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Factors Related to Acute Respiratory Tract Infections in Patients (Comparative Study at Morosi Health Center)

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ABSTRACT

Introduction: The impact of industrial areas, namely pollution and environmental damage, is also quite felt by the community, especially around activities not including dust, noise, and pollution due to chemical substances.

Method: This type of research is quantitative using a comparative approach. The population in this study amounted to 1,370 and sample of 301 respondents. Sampling method using Cluster Random Sampling.

Result: It is known that the average increase for the attitude variable is 11.83851 with a t-count value greater than t-table (7,315 > 1.61831) and the Action variable with an average increase of 26,27329 and it is known that the t-count for the action variable is greater than t-table (15,611> 1.68299).

Conclusion: It was concluded that there was a relationship between environment and Clean and Healthy Life Behavior towards the incidence of ARI and there was a difference in the incidence of ARI between high risk areas (Morosi Village and Porara Village) and low risk areas (Mendikonu Village and Wonua Morini Village).

Introduction

The progress of the industrial sector is always followed by an increase in the number of workers, the increasing use of raw materials and the application of increasingly sophisticated technology. can have a significant impact on the optimization of the production process.[1] The impact of industrial areas, namely pollution and environmental damage, is also quite felt by the community, especially around activities not including dust, noise, and also pollution due to chemical substances. The increase in ARI disease in the villages where coal trucks pass either on company roads or on public roads is an indication of the severity of air pollution due to coal dust, which is the fuel for the nickel industry.[2]

Acute respiratory infections (ARI) and kill more children than any other infectious disease, claiming the lives of more than 800,000 children under five every year, or about 2,200 children

every day.[3]The prevalence of ARI in 2018 in Indonesia according to the diagnosis of health workers and the symptoms experienced was 9.3%.[4]This disease is an acute respiratory infection with symptoms of fever, cough for less than 2 (two) weeks, common cold and or sore throat.[5]

Health problems in Konawe Regency can be seen from the Health Profile data that from 27 sub-districts in Konawe Regency in 2019, the highest order of cases of Respiratory Tract Infections (ARI) reached 75.93%.[6]One of the nickel smelters that have been operating to date is PT. Virtue Dragon Nickel Industry which is located in Morosi Village, Morosi District, Konawe Regency.

Data recap of the last three years the number of patient visits at the Morosi Health Center which is the closest health service center to PT Virtue Dragon and PT OSS, it is known that in 2019 from a total of 2,273 patient visits there were 1,557 (68.49%) with employee status of PT Virtue Dragon and OSS, for in 2020 of the 2,490 visiting patients there were 1,861 (74.67%) with employee status of PT Virtue Dragon and OSS and in 2021 it was known from 2,215 (61.85%). Based on the classification of visit groups, it is known specifically that mining employees PT VDNI (Virtue Dragon Nickel Indonesia) and PT OSS (Ofsidian Stanlis Steal) with a diagnosis of ARI in 2019 amounted to 1,256 patients, in 2020 there were 1,321 patients and in 2021 there were 1,145 patient visits with status employees or 83.57%.[7]

The initial survey obtained from some public information, it is known that in addition to the economic side of the community, the increase is actually inversely proportional to health status where there appears to be a significant change that the 10 (ten) largest diseases are in the first order, namely ARI and followed by diseases, hypertension and other diseases related to environmental health such as diarrhea, pulmonary TB, ARI, skin diseases and even neurological disorders.

Method

This type of research is quantitative. Comparative method or comparison is research that uses the technique of comparing an object with another object.[8]This research was conducted at Morosi Public Health Center, Konawe Regency. The total population is 1,370 patients visiting in 2021, with a sample of 301 people. The sampling method used Cluster Random Sampling. Data analysis used Chi Square test and Paired Sample T-Test.

Result

Table 1 shows that from 113 respondents with a sufficient environment, there are 101 (89.38%) respondents who do not have ARI and 12 (10.63%) respondents who have ARI. Meanwhile, of the 188 respondents with a poor environment, there were 71 (37.77%) respondents who did not have ARI and 117 (62.23%) respondents who did not. The statistical test using Chi square found that X^2hitung (74.684) > X^2table (3.841), meaning thatthere is a significant relationship between the environment and the incidence of ARI and the Phi value is 0.505 which means it has a moderate relationship.

Table 2 shows that from 124 respondents with adequate clean and healthy lifestyle, there are 103 (83.06%) respondents who do not ARI and 21 (16.94%) respondents who have ARI. Meanwhile, from 177 respondents with poor hygiene and sanitation, there were 69 (38.98%) respondents who did not have ARI and 108 (61.02%) respondents who had ARI. The statistical test using Chi square found that X^2count (56.071) > X^2table (3.841), meaning thatthere is a significant relationship between clean and healthy lifestyle with the incidence of ARI and a Phi value of 0.438 which means it has a moderate relationship.

