



RELATIONSHIP BETWEEN THE DISTANCE OF THE HOUSE TO THE TPA INCIDENCE OF ARI DISEASES IN THE COMMUNITY

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ABSTRACT

The problem of waste is still something that requires special attention, because if waste is left alone it can cause national and even world problems because it has not been resolved to date, apart from the smell which disturbs the environment it can also endanger health because waste is one of source of disease. This study aims to determine the relationship between the distance from the house to the TPA and the incidence of ARI at the Tanah Sareal Health Center in 2022. This type of research is a quantitative study with a cross sectional approach using a descriptive correlational research design. The sample in this study were 36 respondents using a purposive sampling technique. The instrument uses a checklist / interview sheet. The results of data analysis from 36 respondents, frequency distribution The distance from the house to the TPA at the Tanah Sareal Health Center was from 36 respondents, as many as 21 respondents (58.3%) with the distance from the house to the TPA being in the far category. distribution of the frequency of ARI at the Tanah Sareal Health Center, out of 36 respondents, 21 respondents (58.3%) had ARI incidents and 21 respondents (58.3%) were in the far category of houses. The statistical test results obtained P-value = 0.004, which means P-value (≤ 0.05). The conclusion of this study is that there is a relationship between distance from home and the incidence of ARI at the Tanah Sareal Bogor Health Center in 2022. 3%) with the distance from the house category Far. The statistical test results obtained P-value = 0.004, which means P-value (≤ 0.05). The conclusion of this study is that there is a relationship between distance from home and the incidence of ARI at the Tanah Sareal Bogor Health Center in 2022. 3%) with the distance from the house category Far. The statistical test results obtained P-value = 0.004, which means P-value (≤ 0.05). The conclusion of this study is that there is a relationship between distance from home and the incidence of ARI at the Tanah Sareal Bogor Health Center in 2022.

Keywords: Garbage, TPA, ARI Incidence

INTRODUCTION

The problem of waste is still something that requires special attention, because if waste is left alone it can cause national and even world problems because it has not been resolved to date, apart from the smell which disturbs the environment it can also endanger health because waste is one of source of disease. Household solid waste such as paper, plastic, food scraps, and from other household activities can be destroyed by disposal and destruction in the best way possible so as not to leave any residue of the solid waste. By using good waste management so as not to interfere with public health.¹Garbage is the residue of daily human activities, its existence cannot be avoided but can be reduced which is directly proportional to technological developments, lifestyles and consumption patterns of society. According to Law no. 18 of 2008 article 2 paragraph (1). household waste is waste that comes from daily household activities, excluding feces and specific waste.²



The World Bank notes that big cities in the world have produced up to 1.3 billion tons of plastic waste per year, this amount will increase annually to 2.2 billion tons in 2025. Waste data records from the ministry of environment and forestry currently reach 29.3 million per year.³

Final Disposal Sites (TPA) in Indonesia currently still use the open dumping system, which is a simple disposal method where waste is collected in an open place, this method is not recommended because it has a lot of potential for environmental pollution. In an open dumping system, the collected waste will be piled up (anaerobic landfill) and will cause leachate (leachate) in the heap layer and will seep into the soil below. This leachate is very damaging and can give off a bad smell.¹

The distance between the TPA and residential areas should be more than 1 KM and residential areas whose houses are less than 1 KM from the TPA will have several problems, such as water quality pollution, air pollution, soil contamination from the waste that has been stockpiled. Garbage that is piled up for too long will produce gas (CH₄) and hydrogen sulfide gas (H₂S) which smells bad and can also invite vectors such as rats, mosquitoes and flies that forage at the landfill site and are also the most preferred places to breed. If the rate of reproduction of flies and rats is allowed to continue, it will cause new problems, namely the risk of diseases such as respiratory infections, typhus, dysentery, diarrhea and cholera. According to WHO, 24% of global diseases are caused by diseases originating from the environment.¹

Environmental factors become a determining element in the condition of public health. Which is determined by the conditions of the host, agent (cause), and the environment. Pollution can occur in the air as a result of waste decomposition and can contaminate water and soil caused by leachate seepage, it can also become a nest or breeding ground for various disease vectors.¹

A healthy home must meet requirements including physiological needs, avoid infectious diseases and avoid accidents. Houses that do not meet the requirements cause disease transmission between families. There are 3 risk factors for ISPA, namely home sanitation factors including house ventilation, humidity, residential density, lighting, exposure to cigarettes in the house and use of mosquito coils, the second factor of environmental sanitation includes the distance between settlements and landfills and pollution from factories in the area. and finally, individual factors including body weight and nutritional status.⁴

Based on data from WHO in 2018, ARI is one of the 10 main causes of death in the world, 56.9 million. ISPA has claimed as many as 3 million deaths in 2018, there are more than 960,000 children under five who died as a result of ISPA. In Indonesia, data on the prevalence of ARI by province in 2018 based on diagnoses by health workers and symptoms experienced show that in West Java (11.2%), while in Indonesia the average prevalence in 2018 was 9.3%.⁵ And in Bogor in 2015 there were 165,998 cases that attacked children aged 1 to 4 years. The above data will increase accompanied by poor air quality.⁶

Acute Respiratory Infection (ARI) is a major cause of morbidity and mortality from infectious diseases globally. (5) ARI can cause complications or complications, where ARI can enter the ear, causing inflammation of the middle ear (otitis media), which is a discharge similar to pus coming out of the ear. In addition, sufferers are also at risk of suffering from sinusitis or infection of the cheek cavity, even when ARI goes down the patient can experience bronchitis or even broncho pneumonia.



