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Research Articles

Knowledge level of mothers of toddlers diagnosed with acute respiratory infection at Dinoyo Community Health Center, Malang City

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ABSTRACT

Acute Respiratory Infection (ARI) is an attack by viruses and bacteria in the upper and lower respiratory tract. The cause of the increase in the number of ARI sufferers can also be influenced by the level of parents' own knowledge of information about ARI. This study aims to analyze the level of knowledge of mothers of toddlers diagnosed with ARI. This research uses quantitative research methods which are observational research using cross-sectional studies by giving questionnaires to respondents. The sample in this study were 65 mothers of toddlers who were diagnosed with ARI at the Dinoyo Community Health Center, Malang City. The results showed that the knowledge level was found to be 89.2% good, 10.85% adequate, and 0% poor. Based on the results of the chi-square test analysis, it shows that in this study, mother's age, domicile, employment, health insurance, family income, and age of toddlers have a significance value of more than 0.05 so that it can be said that they do not have a relationship with the level of knowledge of mothers of toddlers diagnosed with ARI. There is no relationship between sociodemographic factors and the level of knowledge of mothers of toddlers.

1. Introduction

ARI (Acute Respiratory Infection) is a disease caused by microorganisms in the respiratory tract structures. Precisely the reduction and loss of function occurs during gas exchange. The organs involved are the nose, larynx and pharynx. Symptoms found in sufferers include colds, laryngitis, and influenza (Gunawan et al., 2020). Acute Respiratory Infection is an attack by viruses and bacteria on the upper and lower respiratory tract. The upper respiratory tract is the nose and the lower part is the alveoli and the main attack is via droplets, namely the nose or mouth (Hari et al., 2019). This disease also generally attacks many groups, from young to old including toodlers. It is even stated that it is the biggest cause of 4 types of death in the world with a high figure of 4 million in the world declared dead due to a history of exposure and infection due to acute respiratory infections

(Mamengko et al. al., 2015). There are also many causes of ARI, such as environmental influences, bad habits, unhygienic consumption, and so on (Niki, 2019).

According to WHO, 13 million children under 5 years old in the world die every year and most of these deaths occur in developing countries. Among them, 98% attack the lower respiratory tract (WHO, 2020). ARI often attacks children under 5 years old throughout the world. In a scientific journal written by Syamsi, it was stated that ARI was responsible for the biggest reason for death faced by children under 5 years old. Based on the article in the journal, it is quoted that children and babies are most likely to be exposed to ARI (Syarifuddin, 2019).

Riskesdas data in 2018 shows that the provinces with the highest ARI in Indonesia include East Nusa Tenggara (18.6%), Banten (17.7%), East Java (17.2%), Bengkulu (16.4 %), Central Kalimantan (15.1%), and West Java are in sixth place (14.7%). Data from the ARI Sub-Directorate Routine Report for 2017 showed that the incidence of ARI (per 1000 children under five) in Indonesia was 20.54%. Based on data from the 2018 Riskedas for East Java, ARI is the main cause of death and disability in infants and toddlers. There is the highest population in East Java, namely 11,720 people in cases of ARI for children (Ministry of Health RI, 2018).

The cause of the increase in the number of ARI sufferers can also be influenced by the level of knowledge of parents regarding information about ARI itself (Wea et al., 2017). Knowledge becomes the foundation or cornerstone of parents in raising their family. Maintaining stability such as family health by paying attention to children's growth and development, providing good care for children, so that they grow up healthy and well and avoid susceptibility to disease, both mild and severe (Abdillah et al., 2020). If the information obtained by parents is considered minimal, this will result in a lack of action in efforts to prevent and control disease in children (Abdillah et al., 2020). Parents need awareness in searching for and collecting information to meet children's needs, especially education about prevention and treatment regarding ARI information. This is an alternative prevention to protect the family (Tri Novia, 2021). A mother who has a good level of knowledge about information about maintaining children's health has an important role in efforts to prevent and minimize the occurrence of disorders in children's health (Khasanah et al., 2017). The cause of the increase in the number of ARI sufferers can also be influenced by the level of parents' own knowledge of information about ARI. This study aims to analyze the level of knowledge of mothers of toddlers diagnosed with ARI

2. Materials and Methods

This research is an observational study using a cross-sectional study method, meaning that data observation is only carried out once (Kurniasih et al., 2020). The population in this study were mothers of toddlers who were diagnosed with ARI at the Community Health Center Dinoyo Malang City with non-probability sampling and the Slovin formula, which is a formula used to calculate the minimum number of samples if the population is known to determine the number of samples (Nalendra et al., 2021). The sample is a representative of the population (Rahma et al., 2020). The sample in this study were 65 mothers of toddlers who were diagnosed with ARI at the Dinoyo Community Health Center, Malang City. The questionnaire was given to respondents who met the inclusion and exclusion criteria. The results of the study were analyzed using the SPSS 26.0 application, with descriptive analysis (univariate), Chi-Square statistical test (bivariate) and said to have a relationship if the significance value <0.05 (Surahman et al. , 2016).

