

ANALYSIS OF RISK FACTORS IN THE INCIDENT OF RESPIRATORY TRACT INFECTIONS IN BABIES AND BREAST MILK EXCLUSIVELY AT RSIA PURI GARCIA SERANG

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Abstract

Background: Based on WHO (2022), it is revealed that the mortality rate for ARI in children under five is the cause with the highest prevalence. The high incidence of effects on the respiratory tract in Indonesia, especially in Serang, means that it is necessary to carry out an analysis regarding the factors that cause respiratory tract infections, especially in toddlers. **Research Objectives:** To determine the relationship between factors that influence the incidence of respiratory tract infections in babies with exclusive breastfeeding at RSIA Puri Garcia Serang **Research Methods:** descriptive research method with a quantitative approach, the design used is the Cross-Sectional method. The population in this study was all 36 babies aged 0-6 months at RSIA Puri Garcia Serang. The sampling technique in this research used a total sampling technique. Data collection techniques in this research are interviews and questionnaires. The data collection technique was carried out using anthropometric measurements with the aim of knowing the nutritional status of each respondent. **Research Results:** Shows that there is a significant relationship between a history of exclusive breastfeeding and the incidence of infant respiratory tract infections at RSIA Puri Garcia Serang with ap value of 0.001.

Keywords: Exclusive Breastfeeding, Respiratory Tract Infections, Infants

Introduction

Infectious disease is one of the diseases that is still a public health problem and can be a cause of death, mortality, morbidity and disability with a fairly high preference, so preventive behavior is needed by seeking various types of control and eradication effectively and efficiently. Eradicating infectious diseases has an important role as an effort to reduce disease transmission and result in mobility or mortality(Nursofwa et al., 2020).

Efforts to prevent the spread of disease, one of which is infectious disease, can be done by using it intelligently and with quality to maintain the health of each individual. Exclusive breastfeeding is a form of providing food and drink to babies aged 1 to 6 months which can also be used as an effort to prevent infectious diseases.(Anggraeni & Benge, 2022). This is because breast milk has its own benefits for the body, especially those related to immunity, so babies tend to have better immunity compared to babies who are not exclusively breastfed. Exclusive breastfeeding is a method applied to babies by not giving them any food or drink other than breast milk except for medicines and vitamins(Marwiyah & Khaerawati, 2020).

Respiratory tract infections are a cause of death with a fairly high prevalence, especially in developing countries. The cause of respiratory tract infections is caused by the presence of infectious agents with various symptoms(Wulandhani & Purnamasari, 2019). Respiratory tract infections are infections in parts of the respiratory tract, causing disruption of activity and can attack one or more parts

of the respiratory tract(Yunus et al., 2020). Based on data from the Minister of Health, it is known that in 2022 there will be an increase in the incidence of respiratory tract infections from 3,000 cases in 2021, increasing to 50,000 to 70,000 cases in Indonesia. Apart from that, in 2021 it is known that there were 1,452 cases of respiratory tract infections in children under five and this increased in 2020 to reach 2,312 cases.(Ministry of Health, 2022).

Toddlers are individuals who easily experience infectious diseases because their body's defense system or immunity is still not perfect. Therefore, efforts need to be made to help reduce mortality and mobility rates in children under five so that they can influence mortality indicators and infant mortality rates as well as influence the human development index.(Yulnefia & Sutia, 2022).

Respiratory tract infections, both upper and lower respiratory tract infections, can cause mild to severe disease and even death. Respiratory tract infections can also be interpreted as the occurrence of infectious transmission between humans and other humans so that they can spread quickly, even in just a matter of hours or days. There are several symptoms experienced by sufferers such as fever, sore throat, cough, shortness of breath, runny nose, etc(Anggraeni & Benga, 2022).

Based on WHO (2022), it is revealed that the mortality rate for ARI in children under five is the cause with the highest prevalence because it can attack around 41 in 1000 children. Respiratory tract infections can be caused by bacteria or viruses and in general in developing countries it is easier to be attacked by bacteria. The high mortality and morbidity caused by respiratory tract infections, especially in toddlers, every hour or second means that there is a need for responsive diagnosis by health workers to treat or anticipate the occurrence of respiratory tract infections. Based on data from the Ministry of Health, it is known that there has been an increase in the number of respiratory tract infections in Serang, reaching 2,226 cases, whereas in 2021 there will only be around 1,452 cases of respiratory tract infections in Serang.(DinKes, 2023).

