

Parental role in ARI prevention with ARI recurrence in toddlers in Deli Serdang

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ARTICLE INFO

Article history:

Received Aug 1, 2024
Revised Aug 15, 2024
Accepted Aug 30, 2024

Keywords:

ARI Recurrence
Parental Role

ABSTRACT

ARI is a substantial cause of morbidity and mortality in children especially under 5 years of age worldwide. Each year more than 12 million ARIs are registered in hospitals. Recurrence is considered if respiratory tract infection with ≥ 3 episodes or respiratory tract disease or more than 15 days of symptoms in the last 3 months. Objective to determine the relationship of parental role in ARI prevention with ARI recurrence in toddlers in Deli Serdang Regency. The research design used was descriptive correlation research using a cross sectional study approach. The samples taken in this study were parents who had children under five (aged 12-59 months) who had suffered from ARI in Deli Serdang Regency who met the inclusion criteria, with a total of 208 respondents. The results of the study found that the role of parents in the prevention of ARI in Deli Serdang Regency is mostly good as much as 81.7%, the recurrence of ARI in toddlers is more experiencing no recurrence, namely 66.8%. The conclusion of this study is that there is a relationship between the role of parents and the recurrence of ARI in toddlers in Deli Serdang Regency with a p value of 0.00.

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INTRODUCTION

Acute Respiratory Tract Infection (ARI) is an acute infection that attacks one or more parts of the respiratory tract from the nose to the alveoli including the adnexa (sinuses, middle ear cavity, pleura)(Asnel et al., 2021). Lower respiratory tract infections that often occur in children are pneumonia and bronchiolitis (Evidence et al., 2006). ARI in children most often occurs due to direct contact with other children who are carriers of the virus(Yasmin & Haque, 2019). Children are also very susceptible to respiratory infections because their immune systems are not yet mature, genetic factors and environmental factors (such as exposure to pollution and pathogens) also make certain populations more susceptible to infection(Schaad et al., 2016).

ARI is a contagious disease, which means it can spread from one person to another and is especially dangerous for children, the elderly, and people with compromised immune systems. In addition, respiratory infections tend to recur and can cause multiple infections per year. During the first 5 years of life, a child can experience 4-8 episodes of respiratory infections, which primarily affect the lower respiratory tract(Paramesh et al., 2017).

ARI is also a cause of substantial morbidity and mortality in children, especially under 5 years of age in the world. Every year more than 12 million ARIs are registered in hospitals (Nair, 2013). The World Health Organization (WHO) estimates that respiratory infections account for 6% of the total global disease burden, which is a higher percentage compared to the burden of diarrhea, cancer, human immunodeficiency virus (HIV) infection, ischemic heart disease or malaria (Tazinya et al., 2018). In addition to the world, ARI, especially pneumonia, is a disease burden in Southeast Asia (0.36 episodes per child each year), followed by Africa (0.33 episodes per child each year), the Eastern Mediterranean (0.28 episodes per child each year), and the lowest in the Western Pacific (0.22 episodes per child each year) (Adeel Eliyas et al., 2018). Globally, it is estimated that 11-22% of deaths among children aged <5 years are caused by ARI (Tomczyk et al., 2019). In North Sumatra, the prevalence of ARI, especially pneumonia, in 2017 was 3069 sufferers (Kemenkes, 2019). In 2018, the number of sufferers increased to 3147 (Fitriani et al., 2021). Data from the Deli Serdang Health Service (Tinggi, 2019) shows that the incidence of ARI in toddlers aged 1-5 years in 2016 was recorded at 3108 cases, while in 2017, 2018 and 2019 (calculated from January to June) 3089 cases were found.