3. Results and Discussion

Based on **table 1.,** the majority of mothers' age frequency distribution is 30-40 years old with a percentage of 64.6%. This research is in line with research conducted in Tanjung Morawa Village, Tanjung Morawa Inpatient Health Center by (Katy, 2019), the majority of respondents in the 31-35 year old category. In this study, mothers aged >40 years were not included in the study because it could involve the risk of mild premature birth and the presence of low-cost intrauterine death (IUFD). Apart from that, pregnant women who are over 40 years old are at great risk of giving birth by caesarean section (SC) (Uswatun, 2020). Based on these results, it shows that age is a factor that influences an individual in storing information as part of knowledge. At a certain age, information can be easily accepted or vice versa, it becomes difficult (Amalia, 2020).

In the educational frequency distribution results, the majority are students with a percentage value of 49.2%. This research is in line with research conducted in Tanjung Morawa Village at the Tanjung Morawa Inpatient Health Center by (Katy, 2019). Based on these results, it shows that the majority of respondents' education is tertiary (49.2%) (Katy, 2019). Based on these results, it shows that someone with higher education is expected to get as much information as possible as a provision for survival (Amalia, 2020).

In the results of the work frequency distribution, the majority are housewives with a percentage value of 75.4%. This research is in line with research conducted in Tanjung Morawa Village at the Tanjung Morawa Inpatient Health Center by (Katy, 2019). Based on these results, it shows that the majority of respondents' occupations are housewives (90.32%). Based on these results, it shows that the majority of respondents' education is university (49.2%) and they work as housewives (90.32%). Apart from that, mothers who pay attention to their child's health condition will know more about the early signs of disease so they can take the right action (Sari et al., 2020).

In the results of the frequency distribution, the majority of health insurance is Class 3 BPJS with a percentage value of 58.5%. Similar research in Panembahan Senopati Hospital Bantul (Putri, 2018) showed that the quality of nursing services for class III BPJS patients at Panembahan Senopati Hospital Bantul was quite good (54.4%). The higher a person's income level, the more willing they will be to spend additional money to improve the quality of BPJS Health Class III health services provided that the quality of health services becomes even better (Aryani et al., 2020).

In the results of the frequency distribution of income, the majority of families have moderate income of 1,000,000-2,500,000 with a percentage value of 55.4%. Similar research conducted in South Jakarta City (Liani et al., 2021) was confirmed by results per income category where someone with a moderate income had a probability of being healthier than someone with a low income of 1.61%. Based on these results, it shows that in helping children's development, family income cannot be ignored. Family income is income to meet the family's economic needs (Putri et al., 2022) .

In the frequency distribution results, the majority of toddlers aged 3-5 years with a percentage value of 60.6%. Similar research was also carried out in Bogor City at the East Bogor Community Health Center (Sugiharta, 2018). Non-pneumonic ARI sufferers are dominated by toddlers aged >1 year – 3 years with a presentation value of (40.81). Based on these results, it shows that ARI in children under five years is generally the first occurrence of infection and the body's natural immune system has not been optimally formed and the age group under five years still has passive immunity which comes from their mothers and children with an imperfect immune system cause The body's resistance to infectious diseases is reduced, so that children are susceptible to disease (Rikomah et al., 2018).

Table 1. Distribution of Sociodemographic Characteristics

Category	Frequency (N)	Presentation (%)
Mother's age		
20-30 Years	23	35.6
30-40 Years	42	64.6
Residence		
Dinoyo	12	18.5
Sumbersari	6	9.2
Merjosari	17	26.2
Tlogoma	8	12.3
Ketawanggede	4	4.6
Mojolangu	0	0
Tasikmadu	2	3.1
Tunjungsekar	0	0
Tunggulwulung	0	0
Tulusrejo	1	1.5
Jatimulyo	3	4.6
Lowokwaru	13	20.0
Education		
Elementary school	2	3.1
Junior High School	4	6.2
Senior High School	27	41.5
College	32	49.2
Job		
Housewife	49	75.4
Civil servants	1	1.5
Laborer	1	1.5
Private sector employee	8	12.3
Work alone	6	9.2
Health Insurance		
BPJS Class 1	2	3.1
BPJS Class 2	10	15.4
BPJS Class 3	38	58.5
PBI	4	6.2
Public	11	16.9
Family income		
<1,000,000	9	13.8
1,000,000-2,500,000	36	55.4
>2,500,000	20	30.8
Toddler Age		
0-2 Years	26	40.0
3-5 Years	39	60.0

Table 2. Distribution of Knowledge of Respondents' Answers

NO.	Question	Answer			
		Yes		NO	
		N	%	N	%
1.	Is ARI (Acute Respiratory Infection) an infection that worsens respiratory health?	65	100.0	0	0
2.	Is ARI (Acute Respiratory Infection) caused by viruses or bacteria?	65	100.0	0	0
3.	Is ARI (Acute Respiratory Infection) an infectious disease?	42	64.6	23	35.4
4.	Can the incidence of ARI (Acute Respiratory Infection) in toddlers be caused by hereditary factors? *	13	20.0	52	80.0
5.	Is fever one of the symptoms of ARI (Acute Respiratory Infection) that occurs in toddlers?	57	87.7	8	12.3
6.	Are flu, colds and coughs characteristic symptoms of ARI (Acute Respiratory Infection) in toddlers?	61	93.8	4	6.2
7.	Is consuming nutritious food or breast milk one way to prevent ARI (Acute Respiratory Infection)?	64	98.5	1	1.5
8.	Is maintaining personal hygiene one of the ways to prevent acute respiratory infections (ARI)?	65	100.0	0	0
9.	Can giving medication (non-antibiotic) reduce the symptoms of acute respiratory infection (ARI) in toddlers?	40	62.5	25	38.5
10.	Is pneumonia a type of ARI (Acute Respiratory Infection)?	49	75.4	16	24.6

