

# Assessing Knowledge of Acute Respiratory Infections among Mothers of Under-Five Children in Kageshwori Manahara, Nepal

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**Abstract:** This study aimed to assess the knowledge of mothers with under-five children regarding acute respiratory infection (ARI) in Kageshwori Manahara 13. The study was conducted on 50 respondents, and a semi-structured interview was used to collect data. Results showed that 82% of respondents had heard about ARI, with most of them learning about it from themselves. However, only half of the respondents knew that ARI affects both the nose and lungs and is a communicable disease that mostly occurs in children under five years of age. More than half of the respondents believed that ARI occurs in the winter season but mainly due to dust and smoke. Interestingly, 90% of the respondents thought that antibiotics could treat ARI, and 38% believed that gargling with water was a home remedy. Despite the majority having knowledge of ARI, the study highlights the need for increased awareness campaigns and TV programs to educate people, particularly those in rural areas where basic health services are lacking. Ultimately, improving knowledge of ARI could contribute to reducing mortality rates in under-five children due to this common illness.

**Keywords:** Acute Respiratory Infection, children, IMCI, Knowledge, Nepal, prevention

Conflicts of interest: None

Supporting agencies: None

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## 1. Introduction

Acute respiratory infection (ARI) is a serious infection that affects normal breathing and can begin as a viral infection in the nose, trachea, or lungs (DiMaria & Solan, 2012). ARI is a significant cause of morbidity and mortality in under-five children worldwide, with lower respiratory tract infections (LRIs) responsible for the majority of deaths (DiMaria & Solan, 2012). According to the World Health Organization (WHO), ARI was responsible for 4.3 million of 12.9 million deaths in children under five worldwide in 1990 (WHO, 2019). ARI is the leading cause of preventable death among children under five years of age in developing countries, accounting for 30% of mortality in under-fives (WHO, 2019). The Ministry of Health and Population (MoHP) in Nepal recognizes ARI as a significant public health problem among children under five years of age (Annual Report 069/70).

Reducing child mortality is one of the objectives of the Millennium Development Goals (MDGs) for under-five mortality and infant mortality (WHO, 2019). The Integrated Management of Childhood Illness (IMCI) aims to contribute to the reduction in deaths due to major illnesses that cause 70% of child mortality globally, including ARI, diarrheal diseases, malaria, measles, malnutrition, and other common childhood illnesses (WHO, 2019).

ARI occurs at a high rate in Nepal, and community involvement in the assessment and prevention of ARI in under-five children is crucial for decreasing ARI occurrence in Nepal (Annual Report 069/70). According to WHO, pneumonia alone is responsible for almost 1.6 million deaths a year in children under five, making it the leading global killer in that age group (WHO, 2019). ARIs annually kill 1.65 million adults aged 60 or older, and over half a million people from ages 15 to 59, with three to five million severe influenza infections occurring every year and killing some 250,000 to 500,000 people (WHO, 2019). Indoor air pollution from solid fuel use is responsible for 1.6 million deaths globally due to pneumonia, chronic obstructive pulmonary disease, and lung cancer (WHO, 2019). Overcrowding and poor ventilation at homes and workplaces may make the health effects of indoor air pollution more pronounced (WHO, 2019).

Measles, pertussis, and diphtheria vaccines can make an immediate contribution to the reduction of severe respiratory infection (Karzon, 1991). Emerging technologies offer the promise of vaccines against bacterial and viral respiratory pathogens that are suitable for infants and children in developing countries, such as Haemophilus influenzae and Streptococcus pneumoniae vaccines and new approaches to the use of purified protein components or attenuated live virus with respiratory syncytial virus and paramyxovirus vaccines (Karzon, 1991).

This paper focuses on the prevalence of ARI in Nepal and the need for community involvement in the assessment and prevention of ARI in under-five children, which is crucial for decreasing ARI occurrence in Nepal. Pneumonia alone is responsible for almost 1.6 million deaths a year in children under five, making it the leading global killer in that age group. ARIs annually kill 1.65 million adults aged 60 or older, and over half a million people from ages 15 to 59, with three to five million severe influenza infections occurring every year and killing some 250,000 to 500,000 people. Indoor air pollution from solid fuel use is responsible for 1.6 million deaths due to pneumonia, chronic obstructive pulmonary disease, and lung cancer globally.

The distribution of viral pathogens in developing countries can be summarized as follows: respiratory syncytial virus, 15%-20%; parainfluenza viruses, 7%-10%; and influenza A and B viruses and adenovirus, 2%-4%. ARI control programs are advocated for application on the national level vigorously covering with measles immunization and including village-based private practitioners in the strategy for effective case management. Emerging technologies offer the promise of vaccines against bacterial and viral respiratory pathogens that are suitable for infants and children in developing countries. Therefore, this paper emphasizes the importance of understanding the prevalence of ARI in Nepal and the need for community involvement in the assessment and prevention of ARI in under-five children to contribute to the global effort to reduce child mortality. Furthermore, the paper will explore the potential of emerging technologies, such as vaccines against bacterial and viral respiratory pathogens, to control ARI in developing countries.

