



# “A Comparative Study To Assess The Effectiveness Of Strelnikova Breathing Exercise Vs Pursed Lip Breathing Exercises On Respiratory Parameters Among Children With Bronchial Asthma At Dhanalakshmi Srinivasan Medical College And Hospital, Perambalur.”

1Saravanabavani M, 2Rohini T

1Associate Professor, 2Associate Professor

1St.Andrews College of Nursing,Pune.,

2St.Andrews College of Nursing,Pune.

## INTRODUCTION

Children are major consumers of health care. In India, about 35 percent of total populations are children below 15 years of age. Children always need special care to survive and thrive. Good health of these precious members of the society should be ensured as prime importance in all countries, **Karl Menninger, (2009).**<sup>1</sup>

Respiratory disorders are among the most common cause of illness and hospitalization in children. Overall respiratory dysfunction in children tends to be the more serious than in adults because the lumens of a child's respiratory tract are smaller and therefore more likely to become obstructed. Respiratory disorder ranges from minor illness such as a simple upper respiratory tract infection to life-threatening lower respiratory tract disease such as asthma,

**Adele.P, (2010).**<sup>7</sup>

Paediatric nurses are in a position to identify the knowledge, attitude and practice of asthma in children which will enable the nurse to plan with specialized service to help the children to understand about breathing exercises that will make a significant difference in the reduction of asthma and improvement in lung function.<sup>11</sup>

## NEED FOR THE STUDY

In worldwide, Lower respiratory tract infections among children place a considerable strain and serious on the health budget. In 2002 lower respiratory tract infection was still the leading cause of deaths among all infectious diseases, and they accounted for 3.9 million deaths worldwide.<sup>15</sup>

In the study conducted on the prevalence and management of asthma in primary aged school children, at Pune 25 of the schools were surveyed. An International Study of Asthma and Allergies in Childhood (ISAAC) questionnaire was distributed to parents of children in 7 to 9 years, and parental reports indicated a current or previous diagnosis of asthma in 24. 3 percentage children, with 17.8 percentage receiving asthma per year  $\frac{3}{4}$  class, one was receiving no treatment for asthma, there had experienced four or more attacks of wheeze in the previous year with one wheezing child per two year  $\frac{3}{4}$  classes experiencing more than 12 such attacks.<sup>18</sup>

## Research Methodology

### Research approach:

Quantitative Evaluative approach was used in this study.

### Research design

Pre experimental two group pre-test post-test design.

### Setting

The study was conducted on pediatric ward of Dhanalakshmi Srinivasan Medical College and Hospital, which is a 420 bedded hospital situated at Siruvachur in Perambalur district.

### Population

There was about 50-60 children with bronchial asthma admitted in paediatric ward per month

### Sample

Sample was children with bronchial asthma at Dhanalakshmi Srinivasan Medical College and Hospital.

### Sampling technique

The samples were selected by using non purposive sampling technique.

### Sample size

Sample size composed of 50 children with bronchial asthma. Among 50 samples, 25 was experimental group 1 and 25 was experimental group 2.

### Sampling criteria

#### Inclusive criteria:-Children with

- Age group of 6-15 years children with bronchial asthma.
- Both sex
- Diagnosis of bronchial asthma.
- 5 days of hospitalization.
- Children are present during data collection period.
- Children can able to understand and speak Tamil.
- Children are able to do activity

#### Exclusive criteria:-

- Children are critically ill.
- With any congenital defects of mouth and noses
- Children parents are not willing to participate in the study

## DESCRIPTION OF THE TOOL

Tool consists of three parts.

**Tool-I:-**It consists of demographic profile such as age, sex, residence, order of birth, family history of Asthma, pet animals in home, frequency of attack in last year.

