

# A Study to Assess the Effectiveness of Information Booklet in Terms of Knowledge Regarding Control and Prevention of Acute Respiratory Infections Among Mothers of Under Five Year Children in Selected Urban Areas of Jabalpur

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**Abstract**—Acute Respiratory Infection (ARI) is one of the leading causes of morbidity and mortality among under-five children worldwide. Mothers play a vital role in the prevention and early management of ARI, as they are the primary caregivers of children. Adequate knowledge regarding control and prevention of ARI can help reduce complications and improve child health outcomes.

**Aim:** The present study was conducted to assess the effectiveness of an information booklet regarding control and prevention of acute respiratory infection among mothers of under-five children in selected urban areas of Jabalpur.

**Methodology:** A quantitative research approach with a pre-experimental one-group pre-test and post-test design was adopted for the study. A total of 60 mothers of under-five children were selected by non-probability convenient sampling technique. Data were collected using a structured knowledge questionnaire. A pre-test was conducted to assess the existing knowledge of mothers regarding control and prevention of acute respiratory infection. Following the pre-test, an information booklet was administered to the participants. After seven days, a post-test was conducted using the same questionnaire to evaluate the effectiveness of the intervention.

**Result:** The findings revealed that in the pre-test, the majority of mothers had inadequate knowledge regarding control and prevention of acute respiratory infection. After the administration of the information

booklet, there was a significant improvement in the knowledge scores of the mothers. The mean post-test knowledge score was higher than the mean pre-test knowledge score, indicating the effectiveness of the information booklet. Statistical analysis showed a significant difference between pre-test and post-test scores, and the research hypothesis was accepted.

**Conclusion:** The study concluded that the information booklet was an effective educational strategy for improving the knowledge of mothers regarding control and prevention of acute respiratory infection among under-five children. Therefore, health education programmes and information booklets should be used regularly to enhance mothers' awareness and promote better child health practices.

**Index Terms**—Acute Respiratory Infection (ARI), control and prevention, information booklet, knowledge, mothers of under-five children, effectiveness, health education, and child health.

## I. INTRODUCTION

Acute Respiratory Infection (ARI) is one of the most common illnesses affecting children under five years of age and is a major cause of morbidity and mortality worldwide. ARI includes infections of both the upper and lower respiratory tract, such as the common cold, pharyngitis, bronchitis, bronchiolitis, and pneumonia.

These infections can range from mild illnesses to severe life-threatening conditions. Children under five years are particularly vulnerable because of their immature immune systems, poor nutritional status, and increased exposure to environmental risk factors. According to the World Health Organization (WHO), Acute Respiratory Infection is a leading cause of death among children under five years of age, especially in developing countries. Factors such as malnutrition, overcrowding, poor sanitation, indoor air pollution, lack of immunization, and inadequate breastfeeding practices increase the risk of respiratory infections in children. Early recognition of symptoms and appropriate preventive measures can significantly reduce complications and mortality associated with ARI.

Mothers are the primary caregivers of children and play a crucial role in recognizing symptoms, seeking timely medical care, and implementing preventive measures. Their knowledge regarding control and prevention of ARI directly influences the health and well-being of their children. Adequate knowledge enables mothers to identify danger signs, maintain proper nutrition, ensure immunization, promote hygiene practices, and seek medical intervention when necessary.

Health education is one of the most effective strategies for improving awareness and promoting healthy practices among mothers. Information booklets are simple, economical, and effective educational tools that provide systematic information regarding disease prevention and management. Therefore, enhancing mothers' knowledge through an information booklet may contribute to the reduction of ARI-related morbidity and mortality among under-five children.

#### 1.1 Need for the study

Acute Respiratory Infection remains a significant public health problem among under-five children throughout the world. Despite advancements in healthcare services, ARI continues to account for a large number of childhood illnesses, hospital admissions, and deaths. The burden is particularly high in developing countries where poverty, malnutrition, inadequate health services, and lack of awareness contribute to increased incidence and severity of respiratory infections.

Studies have shown that many mothers possess inadequate knowledge regarding the causes, risk

factors, warning signs, prevention, and home management of ARI. Inappropriate practices, delayed recognition of symptoms, and late healthcare seeking behavior often result in severe complications such as pneumonia, respiratory failure, and death. Several research studies have emphasized that improving maternal knowledge can significantly reduce the occurrence and complications of ARI among children. Educational interventions such as information booklets have been found to be effective in increasing knowledge and promoting positive health practices among mothers. Information booklets provide accurate, comprehensive, and easy-to-understand information that can be referred to repeatedly. They are cost-effective and suitable for large-scale community health education programmes.

