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ORIGINAL RESEARCH

Relationship Between Mother's Knowledge About Acute Respiratory Infections Management And The Incidence Of Acute Respiratory Infections In Children In Wolo Village

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Abstract

Background Acute respiratory infections (ARI) are one of the causes of morbidity and mortality in children in poor and developing countries. Various factors trigger the high incidence of ARI, both the environment, congenital, and the knowledge of the public who still do not understand how to prevent ARI, especially mothers as child caregivers.

Method This study describes the problem of ARI with a cross-sectional approach. The sample in this study was 50 mothers who had children aged 5-12 years. Determination of the sample using a purposive sampling technique. Research data were analyzed using the chi-square test.

Results The study reveals an average maternal age of 31.8 years and a child age of 5.94 years. Most mothers completed high school or have a bachelor's degree. Maternal knowledge significantly impacts the incidence of Acute Respiratory Infections (ARIs) in children. Targeted educational interventions are needed to improve child health outcomes and reduce ARI burden.

Conclusion The study reveals a significant link between maternal knowledge of Acute Respiratory Infections (ARI) management and the incidence of ARI in children in Wolo Village, with lower knowledge levels resulting in higher incidences.

Background

Children are one of the vulnerable communities in society. This refers to the body's immune system not being formed optimally (Sakleshpur & Steed, 2022; Singh et al., 2022). There are several diseases that can easily infect children, one of which is ARI (ARI). The high number of cases of ARI spread is due to the easy way of transmission through air, combustion fumes, vehicle emissions and cigarette smoke (Shi et al., 2022). ARI is one of the diseases that causes high morbidity and mortality in poor and developing countries. The World Health Organization states that there are ± 13 million children under five who die due to ARI in the world (Ayeni et al., 2021). The majority of deaths are from developing countries in Asia and Africa such as: India (48%), Indonesia (38%), Ethiopia (4.4%), Pakistan (4.3%), China (3.5%), Sudan (1.5%), and Nepal (0.3%) (de Carvalho et al., 2023).

The results of (Riskesdas, 2018) state that the prevalence of ARI is determined from the diagnosis of health workers. In 2013 there were 25%, the following year this decreased to 9.3% in 2018. Of them, there were 9.0% male and 9.7% female. The highest prevalence of ARI

occurs in the one to four year age group, namely 13.7%. The prevalence of ARI in Southeast Sulawesi was 25% in 2013 and 9% in 2018 (Riskesdas, 2018). Even though the trend is decreasing at the national level and Southeast Sulawesi, ARI still ranks first among the top ten diseases, namely 137,123 cases in Southeast Sulawesi. The results of a preliminary study at the Wolo Community Health Center obtained data on ARI cases for children aged > 5 years as many as 325 cases in 2021. Specifically in Wolo Village there were 98 cases.

The high number of ARI diseases in children is not only caused by the health conditions children are born with but is also influenced by other factors such as the mother's knowledge about ARI (Vidal et al., 2022). Mothers with good knowledge can have a positive influence on children's health, including ARI. Mother's knowledge is a determinant in creating child health. Good maternal knowledge also has a good impact on the surrounding environment. Knowledge as an accumulation of information can be influenced by various factors including education, health workers as providers and the desire to seek health information (Fathmawati et al., 2021).

Good knowledge about ARI can prevent the occurrence of ARI in children. One prevention that mothers can do is to keep the environment clean. The dominant factors in causing ARI are air pollution and living conditions. This factor can cause an increase in risk of 11.35 times greater risk (Aftab et al., 2022). Other actions that can prevent the occurrence of ARI are maintaining children's nutritional intake, personal hygiene, and complete immunization (Puspitasari & Rahardja, 2021). The results of interviews with 6 mothers in the Wolo sub-district area showed that 4 out of 6 mothers did not know how to treat children with ARI, were unable to make decisions regarding treating ARI in children, such as letting children experience ARI, not taking children to health facilities, taking children to facilities. health. Meanwhile, 2 of them provided treatment by immediately taking the child to a health facility. Based on the problem description above, the author is interested in conducting research on the topic of the relationship between maternal knowledge about ARI management and the incidence of ARI in children in Wolo Village (Ghimire et al., 2022).

Method

This research uses a quantitative research design with a correlational study approach, examining the relationship between variables cross-sectionally. The sample in this study was 50 mothers who had children aged 5-12 years. Determination of the sample using purposive sampling technique. The research data were analyzed using the chi-square test.

Results

Table. 1 Characteristics of respondents

Characteristics	Frequency (%)	Mean ± SD
Mother's Age		31.8 ±5.34
Child Age		5.94 ± 3.24
Education		
Finished elementary school	2 (4.0)	4.0
Finished middle school	5 (10.0)	10.0
Finished high school	27 (54.0)	54.0

Bachelor	16 (32.0)	32.0
Work		
IRT/Not working	12 (24.0)	24.0
Civil servants	10 (20.0)	20.0
Private employees	4 (8.0)	8.0
Self-employed	18 (36.0)	36.0
Farmer	6 (12.0)	12.0

Table 1 describes the characteristics of the respondents in the study. The average age of the mothers who participated in the study was 31.8 years, with a standard deviation of 5.34 years, while the average age of the children was 5.94 years, with a standard deviation of 3.24 years. The majority of mothers had completed high school education (54%), followed by those who had completed higher education (32%). In terms of occupation, most of the mothers were self-employed (36%), while those who were not working accounted for 24%. With this variation in characteristics, the knowledge and actions of mothers regarding the management of Acute Respiratory Infections (ARI) in children can be influenced by factors such as age, education, and occupation.

