EFFECTIVENESS OF NURSING INTERVENTION ON ACUTE LOWER RESPIRATORY TRACT INFECTION AMONG PRESCHOOLER USING PEDIATRIC RESPIRATORY SEVERITY SCORE AT SMVMCH, PUDUCHERRY

DR. R. Danasu¹, Mrs. Deepalakshmi. K², K. Santhi

¹Principal, Sri Manakula Vinayagar Nursing College, Puducherry-605107, India
²Assistant Professor in Nursing, Department of Child Health Nursing, Sri Manakula Vinayagar Nursing College, Puducherry-605107, India
³PG student in Child Health Nursing, Sri Manakula Vinayagar Nursing College, Puducherry, India

ABSTRACT

Acute respiratory infections (ARIs) it is an acute infection of any part of the respiratory tract and related structures including paranasal sinuses, middle ear and pleural cavity. It may cause inflammation of respiratory tract anywhere from nose to alveoli with a wide range combinations of symptoms and signs. The lower respiratory tract consists of the lower trachea, main stem bronchi, segmental bronchi, sub segmental bronchioles, terminal bronchioles and alveoli. The reactive portion of lower respiratory tract includes the bronchi and bronchioles in children. Cartilaginous support of the large airways is not fully developed until adolescence. Consequently, the smooth muscle in the structures represents major factor in the constriction of airway, particularly in the bronchioles, that extends from the bronchi to the alveoli. The study was conducted for six weeks to effectiveness of nursing intervention on acute lower respiratory tract infection among preschooler using Pedaitric Respiratory Severity Score 30 preschooler (15 experimental and 15 control group) were selected using purposive sampling technique. Pediatric Respiratory Severity Score (PRESS) a valid scale was used to collect the data regarding respiratory symptoms and the results revealed out Mean and standard deviation of respiratory status of preschooler in experimental group calculated Paired ‘t’ test value of t = 13.33 and p = 0.004 shows statistically significant difference between Comparison of the effectiveness of respiratory status on Acute Lower Respiratory Tract Infection among preschooler by using Pediatric Respiratory Severity Score in experimental group in post -test.
respectively. In experimental group pre test, Majority of preschooler 8 (53.28%) had Severe respiratory status, 5 (33.3%) had moderate respiratory status and 2 (13.32%) had mild respiratory status. In post test, Majority of preschooler 8 (53.28%) had mild respiratory status, 7 (46.62%) had moderate respiratory status respectively. The findings reveals that out of 30 preschooler in control group pre-test, Majority of preschooler 7(46.62%) had Severe respiratory status, 5(33.3%) had moderate respiratory status, and 2(13.32%) had mild respiratory status. In post test, Majority of preschooler 8 (53.28%) had moderate respiratory status, and 5(33.3%) had severe respiratory status and 2(13.32%) had mild respiratory status respectively. Mean and standard deviation of respiratory status of preschooler in control group calculated Paired ‘t’ test value of t = 0.811 and p = 0.425 shows statistically not significant difference between Comparison of the effectiveness of respiratory status on Acute Lower Respiratory Tract Infection among preschooler by using Pediatric Respiratory Severity Score in control group in post -test respectively.

**Keywords:** Acute Lower Respiratory Tract Infection, Pediatric Respiratory Severity Score (PRESS),

I. **INTRODUCTION**

Healthy children brought up in healthy surroundings are not only source of joy to everyone, but also India’s greatest resource tomorrow. Preschooler is a child approximately from three to six years of age, like a child of this age. These years are a time of great cognitive, emotional and social development. In this age they have less immunodeficiency and immunosuppression this leads to highly incidence of Acute Lower Respiratory Tract Infection. Respiratory system is a frequent site of illness in children. Respiratory infection and allergies together are responsible for many disruptions in family life and which force them miss their school work. The lower respiratory tract consists of the lower trachea, main stem bronchi, segmental bronchi, sub segmental bronchioles, terminal bronchioles and alveoli. The reactive portion of lower respiratory tract includes the bronchi and bronchioles in children.