Table 3 shows that there is a significant difference where the value of Sig. (2-tailed) 0.000 < 0.05, which means that there is a difference in the incidence of ARI between high risk areas (Morosi Village and Porara Village) and low risk area (Mendikonu Village and Wonua Morini Village).

Table 1
The Relationship betweenEnvironmental and Incidence ofARI

Environment	ARI				Total		Statistical
	Not ARI		ARI				
	f	%	f	%	f	%	
Enough	101	89.38	12	10.62	113	100.0	X^2count = 74.684
Less	71	37.77	117	62.23	188	100.0	X^2table = 3.841
Total	172	57.14	129	42.86	201	100.0	Phi = 0.505

Table 2
The relationship between Clean and Healthy Life Behavior and Incidence of ARI

Clean and Healthy Lifestyle	ARI				Total		Statistical
	Not ARI		ARI				
	f	%	f	%	f	%	
Enough	103	83.06	21	16.94	124	100.0	X^2count = 56.071
Less	69	38.98	108	61.02	177	100.0	X^2table = 3.841
Total	172	57.14	129	42.86	201	100.0	Phi = 0.438

Table 3
Analysis of Differences in the Incidence ofARI Between High-Risk Areas (Morosi Village and Porara Village) and Low Risk Area (Mendikonu Village and Wonua Morini Village)

		Sig.	Sig. (2-tailed)
ARI	Equal variances assumed	0.000	0.000
	Equal variances not assumed	0.000	0.000

Discussion

Environmental Relationship with Respiratory Tract Infection Incidence

The impact of industrial areas, namely pollution and environmental damage, is also quite felt by the community, especially around activities not including dust, noise, and also pollution due to chemical substances.[9]The increase in ARI disease in the villages where coal trucks pass either on company roads or on public roads is an indication of the severity of air pollution due to coal dust, which is the fuel for the nickel industry.[10]

The emergence of environmental pollution due to industries that are not treated properly, such as noise, dust, gas and a decrease in water quality which results in a decrease in the quality of the surrounding environment. This impact can continue to impact on public health so that adequate health infrastructure is needed for this impact.[11]

With the presence of industry in Morosi sub-district, it is known that the health status appears to have experienced a significant change that the 10 (ten) largest diseases for the first order are ARI and followed by diseases, hypertension and other diseases related to environmental health such as diarrhea, pulmonary TB, ARI, skin diseases. even neurological disorders.

The impact of coal mining on the socio-economic life of the community and health in Sangasanga District, Spice Regency, South Kalimantan Province Mining has a positive impact on the socio-economic life of the community such as recruitment of workers, creating business opportunities and also negatives such as frequent mud floods in the community and mining waste that disturbs the community and the emergence of several diseases such as ARI.[12]

Environmental factors that appear in industrial areas, namely dense population and narrow living quarters, many occupants, lack of ventilation, can increase air pollution in the house, so that it can affect the human body's resistance.[13]

The relationship between clean and healthy lifestyle and the incidence of ARI

Health status is not only determined by health services, but the most prominent is the environment and community behavior. Efforts are made to change people's behavior to support health improvement through the Clean and Healthy Life Behavior Development Program.[14]

Smoking behavior from various points of view is very detrimental, both for yourself and for those around you. From an individual point of view, there are several studies that support this claim. From a health point of view, the effects of chemicals in cigarettes such as nicotine, carbon dioxide (carbon monoxide), and tar will stimulate the central nervous system and the sympathetic nervous system, leading to increased blood pressure and tachycardia. Evaluate. It stimulates cancer and various other diseases such as vasoconstriction, high blood pressure, heart and lung, and chronic bronchitis.[15]

Clean and healthy lifestyle is an important part of basic health maintenance by parents of toddlers where by implementing clean and healthy lifestyle makes the need to improve their health status, this can reduce morbidity and mortality, especially for toddlers who are considered very vulnerable to contracting disease, or health problems and disabilities both physically (growth) and mental (development).[16]

Differences in the incidence of ARI

In general, it can be explained that high-risk areas are areas that are closest to industrial areas when compared to areas that are far from industry, where the incidence is lower than areas far from industry. The areas with the highest incidence rates and are very vulnerable and at risk for the incidence of ARI are found in the closest areas (Morosi Village and Porara Village)

