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ANALYSIS OF ACUTE RESPIRATORY INFECTION IN TODDLER IN PAKASAI AND TALAGO SARIAK VILLAGE, PARIAMAN CITY

Sevilla Ukhtil Huvaid[1] dan Annisa Cayra[2]

Public Health Study Program, Faculty of Public Health, Baiturrahmah University[1,2]
Jl. Raya By Pass Km. 15 Kelurahan Aie Pacah Kecamatan Koto Tangah, Kota Padang, Indonesia
E-mail : sevillaukhtilhuvaid@fkm.unbrah.ac.id

ABSTRACT

Acute Respiratory Infection (ARI) is an infectious disease of the upper or lower respiratory tract. Data from the Pariaman Health Office stated that the highest coverage of ARI cases in toddler was in the Kampung Baru Padusunan Public Health Center with 75 cases and the highest number of cases was in Pakasai and Talago Sariak Village, as12 cases. This type of research is analytic observational with cross sectional design. The number of samples in this study were 235 toddlers. The sampling technique was done by using proportional random sampling technique. Collecting data using a questionnaire and observation of the maternal and child health book. Then the data were analyzed by univariate and bivariate with the chi-square statistical test. This study shows that there is a relationship between knowledge (p = 0.009), immunization status of toddler (p = 0.000) and sources of air pollution (p = 0.000) with the incidence of ARI in toddler. Therefore, it is hoped that health workers will collaborate with cadres in order to provide education to the community, especially for mothers of toddlers, about the causes of ARI and the importance of integrated healthcare center visits for toddlers.

Keywords: Knowledge, immunization, air pollution, ARI

Introduction

One of the highest causes of death in infants and toddlers is due to acute respiratory infections (ARI). Acute Respiratory Infection (ARI) is an upper or lower respiratory tract disease, usually contagious, which can cause a wide spectrum of diseases ranging from asymptomatic illness or mild infection to severe and deadly disease, depending on the causative pathogen, environmental and host factors (Maryunani, 2010). The onset of symptoms is usually fast, that is, within a few hours to several days, symptoms include fever, cough and often sore throat, coryza (runny nose), shortness of breath or difficulty breathing (Kemenkes RI, 2014).

Based on data from the World Health Organization (WHO) in 2014, the proportion of under-five deaths due to respiratory tracts in the world is 19-26%. WHO estimates that the incidence of ARI in developing countries is 0.29% (151 million people) and industrial countries at 0.05% (5 million people). ARI is more common in developing countries than in developed countries with a percentage of 25% -30% and 10% -15%, respectively. Under five deaths due to ARI in Southeast Asia were 2.1 million toddlers in 2004. India, Bangladesh, Indonesia and Myanmar are the countries with the most under-five deaths due to ARI (Kemenkes, 2012).

ARI is always in the first rank of the top 10 diseases in Indonesia. The characteristics of the population with the highest ARI occurred in the 1-4 years age group, namely 25.8%. In 2014 ARI cases in toddler were recorded at 657,490 cases (29.47%) (Kemenkes RI, 2014).

In West Sumatra Province in 2013 there were 11,326 cases of ARI in toddler (22.94%), then in 2014 cases of ARI in toddler increased to 13,384 (27.11%) (Dinkes Sumbar, 2014). The finding of ARI cases in toddler in Pariaman from year to year tends to increase. One of the Public Health Center in Pariaman City with the highest coverage of ARI cases in toddler is in Kampung Baru Padusunan Pariaman Timur Public Health Center with 75 cases (Dinkes Kota Pariaman, 2015).

The profile of the Kampung Baru Padusunan Public Health Center states that the most respiratory infections were found in Pakasai Village with 12 cases and Talago Sariak with 12 cases (Puskesmas Kampung Baru Padusunan, 2015). Based on the description of the data above, the researcher has conducted research on what factors are related to the incidence of ARI in toddlers in Pakasai Village and Talago Sariak in the working area of Kampung Baru Padusunan Public Health Center, Pariaman City.

Research Design and Methodology

This study is an analytical observational study with a cross sectional design. This research was conducted in Pakasai and Talago Sariak villages, the working area of the Kampung Baru Padusunan Public Health Center, Pariaman City. The research subjects were all toddlers totaling 235 toddlers. The sampling technique in this study was proportional random sampling.

Findings and Discussion

1. Relationship between Knowledge Level and The Incidence of ARI in Toddler

Based on the table below, it can be seen that the proportion of toddler who have experienced ARI is more found in respondents who have a low level of knowledge (56.8%) compared to respondents who have a high level of knowledge (20.0%).

Tabel 1. Relationship between Knowledge Level and The Incidence of ARI in Toddler

Knowledge Level	Incidence of ARI				Total	
	Yes		No			
	f	%	*f*	%	*f*	%
Low	21	56,8	16	43,2	37	100
High	5	20,0	20	80,0	25	100
Total	**26**	**41,9**	**36**	**58,1**	**62**	**100**

The statistical results using the Chi-Square test showed that the value of ρ value = 0.009 (ρ <0.05) means that there is a relationship between the knowledge of respondents and the incidence of ARI in toddler. Knowledge is the result of knowing and this occurs after people sense a certain object. Sensing occurs through the five human senses, namely the senses of sight, hearing, smell, taste and touch by itself. The time from sensing to producing knowledge is strongly influenced by the intensity of perceptual attention to the object. Most of human knowledge is obtained through the eyes and ears (Wawan & Dewi, 2011).

