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A Study to Assess Effectiveness of Instructional Teaching Programme on Level of Knowledge and Practices of Prevention of Pneumonia among Mothers of under Five Children in Selected Villages, Kanchipuram District, Tamil Nadu, India

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Original Research Article

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ABSTRACT

Back ground: An experimental study was conducted to assess the effects of instructional teaching programme (ITP) on knowledge and practices of mothers regarding prevention of pneumonia in children, Pooncherry, Chengalpattu District, Tamil Nadu, India.Objectives of the study were to assess the effectiveness of ITP on prevention of pneumonia on level of knowledge and practices among mothers of under five children.
Materials and Methods: Non probability purposive technique was adopted for this study. Samples who met inclusion criteria were participated in the study. Self-structured interview schedule for knowledge and structured rating scale for practices were used to collect the data.
Results: The study results shows that in the pre test 15.13 % of the mothers had adequate knowledge, 24.34 % of the mothers were had moderately adequate knowledge and 60.53 % of the mothers had inadequate knowledge and and in post test 63.17% of mothers were had adequate

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knowledge, 28.94% of the mothers had moderately adequate knowledge and very few (8.55%) mothers had inadequate knowledge. Pre test practices score shows that 63.82 % of the mothers had less desirable practice, 22.37% of the mothers had moderate desirable practices and 13.81% were had highly desirable practices whereas in the post test 63.82% of them had highly desirable practice, 23.03% of them had moderate desirable practices and 13.16% of them had less desirable practices. The mean pretest knowledge score was 5.45 ± 1.47 and the mean posttest knowledge score was 8.49 ± 0.71 and the t value was 15.17, it shows that statistically there was an improvement in the post test knowledge score. The mean pretest practice score was 22.38 ± 2.76, the mean posttest practice score was 43.64 ±1.97 and the t value was 13.35, it shows that statistically there was a significant improvement in the post test practice score. The instructional teaching programme on prevention of pneumonia was statistically effective in promoting the knowledge and desirable practices among mothers.

Keywords: Prevention of pneumonia; instructional teaching programme and mothers of under five children.

1. INTRODUCTION

Pneumonia is an infection that inflames the air sacs in one or both lungs. The air sacs may fill with fluid or pus (purulent material) causing cough with phlegm or pus, fever, chills, and difficulty breathing. A variety of organisms, including bacteria, viruses and fungi, can cause pneumonia. Pneumonia can range in seriousness from mild to life threatening. It is most serious for infants and young children, people older than young age, and people with health problems or with weakened immune systems [1].

In worldwide, Pneumonia burden particularly for preventable disease at both global levels and regional levels. Black et al through a systematic analysis of data on mortality estimated that there is nearly 8.795 million under 5 mortality globally. Of this more than 52% occurred in the Sub-Saharan region and in the Indian subcontinent contributed mainly by 5 countries, India, Nigeria, Congo, Pakistan and Afghanistan.They estimated the global burden of pneumonia death in under 5 to be 1.396million. **In India**, India has the highest number of global deaths of children under 5 years of age. In the year 2015, it was reported that there were 5.9 million deaths of children under 5 years of age globally, of which 1.2 million (20%) occurred in India alone. Currently, India has an under 5 mortality rate of 48 per 1000 live births [2].

In Tamilnadu, 5.9 million children below 5 years of age died in 2015, accounting to nearly 16,000 every day. Almost 83% of deaths are due to infectious diseases, neonatal or nutritional conditions. Around half of childhood pneumonia deaths are associated with air pollution. The effects of indoor air pollution kill more children globally than outdoor air pollution. At the same time, around 2 billion children 0 to 18 years of age live in areas where outdoor air pollution exceeds international guidelines limits. Prevention of pneumonia is the important role of health care workers to reduce the childhood mortality. It is vital to educate the mother regarding the prevention of pneumonia with various aspects such as importance of immunization, adequate nutrition, prevention of indoor and outdoor air pollution, early identification and the appropriate treatment [2].

Abishek Pandey., Alison P Galvani [3] were assessed the pneumonia burden during childhood period. They were stating that in India, 20% of the under five mortality is mainly due to pneumonia. The main causes were malnutrition, poor vaccination and exposure to polluted air. Pneumonia among non-infected HIV children drastically decreased from 83.8% to 49.8%. The pneumonia mortality was high in rural Kerala and Tamilnadu. Administrations of pentavalent vaccine with Haemophilus influenza B vaccine have significantly reduced the mortality rate after 2015. At present India have the largest population of under 14 years of children, Govt of India should concentrate on pneumonia by not only the administration of vaccines but also follow the multi facet approach [3].

