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The Relationsip Between Environmental Conditions and Communitiy Behavior the Incidence of Acute Respiratory Tract Infections (ARI) in Toddlers at the Lapandew

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A R T I C L E I N F O

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A B S T R A C T

This study aims to determine the relationship between environmental conditions and community behavior with ARI. The type of research used is a cross sectional study. The population in the study were all toddlers and the sample was 220 respondents. Data collection techniques using questionnaires. Results showed There is a relationship between house ventilation and the incidence of ARI in toddlers p value = 0.014. residential density and the incidence of ARI in toddlers p value = 0.023. smoking habits and the incidence of ARI in toddlers p value =0.000. Habit of using wood fuel for cooking and the incidence of ARI in toddlers p value =0.000. Conclusion that all research variables, were related to the incidence of acute respiratory infections

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INTRODUCTION

Acute Respiratory Infection (ARI) is one of the leading causes of morbidity and mortality in under five-year children (Koirala,2019). Children under five years of age are most vulnerable to various common but treatable conditions (Ghimire PR,2019). ARI symptoms can vary, usually including fever and cough. Sore throat, coryza, shortness of breath, wheezing, or difficulty breathing are common presentations (Fathmawati F, Rauf S, Indraswari BW,2021). Acute respiratory infection (ARI) refers to infection at different sites along the respiratory tract, resulting in interference of normal breathing activity in an individual. The sites include the nasal cavity, sinuses, pharynx, larynx, epiglottis, trachea, bronchi, and lungs, with symptoms lasting for 30 days or less (Jolliffe DA,2016).The problem of ARI is greater among children under 5 years of age because of their anatomical structure, which makes them more susceptible to infection, ongoing lung development, relative immune immaturity, high risk of exposure to infection, breathing closer to the ground, and increased air intake (Hassen S, ,2020).

ARI that occurs in children, if not treated with proper treatment can cause death. The incidence of acute respiratory infection (ARI) that occurs in toddlers is strongly influenced by various factors. Nutritional status, exclusive breastfeeding, immunization status, and low birth weight (LBW) are one of the biological factors that can affect the incidence of ARI (Kartinazahri,2022). In addition, there are socio-demographic factors including age, gender, education, parental occupation, and family income. Pollution factors in the room, such as the smoking habit of the father or other family members and the presence or absence of a chimney (Fera D, Sriwahyuni S.,2020).

Various factors both intrinsic and extrinsic can cause a child to suffer from ARI, one of which is the nutritional status of children under five and factors that are rarely considered by health experts, namely occupancy factors that include exposure to household air pollution and occupancy density. According to research, people who live in high-density housing have a 6,167 times chance of experiencing the incidence of ARI disease compared to the density of eligible occupancy. This result is reinforced by research that reports that high exposure to household air pollution will cause a toddler to be 5 times more likely to suffer from ARI and even progress to pneumonia (Hendrina RP, Fauzi A,2023). It is estimated that five million children under 5 years die of ARIs worldwide in 2020 (Um S, Vang D, Pin P, Chau D, 2023)

ARIs account for 33% of deaths among children under 5 years of age that occurred in developing countries, particularly in Southeast Asia (Tazinya AA, Halle-Ekane GE, Mbuagbaw LT, Abanda M, Atashili J, Obama M,2018). Based on the mortality survey in Indonesia, it shows that ARI is the most common cause of under-five mortality, with a percentage of 22.30% of all under-five deaths. The results of the 2018 Basic Health Research show that the under-five age group is ranked as the highest group of all ARI cases (Riskesdas. 2018)

Research related to the incidence of acute respiratory infections in Indonesia shows that there are several factors that influence the disease, such as economic status, inadequate environment in the house, such as lack of hygienic floors that are still in the form of soil or not made of ceramic, air ventilation which is contrary to suitability where the area of air ventilation is below the standard size of the area of each room, the number of dwellings that exceeds the standard room capacity causing high air humidity, the presence of pets in the house and smoking status in the house (Triana E, 2019)

Acute respiratory infections are among the top 10 highest diseases in Southeast Sulawesi at 115,331 thousand in 2019, 115,331 thousand in 2020 and in 2021 at 78,341 thousand (Dingis RI, Majid R, Salma WO,2023). Data from the Southeast Sulawesi Provincial Health Service for the incidence of Acute respiratory infections in children under five in 2020 recorded 34,968 cases. The incidence of Acute respiratory infections in children under five in the Konawe Regency area was recorded at 1,799 cases (Samria S,2021)

LITERATURE REVIEW

ARI is an acute infectious disease that attacks the upper respiratory tract and lower respiratory tract. ISPA can cause mild symptoms such as coughing and runny nose, moderate symptoms such as shortness of breath and severe symptoms. ISPA is severe if it attacks the lower respiratory tract, affecting lung tissue and can cause pneumonia. (Yuslinda, Yasnani, & Ardiansyah, 2017). Several risk factors for ARI are environmental factors, ventilation, residential density, age, birth weight, immunization and behavioral factors

