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## Effectiveness of Educational Program in Enhancing Mothers' Knowledge and Caregiving Behaviours for Children with Pneumonia in Selected Hospital, Chennai.

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### Article Info

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### ABSTRACT:

**Background:** Pneumonia is a sudden infection affecting the lower respiratory tract, particularly the lungs. In this condition, the lung's alveoli become filled with pus or fluid, leading to breathing challenges and disrupting the normal gas exchange process. **Aim:** The main aim of the study to assess the effectiveness of educational program in enhancing mothers' knowledge and caregiving behaviors for children with pneumonia. **Methods:** Cross sectional study was used for the study. The study was conducted in a selected hospital at Chennai. The calculated study sample size was estimated as 72. A total of 72 mothers were selected using a purposive sampling technique who fulfils inclusion criteria. **Finding:** The pretest mean was 45.3 (SD = 10.2), while the post-test mean increased to 75.4 (SD = 8.6). The t-value was 14.2 with a p-value of 0.000, indicating a statistically significant improvement. **Caregiving Behavior Score:** The pretest mean was 48.1 (SD = 11.5), and the post-test mean rose to 78.2 (SD = 9.1). The t-value was 13.6 with a p-value of 0.000, also showing a statistically significant enhancement. **Conclusion:** The study concluded that There was the significant positive changes, confirming the educational program's effectiveness in improving mothers' knowledge and caregiving behaviors for children with pneumonia.

**Keywords:** Knowledge, Attitude, Mothers, Pneumonia, children

## 1. INTRODUCTION

Pneumonia is a sudden infection affecting the lower respiratory tract, particularly the lungs. In this condition, the lung's alveoli become filled with pus or fluid, leading to breathing challenges and disrupting the normal gas exchange process. [1]

In India, acute respiratory infection (ARI) is a significant public health issue, particularly affecting children aged 0–5 years. This age group accounts for 15–30% of all deaths, with most of these fatalities being preventable. [2]

Antibiotics are the primary treatment for pneumonia, typically administered orally. Hospitalization is usually necessary only for severe cases and for infants younger than two months. Preventing pneumonia in children is vital for decreasing child mortality rates. Vaccinations against hepatitis B, pneumococcus, measles, and whooping cough (pertussis) are highly effective in preventing pneumonia. Ensuring adequate nutrition, beginning with exclusive breastfeeding for the first six months, enhances children's natural defences. Furthermore, maintaining good hygiene in crowded living conditions helps lower the risk of pneumonia in children. [3]

Despite significant progress, India continues to fall short of achieving the Millennium Development Goal for reducing child mortality. One critical issue is that mothers often fail to recognize common illnesses in infants, such as pneumonia, leading to thousands of preventable deaths. The education program focuses on assessing mothers' knowledge and care giving behaviour of mother with pneumonia among children. While numerous studies have addressed the program to improve the mother knowledge. Only limited study in India on education program enhancing mothers' knowledge and care behaviour on children with pneumonia. Understanding of pneumonia is essential for the early detection and timely treatment of the illness, which can prevent its progression to severe or fatal stages. Consequently, this study serves as a foundation for better strategic planning aimed at raising awareness among parents in the hospitals

### AIM OF THE STUDY

The main aim of the study to assess the effectiveness of educational program in enhancing mothers' knowledge and caregiving behaviors for children with pneumonia in selected hospital, Chennai

## 2. METHODOLOGY

### Study Design and Settings

Cross sectional study was used for the study. The study was conducted in a selected hospital at Chennai. The calculated study sample size was estimated as 72. A total of 72 mothers were selected using a purposive sampling technique who fulfils inclusion criteria.

#### Inclusion criteria:

- Mothers of the children who are admitted in the selected hospital.
- Mothers who understand Tamil and English

#### Exclusion criteria:

- Mothers of children with severe illness.

### Data Collection

Informed consent was obtained from the participants. Data was collected using demographic information, knowledge and caring behaviour questionnaire. The questionnaire was validated for content and reliability, achieving a Cronbach's alpha of 0.9.

### Statistical Analysis

Data was analyzed using SPSS version 26. Descriptive statistics were employed to summarize the frequency and percentage of the data, providing an overview of the participants' characteristics and their knowledge of pneumonia. Inferential statistics were used to determine the p-value, allowing for the significance difference in the educational program.

## 3. RESULTS.

Table 1 reveals the demographic data reveals that the largest age group is 25-34 years (41.7%), followed by 35-44 years (34.7%), 18-24 years (13.9%), and 45 years and above (9.7%). Educational levels show a majority with secondary education (33.3%), followed by primary education (27.8%), no formal education (25.0%), and higher education (13.9%). Employment status indicates that 41.7% are unemployed, 20.8% are employed part-time, 16.7% are employed full-time, and 20.8% are self-employed. The majority of respondents are married (83.3%), with single, widowed, and divorced individuals each constituting a small portion. Regarding children, 41.7% have 3-4 children, 30.6% have 5 or more, and 27.8% have 1-2. Household income levels show that 48.6% are in the middle-income bracket, 34.7% are low-income, and 16.7% are high-income earners.

