ORIGINAL ARTICLE

A Study to Evaluate the Effectiveness of Self Instructional Module (SIM) Regarding Knowledge and Practices of Chest Physiotherapy on Children Suffering with Respiratory Conditions among Nurses Working in Pediatric Wards of Selected Hospitals of Belgaum City, Karnataka

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Abstract

An evaluative study was conducted to evaluate the effectiveness of self-instructional module (SIM) regarding knowledge and practices of chest physiotherapy on children suffering with respiratory conditions among nurses working pediatric wards of selected hospitals of Belgaum city, Karnataka. Totally 45 staff nurses were selected by non-probability purposive sampling technique. The knowledge and practice were assessed by using structured knowledge Questionnaire and observational checklist. The study results reveal that during pre-test, 11(24.44%) had good knowledge & 8 (17.77%) had good practice scores, 23 (51.11%) had an average knowledge & 32 (71.11%) had an average practice scores; and 11 (24.44%) had poor knowledge & 5 (11.11%) had poor practice scores on chest physiotherapy. After introduction of the SIM, All the nurses (100%) had good knowledge and 40 (88.88%) had good practice scores; 4(8.88%) had average practice scores and only 1(2.22%) fall in poor category. The pre-test results revealed that, there is a positive correlation between the variables i.e. knowledge and practice. Probability values of X^2contingency table revealed that the gain in knowledge & practice scores and socio demographic variables are independent. This means that gain in knowledge & practice scores has nothing to do with socio demographic variables of staff nurses. The study findings concluded that SIM on chest physiotherapy is effective in improving the knowledge and practices of nurses. The study also revealed that there is positive correlation between the knowledge and practices of nurses regarding chest physiotherapy.

Keywords: Self-Instructional Module (SIM); Chest Physiotherapy; Respiratory Conditions.

Introduction

Young children fall an easy prey to infectious diseases. The leading childhood diseases are diarrhea, respiratory diseases, measles, pertussis, polio, T.B, and diphtheria etc. The statistics show that respiratory diseases in infants and children are a major problem that accounts for a large share of childhood mortality and morbidity [3].

Infections of the respiratory tract are perhaps the most common ailment in children. Every year acute respiratory tract infections (ARI) are responsible for an estimated 4.1 million deaths worldwide. It is estimated that Bangladesh, India, Indonesia, and Nepal together account for 40% of the global ARI mortality. About 90% of the ARI are due to pneumonia. On an average, children below 5 years of age suffer about 5 episodes of ARI are responsible for about 30%to 50% of visits to health facilities and for about 20-40% of admissions to hospitals [1].

In India, the states and districts with high infant and child mortality rates, ARI is one of the major causes of death. Hospital records from states with high infant mortality rates show that up to 13% of inpatient death in pediatric wards are due to ARI [1].

The appropriate treatment for respiratory diseases in time generally showed good prognosis with

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pharmacological therapy and non – pharmacological interventions like Chest physiotherapy and Oxygenation improve airway clearance thereby improving ventilation and breathing in respiratory conditions.

Chest physiotherapy (CPT) is an airway clearance technique that combines manual percussion of the chest wall by the care- giver, strategic positioning of the patient for mucus drainage with cough and breathing techniques (Balchandran A, et al 2005) [5].

The central function of chest physiotherapy in pediatric respiratory diseases is to assist in the removal of tracheobronchial secretions. The intention is to remove airway obstruction, reduce airway resistance, enhance gas exchange, and improve the breathing. In an acute situation, recovery should be hastened but in child with a chronic respiratory disorder, the progression of the lung disease should be hopefully delayed. Chest physiotherapy can improve a patient's respiratory status and expedite recovery [7].

Objectives of the study

1. To assess the knowledge regarding chest physiotherapy on children suffering with respiratory conditions among nurses.
2. To identify the practices regarding chest physiotherapy on children suffering with respiratory conditions among nurses.
3. To evaluate the effectiveness of self-instructional module (SIM) regarding knowledge and practices of chest physiotherapy on children suffering with respiratory conditions among nurses.
4. To find out the correlation between pre-test knowledge and practice scores.
5. To find out the association between pre-test knowledge scores and selected demographic variables.
6. To find out the association between pre-test practice scores and selected demographic variables.

Methodology

Research Approach

Evaluative research approach

Research Design

Pre-experimental; one group pretest post test design.

Sampling technique & Sample size

Non probability; purposive sampling technique and 45

Setting of the study

Pediatric units of K.L.E.S. Dr. Prabhakar Kore Hospital & MRC, and District Hospital, Belgaum.

