

Literature Review: An Overview of Mothers' Behavior Regarding The Prevention of ARI (Acute Respiratory Infections) in Toddlers

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Article Info	Abstract
Article History Submitted, 2026-05-13 Accepted, 2026-06-24 Published, 2026-06-30	Acute Respiratory Infection (ARI) is one of the major health problems in children under five years and remains a leading cause of morbidity and mortality among children in many countries, including Indonesia. This condition may lead to serious complications such as pneumonia, impaired growth and development, and even death if not properly prevented and managed. One of the key factors in preventing ARI is maternal behavior, which includes knowledge, attitudes, and practices in caring for and protecting children from infection risks. This study aims to describe maternal behavior regarding ARI prevention in under-five children based on a literature review. The method used was a literature review of five scientific articles published between 2021 and 2024. The articles were selected based on inclusion criteria, namely quantitative studies with cross-sectional, quasi-experimental, and descriptive designs that examined the relationship or effect of maternal knowledge, attitudes, and practices on ARI prevention in under-five children. Data analysis was conducted descriptively by synthesizing research findings, including significance values and main results from each study. The results showed that all studies identified relationships and effects between maternal knowledge, attitudes, and practices and ARI prevention in children under five. The conclusion of this study indicates that maternal behavior, including knowledge, attitudes, and practices, plays an important role in preventing ARI in under-five children. Therefore, ARI prevention efforts should focus on improving health education, strengthening maternal behavior, and implementing community-based interventions to reduce ARI incidence in children.
Keywords: acute respiratory infection, toddlers, maternal behavior, knowledge, attitudes, practices	

Introduction

Acute Respiratory Infection (ARI) is one of the most common infectious diseases in children under five years of age and remains a major public health problem due to its high morbidity and mortality rate. ISPA can lead to serious health complications such as pneumonia, growth and developmental disorders, and even death if not prevented and managed properly. The World Health Organization (WHO) identifies ISPA as the leading cause of illness and death in children under five worldwide, especially in low- and middle-income countries where access to health education and preventive care is still limited. In Indonesia, ISPA is also one of the most commonly reported diseases in primary health services and remains a significant contributor to child morbidity (Ministry of Health of the Republic of Indonesia, 2023).

Maternal behavior plays an important role in the prevention and management of ISPA in toddlers. Maternal knowledge, attitudes, and practices (KAP) are important determinants of early detection, home care, and appropriate health-seeking behaviors when children experience respiratory symptoms. Good maternal knowledge and positive health behaviors can significantly reduce the risk of complications of ISPA in children under five. A study conducted by Marleni et al (2022) Found that health education significantly improved maternal knowledge and prevention practices related to pneumonia in toddlers, with statistical significance for both knowledge (p=0.000) and practice (p=0.002). This highlights the importance of maternal education in improving preventive behavior.

Some studies have also shown that maternal knowledge, attitudes, and practices are strongly associated with AKI prevention behaviors. Research conducted by Ulfa et al (2024) report that the mother's knowledge, attitudes, and practices are generally good; However, gaps

still exist in certain preventive behaviors such as recognizing danger signs and proper use of medications. The study also found that higher education, employment, and income levels were significantly associated with better KAP scores ($p < 0.05$). Similarly, Defrianti et al (2024) found that although most mothers had high knowledge (81.3%), only 53.2% showed good preventive behaviors, and there was a significant association between knowledge, attitudes, and ISPA prevention behaviors ($p < 0.05$).

In addition, Sari et al. (2021) reported a significant association between parental knowledge and behavior and the incidence of ARI in children under five years of age ($p = 0.007$ for knowledge and $p = 0.038$ for behavior). This suggests that better parental knowledge and behavior is associated with a lower risk of ARI in children. Furthermore, Salma et al. (2024) also showed that health education interventions significantly increased maternal knowledge related to the prevention of ARI in toddlers, with a p value of 0.000, emphasizing the effectiveness of health promotion programs in increasing maternal awareness and behavior.

Although various studies have shown that maternal knowledge, attitudes, and practices significantly affect the prevention of children's ARI, inappropriate preventive behaviors among mothers are still common. Many mothers still lack understanding of the symptoms of early ARI, proper home care, and timely utilization of health services. This condition shows that maternal behavior gaps remain a challenge in reducing the incidence of ISPA among toddlers (Ali et al., 2024).

Based on these issues, it is important to conduct a comprehensive literature review to analyze and describe maternal knowledge, attitudes, and practices related to the prevention of ISPA in toddlers. The study aims to synthesize findings from previous research to identify consistent evidence related to maternal behavior in the prevention of ARI, which can serve as a scientific basis for improving health education strategies, strengthening maternal awareness, and supporting effective public health interventions to reduce the incidence in children under five.

