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A Study to Assess the Effectiveness of Planned Teaching Programme on Knowledge Regarding Respiratory Tract Infection Among the Mother of Under Five Children in Selected Rural Area, Udupi District

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ABSTRACT

Background: The global figures indicate that acute lower respiratory infection (ALRI) is the single largest infectious cause of death among children. In India, pneumonia itself causes 17% of all deaths in children >5 years. This leads to the initiation of multiple health measures and guidelines for infants and younger children. However, being such a vast and diverse country, there remain so many gaps in the treatment, vaccination, empirical use of available antimicrobials.

Objectives: The study aim to assess the effectiveness of planned teaching programme on knowledge regarding respiratory tract Infection among the mother of under-five years children in selected rural area, Udupi district

Materials and Methods: The single arm pre-post test study carried out among Fifty mothers of under-five children in Manipura, Udupi. A structured knowledge questionnaire was prepared to assess the knowledge of mothers of under-five children regarding RTI and later the PTP was given. The reliability of the tool was tested and validity was ensured in consultation with guides and experts in the field of Nursing and Medicine.

Results: The mean post-test knowledge score 27.8, is higher than the mean pre-test knowledge score of 13.2. The computed value 23.72 ($p < 0.05$) showed that there is a highly significant difference between the pretest and post-test mean knowledge scores of 14.6.

Conclusion: This study concludes that the planned teaching programme is effective in increasing the knowledge scores of mothers of under-five children on respiratory tract infection. The demographic variables of parents are not significantly associated with the knowledge scores.

Keywords: Planned teaching programme, Knowledge, Respiratory tract infection

INTRODUCTION

Respiratory tract infections (RTIs) are infectious diseases involving the respiratory tract.[1] Respiratory infections cause four and a half million deaths among children every year, the overwhelming majority occurring in developing countries.[2] There are 2 types of respiratory tract infection that is upper respiratory tract infection (URI or URTI) or a lower respiratory tract infection (LRI or LRTI). [2,3]

The upper respiratory tract is considered the airway above the glottis or vocal cords.

Typical infections of the upper respiratory tract include tonsillitis, pharyngitis, laryngitis, sinusitis, otitis media, certain influenza types, and the common cold. Symptoms of URIs can include cough, sore throat, runny nose, nasal congestion, headache, low-grade fever, facial pressure, and sneezing. The lower respiratory tract consists of the trachea (windpipe), bronchial tubes, bronchioles, and the lungs. LRIs are generally more severe than upper respiratory infections. The two most common LRIs are bronchitis and pneumonia. [4,5]

Respiratory infections often have strong seasonal patterns, with temperate climates more affected during the winter. Several factors explain winter peaks in respiratory infections, including environmental conditions and changes in human behaviours.[6] Viruses that cause respiratory infections in humans, most have seasonal variation in prevalence. Influenza, Human orthopneumovirus (RSV), and human coronaviruses are more prevalent in the winter. Human Boca virus and Human metapneumovirus occur year-round, rhinoviruses (which cause the common cold) occur mostly in the spring and fall, and human parainfluenza viruses have variable peaks depending on the specific strain. Enteroviruses, except rhinoviruses, tend to peak in the summer. [7,8]

India hosts a population of 1.3 billion people distributed in states having diverse geographical and cultural makeup. The National Health Portal of India reported in 2019 that there were 41,996,260 cases and 3,740 deaths from respiratory infections in India in 2018.[9] Acute respiratory infections (ARI) accounted for 69% of the total cases of communicable diseases, and this scenario is before the era of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). After the coronavirus disease 2019 (COVID-19) pandemic, the total number of infected numbers rose to millions and cases are still getting added while this review was being written. [10,11] The exact cause of such a large number has not been fully understood, but 99% of cases are reported in children below 5 years and are occurring in developing countries. Hence, it has something to do with nourishment and the availability of medical facilities along with sophistication. [12,13]

A lack of awareness and understanding among mothers in developing countries regarding Respiratory Tract Infection (RTI) highlights the need for an evaluation of their knowledge, attitudes, and practices. Researchers aimed to gather baseline data to better comprehend the magnitude of the RTI problem and add to the existing knowledge on the subject. The study's objective was to assess the knowledge, attitudes, and practices of mothers with children under five years of age regarding RTI.

MATERIALS & METHODS

This single arm pre-post study was conducted among mothers of under-five years children in Manipura, Udupi. The selection of area was done based on geographical proximity, feasibility of conducting a study and availability of sample. Purposive sampling technique was used to collet the data. Data was collected from 20/05/2024 to 27/05/2024 after obtaining permission from the authority, Manipura, Udupi.

Inclusion criteria for the study 1) mothers of under five years children who are willing to participate 2) mothers who can read and write English or Kannada. Participants were excluded if 1) mothers who are not available at the time of data collection 2) mothers who underwent a similar type of intervention recently.

