

FACTORS RELATED TO THE INCIDENCE OF ARI AT TANJUNG AGUNG HEALTH CENTER

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Abstract: ARI (Upper respiratory tract infection) is 48,325 children and estimates in developing countries range from 30-70 times higher than developed countries and it is suspected that 20% of babies born in developing countries fail to reach the age of 5 years and 25-30% of child deaths are caused by ARI (Milo et al., 2021). In general, the purpose of the study is to know the factors associated with the incidence of ARI disease in children under five in the working area of the UPTD Tanjung Agung Health Center in 2022. This study included research using quantitative correlation methods with *Cross Sectional* approach and a sample number of 80 people. The variables studied are presented in the form of frequency distribution tables and tested by univariate and bivariate analysis, namely by using demographic data questionnaire instruments, questionnaires. The results of the *chi square* test get a *p value* of 0.000, meaning that there is a relationship between knowledge and the incidence of ARI. *p value* 0.000 means that there is a relationship between smoking habits and the incidence of ARI. *p value* of 0.037 means that there is no exclusive breastfeeding relationship with the incidence of ISPA in the UPTD Tanjung Agung Health Center Working Area in 2022. The conclusion in this study is that there is a relationship between knowledge and smoking habits with the incidence of ARI. Meanwhile, exclusive breastfeeding has nothing to do with the incidence of ARI in the UPTD Tanjung Agung health center work area in 2022.

Keywords : Knowledge, Smoking Habits and Exclusive Breastfeeding, ISPA

1. INTRODUCTION

The Millennium Development *Goal's (MDG's)* program is a Millennium Development program that must be achieved by 2020, where in this program there are 8 development goals. One of the MDG's programs is to reduce infant and child mortality, which is expected that by 2020 Indonesia should be able to reduce infant mortality to 28/1000 live births. Based on data from the routine report of the Sub-Directorate (Subdit) of ISPA in 2020, it was found that the incidence (per 1000 toddlers) in Indonesia was 20.06%, almost the same as the previous year's data of 20.56%. One of the efforts made to control this disease is by increasing the discovery of pneumonia incidence in toddlers (Ariani & Ekawati, 2021)

According to the *World Health Organization (WHO)* in 2021 in New

York, the number of people with ARI (Acute Respiratory Infection) is 48,325 children and estimates that in developing countries it ranges from 30-70 times higher than developed countries and it is suspected that 20% of babies born in developing countries fail to reach the age of 5 years and 25-30% of child deaths are caused by ARI. Deaths from ARI in toddlers reach 12.4 million in toddlers aged 0-5 years every year worldwide, of which two-thirds are infants, namely the age group 0-1 years and as many as 80.3% of these deaths occur in developing countries (Milo et al., 2021).

In 2020, the infant group was higher by 0.16% compared to the group of children aged 1-4 years by 0.05%. The coverage of pneumonia discovery and death in South Sumatra Province Palembang City in 2020 is 17.47%, while for the national target coverage of 89%

(Profile of the South Sumatra Sumatra Health Office)

The Health Development Plan of Ogan Komering Ulu District for Ispa disease management is the focus of the P2ISPA (Eradication of Acute Respiratory Infection) program activities. This program strives to make the term Ispa better known to the public, making it easier for counseling activities and dissemination of information about Ispa countermeasures (Profile of the OKU District Health Office, 2021)

The P2ISPA program classifies patients into 2 age groups: Age under 2 months (Severe Ispa and not Ispa); age 2 months - < 5 years (Severe ARI and not ARI). The non-ARI classification includes groups of cough sufferers who do not show symptoms of increased breathing frequency and do not show any inward withdrawal of the lower chest wall. ARI (Acute Respiratory Infection) includes: *common* cold cough, pharyngitis, tonsillitis and otitis. Pharyngitis, tonsillitis and otitis, are not among the diseases covered by this program.

One of the causes of acute respiratory infections is due to air pollution. One of the air pollutants is particulates, which can be produced from the combustion of fossil fuels, wood. Particulates themselves, some are 10 micrometers (PM10) and 2.5 micrometers (PM2.5). PM10 is the indicator most often used to describe the concentration of suspension particles in air (Fidya and Tono, 2020) in (Ariani & Ekawati, 2021).

