Dewitte dan L. Misery	Journal of Occupat ional Medicin e and Toxiolo gy, 2017	3 Protein contact Contact marine products Allergy	2	14 5, 29 3		27 (1976 – 2014)
Sora Yasri dan Viroj Wiwanitkit	Journal of Coastal Life Medicin , 2014	1 Paederus insects	1	70		6 (1966 – 2013)

Note:

SV = Significant Variable

S = Total Samples

Based on the results of the research found, in terms of the number of variables studied, the number ranged from 2-4 variables. Only one study examined 6 variables. It can be seen from the number of significant variables, the average number of significant variables is 50% or more than all the number of variables studied. There are even studies that have 100% of the number of significant variables. There are only 2 studies that

have less than 50% for the significant variables. This shows that the studies carried out have a high level of significance in each variable.

Table 2: Dermatitis Risk Factors in the Coastal Area Reviewed

Authors	Risk Factors															
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
K Al Hamdi and M Al-Malikey	-	-	-	V	-	-	V	-	-	-	-	-	-	-	-	-
Devi Puspanita Saleh, Ramadhan Tosepu, and Hariati Lestari	V	V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Safriyanti, Hariati Lestari, and Karma Ibrahim	-	-	V	V	V	-	-	-	-	-	-	-	-	-	-	-
Imma Nur Cahyawati and Irwan Budiono	-	-	V	-	V	V	V	V	V	-	-	-	-	-	-	-
Nurfadilah Syarif, Andi Zulkifli, and Ansariadi	V	-	-	-	-	-	-	-	-	V	-	-	-	-	-	-
Khadijah Azhar and Miko Hananto	-	-	-	-	-	V	-	V	-	-	-	-	-	-	-	-
Sarfia, Pitrah Asfia Ririn, and Teguh A.	-	-	V	V	V	-	-	V	-	-	-	-	-	-	-	-
Andan Firmansya and M. Syikir	-	-	V	-	-	V	-	-	-	-	-	-	-	-	-	-
Meutia Nanda	-	-	V	-	-	V	-	-	-	-	-	V	V	-	-	-
Ray Lucas, Keith Boniface, and Michael Hite	-	-	-	-	-	-	-	-	-	-	-	-	-	-	V	V
Feng Xu, Shuxian Yan, Qile Zheng, Fei Li, Weihai Chai,	-	-	V	-	-	-	-	-	-	-	-	-	-	-	-	-

Minmin Wu, Haidong Kan, Norback, Jinhua Xu and Zhuohui Zhao																
Arman, Ari Udiyono, M	-	-	-	-	V	-	-	-	-	-	-	-	-	-	-	-
Sakundarno Adi B. Loddé, P. Cros, A. M. Roguedas-Contios, R.Pougnet	-	-	-	-	-	-	-	-	V	-	-	-	-	V	-	-
Lucas,JD.Dewittedan L. Misery Sora Yasri dan Viroj Wiwanitkit	-	-	-	-	-	-	-	-	-	-	V	-	-	-	-	-
Total	2	1	6	2	4	4	1	3	2	1						

Note:

A = Gen

B = Type of Food

C = Personal Hygiene

D = Contact Duration

E = Disease History

F = Years of Work

G = Personal Protective Equipment

H = Occupational History

I = Allergy History

J = Exclusive Breastfeeding

K = Paederus Insects

L = Age

M = Education

N = Protein Contact

O = Inflammation

P = Infection

V = the factor under study

- = not researching

As the results of the study found there were several risk factors for dermatitis in coastal areas including genetics, type of food, personal hygiene, duration of contact, disease history, years of work, personal protective equipment (PPE) use, occupational history, allergic history, exclusive breastfeeding status, protein contact, age, education, paederus insects, infection and inflammation. Based on table 2 the most frequently studied risk factors are personal hygiene, history of illness and years of work.

4. Discussion

Table 3: *Research Results Risk Factors Affecting Dermatitis in the Coastal Areas*

Risk Factors	Research Results				Total
	Significance	Samples	Unsignificant	Samples	
Gen	1	187	1	43	2
Type of Food	1	43	0	0	1
Personal Hygiene	5	64, 40, 61, 50, 124	0	0	5
Contact Duration	3	64, 210, 61	1	50	3
Disease History	1	40	2	64, 61	3
Years of Work	2	40, 124	0	0	2
Personal Protective Equipment	1	40	0	0	1
Allergy History	1	40	0	0	1
Exclusive Breastfeeding	1	187	0	0	1
Age	0	0	1	124	1
Education	1	124	0	0	1
Protein Contact	-	-	-	-	-
Inflammation	1	125	0	0	1
Infection	0	0	1	125	1

As the table above, it is known that the gene or hereditary variable is one of the variables studied to determine the factors that influence the incidence of dermatitis in the coastal region. Of the 9 studies used as sources systematic review there was only one study which stated that hereditary factors influence the incidence of dermatitis in coastal areas.