The self-administered questionnaire tool was made which consists of two parts, section-A consists of sociodemographic information (this section consists of 7 items) and section-B consists of a structured knowledge questionnaire on respiratory tract infection. This section consists of 32 items on introduction, respiratory system, definition, causes, risk factor, modes of transmission, types, and management of various types of RTIs: common cold, laryngitis,

pharyngitis, influenza, epiglottis, bronchitis, bronchiolitis, and pneumonia. Each item had only one correct response was scored one. The total possible score of the structured knowledge questionnaire was 32. The same questionnaire was used for the assessment of pre and post-tests.

The prepared tool along with objectives, blueprint and criteria checklist was submitted to 7 experts comprised of 5 nurse educators in child health nursing, 1 pediatrician and 1 statistician for establishing the content validity. The final tool is tested for reliability. The structured self-administered questionnaire was administered to 10, mothers of under five children residing at Kodibettu. The reliability of the tool was found by testing the stability using the test- retest method and internal consistency was assessed by using the split-half technique. The internal consistency of the tool is assessed by split half method and is found to be 0.85. It indicates that the tool is reliable.

STATISTICAL ANALYSIS

Paired t test was used to analyse the significant difference within the group and chi-square was used to find out association between knowledge with the demographic variables.

RESULT

A total of 50 mothers were participated in the study.

Table 1: Demographic characteristics of study participants

Sl. No	DEMOGRAPHIC VARIABLES	OPTIONS	FREQUENCY (f)	PERCENTAGE (%)
1.	Age in years	<25 years	22	44%
		26-30 years	12	24%
		31-35 years	09	18%
		36-40 years	05	10%
		Above 40 years	02	4%
2.	Education	Illiterate	3	6%
		Primary school	8	16%
		High school	14	28%
		Higher secondary school	11	22%
		Graduate & above	14	28%
3.	Occupation	Housewife	22	44%
		Coolie worker	07	14%
		Private employee	06	12%
		Self-employee	05	10%
		Government employee	10	20%
4.	Family Income	Below Rs 10000/-	22	44%
		Rs 10001-50000/-	21	42%
		Rs 50001- 100000/-	04	8%
		Above Rs 100001/-	03	6%
5.	Number of children in the family	One	11	22%
		Two	18	36%
		Three	11	22%
		Above three	10	20%

The table 1 shows, the majority of the subjects 22 (44%) were of age below 25 years, followed by 12 (24%) were of age 26-30 years, 9 (18%) were age 31-35 years, 5(10%) were 36-40 year and 2(4%) were above 40 years. 14 (28%) of the subjects were educated until high school, and graduate, 11 (22%) were higher secondary, 8 (16%) were primary and 3 (6%) were illiterate. 22 (44%) of the samples were housewives, 10 (20%) were government employees, 7 (14 %) were coolie workers, 6 (12%) were private employees and the remaining 5 (10%) were self-employed. 22 (44%) of the subjects had income below Rs, 10,000/-, 21 (42%) had Rs. 10,001- 50,000/-, 4 (8%) had Rs. 50,001-1,00,000/- and 3 (6%) were having

above Rs. 1,00,001/-. 18 (36%) had two children, 11 (22%) had one or three children, and 10 (20%) had more than three children.

Table 2: Distribution of knowledge scores regarding RTI

Sl. No	Area	Max score	Mean		Mean percentage		P value
			Pre	Post	Pre	Post	
1	Introduction & Definition	03	1.12	2.92	37%	97%	0.001
2	Causes and risk factors	05	1.76	4.74	35%	95%	0.002
3	Modes of transmission	04	1.60	3.22	40%	81%	0.002
4	Types	06	2.41	4.8	40%	80%	0.021
5	Management of various types of RTI's	14	6.32	12.4	45%	89%	0.001
Total		32	13.2	27.8	40%	88%	0.001

Table 2 shows an area-wise analysis of pretest and posttest knowledge of mothers of under-five children regarding respiratory tract infection analyzed through paired t test. Each component of structured knowledge questionnaire on respiratory tract infection showed significant improvement ($p < 0.05$) between pre and post-test. It showed that the overall pretest knowledge mean was 13.2 with a mean percentage of 40% and the posttest knowledge mean was 27.8 with a mean percentage of 88% showed significant improvement ($p < 0.05$).

Table 3: Comparison of pre and posttest knowledge score

Knowledge assessment	Mean	Difference of mean	SD	df	Paired 't' value	p-value
Pre-test	13.2	14.6	4.38	47	23.72	P<0.05
Post-test	27.8		2.79			

The data in Table 3 illustrates that the mean post-test knowledge score 27.8, is higher than the mean pre-test knowledge score 13.2. The data was analyzed through paired t test and it showed that there is a highly significant difference ($p < 0.05$) between the pretest and post-test mean knowledge scores of 14.6.