The investigator observed that many mothers of under-five children had limited knowledge regarding the control and prevention of Acute Respiratory Infection. Since mothers are responsible for the day-to-day care of children, improving their knowledge is essential for early identification, prevention, and management of respiratory infections. Therefore, the researcher felt the need to assess the effectiveness of an information booklet regarding control and prevention of Acute Respiratory Infection among mothers of under-five children. The findings of the study may help nurses and healthcare professionals develop effective educational programmes aimed at reducing the burden of ARI and improving child health outcomes.

#### 1.2 Objectives of the study

1. To assess the pre-test knowledge regarding control and prevention of Acute Respiratory Infection among mothers of under-five children.
2. To assess the post-test knowledge regarding control and prevention of Acute Respiratory Infection among mothers of under-five children.
3. To evaluate the effectiveness of an information booklet regarding control and prevention of Acute Respiratory Infection among mothers of under-five children.
4. To determine the association between pre-test knowledge scores and selected socio-demographic variables of mothers of under-five children.

#### 1.3 Hypotheses

H<sub>1</sub>: There will be a significant difference between the mean pre-test and post-test knowledge scores

regarding control and prevention of Acute Respiratory Infection among mothers of under-five children after administration of the information booklet.

H<sub>2</sub>: There will be a significant association between pre-test knowledge scores and selected socio-demographic variables of mothers of under-five children.

#### 1.4 Assumptions

1. Mothers of under-five children may have inadequate knowledge regarding control and prevention of Acute Respiratory Infection.
2. An information booklet can improve the knowledge of mothers regarding control and prevention of Acute Respiratory Infection.
3. Increased knowledge may help mothers adopt appropriate preventive measures and seek timely treatment.
4. Mothers will actively participate and provide reliable information during data collection.

## II. OPERATIONAL DEFINITIONS

**Assess:** Assess refers to the measurement of knowledge regarding control and prevention of Acute Respiratory Infection among mothers of under-five children using a structured knowledge questionnaire.

**Effectiveness:** Effectiveness refers to the improvement in knowledge scores of mothers regarding control and prevention of Acute Respiratory Infection after administration of the information booklet, as measured by the difference between pre-test and post-test scores.

**Information Booklet:** Information booklet refers to a systematically prepared educational material containing information regarding causes, signs and symptoms, risk factors, prevention, home care, and management of Acute Respiratory Infection among under-five children.

**Acute Respiratory Infection (ARI):** Acute Respiratory Infection refers to infections affecting the respiratory tract, including upper and lower respiratory tract infections such as common cold, cough, bronchitis, bronchiolitis, and pneumonia occurring among under-five children.

**Mothers of Under-Five Children:** Mothers of under-five children refer to women having at least one child below five years of age and residing in the selected urban area of Jabalpur.

**Knowledge:** Knowledge refers to the understanding and awareness of mothers regarding control and prevention of Acute Respiratory Infection as assessed through the structured questionnaire.

#### Delimitations

1. The study was limited to mothers having under-five children.
2. The study was conducted in selected urban areas of Jabalpur.
3. The sample size was limited to 60 mothers of under-five children.
4. The study assessed only knowledge regarding control and prevention of Acute Respiratory Infection.
5. The effectiveness of the information booklet was evaluated through pre-test and post-test knowledge scores only.
6. The study period was limited to the duration specified for data collection.

## III. MATERIALS AND METHODS

**1. Research Approach:** A quantitative evaluative research approach was adopted to assess the effectiveness of an information booklet regarding control and prevention of Acute Respiratory Infection among mothers of under-five children.

**2. Research Design:** A pre-experimental one-group pre-test and post-test research design was used for the study.

**3. Research Setting:** The study was conducted in selected urban areas of Jabalpur, Madhya Pradesh.

**4. Population:** The target population comprised mothers of under-five children residing in the selected urban areas of Jabalpur.

**5. Sample:** The sample consisted of 60 mothers of under-five children who fulfilled the inclusion criteria.

6. Sampling Technique: A non-probability convenient sampling technique was used to select the study participants.

7. Criteria for Sample Selection

A. Inclusion Criteria

- Mothers having under-five children.
- Mothers who were willing to participate in the study.
- Mothers available during the period of data collection.

b. Exclusion Criteria

- Mothers who were healthcare professionals.
- Mothers who were not available during the data collection period.