As per WHO statement pneumonia is the very largest cause of mortality during childhood period globally. 808694 children under the age of 5 died due to pneumonia in the year 2017. The prevalence of pneumonia was high among South Asia and Sub Saharan Africa. The most common bacterial pneumonia is streptococcus pneumonia. The leading cause of viral

pneumonia is respiratory syncytial virus. Indoor air pollution, living in crowded place and passive smoking are the main risk factors of pneumonia [4,5,6].

1.1 Objectives

1. To assess the existing level of knowledge and practices on prevention of pneumonia among mothers of under five children.
2. To assess the effectiveness of instructional teaching programme regarding prevention of pneumonia on level of knowledge and practices among mothers of under five children.
3. To correlate the pre and post test level of knowledge and practices regardingprevention of pneumonia among mothers of under five children.
4. To find out the association between the pre and post test level of knowledge and practices regarding prevention of pneumonia with the selected demographic variables of mothers of under five children.

1.2 Hypotheses

H_1: There is a significant difference between pre and post test level of knowledge and practices of mothers of under five children regarding prevention of pneumonia.

H_2: There is a correlation between pre and post test level of knowledge and pre & post test level of practices regarding prevention of pneumonia.

2. MATERIALS AND METHODS

Quantitative evaluative approach was adopted for this study. Pre experimental type of one group pretest and post test design was used to conduct the study. This study was conducted at Poonchery village in Chengalpattu district, Tamilnadu, India. Mothers of under five children who were satisfied the inclusion criteria were selected as a sample. The sample size was calculated based on open epi sample calculation formula of 95% confidence level, 5% of confidence interval and 250 population size with the attrition rate of 15 and the final sample size was 152.

2.1 Sampling Criteria

Inclusion criteria;

The study includes the mothers who were

1. having children in the age of 0 to 5 years.
2. able to understand Tamil orEnglish.
3. willing to participate in thestudy.

Exclusion criteria:

The study excludes the mothers who were having adequate knowledge and desirable practices in pre test.

2.2 Research Tool

PART-I

Selected socio demographic variables of mothers of under five children such as age of the mother, educational qualification, occupational status, type of the family, number of children and source of information on prevention of pneumonia.

PART II

PART A - structured interview schedule regarding knowledge on prevention of pneumonia.

PART B - structured rating scale regarding practices on prevention of pneumonia.

2.3 Score Interpretation

Chart PART-II (A). Standardized structured interview schedule to assess the knowledge on pneumonia

Score	Percentage (%)	Inference
1-4	<50%	Inadequate knowledge
5-7	50-70%	Moderately adequate Knowledge
8-10	>70%	Adequate knowledge

Chart PART –II (B). Structured 5 point rating scale to assess the practices on prevention of pneumonia

Score	Percentage (%)	Inference
<25	<50%	Less desirable skills
25-38	51-76%	Moderate desirable skills
39-50	>76	High desirable skills

3. RESULTS

Table 1. Frequency and percentage distribution of demographic variables of mothers of under five children N=152

Demographic Variables	Frequency (n)	Percentage (%)
Age in years		
<25	56	36.84%
25-30	75	49.34%
>30	21	13.82%
Educational Status		
No formal education	14	9
Primary/ secondary school	67	44
High school	59	39
Higher secondary school	12	8
Diploma/ Graduate	0	0
Occupational Status		
Home maker	139	91.44%
Daily wages	13	8.55%
Private employee	-	-
Government employee	-	-
Self-business	-	-
Family income per month		
< Rs.10,000/-	32	21.06%
Rs.10,000/- to 20,000/-	120	78.94%
> Rs. 20,000/-	-	-
Number of Children in the family		
One	76	50
Two	58	38
>Two	18	12
Type of the family		
Single parent family	19	12.50%
Nuclear	75	49.34%
Joint	58	38.16%
Previous knowledge on prevention of pneumonia		
Yes	35	23
No	117	77

Table 2. Frequency and percentage distribution of level of knowledge and practices of mothers of under five children on prevention of pneumonia

		Knowledge			
S. no	Level of knowledge	Pre test		Post test	
		Frequency	Percentage	Frequency	Percentage
1	Adequate knowledge	23	15.13%	95	62.5%
2	Moderate knowledge	37	24.34%	44	28.94%
3	Inadequate knowledge	92	60.53%	13	8.55%

S. no	Level of practice	Pre test		Post test	
		Frequency	Percentage	Frequency	Percentage
1	Less Desirable	97	63.82%	20	13.16%
2	Moderate Desirable	34	22.37%	35	23.03%
3	High Desirable	21	13.81%	97	63.82%

Table 3. Effectiveness of instructional teaching programme on knowledge and practices of prevention of pneumonia among mothers of under five children

N=152

Variables	Pre test		Post test		't' value
	Mean	Standard deviation	Mean	Standard deviation	
Knowledge	5.45	1.47	8.49	0.71	15.17
Practice	22.38	2.76	43.64	1.97	13.35

Table 4. Correlation between pretest and posttest level of knowledge and practices of mothers of under five children on prevention of pneumonia

N=152

Score	Mean		Standard deviation		'r' value	
	Pre test	Post test	Pre test	Post test	Pre test	Post test
Knowledge	5.45	8.49	1.47	0.71	0.7363	0.8147
Practice	22.38	43.64	2.76	1.97		

4. DISCUSSION

Frequency and percentage distribution of level of knowledge and practices of mothers of under five children regarding prevention of pneumonia.