This shows that this factor does not significantly affect the incidence of dermatitis in coastal areas.

As the results obtained from systematic reviews note that hereditary factors are one of the factors that can influence the incidence of dermatitis in coastal areas. Based on research that states that this factor is significant, as for toddlers who have a family with a history of allergies will easily suffer from dermatitis due to immunological abnormalities that are passed down from the family through blood cells or spinal cord. Immunological abnormalities that then cause an increase in IgE which causes a hypersensitivity to allergens, so that toddlers with sensitive IgE will easily experience allergies either caused by environmental factors such as the presence of mites, foreign substances or from food and beverage factors such as protein allergies seafood and formula milk. hypersensitivity to allergens, so that toddlers with sensitive IgE will easily experience allergies either caused by environmental factors such as the presence of mites, foreign substances or from food and beverage factors such as protein allergies seafood and formula milk.

Based on table 3, it was also found that the type of food factor was one of the factors studied to determine the relationship with the incidence of dermatitis. According to Saleh (2010), based on the results of statistical tests with chi square obtained p Value = 0.024. With a 95% CI. Based on a systematic review conducted, Bone Lipu Village is in the Kulisusu District, Buton Utar District, which is 7 km from the city center. This is one of the constraints of the community in obtaining new information because of the location of people's housing which is quite far from the city center and health services. Skin allergies by most mothers in this area are considered as common diseases in children, especially toddlers and also no one knows that this disease can decline, so there is no serious attention from parents to prevent and treat these skin allergic diseases . This research was conducted on mothers who have toddlers with the same symptoms as dermatitis (skin allergies), from the results of the study there are several types of foods commonly consumed by toddlers who cause allergies including eggs and snacks.

Skin disorders are a very common occupational hazard with reported numbers ranging from 4.3 to 8.2 cases per 10 000 full-time workers in all jobs in the United States (US) from 1992-2001. In 2001 in the US occupational-dermatitis rates in workers in agriculture, mining, and the fishing industry combined were higher than in other countries- bloody at the US National Institute for Occupational Safety and Health Health Statistics (Worker, 2004). Contact dermatitis, both allergic and from irritation, is the most

frequently reported work on skin disorders, accounting for up to 95% of skin diseases in some series (Clark SC, 2009).

The problem that is often faced by parents is not located in the type of food, but how do parents provide protection for children about the food they will consume after knowing their children suffer from allergies because of certain foods. Another problem is the difficulty of reducing the desire to not consume the food again. Detection of allergic symptoms and developmental disorders as well as early behavior in children must be done, so that the effects of allergies because food on children can be prevented or minimized.

Personal hygiene variables also showed a significant relationship to the incidence of dermatitis in coastal areas and this factor was the most studied factor from various sources obtained in five studies. In these 5 studies, the personal hygiene factor was a significant factor, meaning that these factors influenced the incidence of dermatitis in the coastal area in the five studies in question. The 5 studies in question are Safriyanti (2016), Cahyawati (2011), Sarfiah (2016), Firmansyah (2016), and Nanda (2016).

According to Safriyanti (2016), personal hygiene is one of the efforts to prevent skin diseases. One of the personal hygiene measures to prevent contact dermatitis is by keeping the skin clean. Skin hygiene in research is a habit of seaweed farmers to maintain the cleanliness of their skin before and after work which includes (bathing, using soap, wearing clean towels and clothes).

Personal hygiene behavior is the actions of a person or activity (cleanliness of hair, stiffness, hands, nails, skin, clothes) carried out by someone, both directly and indirectly to maintain and improve the health of their hygiene and prevent the risk of disease (Laily Isro'in & Sulistya Andarmoyo, 2012).

According to Cahyawati (2011), there is a tendency that respondents who suffer from dermatitis because they have bad personal hygiene, whereas respondents who do not suffer from dermatitis mostly have good personal hygiene.