One of the risk factors that contribute to the occurrence of ARI (Acute Respiratory Infection) is undernutrition, low exclusive breastfeeding, indoor air pollution, density, low measles immunization coverage, and low birth weight (WHO, 2019). The causes of ARI are air pollution in the house, home ventilation, smoking habits of family members in the house, age, birth weight, nutritional status, vitamin A, immunization

status, and maternal knowledge about ARI (Acute Respiratory Infection) (Fitri, Fitriani, & Aryana, 2020) .

Knowledge is a very important factor in shaping a person's actions (*overbehavior*). According to Sayono (2012) in (Fitri et al., 2020), a person's knowledge of an object also contains two aspects, namely positive and negative aspects. So that well-informed mothers will be more objective and open to their insights in making a positive decision or action, especially in terms of providing care to sick toddlers, especially ARI (Acute Respiratory Infection).

The smoking habits of parents in the house make toddlers passive smokers who are always exposed to cigarette smoke. Homes whose parents have smoking habits have the opportunity to increase the incidence of ARI by 7.83 times compared to homes of toddlers whose parents do not smoke in the house. Meanwhile, the number of smokers in a family is quite high (Rahmayatul, 2013) in (Milo et al., 2015).

According to Rebekah, et al (2013) in Aryani and Syapitri, (2016), shows that the adverse effects of cigarette smoke are greater for passive smokers than active smokers. When a smoker burns a cigarette and smokes it, the smoke inhaled by the smoker is called the main smoke and the smoke that comes out of the tip of the cigarette (the burning part) called sidestream smoke or side smoke is proven to contain more tobacco combustion products than the main smoke.

Based on research conducted by Christi *et al.*, (2015) the incidence of ARI (Acute Respiratory Infection) is more common in infants from mothers with a good level of knowledge, namely as many as 28 babies (63.6%) than babies from mothers with less knowledge level of 15 babies (62.5%). The results of statistical tests using the *Chi-square* statistical test combination method obtained a value of *P-Value* = 1,000 ($p > \alpha$) which means H_0 is accepted and H_a is rejected. It was

concluded that there was no relationship between the level of knowledge of mothers and the incidence of ARI (Acute Respiratory Infection) in infants in the working area of the Candilama Health Center in Semarang City.

Based on research conducted by Christi *et al.*, (2015) the incidence of ARI (Acute Respiratory Infection) is more common in infants with a history of non-exclusive breastfeeding, which is 27 infants (65.9%) than infants with a history of exclusive breastfeeding, which is as many as 16 babies (59.3%). The results of statistical tests using the *Chi-square* statistical test combination method obtained *P value value* = 0.768 ($p > \alpha$) which means H_0 is accepted and H_a is rejected.

Berdasarkan data yang diperoleh dari UPTD Puskesmas Tanjung Agung Working Area, in 2019 ARI (Acute Respiratory Infection) was one of the diseases that ranked first as many as 221 people. There were 254 patients in 2020, 265 people in 2021 and 2020 from January to June 137 people from 304 toddlers who sought treatment (Profile of UPTD Puskemas Tanjung Agung, 2022).

From the background above, researchers are interested in conducting a study entitled factors related to the incidence of ARI disease in children under

five in the UPTD Tanjung Agung health center work area in 2022.

The purpose of this study is to find out what factors are related to the incidence of ARI in toddlers at the Tanjung Agung Health Center, West Baturaja District, OKU Regency in 2022. Working area of UPTD Tanjung Agung health center in 2022.

2. RESULTS AND DISCUSSION

From the background above, researchers are interested in conducting a study entitled factors related to the incidence of ARI disease in children under five in the UPTD Puskesmas Tanjung Agung Working Area.

3. METHOD

Quantitative research using the design is *Cross Sectional*. The population in this study is toddlers in the working area of the Tanjung Agung Health Center, West Baturaja District, OKU Regency in 2022, amounting to 80 respondents selected by *accidental sampling techniques*. The data in this study was obtained using a questionnaire instrument, then analyzed using the *chi-square* test. In this study, the independent variables are Knowledge, Smoking Habits, and Exclusive Breastfeeding. The research was carried out in January - July 2022 at the Tanjung Agung Health Center, West Baturaja District, OKU Regency

Table 1 Frequency Distribution of Respondents Based on the Incidence of ARI, Knowledge, Smoking Habits, Exclusive Breastfeeding in the Working Area of Tanjung Agung Health Center.