Pretest level of knowledge of mothers shows that 60.53% of mothers had inadequate knowledge, 24.34% of mothers had moderate knowledge and 15.13% of mothers had adequate knowledge in pretest and the practices towards the prevention of pneumonia shows that 63.82% of mothers had less desirable practices, 22.37% of mothers had moderate desirable practices and 13.81% of mothers had high desirable practice in pretest. This might be due to their educational level, lack of information onprevention of pneumonia through mass media and also because of not much important were given by health personnel towards the prevention of pneumonia.

The posttest results shows that 62.05% of mothers have adequate knowledge, 28.94% of mothers had moderate knowledge and 08.55% of mothers had inadequate knowledge and in post testpractice towards the prevention of pneumonia shows that 63.82% of mothers had high desirable practice, 23.03% of mothers had moderate desirable practice and 13.16% of mothers have less desirable practice. It might be assumed that mothers of under five children showed interest to learn about the prevention of pneumonia because of its frequent occurrence and more prevalence. Therefore a regular health education programme regarding prevention of pneumonia should be carried out by the nurses for all mothers of children.

Effectiveness of instructional teaching programme on knowledge and practices of prevention of pneumonia among mothers of under five children.

The study results shows that the pretest mean knowledge score was 5.45 and the post test knowledge score was 8.49.The calculated t value is 15.17which was significant at $p<0.05$ level and the man pretest practice score was 22.38 and post test mean practice score was 43.64.The calculated t value 13.35 significant at $p< 0.05$ level.The finding revealed that the instructional teaching programme has statistically significant effect in the improvement of knowledge and practices regarding prevention of pneumonia. Hence hypothesis H_1 was accepted.

The similar study conducted by the Parvez MM , W Wiroonpanich , M Naphapunsakul, the

findings revealed that, mothers of both study and control groups are homogenous in terms of demographic characteristics, but statistical significant difference was noted regarding their mean knowledge (25.04± 5.81vs 34.64 ± 3.86 and behavior score (6.64 ±2.23 vs 17.68±1.89) among study and control group respectively. The study concluded that structured teaching program could effectively increase both knowledge and behavior of mothers of under five children on pneumonia.

Correlation of knowledge and practices of mothers regarding the prevention of pneumonia.

The present study shows that there wasa positive correlation between knowledge and practices on prevention of pneumonia was found that Karl Pearson coefficient of the pretest score was **r =0.7363**and the post test score **r=0.8147**. This indicates a **strong positive correlation** between the pre and post test knowledge and practice score of mothers of under five children regarding prevention of pneumonia. This indicates when the knowledge increases practices also increases. Hence hypothesis H_2 was accepted.

Association of selected demographic variables with the level of knowledge of mothers of under fivechildren.

The study finding revealed that the mother's demographic characteristics like educational status,type of family, family income per month, number of children in the family, type of family and aware of prevention of pneumonia had the significant association with level of knowledge (x2 =28.30), (x2 =26.64),(x2 =19.63), (x2 =23.53), (x2 =26.64)at $p < 0.05$ level. But other demographic variables like age groups and occupational status were not aassociated with level of knowledge.

Association of selected demographic variables with practice of mothers of under five children.

The study findings revealed that the mother's demographic characteristics like educational qualification,occupation status, family income per month and awareness of prevention of pneumonia had significant association with level of practices (x2=12.59),(x2=3.84),(x2=3.84), (x2=3.84) respectively at $p<0.05$ level but other demographic variables like age groups, number of children, type of family were not significantly associated with the level of practices.

5. CONCLUSION

The results indicated that there is a significant variation in the level of knowledge and practices of mothers of under five children after the implementation of structured instructional teaching programme and a significant positive relationship was found between level of knowledge and practices of mothers of under five children regarding prevention of pneumonia. Instructional teaching programme on prevention of pneumonia helps to reduce the morbidity and mortality burden, this will reduces the financial burden of the family & government and also prevents the hospitalization of under five children and facilitates the growth & development and optimal growth.

CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

The study was approved by the Institutional Human Ethics Committee

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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