International Journal of Science and Healthcare Research
Vol.4; Issue: 1; Jan.-March 2019
Website: www.ijshr.com
Original Research Article *ISSN: 2455-7587*

Factors Influencing Acute Respiratory Infection Incidence to Child Under Five Years in Sentani Health Primary Jayapura District

Yonece Wadi[1], A.L. Rantetampang[2], Bernard Sandjaja[3], Anwar Mallongi[4]

[1]Magister Program of Public Health, Faculty of Public Health, Cenderawasih University, Jayapura.
[2,3]Lecturer of Master Program in Public Health. Faculty of Public Health, Cenderawasih University, Jayapura
[4]Environmental Health Department, Faculty of Public Health, Hasanuddin University, Makassar

Corresponding Author: Anwar Mallongi

ABSTRACT

Background: Acute Respiratory Infection is a health problem that can cause death in infants. Various factors are caused by the sex of children under five, immunization status and nutritional status, parents (mother) include age, education, socio-economic, smoking habits in the home, burning garbage, the use of mosquito repellent.
Objective of the study: Evaluate what factors are related to the incidence of ARI in Sentani Health Center, Jayapura District, Papua Province.
Research Methods: Descriptive analytical cross sectional study design. The population of all under-fives was 232 toddlers and a sample of 70 under-fives was random sampling. Data were obtained using a questionnaire and analyzed using chi square and regression binary logistic.
Results: Factors related to ARI incidence in infants in Sentani Health Center were immunization status of children under five (p-value = 0.015; RP = 2.551; CI95% = (1,278 - 5,091), nutritional status of children (p-value = 0,000; RP = 5,359; CI95% = (2,818 - 10,191), education mother (p-value = 0,026; RP = 2,538; CI95% = (1,197 - 5,384), smoking habits (p-value = 0,000; RP = 18,391; CI95% = (4,659 - 72,601), habit of burning garbage in the home environment (p-value = 0,000; RP = 3,955; CI95% = (2,118 - 7,383), habit of using mosquito repellent (p-value = 0,000; Rp = 4,889; CI95%; = (2,532 - 9,331). Factors not related to the incidence of ARI in toddlers at Sentani Health Center are toddlers (p-value = 0,234; RP = 1,728; CI95% = (0,823 - 3,627), maternal age (p-value = 0.601; RP = 1,362; CI95% = (0,648 - 2,863), economic status (p-value = 0,332; RP = 1,593; CI95% = (0,766 - 3,313). The dominant factor in the incidence of ARI in infants is smoking in the household. mah, the habit of using mosquito repellent and the habit of burning garbage in the home environment.

Keywords: Acute, Respiratory, Infection, Child

1. INTRODUCTION

ARI occurring in children under five (aged 12-59 months) from the Syahidi study (2016) revealed that toddlers suffering from ARI were found more in mothers with low education and maternal age >35 years, incomplete immunization status, giving vitamin A capsules, mother's knowledge, kitchen smoke, mosquito repellent use, house ventilation and the presence of family members who smoke inside the house.

Some of the characteristics of mothers with low education tend to be those who have a severe ARI. This is due to the fact that with higher maternal education, his knowledge is increasingly high about the management of ARI. Whereas the family socio-economic is more than the minimum wage able to provide their children with better nutrition and immediately bring their toddlers to treatment compared to low socio-economics (Sukarto, 2016).

Research Maramis (2013) revealed that education has no effect on the ability to care for toddlers with ARI, this is due to mothers who are highly educated parents who are too busy with their careers or jobs, lack of information received directly from health workers and the tendency of parents to entrust children to caregivers or other family members to be taken to the Puskesmas. Besides that, young mothers

(<22 years old) on average have not worked and take care of their toddlers well. Jayapura Regency is one of the Regencies in Papua Province. Preliminary study, ARI incidence data for children under five in Jayapura Regency in 2017 ARI incidence ranks first in the pattern of the top ten diseases with prevalence reaching 23.64% from 20 Puskesmas in Jayapura Regency with the highest incidence of ARI in Sentani Health Center (66.9%) and lowest at Harapan Health Center. Sentani Health Center ranks seventh as much as 27.5%.

Healthy home prevalence in the Sentani Health Center work area is 30.27% (Jayapura District Health Office, 2017) and initial observations of researchers in the Sentani Health Center work area, some residents owned by residents are semi-permanent and mostly in the form of stilt houses with wooden walls / grain. Most of the habits of parents of toddlers smoke and use mosquito repellent and the habit of burning garbage in the home environment. Based on maternal characteristics, most do not work.