Environmental Factors

- Residential density

Behavioral Factors

- Smoking habit
- Habit of using cooking fuel

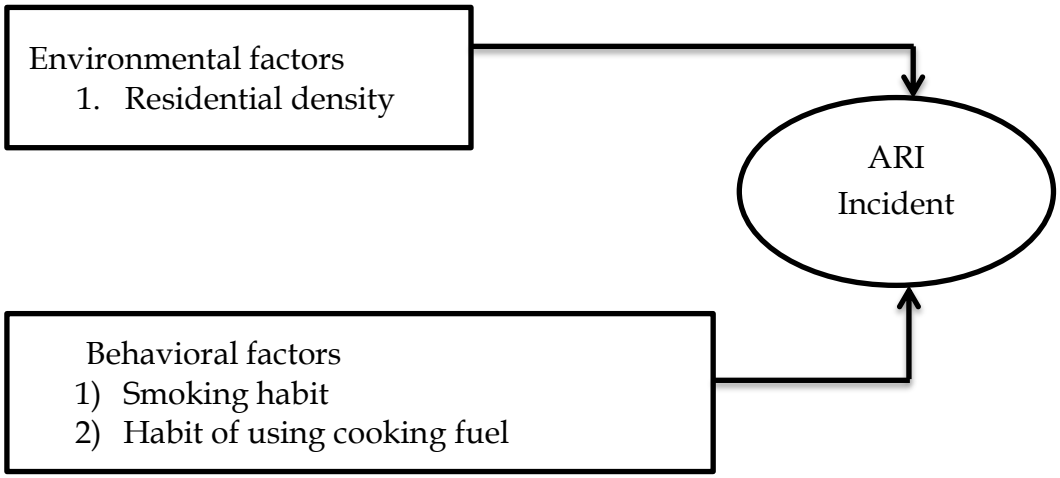

Figure 1. Conceptual Framework

METHODOLOGY

The type of research used in this research is quantitative research with a cross sectional study design, namely a research design that does not have a time dimension, meaning that measurements of all variables (exposure and disease) to be studied are only carried out once, at the same time or in one period. This research was carried out from 1 August to 1 September 2022 in the working area of the Lapandewa Community Health Center, Lapandewa District, South Buton Regency.

The population in this study were all toddlers in the working area of the Lapandewa health center, namely Lapandewa village, Lapandewa Kaindea village, Lapandewa Jaya village, Burangasi village and Burangasi Rumbia village. The number of samples in this research was 220 respondents. The sampling technique uses accidental sampling, which is an accidental method of sampling by taking respondents who happen to be present or available in a place according to the research context. Data processing using SPSS 21. The analysis used in this research is bivariate analysis, which is an analysis carried out on two variables that are thought to be related or correlated. The test used is Chi-Square with a significance limit of $\alpha = 0,05$.

Determine the significance test of the relationship or correlation by comparing the value of ρ (ρvalue) with the value of $\alpha = 0.05$ at the 95% confidence level, with the following decision making rules:

1) The value of ρ (ρvalue) ≤ 0.05 means Ho is rejected, which means the independent variable has a significant influence on the related variable.
2) The value of ρ (ρvalue) > 0.05 means Ho is accepted, which means the independent variable does not have a significant influence on the related variable

RESULTS

Based on table 1, the most respondents were aged 25-36 months, namely 84 (38.2%) and the respondents were at least aged 37-60 months, namely 53 (24.1%)

Table 1. Subject Identity (n=220)

Subject identity	n	n %
Age group (year)		
0-24	83	37,7
25-36	84	38,2
37-60	53	24,1

Source: Primary Data 2022

Based on residential density, of the 124 respondents whose residential density did not meet the requirements, 97 children under five (60.7%) suffered from acute respiratory infections and 27 children under five did not suffer from acute respiratory infections (39.3%). Meanwhile, of the 96 respondents whose housing density met the requirements, 22 children under five (44.4%) suffered from acute respiratory infections and 74 children under five (55.6%) did not suffer from acute respiratory infections. Statistical testing using the Chi Square test with a significance level of 95%, it can be seen that the p value = 0.023 < α = 0.05, so there is a relationship between residential density and the incidence of acute respiratory infections in the work area of the Lapandewa Community Health Center, South Buton Regency.

Based on the habit of using wood fuel, it can be seen that of the 114 respondents who always cook using firewood, 105 children under five suffer from acute respiratory infections (92.1%), which is very high compared to 9 children under five who do not suffer from acute respiratory infections (7.9%). %). Meanwhile, of the 106 respondents who sometimes cooked using firewood, 10 children under five (11.4%) suffered from acute respiratory infections and 95 children under five did not suffer from acute respiratory infections (89.6%). This shows that the habit of cooking using wood fuel influences the incidence of acute respiratory infections in toddlers. Based on statistical tests using the Chi Square test with a significance level of 95%, it can be seen that the p value = 0.000 < α = 0.05, so there is a relationship between the habit of cooking using wood fuel and the incidence of acute respiratory infections in the Lapandewa Community Health Center working area. South Buton Regency.

