



Effectiveness of Strelinikova Breathing Exercise on Respiratory Signs and Parameters among School Children with Lower Respiratory Tract Infection

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ABSTRACT

Respiratory problems are significant gathering of ailment influencing kids particularly in India and are the significant reasons for youth horribleness and mortality. Specifically, obstructive aviation route illnesses ascend in youngsters because of natural contamination and different causes. In this way, evaluation of aspiratory work test in such kids is significant. Henceforth the current investigation focused on to evaluate the adequacy of strelinikova breathing activity on respiratory signs and boundaries among younger students with respiratory parcel infection. The research configuration utilized was semi exploratory pre-test post-test plan. Purposive examining strategy was utilized to choose the 60 sample. The demographic data was collected by using the structured questionnaire and the oxygen level was measured by using the Pulse Oximeter. The peak flow rate was measured by using the Peak Flow Meter. The findings of the study revealed that there was significant difference in the measurement of oxygen saturation and respiratory rate between the experimental and control group which infers that Strelinikova Breathing Exercise on respiratory signs and parameters administered to the school age children with lower respiratory tract infection in the experimental group was found to be effective in maintaining the respiratory parameters among school age children and the current findings suggests that more extensive studies can be done at different settings and also as comparative studies.



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INTRODUCTION

The respiratory framework is a continuous site of sickness in youngsters, Respiratory contaminations and hypersensitivities together are answerable for

some disturbances in family life and missed from school work. Kids react diversely to respiratory ailment than do grown-ups, the respiratory changes during youth as new lung tissue keeps on framing and existing structure change fit as a fiddle and capacity. However, most respiratory conditions are more upsetting for the youngsters than the grown-up, more frequently prompting aviation route hindrance or respiratory disappointment. In respiratory parcel, lower respiratory lot contamination is one of the main normal infection happen during childhood. (George et al., 2014)

LRTIs are a steady and an inescapable medical condition which force a gigantic weight on the general public. They being regular purposes behind interview and hospitalization (Rabe et al., 2000)

The patients present with a wide range of sicknesses

which range from minor self restricting ailments to conceivably dangerous infections (Juniper *et al.*, 2004).

Respiratory issues are significant gathering of ailment influencing kids particularly in India and are the significant reasons for youth horribleness and mortality. Specifically, obstructive aviation route illnesses ascend in kids because of natural contamination and different causes. Thus, appraisal of aspiratory work test in such kids is significant. The PEFR is one among the lung work test which is useful in assessing obstructive lung illnesses particularly bronchial asthma. (Gupta *et al.*, 2001) It is additionally useful in observing the infection movement and reaction to treatment. The Peak Expiratory Flow Rate (PEFR) is an exertion subordinate boundary, arising out of the enormous aviation routes inside around 100-120 msec of the beginning of constrained termination. It stays at its top for 10 msec (Dikshit *et al.*, 2005).

It is all around archived in writing that a wide scope of geological, climatic, anthropometric, healthful, and financial states of India are related with territorial contrasts in lung function. Besides anthropometric and financial components, elevation is a significant determinant of lung function (Lommatzsch and Virchow, 2014).

Infections are the most widely recognized reason for lower respiratory parcel illness in babies and little youngsters and are a significant general medical condition in this age gathering. The tale variation of Covid that is related with the overall flare-up of the extreme intense respiratory condition and human metapneumovirus, an as of late distinguished new respiratory microbe, have focused on the proceeding with significance of viral respiratory contaminations over the entire age spectrum. (Van Woensel, 2003) Costs owing to viral lower respiratory lot diseases in both outpatient and inpatient settings are a significant weight on public medical services budgets. (Ahmed *et al.*, 2013)

Every year around 3% of all kids under 1 year old enough should be admitted to the clinic with moderate or extreme viral lower respiratory parcel infection. (Newton *et al.*, 2008) Asthma is a persistent aviation route inflammation and expanded aviation route hyper-responsiveness. Normal manifestations incorporate wheeze, hacking, chest snugness, and dyspnea which are joined by the presence of air obstruction, variable throughout brief timeframes, or reversible with treatment. The reason for asthma is unknown, but it is probably going to be polygenic infection impacted by ecological factors. (Raju *et al.*, 2004)

In India, an expected that 57,000 passings were ascribed to Asthma in 2004 (WHO 2004)3 and it was viewed as one of the main source of horribleness and mortality in provincial India (Smith 2000). (Rietveld *et al.*, 2000) Though effective screening, assessment, and the board systems for asthma are entrenched in big-time salary nations, these methodologies have not been completely actualized in India as proof had previously recommended that Asthma isn't to be dealt with freely yet fitted into the general spectrum of respiratory sicknesses. Besides, despite the fact that meds that treat asthma effectively are accessible at reasonable costs, they infrequently more than one percent of the individuals who might profit from it (Naik *et al.*, 2010).

Because of the high pervasiveness of LRTIs in the older both in medical clinic and outpatient setting, the epidemiological contrasts, atypical clinical signs, and age-related varieties in pharmacokinetics and pharmacodynamics make LRTIs the board for the old all the more testing, and normalized therapy at the beginning phase of LRTIs is basic to lessening passings and inability at present. (Liu *et al.*, 2019)

Subsequently the current examination focused on to evaluate the adequacy of strelinikova breathing activity on respiratory signs and boundaries among younger students with respiratory lot disease.

MATERIALS AND METHODS

A quantitative approach with quasi pre-test post-test configuration was utilized to direct the investigation in pediatric ward of SMCH. 60 sample tests were chosen utilizing purposive inspecting strategy in which 30 examples were assigned to control gathering and 30 examples were distributed to trial group. The investigation was carried out with prior permission from the ethical committee.

