

# Effectiveness of Educational Interventions on Knowledge Towards Prevention of Acute Respiratory Tract Infection among the mothers of under five year children

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## ABSTRACT

**Background:** Acute respiratory infection (ARI) is considered one of the common causes of morbidity and mortality in children that results in high economic cost. It is a serious problem that causes 4.5 million deaths among children every year in developing countries. In Pakistan, acute respiratory tract infections are responsible for 20-30% of all deaths among children under the age of 5 years.

**Aim:** To assess the effectiveness of an educational intervention on mothers' knowledge towards the prevention of acute respiratory tract infection in children under five years of age.

**Method:** This study involves a pre-test and post-test research design to evaluate the effectiveness of education. 60 mothers of under-five children were selected by a convenient sampling method in rural community Lahore to participate in the study. Data was collected through an adopted questionnaire and analyzed by applying paired T-test to see differences in means.

**Results:** In this study pre-test knowledge score was 1.974 and after the educational intervention, the mean score was 2.081. The present study revealed that the p-value was significant. The findings of this research show the positive impact of educational interventions on knowledge towards the prevention of acute respiratory tract infections among mothers of children under five years of age.

**Conclusion:** Educational sessions were effective to improve the knowledge regarding the prevention of acute respiratory tract infection. Such awareness would be beneficial for community residents for the prevention of infectious diseases.

**Keywords:** Acute respiratory tract infection, Knowledge, Educational Intervention.

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## INTRODUCTION

Children, the hope of tomorrow, the reason to smile, and the goals of destiny, who needs to be protected. Childhood is the period of disabilities and illness as well as the period of mental and social development. Disturbance in childhood can result in diverse effects concerning growth and development both physically and mentally. Sickness plays a devastating role in taking away the innocent smile from their faces. Among the illnesses, the acute respiratory tract infection is a major contributing factor<sup>1</sup>.

Acute Respiratory Infection (ARI) is concerned with a high economic burden as it increases the need of acquiring health facilities for children. In developing countries, this is essential to combat such devastating child illness as it results in 4.5 million deaths annually<sup>2</sup>. Untreated acute respiratory tract infections often lead to pneumonia, which is more serious and causes 15% of under-five deaths worldwide<sup>3</sup>. In Pakistan, ARIs are responsible for 20-30% of all deaths among children below the age of five years. Pakistan's demographic and health survey shows annually 74 million cases of ARIs in several health facilities of Pakistan<sup>4</sup>.

Many risk factors such as low income, literacy rate, breastfeeding, malnutrition, incomplete immunization of

children, contribute to the increased rate of ARI among children<sup>5</sup>. Breastfeeding plays a major role in the control and prevention of RTI in children under 5 years<sup>6</sup>.

More than fifty percent of parents use traditional remedies like applying butter and herb to the chest via a massage at home as a cure to treat ARIs. In Pakistan, there is no concept of contamination among the mothers but they believe exposure to cold is responsible for pneumonia. One main cause of children's morbidity and mortality is the lack of a mother's knowledge. Moreover, insufficient women's education is another contributor. Mother's education is still considered as a necessity to combat ARI in children<sup>7</sup>.

A research was conducted to assess the impact of educational measures on mothers' knowledge regarding ARIs in children under 5 years of age. The study showed a good association between the knowledge and structured teaching program. Pretest data collection showed that mothers had inadequate knowledge about acute respiratory tract infection. After the structured teaching program mother's knowledge was improved<sup>8</sup>.

A study assesses the impact of caregiver's education on acute respiratory tract infection in daycare children. Health education was given regarding the prevention of acute respiratory tract infection's signs and symptoms, medications, and nasal clearance techniques. This study concluded that children's caregivers had poor knowledge before the education session and after the interventions, their knowledge regarding the prevention of ARI had

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improved especially in terms of nasal clearance techniques<sup>9</sup>.