Based on the above problems, the Researcher was interested in conducting a study entitled "Factors related to the incidence of ISPA in Toddlers in Sentani Health Center, Jayapura Regency".

2. MATERIALS AND METHODS

2.1 Types and Design of Research

The type of research used is descriptive analytic with cross-sectional study design, a study in which variables including risk factors and variables including effects are examined at the same time (Notoatmodjo, 2012).

2.2 Research Place and Time

This research was conducted at Sentani Health Center, Jayapura Regency, which was held in October 2018.

2.3 Research Populations and Samples

1. Population

Population is the entire object of research or the object under study. The population in this study was the number of toddlers aged 1-5 years in Sentani Health Center in June - August 2018 who visited 232 toddlers.

2. Samples

The sample is a portion of the population considered to represent WITH 70 respondents (Notoatmodjo, 2012).

3. RESULTS

3.1. Relationship between sex of toddlers and the incidence of ARI in infants

Table 1. Relationship between sex of children under five with the incidence of ARI in infants at Sentani Health Center

No	Sex of children under five	Incidence of ARI				Number	
		ARI		Not ARI			
		n	%	n	%	n	%
1	Male	11	37,9	18	62,1	29	100
2	Female	9	22	32	78	41	100
Total		20	28,6	50	71,4	70	100
p-value = 0,234; RP = 1,728; CI95%= (0,823 – 3,627)							

Based on Table 1, it shows that of the 29 under-fives who were male as many as 11 people (37.9%) with the incidence of ARI and not ARI as many as 18 people (62.1%). While from 41 people who were female as many as 9 people (22%) with the incidence of ARI and not ARI as many as 18 people (62.1%). The results of the chi square test obtained p-value = 0.234> 0.05. This means that there is no relationship between the sex of the toddler to the incidence of ARI in infants in Sentani Health Center. Prevalence ratio test results (RP) = 1,728; CI95% = (0,823 - 3,627) with a lower value does not include 1 which means that gender is not a risk factor for the incidence of ARI.

3.2. Relationship between toddler immunization status and the incidence of ARI in infants

Table 2. Relationship between immunization status of toddlers and the incidence of ARI in infants at Sentani Health Center

No	Immunization status of toddlers	Incidence of ARI				Number	
		ARI		Not ARI			
		n	%	n	%	n	%
1	Not complete	9	52,9	8	47,1	17	100
2	Complete	11	20,8	42	79,2	53	100
Total		20	28,6	50	71,4	70	100
p-value = 0,015; RP = 2,551; CI95%= (1,278 – 5,091)							

Based on Table 2, it shows that out of 17 children under five with incomplete immunization status as many as 9 people (52.9%) with ARI incidence and not ARI as

many as 8 people (47.1%). While from 53 people with complete immunization status as many as 11 people (20.8%) with ARI incidence and not ARI as many as 42 people (79.2%). The results of the chi square test obtained p-value = 0.015 <0.05. This means that there is a relationship between the status of immunization of children under five to the incidence of ARI in infants at Sentani Health Center. Prevalence ratio (RP) = 2,551; CI95% = (1,278 - 5,091) which means that the immunization status of incomplete toddlers is likely to have ARI events 2,551 times higher than toddlers with complete immunization status.

3.3 The relationship of nutritional status of children with the incidence of ARI in infants

Table 3. Relationship between nutritional status of children with ISPA in infants at Sentani Health Center

No	Nutritional status of children	Incidence of ARI				Number	
		ARI		Not ARI			
		n	%	n	%	n	%
1	Less	11	84,6	2	15,4	13	100
2	Good	9	15,8	48	64,2	57	100
Total		20	28,6	50	71,4	70	100
p-value = 0,000; RP = 5,359; CI95%= (2,818 – 10,191)							

Based on Table 3, it shows that of the 13 children under five with poor nutritional status as many as 11 people (84.6%) with the incidence of ARI and not ARI as many as 2 people (15.4%). While from 57 toddlers with good nutritional status as many as 9 people (15.8%) with ARI incidence and not ARI as many as 48 people (64.2%). The results of the chi square test obtained p-value = 0,000 <0,05. This means that there is a correlation between the nutritional status of children under five years of ISPA in infants at Sentani Health Center. Prevalence ratio test results (RP) = 5,359; CI95% = (2,818 - 10,191) which means that the nutritional status of children under five is less likely to have ARI events 5,539 times higher than toddlers with good nutritional status.