## **2. Materials and methods**

The methodology of this research study involved the use of a descriptive type of study design to assess the knowledge regarding sign management of ARI in under-five children. The study was conducted in the Community of Kageshwori Manahara-13, Kathmandu. The population of the study was mothers having under five children, and a total of 50 mothers were selected using non-probability purposive sampling. The inclusion criteria were community people having underfive children who lived in Kageshwori Manahara-13, Kathmandu, and those who were willing to participate.

The data was collected from 50 respondents. It was analyzed according to research objective. The data was collected in Kageshwori Manahara Municipality ward number 13 with mothers of underfive children. To measure the research variables, a semi-structured interview questionnaire was designed with the help of supervisor, subject experts, and by reviewing various literatures. The research instrument consisted of three parts: Socio-Demographic information, Knowledge regarding ARI, and Knowledge regarding preventive measures and management of ARI. The instrument was pretested among 5 mothers having under five children in Pepsi khola-35, Kathmandu, and modifications were done to make the instrument simple and understandable.

Validity of the instrument was established by consulting the teachers and research guide, while the reliability of the instruments was established by pre-testing the instrument in Pepsi khola-35, Kathmandu. Data was collected by the researcher in a period of 6 weeks through interviews, and the filled questionnaire was checked for completeness and accuracy. The data was analyzed using SPSS and Microsoft Excel in the computer and through descriptive statistics, i.e. by calculating mean, frequency, and percentage.

## **3. Results and discussion**

More than two-fourths (64%) of respondents were between the ages of 25-29 years. The mean age of the respondents was 26 years. More than three-fourths (82%) of respondents belonged to nuclear families, and more than half (54%) had only one child. About 88% of the respondents had one child under the age of five. More than half (54%) of the respondents were Brahmin. The majority (98%) of respondents were Hindu, and half (50%) of the respondents were employed. More than one-fourth (28%) of respondents were literate.

The results of the study indicate that a majority of the respondents had heard of ARI (82%), with the main source of information being health facilities (34%). However, there were some misconceptions regarding the definition of ARI, with nearly half of the respondents (44%) believing that ARI means nose infection, and only 2% believing that it affects the nose to alveoli. Similarly, about half of the respondents (50%) believed that only the lungs are mostly affected in ARI, indicating a lack of understanding about the full impact of the disease.

In terms of transmission, a majority of the respondents (60%) knew that ARI is a communicable disease, and almost half (44%) believed that it is transmitted through the air-borne route. However, there were some misconceptions about the symptoms, with nearly half of the respondents (46%) believing that fever is the main symptom of ARI, while only 13.6% indicated that it is a sign and symptom of ARI. The study also revealed that the occurrence of ARI is perceived to be

more common in under-five children, with almost three fourth (72%) of respondents indicating that ARI is seen in this age group. Similarly, the majority of the respondents (88%) believed that pneumonia is seen in under-five children, which is supported by a study conducted by Hitze (1978), which found that 75.5% of total deaths from pneumonia occur from ARI.

The study found that vaccination is considered an effective preventive measure for ARI by a majority of the respondents (76%). This is consistent with the findings of a study conducted by Cattaneo (1994), which showed that vaccination can prevent ARI and contribute to the prevention of childhood deaths. The study also highlighted the importance of seeking medical attention for ARI, with more than three fourth (76%) of respondents indicating that they would take their children to health centers if they suspected ARI. Furthermore, the majority of respondents (90%) believed that ARI like pneumonia can be treated by antibiotics, emphasizing the need for appropriate treatment and management of the disease.

Finally, the study revealed some misconceptions about the causes of ARI, with a significant number of respondents (38%) believing that ARI is mostly caused by dust/smoke, while only 30% believed that it is caused by microorganisms. This highlights the need for education and awareness campaigns to improve understanding about the causes and prevention of ARI. The study provides valuable insights into the knowledge and perceptions of the respondents regarding ARI. The findings emphasize the need for education and awareness campaigns to address misconceptions and improve understanding about the causes, symptoms, and prevention of ARI, especially in the context of under-five children. The study also underscores the importance of seeking medical attention and appropriate treatment for ARI.

## **4. Conclusion**

There are some misconceptions and gaps in knowledge among the respondents regarding ARI. However, they also have some level of understanding about the disease and its management, such as the importance of seeking medical attention and the effectiveness of vaccination as a preventive measure. The study highlights the need for education and awareness campaigns to improve understanding about the causes, symptoms, and prevention of ARI, especially in the context of under-five children.

The study is limited by its small sample size and the specific group of mothers of under-five children. Further research is recommended to explore ARI management in a larger and more diverse population. Recommendations for concerned authorities include launching awareness programs, mobilizing local health workers, organizing health camps in the community, and promoting TV programs to create awareness on ARI. Further studies can be conducted to compare ARI management between the community and hospital, conduct a larger-scale study, and explore the issue qualitatively.

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