Tool Used

1. Structured knowledge Questionnaire to assess knowledge regarding chest physiotherapy among nurses.

Section I: Socio-demographic variables of subjects

Section II: Knowledge items on chest physiotherapy

2. Observational checklist to identify the practices regarding chest physiotherapy among nurses.

Procedure of data collection

The formal permission was taken from the Medical Director and Chief Executive Administrator Clinical Services of K.L.E.S' Dr. Prabhakar Kore Hospital & MRC and District Surgeon of District Hospital, Belgaum. The written consent was obtained by the subjects. The pre-test includes structured knowledge questionnaire to assess knowledge of subjects and observational checklist to identify the practices of subjects regarding chest physiotherapy. Self instructional module (SIM) was administered at the end of the pre-test. The post-test of the study was carried out 7 days later, using the same tool as the pre-test. Data collected was then tabulated and analyzed.

Results

The findings related to socio-demographic variables of subjects

The majority of the subjects 40 (88.88%) belonged to age group 21-30, while minimum number 5 (11.11%) belonged to the age group of 31-40yrs. In terms of gender, the maximum number of subjects 24 (53.33%) were females where as the minimum number 21 (46.66%) were males. Majority of the subjects 32 (71.11%) were single where as the minimum number 13 (28.89%) were married. All the subjects participated in study had GNM qualification. Majority of subjects 20(44.44%) had 2-4yr of experience and minimum of subjects 04(8.88%) had experience of 4-6yrs. The majority of subjects

24(53.33%) had 0-1 yr of experience in paediatric wards while minimum number 03(6.66%) had experience of 3 yrs and above. There was no exposure to any training program on chest physiotherapy.

Analysis and interpretation of knowledge scores of nurses regarding chest physiotherapy

Analysis and interpretation of data to find out correlation between knowledge and practice scores

Table 1: Pre-test and post-test percentage of knowledge scores of subjects in different items of chest physiotherapy

Sl. No	Items on CPT	Total score	Mean % of knowledge scores of subjects		
			Pre-test(x)	Post-test(y) knowledge	Gain in
1	Anatomy & physiology of thorax and respiratory system	1035	61.51	85.02	23.51
2	Chest physiotherapy	945	46.66	77.98	31.32

Table 1 reveals that the percentage of gain in knowledge scores in the area of anatomy and physiology of thorax and respiratory system was 23.51 and chest physiotherapy is 31.32%.

Table 2: Frequency and percentage distribution of knowledge scores of subjects regarding chest physiotherapy

Knowledge score	Pre test		Post test	
	Freq	%	Freq	%
Good	11	24.44	45	100
Average	23	51.11	00	00
Poor	11	24.44	00	00

Table 2 reveals that in pre-test majority of subjects 23 (51.11%) had an average knowledge; 11(24.44%) had good knowledge and 11 (24.44%) had poor knowledge, where as in post test all (100%) of them had good knowledge.

Graph 1: Percentage distribution of knowledge scores of subjects regarding chest physiotherapy

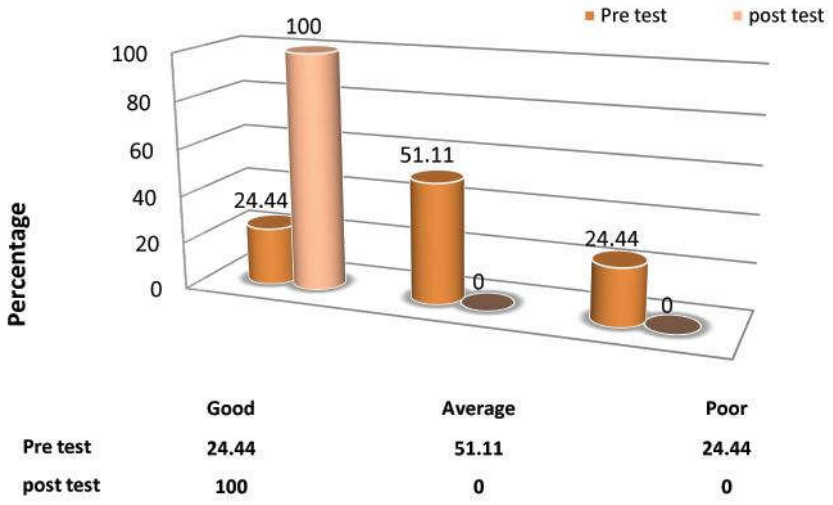


Table 3: Pre-test, post-test percentage of practice scores of subjects regarding chest physiotherapy

Sl. No.	Items	Total score	Mean % of practice scores of subjects		
			Pre-test (x)	Post-test (y)	Gain in knowledge (y-x)
1	Chest physiotherapy	855	32.28	64.67	32.39