3.4. Relationship between mother's age and the incidence of ARI in infants

Table 4. Relationship between the age of the mother and the incidence of ARI in infants in Sentani Health Center

No	Age of the mother	Incidence of ARI				Number	
		ARI		Not ARI			
		n	%	n	%	n	%
1	≤ 25 Year	8	34,8	15	65,2	23	100
2	> 25 Year	12	25,5	35	74,5	47	100
Total		20	28,6	50	71,4	70	100
p-value = 0,601; RP = 1,362; CI95%= (0,648 – 2,863)							

Based on Table 4, it shows that out of 23 toddlers aged <25 years as many as 8 people (34.8%) with ARI incidence and not ARI as many as 15 people (65.2%). While from 47 mothers of children under the age of> 25 years as many as 12 people (25.5%) with the incidence of ARI and not ARI as many as 35 people (74.5%). The results of the chi square test obtained p-value = 0.601> 0.05. This means that there is no relationship between the age of the mother and the incidence of ARI in infants at Sentani Health Center. The prevalence ratio (RP) = 1,362; CI95% = (0.648 - 2.863) with a lower value that does not cover 1 which means that the age of the mother is not significant for the occurrence of ARI in infants.

3.5. Relationship between mother's education and the incidence of ARI in infants

Table 5. Relationship between mother's education and the incidence of ARI in children under five at Sentani Health Center

No	Mother's education	Incidence of ARI				Number	
		ARI		Not ARI			
		n	%	n	%	n	%
1	Low	12	46,2	14	53,8	26	100
2	High	8	18,2	36	81,8	44	100
Total		20	28,6	50	71,4	70	100
p-value = 0,026; RP = 2,538; CI95%= (1,197 – 5,384)							

Based on Table 5, it shows that of the 26 mothers of children under five with a low level of 12 people (46.2%) with the incidence of ARI and not ARI as many as 14 people (53.8%). While from 44 mothers of children with high education as many as 8 people (18.2%) with the incidence of ARI and not ARI as many as 36 people (81.8%). The chi square test results obtained p-value = 0.026 <0.05. This means that there is a relationship between maternal education and the incidence of ARI in infants at Sentani Health Center. Prevalence ratio (RP) =

2,538; CI95% = (1,197 - 5,384) which means that the education of mothers who are low in their children is at risk of ARI by 2,538 times higher than under-educated mothers.

3.6. Relationship between family economic status and the incidence of ARI in infants

Table 6. Relationship between family economic status and the incidence of ARI in infants at Sentani Health Center

No	Family economic status	Incidence of ARI				Number	
		ARI		Not ARI			
		n	%	n	%	n	%
1	Less	10	37	17	63	27	100
2	Enough	10	23,3	33	76,7	43	100
Total		20	28,6	50	71,4	70	100
p-value = 0,332; RP = 1,593; CI95%= (0,766 – 3,313)							

Based on Table 6, it shows that from 27 people with economic status of less families as many as 10 people (37%) with the incidence of ARI and not ARI as many as 17 people (63%). While from 43 people, there was enough economic status as many as 10 people (23.3%) with the incidence of ARI and not ARI as many as 33 people (76.7%). The results of the chi square test obtained p-value = 0.332> 0.05. This means that there is no correlation between the family economic status of the incidence of ARI in children under five at Sentani Health Center. The prevalence ratio (RP) = 1.593; CI95% = (0,766 - 3,313) with the lower value does not cover 1 which means that the economic status of the family is not a risk factor for the incidence of ARI in infants.

3.7. Relationship between smoking habits in the home and the incidence of ARI in infants

Table 7. Relationship between home smoking habits and the incidence of ARI in infants at Sentani Health Center

No	home smoking habits	Incidence of ARI				Number	
		ARI		Not ARI			
		n	%	n	%	n	%
1	Yes	18	78,3	5	21,7	23	100
2	Not	2	4,3	45	95,7	47	100
Total		20	28,6	50	71,4	70	100
p-value = 0,000; RP = 18,391; CI95%= (4,659 – 72,601)							

Based on Table 7, it shows that out of 23 people with smoking in the home as many as 18 people (75%) with the incidence of ARI and not ARI as many as 3 people (25%). While from 47 people who did not have smoking habits in the home as many as 2 people (4.3%) with ARI incidence and not ARI as many as 45 people (95.7%). The results of the chi square test obtained p-value = 0,000 <0,05. This means that there is a relationship between smoking habits in the home to the incidence of ARI in infants in Sentani Health Center. Prevalence ratio test results (RP) = 18,391; CI95% = (4,659 - 72,601) with a value that means that smoking habits in the home 18,391 times higher chance of occurrence of ARI compared to no smoking habit in the home.