Characteristic	Sum	Percentage (%)
ARI Occurrence		
1. Yes	48	60,0
2. Not	32	40,0
Knowledge		
1. Good	45	56,3
2. Less	35	43,8
Smoking Habits		
1. Yes	37	46,3
2. Not	43	53,8

Exclusive breastfeeding		
1. Yes	41	51,3
2. No	39	48,8

From table 1 the results showed that the incidence of ARI in toddlers 60%, Good Knowledge 56.3%, smoking habits 37%, exclusive breastfeeding 51.3%.

Table 2 The relationship of independent variables to the incidence of ARI in the Tanjung Agung Health Center Working Area

Variable	ARI Occurrence				Sum		P Value
	Yes		Not		n	%	
	n	%	n	%			
Knowledge							
1. Good	11	22,977,1	24	75,020,5	35	100,0	0,015
2. Less	37		8		45	100,0	
Smoking Habits							
1. Smoking	34	70,8	3	9,4	37	100,0	0,000
2. No smoking	14	29,2	29	90,6	43	100,0	
Exclusive breastfeeding							
1. Yes	29	60,4	12	37,5	41	100,0	0,037
2. No	19	39,6	20	62,5	39	100,0	

That from 80 respondents, it was found that respondents who had poor knowledge with no family members suffering from ARI were 37 (77.1%) respondents and respondents who knew well with family members suffering from ARI were 11 (22.9%) respondents, while respondents who had poor knowledge with no family members suffering from ARI were 8 (20.5%) respondents and respondents who knew well with no family members suffering from ARI A total of 24 (75.0%) respondents.

The results of the *chi square* test obtained a *p value* of 0.000, meaning that there is a knowledge relationship with the incidence of ISPA in the UPTD Tanjung Agung Health Center Working Area in 2022.

That from 80 respondents, it was found that respondents who smoked every day with family members suffering from ARI as many as 34 (70.8%) respondents and respondents who did not smoke with

family members suffering from ARI as many as 14 (29.2%) respondents while respondents who smoked every day with no family members suffering from ARI as many as 3 (9.4%) respondents and respondents who did not smoke with no family members suffering from ARI as many as 24 (53.8%) Respondents.

The results of the *chi square* test obtained a *p value* of 0.000, meaning that there is a relationship between smoking habits and the incidence of ARI in the UPTD Tanjung Agung Health Center Working Area in 2022.

That from 80 respondents, it was found that respondents who were breastfeeding mothers for up to 6 months without complementary food with family members suffering from ARI as many as 29 (60.4%) respondents and respondents whose mothers did not breastfeed for up to 6 months and provided complementary supplementary food with family members suffering from ARI as many as 19 (39.6%) respondents while respondents who were

breastfeeding mothers for up to 6 months without complementary supplements with none Family members who suffered from ARI as many as 12 (37.5%) respondents and respondents whose mothers did not breastfeed for up to 6 months and provided complementary food supplements with no family members suffering from ARI as many as 20 (62.5%) respondents.

The results of the *chi square* test obtained a *p value* of 0.037, meaning that there is no relationship between exclusive breastfeeding and the incidence of ARI in the UPTD Tanjung Agung Health Center Working Area in 2022.

4.DISCUSSION

From the results of the analysis of the relationship of knowledge with the incidence of ARI, it was found that respondents who had poor knowledge with family members suffering from ARI were 37 (77.1%) respondents and respondents who knew well with family members suffering from ARI as many as 11 (22.9%) respondents, while respondents who had poor knowledge with no family members suffering from ARI were 8 (20.5%) respondents and respondents who Good knowledge with no family members suffering from ARI as many as 24 (75.0%) respondents.

Bivariate analysis results The *chi square* test results obtained *p Value* 0.000, meaning that there is a knowledge relationship with the incidence of ISPA in the UPTD Tanjung Agung Health Center Working Area in 2022.

Knowledge is a very important factor in shaping a person's actions (*over behavior*). According to Sayono (2012) in (Fitri et al., 2020), a person's knowledge of an object also contains two aspects, namely positive and negative aspects. So that well-informed mothers will be more objective and open to their insights in making a positive decision or action, especially in terms of providing care to sick toddlers, especially ARI (Fitri et al., 2020).

The results of Ariani and Ekawati's study, (2021) univariate tests on knowledge variables of most smoking respondents were 95 respondents (82.6%). The results of the statistical test obtained *p value* = 0.002 can be concluded that there is a significant relationship between knowledge of the incidence of ARI in children under five at the Tanjung Baru Health Center, Muara Enim Regency in 2021.