8. Development of the Tool

The tool consisted of two sections:

Section A: Socio-Demographic Variables

This section included items related to:

- Age of mother
- Educational status
- Occupation
- Type of family
- Monthly family income
- Number of children
- Previous knowledge regarding ARI
- Source of information

Section B: Structured Knowledge Questionnaire

A structured questionnaire was prepared to assess knowledge regarding:

- Meaning of ARI
- Causes and risk factors
- Signs and symptoms
- Prevention of ARI
- Home management
- Complications
- When to seek medical care

9. Scoring Procedure

- Correct answer = 1 mark
- Incorrect answer = 0 mark

10. Interpretation of Knowledge Scores

Knowledge Level	Percentage
Poor Knowledge	0–50%
Average Knowledge	51–75%
Good Knowledge	76–100%

11. Validity of the Tool: The tool and information booklet were validated by experts from the fields of Community Health Nursing, Child Health Nursing, and medical experts. Necessary modifications were made according to their suggestions.

12. Pilot Study: A pilot study was conducted among 10 mothers of under-five children in a selected urban area of Jabalpur to assess the feasibility and practicability of the study. A pre-test was conducted using a structured knowledge questionnaire, followed by the administration of an information booklet regarding control and prevention of Acute Respiratory Infection (ARI). After 7 days, a post-test was conducted using the same questionnaire. The findings showed improvement in knowledge scores, indicating that the information booklet was effective. The study was found feasible, and no major modifications were required before conducting the main study.

13. Data Collection Procedure

1. Formal permission was obtained from concerned authorities.
2. Informed consent was obtained from the participants.
3. A pre-test was conducted using the structured knowledge questionnaire.
4. The information booklet regarding control and prevention of Acute Respiratory Infection was distributed to the mothers.
5. A post-test was conducted after seven days using the same questionnaire.
6. The collected data were organized and prepared for analysis.

14. Plan for Data Analysis

Descriptive Statistics

- Frequency
- Percentage
- Mean
- Standard Deviation

Inferential Statistics

- Paired t-test to assess the effectiveness of the information booklet.
- Chi-square test to determine the association between pre-test knowledge scores and selected socio-demographic variables.

#### 15. Ethical Considerations

- Permission was obtained from the concerned authorities.
- Informed consent was taken from all participants.
- Confidentiality and anonymity of the participants were maintained throughout the study.
- Participants were assured that the information collected would be used only for research purposes.

### IV. RESULT

The present study was conducted to assess the effectiveness of an information booklet on knowledge regarding the control and prevention of Acute Respiratory Infection (ARI) among mothers of under-five children. The findings are presented as follows:

#### Section A: Finding related to socio demographic Characteristics of Mothers

Out of 60 mothers selected for the study, 35% belonged to the age group of 20–25 years and another 35% belonged to the age group of 25–30 years. The majority (61%) were graduates, indicating a relatively good educational background. Most of the mothers (60%) were housewives. Regarding family income, 61.7% of families had a monthly income of more than ₹5000. Television and radio were the major sources of information for 62.9% of mothers. About 50% of the mothers had previous knowledge regarding Acute Respiratory Infection (ARI).

#### Section B: Finding related to assessment of pretest and posttest Knowledge Scores

The pre-test assessment revealed that the majority of mothers had inadequate knowledge regarding ARI. Among the participants, 36.67% had poor knowledge, 60% had average knowledge, and only 3.33% had good knowledge.

After the administration of the information booklet, the post-test findings showed a marked improvement in knowledge levels. A total of 85% of mothers achieved good knowledge scores, while 15% had average knowledge. None of the mothers remained in the poor knowledge category. These findings indicate a substantial increase in knowledge following the educational intervention.

#### Section C: Finding related to effectiveness of Information Booklet

The effectiveness of the information booklet was determined by comparing pre-test and post-test knowledge scores. The mean pre-test knowledge score was 9.61, whereas the mean post-test knowledge score increased to 19.18. The calculated t-value was 4.31, which was higher than the table value at the selected level of significance. This result demonstrates that the information booklet was highly effective in improving mothers' knowledge regarding the control and prevention of Acute Respiratory Infection among under-five children.

#### Section D: Finding related to association Between Knowledge and Demographic Variables

The study also examined the association between pre-test knowledge scores and selected demographic variables. A statistically significant association was found between knowledge scores and age of mothers, educational status, and previous knowledge regarding ARI. This suggests that these factors influenced the mothers' baseline knowledge levels.