**Table 1: Distribution of demographic variables of mother and clinical variables of the children (N=72)**

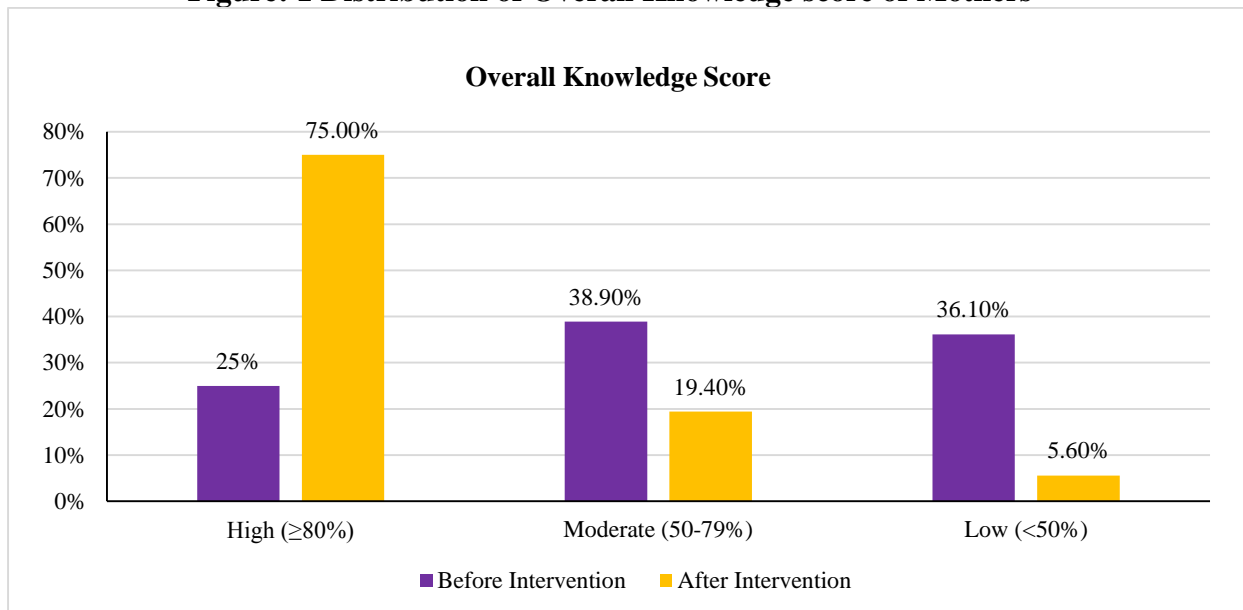
Demographic Variables	Frequency (%)
<b>Age Group</b>	
18-24 years	10 (13.9%)
25-34 years	30 (41.7%)
35-44 years	25 (34.7%)
45 years and above	7 (9.7%)
<b>Educational Level</b>	
No formal education	18 (25.0%)
Primary education	20 (27.8%)
Secondary education	24 (33.3%)
Higher education	10 (13.9%)
<b>Employment Status</b>	
Unemployed	30 (41.7%)
Employed (part-time)	15 (20.8%)
Employed (full-time)	12 (16.7%)

Self-employed	15 (20.8%)
<b>Marital Status</b>	
Single	5 (6.9%)
Married	60 (83.3%)
Widowed	5 (6.9%)
Divorced	2 (2.8%)
<b>Number of Children</b>	
1-2 children	20 (27.8%)
3-4 children	30 (41.7%)
5 or more children	22 (30.6%)
<b>Household Income Level</b>	
Low (Rs. <50,000/month)	25 (34.7%)
Middle (Rs.50,000-100,000/month)	35 (48.6%)
High (Rs. >100,000/month)	12 (16.7%)

**Table 2: Distribution of Mothers' Knowledge Before and After Intervention Among Children with Pneumonia (N=72)**

<b>Knowledge Areas</b>	<b>Before Intervention (%)</b>	<b>After Intervention (%)</b>
<b>Knowledge of Symptoms</b>		
Recognizing persistent cough	30 (41.7%)	60 (83.3%)
Identifying fast or labored breathing	25 (34.7%)	55 (76.4%)
Awareness of both cough and labored breathing	20 (27.8%)	50 (69.4%)
<b>Knowledge of Preventive Strategies</b>		
Importance of vaccination	28 (38.9%)	58 (80.6%)
Exclusive breastfeeding for the first 6 months	24 (33.3%)	52 (72.2%)
Providing a balanced diet	22 (30.6%)	50 (69.4%)
Regular handwashing	26 (36.1%)	54 (75.0%)
<b>Knowledge of Transmission Risks</b>		
Inhaling dust	18 (25.0%)	44 (61.1%)
Poor sanitation	20 (27.8%)	48 (66.7%)
Close contact with an infected person	15 (20.8%)	42 (58.3%)
Proximity to someone coughing	16 (22.2%)	45 (62.5%)
<b>Knowledge of Treatments</b>		
Use of antibiotics	26 (36.1%)	56 (77.8%)
Administration of oxygen	20 (27.8%)	50 (69.4%)

