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Research article

Relationship Between Environmental Sanitation and the Incidence of Scabies: A Literature Review

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Abstract.

It is estimated that two hundred million people in the world suffer from scabies at any one time. The World Health Organization includes scabies in their 2021-2030 roadmap for neglected tropical diseases. Most previous research states that the risk factors for scabies are personal hygiene and environmental sanitation. But other studies state that there is no relationship between scabies and environmental sanitation. The purpose of this study was to examine the differences in the results of several studies regarding the relationship between environmental sanitation and the incidence of scabies. This study was a systematic literature review. Journal articles were found by searching through Google Scholar, Pubmed, and Science Direct using the keywords 'scabies' and 'environmental sanitation'. The JBI Critical Appraisal Checklist for Analytical Cross Sectional Studies was used in examining articles for eligibility. Five research articles were obtained which were published in 2016-2021. From these articles, it was found that poor environmental sanitation, especially from cloth use, was associated with the risk of scabies. Poor environmental sanitation, such as unavailability of clean water, sewerage and garbage disposal, provides an opportunity for scabies mites to breed and spread efficiently.

Keywords: environmental sanitation, scabies

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1. Introduction

Two hudred million people in the world an estimated suffer from scabies at any one time. The World Health Organization (WHO) puts scabies in part of the roadmap for neglected tropical diseases 2021–2030 [1].

The spread of scabies disease can occur directly, such as through contact with a patient infected with scabies and indirectly, such as through clothes, bed linen, towels, pillows, or combs that have been used by the patient and have not been cleaned so that they are still contaminated by the Sarcoptes scabiei mite. 2013 in [2].)

Factors causing scabies disease include age, low socio-economic level, poor personal hygiene, densely populated areas, poor environmental sanitation such as areas with slum environments and clean water supply such as bathroom sanitation which

greatly contributes to the incidence of scabies disease. . The main problems that still occur in Indonesia are still dominated by infectious diseases, most of which are environmental-based infectious diseases (Hidayati and Abidin, 2016). At that time the skin disorder will look like dermatitis with the discovery of papules, vesicles, urticaria and others [3].)

The results of research conducted by [4] in his research on 104 respondents with the title ”House Environmental Sanitation and Social Culture of Coastal Communities against Scabies Incidence” showed that the respondents who suffered from scabies were 52 respondents (50%), with a high residential density. did not meet the requirements, namely 77 respondents (74.0%), the humidity that did not meet the requirements was 41 respondents (39.4%) and the physical quality of the water did not meet the requirements, namely 61 respondents (58.7%). The p value is 0.464 or > 0.05, which means that there is no relationship between the sanitation of the home environment and the incidence of scabies. According to the results of research conducted by [3]) in their research on 61 respondents with the title ”The Relationship of Clean and Healthy Living Behavior (PHBS) and the Environment with Scabies Incidence in the Elderly” showed that respondents who suffered from scabies were 34 respondents (55, 7%), with poor environmental sanitation as many as 35 respondents (57.4%) and respondents who have poor bathing frequency as many as 14 people (23%). The p-value is 0.002 or <0.05, which means that there is a relationship between environmental sanitation and the incidence of scabies in the elderly. From the results of the two studies, there are still differences so that researchers need to conduct research using the literature review method.

Based on the description of the background above, there are still variations in the results that can cause scabies. So that researchers are interested in knowing the dominant factor in the occurrence of scabies by conducting a literature review secondary data study with the title ”Relationship of Environmental Sanitation with Scabies Incidence: Literature Review”.

2. Methods

2.1. Literature Search Strategy

2.1.1. Data Source

The data sources used in the preparation of this report are secondary data sources, using data from the results of previous researchers, in the form of papers from scientific

journals, papers from conferences (proceedings), theses and dissertations, reports from trusted organizations and textbooks. .(Roswendi et al., 2021). The academic database used is data that has high reputation, medium reputation and low reputation. For journals that have a high reputation and are being obtained from International Journals, while for journals that have low reputations are obtained from national journals accredited by Shinta, which are obtained from Google Scholar. International journals used as secondary data are Scopus accredited journals. International journal search using MeSH (Medical Subject Heading) with boleen operators (AND, OR and NOT) with the keyword "environment sanitation and scabies". In addition to using MESH, researchers also use PICOST (Population, Intervention, Comparison, Study, Output and Time). The time limit for the journal used is from 2016-2021, the journal can be accessed in full text, abstract, and free access.