Methods

This study uses a quantitative approach with a descriptive design through a literature review method to analyze maternal knowledge, attitudes, and practices related to the prevention of Acute Respiratory Infection (ARI) in toddlers. This study was conducted in the period from January to April 2026 without direct intervention, by reviewing, comparing, and synthesizing the results of previous research that discussed maternal behavior in the prevention of STI in children under five years old.

The population in this study is all scientific articles that discuss knowledge, attitudes, and practices of mothers (Knowledge, Attitude, Practice/KAP) related to the prevention of ARI in toddlers. The main focus of these behavioral variables includes the mother's knowledge of ARI, attitudes toward the child's health, as well as preventive practices such as environmental hygiene, early detection of ARI symptoms, and appropriate treatment-seeking behaviors. A total of five articles were selected as research samples using purposive sampling techniques based on the inclusion and exclusion criteria that have been set.

The inclusion criteria in this study include: (1) quantitative research with cross-sectional, quasi-experimental, and descriptive designs; (2) research that discusses maternal or parental related to the prevention of ARI in children under five years old; (3) research that contains variables of knowledge, attitudes, practices, or behaviors related to ISPA; (4) the article is available in full text; and (5) articles published in accredited national and international journals in the range of 2021 to 2024. The exclusion criteria include qualitative research, case reports, editorial articles, and research that does not present clear statistical results related to the ARI variables.

The main variables in this study were maternal knowledge, attitudes, and practices (KAP) as independent variables, as well as prevention behavior of ISPA or the incidence of ISPA in toddlers as dependent variables. Independent variables included the mother's level of knowledge about ARI, attitudes towards children's health, and preventive practices such as hygiene habits, appropriate medication use, and access to health services. Meanwhile, the dependent variable is the behavior of preventing ISPA or the incidence of ISPA in children under five. Research data was obtained from secondary sources in the form of scientific journals that have been published in academic databases and peer-reviewed journals. Each article was analyzed using a data extraction sheet that included author information, year of publication, research location, research design, sample count, research instruments, variables studied, as well as key results including statistical values such as p -value, average score, and relationship test results.

Data collection is carried out systematically through four stages, namely article identification, screening according to criteria, feasibility assessment, and determination of articles included in the final analysis. The data obtained is then processed through editing, coding, tabulation, and grouping processes using Microsoft Excel. Data analysis was carried out descriptively by comparing and synthesizing findings from each article to identify the

pattern of relationship between knowledge, attitudes, and practices of mothers towards the prevention of ISPA in toddlers. This research also applies academic ethical principles, such as including correct citations in all sources, avoiding plagiarism, maintaining transparency in reporting, and presenting data synthesis objectively without manipulating existing research results.

Results and Discussion

Table 1. Summary of Reviewed Articles on Maternal Knowledge, Attitudes, and Practices Regarding the Prevention of ISPA in Toddlers

Author & Year	Research Title	Design & Sample	Research Variables	Key Results
Astiarani et al., 2023	Mother's Knowledge and Attitude Associated with ARI Prevention in Under Two Children	Cross-sectional, 144 mothers of toddlers 0–24 months in Lewoleba, NTT	Knowledge, attitudes, and behaviors of mothers towards ARI prevention	81.3% are highly knowledgeable; 54.9% positive attitude; 53.2% of good behavior. There was a significant relationship between knowledge and attitudes and behavior (p<0.05). PR knowledge 2.31; attitude 1.52
Ha Manh et al., 2023	Knowledge, Attitudes and Practices of Mothers during Care of Children with ARI under 5 Years	Cross-sectional, 172 mothers in Vietnam	KAP (Knowledge, Attitude, Practice) ibu	Average score: knowledge 3.8; attitude 4.2; practice 3.9. Significant factors: education, employment, income (p<0.05)
Abdelatty et al., 2022	Mothers' Measures Regarding Prevention of URTI and its Occurrence for their Children	Descriptive study, 409 mothers in Egypt	Mother's knowledge and practice	The majority of mothers have less knowledge; <3/5 have enough practice. There is a weak correlation between knowledge and practice
Salma et al., 2024	The Influence of Health Education on Mothers' Knowledge About ARI Prevention in Toddlers	Quasi experiment pre-post test, 49 ibu	The influence of health education on knowledge	Knowledge increased from bad (40.8%) to good (46.9%). p=0.000 shows a significant influence
Sari et al., 2021	Relationship between Parents' Knowledge and Behaviors with ARI Incidence in Children Under Five	Descriptive quantitative, 180 responden di Indonesia	Knowledge, parental behavior, ARI occurrence	52.2% are highly knowledgeable; 72.8% of good behavior. There was a significant relationship between knowledge (p=0.007) and behavior (p=0.038) with the incidence of ARI

