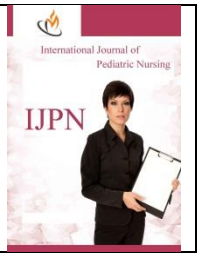
e - ISSN – 3117-4191
Print ISSN - 3117-4183

INTERNATIONAL JOURNAL OF PEDIATRIC NURSING

Journal homepage: www.mcmed.us/journal/ijpn



A COMPARATIVE STUDY TO ASSESS THE EFFECTIVENESS OF DEEP BREATHING EXERCISE USING BALLOON THERAPY VERSUS INCENTIVE SPIROMETRY ON RESPIRATORY STATUS AMONG CHILDREN WITH LOWER RESPIRATORY TRACT INFECTION ADMITTED IN SELECTED HOSPITAL AT KRISHNAGIRI DISTRICT

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Article Info

Received 25/01/2026
Revised 15/02/2026
Accepted 10/03/2026

Key word:
Lower Respiratory tract infection, respiratory status, children, incentive spirometry and balloon blowing.

ABSTRACT

A Comparative Study to Assess the Effectiveness of Deep Breathing Exercise using Balloon Therapy versus Incentive Spirometry on Respiratory Status Among Children with Lower Respiratory Tract Infection admitted in selected Hospital at Krishnagiri District" using quantitative research approach with quasi experimental design, two group Pre-test and post test design The study was conducted among 60 children with the age group of 2-6 years those who diagnosed with LRTI by purposive sampling techniques from Jeeva hospital & RK hospital Krishnagiri for Research setting. Data was collected. A close ended questionnaire was used to assess the respiratory distress among child with LRTI. The investigator divides the sample into two study groups; study group-I taught to blow the balloon for 7 days and study group-II taught about incentive spirometry. After 7 days post test was conducted to assess the respiratory distress. Data was analyzed by using descriptive and inferential statistics.The results show that during pre test means value was 16.4 and standard deviation was 5.4, in posttest mean value was 24 and standard deviation was 4.8. The calculated value of 't'' was 4.5 which is greater than table value, it is noted that there was a highly significant between pre and post test score, so there is effectiveness on balloon therapy for child with lower respiratory tract infection in study group- I. Hence H1 was accepted.Whereas in study group-II, the results show that, during pretest mean value was 15.5 andstandard deviation was 5.5, in posttest mean value was 20.4 and standard deviation was 4.6. The calculated value of 't'' was 4.5 which is greater than table value, it is noted that there was a highly significant between pre and post test score, so there is effectiveness on incentive spirometry for child with lower respiratory tract infection. Hence H1 was accepted.Chi-square analysis was used to test in study group-I, there is significant association ($p \leq 0.05$level) between the post test level of respiratory status among child in study group-I with their selected socio demographic variables such as education of Child, birth order, mother's education, source of passive smoking, no of hospitalization for LRTI last one year, previous treatment for LRTI and duration of present hospital stay had

association with level of knowledge. Hence hypothesis (H2) was accepted.In study group-II, there is significant association (p≤ 0.05level) between the post test level ofrespiratory status among children in study group- II with their selected socio demographic variables such as sex of Child, religion, residence, education of Child, birth order, mother's education, income of family, type of family, source of passive smoking, previous treatment for LRTI, duration of present hospital stay had association with level of knowledge. Hence hypothesis (H2) was accepted.

INTRODUCTION

Respiratory system is a frequent site of illness in children, Respiratory infections andallergies together are responsible for many disruptions in family life and missed from school work. Children respond differently to respiratory illness than do adults, the respiratory changes during childhood as new lung tissue continues to form and existing structure change in shape and function. However, most respiratory conditions are more stressful for the children than the adult, more often leading to airway obstruction or respiratory failure. In respiratory tract, lower respiratory tract infection is one of the leading common diseases occur during childhood. (AR Bharathi, 2021) "A Comparative Study to Assess the Effectiveness of Deep Breathing Exercise Using Balloon Therapy Versus Incentive Spirometry on Respiratory Status Among Children WithLower Respiratory Tract Infection Admitted in Selected Hospital at Krishnagiri.

OBJECTIVES:

- To assess the pre-test level of respiratory Status among children in study group- 1 and studygroup- 2.
- To evaluate the effectiveness of balloon therapy on respiratory Status among children in studygroup- 1.
- To evaluate the effectiveness of incentive spirometry on respiratory Status among children in study group - 2.
- To find out an association between deep breathing exercises using balloon therapy withselected demographic variable.
- To find out an association between deep breathing exercises using incentive spirometry withselected demographic variable.

