

A Study to Assess the Effectiveness of Structured Teaching Program on Knowledge Regarding Prevention of Upper Respiratory Tract Infection (URTI) among Mothers of Under Five Children in Pediatric Ward at Era's Lucknow Medical College & Hospital, Lucknow, U. P.

Prabhat Kumar¹, Madhu Kumari Gupta²

¹M. Sc. Nursing Final Year

²Assistant Professor Era College of Nursing, Lucknow, India

Abstract: ***Background:** Respiratory tract infection is one of the problematic respiratory disease in India. Children below 5 years are more vulnerable to this disease. Mothers are primary care providers and they should have knowledge to manage respiratory tract infection. This study intended to assess the knowledge of mothers regarding prevention of upper respiratory tract infection in under five children with implementation of structured teaching program. **Objective:** The study was conducted with the objectives to assess the pre and post interventional level of knowledge, to evaluate the effectiveness of Structured Teaching Program and to determine the association between the levels of knowledge with selected demographic variables. **Methods:** The researcher used a pre experimental research design. The research approach was quantitative research approach. The study was conducted in pediatric ward at Era's Lucknow Medical College & Hospital, Lucknow. 60 sample were selected by using Non - probability purposive sampling technique. The data was collected by using structured interview schedule before and after implementation of structured teaching program. **Results:** The finding of this study shows that there was a significant improvement of knowledge among mothers of under five children after implementation of structured teaching program. The overall knowledge level of mothers regarding prevention of upper respiratory tract infection, in pretest there were 40 number (66.67%) of mothers with inadequate knowledge, 19 number (31.66%) of mothers with moderate level of knowledge, 1 number (1.67%) of mother with adequate knowledge where as in post - test 22 number (36.67%) of mothers had moderate knowledge, 38 numbers (63.33%) had adequate knowledge regarding prevention of upper respiratory tract infection. The post - test knowledge mean percentage was found higher (knowledge mean percentage was 78.93% with SD of 2.92 when compared with pre - test mean percentage knowledge mean percentage which was 50.77% with SD of 3.14). Knowledge mean percentage enhancement was 28.17% with SD of 2.66. The statistical paired 't' test implies that the difference in the pre - test and post - test value was found statistically significant at 5% level ($p < 0.05$) with a paired 't' test value of 24.625. **Conclusion:** The overall findings of the study showed that the structured teaching program was significantly effective in improving the knowledge score of mothers of under five children regarding prevention of upper respiratory tract infection.*

Keywords: Prevention of Upper Respiratory Tract Infection, Structured Teaching Program, Mothers of Under five children

1. Introduction

“Children are the wealth of tomorrow – Take care of them if you wish to have a strong India, ever ready to meet various challenges”

Pandit Jawahar Lal Nehru

Children are our future. The development of children is basically affected by what happens to their health status during early years of life.¹ Investing in children health & development means investing in the future of a nation.²

Each year more than 10 million children die before they reach their fifth birthday. Seven in ten of these deaths are due to five preventable and treatable conditions: pneumonia, diarrhea, malaria, measles, and malnutrition, and often a combination of these each year more than 10 million children die. The estimated proportion of deaths in which under nutrition is an underlying cause are roughly similar for diarrhea 61%, malaria 57%, pneumonia 52%, and measles

45%. This problem causes a higher under five mortality rate (UMR) especially in South - East Asia.³

Acute respiratory tract infection (ARI) is considered as one of the major public health problems and it is recognized as the leading cause of mortality and morbidity in many developing countries. The greatest problem for developing countries is the mortality from ARI in children less than five year of age.⁴

1.1 Research Statement

A study to assess the effectiveness of Structured Teaching Program on knowledge regarding Prevention of Upper Respiratory Tract Infection (URTI) among mothers of under five children in pediatric ward at Era's Lucknow Medical college & Hospital, Lucknow, U. P.