Human metapneumovirus is a common virus associated with acute lower respiratory infections (ALRIs) in children. No global burden estimates are available for ALRIs
associated with human metapneumovirus in children, and no licensed vaccines or drugs exist for human metapneumovirus infections. We aimed to estimate the age stratified human metapneumovirus-associated ALRI global incidence, hospital admissions, and mortality burden in children younger than 5 years.

Diagnosis of the child’s chest and breathing through a stethoscope, pulse oximetry to find how much oxygen is in the blood, chest X-rays to check for pneumonia, blood tests to check for bacteria and viruses, mucus samples to look for bacteria and viruses. Treatment over-the-counter medications for a cough or fever, plenty of rest, drinking plenty of fluids, antibiotics for bacterial infections, or breathing treatments, such as an inhaler, need to visit the hospital to receive IV fluids, antibiotics, or breathing support.

Respiratory tract infections are common diseases in children. It is crucial therefore to evaluate the severity of the condition during the initial bedside assessment in the emergency department so that further examinations and hospital treatment can be conducted as appropriate. A respiratory scoring system, namely “Pediatric Respiratory Severity Score (PRESS)”, This PRESS is used to assess tachypnea, wheezing, retraction (accessory muscle use) SpO2, and feeding difficulties, with each component given a score of 0 or 1, and total scores were classified as mild (0–1) moderate (2–3) or severe (4–5). This scoring system is useful for the initial assessment of respiratory tract infections in children to identify the need for hospitalization and further examination in emergency settings.

**Aim of the Study**

The aim of the study was to assess the effectiveness of Nursing Intervention on Acute Lower Respiratory Tract Infection among Preschooler using Pediatric Respiratory Severity Score.

**Objectives**

- To assess the respiratory status of Acute Lower Respiratory Tract Infection by using Pediatric Respiratory Severity Score among preschooler for both
To evaluate the effectiveness of Nursing intervention for respiratory status of Acute Lower Respiratory Tract Infection among preschooler by using Pediatric Respiratory Severity Score for experimental group.

To compare the respiratory status of Acute Lower Respiratory Tract Infection before and after Nursing intervention among Preschooler by using Pediatric Respiratory Severity Score for both experimental and control group.

To associate the respiratory status of Acute Lower Respiratory Tract Infection by using Pediatric Respiratory Severity Score among preschooler with their selected demographic variables for both experimental and control group.

**Hypothesis:**

- H1: There is a significant difference in the respiratory status of preschooler with Acute Lower Respiratory Tract Infection before and after Nursing intervention in experimental group.

- H2: There is a significant difference between experimental and control group on respiratory status of preschooler with Acute Lower Respiratory Tract Infection.

- H3: There is a significant association between the respiratory status of Acute Lower Respiratory Tract Infection among preschooler with their selected demographic variables for both experimental and control group.

**II. MATERIALS AND METHODS**

A Quasi experimental research design is selected for the present study, "A Study to assess the effectiveness of Nursing Intervention on Acute Lower Respiratory Tract Infection among Preschooler using Pediatric Respiratory Severity Score at SMVMCH, Puducherry". This study was conducted at SMVMCH, Puducherry. The period of the data collection was 6 weeks. Totally 30 preschooler (15 experimental and 15 control group) with Acute Lower Respiratory Tract Infection were selected for by using purposive sampling technique.

**Data Collection Tools:**

**Section A:** This section consists of demographic characteristics information
about the age, sex, birth order, mode of delivery, birth weight of the baby, religion, type of family, family monthly income, father’s and mother’s occupation, father’s and mother’s education, malnutrition, any past medical illness and diagnosis of the child.

**Section B:** A Pediatric Respiratory Severity Score used to grade the respiratory status for Under-five children with Acute Respiratory Tract Infection. This score consists of five items such as respiratory rate, wheeze, pulse oximetry, accessory muscle use and feeding difficulties.