HYPOTHESIS:

- H1: There is a significant difference between pretest and post-test level of respiratory parameters among children with lower respiratory tract infection in study group- 1 and study Group- 2
- H2: There is a significant association between the post-test level of balloon therapy and incentive spirometry on respiratory parameters with selected demographic

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Statement of Problem:

variables between the study group-1 and study group-2

Assumptions

- Children with Lower respiratory tract infection may have ineffective breathing pattern.
- The breathing exercises will be effective on respiratory parameters of children with lowerrespiratory tract infection.
- Breathing exercises by using balloon therapy are easy to perform, cost effective and havebeneficial effects on respiratory parameters.
- Using incentive spirometry may easy the breathing by enhancing lung capacity

Delimitations

This study is limited to,

- Children with lower respiratory tract infection
- Children with the age group of 2-6 years
- Four weeks of data collection

The table 1 reveals that there is significant association (p≤ 0.05level) between the post test level of respiratory parameters among children in study group-I with their selected socio demographic variables and clinical profile such as education of Child, birth order, mother's education, source of passive smoking, no of hospitalization for LRTI last one-year, previous treatment for LRTI and duration of present hospital stay had association with level of knowledge. Hence hypothesis (H 2) was accepted.

The table 1 reveals that there is no significant association (p≤ 0.05level) between the post test level of respiratory parameters among children in study group- I with their selected socio demographic variables and clinical profile such as Age (in years), sex of Child, religion, residence, weight of Child, father education, income of family, primary Care taker, types of family, experience in passive smoke, previous exposure to spirometry therapy and habit of balloon blowing had no association between level of knowledge. Hence hypothesis (H2) was not accepted.

The table 2 reveals that there is significant association (p≤ 0.05level) between the post test level of respiratory parameters among children in study group-II with their selected socio demographic variables and

clinical profile such as sex of Child, religion, residence, education of Child, birth order, mother's education, income of family, type of family, source of passive smoking, , previous treatment for LRTI, duration of present hospital stay had association with level of knowledge. Hence hypothesis (H_2) was accepted.

The table 2 reveals that there is no significant association ($p \leq 0.05$level) between the post test level of respiratory parameters among children in study group-II with their selected socio demographic variables and clinical profile such as Age (in years), weight of Child, father education, primary Care taker, types of family, experience in passive smoke and no of hospitalization for LRTI last one year, previous exposure to spirometry therapy and habit of balloon blowing had no association between level of knowledge. Hence hypothesis (H_2) was not accepted.

Table 1: Association between posttest level of knowledge with selected demographic variables and clinical profile among children with lower respiratory tract infection for study group –I (N-60)

Sl No	Demographic Variables	chi-square	Table Value	df	Significant
1	Child Age (in years)	3.04	7.815	**3**	**NS**
2	Sex of Child	2.56	3.841	**1**	**NS**
3	Religion	2.04	5.991	**2**	**NS**
4	Residence	0	3.841	**1**	**NS**
5	Weight of Child	1.72	5.991	**1**	**NS**
6	Education of Child	6.52	5.991	**2**	**S**
7	Birth order	10.72	5.991	**2**	**S**
8	Mother's education	**8.12**	7.815	**3**	**S**
9	Father's Education	**7.32**	7.815	**3**	**NS**
10	Income of Family	**4.32**	5.991	**2**	**NS**
11	Primary Caretaker	2.04	5.991	**2**	**NS**
12	Types of family	3	5.991	**2**	**NS**
13	Experience in passive smoke	0.16	3.841	**1**	**NS**
14	Source of passive smoking	63.96	5.991	2	**S**

S No	CLINICAL PROFILE				
1	**No of hospitalization for LRTI last one year**	7.84	7.815	3	S
2	**Previous treatment for LRTI**	14.32	5.991	**2**	**S**
3	**Duration of present hospital stay**	**6.88**	5.991	**2**	**S**
4	**Previous exposure to spirometry therapy**	**0**	3.841	**1**	**NS**
5	**Habit of balloon blowing**	**0**	3.841	**1**	**NS**