1.2 Aim of the study

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To assess the effectiveness of Structured Teaching Program on knowledge regarding Prevention of Upper Respiratory Tract Infection among mothers of under five children in order to enhance their level of knowledge on Prevention of Upper Respiratory Tract Infection.

2. Objective

- To assess the pre and post interventional level of knowledge regarding Prevention of Upper Respiratory Tract Infection (URTI) among mothers of under five children in pediatric ward at Era's Lucknow Medical college & Hospital, Lucknow, U. P.
- To evaluate the effectiveness of Structured Teaching Program on knowledge regarding Prevention of Upper Respiratory Tract Infection (URTI) among mothers of under five children in pediatric ward at Era's Lucknow Medical College & Hospital, Lucknow, U. P.
- To determine the association between the levels of knowledge regarding Prevention of Upper Respiratory Tract Infection (URTI) among mothers of under five children with selected demographic variables.

3. Material and Method

A study was conducted by using quantitative research approach at Era's Lucknow Medical College, Lucknow, U.

P. A pre - experimental, one group pre - test and post - test research design was adopted to conduct the study. The study was conducted between 17/06/2019 to 15/07/2019. The conceptual framework utilized in this study was *KING'S IMOGEN THEORY*. The Institutional Ethical Committee approval was obtained before the study. Total 60 mothers of under five children were selected by non - probability purposive sampling technique for collection of data. Method of data collection was Structured Interview Schedule. Before conducting the study written consent was obtained from the mothers of under five children. The research tool consists of two sections, 1st section is for demographic data and 2nd section is structured questionnaire was used to assess the knowledge of mothers of under five children regarding prevention of upper respiratory tract infection.

Demographic variable such as Age, Educational Status, Occupational Status, Place of Resident, Family Income, Type of Family, Number of Living Children, Immunization Status and Family History of Respiratory Disease.

The structured questionnaire consists of 30 items related to knowledge about anatomy & physiology, causes, sign & symptoms, mode of transmission, clinical features, home management and preventive measures of respiratory tract infection in children. Each question has one correct answer among 4 options and it is awarded a score of 1 for the correct response according to the pre - determined key.

Table 1

Sr. No.	Content Area	Multiple Choice Questions	Total No. of Question	Percentage
1.	Anatomy & Physiology of respiratory tract	1, 2	2	6.66%
2.	Cause of Upper Respiratory Tract Infection	3, 4, 5, 6, 7, 8	6	20%
3.	Clinical features of Upper Respiratory Tract Infection	9, 10, 11, 12, 13, 14	6	20%
4.	Home care management of Upper Respiratory Tract Infection	15, 16, 17, 18, 19, 20	6	20%
5.	Preventive Measures of Upper Respiratory Tract Infection	21, 22, 23, 24, 25	5	16.67%
6.	Vaccination	26, 27, 28, 29, 30	5	16.67%
Total			30	100%

Scoring of the items

There were 30 items. Each item has four options with one accurate answer. The score for correct response to each item was one and incorrect response was zero, thus for 30 items maximum obtainable score was 30 and minimum was zero.

$$\text{Percentage} = \frac{\text{Obtained Score} \times 100}{\text{Total Score}}$$

Table 2

Score	Percentage (%)	Level of knowledge
0 - 15	0 - 50%	Inadequate Knowledge
16 - 23	51 - 75%	Moderate Knowledge
24 - 30	76 - 100%	Adequate Knowledge

Nominal data were described and expressed in frequency and percentage. Both descriptive and inferential statistics was used to analyze data. Inferential Statistics 't' test, was used to find relationship of knowledge level with selected demographic variable. Descriptive statistics (frequency

distribution and percentage, mean and SD) was used to analyze the socio - demographic data.

4. Strength and Limitations

The specified population assessed in this research study and standardized tools used were the strength of the study. Study is limited to the mothers of under five children of 1 to 5 years age group who were admitted in paediatric medicine ward or attended the paediatric OPD at Era's Lucknow Medical College & Hospital, Lucknow

5. Results

Description of subjects

During the study period, 60 mothers were selected in the study based on inclusion criteria.