The high incidence of effects on the respiratory tract in Indonesia, especially in Serang, makes it necessary to carry out an analysis regarding the factors that cause respiratory tract infections, especially in toddlers. StudyZolanda et al., (2021)revealed that there are both internal and external factors that can influence the incidence of respiratory tract infections such as nutritional status, exclusive breastfeeding, age, etc. Therefore, it is necessary to carry out further analysis regarding other factors related to respiratory tract infections as an effort to prevent and reduce the incidence of infectious diseases in Indonesia, especially respiratory tract infections. Based on this description, the author took the research title "Analysis of Risk Factors for Respiratory Tract Infections in Infants at RSIA Puri Garcia Serang".

Research Methods

The research used in this study uses a descriptive quantitative approach method which involves collecting a number of data to test hypotheses and answer the research problem formulation. This research uses a total sampling technique, namely determining the sample based on the total population in the study.

Research Result

1. Distribution of Respondent Characteristics

a. Distribution of Age Characteristics of Babies at RSIA Puri Garcia Serang in 2023

The following are the results of univariate analysis regarding the age distribution of children using the SPSS program:

Table 5.1 Age Distribution of Babies at RSIA Puri Garcia Serang in 2023

Baby Age		
Category	n	%
2 months	1	2.8
3 months	5	13.9
4 months	13	36.1
5 months	9	25.0
6 months	8	22.2
Total	36	100.0

Based on the distribution table regarding children's ages, it is known that the majority of toddlers in this study were 4 months old with 13 respondents (36.1%). Apart from that, there is one respondent (2.8%) who is 2 months old, 5 respondents 13.9 who is 3 months old, 9 respondents (25%) who is 5 months old and there are 8 respondents (22.2%) who are 5 months old. 6 months.

b. Distribution of Baby Gender Characteristics at RSIA Puri Garcia Serang in 2023

The following are the results of univariate analysis regarding the gender distribution of children using the SPSS program:

Table 5.2 Gender Distribution of Babies at RSIA Puri Garcia Serang in 2023

Gender		
Category	n	%
Man	15	41.7
Woman	21	58.3
Total	36	100.0

Based on the distribution table regarding the gender of the child, it is known that the majority of respondents are female, namely 21 respondents (58.3%) and 15 respondents (41.7%) are male.

c. Distribution of Age Characteristics of Mothers and Babies at RSIA Puri Garcia Serang in 2023

The following are the results of univariate analysis regarding maternal age distribution using the SPSS program:

Table 5.3 Age Distribution of Mothers and Babies at RSIA Puri Garcia Serang in 2023

Mother's Age		
Category	n	%
>20-25 years	16	44.4
26-35 years old	12	33.3
36-60 years old	8	22.2
Total	36	100.0

Based on the distribution of unicariat analysis regarding maternal age in the table, it is known that the majority of mothers are aged 20 to 25 years, namely 16 respondents (44.4%). Apart from that, there were 12 mothers aged 26 to 35 years (33.3%) and 8 mothers (22.2%) whose ages were between 36 and 60 years.

d. Distribution of Educational Characteristics of Mothers and Babies at RSIA Puri Garcia Serang in 2023

The following are the results of univariate analysis regarding the distribution of maternal education using the SPSS program:

Table 5.4 Distribution of Mother-Infant Education at RSIA Puri Garcia Serang in 2023

Mother's Education		
Category	n	%
Middle school equivalent	2	5.6
high school equivalent	15	41.7
College	19	52.8
Total	36	100.0

Based on the distribution of respondents regarding maternal education, it is known that the majority of mothers have a tertiary education, namely 19 respondents (52.8%), there are 15 respondents (41.7%) who have a high school or equivalent education and there are two mothers who have a junior high school education. equal.

e. Distribution of Infant Family Income Characteristics at RSIA Puri Garcia Serang in 2023

The following are the results of univariate analysis regarding family income distribution using the SPSS program:

Table 5.5 Distribution of Family Income for Babies at RSIA Puri Garcia Serang in 2023

Income		
Information	n	%
<Rp.2000,000	1	2.8
Rp.2000,000 – Rp.3,500,000	11	30.6
Rp.3,500,000 - Rp.5,000,000	19	52.8
>Rp.5,000,000	5	13.9
Total	36	100.0

