



**Universitas Sriwijaya**  
Faculty of Public Health

## **PROCEEDING BOOK**

**THE 3<sup>rd</sup> SRIWIJAYA INTERNATIONAL  
CONFERENCE OF PUBLIC HEALTH**

**Theme :**

**“ The workplace Initiative : Health, Safety and  
Wellbeing Regarding COVID - 19 ”**

ISBN 978-623-399-020-2



**GRAND ATYASA PALEMBANG**  
**21<sup>st</sup> - 22<sup>nd</sup> OCTOBER 2021**

**PROCEEDING  
THE 3<sup>rd</sup> SRIWIJAYA INTERNATIONAL  
CONFERENCE ON PUBLIC HEALTH**

*The Work Place Initiative: Health, Safety and Wellbeing  
Regarding COVID-19*

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Grand Atyasa Palembang, 21<sup>st</sup> – 22<sup>nd</sup> October 2021  
Publication Year : March 2022

This proceeding is published by:  
Public Health Faculty Universitas Sriwijaya  
Kampus FKM Unsri Indralaya, Jl. Raya Palembang-  
Prabumulih KM.32 Indralaya, Ogan Ilir, Sumatera Selatan, 30662  
Hotline : +62711580068  
Fax : +62711580089

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ISBN : 978-623-399-020-2

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CONFERENCE ON PUBLIC HEALTH**

*The Work Place Initiative: Health, Safety and Wellbeing  
Regarding COVID-19*

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# PREFACE

On behalf of the organizing committee, I am delighted to welcome you to the 3<sup>rd</sup> Sriwijaya International Conference on public Health (SICPH 2021) during 21<sup>th</sup> october 2021 at Palembang South Sumatera, Indonesia. The SICPH 2021 is international conference organized by Faculty of Public Health, Sriwijaya University (UNSRI). I would like to extend my warmest welcome to all the participant of The SICPH 2021 under the theme ***“The Impact of Climate Change on Infectious Disease Transmission”***.

The SICPH 2021 consists of keynote sessions from well known expert speakers in the field of public health, and academic paper sessions (oral presentations) who are coming from several region. This conference seeks to bring together academics, public health professionals, researchers, scientists, students and health stakeholders from a wide range of disciplines to present their latest research experience and further development in all areas of public health. We hoped that this conference will be usefull platform for researchers to present their finding in the areas on multidisciplinary realted to public health and health system issues.

This conference will provide opportunities to exchange ideas, knowledge, and development of the latest research among the participants. We will publish the paper as output from the SICPH 2021 in proceeding book with ISBN and selected paper will be published in Jurnal ilmu kesehatan masyarakat- SINTA 3 (a nationally-accredited journal). The SICPH 2021 is being attended by about 50 participants. I hope you enjoy the conference.

With regard to considerable conference agenda, we greatly appreciate any support and sponshorship derived from any governmental as well as private institutions for the success of the conference. Great appreciation is also handed to organizing committe of the conference for any voluntarily effort that bring to the succes of the conference.

The conference committee expresses its gratitude towards all the keynote speakers, authors, reviewers, and participanst for the great contribution to enssure the succes of this event. Finnally, I sincerely thank all the members of the organizing committee who have worked hard to prepare this conference.

**Palembang, October 2021**

**Chair,**

**Anita Camelia, SKM., MKKK.**



# PREFACE



First of all, let us thank God, the Almighty, who has given His grace and guidance so that the 3rd Sriwijaya International Conference of Public Health (SICPH) with the theme of The Workplace Initiative: Health, Safety and Wellbeing Regarding Covid:19 can be held successfully. I welcome all of you to this seminar which has received great attention not only from university, but also other communities to submit papers to be presented in this seminar. I express my highest gratitude and appreciation the presenters.

The conference is divided in two session, the first session is speeches and the second session is round table discussion. In the first session, the invited keynote speakers were Prof. Dr. Tan Malaka, MOH, DrPH, SpOk, HIU (A Professor from Medical Faculty Universitas Sriwijaya), Prof. Dr. Retneswari Masilamani (University Tunku Abdul Rahman, Malaysia), Prof.Dr.Joselito L. Gapaz MD, M.PH(University of the Philippines) and Prof. Dr Tjandra Yoga Aditama, MHA,DTM&H, DTCE,SpP(C).FIRS (Professor from Griffith University, Australia)

Of course, this conference activity would not have succeeded without the support of all parties involved, as well as the presence of all participants in all regions in Indonesia and internationally. I especially thank to all the organizing committees for their hard work, perseverance, and patience in preparing and organizing this conference so that it can go well, smoothly and successfully.

Finally, through this conference let us extend the network and cooperation among all stakeholders of the public health sector, especially in Indonesia and in the world in general, to build a better public health world in Indonesia

Thank you for participating in this conference.