A study carried out to evaluate knowledge of mothers about ARIs revealed that fifty percent of respondents have no knowledge about ARI. Results depict that more than forty percent of respondents use ginger- honey, as common home practice for the management of ARI. Mothers said that they seek traditional healers to treat the ARI. This study revealed poor mother's knowledge regarding the causes of ARI, symptoms of ARI, action taken for management, and types of food given to the children<sup>10</sup>.

Mothers should be knowledgeable about the health status of their children. This study aims to assess the effectiveness of an educational intervention on knowledge towards the prevention of acute respiratory tract infections among mothers of children under five years of age.

## METHODOLOGY

The research was conducted in a rural community of Lahore, Pakistan. Pretest post-test study design was used. The target population was mothers of under-five children in the rural community of Lahore. A convenient sampling technique was used to gather data to answer the research questions. Interventions including lectures, open group discussion, audio-visual aids, and question-answer sessions, etc. regarding respiratory tract infections in children were applied for a period of six months. Data were analyzed through Statistical Package for the social science (SPSS) version 22. Pre and post data related to knowledge regarding ARIs were analyzed by using paired T-test. The consent form was made signed by the participants before data collection. The participants had the right to choose whether to fill the questionnaire or not. Confidentiality was considered by informing Participants. The beneficence of the participants was maintained. The study implicated no harm to the participants. All the participants were treated equally.

## RESULTS

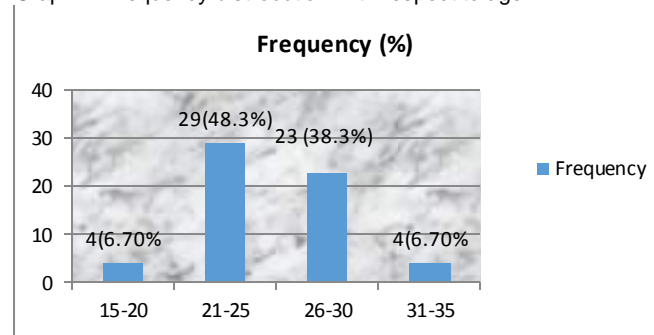
The demographic data of 60 respondents are represented in Table 1. Most of the participants 29(48.3%) were in 26-30 age group while the majority of participants 26(43.6%) had three children and few of them 6(10.0%) had only one child. Concerning occupation, most of the respondents 40(66.7%) were housewives. Mostly mother's educational status was an only primary school.

Table 1 presents the demographic profile of study participants.

Table 1: Demographics of Participants

Characteristics	Category	Respondents	
		Number	Percent
Number of children	One	6	10.0%
	Two	16	26.7%
	Three	26	43.3%
	Four	12	20.0%
Type of Family	Nuclear	28	46.7%
	Joint	32	53.3%
	Extended	1	16%
Qualification	Illiterate	17	28.3%
	Primary	31	51.7%
	high school	12	20.0%
	Intermediate	2	6.3%

Graph-1: Frequency distribution with respect to age



Graph-2: Pie Chart with Occupation of Participants

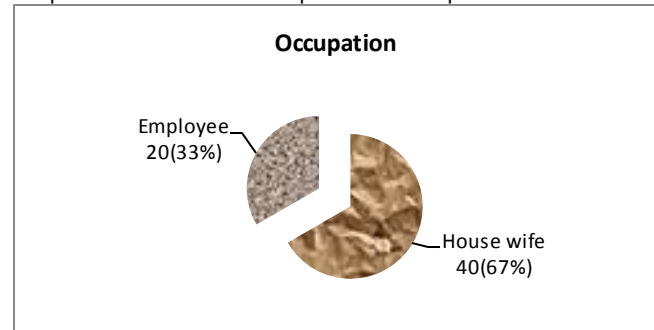


Table 1.1: Pre and post knowledge score regarding ARI

S#	Knowledge Regarding ARI	Pre-mean	Post-mean
1	Which system helps the child to take breath?	1.82	1.95
2	Where does the mucus produced in the Respiratory System?	1.85	2.0
3	What do you mean by the term Acute Respiratory Tract Infection?	1.82	1.96
4	What are the common respiratory infections seen in under five children?	1.80	1.85
5	What would be the reason for high incidence of acute respiratory tract infections in under five children?	1.87	1.90
6	Which is the common risk factor of ARI in Under-five children?	1.88	1.90
7	What do you know about pneumonia?	2.00	2.0
8	What is the common mode of spreading Acute Respiratory tract Infection in Children?	2.30	2.43
9	Why under-five children are at risk of pneumonia?	1.90	1.98
10	Among children in which age group ARI is more common?	1.95	1.99
11	Which of the following is the example for air borne/droplet transmission of infections?	2.67	2.90