Based on data obtained from the Deli Serdang Health Office, the highest number of ARI cases among Health Centers and Hospitals in Deli Serdang. Based on data from the Bandar Khalipah Health Center, ARI is the main disease of the 5 most common diseases in children in 2022 with a prevalence of 1326 ARI cases in 2022. Initial symptoms of acute respiratory infection usually appear in the nose and upper lungs and if the disease persists, there may be high fever and chills. Mardiah (Mardiah, 2017) said that the most felt impacts are shortness of breath, runny nose, fever, fatigue and weakness so that toddlers are less active, Respiratory infections may recur in infants and children, especially for various reasons (El-Azami-El-Idrissi et al., 2016). Parents have an important role in the growth period of children, as well as in the process of preventing and treating ARI. However, very few mothers are aware of ARI, its signs and symptoms, home care and the need for referral to health facilities for treatment (Gyawali et al., 2016). Parents are the primary caregivers who have roles such as: role as provider, child care, child socialization, educational role, and affective role, the role of parents referred to here is the role of parents in caring for children with ARI. The role played by parents can be anything related to the child's health, such as giving medicine, paying attention to the child's personal hygiene (Luhukay et al., 2018). (Shibata et al., 2014) stated that children have an increased risk of coughing if their mother is not the primary caregiver. Based on initial data when interviewed from 10 parents who have toddlers whose children suffer from ARI, it was found that 45% of parents have a less than good role in preventing ARI recurrence such as; smoking habits in the house, unhealthy nutrition, not providing immunizations and not providing exclusive breastfeeding. In addition, 60% of parents also stated that in the last three months their children had coughs, flu, and fevers 3-4 times. Previous research conducted by Sukarto in 2016 stated that there was a significant relationship between the role of parents and ARI recurrence. In the study, it was found that the proportion of good parental roles and not suffering from ARI (85.7%), was greater than those suffering from ARI (30.8%). Previous research also reported that mothers who behaved less well in prevention were 3.2% more than respondents who behaved well in prevention. This less than good prevention behavior is due to the lack of respondent behavior in getting used to washing their children's hands after doing activities, not being used to putting masks on their children when outside the house and rarely opening the windows of the house (Putri et al., 2020).

Based on the survey above, the author is interested in conducting research on "the relationship between the role of parents in preventing ARI with the recurrence of ARI in toddlers in Bandar Khalipah Village, Percut Sei Tuan District, Deli Serdang Regency". The purpose of this study is to determine the relationship between the role of parents in preventing ARI with the recurrence of ARI in toddlers in Deli Serdang Regency.

RESEARCH METHOD

The research design used in this study is a descriptive correlation study using a cross-sectional study approach, namely studying the dynamics of the correlation between independent variables or risk factors (independent) with related variables or effects (dependent) through an observation approach or data collection at the same time by conducting momentary measurements point time approach (Abolwafa & Mohamed, 2017). This type of research is to determine the relationship or see the relationship/correlation between the independent variables, namely the role of parents on the recurrence of ARI in Deli Serdang. The population in this study were all parents who had toddlers (aged 12-59 months) who had suffered from ARI in Deli Serdang Regency in 2023, namely as many as 100 people. The sample to be taken in this study was some parents who had toddlers (aged 12-59 months) who had suffered from ARI in Deli Serdang Regency. who met the inclusion criteria and were selected as samples. The number of samples from this study was 208 people.

RESULTS AND DISCUSSIONS

Result

Univariate Analysis

Table 1. Frequency distribution of demographic characteristics of parents in Bandar Khalipah Village, Percut Sei Tuan District, Deli Serdang Regency in 2023

No	Respondent Characteristics	f	%
1.	Age		
	a. < 20	1	5,3
	b. 20-30	116	55,8
	c. > 30	91	43,8
2.	Gender		
	a. Male	11	5,3
	b. Female	197	94,7
3.	Education		
	a. No School	6	2,9
	b. Elementary School	9	4,3
	c. Middle School	31	14,9
	d. High School	137	65,9
	e. College	25	12,0
4.	Job		
	a. Working	56	26,9
	b. Not Working	175	73,1
	Amount	234	100

Table 1 shows that from 208 respondents, it is known that 55.8% of respondents are in the age range of 20-30 years, 94.7% of respondents are female, 65.1% have a high school education, and 73.1% of respondents are unemployed.