Reputable data used is from Science Direct with. The number of articles found that are in line with the research theme amounted to 26 articles. The database includes more than 30 million citations from medical and biomedical literature. The number of articles found that are in line with the research theme is 15 articles, with access address: https://www.ncbi.nlm.nih.gov/pmc/. The data of low reputation used is from Google Scholar, with the number of articles found that are in line with the research theme totaling 561 articles. https://scholar.google.com/. The search time for the literature review is from February to July 2021.

2.1.2. Quality Assessment

Analysis of article quality assessment can be carried out using scientific instruments using the Critical Appraisal Tools (CAT) instrument, which is adjusted to the type of research design used. Each criterion is given a score, the yes score is worth 1 and the no score is 0, then each score is calculated and added up. The minimum value of the literature that can be used is 50% of the cut off point value that has been agreed upon by the research team. The instrument used in this study was the JBI (The Joanna Briggs Institute) instrument with a cross sectional approach [1].

2.1.3. Literature Selection

The literature selection used is using protocols and literature evaluation using PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) is used so that literature review writing is carried out in a systematic and structured manner, starting

from searching, selecting assessments to determining articles, which are explained in stages. narratively then displayed in the form of a PRISMA diagram. The PRISMA stages carried out consist of: Identification, Screening, Eligibility, Included. The steps taken are described in the chart below:

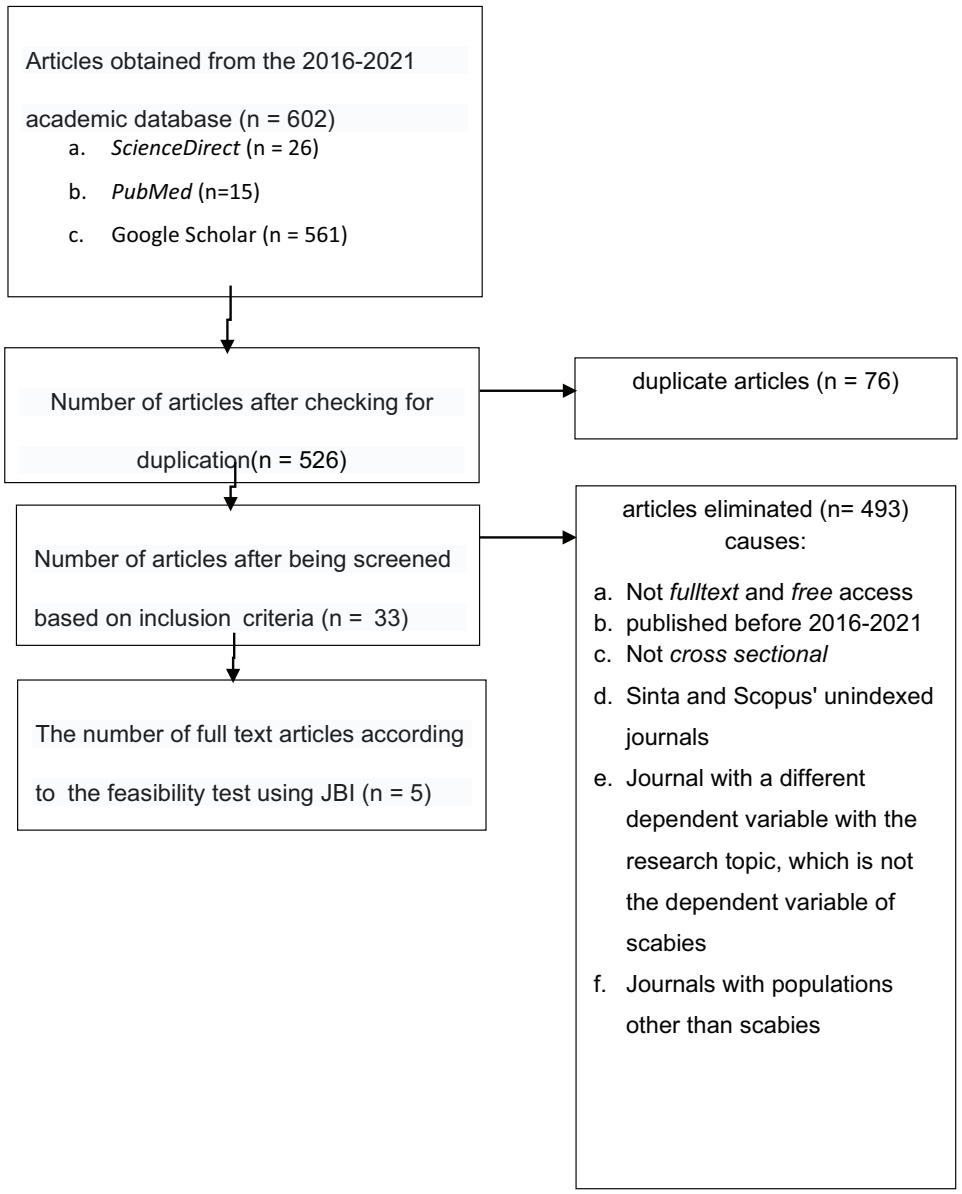

Figure 1

3. Results

According to the results of research conducted by T Caroline et al., (2020) explained that of 120 respondents, the factor that did not have a relationship was the knowledge factor with a P Value of 0.533 (P Value , = 0.05), and others have a relationship, such

Table 1: Percentage of Independent Variables with Incidence of Scabies.

Article Title	Independen Variabel	Independen Variabel (%)	Scabies(%)	P Value	Result
Relationship of Knowledge, Clothing Cleanliness, Towel Hygiene and Environmental Sanitation with Scabies Incidence **Author:** Ruth Novyna Carolyne T, Namora Lumongga Lubis, Nurmaini 2021 **Indexed** : SINTA 3	a.Knowledge b. Clothing Hygiene c. Towel Cleanliness d. Environment sanitation.	90 % 65,0% 33,3% 78,3%	48,3%	0,533 0,003 0,014 0,042	No corelation There's corelation There's a corelation There's a corelation
Relationship of Knowledge, Personal Hygiene and Clean Water Provision with Scabies Incidence **Author:** Ulfa Amelia, La Ode Muh Sety, Lymbran Tina 2019 **Indexed** : SINTA 5	a. Knowledge b. Personal Hygiene c. Clean water supply	85,7% 57,1% 95,2%	70%	0,001 0,001 0,001	There's Relationship There's a Relationship There's a Relationship
Personal Hygiene and Presence Analysis Sarcoptes scabiei in the dust of sleeping mats of prisoners in prison in the incident of scabies at the Class IIB Prison in Jombang **Author:** Arie Aulia Nur Affandi 2019 **Indexed** : SINTA 3	a. Personal Hygiene b. The presence of Sarcoptes scabiei	7,9% 40%	74,1%	0,001 0,321	There's corelation No Corellation
Scabies and its Associated Factors Among Under 15 Years Children in Widila District, Northern Ethiopia, 2019 **Author :** *Tefera Haile, Tadesse Sisay, Tadeg Jemere 2020* **Indexed** : *Scopus* (Q3)	a. House Cleaning b. Environment sanitation c. The Presence of Animals in the House d. Water sources e. Do not use soap when bathing f. Sharing Clothes with Scabies Sufferers g. Go to the scabies epidemic area	29,5% 84,2% 64,8% 74,1% 59,8% 5% 25,4%	23,84%	OR= 2,28 OR= 1,82 OR = 3,01 OR= 1,82 OR= 2,93 OR= 10,10 4,09	The possibility of scabies occurs, and the highest because sharing clothes is 10.10 times the possibility of scabies
Prevalence and Associated Factors of Scabies Among School Children in Dabat District, Northwest Ethiopia, 2018 **Author :** *Henok Dagne, Awrajaw Dessie, Bikes Destaw, Walelegn Worku Yallew and Zemichael Gizaw 2019* **Indexed** : *Scopus* (Q2)	a. Rarely Shower b. Contact with people who have symptoms of itching c. Have a family member with symptoms of itching d. Only use water to wash hands	91,1% 24,5% 21,1% 12,75%	9,3%	OR= 3,54 OR=2,66 OR= 2,66 OR= 4,38	The possibility of scabies occurs, and the highest because of not using soap when bathing is 4.38 times the possibility of scabies occurring

as: clothing cleanliness factor, with a P Value of 0.003, towel cleanliness factor with a P value of 0.014 and environmental sanitation factor with a P Value of 0.042. Based on

these data, the factor that has the smallest P value is the towel cleanliness factor which can cause ascabies.

According to the results of research conducted by [5] of 42 respondents. All factors examined, such as knowledge factors, personal hygiene factors, and clean water supply factors all have a relationship with the P Value for each factor of 0.001 ((P Value , = 0.05). Based on these data all factors studied have the same strength of the relationship, namely the P Value of 0.001.