The assumption of researchers concludes that good knowledge can influence maternal behavior in preventing the incidence of ARI in children under five. Mothers' knowledge is still not good about ARI because mothers are still trying to find various sources of information about ARI. Knowledge is influenced by environment, education, socio-cultural, economic information and sources of information. Therefore, it is necessary to hold counseling by health workers about ARI disease.

From the results of the analysis of the relationship of knowledge with the incidence of ARI, it was found that respondents who smoked every day with family members suffering from ARI were 34 (70.8%) respondents and respondents who did not smoke with family members suffering from ARI as many as 14 (29.2%) respondents while respondents who smoked every day with no family members suffering from ARI were 3 (9.4%) respondents and respondents who did not smoke with no family members suffering from ARI as many as 24 (53.8%) respondents.

Bivariate analysis results The results of the *chi square* test obtained *p Value* 0.000, meaning that there is a relationship between smoking habits and the incidence of ARI in the UPTD Tanjung Agung Health Center Working Area in 2022.

Infants and toddlers of smokers who are exposed to secondhand smoke will suffer from sudden infant death syndrome, acute respiratory tract

infections (ARI), asthma, bronchitis and middle ear infections that can lead to hearing loss. They will also suffer from stunted growth of lung function, which will lead to various lung diseases when adults (Fitri et al., 2020).

Based on the assumptions of researchers, it can be concluded that the factor is most respondents smoking. Smoking inside the house or in the home environment will be at risk of exposure to smoke to family members, passive smokers are more at risk of disease than active smokers. Smoking can cause inhalation of cigarette smoke in children, so that children are at risk of infection in the respiratory tract so that children will potentially get sick as a result of exposure to the smoke. Therefore, if there is a baby / toddler in the house should smoke outside the house.

From the results of the analysis of the relationship of knowledge with the incidence of ARI, it was found that respondents who were breastfeeding mothers for up to 6 months without complementary food with family members suffering from ARI as many as 29 (60.4%) respondents and respondents whose mothers did not breastfeed for up to 6 months and provided complementary supplements with family members suffering from ARI as many as 19 (39.6%) respondents while respondents who were breastfeeding mothers up to with 6 months without complementary food with no family member suffering from ARI as many as 12 (37.5%) respondents and respondents whose mother did not breastfeed for up to 6 months and gave complementary supplementary food with no family member suffering from ARI as many as 20 (62.5%) respondents.

Bivariate analysis results The results of the *chi square* test obtained *p Value* 0.037, meaning that there is no exclusive breastfeeding relationship with the incidence of ARI in the UPTD Tanjung

Agung Health Center Working Area in 2022.

The incidence of ARI was more common in infants with a history of non-exclusive breastfeeding, which was 27 infants (65.9%) than infants with a history of exclusive breastfeeding, which was as many as 16 infants (59.3%). The results of the statistical test using the Chi-square statistical test cell merger method obtained *p value* = 0.768. It was concluded that there was no relationship between the history of breastfeeding and the incidence of ARI in infants in the working area of the Candilama Health Center (Christi *et al.*, 2015).

Exclusive breastfeeding itself is very much ranging from increasing immunity, meeting nutritional needs, clean, hygienic and can increase the relationship or inner bond between mother and child. The incidence of ARI is caused by low family income, non-exclusive breastfeeding, poor breastfeeding, incomplete immunization with the most dominant factor being non-exclusion of breastfeeding (Christi *et al.*, 2015).

This shows that if the mother gives exclusive breastfeeding to her baby, it is likely that the mother can prevent the occurrence of ARI disease in her toddler because with exclusive breastfeeding, the baby has antibodies in preventing the occurrence of ARI. However, this is still influenced by other factors such as completeness of immunization, babies who are low weight, and nutritional status in toddlers that can help antibodies to prevent the occurrence of ARI.

5.CONCLUSIONS

Based on the results of research conducted on 80 respondents, it can be concluded that there is a relationship between knowledge and smoking habits. For the variable Exclusive Breastfeeding is not related to the incidence of ARI in toddlers.

Suggestions that can be given are for the District Government, Village Government and puskesmas to increase knowledge and insight for counseling materials to the community / parents on factors that can cause ARI. It is also expected that the community will always increase health awareness of toddlers and families by monitoring children's health and protecting children from exposure to risk factors that can cause ARI.

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