The Correlation Of Sex And Exclusive Breastfeeding Status With Acute Respiratory Infection (Ari) Incidence Among Under-Five Children At The Cempaka Public Health Center Banjarmasin

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ABSTRACT

Background: Acute Respiratory Infection (ARI) has the first cause of death in infants and toddlers in Indonesia. Based on National Health Survey data shows that the proportion of ARI as a cause of infant mortality is 27.6%, whereas ARI as the cause of death of children under five is 22,8%. Currently, ARI disease is still a health problem that needs attention and needs to be immediately overcome. ISPA is a disease whose risk may increase due to sex and exclusive breastfeeding status.
Purpose: The purpose of this study is to know the correlation between sex and exclusive breastfeeding status with the incidence of acute respiratory infections among children under five at the Cempaka Public Health Center Banjarmasin.
Method: This research was an analytic survey research using cross-sectional study approach. The samples of this study were all children under five years old who visited Cempaka Public health Center on the 3rd week of July - 1st week of August taken by accidental sampling technique amounted to 50 people.
Result: Most of the respondents were male as many as 32 toddlers (64%), exclusive breastfeeding status was mostly not exclusive breastfeeding (64%), and most respondents had ARI for 31 toddlers (62%). The statistic test result of sex correlation with the incidence of ARI was obtained p-value = 0.026 and OR = 4.714 (95% CI: OR = 1.364-16.295). While the statistical test result of exclusive breastfeeding status correlation with the incidence of ARI obtained p-value = 0.000 and OR = 18.900 (95% CI: OR = 4.369-81.765).
Conclusion: In this study proved that there is a significant relationship between sex and exclusive breastfeeding status with the incidence of ARI among under-five children.

Keywords: Acute Respiratory Infection (ARI), Children under-five, Exclusive breastfeeding status, Sex

BACKGROUND

ARI is a respiratory tract infection that can last up to 14 days, clinically signs and symptoms of acute infection occur in each respiratory tract no more than 14 days. ISPA is the biggest cause of death for infants and toddlers in Indonesia. Most of these deaths are caused by a lower ARI (pneumonia) (Ditjen PPM, 2010).

The report of the 10 most disease patterns in hospitalized patients in hospitals in Indonesia in 2009 showed that pneumonia disease had the highest CFR of 6.63% from 1000 children under five. WHO report on 2008 shows that the PMR rate due to pneumonia in infants in Indonesia is 22% per 1000 live births (Departemen Kesehatan RI, 2015).

ARI is the first cause of death in infants and toddlers in Indonesia. Based on National Health Survey data shows that the proportion of ARI as a cause of infant mortality is 27.6%, whereas ARI as the cause of death of children under five is 22.8% (Departemen Kesehatan RI, 2015).

Based on the health profile in South Kalimantan Province, the incidence of ARI is 4955 cases in 2014 and 5479 cases in 2015. This indicates an increase of 9.5% (DinKes Provinsi Kalimantan Selatan, 2014; DinKes Provinsi Kalimantan Selatan, 2015).

Banjarmasin is the capital of South Kalimantan Province which of course people also have various health problems. One of them is ARI. One of the Puskesmas in Banjarmasin with the highest incidence of ARI in its working area is Cempaka Public Health Center.

ARI is the first among the 10 most common diseases in Cempaka Public Health Center in 2015. The working area of Cempaka Public Health Center covers four urban villages namely Kertak Baru Ilir, Kertak Baru Ulu, Mawar and Kelayan Luar. The population is 15694 people with the number of children about 10% of the total population is 1567 children under five (Laporan Tahunan Puskesmas Cempaka, 2015).

The interview result to the mother who brought her toddler went to Cempaka Public Health Center on June 9, 2016, found that from 10 children under five, 6 people (60%) were exposed to respiratory infection. Among that 6 toddlers, 4 toddlers (66.7%) were male. Among that 4 toddlers who affected by ARI, 3 toddlers (75%) of them did not get exclusive breastfeeding.

Based on the national mid-term work plan guideline for childhood pneumonia prevention in 2001-2009, boys have a higher risk than girls for ARI. Exclusive breastfeeding status can establish a good body immune system for toddlers. Decreased immunity can result in under-five children susceptible to infectious diseases including ARI (Djaja, S., 2010).

Based on the above things can be seen that the current ARI disease is still a health problem that needs attention and needs to be addressed. ARI is a disease whose risk may increase due to sex and exclusive breastfeeding status. Therefore, it is necessary to study the correlation of sex and exclusive breastfeeding status with the incidence of ARI in under-five children at Cempaka Public Health Center Banjarmasin.

METHOD

This research is an analytic survey research using cross-sectional study approach. The samples of this study were all children under five years old who visited Cempaka Public Health Center on the 3rd week of July - 1st week of August taken by accidental sampling technique amounted to 50 people.

The research instrument used in the form of a questionnaire. The data obtained were analyzed by chi-square test.

RESULT

Respondent characteristic of the toddler's mother in this research mostly aged 20-35 years that was 38 people (76%). The education level of most of the under-five mother was low educated about 28 people (56%). Toddlers mostly aged > 6 - 24 months were 22 people (44%) (table 1).

Table 1. The characteristic of respondent

No	Respondent characteristic	f	%
1	**The Age of Mother**		
	<20 years	2	4
	20 – 35 years	38	76
	>35 years	10	20
	Total	50	100
2	**Education**		
	Low (Elementary/Junior High School)	28	56
	Middle (Senior High School)	16	32
	High (Academy/University)	6	12
	Total	50	100
3	**The Age of Toddler**		
	>6 – 24 months	22	44
	>24 – 42 months	16	32
	>42 – 60 months	12	24
	Total	50	100

Based on the sex, the most toddlers were male that was as much as 32 toddlers (64%). A respondent with female gender is as much as 18 toddlers (36%). While based on exclusive breastfeeding status in toddlers was mostly not exclusive breastfeeding (64%). Respondents with exclusive breastfeeding status of 18 people (7.5%) (table 2 and 3).