According to the results of research conducted by [6] of 85 respondents, it was found that poor personal hygiene resulted in the occurrence of scabies, with a P Value of 0.001 while the use of water contaminated with Sarcptes scabiei had no relationship with the incidence of scabies, with a value of P Value of 0.321.

According to the results of research conducted of 583 respondents, it was found that all factors consisting of environmental hygiene factors, environmental sanitation factors, the presence of animals in the house, the water factor used, the factor not using soap when bathing, the factor of sharing the use of clothing and the factor of going to an area that has a scabies epidemic, the results explain that there is a relationship, with the value of P Value (α = 0.05). Of all the factors that have these factors, the factor of sharing the use of clothing has the highest close relationship, which is 10.10 times the possibility of scabies infection with OR = 10.10

According to the results of research conducted from 494 respondents, it was found that all the factors studied consisted of the factor of rarely bathing, the factor of contact with people who have symptoms of scabies, the factor of having family members who have itching, and the hand washing factor only uses water, the results explain that it has a relationship, with the P Value (α = 0.05). Of all the factors that have these factors, the factor of washing hands using only water has the highest close relationship, which is 4.38 times the possibility of scabies infection with OR = 4.38.

Based on the results of the research above, the researcher can conclude that personal hygiene, cleanliness of clothes, cleanliness of towels, cleanliness of environmental sanitation, house hygiene, sharing clothes, contact with scabies sufferers, having family members have itching disorder have a role in the occurrence of scabies infection, but the most Having a strong close relationship is a shared factor in the use of clothing.

This is in line with [4] where the factors for the occurrence of scabies disease are poor environmental sanitation and also humans who live in groups so that mite infestations easily spread from sufferers to people around them through physical contact and can occur in all family members who live in the same area. one house. Scabies is also very closely related to behavior, especially in terms of poor personal hygiene. Scabies

infection can occur through the skin related to personal hygiene such as rarely bathing or only using water when washing hands, things like this are considered part of a person's habits, where poor personal hygiene can cause the body to be attacked by various diseases, such as scabies skin disease.

[7]) which states that high room humidity will accelerate the proliferation of Sarcoptes scabiei mites. Scabies mites are found in poor environmental sanitation, such as the unavailability of clean water, the unavailability of sewerage and the absence of landfills which can cause scabies mites to breed in poor environmental sanitation, so that scabies mites can move in the most efficient way of transmission. is through direct contact of individuals with the environment as well as individuals with individuals who have been infected.

Based on the results of this literature review, it is hoped that it can be a reference in conducting further research on the relationship between environmental sanitation and the incidence of scabies.

4. Discussion

Factors causing scabies disease include age, low socio-economic level, poor personal hygiene, densely populated areas, poor environmental sanitation such as areas with slum environments and clean water supply such as bathroom sanitation which greatly contributes to the incidence of scabies disease.

the availability of good environmental sanitation, depending on the behavior of the community, and the habits of the community. Good behavior in preventing scabies review can be started with good knowledge of preventing scabies transmission. Lack of knowledge can make it difficult for people to receive information, so that people do not understand the importance of maintaining personal hygiene and environmental sanitation to prevent the occurrence of scabies disease. Where environmental sanitation conditions play an important role in the incidence of scabies disease so that people who have poor environmental sanitation will be at higher risk of suffering from scabies compared to people who have good environmental sanitation.

5. Study Limitation

The scope of good environmental sanitation has several criteria, namely the condition of available clean water, healthy settlements, the availability of good latrines, good waste

management, there is a place for disposal and waste management, good humidity and good lighting. Each of these criteria has terms and conditions according to the standard.

In this research, there is only one article that has results up to measuring the criteria for light and humidity. other articles are not specific to all the criteria that state the scope of environmental sanitation. The article that discusses the risk factors for scabies is from the personal hygiene side.

6. Conclusion

The spread of scabies disease can occur directly, such as through contact with a patient infected with scabies and indirectly, such as through clothes, bed linen, towels, pillows, or combs that have been used by the patient and have not been cleaned so that they are still contaminated by the Sarcoptes scabiei mite.

poor environmental sanitation, such as unavailability of clean water, unavailability of sewerage and no garbage disposal which can cause scabies mites to breed in poor environmental sanitation, so that scabies mites can move in the most efficient way. transmission. is through direct contact of individuals with the environment as well as individuals with individuals who have been infected.

7. Further Recommendation

From this study, the researcher recommend for future researchers, research themes with a broad scope related to scabies transmission, for example good environmental sanitation standards that can prevent the growth and transmission of scabies which have more detailed environmental standards and criteria

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