The results of this study are almost the same as research conducted by Fuad (2013) concerning the relationship of knowledge, economic status, and nutritional status with the incidence of ARI in toddler in Jorong Saiyo, the Work Area of the Timpeh Public Health Center, Dharmasraya Regency. The results showed that there was a relationship between maternal knowledge and the incidence of ARI in toddler (p value = 0.000).

The results of this study found that the mother was only at the tofu level and had not yet understood, applied, analyzed, synthesized and evaluated a material related to the incidence of ARI, so that the mother could not apply preventive measures against ARI. Mother's knowledge is also influenced by the level of education, the role of health educators, access to available information and the desire to seek information about ARI from various media, so this affects the occurrence of ARI disease in toddler.

2. Relationship of Immunization Status with The Incidence of ARI in Toddler

Based on the table below, it can be seen that the proportion of toddler who have experienced ARI is more found in incomplete immunization status (66.7%) compared to complete immunization status (13.8%).

Tabel 2. Relationship of Immunization Status with The Incidence of ARI in Toddler

Immunization Status	Incidence of ARI				Total	
	Yes		No			
	f	%	*f*	%	*f*	%
Complete	22	66,7	11	33,3	33	100
Incomplete	4	13,8	25	86,2	29	100
Total	**26**	**41,9**	**36**	**58,1**	**62**	**100**

The statistical results using the Chi-Square test showed that the value of ρ value = 0.000 (ρ <0.05) means that there is a relationship between immunization status and the incidence of ARI in toddler. Most of the ARI deaths came from types of ARI that developed from diseases that can be prevented by immunization such as diphtheria, pertussis and measles, so increasing the coverage of immunization will play a role in efforts to eradicate ARI. To

reduce the factors that increase the mortality of ARI, complete immunization is attempted. The method that has proven to be the most effective at this time is by giving measles and DPT immunization (Kemenkes RI, 2012). Most of the ARI deaths came from types of ARI that developed from diseases that can be prevented by immunization such as diphtheria, pertussis, measles, so increasing the coverage of immunization will play a major role in the effort to eradicate ARI (Maryunani, 2010).

According to the Indonesian Ministry of Health (2012), most of the ARI deaths came from types of ARI that developed from diseases that can be prevented by immunization such as diphtheria, pertussis and measles, so increasing the coverage of immunization will play a role in efforts to eradicate ARI. To reduce the factors that increase the mortality of ARI, complete immunization is attempted. The method that is currently proven to be the most effective is by giving measles and DPT immunizations.

The results of this study are in line with research conducted by Marhamah (2012) regarding factors related to the incidence of ARI in toddler in Bontongan Village, Enrekang Regency. The results showed that there was a relationship between immunization status and the incidence of ARI (p value = 045).

3. Relationship between Sources of Air Pollution and The Incidence of ARI in Toddler

Based on the table below, it can be seen that the proportion of toddler who have experienced ARI is more found in houses with air pollution sources (73.3%) compared to houses without air pollution sources (12.5%).

Tabel 3. Relationship between Sources of Air Pollution and The Incidence of ARI in Toddler

Sources of Air Pollution	Incidence of ARI				Total	
	Yes		No			
	f	%	*f*	%	*f*	%
Exist	22	73,3	8	26,7	30	100
Not Exist	4	12,5	28	87,5	32	100
Total	**26**	**41,9**	**36**	**58,1**	**62**	**100**

The statistical results with the Chi-Square test showed that the value of ρ value = 0.000 (ρ <0.05) means that there is a relationship between sources of air pollution and the incidence of ARI in toddler. According to the Indonesian Ministry of Health (2014), ARI can be caused by environmental pollution in the house, namely the use of mosquito repellents, exposure to cigarette smoke in the house and the fuel used for cooking. Burning in household activities can produce pollutants, including smoke, dust, grids (fine sand) and gas (CO and NO). The use of mosquito repellents as a tool to avoid mosquito bites can also reduce indoor air quality,

causing respiratory problems because it produces smoke and bad odors. The existence of air pollution in the home environment will damage the defense mechanism of the lungs, making it easier for respiratory problems. Cigarette smoke exposure is a significant cause of health problems such as acute respiratory infections (ARI) in children (Valentina, 2011).

The results of this study are in line with research conducted by Fillacano (2013) regarding the relationship of the indoor environment to ARI in toddler in Ciputat Village, South Tangerang City. The results of the study found that there was an environmental relationship with the incidence of ARI (p value = 0.019).

Houses that are polluted by bad air can cause toddler to experience infectious diseases. This is also caused by the lack of proper ventilation of the house, where inadequate ventilation of the house causes humidity in the room. In addition, it is also caused by the lack of sunlight entering the house and types of floors that do not meet the requirements to reduce humidity and less clean air. In addition, the habit of using firewood, using mosquito coils and smoking in the house can expose toddlers to smoke, causing respiratory problems.

Conclusion

Based on the research that has been done, it is concluded that there is a relationship between knowledge, immunization status, and sources of air pollution with the incidence of ARI in toddler in Pakasai Village and Talago Sariak in the working area of the Kampung Baru Padusunan Public Health Center, Pariaman City. Therefore, it is hoped that health center officers in collaboration with cadres can improve education provision to toddlers' mothers about the importance of posyandu visits in preventing various health problems that can arise in toddlers, including ARI.

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