Not only infection in the lung canal but also to the lung tissue. ISPA disease is a disease with a high morbidity rate and mortality rate, so ISPA disease needs integrated treatment, directed towards improving the quality of the environment or housing conditions as well as the management of patients at the health center/hospital. Bearing in mind that the morbidity and mortality rates of ARI are quite high, so that in handling them, higher awareness is needed from both the public and staff, especially the factors that affect health status.⁷

RESEARCH METHODS

This type of research is a Quantitative research with a Cross Sectional approach using a Descriptive Correlational research design.²⁶ Correlational descriptive researcher which can be defined as a study that is intended to collect information about an existing symptom, namely the symptoms experienced when the research was carried out, the descriptive method is used to describe health problems with the health of a group of people who live in a certain community.²⁶ The research design used is Cross Sectional, namely a research design that aims to study the dynamics of the correlation between risk factors and effects, by way of approach, observation or by collecting data at once (point time approach). Which means that each research subject was only observed once and measurements were made of the character status or subject variables at the time of examination.²⁷ In this study, we will study the relationship between the distance from the house to the TPA and the incidence of ARI at the Tanah Sareal Bogor Health Center, namely the distance from the house to the TPA as the independent variable and the incidence of ARI as the dependent variable.

This research was carried out in October 2022 with checklists/interviews with residents in the Tanah Sareal Health Center area. The population in this study were all residents in the Tanah Sareal Health Center area, namely 142 families. According to Ari Kunto said that if the subject is less than 100, then the entire population becomes the research sample. But if the subject is more than 100, it can be taken 10-15% or 15-25%. Based on the definition above, it can be said that the sum of the sample in this study is $142 \times 25\% = 35.5$ so that it becomes 36 people. The variables of this study consisted of the distance from the house to the TPA and the incidence of ARI in the Tanah Sareal Health Center area. Data processing and data analysis used the computer program SPSS for windows series 16. Data analysis consisted of univariate and bivariate analysis,

RESEARCH RESULT

This research was conducted on October 14-15 2022. Respondent data was collected using a checklist sheet and interviews. The number of respondents in this study were 36 residents in the Tanah Sareal Health Center area.

Table 1 frequency distribution of distance from house to TPA

No	Distance from house to landfill	Frequency	Percentage
1	Near	15	41.7%
2	Far	21	58.3%

Total	31	100%
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Based on the table above the frequency distribution based on the distance from the house to the TPA, from 36 respondents, 21 respondents had a far distance from the house to the TPA (41.7%).

Table 2 Frequency distribution of ISPA incidents

No	ARI disease	Frequency	Presentatione
1	Yes	21	48.3 %
2	No	15	41.7 %
	Total	31	100

Based on the table above the frequency distribution based on the incidence of ARI, from 36 respondents, 21 respondents experienced ARI (48.3%).

Table 3 Relationship between the distance from the house to the TPA and the incidence of ARI at the Tanah Sareal Bogor Health Center in 2022

Jarak Rumah Ke TPA	Kejadian ISPA				Total		<i>p- value</i>
	Ya		Tidak		F	%	
	f	%	f	%			
Dekat	15	100	0	0	15	100	0,004
Jauh	0	0	21	100	21	100	
Total	15	44,4	21	58,3	36	100	

Based on the table above, the relationship between the distance from the house to the TPA and the incidence of ARI, in the Tanah Sareal Puskesmas area, the result was $0.004 \leq 0.05$ and it was stated that there was a relationship between the distance from the house to the TPA and the incidence of ARI in the community in the Tanah Sareal Puskesmas area.

DISCUSSION

a. The relationship between the distance from the house to the TPA

Based on the results of the frequency distribution regarding the distance from the house to the TPA for respondents at the Tanah Sareal Health Center in 2022, it was found that from 36 respondents, 21 respondents (41.7%) had a long distance from their house to the TPA.