In the place of fish auction, the cleanliness of the environment is less healthy and comfortable. This is made possible because all the activities at the fish auction site have caused a lot of trash from the remains of fish and a lot of water is stagnant on the floor due to clogged water flow. As a result, fishermen who work in fish auctions will get the risk of infectious and non-infectious diseases. The results showed that 13 of 19 respondents (65%) suffered from bad dermatitis with personal hygiene. If personal hygiene such as washing hands, bathing before going home from work, clean clothes and being changed every day

and using clean personal protective equipment is not done, it will make dermatitis more difficult.

According to Sarfiah (2016), the habit of bathing and washing hands and feet is very important because this part is the most frequent direct contact with irritants, while the bad habit of washing hands and feet can aggravate the condition of the skin, especially those who have dermatitis. Besides washing clothes also need to be considered, because the remaining irritant material that is attached to the clothes can infect the body if it is used repeatedly. Clothing washing also needs to be separated from the clothes of other family members, so that families avoid contamination. Clothes should be washed after one use or at least washed before being reused. In addition, the relationship between irritant contact dermatitis and personal hygiene is caused by the habits of fishermen who pay little attention to their physical condition such as when returning home from work directly lying down and falling asleep without regard to their cleanliness. This is because the fishermen feel tired and sleepy. Unwittingly these habits can cause the skin to be susceptible to rapid interference.

The factors that can cause the transmission of skin diseases are direct contact (skin contact), such as shaking hands, sleeping together, and sexual relations. In addition, it can also be through indirect contact (through objects), such as clothes, towels, bed sheets, pillows, and others (Djuanda, 2006).

According to Safriyanti (2016), the duration of contact is one of the factors that influence the incidence of contact dermatitis. Seaweed farmers who were found said that they worked from morning to evening, some were up to night. Seaweed farmers acknowledge that since switching professions into seaweed farmers, their lives have become better so they strive to work as much as possible. The results showed that there was a relationship between the duration of contact with the incidence of contact dermatitis in seaweed farmers in Akuni Village with a p value of 0.045.

Disease history is used as one of the basis for determining whether a disease occurs due to a previous disease, so that the history of the disease is very important in the healing process of a person. Based on the research, at the Tanjungsari fish auction place (TPI) most of the respondents detected with dermatitis had a history of previous skin disease (Imma, 2011).

A person's work period determines the level of one's experience in mastering their work (Cahyawati, 2011). Where most (75%) fishermen with dermatitis have a service life of 2 years or less, the opposite who does not suffer from dermatitis all have a period of

more than two years of (25%). It is possible that workers who have worked for more than two years have resistance to irritants and allergens, so that the contact dermatitis sufferers in this group tend to be little. Workers with a work duration of less than or equal to 2 years can be one factor that indicates that the worker does not have sufficient experience in doing his work.

Risk factors for personal protective equipment (PPE) use are only carried out by one study, the research conducted by Cahyawati (2011). There is a significant relationship between the use of personal protective equipment and the incidence of dermatitis in fishermen who work at the Tanjungsari fish auction area in Rembang Subdistrict. The use of personal protective equipment, it will prevent someone direct contact with physical, chemical and biological agents. workforce or workers at work do not use personal protective equipment so the skin becomes unprotected and the skin becomes more exposed to irritants and allergens (Lestari, 2007).

Job history variables reach a significant level in two studies namely Cahyawati (2011) and Azhar (2011). According to Cahyawati (2011), there is a significant relationship between employment history and the incidence of dermatitis in fishermen who work in the fish auction place. Job history is one of the factors that can be considered as a cause of dermatitis. It is possible that dermatitis is suffered not due to the work he is living now, but due to previous work.

Most of the respondents at Tanjungsari TPI who were detected with dermatitis had a history of previous work in agriculture, salons, printing, gas stations, on the market, and carpentry. Respondents who have a work history that provides opportunities for contracting dermatitis. For example due to exposure to foreign objects, chemicals, biology, or the environment of the previous workplace. As for workers who are normally exposed to sensitizers, such as chromate in the building industry or dye, in the leather processing plant, it has a higher incidence (Kabulrachman, 2003). But skin diseases may also be caused by marine fungi or animals. Wet work is a place where fungal disease develops, for example monoliasis. Sercarial dermatitis may affect fishermen who live on the beach with poor sanitation conditions, the cause is worm-type larvae. Some types of fish can cause skin disorders, usually fishermen know the types of fish that bring itching (Lestari, 2008). So that through his work history, one can find out the possible causes of the illness he is suffering from.