Based on smoking habits, it shows that 102 respondents who did not smoke, suffered from acute respiratory infections as many as 3 children under five (2.9%) and did not suffer from acute respiratory infections as many as 99 children under five (97.1%). Meanwhile, of the 118 respondents who had a smoking habit, 113 children under five (95.8%) suffered from acute respiratory infections, more than 5 children under five who did not suffer from acute respiratory infections (4.2%). This shows that the presence of family members who smoke in the house influences the incidence of acute respiratory infections in toddlers. statistical test using the chi square test with a significance level of 95%, it can be seen that the p value = 0.000 < α = 0.05, so there is a relationship between smoking habits and the incidence of acute respiratory infections in the work area of the Lapandewa Community Health Center, South Buton Regency.

Table 2. The Incidence of Acute Respiratory Infections

Variabel	The Incidence of Acute Respiratory Infections				Amount		*P-Value*
	Not suffer		Suffer				
	n	%	n	%	n	%	
Residential Density							
Not eligible	27	39,3	97	60,7	124	100,0	0,023
Qualify	74	55,6	22	44,4	96	100,0	
Habit Of Using Firewood							
Always	9	7,9	105	92,1	114	100,0	0,000
Sometimes	95	89,6	11	10,4	106	100,0	
Smoking Habit							
Do not smoke	99	97,1	3	2,9	102	100,0	0,000
Smoke	5	4,2	113	95,8	118	100,0	

Source: Primary Data, 2022

DISCUSSION

This part allows you to elaborate on your results findings academically. You must not put numbers related to your statistical tests here; instead, you have to explain that numbers here. You have to compile your discussion with academic supports to your study and a good explanation according to the specific area you are investigating.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Guan et al revealed that smoking habits among family members is an independent risk factor for recurrent ARTI in children (Jiang C, 2020). The habit of people smoking inside the house can have a negative impact on family members (Thamrin MI,2022). The results of the research show that the majority of respondents have bad smoking habits so they are at risk of experiencing of acute respiratory infections, because there are still many family members of respondents who have the habit of smoking at home, who have toddlers, and this has become a bad habit and can cause negative impacts on toddlers. and pregnant mothers, especially for health reasons which can cause acute respiratory infections in toddlers in the Lapandewa Community Health Center working area.

The majority of Lapandewa people still use firewood as fuel which produces a lot of smoke. In most homes, the kitchen is located close to the family room, so toddlers are often exposed to pollutants from combustion in the kitchen. Dense housing is also very risky for the incidence of Acute Respiratory Tract Infections where the Lapandewa community is still classified as having a fairly dense residential density. and some respondents live on the side of the road so that during the day the road is dusty due to the continuous passing of motor vehicles and the addition of family members who find it difficult to stop smoking because they are addicted to smoking.

Household air pollution can result from fuels that are used for cooking, indoor tobacco smoking, insecticides and pest controls, and building materials and chemicals used for cleaning purposes (Ranathunga N, 2019). Exposure to biomass fuel smoke from a traditional stove is one of the factors leading to acute respiratory infections among under-five children (Sharma SR, 2015). Based on research results, household fuels that come from wood/traditional will produce more smoke than modern fuels such as oil stoves or gas stoves. This will affect the air condition in the house. The smoke that comes from burning wood contains a lot of carbon monoxide. Babies and children who often inhale smoke at home are more susceptible to acute respiratory infections. The results of the research show that the habit of the Lapandewa people is still to use firewood to make wood fuel for cooking. It was also found that in most of the houses in Lapandewa, the kitchen room and the family room are located close together so that toddlers are often exposed to pollutants from burning in the kitchen which has little ventilation. so toddlers are often exposed to pollutants from combustion in the kitchen. Crowded housing is also very risky for the incidence of acute respiratory infections where the Lapandewa community is still classified as having a fairly dense residential density.

Recommendation

The suggestions that can be given regarding the results of the research conducted are as follows:

1. For community

It is hoped that parents of toddlers who have a smoking habit will stop smoking, especially smoking at home and away from toddlers.

It is hoped that family members who use firewood as cooking fuel will pay attention to ventilation in their kitchen so that smoke can escape and not stay in the kitchen for long.

It is hoped that family members who use firewood as cooking fuel will pay attention to ventilation in their kitchen so that smoke can escape and not stay in the kitchen for long.

2. For Health Center

It is necessary to increase health promotion/counseling and socialization about risk factors for ISPA as a form of prevention effort.

FURTHER STUDY

For future researchers, it is hoped that the results of this study can be used as a reference for conducting further research related to evaluating programs for handling acute respiratory tract infections in community health centers.

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