4. DISCUSSION

4.1 Relationship between sex of toddlers and the incidence of ARI in infants

The results of the study were obtained from the results of statistical tests that there was no relationship between toddlers' sex to the incidence of ARI in infants in Sentani Health Center Jayapura Regency (p-value = 0.234> 0.05). This research is in line with the previous one conducted by Fibrila (2015) in Lampung Province, revealing that the lower types of kelurahan were not related to the incidence of ARI.

This research of the number of 29 toddlers who were male as many as 11 people (37.9%) while from 41 people who were female as many as 9 people (22%) with the incidence of ARI. This shows that the majority of men who have prosenase do not differ greatly from the incidence of ARI, which from the results of the prevalence ratio test (RP) with a lower value does not cover 1 which means that the sex of children under five is a protective factor against the incidence of ARI.

According to Sari (2017), that boys have a higher risk than girls affected by ARI, because boys play more often outside the home so that air exposure is more than girls who are more dominant playing in the house. While in this study the sex of toddlers boys and girls have the same opportunities as the incidence of ARI. This condition is made possible by a shift in habits in children. At present both boys and

girls have the same tendency to play. In this era children play more often in the house with available facilities than playing outside the home. So that the variable factor that is stronger relates to the survival of ARI such as smoking habits in the home, burning garbage in the home environment and using fuel mosquito repellent.

4.2. Relationship between immunization status of infants and the incidence of ARI in infants

The results of the study were obtained from the results of statistical tests that there was a relationship between immunization status of children under five years of ARI in infants in Sentani Health Center (p-value = 0.015 <0.05). This research is in line with previous research conducted by Oktaviani (2017) in the Teluknaga District Health Center, Tangerang Regency, revealing the same thing that incomplete immunization status is associated with the incidence of ARI in infants.Provision of immunization is one attempt to establish an antibody system in the human body. Antibodies formed from immunization require time to function. Completeness of immunization can help the formation of antibodies optimal is expected to suppress the development of the disease does not become more severe if exposed to ARI. Infants and toddlers who have had measles and survivors will get natural immunity against pneumonia as a complication of measles. Most ARI deaths come from the type of ARI that develops from diseases that can be prevented by immunization (Maryunani, 2013).

Toddlers with incomplete immunization status at Sentani Health Center were 9 people (52.9%) with ARI events, while toddlers with complete immunization status in children under five were lower with ARI incidents of 11 people (20.8%). The prevalence ratio test results that incomplete immunization status of children under five is likely to have ARI events 2,551 times higher than toddlers with complete immunization status. Paying attention to the problem of complete immunization with the incidence of ARI in infancy is a period of growth of each body system. This condition certainly causes toddlers vulnerable to infection. Factors that support children who are not susceptible to infection are to increase immunity through immunization. Thus, the importance of basic immunization for children, so the role of puskesmas officers in providing counseling to mothers so that their children get immunizations for children under five whose immunization is not complete.

4.3 Relationship between nutritional status of children with ARI in infants

The results of the study were obtained from the results of statistical tests that there was a relationship between nutritional status of children under five years of ARI in infants in Sentani Health Center (p-value = 0,000 <0,05). Previous research conducted by Widia (2017) revealed that the nutritional status of children under five is related to the incidence of ARI due to the lack of nutritional status that causes a lack of endurance for children under five. Toddlers are a group of people who are vulnerable to malnutrition, in this group experiencing a cycle of growth and development that requires nutrients that are greater than other age groups so that toddlers are the easiest to suffer from nutritional disorders. The incidence of malnutrition is like an iceberg phenomenon where the incidence of malnutrition can cause death. In the case of malnutrition, it will be more susceptible to infection due to decreased immunity against invading pathogens. Good growth and adequate immunological status will also produce good health (Parii, 2014).

The number of children under five in Sentani Health Center with less nutritional status was 11 people (84.6%) with ARI incidence, while under fives with good nutritional status were 9 people (15.8%) with ARI events. This shows that children with good nutritional status are lower with the incidence of ARI compared with toddlers who are under nutrition. This is reinforced from the results of the prevalence

ratio test that the nutritional status of good toddlers is likely to have an ARI incidence of 5.539 times higher than that of toddlers with poor nutritional status. According to Maryunani (203), ARI is more common in toddlers, this may be closely related to the problem of the baby's immune system that is still not too strong compared to adults. In a state of good nutrition, the body has enough ability to defend itself against infectious diseases. Whereas if the state of nutrition becomes bad, then the body's immune reaction will decrease so that the body's ability to defend itself against infection will decrease. This event is caused by the process of formation of antibodies that are disturbed or inhibited and eventually the production of these antibodies will decrease. This decrease results in the body being more vulnerable or susceptible to infection. So the condition of malnutrition and the incidence of ARI often work together and foster a poor prognosis.