12	Which type of Microorganism causes common cold?	1.00	1.13
13	In which season highest incidence of common cold occurs?	1.90	2.0
14	What are the common signs & symptoms of common cold?	1.93	1.99
15	How do you identify pneumonia in a child?	1.81	1.89
16	What are the complications of pneumonia in children?	1.55	1.76
17	What do you mean by the term Bronchitis?	1.88	1.98
18	Which is the common sign & symptom of Bronchitis?	1.88	2.0
19	What happens, when an under five child suffers with repeated attacks of bronchitis?	1.82	2.11
20	Which is the easiest method in preventing acute respiratory tract infections among children?	1.88	1.91
21	Which of the following helps to prevent respiratory tract infections in children?	1.87	1.93
22	Which vaccine is given after 6 months of children to prevent respiratory tract infections?	1.92	1.95
23	Which of the following are helps to improve child's immunity and prevent infection?	1.92	1.99

Table 1: Depict the knowledge score of mothers regarding acute respiratory tract infection. Post knowledge score shows improvement in knowledge. So, educational interventions proved fruitful to enhance mothers' knowledge.

The normality of data is shown in table 2. Data is normally distributed as value is more than 0.05. This is evidence that data is normally distributed. So, according to the normality of data, as shown in the above table, a

parametric test (paired t-test) would be applied to see the effectiveness of educational interventions.

Table 2: Tests of Normality

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Compute	.168	59	.186	.856	59	.271

Table3: Paired Sample t-Test

Pair 1	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig (2 tailed)
				Lower	Upper			
Post data Pre data	.107	.146	.03293	0.080	0.135	.215	59	.000

Table 3 shows mean differences in pre and post-test knowledge scores. P-value shows the positive impact of educational interventions on knowledge of mothers regarding ARI and shows a prominent difference in pre and post knowledge scores of participants after an educational intervention. P-value indicates an enhancement in the knowledge of mothers.

## DISCUSSION

The study shows that the mothers have a low literacy rate which is associated with the knowledge about acute respiratory tract infection. Another study also revealed similar findings regarding the knowledge of mothers about acute respiratory tract infect under-five -children. Literate mothers are more vigilant in seeking medical care for their children<sup>11</sup>.

The findings of the present study show that mothers have a lack of knowledge about acute respiratory tract infection. Mean pre-test scores depict less knowledge of mothers regarding ARIs. As educational interventions were applied, a difference in knowledge score was obvious. Another study also revealed similar findings regarding the knowledge of mothers about acute respiratory tract infect under-five children. Educational interventions proved helpful in enhancing knowledge to overcome disease burden<sup>12</sup>.

After the analysis of the means of pre and post-intervention, a paired t-test showed a significant value which is 0.000. This value proves that there is an effect of a structured teaching program on knowledge of women regarding the prevention of acute respiratory tract infection among under-five children. A similar study also elaborates on the positive impact of teaching intervention to enhance

the knowledge of mothers regarding acute respiratory tract infections<sup>13</sup>.

## CONCLUSION

The present study reveals that lack of mothers' knowledge increases the chances for ARIs in children under five years of age. It showed a remarkable impact of education on knowledge enhancement. This increases the socio-cultural health concerns, especially for parents. Educational sessions were effective to improve the knowledge regarding the prevention of acute respiratory tract infection. Such awareness would be beneficial for community residents in the prevention of infectious diseases. It is suggested media should be used for dissemination of health-related educational programs to improve knowledge and combat infections. The government should also take steps to initiate such effort at large scale.

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