Based on the univariate analysis distribution related to family income in the table, it is known that the majority have a family income of Rp. 3,500,000 - Rp. 5,000,000, namely 19 respondents (52.8%), there are 11 respondents (30.6%) who have Family income is Rp. 2000,000 – Rp. 3,500,000 and there is one respondent who has a family income of less than 2 million.

f. Distribution of Job Characteristics of Mothers at RSIA Puri Garcia Serang in 2023

The following are the results of univariate analysis regarding the distribution of maternal employment using the SPSS program:

Table 5.6 Job Distribution of Mothers and Babies at RSIA Puri Garcia Serang in 2023

Mother's Job		
Category	n	%
Doesn't work	17	47.2
Work	19	52.8
Total	36	100.0

Based on the results of univariate analysis regarding the distribution of mothers' jobs which are categorized into two, namely working and not working, it is known that the majority of mothers have jobs, namely 19 respondents (52.8%) and there are 17 mothers (47.2%) who do not work.

g. Distribution of IMD (Early Initiation of Breastfeeding) History of Babies at RSIA Puri Garcia Serang in 2023

The following are the results of univariate analysis regarding the distribution of history of early initiation of breastfeeding using the SPSS program:

Table 5.7 Distribution of Infant IMD History at RSIA Puri Garcia Serang in 2023

IMD		
Category	n	%
Not IMD	11	30.6
IMD	25	69.4
Total	36	100.0

Based on univariate analysis regarding the distribution of early breastfeeding initiation history given by mothers to children, it is known that the majority of children received early breastfeeding initiation, namely 25 respondents (69.4%) and there were 11 respondents (30.6%) who did not receive early breastfeeding initiation.

h. Distribution of Exclusive Breast Milk for Babies at RSIA Puri Garcia Serang in 2023

The following are the results of univariate analysis regarding the distribution of exclusive breastfeeding using the SPSS program:

Table 5.8 Distribution of Exclusive Breast Milk for Babies at RSIA Puri Garcia Serang in 2023

Exclusive Breastfeeding		
Category	n	%
Not Exclusive	12	33.3
Exclusive	24	66.7
Total	36	100.0

Based on the results of univariate analysis related to exclusive breastfeeding by mothers who are categorized as receiving exclusive breastfeeding and not exclusive breastfeeding, it is known that the majority of children receive exclusive breastfeeding, amounting to 24 respondents (66.7%) and there are 12 respondents (33.3%) who do not receive exclusive breastfeeding.

i. Distribution of Infant Nutritional Status at RSIA Puri Garcia Serang in 2023

The following are the results of univariate analysis regarding the distribution of nutritional status using the SPSS program:

Table 5.9 Distribution of Infant Nutritional Status at RSIA Puri Garcia Serang in 2023

Nutritional status		
	n	%
Malnutrition	8	22.2
Normal Nutrition	19	52.8
More Nutrition	8	22.2
Obesity	1	2.8
Total	36	100.0

Based on the table related to the distribution of children's nutritional status, it is known that the majority of respondents have nutritional status in the good/normal category, namely 19 respondents (52.8%), there are 8 respondents (22.2%) who have poor nutritional status, there are 8 respondents (22.2%) had over nutritional status, and there was 1 respondent (2.8%) who had nutritional status in the obese category.

j. Distribution of ISPA (Acute Respiratory Infection) in Babies at RSIA Puri Garcia Serang in 2023

The following are the results of univariate analysis regarding the distribution of children's ISPA using the SPSS program:

Table 5.10 Distribution of Infant ISPA Incidents at RSIA Puri Garcia Serang in 2023

ISPA		
Category	n	%
No ISPA	23	63.9
ISPA	13	36.1
Total	36	100.0

Based on univariate analysis regarding the incidence of respiratory tract infections in children, it is known that the majority of children do not experience respiratory tract fixation, namely 23 respondents (63.9%) and there are 13 respondents (36.1%), who experience respiratory tract infections.

k. Hypothesis Testing

Based on the results of the analysis, it is known that testing the hypothesis in this research uses the Chi Square test which is presented in the form of a table:

Table 5.11 Analysis of the Relationship between Age, Gender, Maternal Age, Maternal Education, Family Income, Maternal Occupation, IMD, Exclusive Breastfeeding, and Nutritional Status on the Risk of Infant ISPA at RSIA Puri Garcia Serang in 2023

Bivariate Analysis			
Category	Value	<i>p value</i>	Information
Age	6734	0.151	Not significant
Gender	6361	0.012	Significant
Mother's Age	6729	0.113	Not significant
Mother's Education	14702	0.001	Significant
Family Income	3174	0.366	Not significant
Mother's Job	12386	0.001	Significant
IMD	9205	0.002	Significant
Exclusive breastfeeding	20750	0.001	Significant
Nutritional status	21742	0.001	Significant

Based on the results of bivariate analysis using SPSS software, namely using the square test, it is known that there is no significant relationship between the child's age and the incidence of ISPA with a *p* value of 0.151, there is a significant relationship between the gender of the child and the incidence of ISPA with a *p* value of 0.012, there is no there is a significant relationship between maternal age and the incidence of ISPA with a *p* value of 0.1 13, there is a significant relationship between maternal education and the incidence of ISPA with a *p* value of 0.001, there is no significant relationship between family income and the incidence of ISPA with a *p* value of 0.366 , there is a significant relationship between maternal occupation and the incidence of ARI with a *p* value of 0.001, there is a significant relationship between the history of early initiation of breastfeeding and the incidence of ARI with a *p* value of 0.002, there is a significant relationship between exclusive breastfeeding and the incidence of ARI with a *phi* value of 0.002. 0.001, and there is a significant relationship between nutritional status and the incidence of ARI with a *phi* value of 0.001

Discussion

1. Research Hypothesis Testing

a. The Relationship between Child Age and the Incidence of ISPA at RSIA Puri Garcia Serang

Based on the results of bivariate analysis using SPSS software with the chi square test, it is known that there is no significant relationship between child age and the incidence of ISPA at RSIA Puri Garcia Serang with a *p* value of 0.151. This is in line with research Lazamidarmi et al., (2021) which also revealed that there was no significant relationship between the age of the baby and the incidence of infection.

Age is a calculation that is determined from the time a child is born. In this study, it was discovered that the samples used were aged between 0 and 6 months, namely the age where the majority of babies were able to respond to sounds and the surrounding environment and use their own hands for support. In this case, it is known that the child's age in the range of 0 to 6 months is not related to the incidence of ARI experienced. This is because there are other factors that have a greater influence on the incidence of ARI, acute respiratory infections in children (Himawati & Fitria, 2020).

Age 0 to 6 months is the initial age of children with the majority of their metabolic systems still in the formation stage so overall they tend to be more susceptible to infectious diseases and nutritional deficiencies.(Himawati & Fitria, 2020).

b. The Relationship between Child Gender and the Incidence of ISPA at RSIA Puri Garcia Serang

Based on the results of bivariate analysis using SPSS software with the square test, it is known that there is a significant relationship between the child's gender and the incidence of ISPA with a p value of 0.012. This is in line with researchHerlinawati et al., (2019)which revealed that there was a significant relationship between the gender of toddlers and the incidence of ARI (acute respiratory tract infections).

Gender is a differentiation in terms of biology and behavior that can contribute to the tendency to be active and respond to a disease-causing agent. Research has revealed that boys tend to be at risk of experiencing respiratory tract infections. This is related to the child's ease and planning with infectious environmental contact. In environmental perception, boys are often considered stronger and tend to have more activities so that society will also consider that this is the basis for increasing boys' habituation to an environment that is not always good.(Dalimoenthe, 2021).

Basically, a person, especially a baby who is male or female, has the same right to receive care from both parents and the surrounding environment in achieving health and avoiding agents that carry viruses, bacteria and disease. One of the efforts that can be made to prevent incidents respiratory tract infections in toddlers, namely through immunization, maintaining cleanliness, paying attention to the surrounding environment regardless of gender(Keman, 2022).

c. The Relationship between Mother's Work and the Incidence of ISPA at RSIA Puri Garcia Serang

Based on bivariate analysis using the ci square test, it is known that there is a significant relationship between maternal employment and the incidence of ISPA with a p value of 0.001. This is in line with research(Badrya, 2022)shows that there is a significant relationship between maternal employment and the incidence of ARI.