The role of Pukesmas officers can increase maternal knowledge through the role of posyandu when toddlers are weighed by providing counseling about giving balanced gzii intake so that mothers' knowledge increases and influences the provision of nutrition to their children.

4.4. Relationship between the age of the mother and the incidence of ARI in infants

The results of the study were obtained from the results of statistical tests there was no relationship between maternal age and the incidence of ARI in infants in Sentani Health Center (p-value = 0.601> 0.05). This research is in line with the one conducted by Syahidi (2013) in the Puskesmas Kelurahan Tebet Barat, Tebet Subdistrict, South Jakarta, revealing that the age of the mother is not related to the incidence of ARI in infants. The mother's age of children under the age of <25 years is 8 people (34.8%) with the incidence of ISPs, while the age of mothers of children under the age of> 25 years is 12 people (25.5%) with the incidence of ARI. This shows that the mother's age is the same as the chance for the occurrence of ARI in infants.

This agrees with Maramis (2013) that the age of a mother of a toddler who is younger, has a stronger memory and creativity is higher in finding and knowing something unknown before compared to older people. Besides that, the ability to absorb new knowledge is younger because the brain functions optimally at a young age. Whereas according to Prayoto (20140, that increasing age a person will experience changes in physical and psychological (mental) aspects. In the psychological or mental aspects, the level of thinking of a person becomes more mature and mature (Prayoto, 2014).

Thus that at the age level things related to age are knowledge that comes from information about prevention of ARI. In this study, knowledge was not included in this study, but from the percentage of ARI shows that in this variable there are factors such as maternal action in prevention of toddlers such as smoking habits in the home, habits of burning garbage in the home environment and the habit of using mosquito repellent related to the age of the mother in the prevention of ARI in infants.

4.5. Relationship between mother's education and the incidence of ARI in infants

The results of the study were obtained from the results of statistical tests that there was a relationship between maternal education on the incidence of ARI in infants in Sentani Health Center (p-value = 0.026 <0.05). This is in line with the research conducted by Chandra (2017), stating that maternal education is one of the factors that influence the behavior of ARI prevention. There is a positive relationship between the level of education and ARI prevention behavior, the higher the education level of the respondents, the better the proportion of respondents' actions. Low under five mother's education as many as 12 people (46.2%) with ARI incidence, while mothers of under-fives with lower education were 8 people (18.2%) with ARI

events and from the results of the prevalence ratio test that low maternal education was 2,538 times as high as toddlers with ARI as much as compared to mothers with low education.

Mother's education is closely related to family health. Mothers generally play a role in maintaining the health of infants and toddlers. All efforts are made so that the baby remains healthy. Therefore maternal education is very important in maintaining the health of infants and toddlers. A well-educated mother will have sufficient insight in maintaining the health of her baby and child. Efforts to prevent ARI can be done by Sentani Health Center staff by increasing counseling efforts to mothers, so that mothers with low education can understand how to care for the family, especially care for babies and their babies.

4.6. Maternal socio-economic relationship with the incidence of ARI in infants

The results of the study were obtained from the results of statistical tests there was no relationship between family economic status of the incidence of ARI in infants in Sentani Health Center (p-value = 0.332> 0.05). This research is in line with the research conducted by Supran (2017), that the economic status of the family is not related to the incidence of ARI. Relationships with health are also less evident clearly that poverty is closely related to disease, it's just difficult to analyze which cause and which results. Economic status determines the quality of food, occupancy, density, nutrition, education level, availability of clean water, sanitation facilities, size family, technology etc. Income levels are often associated with the use of health services and prevention. Someone is not utilizing existing health services maybe because there is not enough money to buy medicine, pay for transportation and others (Prayoto, 2014).

The economic status of the family is less than 37% with the incidence of ARI, while sufficient family economic status is as much as 23.3% with the incidence of ARI and from the results of the time trial there is a relationship but not significant to the incidence of ARI. This is due to the economic status of the family which is sufficient to fulfill all the needs needed, but the economic status of the family is lacking, the mother is very concerned about and maintains the health of her baby because mothers with income <3 million per month are more selective in fulfilling their needs because This economy is enough that mothers are more concerned with things that are very important for their children in meeting their dietary needs and immunization so that children are not easily sick.