Table 3

S No.	Demographic Data	Category	Frequency	Percentage %
1.	Age	Below 20	0	0
		21 - 25	27	45
		26 - 30	20	33.33
		Above 30	13	21.67
2.	Educational Status	Illiterate	13	21.67
		Primary Education	9	15
		Higher Primary	6	10
		Higher Secondary	4	6.67
		Senior Secondary	12	20
3.	Occupational Status	Degree or others	16	26.67
		Housewife	54	90
		Working	3	5
4.	Place of Residence	Business	3	5
		Urban	23	38.33
		Rural	37	61.67
5.	Family Income	Slums	0	0
		Below 10, 000	37	61.67
		10,000 - 20, 000	13	21.67
		20, 000 - 30, 000	2	3.33
6.	Type of family	Above 30, 000	8	13.33
		Nuclear Family	36	60
7.	No. of living children	Joint Family	24	40
		1	26	43.33
		2	17	28.33
8.	Immunization Status	More than 2	17	28.33
		Completely	48	80
		Partially	11	18.33
9.	Family History of Allergic Respiratory Disease	Not immunized	1	1.67
		Yes	12	20
		No	48	80

In this table **Age** revealed that majority 27 mothers (45%) of under five children were in the age group of 21 - 25 age group, followed by 20 mothers (33.33%) were between 26 - 30 age group and 13 mothers (21.67%) were above 30 age group.

According to **Educational Status**, majority 16 mothers (26.67%) of under five children were educated at degree level, followed by 13 mothers (21.67%) were illiterate, 12 mothers (20%) were educated at senior secondary level, 9 mothers (15%) were educated at primary level, 6 mothers (10%) were educated at higher primary and 4 mothers (6.67%) were educated at higher secondary level.

According to **Occupational Status**, majority 54 mothers (90%) of under five children were housewife, followed by 3 mothers (5%) were working, 3 mothers (5%) had business.

According to their **place of residence**, majority 37 mothers (61.67%) were living in rural area, followed by 23 mothers (38.33%) were in urban area.

According to their **family income**, majority 37 mothers (61.67%) were belong to below 10, 000 rupee/month, 13

mothers (21.67%) were belong to 10, 000 - 20, 000 rupee/month, 8 mothers (13.33%) were belong to above 30, 000 rupee/month and 2 mothers were belong to 20, 000 - 30, 000 rupee/month.

According to the **type of family**, majority 36 mothers (60%) were living in nuclear family, followed by 24 mothers (40%) were living in joint family.

According to their **number of living children**, majority 26 mothers (43.33%) were having one child, 17 mothers (28.33%) were having two children and then 17 mothers (28.33%) having more than two children.

According to the **immunization status**, majority 48 mothers (80%) were given vaccines completely to their child, 11 mothers (18.33%) were given vaccines partially to their child and 1 mother (1.67%) was not given vaccination to her child.

According to the **family history of allergic respiratory disease**, majority 48 mothers (80%) have no family history of any respiratory disease in their family, followed by 12 mothers (20%) have family history of respiratory disease in their family.

Table 4

Aspects	Pre Test				
	Max Score	Range	Mean	SD	Mean %
Anatomy & Physiology of respiratory tract	2	0 - 2	1.33	0.68	66.5
Cause of Upper Respiratory Tract Infection	6	0 - 6	2.91	1.39	48.5
Clinical features of Upper Respiratory Tract Infection	6	1 - 6	3.67	1.23	61.17
Home care management of Upper Respiratory Tract Infection	6	0 - 6	3.30	1.16	55
Preventive Measures of Upper Respiratory Tract Infection	5	0 - 5	3.53	1.22	70.6

Vaccination	5	0 - 4	0.48	0.93	9.6
Overall	30	7 - 25	15.23	3.14	50.77

The table reveals that in pre - test Aspect wise mean knowledge of mothers regarding Anatomy & Physiology of respiratory tract was 66.5%. Regarding cause of Upper Respiratory Tract Infection was 48.5%. Regarding clinical features of Upper Respiratory Tract Infection was 61.17%. Regarding home care management of Upper Respiratory

Tract Infection was 55%. Regarding Preventive Measures of Upper Respiratory Tract Infection was 70.6%. Regarding Vaccination was 9.6%. The overall pretest mean score on knowledge regarding prevention of Upper Respiratory Tract Infection among mothers of under five children was 50.77% shows inadequate knowledge.