According to Cahyawati (2011), there was a significant relationship between a history of allergies with the incidence of dermatitis in fishermen. Occupational or acquired

dermatitis while doing work, many causes. Agents as the cause of these skin diseases include other physical, chemical and biological agents. Most agents are found in industrial jobs, but exposure to weather conditions is common in the work of fishermen as happens to fishermen who work in fish auction sites. Skin responses to these agents can be associated with allergies (Manjoer, 2000).

Allergies can cause dermatitis because the community (respondents) studied live in densely populated areas and some areas where the environmental conditions are unconditional. An environment that lacks lighting (sunlight), has a high humidity that allows fungi, bacteria or viruses to reproduce properly. Bacteria, fungi, viruses and dust can stimulate allergies (Gafur, 2018).

The results of Syarif's research (2014) showed that there was a significant relationship between the status of exclusive breastfeeding with the incidence of dermatitis in infants in the Pattopakang PKM work area. Children who obtain exclusive breastfeeding have better immunity than children who are not given exclusive breastfeeding. However, it turned out that there were also high incidence of dermatitis in children who were given exclusive ASI. This can be due to the large number of mothers who suffer from dermatitis which then transmit to children through ASI. Although more children under five who are exclusively breastfed suffer from dermatitis than not dermatitis does not mean that exclusive breastfeeding is the cause of dermatitis, there is a possibility that toddlers are affected by dermatitis after mother has not been given more milk. In addition, by giving breast milk to children will improve the body's immune mechanism, so if breast milk has been stopped, there can be a tendency for excessive sensitivity to the protein content given through food or formula milk.

4. Conclusion

Risk factors for the incidence of dermatitis in coastal areas include genetics, type of food, personal hygiene, contact duration, disease history, years of work, PPE use, occupational history, allergy history, exclusive breastfeeding status, insect paederus, age, education, contact protein, infection and inflammation. The most studied risk factors are personal hygiene, history of illness and years of work. There is a tendency that respondents who suffer from dermatitis. Most respondents who detected dermatitis had a history of previous skin disease. In addition, a person's work period determines the level of one's experience in mastering their work. Based on the results of systematic review as for

interventions that can be done should lead to primary preventive measures carried out by providing socialization to coastal communities to carry out clean and healthy living behavior, to improve the condition of personal hygiene to avoid dermatitis.

Limitation

This study uses a systematic review method, therefore it is only limited to several studies conclusions related to dermatitis in the coastal areas Indonesia. International journals are intended to strengthen the result of research

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References

- Alsowaidi, Shirina. Abdishakur Abdulle. Roos Bernsen. Torsten Zuberbier. 2010. 'Allergic Rhinitis and Asthma: A Large Cross-Sectional Study in the United Arab Emirates'. *International Archives of Allergy and Immunology*. Vol.153, pp 274-279. <https://doi.org/10.1159/000314368>
- Arman,Ari Udiyono, and M Sakundo Adi. 2017. *Dermatitis Pictures in Indonesian Workers in Temporary Shelter in Nunukan Regency*. University of Diponegoro: Faculty of Public Health.
- Azhar, Khadijah and Miko Hananto. (2011). *Realtionship between Work Processes and Irritant Contact Dermatitis Events in Seaweed Farmers in Bantaeng District, South Sulawesi*. Makassar: Center for Public Health Intervention Technology.
- B. Loddé, P. Cros, A. M. Roguedas-Contios, R.Pougnnet, D. Lucas, JD. Dewitte dan L. Misery. 2017. Occupational contact dermatitis from protein in sea products: who is the most affected, the fisherman or the chef?. *Journal of Occupational Medicine and Toxicology*. <https://doi.org/10.1186/s12995-017-0150-0>
- Cahyawati, I. N. (2010). *Factors Associatied with Dermatitis Events in Fishermen Working at Tanjungsari Fish Auction Place in Rembang Sub-District*. Thesis.
- Cahyawati, Imma Nur and Irwan Budiono. (2011). *Factors Associated with Dermatitis in Fisherman*. Semarang: Faculty of Medicine, Semarang State University. <http://journal.unnes.ac.id/index.php/kemas>