4.7. Relationship between smoking habits in the home and the incidence of ARI in infants

The results of the study were obtained from the results of statistical tests there was a relationship between smoking habits in the home to the incidence of ARI in infants in Sentani Health Center (p-value = 0,000 <0,05). The results of this study are in line with the research conducted by Sofia (2017), revealing that toddlers who live at home with smokers in homes are more susceptible to ARI. The number of smokers will be proportional to the number of sufferers of health problems. Cigarette smoke will increase the risk for toddlers to get ARI attacks.

In-house smoking habits carried out by family members as many as 18 people (75%) with ARI events, while family members who do not have smoking habits in the home as many as 2 people (4.3%) with ARI events and from the results of the prevalence ratio test which means that home smoking habit 18,391 times higher chance of ARI compared to no smoking habit in the home. Winarni's results show that toddlers who live at home with smokers in homes are more susceptible to ARI. The number of smokers will be proportional to the number of sufferers of health problems. Cigarette smoke will increase the risk for toddlers to get ARI attacks. Cigarette smoke is not only a direct cause of ARI in infants, but an indirect factor which can weaken the

immune system of toddlers. Cigarette smoke can reduce the ability of macrophages to kill bacteria. Cigarette smoke is also known to damage local lung resistance, such as mucociliary cleansing ability. So the presence of family members who smoke is proven to be a risk factor that can cause respiratory disorders in children under five (Winarni, 2010).

This can occur in homes where ventilation is lacking and the kitchen is located in a house united with a bedroom, a baby room and a toddler playing. This is more likely because babies and toddlers are at home with their mothers longer, so the pollution dose will certainly be higher. Mother's prevention of ARI can be done by reminding family members who smoke so that they do not smoke at home or stop smoking in addition to harming health as well as detrimental to the family economy because they simply throw away money that is not useful.

4.8. Relationship between the habit of burning garbage in the home environment with the incidence of ARI in infants

The results of the study obtained from the results of statistical tests there is a relationship between the habit of burning garbage in the home environment to the incidence of ARI in infants in Sentani Health Center (p-value = 0,000 <0,05). The results of this study are in line with the research conducted by Sofia (2017), revealing that family habits of burning waste are more susceptible to ARI disease. The smoke of burning trash has a detrimental effect on health such as lung cancer, asthma, tuberculosis, cataracts, heart disease, babies born with low body weight, blindness, and even affect children's brain abilities (Maryunani, 2013).

The habit of family members burning garbage in the home environment as many as 9 people (75%) with the incidence of ISPs, while family members who did not have smoking habits in the home were lower as many as 11 people (19%) with the incidence of ARI. The prevalence ratio test results obtained that the habit of burning trash in the home environment is 3.955 times higher chance of ARI events than there is no habit of burning garbage in the home environment. According to Smith (2016), that burning of waste as a major cause of health problems is caused by incomplete combustion having the same impact as cigarettes is even more dangerous because the amount of smoke is very large. The compound produced is like burning a thousand cigarettes every hour. Prevention efforts can be carried out by the family so as not to burn waste and should dispose of garbage in a place that has been provided by the government.

5. CONCLUSIONS

1. There is no relationship between the sex of the toddler to the incidence of ARI in infants in Sentani Health Center (p-value = 0.234; RP = 1.728; CI95% = (0.823 - 3.627).
2. There is a relationship between immunization status of children under five years of ARI in infants in Sentani Health Center (p-value = 0.015; RP = 2.551; CI95% = (1,278 - 5,091).
3. There is a relationship between nutritional status of children under five years of age in ISPA in infants in Sentani Health Center (p-value = 0,000; RP = 5,359; CI95% = (2,818-10,191).
4. There is no relationship between maternal age and the incidence of ARI in infants in Sentani Health Center (p-value = 0.601; RP = 1.362; CI95% = (0.648 - 2.863).
5. There is a relationship between mother's education on the incidence of ARI in infants in Sentani Health Center (p-value = 0.026; RP = 2.538; CI95% = (1.197 - 5.384).
6. There is no family socio-economic relationship to the incidence of ARI in infants in Sentani Community Health Center (p-value = 0.332; RP = 1.593; CI95% = (0.766 - 3.313).
7. There is a relationship between smoking habits in the home to the incidence of ARI in infants in Sentani Health Center (p-value

= 0,000; RP = 18,391; CI95% = (4,659 - 72,601).