Table 5

Aspects	Post Test				
	Max Score	Range	Mean	SD	Mean %
Anatomy & Physiology of respiratory tract	2	1 - 2	1.88	0.32	94
Cause of Upper Respiratory Tract Infection	6	0 - 6	4.85	1.24	80.83
Clinical features of Upper Respiratory Tract Infection	6	2 - 6	4.95	0.94	82.5
Home care management of Upper Respiratory Tract Infection	6	3 - 6	5.25	0.87	87.5
Preventive Measures of Upper Respiratory Tract Infection	5	3 - 5	4.67	0.57	93.4
Vaccination	5	0 - 5	2.08	1.43	41.6
Overall	30	17 - 29	23.68	2.92	78.93

The table reveals that in post - test Aspect wise mean knowledge of mothers regarding Anatomy & Physiology of respiratory tract was 94%. Regarding cause of Upper Respiratory Tract Infection was 80.83%. Regarding clinical features of Upper Respiratory Tract Infection was 82.5%. Regarding home care management of Upper Respiratory

Tract Infection was 87.5%. Regarding Preventive Measures of Upper Respiratory Tract Infection was 93.4%. Regarding Vaccination was 41.6%. The overall post - test mean score on knowledge regarding prevention of Upper Respiratory Tract Infection among mothers of under five children was 78.93% shows adequate knowledge.

Table 6

Sr. No.	Knowledge Level	Scores	Pre Test		Post Test	
			Frequency	Percentage %	Frequency	Percentage %
1	Inadequate knowledge	0 – 15	40	66.67	0	0
2	Moderate knowledge	16 – 23	19	31.66	22	36.67
3	Adequate knowledge	24 – 30	1	1.67	38	63.33
	Total		60	100	60	100

The table indicates the overall knowledge level of mothers regarding prevention of upper respiratory tract infection, in pretest there were 40 number (66.67%) of the mothers with inadequate knowledge, 19 number (31.66%) of the mothers with the moderate level of knowledge, 1 number (1.67%) of

mother with adequate knowledge where as in post - test 22 number (36.67%) of mothers had moderate knowledge, 38 numbers (63.33%) had adequate knowledge regarding prevention of upper respiratory tract infection.

Table 7

Demographic Variables	Inadequate		Moderate		Adequate		Chi Square Value	df	'p' value
	f	%	f	%	f	%			
Age (in years)									
Below 20 years	0	0	0	0	0	0	5.82	4	9.49 NS
21 - 25	17	28.3	10	16.7	0	0			
26 - 30	16	26.7	4	6.67	0	0			
Above 30	7	11.7	5	8.33	1	1.67			
Educational Status							25.85	10	18.31S
Illiterate	12	20	1	1.67	0	0			
Primary Education	9	15	0	0	0	0			
Higher Primary	6	10	0	0	0	0			
Higher Secondary	2	3.33	2	3.33	0	0			
Senior Secondary	7	11.7	5	8.33	0	0			
Degree or others	4	6.67	11	18.3	1	1.67			
Occupational Status							21.64	4	9.49 S
Housewife	37	61.7	17	28.3	0	0			
Working	2	3.33	0	0	1	1.67			
Business	1	1.67	2	3.33	0	0			
Place of Resident							2.84	2	5.99 NS
Urban	13	21.7	9	15	1	1.67			
Rural	27	45	10	16.7	0	0			