Table 2.Distribution of respondents based on variables

Variable	Frequency	Percentage
Knowledge		
Good	30	60.0
Not enough	20	40.0
Acute respiratory infections		
No Acute respiratory infections	19	38.0
Acute respiratory infections	31	62.0

Table 2 presents the distribution of respondents based on variables. In terms of knowledge about Acute Respiratory Infections (ARI), 60% of respondents were classified as having good knowledge, while 40% were deemed to have insufficient knowledge. Regarding the occurrence of ARI, 62% of respondents reported experiencing ARI, while 38% did not have any episodes of ARI.

Table 3. Relationship between knowledge and the incidence of ARI

Knowledge	**Acute Respiratory Infections**				**Total**		***p-value***
	No Acute Respiratory Infections		**Acute Respiratory Infections**				
	N	**%**	**n**	**%**	**n**	**%**	0.002

Good	17	34	13	26	30	60
Not enough	2	4	18	36	20	40
Total	19	38	31	62	50	100

Table 3 depicts the relationship between knowledge and the incidence of Acute Respiratory Infections (ARI). Among respondents with good knowledge, 34% did not experience ARI, while 26% reported having ARI. For respondents with insufficient knowledge, only 4% did not experience ARI, whereas 36% reported having ARI. The chi-square test yielded a p-value of 0.002, indicating a statistically significant relationship between knowledge level and the occurrence of ARI.

Discussion

Acute respiratory infections (ARIs) pose a significant public health concern, particularly among children. According to the World Health Organization (WHO), ARIs account for a substantial proportion of childhood morbidity and mortality globally (WHO, 2022). In the present study, 62% of respondents reported their children experiencing ARI, highlighting the prevalence of this issue within the study population. Previous research has consistently demonstrated the burden of ARIs on child health and the importance of preventive measures, such as maternal knowledge and practices (Rana et al., 2020).

The findings of this study reveal a statistically significant relationship between maternal knowledge and the incidence of ARI in children (p=0.002). Mothers with good knowledge about ARIs were less likely to have children experiencing ARI compared to mothers with insufficient knowledge(Andas et al., 2023; Purnamasari et al., n.d.). This aligns with previous studies that have underscored the pivotal role of maternal knowledge in influencing child health outcomes (Kajungu et al., 2023). Adequate knowledge about ARIs enables mothers to recognize symptoms, seek timely medical attention, and implement appropriate preventive measures, thereby reducing the risk of ARI in their children(Amzal Mortin Andas et al., 2020; Prima et al., 2020).

Notably, the study population exhibited a relatively high level of education, with 54% of mothers having completed high school and 32% holding a bachelor's degree. Education has been consistently associated with better health-related knowledge and practices (Kiconco et al., 2021). However, the findings suggest that despite the relatively high educational attainment of the respondents, a considerable proportion (40%) still lacked sufficient knowledge about ARIs. This underscores the need for targeted educational interventions and awareness campaigns to bridge the knowledge gap and equip mothers with the necessary information to effectively combat ARIs.

The occupational status of the respondents also warrants consideration. A substantial proportion (36%) were self-employed, while 24% were not working. Previous studies have highlighted the potential impact of maternal employment on child health outcomes, with mixed findings (Künn-Nelen, 2016). On one hand, employment may provide financial resources to access healthcare services; on the other hand, it may limit the time available for childcare. The relationship between maternal occupation and ARI incidence in this study population may be an area for further exploration. Furthermore, factors such as maternal and child age can influence knowledge and practices related to ARI management. In this study, the mean age of mothers was 31.8 years with a standard deviation of 5.34 years, while the mean age of children was 5.94 years with a standard deviation of 3.24 years. Previous research has shown that younger maternal age and younger child age can be risk factors for inadequate knowledge and practices in managing ARIs. Therefore, educational interventions and support may need to be tailored to different age groups to ensure their specific needs are met (Tazinya et al., 2018).

These findings also underscore the importance of collaboration among healthcare professionals, government, and communities in efforts to combat ARIs in children. A multisectoral approach involving various stakeholders can help improve access to the necessary information and healthcare services for mothers and children (Graham et al., 2018). Community awareness campaigns, training for healthcare workers, and policies supporting ARI prevention practices can significantly contribute to reducing the burden of this disease. While this research provides valuable insights, there are limitations that need to be considered. The relatively small sample size and the population limited to one geographic area may restrict the generalizability of the findings to broader populations. Further research with larger sample sizes and broader geographic coverage could provide deeper understanding of the relationship between maternal knowledge and ARI incidence in children.

Overall, this research reaffirms the importance of maternal knowledge in combating ARIs in children. These findings support efforts to enhance mothers' awareness and education about ARIs, taking into account factors such as educational level, employment status, and maternal and child age. By improving maternal knowledge and facilitating access to appropriate information and healthcare services, we can contribute to improving child health outcomes and significantly reducing the burden of ARIs.

Limitations Of Research

The study's sample size was relatively small, comprising only 50 mothers from Wolo Village. Additionally, the research was conducted using a cross-sectional approach, which provides a snapshot of data at a single point in time and does not allow for establishing causal relationships. Future research could benefit from a larger sample size and longitudinal study design to explore the long-term effects of maternal knowledge on ARI incidence in children. Furthermore, investigating additional factors beyond maternal knowledge, such as socioeconomic status and access to healthcare, could provide a more comprehensive understanding of the determinants of ARI incidence in the community.

Conclusion

The study highlights a significant relationship between maternal knowledge of Acute Respiratory Infections (ARI) management and the incidence of ARI in children in Wolo Village. Despite the majority of mothers possessing good knowledge about ARI management, the incidence of ARI remains high, likely influenced by uncontrollable factors such as environmental pollutants and changing climates. However, mothers with lower knowledge levels tend to have higher incidences of ARI in their children. This underscores the importance of improving maternal knowledge as a preventive measure against ARI.

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