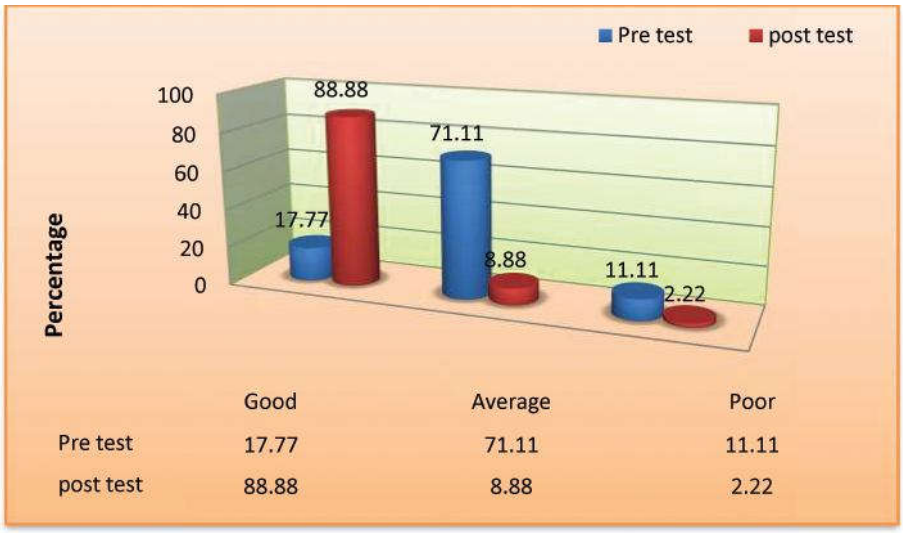
Table 3 reveals that the percentage gain in practice scores of chest physiotherapy is 32.39%.

Table 4: Frequency and percentage distribution of practice scores of subjects regarding chest physiotherapy

Knowledge score	Pre test		Post test	
	Freq	%	Freq	%
Good	8	17.77	40	88.88
Average	32	71.11	04	8.88
Poor	5	11.11	01	2.22

Table 4 reveals that in pre-test majority of subjects 32 (71.11%) had an average practice scores; 8 (17.77%) had good practice scores and 5 (11.11%) had poor practice scores, where as in post test 40 (88.88%) had good practice scores, 04 (8.88%) had an average practice scores; and 1 (2.22%) had poor practice scores.

Graph 2: Percentage distribution of practice scores of subjects regarding chest physiotherapy.



The Karl Pearson's coefficient of correlation formula was used to compute correlation between knowledge and practice is to be rxy = 0.036. Since 0< rxy<+1, there is a positive correlation between the variables i.e. knowledge and practice.

Analysis and interpretation of data to find out association between gain in knowledge and practice scores with selected socio demographic variables

Since x^2_{cal} value < x^2_{tab} value. Hence, there is no association between pre-test knowledge and selected demographic variables.

Since x^2_{cal} value < x^2_{tab} value. Hence, there is no association between pre-test practice scores and selected demographic variables.

Conclusion

Based on the findings of the study, the following conclusions are drawn.

(1) Overall pre-test knowledge & practice scores about chest physiotherapy was average.

(2) There was a need for Self Instructional Module for nurses on chest physiotherapy.

(3) Post test results showed significant improvement in the level of knowledge and practice scores on chest physiotherapy. Thus, it can be concluded that self instructional module (SIM) is effective self-learning package for nurses to increase and update their knowledge on chest physiotherapy.

(4) The pre-test results revealed that, there is a positive correlation between the variables i.e knowledge and practice.

(5) The results revealed no association between pre-test knowledge and sociodemographic variables.

(6) The results revealed no association between pre-test practice scores and sociodemographic variables.

Implications

The findings of the study have varied implications in different areas of nursing practice, nursing administration, nursing education, and nursing research.

Nursing Practice

Since the present study showed that most of the nurses were young and had avarage knoweledge and practices on chest physiotherapy, this present study will enable them to become aware of importance of the procedure and practice it effectively in order to provide better services. They will also be able to educate the patients to practice in home properly.

Nursing Administration

This study emphasize the need for inservice education programme or staff development programme on chest physiotherapy to improve and apply the knowledge in their day to day life. The SIM and the tool can be used during inservice education programmes.

Nursing Education

Findings of the study can be used by the nurse educator to highlight the importance of chest physiotherapy in children suffering with respiratory conditions among staff nurses to the budding nurses. This SIM can be used as reference material by the student nurses.

Nursing Research

The present study conducted by the investigator can be a source of review of literature for others, who are intending to conduct studies on chest physiotherapy.

Recommendations

(1) A similar study on large and wider sample for a longer period of time would be more pertinent in making broad generalizations.

(2) A structured teaching program (STP) on knowledge of chest physiotherapy can also be used to improve the knowledge.

(3) The study can be done with an experimental research approach having a control group.

(4) A study can be conducted to assess the effect of chest physiotherapy on children underwent for abdominal surgery.

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