**Figure: 1 Distribution of Overall Knowledge score of Mothers**



**Table 3: Effectiveness of educational program in enhancing mothers' knowledge and caregiving behaviours for children with pneumonia (N = 72)**

Score	Pretest Mean (SD)	Post-test Mean (SD)	t-value	p-value	Significance (p < 0.05)
Knowledge Score	45.3 (10.2)	75.4 (8.6)	14.2	0.000	Yes
Caregiving Behavior Score	48.1 (11.5)	78.2 (9.1)	13.6	0.000	Yes

**Table 4 : Caregiving Behaviors for Children with Pneumonia Before and After Intervention (N = 72)**

Caregiving Behaviors	Before Intervention (%)	After Intervention (%)
<b>Symptom Monitoring</b>		
Regularly checking temperature	30 (41.7%)	55 (76.4%)
Monitoring breathing rate	25 (34.7%)	50 (69.4%)
Observing for worsening symptoms	28 (38.9%)	52 (72.2%)
<b>Hygiene Practices</b>		
Frequent handwashing	35 (48.6%)	60 (83.3%)
Cleaning toys and surfaces	20 (27.8%)	45 (62.5%)
Using tissues for coughs and sneezes	22 (30.6%)	48 (66.7%)
<b>Nutritional Support</b>		
Providing balanced diet	32 (44.4%)	57 (79.2%)
Ensuring adequate hydration	36 (50.0%)	62 (86.1%)
<b>Medical Compliance</b>		

Adhering to prescribed medication schedule	40 (55.6%)	65 (90.3%)
Attending follow-up medical appointments	38 (52.8%)	64 (88.9%)
<b>Environmental Control</b>		
Reducing exposure to smoke and pollutants	30 (41.7%)	58 (80.6%)
Ensuring good ventilation in living spaces	33 (45.8%)	60 (83.3%)
<b>Health Education and Awareness</b>		
Awareness of pneumonia symptoms	28 (38.9%)	53 (73.6%)
Knowledge of when to seek medical help	34 (47.2%)	61 (84.7%)

#### 4. DISCUSSION

The study assessed the effectiveness of educational program in enhancing mothers' knowledge and caregiving behaviors for children with pneumonia in selected hospital, Chennai. The program focused on improving mothers' understanding of pneumonia symptoms, preventive strategies, transmission risks, and treatment options, as well as reinforcing appropriate caregiving practices. Before the intervention, only 18 mothers (25.0%) had a high overall knowledge score ( $\geq 80\%$ ). After the intervention, this number increased dramatically to 54 mothers (75.0%). This substantial improvement highlights the program's effectiveness in imparting crucial information about pneumonia. Additionally, the number of mothers with moderate knowledge scores (50-79%) decreased from 28 (38.9%) to 14 (19.4%), suggesting that many of these mothers enhanced their understanding to a high level. The reduction in mothers with low knowledge scores ( $< 50\%$ ) from 26 (36.1%) to 4 (5.6%) further emphasizes the program's impact. These improvements in knowledge are critical as they are directly linked to better caregiving practices.

The pretest mean was 45.3 (SD = 10.2), while the post-test mean increased to 75.4 (SD = 8.6). The t-value was 14.2 with a p-value of 0.000, indicating a statistically significant improvement. Caregiving Behavior Score: The pretest mean was 48.1 (SD = 11.5), and the post-test mean rose to 78.2 (SD = 9.1). The t-value was 13.6 with a p-value of 0.000, also showing a statistically significant enhancement. There was the significant positive changes, confirming the educational program's effectiveness in improving mothers' knowledge and caregiving behaviors for children with pneumonia.

Mothers' enhanced knowledge of pneumonia symptoms, such as recognizing persistent cough and labored breathing, indicates a better capacity for early detection and timely medical intervention. The program also improved awareness of preventive strategies, including vaccination, exclusive breastfeeding, good nutrition, and regular handwashing. This increased awareness is vital for reducing pneumonia incidence among children.

This study is support by **Pradhan (2016)** who concluded that overall, mothers exhibited a moderate level of knowledge and perception regarding childhood pneumonia. However, there is a critical need to address the gaps in understanding the simple signs, symptoms, and contributing factors related to pneumonia.[4]

**Adeel Eliyas et al.** made a study on mother knowledge on preventive measure on pneumonia and concluded similar results. Among the 120 study participants, 59.2% were illiterate, and 51.6% were in the age group of 31 to 41 years. Only 15.8% of women had fair knowledge about pneumonia, while 55.5% lacked any knowledge on the subject. Additionally, 28.7% of the women did not know what pneumonia is. A significant 60.8% of respondents were unable to recognize the signs and symptoms of pneumonia, and only 19.2% knew that vaccination against pneumonia should be essential for children.[5]

## 5. CONCLUSION

The educational program has proven to be highly effective in enhancing mothers' knowledge and caregiving behaviours for children with pneumonia. The significant improvements observed in knowledge and practices post-intervention underscore the importance of such programs in healthcare settings. Continued efforts to educate mothers and caregivers about pneumonia and other preventable diseases can lead to healthier communities and better overall health outcomes for children.

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