**Dean of Public Health Faculty,  
Universitas Sriwijaya**

**Dr. Misnianti, S.K.M, M.K.M**

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# **SARCOPTES SCABIEI MITE MORPHOLOGY AND ENVIRONMENTAL FACTORS AFFECTING SCABIES INCIDENCE (CASE STUDY: ISLAMIC BOARDING SCHOOL "X" IN OGAN ILIR REGENCY, SOUTH SUMATRA PROVINCE)**

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## **ABSTRACT**

*Scabies is an infectious disease that occurs throughout the world, not only in developing countries but can occur in developed countries. Globally, an estimated 66 million scabies occurred in 2013. The majority of scabies occur in institutional communities such as nursing homes, prisons, hospitals and boarding schools. The purpose of this study was to detect the morphology of the mite *Sarcoptes scabiei* and analyze environmental factors that influence the incidence of scabies. This research is quantitative with a cross sectional research design. The sample population is students who live in Pondok Pesantren X Indralaya District. The sample is 97 respondents. Bivariate data analysis used Chi Square test. Multivariate analysis used logistic regression. The results: the room temperature of the respondent's room 25 (25.8%) did not meet the requirements, 72 (74.2%) met the requirements. The respondents' room lighting did not meet the requirements 58 (59.8%), 39 (40.2%) met the requirements. Respondents' room humidity did not meet the requirements 44 (45.4%), 53 (54.6%) met the requirements, 60 (61.9%) ventilation did not meet the requirements, 37 (38.1%) met the requirements. The results of the bivariate analysis obtained that the respondent's room temperature influence no significant effect on the incidence of scabies (Pvalue: 0.08), while lighting (p-value: 0.000), humidity (p-value: 0.006), ventilation of the respondent's room (p-value: 0.004) influence a significant effect. with scabies. The dominant factor influencing the incidence of scabies is the ventilation of the respondent's room.*

**Keywords:** *scabies, environment, mites.*

## **ABSTRAK**

Skabies merupakan penyakit menular yang terjadi di seluruh dunia, tidak hanya di negara berkembang tetapi dapat terjadi di negara maju. Secara global, diperkirakan 66 juta skabies terjadi pada tahun 2013. Skabies mayoritas terjadi di komunitas institusional seperti di panti jompo, penjara, rumah sakit dan sekolah berasrama. Tujuan penelitian ini adalah untuk mendeteksi morfologi tungau *sarcoptes scabiei* dan menganalisis faktor lingkungan yang mempengaruhi kejadian skabies. Penelitian ini bersifat kuantitatif dengan desain penelitian cross sectional. Populasi sampel yaitu santri yang tinggal di Pondok Pesantren X Kecamatan Indralaya. Sampel berjumlah 97 responden. Analisis data bivariat digunakan Uji Chi Square. Analisis Multivariat menggunakan regresi logistik. Hasil penelitian: suhu ruangan kamar responden 25 (25,8%) tidak memenuhi syarat, 72 (74,2%) memenuhi syarat. Pencahayaan ruangan responden tidak memenuhi syarat 58 (59,8%), 39 (40,2%) memenuhi syarat. Kelembaban ruangan responden tidak memenuhi syarat 44 (45,4%), 53 (54,6%) memenuhi syarat, 60 (61,9%) ventilasi tidak memenuhi syarat, 37 (38,1%) memenuhi syarat. Hasil analisis bivariat diperoleh pada suhu kamar responden tidak ada berpengaruh yang signifikan dengan kejadian skabies (Pvalue: 0,08), Sedangkan pencahayaan (pvalue: 0,000), kelembaban (pvalue: 0,006), ventilasi ruangan responden (pvalue: 0,004) ada berpengaruh signifikan dengan kejadian skabies. Faktor dominan yang mempengaruhi kejadian skabies adalah ventilasi ruangan responden.

**Katakunci :** *scabies, lingkungan , tungau.*

## Introduction

Scabies is an infectious disease that occurs worldwide, but it can happen in developed countries. Globally, the incidence of scabies is estimated at 66 million in 2013 [1]. In Indonesia, the prevalence of scabies, according to data from the Ministry of RI in 2008 was 5.6% - 12.95%, The prevalence of scabies in Palembang is 8.9% [2].