Remarks: (*) Unfavorable Question

Table 3. Category of Respondents Based on Their Level of Knowledge

Category	Frequency	Presentation (%)
Good	58	89.2
Adequate	7	10.8
Poor	0	0
Total	65	100.0

If the level of knowledge is said to be good, it is 76-100%, a score of 56-74% is in the adequate category, and in the poor category if the score is <55%. In this study, the level of knowledge of mothers of toddlers at the Dinoyo Community Health Center showed a good level of knowledge of 89.2%. In line with research conducted in Galuga Village, according to research by Daeli et al. (2021) that as many as 22.5% of respondents who had good knowledge had good ARI prevention efforts.

Table 4. Relationship between sociodemographic factors and the level of knowledge of mothers of toddlers

Variable	Category	Good (%)	Adequate (%)	Poor (%)	Sig. (*p*-value <0.05)
mother's age	20-30 Years	21(36.2)	2(28.6)	0(0)	0.690
	30-40 Years	37(63.8)	5(71.4)	0(0)	
Residence	Dinoyo	9(15.5)	3(15.5)	0(0)	0.709
	Sumbersari	5(8.6)	1(14.3)	0(0)	
	Merjosari	15(25.9)	2 (28.6)	0(0)	
	Tlogoma	7(12.1)	1(14.3)	0(0)	
	Ketawanggede	3(5.2)	0(0)	0(0)	
	Mojolangu	0(0)	0(0)	0(0)	
	Tasikmadu	2(3.4)	0(0)	0(0)	
	Tunjungsekar	0(0)	0(0)	0(0)	
	Tunggulwulung	0(0)	0(0)	0(0)	
	Tulusrejo	1(1.7)	0(0)	0(0)	
	Jatimulyo	3(5.2)	0(0)	0(0)	
	Lowokwaru	13(22.4)	0(0)	0(0)	
Education	elementary school	2(3.4)	0(0)	0(0)	0.701
	Junior High School	2(3.4)	0(0)	0(0)	
	Senior High School	25(25)	2(28.6)	0(0)	
	College	29(50.0)	3(49.2)	0(0)	
Work	Housewife	44(75.9)	5(71.4)	0(0)	0.974
	Civil servants	1(1.7)	0(0)	0(0)	
	Laborer	1(1.7)	0(0)	0(0)	
	Private employee	7(12.1)	1(14.3)	0(0)	
	Work alone	5(8.6)	1(14.3)	0(0)	
Health Insurance	BPJS Class 1	2(3.4)	0(0)	0(0)	0.51
	BPJS Class 2	9(15.5)	1(14.3)	0(0)	
	BPJS Class 3	36(62.1)	2(28.6)	0(0)	
	PBI	4(6.9)		0(0)	
	Public	7(12.1)	4(57.1)	0(0)	
Family income	<1,000,000	8(13.8)	1(14.3)	0(0)	0.742
	1,000,000-2,500,000	33(56.9)	3(42.9)	0(0)	
	>2,500,000	17(29.3)	3(42.9)	0(0)	
Toddler Age	0-2 Years	23(39.7)	3(42.9)	0(0)	0.581
	3-5 Years	35(60.3)	4(57.1)	0(0)	

Chi-square test analysis by measuring the significance value if <0.05 it is said to have a correlation (Negara et al., 2018) indicating that this research has independent variables, namely mother's age, domicile, employment, health insurance, family income, and age of toddlers which have a significance value of more than 0 .05 so that it can be said to have no significant relationship with the level of knowledge of mothers of toddlers diagnosed with ARI. This research is in line with research conducted at STIKes Madani Yogyakarta by researchers (Ari et al., 2021) that there is no relationship between maternal age, toddler age, number of children, maternal education, maternal occupation, and decision makers regarding ARI children. care about the mother's knowledge of caring for ARI children at home (Ari et al., 2021).

The digital era with the fast and varied flow of information makes the boundaries between levels of education increasingly thin. There is a lot of knowledge that people can absorb without having to receive formal education. Parents' critical thinking regarding the treatment of sick children is increasing. With maximum quality consultation, regardless of formal education level, parental decision making in child treatment can be taken appropriately (Ari et al., 2021).

4. Conclusion

Based on the results of the research and discussions that have been carried out, the conclusions in this research are as follows:

1. The level of knowledge of mothers of toddlers was found to be 89.2% good, 10.85% adequate, and 0% poor.
2. There is no relationship between sociodemographic factors and the level of knowledge of mothers of toddlers.

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