**Tool-II:-**It consists of oxygen saturation ratings to measure the oxygen level by using pulse oximeter.

### Tools and Techniques:-

**SECTION I:**Distribution of samples according to their demographic variables.

**SECTION II:**Assess the respiratory parameters among children with bronchial asthma before & after Strelnikova breathing exercise and Pursed lip breathing exercise.

**SECTION III:**Compare the effectiveness of Strelnikova breathing exercise Vs Pursed lip breathing exercise on respiratory parameters among children with bronchial asthma from experimental group 1 and 2.

**SECTION IV:**Find out the association between the post test scores on respiratory parameters among children with bronchial asthma with their selected demographical variable from experimental group 1 and 2.

**Section-I:-Description of samples (antenatal mothers) based on their personal characteristics.**

Table 1:-Description of samples (antenatal mothers) based on their personal Characteristics in terms of frequency and percentage.

n=100

Sr. No	Demographic variable	Frequency (F)	Percentage (%)
<b>1.</b>	<b>Age</b>		
	<20years	2	2
	21-29years	84	84
	30- 40years	14	14
<b>2.</b>	<b>Education</b>		
	Illiterate	19	19
	Primary	56	56
	Secondary	21	21
	Graduation	4	4
<b>3.</b>	<b>Occupation</b>		
	Private employee	11	11
	Government employee	7	7
	Homemaker	80	80
	Business	2	2
<b>4.</b>	<b>Type of family</b>		
	Nuclear	34	34
	Joint	58	58
	Extended	8	8
<b>5.</b>	<b>Family Income</b>		
	Below Rs 5,000	1	1
	Rs 5,000 - Rs.10,000	58	58
	Rs 10,000- Rs 20,000	41	41

**SECTION-II:-Assess the pre-test and post test score of respiratory parameters among children with bronchial asthma in experimental group 1 and experimental group 2**

Table 4.2: Frequency and percentage distribution of pre-test and post test score of Respiratory parameters among children with bronchial asthma in Experimental group 1 and experimental group 2.

Respiratory parameters	Experimental group 1				Experimental group 2			
	Pre test		Post test		Pre test		Post test	
	frequency	percentage	frequency	percentage	frequency	percentage	frequency	percentage
<b>Oxygen saturation</b>								
Normal (98-100%)	-	-	21	84	-	-	3	12
Mild (96-97%)	-	-	4	16	-	-	22	88
Moderate (91-95%)	23	92	-	-	24	96	-	-
Severe (<91%)	2	8	-	-	1	4	-	-
<b>Peak flow rate</b>								
Normal (90-100%)	-	-	10	40	-	-	-	-
Mild (70-90%)	-	-	10	40	-	-	13	52
Moderate (50-70%)	9	36	5	20	10	40	12	48
Severe (<50%)	16	64	-	-	15	60	-	-

### SECTION III: Compare the pre-test and post test score of respiratory parameters among children with bronchial asthma in experimental group 1

**Table 4.4:** Comparison of Mean, standard deviation and paired 't' value between pre-test and post test score of oxygen saturation and peak flow rate among children with bronchial asthma in Experimental group 1. n=25

Respiratory parameters	Variable	Mean	SD	Mean difference	Paired 't' value	Table value	Inference
Oxygen saturation	Pre test	1.92	0.291	48	33.264	2.06	Significant
	Post test	3.84	0.408				
Peak flow rate	Pre test	1.36	0.645	45	14.254	2.06	Significant
	Post test	3.2	0.790				

n= 25

Respiratory parameters	Variable	Mean	SD	Mean difference	Paired 't' value	Table value	Inference
Oxygen saturation	Pre test	1.96	0.202	29	3.1	2.06	Significant
	Post test	3.16	0.353				
Peak flow rate	Pre test	1.4	0.645	28	7.619	2.06	Significant
	Post test	2.52	0.707				

N<sub>1</sub>=25,N<sub>2</sub> = 25

Respiratory parameters	Group	Mean	SD	Mean difference	Independent 't' value	Table value	Inference
Oxygen saturation	Experimental group 1	3.84	0.408	18	4.0700	2.06	Significant
	Experimental group 2	3.16	0.353				
Peak flow rate	Experimental group 1	3.2	0.79	17	3.910	2.06	Significant
	Experimental group 2	2.52	0.707				

#### SECTION IV: Association between post test score on respiratory parameters of children with bronchial asthma with their selected demographic variables in experimental group—1

**Table: 4.7** Association between post test score on respiratory parameters among children with Bronchial asthma with their selected demographic variables in experimental group 1.