Table 4: Distribution of the samples on the association between knowledge score and demographic variables

Demographic Variables	Options	f	%	Chi- square value	P value	Remarks
Age in years	21-25 years	07	14%	1.6129	0.656	NS
	26-30 years	09	18%			
	31-35 years	15	30%			
	Above 35 years	19	38%			
Education	Illiterate	3	5%	1.275	0.865	NS
	Primary school	8	16%			
	High school	14	29%			
	Higher secondary school	11	22%			
	Graduate	14	28%			
Occupation	Housewife	21	43%	2.1328	0.711	NS
	Daily wages	07	15%			
	Private employee	06	12%			
	Self-employee	05	11%			
	Government employee	10	19%			
Family income	Below Rs 20000/-	22	12%	1.832	0.607	NS
	Rs 20001-50000/-	21	42%			
	Rs. above 50001/-	07	21%			
Number of children in the family	One	11	22%	4.317	0.229	NS
	Two	18	37%			
	Three	11	22%			
	Above three	10	19%			

***NS- Not significant**

Chi-square test was used to analyse association between knowledge with the demographic variables. Table 4 shows the association of knowledge scores with selected demographic variables. The variables like age, education, family income, occupation and number of children do not show any significant association ($p > 0.05$).

DISCUSSION

The study aimed to assess the effectiveness of planned teaching programme on knowledge regarding respiratory tract Infection among the mother of under-five children in selected rural area, Udupi district.

Area-wise analysis of pretest and posttest knowledge of mothers of under-five children regarding respiratory tract infection. It shows that the overall pretest knowledge mean was 13.2 with a mean percentage of 40% and the posttest knowledge mean was 27.8 with a mean percentage of 88%.

The above findings of the first object were supported by a cross-sectional survey was used to evaluate mothers' knowledge, attitudes, and practices regarding acute respiratory tract infections (ARIs) in children under the age of five in the Darul Sehat hospital in Karachi in 2014 to 2015 by paediatrics department, the purpose of the study is to evaluate mothers' knowledge, attitudes, and practices regarding acute respiratory tract infections (ARIs) in children under the age of five children among the 335 moms with at least one young kid (under the age of five). [14] Acute respiratory tract infection was seen in 228 of them. Mothers' knowledge, attitudes, and practices about ARI (acute respiratory tract infection) were evaluated using a questionnaire. The study shows that mothers had a good understanding of ARI symptoms, that environmental conditions were getting worse, mostly during the winter (n=255,87%), that dust was the most common aggravating factor and that pneumonia was the most common complication, and that most mothers (n=268,89%) chose to see a doctor for treatment.

The mean post-test knowledge score 27.8, is higher than the mean pre-test knowledge score of 13.2. The computed value 23.72 ($p < 0.05$) showed that there is a highly significant difference between the pretest and post-test mean knowledge scores of 14.6. This indicates that the planned teaching programme is effective in increasing the knowledge scores on respiratory tract infection.

The above findings of the first object were supported by a quantitative study conducted to assess the effectiveness of an information booklet on the knowledge of mothers regarding home management of respiratory tract infection among under-five children in Pallithottam at Kollam in 2018 by the Department of Child Health Nursing the purpose of this study to examine their knowledge, attitude, and practices concerning acute respiratory infection (ARI) in children.[15] A structured questionnaire was used to assess the knowledge, and attitude of respiratory tract infection, a sample of 140 mothers who had 265 children were selected for the study. 75% of literate women were fully knowledgeable about how to treat an acute respiratory tract infection. The majority of women (89.3%) learned about ARI from the media and paramedical personnel. During an episode of an acute respiratory tract infection, over 72% of moms took prompt action. When necessary, the majority of moms (70%) had little trouble bringing their kids to the preferred medical facilities. These results indicate that Ghana needs a health education programme on acute respiratory tract infections.

The chi-square value of variables such as age, education, family income, occupation, number of children, dietary pattern and source of information does not show any significant association.

A study was conducted to assess the knowledge of mothers regarding the prevention of respiratory tract infections and

find an association between the knowledge of mothers and selected baseline data. The population was the mothers of children with 1-14 years of age in, Mangalore. Analysis of demographic variables shows that the highest (35%) of the mothers are in the age group of 26-30 years and about 24% of them were in the age group of 31-35 years. Majorities (44%) of the mothers were with 2 children, 41% of the mothers with 1 child, and only 2% mothers with more than 3 children. Among the group majority (52%) of the mothers had 1 male child and 55% had one female child. The data also showed that 47%of them have at least one child below 14 years. The study findings revealed that most of the mothers (60%) had excellent knowledge regarding the prevention of RTI, about (34%) of them had good knowledge, about (6%) had average knowledge and none of the mothers had poor knowledge. There was no significant association between knowledge score and demographic variables.

Implication of the study

The study findings will help to create awareness and improve the knowledge regarding respiratory tract infection among mothers of children, regarding the benefits of 'administration of PTP. Nurse administrators should plan to conduct programmes about PTP regarding respiratory tract infections among mothers of under five children.

Limitations of the study

1. The study is done only on 50, mothers of under five children. Hence generalization is possible only for the selected participants.
2. The study was confined to mothers of under-five children residing in a selected area, Udupi.
3. Only knowledge was considered in the present study.
4. The study was conducted in one area, which restricts the generalization.

Recommendation for future study

Similar study may be conducted on a larger sample and larger area with exploring other components like attitude and practices regarding respiratory tract infection

CONCLUSION

This study concludes that the planned teaching programme is effective in increasing the knowledge scores of mothers of under-five children on respiratory tract infection. The demographic variables of parents are not significantly associated with the knowledge scores.

Declaration by Authors

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