Table 2. Frequency distribution of categories of the role of parents in preventing ISPA in Bandar Khalipah Village, Percut Sei Tuan District, Deli Serdang Regency in 2023

No	Parent Role Category	F	%
1.	Parental Knowledge		
	Less	31	14,9
	Enough	84	40,4
	Good	93	44,7
2.	Dietary Arrangements		
	Less	4	1,9
	Fair	61	29,3
	Good	143	68,8
3.	Creating a comfortable environment		
	Less	11	5,3

No	Parent Role Category	F	%
	Fair	45	21,6
	Good	152	73,1
Avoiding Triggering Factors			
	Less	1	5
	Fair	28	13,5
	Good	179	86,1
	Amount	208	100

Based on table 2 shows that for the category of knowledge, 44.7% of parents have good knowledge, for the category of dietary arrangements, 78.8% of parents have a good role, for the category of creating a comfortable environment, 73.1% of the war of the master is good and for the category of avoiding triggering factors 86.1% of the role of parents is good.

Table 3. Frequency distribution based on the role of parents in preventing ARI in Bandar Khalipah Village, Percut Sei Tuan Subdistrict, Deli Serdang Regency in 2023

No	Category of Parental Role	f	%
1.	Less	0	0
2.	Fair	38	18,3
3.	Good	170	81,7
	Amount	208	100

Table 3 shows that out of 208 respondents, 81.7% of respondents have a good role in ARI prevention.

Table 4. Distribution of ARI recurrence in toddlers in Bandar Khalipah Village, Percut Sei Tuan District, Deli Serdang Regency in 2023

No	ARI Recurrence	F	%
1.	Relapse	69	33,2
2.	No Relapse	139	66,8
	Amount	208	100

Table 4 shows that out of 208 respondents, 66.8% of toddlers did not experience ARI recurrence and 33.2% experienced ARI recurrence.

Table 5. Relationship between parental role in ARI prevention and ARI recurrence in toddlers in Bandar Khalipah Village, Percut Sei Tuan District, Deli Serdang Regency in 2023

No	Parental Role	Recurrence				Total	P value
		Relapse		No Relapse			
		f	%	f	%	F	%
1.	Less	0	0	0	0	0	0,0
2.	Fair	32	15,4	6	2,9	38	18,3
3.	Good	37	17,8	133	63,9	170	81,7
	Amount	69	33,2	139	66,8	208	100

Based on table 5, it is known that out of 170 respondents who have a good role in ARI prevention, the majority showed no relapse as much as 63.9%. The statistical test results show that there is a relationship between the role of parents with ARI recurrence in toddlers with a p value of 0.00.

Parents' role in ARI prevention

Of the 208 respondents, the majority (86.1%) of respondents had a good role in ARI prevention. The results of this study are supported by previous research that 65% of respondents have a good role in ARI prevention (Sukarto et al., 2016).

This study may be explained by the fact that the respondents in this study had upper secondary education (65.9%) and higher education (12.0%). In addition, 22.1% of respondents' knowledge was good where respondents knew ARI disease in children. Parents' knowledge about ARI disease is the main capital for the formation of good habits for the quality of children's health. Based on knowledge, awareness and positive attitudes will last long and be permanent, mothers who have good knowledge about ARI are expected to have a positive impact on children's health because the risk of ARI incidence in children can be eliminated to a minimum (Soekidjo, 2007).

Based on the results of this study, it is known that 68.8% of respondents have a good role in regulating children's diet. Diet is one of the important factors in shaping a person's nutritional status (Astuti, 2017). Children with normal nutritional status have a significantly lower incidence of ARI when compared to malnourished children (Kumar & Kumar, 2017). Tazinya (6) and (Cox et al., 2017) in their study also reported that malnutrition was a significant risk factor for ARI with an odds ratio of 3.01 (95% CI: 1.66-5.43). The results of this study also showed that the majority of 73.1% of respondents had a good role in creating a comfortable environment. As for what parents do such as every morning opening the window so that light can enter and air can exchange. Respondents who have window ventilation and window holes, experience fewer ARI events because the turnover of air in the house is very good while respondents who do not have window ventilation and ventilation holes experience more ARI because the turnover of air in the house is not good, that is, clean air cannot change optimally (Mahendrayasa, 2018). The environment is one of the risk factors for ARI (Sofia, 2017).