S. No	Demographic variables	Oxygen saturation				Chi-square	Table value	Inference
		Normal	Mild	Moderate	Severe			
1.	<b>Age of child (in years)</b>							
a)	6 to 8 years	10	1	-	-	0.040	3.84	NS
b)	9 to 12 years	8	1	-	-			
c)	13 to 15 years	3	2	-	-			
2.	<b>Sex</b>							
a)	Male	14	1	-	-	0.041	3.84	NS
b)	Female	7	3	-	-			
3.	<b>Residence</b>							
a)	Rural area	12	3	-	-	0.041	3.84	NS
b)	Urban area	9	1	-	-			
4	<b>Order of birth</b>							
a)	First child	7	1	-	-	0.049	3.84	NS
b)	Second child	8	2	-	-			
c)	Third child	3	1	-	-			

d)	Fourth child and above	3	-	-	-			
5	<b>Family history of Bronchial asthma</b>							
a)	Yes	13	2	-	-	0.041	3.84	NS
b)	No	8	2	-	-			
6	<b>Pet animals in home</b>							
a)	Yes	6	1	-	-	0.049	3.84	NS
b)	No	15	3	-	-			
7.	<b>Frequency of attack in last year</b>							
a)	None	6	1	-	-			
b)	1 to 3 times	6	2	-	-	0.040	3.84	NS
c)	4 to 5 times	7	1	-	-			
d)	Above 5 times	3	-	-	-			

Table 4.7: Depicts that, Chi-square was calculated to find out the association between the respiratory parameters, oxygen saturation with their selected demographic variables in experimental group1. The findings revealed that there was no significant association with demographic variables.

### Discussion

This chapter deals with the discussion which was based on the finding obtained from the statistical analysis and its relation to the objective of the study. The theoretical frame work and the related literature.

A comparative study to assess the effectiveness of Strelnikova breathing exercise Vs pursed lip breathing exercise on respiratory parameters among children with bronchial asthma at Dhanalakshmi Srinivasan Medical College and Hospital, Perambalur.

### Conclusion

The present comparative study assessed the effectiveness of Strelnikova breathing exercises Vs pursed lip breathing exercise on respiratory parameters among children with bronchial asthma at Dhanalakshmi Srinivasan Medical College and Hospital, Perambalur. Based on statistical findings, it is shown that Strelnikova breathing exercises given among children with Bronchial asthma significantly improve oxygen saturation level ( independent 't' value=4.07) and increased the peak flow rate (independent 't' value= 3.91), therefore the investigator felt that, Strelnikova breathing exercise for children with Bronchial asthma will improve the respiratory parameters.

### Limitations

- Since it is an exercise program to the children, the researcher found difficulty in making them to understand and to co-operative to do the exercises.

### Recommendations

- ❖ Similar study can be done in different settings (rural and urban)
- ❖ Similar study can be replicated on larger samples there by findings can be generalized.
- ❖ A comparative study can also be between the effectiveness of various non- pharmacological measures for improving lung function among children.
- ❖ A different study can be conduct on breathing exercise with bronchial asthma in children.
- ❖ A similar study can be conduct to test effectiveness of Strelnikova breathing exercises on respiratory signs among children with bronchial asthma.
- ❖ A similar study can conduct to test the effectiveness of Pursed lip breathing exercise on respiratory signs among children with bronchial asthma.

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