- Clark SC, Zirwas MJ. Management of Occupational Dermatitis. *Dermatol Clin* 2009; 27: 365-383 <https://doi.org/10.1016/j.det.2009.05.002>
- Djuanda. A. 2007. *Your Skin and Sex Disease* Faculty of Medicine, University of Indonesia Jakarta: University of Indonesia.
- Espeland, Nancy. (2008). *Complete Intructions for Dealing With Allergies and Asthma in Childern*. Jakarta : Workshop Achievements.
- Feng Xu, Shuxian Yan, Qile Zheng, Fei Li, Weihan Chai, Minmin Wu, Haidong Kan, Norback, Jinhua Xu and Zhuohui Zhao. 2106. Residential Risk Factors for Atopic Dermatitis in 3-to 6-Year Old Children: A Cross-Sectional Study in Shanghai, China. *International Journal of Environmental Reseach and Public Health*.
- Firmansyah, Andan and M. Syikir. (2016). Factors Associated with the Occurrence of Skin Disorder in Fishermen at Tonyaman Village Fisherman Housing, Binuang District, Polewali Mandar District. Mamuju.
- Gafur, Abdul and Nasridin Syam. Determinants of Dermatitis Events at Makassar's Rappokalling Health Center. *Window of Health*. Indonesian Muslim University.
- Laily Isro'in and Sulistyoyo Andarmoyo. (2012). *Personal Hygiene*. Yogyakarta : Graha Ilmu
- Ludfi, Achmad Syaeful. Luki Agustina. Fetrayani D. Baskoro A. Gatos S. 2012. Association of Autopic Allergic Childern with Parental Atopy and Environmental Factors. *Electronic Journal*. Airlangga University. Surabaya.
- Ministry of Health. (2011). Prime Launch of the Skin Health Conseling Training Program for Posyandu Cadres. Retrieved from <https://www.depkes.go.id/article/print/1388/peluncuran-perdana-programpelatihan-penyuluhan--kesehatan-kulit-bagi-kader-posyandu-.html>
- Ministry of Health. (2013). Improving Coastal Community Health. Retrieved from <http://www.depkes.go.id/article/print/2237/peningkatan-kesehatan-masyarakat-pesisir.html>
- Nanda, Meutia. (2014). Factors Affecting Dermatitis Events in Santri at Al Mukhlishin Tanjung Morawa Modern Islamic Boarding School in Deli Serdang District in 2014. Medan: Faculty of Public Health, Islamic University of North Sumatra.
- Putri, E. (2015). CHAPTER II Literature Review. Retrieved from [eprints.undip.ac.id: https://www.google.com/url?q=http://eprints.undip.ac.id/46228/3/Ellisa_Putri_22010111110155_Lap.KTI_Bab2.pdf&sa=U&ved=2ahUKEwjdcTEsPjbAhXKV30KHcK_B60QFjACegQIBBAB&USG=AOvVaw3pllTaFdYIWnD7li8MzqRL](https://www.google.com/url?q=http://eprints.undip.ac.id/46228/3/Ellisa_Putri_22010111110155_Lap.KTI_Bab2.pdf&sa=U&ved=2ahUKEwjdcTEsPjbAhXKV30KHcK_B60QFjACegQIBBAB&USG=AOvVaw3pllTaFdYIWnD7li8MzqRL)

- Ray Lucas, Keith Boniface, Michael Hite. Skin Disorders at sea. Maritime Medical Access. The George Washington University. USA. 2010
- Saleh, Devi Puspanita, Ramadhan Tosepu, and Hariati Lestari. (2010). Risk Factors for the Occurrence of Dermatitis (Skin Allergy) in Toddlers in the Coastal Area of Bone Lipu Sub-District, Kulisusu District, North Buton Regency in 2010. Kendari Faculty of Mathematics and Natural Sciences, Haluoleo University.
- Sarfiah, Pitrah Asfian, and Ririn Teguh A. (2016). Factors Associated with Irritant Contact Dermatitis in Fishermen in Lamanggau Village, Tomia District, Wakatobi Regency, 2016. Kendari: Faculty of Mathematics and Natural Sciences, Haluoleo University
- Sora Yasri and Viroj Wiwanitkit. 2014. Paederus Dermatitis. Journal of Coastal Life Medicine. Hainan Medical University: Haikou, China.
- Syafriyanti, Hariati Lestari, and Karma Ibrahim. (2016). Personal Hygiene Relationships, Length of Contact and History of Skin Diseases with Dermatitis Events Contact with Seaweed Farmers in Akuni Village, Tinanggea District, South Konawe Regency, 2016.
- Syarif, Nurfadilah, Andi Zulkifli, and Ansariadi. (2014). Factors Associated with Dermatitis Events in Toddler Children in (PKM) Pattopakang Work Area in Mangarabombang District, Takalar Regency. Makasar: Epidemiology Section, Faculty of Public Health, University of Hasanudin.
- Worker Health Chartbook. (2004). National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention, Department of Health and Human Services. <http://www.cdc.gov/niosh/docs/2004-146/pdfs/2004-146.pdf>