This research is in line with Rochmawati's research entitled "Analysis of Environmental Quality and Public Health Status Around the Batu Layang Garbage Final Disposal Site (TPA) in Pontianak City". dry/phlegm. The P-value is 0.004 which concludes that there is a relationship

between settlements that are close to the TPA.³²

Settlements that are close to TPA are very risky for the health of the residents. The decomposition of waste will produce, among other things, methane gas, ammonia gas, and hydrogen sulfide gas which are toxic to the body. As well as being toxic, it also smells bad and is aesthetically unacceptable, so the accumulation of rotting waste is unacceptable. A healthy settlement should be 1KM away from the landfill. The distance between the house and the TPA that is close can have an impact on poor health, many illnesses such as colds, flu and dry cough/phlegm. This is the impact of air pollution centered on the Batu Layang Pontianak TPA.³²

Therefore, it can be concluded that in this study the distance from the house to the TPA is influenced by the unavailability of waste transportation to every resident's house, causing residents to process their own waste which results in waste accumulation.

b. ARI incident

Based on the results of the frequency distribution regarding ARI incidents among respondents at the Tanah Sareal Health Center, it was found that out of 36 respondents, 21 respondents (48.3%) experienced ARI incidents.

This research is in line with Dedi Mahyudin Syam's research "Temperature, Humidity and Lighting as Risk Factors for ISPA Disease in Toddlers in Balaesang District, Donggala Regency". The results of this study indicate that temperature is the most important cause that attacks infants in Balaesang District, Donggala Regency with OR = 0.173 (0.072 – 0.417) with the Odds Ratio test obtained OR = 0.17 and lower limit value = 0.072 and upper limit = 0.417 which means that house temperature is a significant risk factor.³³

Mouth organs to the alveoli of the lungs along with their adnexal organs such as sinuses, earlobes and pleura which will last for 14 days if attacked by ARI. Cough, runny nose and fever are early symptoms of ARI. Until now, there are still many children in both developing and developed countries who have to go to the hospital because ARI is quite serious. ISPA disease that attacks children can also cause disability until adulthood. Risk factors such as temperature, humidity, and lighting are also things that must be considered, because the three factors above are risk factors that are often used as complaints by people with ARI in the Balaesang sub-district, Donggala Regency.³³

Therefore, it can be concluded that in this study the majority of respondents whose homes are near the TPA have contracted ISPA in the last 2 weeks, so residents whose homes are near the TPA must often wear masks, wash their hands before and after eating, and cover their mouths. if you are sick with flu and cough.

c. The relationship between the distance from the house to the TPA and the incidence of ARI

Based on the results of the frequency distribution regarding the relationship between the distance from the house to the TPA and the incidence of ARI in the respondents, using chi-square analysis, a p-value of 0.004 was obtained, so it can be concluded that H_a is accepted and there is a relationship between the distance from the house to the TPA and the incidence of ARI in respondents Tanah Sareal Community Health Center in 2022.



This research is in line with the research entitled "Factors Influencing the Occurrence of ISPA Disease in Toddlers Around the Tamangapa Garbage Final Disposal Area (Tpas) in Makassar City" in this study showed that there was a significant relationship between the distance between the house and the TPA and the incidence of ISPA in toddlers (71.8%). With a P-Value of 0.04.

Unhealthy housing and environmental conditions are risk factors for the transmission of certain diseases, such as ISPA, these factors include the age of children under five, house ventilation, type of floor, occupancy density, presence of family members who smoke, presence of family members suffering from ISPA and indoor air pollution. the house is mainly due to the location of the house/dwelling which is close to the landfill. The occurrence of ISPA in an area is caused by settlements that are close to the TPA and also the lack of public health awareness. Conversely, settlements that are more than 1KM from the TPA location will have better health quality.

Therefore, it can be concluded that the distance from the house to the TPA is related to the incidence of ARI because the TPA is an open dumping type which can damage the environment and interfere with the breathing of residents whose settlements are close to the TPA so that the closer the house is to the TPA, the higher the risk of catching ARI.

CONCLUSION

1. It is known that the frequency distribution of the distance between the house and the TPA at the Tanah Sareal Health Center is from 36 respondents, as many as 21 respondents (58.3%) with the distance from the house to the TPA being far away
2. It is known that the frequency distribution of ARI at the Tanah Sareal Health Center, out of 36 respondents, 21 respondents (58.3%) had ARI
3. There is a relationship between the distance from the house to the TPA and the incidence of ARI in the Tanah Sareal Bogor Community Health Center in 2022, out of 36 respondents there were 21 (58.3%) ARI cases whose house distance was in the Far category. The statistical test results obtained P-value = 0.004, which means P-value (≤ 0.05). So the alternative hypothesis is accepted and the null hypothesis is rejected so that there is a relationship between the distance from the house to the TPA and the incidence of ARI at the Tanah Sareal Health Center, Bogor.

SUGGESTION

1. For Educational Institutions

It is suggested to be used as literature material for further research, to be used as a source of information about the distance from the house to TPA, ARI diseases and as student material development as well as being used as a scientific reference regarding environmental health.

2. For the Tanah Sareal Health Center

It is recommended that the residents of the Tanah Sareal Health Center increase their knowledge about ISPA and add a TPA in the Tanah Sareal Health Center area so that people who are far away can dispose of waste more easily.

3. For Further Researchers

It is recommended to modify this research by increasing the population, using more creative or



different methods and adding research variables or using more complete instruments that do not exist in this study.

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