The prevalence of scabies in Indralaya district in 2015 was 213 people [3]. The prevalence of scabies in Pondok Pesantren X in 2016 was 59 people, in 2017 there were 85 people [4]. Scabies generally occurs in densely populated areas such as nursing homes, prisons, hospitals and Islamic boarding school [5]. Scabies is a contagious skin disease caused by the mite *Sarcoptes scabiei hominis* variety [6]. Transmission occurs by direct and indirect contact. For example shaking hands with people with scabies and indirect contact, namely through shared objects such as towels, beds and bed linen [7]. Scabies is a skin disease that can be cured, but scratching causes a secondary infection. Infections in the form of impetigo, abscess and cellulitis which can be serious complications such as septicemia, kidney disease, glomerulo nephritis, rheumatic fever can even lead to death. Early identification of scabies is necessary [8].

Factors that support the occurrence of scabies in the form of environment include humidity, temperature, lighting and room ventilation [9]. Suhu udara dalam ruangan rumah yang tidak memenuhi syarat kesehatan akan meningkatkan kehilangan panas dalam tubuh. The body tries to balance with the environmental temperature through the evaporation process, resulting in heat loss in the body which decreases the body's vitality which predisposes to infection [10]. The temperature that meets the health requirements is 18-30°C [11]. Ventilation that does not meet health requirements causes the house to become damp and wet, making it difficult for the sun to enter the house resulting in germs, parasites in the house not being able to get out and being sucked in with the air [12]. The results of the survey at Islamic boarding school X with room conditions a bit dark, and room cleanliness is not good, ventilation that does not meet health requirements. previous studies diagnosed scabies in students only clinically, in the form of 4 cardinal signs namely popular lesions, pustules, gray tunnel vesicles, but did not find the mite that causes scabies. Based on the data above, it is necessary to carry out research with diagnostics through microscopic testing and observing the environment.

## Materials and Methods

This research method is qualitative with analytic survey design with cross sectional approach. The sample population is all students who live in Pondok Pesantren X. The sample is 97 respondents using Proportional Stratified Random sampling. The variables studied in this study were temperature, humidity, ventilation, room occupancy density. The skin of the students was examined by dermatoscopy and then scraped off for the mites to be examined under a microscope. his research has conducted a cliaren ethic test at FKM Sriwijaya University No. 289/UN9.1.10/KKE/2019

## Measuring instruments

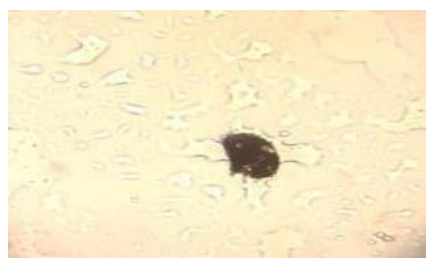
The measuring instruments used in this research are microscope and environment meter. The skin of the respondent who suffers from scabies is examined and observes the condition of the respondent's room.

## Statistics Analysis

Analyze the results of environmental data using a table view. The relationship between the dependent variable and the independent variable was determined by the Chi-square test ( $\alpha = 0.05$ ), then continued with the linear logistic regression test to determine the most dominant factor.

## Results

### Microscopic Examination



**Figure 1. Tungau *Sarcoptes scabiei* varietas *Hominis*. Microscopic examination using 10X magnification.**

### Questionnaire Analysis

*The 3<sup>rd</sup> Sriwijaya International Conference on Public Health (SICPH)  
Palembang, Oktober 21<sup>st</sup>, 2021*

**Table 1. Effect of risk factors Respondent's room temperature on the incidence of scabies**

Room temperature	Skabies				Total		p-value	PR 95% CI
	Yes		No		N	%		
	n	%	N	%				
not eligible	11	44	14	56	25	100	0,081	0,78
qualify	36	50	36	50	72	100		(0,315 – 1,962)
<b>Total</b>	47	100	50	100	97	100		

**Table.2 Effect of risk factors for respondent's room ventilation on the incidence of scabies**

Room ventilation	Skabies				Total		p-value	PR 95% CI
	Yes		No		N	%		
	n	%	n	%				
not eligible	36	60	24	40	60	100	0,004	3,54
qualify	11	29,7	26	70,3	37	100		(1,48– 8,49)
<b>Total</b>	47	100	50	100	97	100		

**Table. 3 Effect of risk factors for respondent's room lighting on the incidence of scabies**

Room lighting	Skabies				Total		p-value	PR 95% CI
	Ya		Tidak		N	%		
	n	%	N	%				
not eligible	43	74,1	15	25,9	58	100	0,000	25,08
qualify	4	10,3	35	89,7	39	100		(7,633 – 82,432)
<b>Total</b>	47	100	50	100	97	100		

**Table 4. The influence of the risk factors of the respondent's room humidity on the incidence of scabies**

Room humidity	Skabies				Total		p-value	PR 95% CI
	Ya		Tidak		N	%		
	n	%	N	%				
not eligible	28	63,6	16	36,4	44	100		
qualify	19	35,8	34	64,2	53	100	0,006	3,132
<b>Total</b>	64	100	64	100	128	100		(1,363 – 7,197)