Based on the results of this study, it is known that the majority of 68.8% of respondents have a good role in avoiding precipitating factors such as parents cleaning the floor of the house every day to avoid dust. Exposure to indoor pollution increases the risk of ARI in children (Wahyuningsih et al., 2017). In addition, parents avoid prolonged exposure to smoke and dust outside the home. (Thaw et al., 2019) pointed out that parents should provide a good environment for children and also avoid pollution inside, outside the home and avoid smoking close to children.

ARI Recurrence

The table above shows that out of 208 respondents, 66.8% of toddlers did not experience ARI recurrence and 33.2% experienced ARI recurrence. The results of this study are in line with previous research which reported that 59.1% of toddlers aged 36-59 months experienced ARI recurrence (Habeahan, 2009). Recurrence is considered if respiratory tract infection with ≥ 3 episodes or respiratory tract disease or more than 15 days of symptoms in the last 3 months. It is estimated that 10%-15% of children experience recurrent respiratory infections. Compared to healthy adults, infants and young children are at higher risk of recurrent respiratory infections due to the immaturity of their immune system.

The relationship between the role of parents and the recurrence of ARI in toddlers

Based on the results of the study that there is a relationship between the role of parents with ARI recurrence in toddlers with a p value = 0.00. The results of this study are in line with previous research which states that there is a relationship between the role of parents with ARI recurrence in toddlers (Ijana et al., 2017). The results showed that for the knowledge category, 44.7% of parents had good knowledge. The better the parents' knowledge about ARI, the less they experience ARI (Rahayu, 2011).

For the category of the role of parents in dietary arrangements, 68.8% of parents have a good role. Parents, especially mothers, play a role in regulating food for toddlers in fulfilling the nutritional needs of toddlers and managing healthy food for toddlers (Alsaleem & AS, 2013). (Hadisaputra et al., 2015) confirms that poor nutritional status has a 40-fold risk of causing recurrent ARI in toddlers rather than good nutritional status where the OR value is 5.19 (95% CI: 5.19-320.7) which means that at least poor nutrition can risk 5 times and the greatest possibility can risk 321 times causing recurrent ARI in toddlers.

For the category of creating a comfortable environment, 73.1% of parents' role is good. Syahidi (2016) suggests that there is a significant relationship between occupancy density and the incidence of ARI in children aged 12-59 months. For the category of avoiding precipitating factors 86.1% of the role of parents is good. Ijana (Hulu & Pardede, 2016) stated that the most dominant risk factors for ARI are air pollution and unhealthy living conditions for toddlers. Environmental factors based on air pollution and unhealthy living conditions are 11.35 times more at risk of acute respiratory infections (ARI). Parents play an important role in their child's development, as well as in the prevention and management of ARI. However, very few mothers are aware of ARI, its signs and symptoms, home care and the need for referral to a health facility for treatment (Kusuma & Nurarif, 2015). Parents are the main caregivers who have roles such as: the role of provider, child care, child socialisation, educational roles, and affective roles, the role of parents referred to here is the role of parents in the care of children with ARI disease. The role played by parents can be anything related to children's health, such as giving medicine, paying attention to children's personal hygiene (Agus & Zuhriyah, n.d.). Shibata et al (17) suggested that children have an increased risk of coughing, if their mothers are not the primary carers.

CONCLUSION

From the results of research that has been done, it can be concluded that the role of parents in preventing ARI is a good category (81.7%), ARI recurrence in toddlers is more who do not experience recurrence (66.8%), there is a relationship between the role of parents in preventing ARI with ARI recurrence in toddlers with p value = 0.00.

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