Figure 1: Schematic Representation of the Research Design

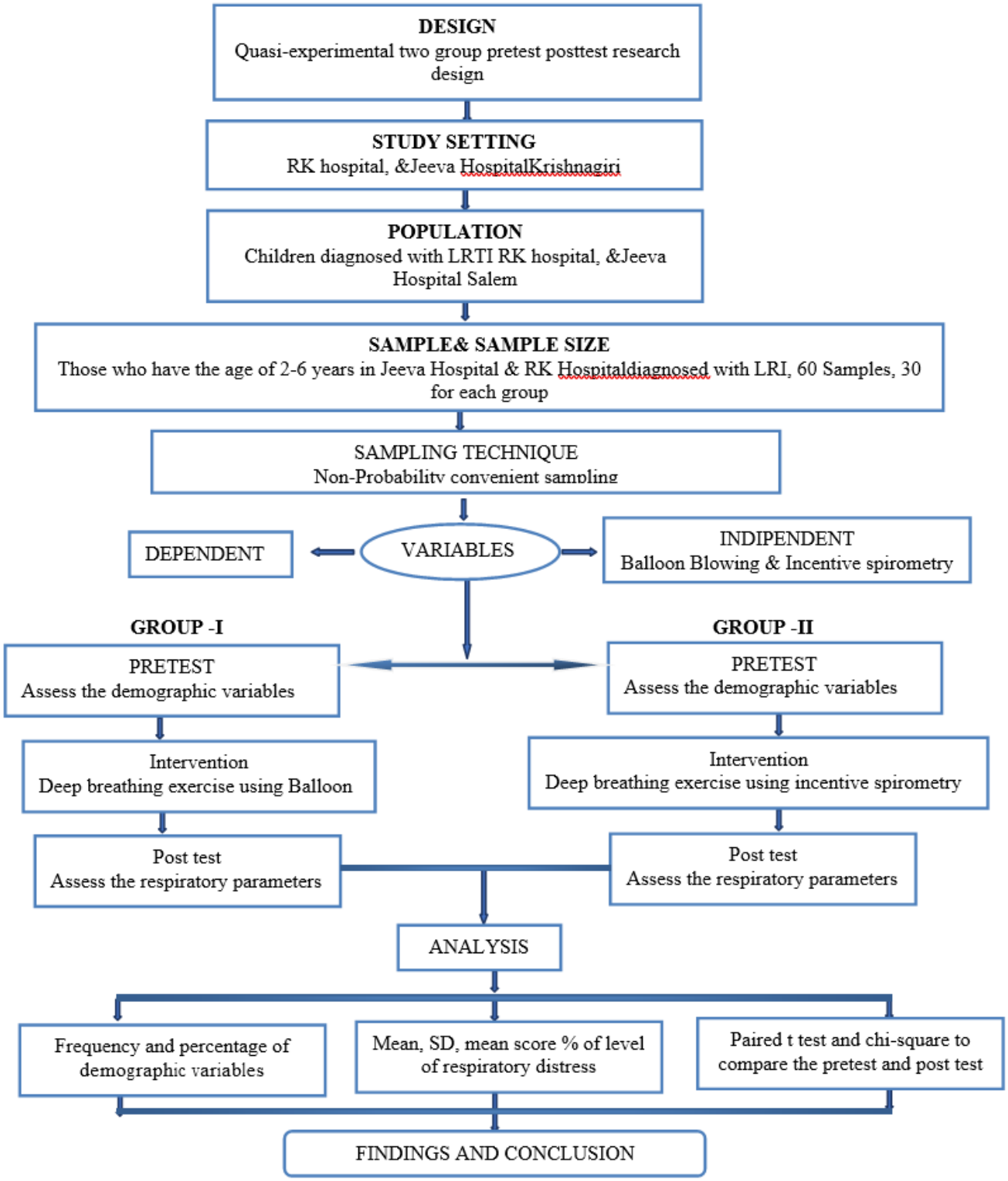

Table 2: Association between posttest level of knowledge with selected demographic variables and clinical profile among children with lower respiratory tract infection for study group –II

Sl No	Demographic Variables	chi-square	Table Value	df	Significant
1	Child Age (in years)	8.36	7.815	**3**	**NS**
2	Sex of Child	20.44	5.991	**2**	**S**
3	Religion	12.28	5.991	**2**	**S**
4	Residence	17.64	3.841	**1**	**S**
5	Weight of Child	3.88	5.991	**2**	**NS**
6	Education of Child	34.50	5.991	**2**	**S**
7	Birth order	40.36	7.815	**3**	**S**
8	Mother's education	8.10	5.991	**2**	**S**
9	Father's Education	7.12	7.815	**3**	**NS**
10	Income of Family	12.28	5.991	**2**	**S**
11	Primary Caretaker	0.12	5.991	**2**	**NS**
12	Types of family	11.88	5.991	**2**	**S**
13	Experience in passive smoke	0.16	3.841	**1**	**NS**
14	Source of passive smoking	22.36	5.991	2	**S**