8. There is a relationship between the habit of burning garbage in the home environment to the incidence of ARI in infants in Sentani Health Center (p-value = 0,000; RP = 3,955; CI95% = (2,118 - 7,383).

REFERENCES

- Azwar A, (2013). *Pengantar Administrasi Kesehatan*. Edisi Ketiga. Binarupa Aksara, Tangerang.
- Badriah. (2013). *Gizi Dalam Kesehatan Reproduksi*. Nuha Medika, Yogtyakarta.
- Chandra (2017). *Hubungan Pendidikan Dan Pekerjaan Ibu Dengan Upaya Pencegahan ISPA Pada Balita Oleh Ibu Yang Berkunjung Ke Puskesmas Kelayan Timur Kota Banjarmasin*. An-Nadaa, Juni 2017, hal. 11-15.
- Dahniar AR. (2011). *Pengaruh Asap Obat Nyamuk Terhadap Kesehatan dan Struktur Histologi Sistem Pernafasan.* J Kedokt Syiah Kuala. 2011;11(1):52-59.
- Edowai N, Rantetampang AL, Msen Y et.al. Factors influencing with malnutrition pregnant at Tigi district Deiyai regency. International Journal of Science & Healthcare Research. 2018; 3(4): 245-256.
- Fibrila F (2015). *Hubungan Usia Anak, Jenis Kelamin dan BBL Anak dengan Kejadian ISPA. Jurnal Kesehatan Metro Sai Wawai* Volume VIII No.2 Edisi Des 2015, ISSN: 19779-469X.
- Fritje Linggar1, A.L. Rantetampang2, Rosmin Tingginehe3, Anwar Mallongi4 , The factors influencing defecation behavior in toilet Pasca community led total sanitation at Wamesa sub district Manokwari Selatan district. International Journal of Science & Healthcare Research. 2019; 4(1): 88-99.
- Hartono dan Rahmawati. (2012). ISPA. *Gangguan Pernafasan Pada Anak. Panduang Bagi Tenaga Kesehatan dan Umum*. Nuha Medika, Yogyakarta.
- Hasmi. (2016). *Metode Penelitian.* In Media, Jakarta.
- Hidayat A.A. (2015). *Ilmu Kesehatan Anak,* Salemba Medika, Jakarta.
- Janggo WO, Msen Y, Rantetampang AL, Mallongi A. The factors affecting pain intensity to patient post operative fracture at Jayapura public hospital. International Journal of Science & Healthcare Research. 2018; 3(4): 81-90.
- Jikwa Y, Rantetampang AL, Zainuri A et.al. The factors affecting of health employee at public health centre, Sentani sub province Jayapura. International Journal of Science & Healthcare Research. 2019; 4(1): 109-120.
- Linggar F, Rantetampang AL, Tingginehe R et.al. The factors influencing defecation behavior in toilet Pasca community led total sanitation at Wamesa sub district Manokwari Selatan district. International Journal of Science & Healthcare Research. 2019; 4(1): 88-99.
- Marhamah. (2013). *Faktor Yang Berhubungan Dengan Kejadian* ISPA *Pada Anak Balita Di Desa Bontongan Kabupaten Enrekang*. Diakses 23 Mareti 2015 dari http//www.unhas.co.id.
- Maramis A. (2013). *Hubungan Tingkat Pendidikan Dan Pengetahuan Ibu Tentang* ISPA *Dengan Kemampuan Ibu Merawat Balita* ISPA *Pada Balita Di Puskesmas Bahu Kota Manado.* Program Studi Ilmu Keperawatan Fakultas Kedokteran. Diakses 23 Mareti 2015 dari http//www.unsrat.co.id.
- Marmi dan Rahardjo. (2012). *Asuhan Neonatus Bayi dan Balita.* Pustaka Pelajar, Yogyakarta.
- Nana S & Tinah. (2012). *Hubungan Pendidikan Ibu Dan Status Ekonomi Keluarga Dengan Kejadian* ISPA *Pada Balita*. Diakses 23 Mareti 2015 dari http//www. estuutomoboyolali.co.id.
- Nurhidayah. (2009). *Upaya Keluarga Dalam Pencegahan Dan Perawatan ISPA (Infeksi Saluran Pernafasan Akut) Di Rumah Pada Balita Di Kecamatan Ciawi Kabupaten Tasikmalaya*. http//www. unpad.co.id. Diakses 2 November 2018
- Notoatmodjo, S. (2014). *Kesehatan Masyarakat, Ilmu dan Seni*. Edisi Revfiis 4. Rineka Cipta, Jakarta.
- Oktaviani I (2017). Faktor - Faktor Yang Berhubungan Dengan Kejadian Pneumonia Pada Balita di Puskesmas Kecamatan Teluknaga Kabupaten Tangerang. Jurnal Komunikasi Kesehatan Vol.VIII No.1 Tahun 2017.
- Pangaribuan S (2017) *Hubungan Kondisi Lingkungan Rumah Dengan Kejadian* ISPA *Pada Balita di Puskesmas Remu Kota*