Tabel 2. The frequency distribution of respondent based on sex

No	Sex	f	%
1	Male	32	64
2	Female	18	36
	Total	50	100

Table 3. The frequency distribution of respondent based on exclusive breastfeeding status

No	Exclusive breastfeeding status	f	%
1	No	32	64
2	Yes	18	36
	Total	50	100

The incidence of ARI in 50 respondents is presented in Table 4.

Table 4. The frequency distribution of respondent based on incidence of ARI

No	ARI Incidence	f	%
1	Yes	31	62
2	No	19	38
	Total	50	100

Based on table 4, it is known that from 50 respondents, most respondents had ARI that was 31 people (62%). Respondents who did not experience ARI were 19 (38%).

The statistic test result of the correlation between sex and ARI occurrence was male (24%), while those who were not affected by ARI as many as 8 people (25%). Toddlers of female sex were mostly not affected by ARI, amount 11 people (61.1%), while those with ARI as many as 7 people (38.9%).

This study has proved significantly the correlation between sex with ARI occurrence in a toddler that was with p-value = 0.026 and OR = 4.714 (95% CI: OR = 1.364-16.295). This shows that toddlers with male sex have a 4.714 times greater risk of ARI compared with under-fives with female gender (table 5).

Table 6 shows that infants with non-exclusive breastfeeding status were mostly exposed to respiratory infection (ARI) of 27 people (84.4%), while those without ARI were 5 people (15.6%). Toddlers with exclusive breastfeeding status were mostly not affected by ARI, which was 14 people (77.8%), while those with ARI were 4 (22.2%).

Based on statistical test results obtained p-value = 0.000 that was a significant correlation between exclusive breastfeeding status with the incidence of ARI. The OR value = 18.900 (95% CI: OR = 4.369-81.765). This means that under-five children with non-exclusive breastfeeding status were 18.900 times more likely to get ARI compared to under-five children with exclusive breastfeeding status.

Table 5. The statistic test result of correlation between sex and ARI incidence

No	Sex	ARI Incidence				Total (%)	*p-value*	OR (CI 95%)
		ARI		Non-ARI				
		n	%	n	%			
1	Male	24	75	8	25	32 (100)	0,026	4,714 (1,364-16,295)
2	Female	7	38,9	11	61,1	18 (100)		
Total		31	62	19	38	50 (100)		

Table 6. The statistic test result of correlation between exclusive breastfeeding status and ARI incidence

No	Exclusive breastfeeding status	ARI Incidence				Total (%)	*p-value*	OR (CI 95%)
		ARI		Non-ARI				
		n	%	n	%			
1	No	27	84,4	5	15,6	32 (100)	0,000	18,900 (4,369-81,765)
2	Yes	4	22,2	14	77,8	18 (100)		
Total		31	62	19	38	50 (100)		

DISCUSSION

1. The Correlation of Sex with ARI Incidence

Based on the results of research found that most of the infants affected by ARI were male. In addition, based on statistical test results obtained a significant correlation between sex with the incidence of ARI in infants at Cempaka Public

Health Center Banjarmasin (p-value = 0.026). This shows that male toddlers were more at risk than women (OR = 4.714).

According to Daulay (1992 in M.Nur, 2004) children with male gender are more likely to get ARDs than girls, this is assumed because male toddler activity is usually more than the female toddler, so the possibility of exposure to pollutants in-room or outdoor will be bigger.

According to Glezen and Denny quoted from Kartasasmita, CB (1993), boys are more susceptible to more severe ARIs, than girls. Based on the Guidelines of the National Medium-Term Work Plan for the Prevention of Pneumonia Under-Fives Children in 2005-2009 shows that boys have a higher risk than girls for ARI (Depkes, 2009).

The role of sex, male and female, is related to the nutritional needs, of course, differences between men and women. Gender is an internal nutritional factor that affects nutritional needs and will affect the immune system. Therefore, sex can affect the incidence of ARD in under-five children (Mairusnita, 2006).

2. The Correlation of Exclusive Breastfeeding Status with ARI

Based on the results of the research note that most respondents have the status of breastfeeding was not exclusive. There was a significant relationship between breastfeeding status and the incidence of ARI (p = 0,000). In addition, based on statistical test results note that the status of breastfeeding was not exclusively at risk 18.900 times greater than ARI compared to under-five children with exclusive breastfeeding status.

The results of this study are in line with the results of Taisir's research (2005), in which the incidence rate of ARI is higher in under-fives with non-exclusive breastfeeding status (35.1%). In addition, based on the results of research Khoirul Naim (2001) states that in infants who are breastfed exclusively have a risk of ARI of 4.89 times compared with the toddler who received exclusive breastfeeding. Quoted from the research of Kartasasmita, CB (1993), some researchers reported that breastfeeding can protect toddlers against ARI, as well as diarrhea.

Breast milk can meet the nutritional needs of toddlers to grow normally until the age of 6 months. ASI is able to provide protection against infections and allergies and stimulates the development of the baby's own immune system. In the presence of anti-infective substances in breast milk, toddlers with exclusive breastfeeding will be protected from various infections (Rusli, 2010).

Breast Milk is a perfect baby food, clean and healthy and practical because it is easy to be given at any time. Exclusive breastfeeding is breastfeeding only to infants up to 6 months of age without providing food/other fluids (Sadono, 2005).

CONCLUSION

Sex and exclusive breastfeeding status were significantly associated with the incidence of ARIs in under-five children at Cempaka Public Health Center Banjarmasin.

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