S No	CLINICAL PROFILE				
1	**No of hospitalization for LRTI last one year**	6.48	7.815	3	NS
2	**Previous treatment for LRTI**	25.48	5.991	**2**	**S**
3	**Duration of present hospital stay**	21.70	5.991	**2**	**S**
4	**Previous exposure to spirometry therapy**	**0**	3.841	**1**	**NS**
5	**Habit of balloon blowing**	**0**	3.841	**1**	**NS**

RESULTS AND DISCUSSION

Demographic variables: The findings reveal that the demographic variables in study group 1(balloon therapy) highest percentage of the children, 10(33.3%) of them belonged to the age 2 years, respectively 16(53.3%) were males, 12(40 %) belonged to Christian. Equally they reside in 15(50%) belonged to rural and urban. Most of the child 14(46.7%) weight between 15-20 kg, 13(43.4%) children were going to kindergarten. And majority of the child 11(36.7%) were the second child in the family. Most of the mother educated up to 10 (33.4%) were primary education, father was studied up to 10(33.3%) secondary education and majority of their family income is 13(43.3%) between Rs.10001- 20000. In majority of the family grandparents was taking care of the baby 12(40%). Majority of them 15(50%) belonged to joint family, 30(100%) had experienced about passive smoking. Majority of the child 14(46.7%) were exposed to mosquito coil.

Whereas in clinical profile, 15(5%) were hospitalized previously. Most of them 12(40%) were hospitalized for less than 2 days. Majority of them had no experience on use of spirometry 30(100%) and 30 (100 %) were not had habit of balloon blowing.

Demographic variables: The findings reveal that the demographic variables in study group II (incentive spirometry) highest percentage of the children, 11(36.7%) of them belonged to the age 2 years, respectively 16(53.3%) were females, 11(36.7%) belonged to Muslim. They reside in 16(53.3%) belonged to urban. Most of child 11(36.7%) weight between 20-25 kg, 13(43.4%) were going to kindergarten. And majority of the child 12(40%) were the second child. Most of the mother were uneducated 6(20%), father educated up to 10(33.4%) primary education, majority of their family income is 11(36.73%) between Rs.10001- 20000.In majority of the family father was taking care of the baby 12(40%). Majority of them 11(36.7%) belonged to joint family, 30(100%) had experienced about passive smoking, Majority of the child 12(40%) were exposed to mosquito coil. Whereas in clinical profile, 10(33.3%) were between 1- 2 times hospitalized previously, most of them 9(30%) were between 3-4 times admitted in hospital. Majority of them had no experience on use of spirometry and 30(100 %) were not had habit of balloon blowing. effective, but also children enjoyable to as a recreational game and children were easily attracted towards it. Caregivers motivate to practice the balloon blowing to their children and encourage other caregivers in order to create health awareness. Therefore, the researcher felt that more importance should be given for deep breathing exercise among children like balloon blowing and incentive spirometry therapy to enhance lung expansion and reduce the reoccurrence of lower respiratory tract infection.

CONCLUSION

The study was done to evaluate the deep breathing exercise using balloon therapy versus incentive spirometry on respiratory status among children with lower respiratory tract infection admitted in selected hospital. From the result of the study, it was concluded that balloon blowing exercise and incentive spirometry therapy was effective on respiratory parameters among children with lower respiratory tract infection. Children develop five to eight attacks of respiratory illness such as bronchitis, pneumonia and asthma which cause 30 40% of hospitalization up to 3-8 years. So that the researcher identified balloon blowing exercise helps to reduce the length of hospital stay among children. Balloon blowing exercise was not only cost effective, but also children enjoyable to as a recreational game and children were easily attracted towards it. Caregivers motivate to practice the balloon blowing to their children and encourage other caregivers in order to create health awareness. Therefore, the researcher felt that more importance should be given for deep breathing exercise among children like balloon blowing to enhance lung expansion and reduce the reoccurrence of lower respiratory tract infection.

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