Sorong. Global Health Science, Volume 2 Issue 1, Maret 2017.

- Parrung E, Rantetampang AL, Msen Y, Mallongi A. The factors affecting by leadership and motivation working health employee at public health centre Kotaraja Jayapura city. International Journal of Science & Healthcare Research. 2018; 3(4): 132-140.
- Rahmawati R (2017). *Hubungan Riwayat Imunisasi Pentavalen Dan Keberadaan Anggota Keluarga Yang Merokok Di Dalam Rumah Dengan Kejadian* ISPA *Pada Balita Di Puskesmas Cempaka Kota Banjarmasin Tahun 2017*. Fakuktas Keperawatan Dan Ilmu Kesehatan Program Study S.1 Keperawatan Banjarmasin.
- Sari NI (2017). *Hubungan Umur Dan Jenis Kelamin Terhadap Kejadian Infeksi Saluran Pernapasan Akut (*ISPA*) Pada Balita di Puskesmas Tembilahan Hulu*. An-Nadaa, Juni 2017, hal. 26-30
- Sigalingging (2013). *Karakteristik Penderita Penyakit Pneumonia Pada Anak Di Ruang Merpati II Rumah Sakit Umum Herna Medan*.diakses 23 Mareti 2015 dari http://www.udarma.co.id.
- Sofia (2017). *Faktor Risiko Lingkungan Dengan Kejadian* ISPA *Pada Balita di Wilayah Kerja Puskesmas Ingin Jaya Kabupaten Aceh Besar*. Jurnal AcTion: Aceh Nutrition Journal, Mei 2017; 2(1): 43-50
- Supran (2017). *Hubungan Pengetahuan Ibu Dengan Upaya Pencegahan Primer Penyakit* ISPA *Pada Balita (Studi Pada Perumahan Kohul (Kotawaringin Hulu) PT. BGA (Bumitama Gunajaya Agro) Kotawaringin Lama, Kab. Kotawaringin Barat, Prov. Kalimantan Tengah).* Jurnal Borneo Cendekia. Volume 1 No 1 Januari 2017.
- Syahidia MH (2016). *Faktor-faktor yang Mempengaruhi Kejadian Infeksi Saluran Pernapasan Akut (*ISPA*) pada Anak Berumur 12-59 Bulan di Puskesmas Kelurahan Tebet Barat, Kecamatan Tebet, Jakarta Selatan*. Jurnal Epidemiologi Kesehatan Indonesia Vol. 1, No. 1, November 2016.
- Tanan T, Makaba S, Rantetampang AL, Mallongi A. Drug management in pharmaceutical installation of health office at Jayapura district. International Journal of Science & Healthcare Research. 2019; 4(1): 3744.
- Waine I, Rantetampang AL, Msen Y, Mallongi A. Factors related to hiv/aids transmission by people with hiv/aids in dogiyai district papua province. International Journal of Science & Healthcare Research. 2018; 3(4): 9198.
- Weya A, Rantetampang AL, Tingginehe R, Mallongi A. Factors affecting nutrient status of children under five years at Puncak Jaya district sub province Papuan. International Journal of Science & Healthcare Research. 2018; 3(4): 70-80.
- Winarni ABU, Sarifudin SAN. Hubungan Antara Perilaku Merokok Orang Tua dan Anggota Keluarga Yang Tinggal Dalam Satu Rumah Dengan Kejadian ISPA pada Balita Di Wilayah Kerja Puskesmas Sempor II Kabupaten Kebumen Tahun 2009. *JIlm Kesehat Keperawatan. 2010;6(1):16-20.*

How to cite this article: Wadi Y, Rantetampang AL, Sandjaja B et.al. Factors influencing acute respiratory infection incidence to child under five years in sentani health primary jayapura district. International Journal of Science & Healthcare Research. 2019; 4(1): 274-283.

******