The emergence of smoke or dust in industrial areas further increases the risk of ARI occurrences, they unconsciously inhale it every day, so many people complain of coughing, shortness of breath and difficulty breathing. Pollution from coal fuel contains substances such as dry base, ash, carbon, hydrogen, sulfur, nitrogen and oxygen which are very harmful to health.[17]

In addition, the degree of health is also influenced by the environment, for example making adequate ventilation of the house to reduce smoke pollution and air pollution, heredity, for example where there are people who are affected by ARI disease there must also be one of the families affected by ARI disease because ARI disease can It is also caused by heredity, and with good daily services, the ARI disease will decrease and the health will gradually improve, and influences affect one another.[18]

Conclusion

There is a moderate relationship between the environment and clean and healthy lifestyle with the incidence of ARI. There is a difference in incidence between high risk areas (Morosi Village and Porara Village) and low risk area (Mendikonu Village and Wonua Morini Village).

Reference

1. Hidayah N. Integrated Quality Management Model of Health Services for the Development of Regional General Hospitals in Makassar City. *Scientific Journal of Public Administration: Journal of Research and Public Administration Thought*. 2015;5(1):20–30.
2. Saputri HD, Harini R. Public Perception of the Impact of Coal Mining on the Socio-Economic Condition of the Community in Talawi District, Sawahlunto, West Sumatra. *Indonesian Earth Journal*. 2018;7(1):1–8.
3. Ariani R, Ekawati D. Factors Associated with the Incidence of Acute Respiratory Tract Infections in Toddlers in the UPTD Working Area of Tanjung Baru Health Center, Kec. East Baturaja Kab. OKU 2021. *Journal of Abdimas Musi Charitas*. 2021;4(2):275–294.
4. Ministry of Health R. Main Results of Basic Health Research (RISKESDAS). Journal of Physics A: *Mathematical and Theoretical*. 2018;44(8):1–200.
5. Budiastuti DE. *Relationship between physical environment at home and incidence of acute respiratory infection in children under five (Study in Kebondalem Public Health Center Pemalang) [Doctoral dissertation]*.

[Semarang]: Muhammadiyah University of Semarang; 2018.

6. South Konawe District Health Office. *Konawe District Health Profile.* Konawe: Konawe District Health Office; 2020.
7. Morosi Health Center. *Morosi Health Center Health Profile (Medical Records).* Konawe: Morosi Health Center; 2021.
8. Anshori M, Iswati S. *Quantitative research methodology*: 1st edition. Surabaya: Airlangga University Press; 2019.
9. KES beads. *Management of the environment.* Surabaya: Kencana; 2018.
10. Sari FA, Rahayu S. *Study on the Impact of Industrial Existence of PT. Korindo Ariabima Sari in Mendawai Village, West Kotawaringin Regency.* PWK (City Area Planning) technique. 2014;3(1):106–116.
11. Muliani A, Rijal M. Industrialization, Environmental Pollution and Changes in the Structure of Public Health. Biocell: *Biology Science and Education.* 2018;7(2):178–184.
12. Indriyati NA. *The Impact of Coal Mining on the Socio-Economic Environmental Conditions of the Community of Bunati Village, Angsana District, Tanah Bumbu Regency, South Kalimantan [Thesis]*. [Malang]: University of Muhammadiyah Malang; 2017.
13. Jayadipraja EA, Daud A, Assegaf AH. Air Pollution and Lung Capacity of People Living around the Cement Industry. *Public Health of Indonesia*. 2016;2(2):76–83.
14. Fitrianingsih N, Huriah T, Muryati S. The Relationship Between Clean and Healthy Behavior and Pneumonia Incidence in Toddlers in the Work Area of the Mlati II Public Health Center Yogyakarta. J*ournal of Health (JoH)*. 2014;1(2):72–78.
15. Anwar A, Dharmayanti I. Pneumonia in children under five in Indonesia. *Kesmas: National Public Health Journal.* 2014;8(8):359–65.
16. Annisa N. *Clean and Healthy Lifestyle Traders of the Minasa Maupa Main Market during the Covid-19 Pandemic [Thesis].* [Makassar]: Alauddin State Islamic University; 2021.
17. Usman W, Taruna J, Kusumawati N. Factors Causing the Incidence of Acute Respiratory Infections (ARI) in the Dry Season in the Work Area Community of the Kampar Health Center. *PREPOTIVE : Journal of Public Health*. 2020;4(2):149–156.
18. Asmar Y, Susanti EW, Winarti Y. T*he Effect of Role Play Method on Prevention of ARI Diseases on Increasing Knowledge of Students at SDN 018 Mugirejo Village, North Samarinda [Thesis]*. [Samarinda]: Muhammadiyah University of East Kalimantan; 2016.