Slums	0	0	0	0	0	0			
Family Income									
Below 10,000	26	43.3	11	18.3	0	0	5.52	6	12.59 NS
10,000 - 20,000	9	15	3	5	1	1.67			
20,000 - 30,000	1	1.67	1	1.66	0	0			
Above 30,000	4	6.67	4	6.67	0	0			
Type of family									
Nuclear family	24	40	12	20	0	0	1.58	2	5.99 NS
Joint family	16	26.7	7	11.7	1	1.67			
No. of living children									
1	16	26.7	10	16.7	0	0	3.47	4	9.49 NS
2	12	20	4	6.67	1	1.67			
More than 2	12	20	5	8.33	0	0			
Immunization Status									
Completely	31	51.7	16	26.7	1	1.67	3.48	4	9.49 NS
Partially	9	15	2	3.33	0	0			
Not immunized	0	0	1	1.67	0	0			
Family history of allergic respiratory disease									
Yes	7	11.7	4	6.67	1	1.67	4.17	2	5.99 NS
No	33	55	15	25	0	0			

Note: NS - Not Significant, at p<0.05 level.

S – Significant, at p.0.05 level.

The data presented in the table shows that there was significant and non - significant statistical association between the levels of pre - test knowledge score with their selected socio - demographic variables among mothers of under five children at 0.05 level of significance.

The data presented in the table shows that there was no significant statistical association between the levels of pre - test knowledge score with their selected socio - demographic variables such as age, place of resident, family income, type

of family, No. of living children, immunization status, family history of allergic respiratory disease among mothers of under five children at 0.05 level of significance.

The data presented in the table shows that there was significant statistical association found between the levels of pre - test knowledge score with their selected socio - demographic variables such as educational status and occupational status among mothers of under five children at 0.05 level of significance.

Table 8

Aspects	Pre Test		Post Test		Mean Difference	't' value	p - value
	Mean	SD	Mean	SD			
Anatomy & Physiology of respiratory tract	1.33	0.68	1.88	0.32	0.55	6.31	S
Cause of Upper Respiratory Tract Infection	2.91	1.39	4.85	1.24	1.94	12.57	S
Clinical features of Upper Respiratory Tract Infection	3.67	1.23	4.95	0.94	1.28	7.20	S
Home care management of Upper Respiratory Tract Infection	3.30	1.16	5.25	0.87	1.95	12.59	S
Preventive Measures of Upper Respiratory Tract Infection	3.53	1.22	4.67	0.57	1.14	7.31	S
Vaccination	0.48	0.93	2.08	1.43	1.6	8.74	S
Overall	15.23	3.14	23.68	2.92	8.45	24.625	S

Note: S – Significant, at p>0.05 level, df = 59

The above table reveals that the paired 't' value shows that there was significant difference between pretest and post - test knowledge score ('t'=24.625) at 0.05 level of significance.

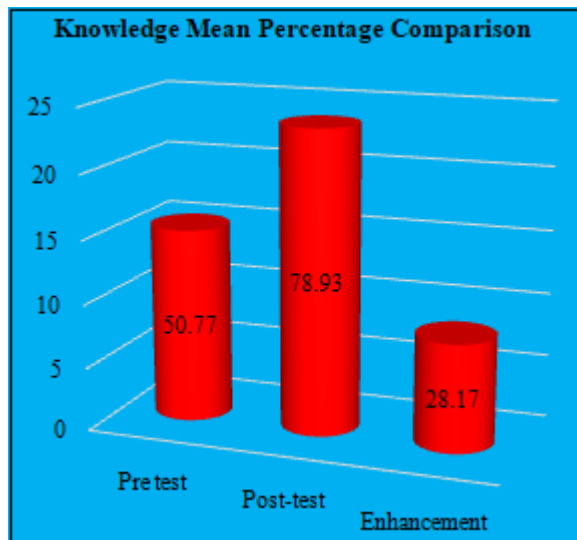
It indicates the effectiveness of structured teaching program in enhance the knowledge regarding prevention of upper respiratory tract infection among mothers of under five children.