Selected articles were published between 2021 and 2024, namely: (1) Astiarani et al. (2023), a cross-sectional study that examined the relationship between maternal knowledge and attitudes and STI prevention behaviors in children under two years of age in Indonesia; (2) Manh et al. (2023), a cross-sectional study that analyzed maternal knowledge, attitudes, and practices in caring for children under five with ISPA in Vietnam; (3) Abdelatty et al. (2022), a descriptive study that assesses maternal knowledge and practice related to the prevention of upper respiratory tract infections in children under five in Egypt; (4) Sari et al. (2021), a quantitative descriptive study that examines the relationship between parental knowledge and behavior and the incidence of ISPA in children under five in Indonesia; and (5) Salma et al. (2024), a quasi-experimental study that evaluated the influence of health education on maternal knowledge about the prevention of STI in toddlers in Indonesia.

In general, the results of the five articles show that maternal knowledge of ISPA tends to be in the category of sufficient to good, especially in the studies of Astiarani et al. (2023) and Manh et al. (2023) which showed a high proportion of mothers with a good level of knowledge. However, such good knowledge is not always followed by optimal prevention practices. This can be seen in the study of Abdelatty et al. (2022) who found that most mothers still have inadequate practices in the prevention of ISPA, even though some of them already have

sufficient knowledge. This condition shows that there is a gap between knowledge and practice which is still the main problem in the prevention of ISPA in toddlers (Abdelatty et al., 2022).

Furthermore, some studies have shown that knowledge has a significant relationship with the prevention behavior of ISPA. Astiarani et al (2023) reported that mothers with high knowledge had a greater chance of performing good preventive behaviors compared to mothers with low knowledge. The same is also found in Sari et al (2021) which states that there is a significant relationship between parents' knowledge and their behavior on the incidence of ISPA in children under five. These findings confirm that knowledge is a fundamental factor that plays an important role in shaping maternal health behaviors in preventing children's ADHD. (Tuloli et al., 2024).

In addition to knowledge, attitudes have also been shown to contribute to the prevention behavior of ISPA. Astiarani et al (2023) It shows that mothers with positive attitudes tend to have better preventive behaviors than mothers with negative attitudes. Nevertheless, Manh et al (2023) found that even though the mother's attitude was relatively good, there were still some inappropriate practices, such as the use of inappropriate medications. This shows that positive attitudes need to be supported by correct knowledge and adequate access to health information so that they can be applied optimally in daily practice.

In addition, sociodemographic factors also affect the level of knowledge, attitudes, and practices of mothers. Manh et al (2023) found that education, employment, and family income levels have a significant relationship with maternal KAP. Mothers with higher education and better economic conditions tend to have better knowledge and practices in the prevention of ARI. This shows that socioeconomic factors play an important role in determining the ability of mothers to access and understand health information.

Furthermore, interventions in the form of health education have been proven to be effective in increasing maternal knowledge. Salma et al (2024) showed that there was a significant increase in maternal knowledge after being given health education on the prevention of ISPA in toddlers. These results indicate that health education is one of the important strategies in improving maternal understanding, which can ultimately contribute to improving ISPA prevention behaviors (Afdhal et al., 2023; Khasanah et al., 2024).

Overall, it can be concluded that maternal knowledge, attitudes, and practices have a close relationship in the prevention of ARI in toddlers. Although the knowledge and attitude of mothers are generally good enough, prevention practices are still the weakest aspect. Therefore, continuous efforts are needed through health education, improved access to information, and behavioral approaches to reduce the gap between knowledge and concrete actions in preventing children's ARI.

Conclusion and Recommendations

Overall, the results of the analysis of the five articles show that maternal knowledge, attitudes, and practices have an important role in the prevention of Acute Respiratory Infections (ARI) in toddlers. Most mothers have a sufficient to good level of knowledge, but this knowledge is not always followed by optimal prevention practices, so there is still a knowledge-practice gap. Research also shows that knowledge and attitudes are significantly related to the prevention behavior of ARI, where the better the mother's knowledge and attitude, the better the preventive behavior carried out. In addition, sociodemographic factors such as education, employment, and income also affect the level of maternal KAP. Interventions in the form of health education have been shown to be effective in increasing maternal knowledge about the prevention of STIs. Therefore, it can be concluded that increasing sustainable health promotion efforts is needed to increase knowledge while encouraging changes in maternal behavior in preventing ISPA in toddlers more optimally.

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