However, no significant association was found between knowledge scores and age of the child, number of children, family income, occupation, area of work, or source of information. These variables did not appear to have a significant impact on the mothers' knowledge regarding ARI.

### V. CONCLUSION

The study was conducted to evaluate the effectiveness of an information booklet on knowledge regarding the control and prevention of Acute Respiratory Infection (ARI) among mothers of under-five children. The findings revealed that the majority of mothers had inadequate knowledge in the pre-test. Following the administration of the information booklet, a significant improvement was observed in the post-test knowledge scores. The mean post-test score was considerably higher than the mean pre-test score, indicating the effectiveness of the educational intervention.

The study concluded that the information booklet was an effective teaching strategy for improving mothers' knowledge regarding the prevention and control of Acute Respiratory Infection among under-five children. Therefore, health education through information booklets can be used by nurses and other

healthcare professionals to enhance awareness and promote child health in the community.

## VI. DISCUSSION

The present study was conducted to assess the effectiveness of an information booklet on knowledge regarding the control and prevention of Acute Respiratory Infection (ARI) among mothers of under-five children. The findings of the study revealed that mothers had inadequate knowledge regarding ARI before the educational intervention.

In the pre-test, the majority of mothers (60%) had average knowledge, 36.67% had poor knowledge, and only 3.33% had good knowledge regarding the control and prevention of ARI. These findings indicate a need for health education among mothers to improve their understanding of ARI and its preventive measures.

After the administration of the information booklet, a remarkable improvement was observed in the knowledge scores of the mothers. In the post-test, 85% of mothers attained good knowledge and 15% had average knowledge, while none of the participants remained in the poor knowledge category. This improvement demonstrates the effectiveness of the information booklet as a teaching strategy.

The mean post-test knowledge score was significantly higher than the mean pre-test score. The calculated t-value (4.31) was greater than the table value, indicating that the difference was statistically significant. Therefore, the information booklet was effective in enhancing the knowledge of mothers regarding the prevention and control of Acute Respiratory Infection among under-five children.

The study also found a significant association between pre-test knowledge scores and selected demographic variables such as age of mothers, educational status, and previous knowledge regarding ARI. This suggests that these factors influence the level of knowledge among mothers. However, no significant association was found with variables such as family income, occupation, age of child, number of children, and source of information.

Overall, the findings support the importance of health education in improving maternal knowledge and emphasize the role of nurses in providing educational interventions. The information booklet proved to be a simple, economical, and effective method for increasing awareness regarding the prevention and

control of Acute Respiratory Infection among mothers of under-five children.

## VII. IMPLICATION

### 1. Nursing Practice

- Nurses should provide health education to mothers regarding the prevention and control of Acute Respiratory Infection (ARI).
- Information booklets can be used as an effective teaching aid in hospitals, clinics, and community settings.
- Nurses should encourage early identification of ARI symptoms and timely medical consultation.

### 2. Nursing Education

- Health education on ARI should be included in nursing curricula and training programs.
- Student nurses should be trained to educate mothers about child health and ARI prevention.
- Educational materials such as booklets, pamphlets, and posters should be utilized during teaching sessions.

### 3. Nursing Administration

- Nursing administrators should organize health education programs on ARI for mothers of under-five children.
- Adequate educational resources should be made available in healthcare institutions.
- Administrators should support continuing education programs for nurses on child health promotion.

### 4. Nursing Research

- Similar studies can be conducted on a larger sample to validate the findings.
- Comparative studies can be undertaken using different teaching methods such as videos, structured teaching programs, and demonstrations.
- Further research can assess long-term retention of knowledge and its impact on child health outcomes.

## RECOMMENDATIONS

1. Similar studies may be conducted on a larger sample to improve the generalizability of the findings.

2. Comparative studies can be carried out using different teaching methods such as structured teaching programmes, video-assisted teaching, and demonstrations.
3. Follow-up studies may be conducted to assess the long-term retention of knowledge among mothers.
4. Educational programmes on Acute Respiratory Infection (ARI) should be organized regularly in community and hospital settings.
5. Information booklets should be distributed to mothers attending pediatric and immunization clinics.
6. Studies can be undertaken to evaluate the impact of improved maternal knowledge on the incidence of ARI among under-five children.
7. Similar research can be conducted in rural and urban areas for comparison of outcomes.

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