Table 9

Aspects	Range Score	Mean Score	Knowledge Mean%	Score SD	Paired 't' test	Df
Pre test	7 - 25	15.23	50.77	3.14	24.625	59
Post - test	17 - 29	23.68	78.93	2.92		
Enhancement		8.45	28.17	2.66		

*Significant at 5% level (<p 0.05)

The table indicates the overall mean percentage knowledge of pre - test and post - test regarding prevention of upper respiratory tract infection. The post - test knowledge mean percentage was found higher (knowledge mean percentage was 78.93% with SD of 2.92 when compared with pre - test knowledge mean percentage which was 50.77% with SD of 3.14). Knowledge mean percentage enhancement was 28.17% with SD of 2.66. The statistical paired 't' test implies that the difference in the pre - test and post - test value was found statistically significant at 5% level (p<0.05) with a paired 't' test value of 24.625. There exists a statistical significance in the enhancement of level of knowledge score indicating the positive impact of structured teaching program. Hence the stated research hypothesis **H₁ is accepted.**



Mean Score Comparison

6. Discussion

In the study, majority 27 mothers (45%) of under five children were in the age group of 21 - 25 years, majority 16 mothers (26.67%) of under five children were educated at degree level, majority, 54 mothers (90%) mothers were housewife, majority 37 mothers (61.67%) were living in rural area, majority 37 mothers (61.67%) were belonging to below 10, 000 rupee/month, majority 36 mothers (60%) were living in nuclear family, majority 26 mothers (43.33%) were having one children, majority 48 mothers (80%) were given vaccines completely to their child, majority 48 mothers (80%) have no family history of any respiratory disease in their family.

In this study the overall knowledge level of mothers regarding prevention of upper respiratory tract infection, in pretest there were 40 number (66.67%) of the mothers with inadequate knowledge, 19 number (31.66%) of the mothers with the moderate level of knowledge, 1 numbers (1.67%) mothers with adequate knowledge where as in post - test 22 number (36.67%) of mothers had moderate knowledge, 38 numbers (63.33%) had adequate knowledge regarding prevention of upper respiratory tract infection.

In the study, the findings showed that during pretest the knowledge of the mothers of under five children regarding prevention of upper respiratory tract infection was inadequate where as in post - test score the knowledge was adequate. The mean difference between pre - test and post - test of the knowledge of mothers of under five children was 8.45

7. Conclusion

The conclusion drawn on the basis of the findings of the study includes –

- 1) Overall pre - test mean score on knowledge regarding prevention of upper respiratory tract infection among mothers of under five children was 50.77% shows inadequate knowledge, which suggested the need for

- teaching program for mothers of under five children regarding prevention of upper respiratory tract infection.
- 2) Overall post - test mean score on knowledge regarding prevention of upper respiratory tract infection among mothers of under five children was 78.93% shows adequate knowledge.
- 3) The calculated paired't' values for knowledge scores were statistically highly significant at 0.05 level of significant.
- 4) There was no significant statistical association between the levels of pre - test knowledge score among mothers of under five children and their selected socio - demographic variables such as age, place of resident, family income, type of family, No. of living children, immunization status, family history of allergic respiratory disease at 0.05 level of significance.
- 5) There was significant statistical association found between the levels of pre - test knowledge score and their selected socio - demographic variables such as educational status and occupational status among mothers of under five children at 0.05 level of significance.

8. Implications

The Nursing personnel should be encouraged to participate in awareness programs regarding prevention of respiratory tract infection. They can organize continuing education programmes on the prevention of respiratory tract infection for nursing personnel and motivate them to educate the common mothers. Nurses should conduct health campaigns and should use different strategies to educate the mothers from preventing respiratory tract infection.

9. Financial support and sponsorship

Nil

10. Conflicts of interest

There are no conflicts of interest.

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