**Table 5. Multivariate analysis of environmental risk factors with the incidence of scabies**

No	Variable	p value	OR/ExpB
1	Temperature	0.220	1.092
2	Lighting	0.002	.005
3	Humidity	0.716	1.453
4	Ventilation	0.001	4,092



## Discussions

The results of the study of the morphology of the mite *Sarcoptes* : The results of the study on the morphology of the mite *Sarcoptes scabiei*: Mites are black with an oval body shape and a convex top. Body length 300µm, has 4 pairs of legs include: 2 pairs on the front and 2 pairs on the back. This research is in line with the research of Arlian and Morgan, namely *Sarcoptes scabiei hominis* variety which has a body like an oval turtle (idiosoma), flat on the abdomen and convex back. All legs of female and male mites are short and stubby on the III and IV legs of both sexes, not extending beyond the lateral-posterior boundary of the idiosoma. Each terminal segment of the male and female legs has claws[13].

In table 1. From the results of the study, there was no significant effect of the respondent's room temperature on the incidence of scabies in Pondok Pesantren X. This study is not in line with Liu's research results that temperature has a significant effect on the incidence of scabies [14]. *Sarcoptes scabiei* mites have a better life process with higher fertility rates in cold weather [14]. At low temperatures, *Sarcoptes scabiei hominis* mite eggs can survive from the host for up to 10 days [5]. according to the Regulation of the Minister of Health of the Republic of Indonesia No. 1077/MENKES/PER/V/2011 that the temperature that meets health requirements is 18-30C [11]. There are differences in weather conditions at the time of the study so that there are differences in the results of the author's research with other studies.

In table 2. From the results of the study, there is a significant effect of respondents' room ventilation on the incidence of scabies in Pondok Pesantren X. The results of this study are in line with Latifah's research that there is a significant relationship between room ventilation and the incidence of scabies [15]. Ventilation is a window / air hole in the wall of the house that functions as a process for exchanging air from outside the house that enters the house. Fresh air is needed to maintain temperature, occupant comfort and indoor air humidity [16]. Ventilation that has less air in the room does not get good circulation. The existence of poor circulation causes the room to be hot and the occupants will sweat. If there are scabies sufferers in the room, there will be a greater risk of transmission, namely through direct contact [16]. According to the Regulation of the Minister of Health of the Republic of Indonesia No. 1077/MENKES/PER/V/2011 where ventilation of the room in the room of the house, efforts are made to suit the need to see objects around and read health requirements of at least 5% of the floor area [11].

In Table 3. From the results of the study there was a significant effect of respondent's room lighting on the incidence of scabies in Pondok Pesantren X. The results of this study are in line with Hapsari's research that there is a significant relationship between room lighting and the incidence of scabies [17]. Lighting is a risk factor for suffering from scabies, if the respondent's room has lighting that does not meet the requirements, it has a five-fold risk of getting scabies compared to respondents who have rooms with qualified lighting [18]. According to the Regulation of the Minister of Health of the Republic of Indonesia No. 1077/MENKES/PER/V/2011 where lighting in the living room is attempted to suit the needs, to see objects around and read with minimum health requirements of 60 Lux [11].

In Table 4. From the results of the study, there is a significant effect of the humidity of the respondent's room on the incidence of scabies in Pondok Pesantren X. The results of this study are in line with Liu's research that there is a significant relationship between the humidity of the respondent's room and the incidence of scabies [14]. The mite *Sarcoptes scabiei hominis* variety can survive longer up to 19 days in a cool and humid environment, so it can increase the incidence of scabies [19] [14]. According to the Regulation of the Minister of Health of the Republic of Indonesia No. 1077/MENKES/PER/V/2011, the humidity of the room is a health requirement with a minimum size of 40-60 Rh [11].

The results of the Multivariate analysis showed that the most dominant factor was room ventilation. Room ventilation is a place for air circulation in and out, so that it can affect the temperature, humidity, lighting factors.

## **Conclusion**

Observation with microscopic test is very effective to determine the mite *Sarcoptes scabiei* is a parasite that causes scabies. The respondent's room temperature influence no significant effect, while lighting, humidity, ventilation influence a significant effect on the incidence of scabies. Environmental sanitation is needed to prevent disease, especially scabies.

## **Acknowledgement**

The author would like to thank STIK Siti Khadijah, Pondok Pesantren X, Id2dikti, Dermatologist (dr. Indah, Sp.KK) at RSMH Palembang who has assisted in the author's research.

## Funding

This research was funded by Id2dikti and STIK Siti Khadijah Palembang.

## Conflict of Interest

The author has no conflict of interest.

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ISBN 978-623-399-020-2