**Section C:** Nursing intervention checklist consists of the Nursing action implemented which was carried out for 7 days to reduce level of respiratory tract infection and its complications for Preschooler. The nursing intervention includes:

- Massage therapy was given for relaxing the muscles engaged in breathing.
- Peak expiratory flow meter used to monitor a child’s ability to breathe out air.
- Play way method of instructing the children to do breathing exercises which will improve and clear secretions from their lungs and increase ventilation.
- Administration of nebulization therapy as per physician order.
- Administration of bronchodilators as per physician order.

**Data collection procedure:**

In step 1 descriptive survey about demographic data, were assessed. After In step 2, after getting formal authorization from the department of Child Health Nursing severity of respiratory status was identified by using Pediatric Respiratory Severity Score (PRESS). In step 3, nursing intervention was provided on the basis of grading of PRESS. Oral consent was obtained before collecting data from the mother of the preschooler.

**Statistical analysis**

The data was analyzed using both descriptive and inferential statistics. Frequency, percentage distribution were used for the analysis of demographic. Mean and standard deviation of respiratory status of preschooler in experimental group calculated Paired ‘t’ test value of t =13.33 and p = 0.004* shows statistically significant difference between Comparison of the effectiveness of
III. RESULTS AND DISCUSSION

The frequency and percentage wise distribution of pretest and posttest of respiratory status among preschooler with acute lower respiratory tract infection by using pediatric respiratory severity score in experimental group. The findings shows that out of 30 preschooler, In experimental group pre test, Majority of preschooler 8 (53.28%) had severe respiratory status, 5(33.3%) had moderate respiratory status and 2 (13.32%) had mild respiratory status. In post test, Majority of preschooler 8 (53.28%) had mild respiratory status, 7 (46.62%) had moderate respiratory status respectively.
Figure 1: Percentage wise distribution of pre test and post test respiratory status among preschooler with Acute Lower Respiratory Tract Infection by using Pediatric Respiratory Severity Score in experimental group.

Frequency and percentage wise distribution of pre test and post test respiratory status among preschooler with Acute Lower Respiratory Tract Infection by using Pediatric Respiratory Severity Score in control group. In control group pre test, Majority of preschooler 7 (46.62%) had Severe respiratory status, 5 (33.3%) had moderate respiratory status, and 2 (13.32%) had mild respiratory status. In post test, Majority of preschooler 8 (53.28%) had moderate respiratory status, and 5 (33.3%) had severe respiratory status and 2 (13.32%) had mild respiratory status respectively.

Figure 2: Percentage wise distribution of pre test and post test respiratory status among preschooler with Acute Lower Respiratory Tract Infection by using Pediatric Respiratory Severity Score in control group.
Mean and Standard deviation for Acute Lower Respiratory Tract Infection calculated Paired ‘t’ test value of $t = 13.33$ shows statistically significant difference between Comparison of the effectiveness of respiratory status on Acute Lower Respiratory Tract Infection among preschooler by using Pediatric Respiratory Severity Score in experimental group in post test respectively. The findings shows that out of 30 preschooler the level of Acute Lower Respiratory Tract Infection calculated Paired ‘t’ test value of $t = 0.811$ shows statistically not significant difference between Comparison of the effectiveness of respiratory status on Acute Lower Respiratory Tract Infection among preschooler by using Pediatric Respiratory Severity Score in both experimental and control group in post test respectively.

![Figure 3: Mean, standard deviation and paired ‘t’ test of comparison of the effectiveness of nursing intervention on Acute Lower Respiratory Tract Infection among preschooler by using Pediatric Respiratory Severity Score in experimental group and control group in Pre test and Post test.](image)

**Figure 3**

**IV. CONCLUSION**

A Quasi experimental research design was selected for this study to assess the effectiveness of nursing intervention on Acute Lower Respiratory Tract Infection among preschooler using Pediatric Respiratory Severity Score. The investigator obtained formal permission from ethical committee of Sri Manakula Vinayagar Medical College and Hospital. The main study was conducted in Sri Manakula Vinayagar Medical College and
Hospital (neonatal intensive care units) Puducherry. The period of data collection was six weeks. Totally 30 preschooler were selected by using the purposive sampling technique. The purpose of the study was explained to the preschooler informants.

REFERENCE