Work is an activity that involves an employee in the company to obtain wages or salaries so that it can be used as a routine and daily activity. Based on the results of the analysis, it is known that a child will be more susceptible to experiencing acute respiratory infections with a mother who has a job or works outside the home. This is related to the daily activities and busyness of mothers who have less time to take care of children compared to mothers who do not work or stay at home to optimize taking care of the household alone.(Fajar, 2022).

d. IMD's Relationship to ISPA Incidents at RSIA Puri Garcia Serang

Based on the results of the analysis carried out using SPSS software with the chi square test, it is known that there is a significant relationship between the history of providing early breastfeeding initiation and the incidence of ARI at RSIA Puri Garcia Serang with a p value of 0.002. This is in line with research(Felicia & Suarca, 2020)which revealed that there was a significant relationship between early initiation of breastfeeding and the incidence of ARI.

This is related to the content of colostrum in the mother's breast milk which is given to the baby for the first time when the baby is just born. Colostrum contains ingredients that can improve the immune system and the body's immune system so that it is not susceptible to various diseases, one of which is respiratory tract infections. Based on the results of the analysis, it is known that the majority of babies who receive early initiation of breastfeeding are less likely to experience respiratory tract infections compared to babies who do not receive early initiation of breastfeeding.(Himawati & Fitria, 2020).

e. The relationship between exclusive breastfeeding and the incidence of infant ARI at RSIA Puri Garcia Serang

Based on the results of the analysis carried out using SPSS software with the chi square test, it is known that there is a significant relationship between the history of exclusive breastfeeding (breast milk) and the incidence of ISPA (infant respiratory tract infections at RSIA Puri Garcia Serang with a p value of $0.001 < 0.05$). This is in line with research Wahyuni et al., (2020) and Lely (2019) which shows that there is a relationship between a history of exclusive breastfeeding and the incidence of ARI in children.

Giving exclusive breast milk to babies can improve their immune system. This is related to the nutritional content in it which is important enough to meet the baby's nutritional needs. Exclusive breastfeeding is the provision of breast milk by mothers to babies up to 6 months old without any intake other than medicine and vitamins. According to Polwandari & Wulandari, (2021) revealed that the application of exclusive breastfeeding can make a child's immune system better when compared to children who do not use exclusive breastfeeding. Therefore, the better a person's immune system, the more susceptible they are to various diseases, one of which is respiratory tract infections. (Lely, 2019).

f. The relationship between nutritional status and the incidence of infant ARI at RSIA Puri Garcia Serang

Based on the results of the analysis carried out using SPSS software with the chi square test, it is known that there is a significant relationship between nutritional status and the incidence of ARI (respiratory tract infections) in babies at RSIA Puri Garcia Serang with a p value of $0.001 < 0.05$. This is in line with research Giroth et al., (2022) and research (Ayu, (2021) which revealed that there was a significant relationship between nutritional status and the incidence of infant ARI at RSIA Puri Garcia Serang.

Nutritional status is an expression of the balance condition of certain variables which can also be related to balance. Nutritional status can also be interpreted as an interaction between energy intake and other nutrients on a person's health condition and has an impact on the condition of the body (Lia Fentia, 2020). The body's expression obtained from food intake will have an impact on the body's immunity and susceptibility to infectious diseases caused by viruses, bacteria, etc., one of which is respiratory tract infections. (Virgo et al., 2022).

Conclusion

Based on this explanation, the following conclusions can be obtained:

1. There is a relationship between gender and the incidence of infant respiratory tract infections at RSIA Puri Garcia Serang with a p value of 0.012.
2. There is no relationship between age and the incidence of infant respiratory tract infections at RSIA Puri Garcia Serang with a p value of 0.151.
3. There is a relationship between mother's employment and the incidence of ARI at RSIA Puri Garcia Serang with a p value of 0.001.
4. There is a relationship between IMD (Early Breastfeeding Initiation) and the incidence of infant respiratory tract infections at RSIA Puri Garcia Serang with a p value of 0.002.
5. There is a significant relationship between a history of exclusive breastfeeding and the incidence of infant respiratory tract infections at RSIA Puri Garcia Serang with a p value of 0.001.
6. There is a significant relationship between a history of exclusive breastfeeding and the incidence of infant respiratory tract infections at RSIA Puri Garcia Serang with a p value of 0.001.

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