The demographic data were collected by using a structured questionnaire. The oxygen level was measured by using the Pulse Oximeter. The peak flow rate was estimated by utilizing the Peak Flow Meter. Strelinikova breathing was taught and was instructed to carry out for 1 week. The data were analyzed descriptive and inferential statistics.

RESULTS AND DISCUSSION

Sample characteristics

The sample characteristics in the experimental group, most of them 15(50%)16(53.3%) were male, 15(50%) were studying 1 – 3 and 4 – 6 standard, 11(36.7%) were Hindus, 16(53.3%) were first born child, 15(50%) had no allergy, 24(80%) had no

Table 1: Frequency and rate dispersion of level of peak flow rate among young school age with lower respiratory tract infection. N= 60(30+30)

Group	Test	Normal		Mild		Moderate		Severe	
		No.	%	No.	%	No.	%	No.	%
Experimental Group	Pre-test	0	0	15	50.0	11	36.67	4	13.33
	Post-test	27	90.0	3	10.0	0	0	0	0
Control Group	Pre-test	1	3.33	11	36.67	13	43.33	4	13.33
	Post-test	25	83.33	5	16.67	0	0	0	0

Table 2: Frequency and rate appropriation of oxygen immersion among young school age children with lower respiratory tract infection. N = 60(30+30)

Group	Test	Normal		Mild		Moderate		Severe	
		No.	%	No.	%	No.	%	No.	%
Experimental Group	Pre-test	0	0	23	76.67	7	23.33	0	0
	Post-test	17	56.67	13	43.33	0	0	0	0
Control Group	Pre-test	0	0	13	43.33	17	56.67	0	0
	Post-test	11	36.67	19	63.33	0	0	0	0

Table 3: Comparison of post-test respiratory signs and parameters among school age children with lower respiratory tract infection. N = 60(30+30)

Variables	Experimental		Control		Student Independent 't' Test Value
	Mean	S.D	Mean	S.D	
	269.30	73.20	285.73	67.22	t = 0.906 p = 0.369, N.S
Oxygen saturation	97.57	0.50	97.23	0.68	t = 2.159 p = 0.035, S*
Respiratory rate	27.60	2.75	30.73	2.38	t = 4.722 p = 0.0001, S***
Pulse rate	97.60	3.25	97.93	3.98	t = 0.355 p = 0.724, N.S

***p<0.001, *p<0.05, S - Significant, N.S- Not Significant

pet animals at home and 19(63.3%) were hospitalized for 0 – 3 days. Whereas in the control group, most of them 12(40%) were in the age group of 6 – 8 years, 16(53.3%) were male, 18(60%) were studying 4 – 6 standard, 12(40%) were Hindus, 16(53.3%) were first born child, 16(53.3%) had no allergy, 20(66.7%) had no pet animals at home and 19(63.3%) were hospitalized for 0 – 3 days.

Assessment of level of respiratory signs among school age children with lower respiratory tract infection

The analysis shows that in the pretest of the experimental group, 15(50%) had mild peak expiratory flow rate, 11(36.67%) had moderate peak expiratory flow rate and 4(13.33%) had severe expiratory peak flow rate. Whereas in the post-test,

27(90%) had normal peak expiratory flow rate and 3(10%) had mild peak expiratory flow rate. The analysis also portrays that in the pretest of control group, 13(43.33%) had moderate peak expiratory flow rate, 11(36.67%) had mild peak expiratory flow rate, 4(13.33%) had severe peak expiratory flow rate and only one had normal peak expiratory flow rate. Whereas in the post-test, 25(83.33%) had normal peak expiratory flow rate and 5(16.67%) had mild peak expiratory flow rate. (Table 1)

The analysis revealed that in the pretest of experimental group, 23(76.67%) had mild level of oxygen saturation and 7(23.33%) had moderate level of oxygen saturation. Whereas in the post-test, 17(56.67%) had normal oxygen saturation and 13(43.33%) had mild level of oxygen saturation. pretest of control group, The discoveries addition-

ally portrays that in the 17(56.67%) had moderate level of oxygen saturation and 13(43.33%) had mild level of oxygen saturation. Whereas in the post-test, 19(63.33%) had mild level of oxygen saturation and 11(36.67%) had normal oxygen saturation.(Table 2)

Comparison of respiratory signs among school age children with lower respiratory tract infection

The comparison findings depicts that the post-test mean score of peak expiratory flow rate in the experimental group was 269.30 ± 73.20 and the mean score in the control group was 285.73 ± 67.22 . The calculated student independent 't' test value of $t = 0.906$ was not found to be satisfically significant the findings also portrays that the post-test mean score of oxygen saturation was 97.57 ± 0.50 and the post-test mean score was 97.23 ± 0.68 . The calculated student independent 't' test value of $t = 2.159$ was found to be satisfically significant at $p < 0.05$ level. It further shows that the post-test mean score of respiratory rate was 27.60 ± 2.75 , and the post-test mean score was 30.73 ± 2.38 . The calculated student independent 't' test value of $t = 4.722$ was found to be statistically significant at $p < 0.001$ level.

The post-test mean score of pulse rate was 97.60 ± 3.25 and the post-test mean score was 97.93 ± 3.98 . The calculated student independent 't' test value of $t = 0.355$ was not found to be statistically significant. By comparing the mean of experimental and the control group and the mean of experimental group is found to be less compare to mean of control group. So the Strelinikova Exercise found to be effective among the children.(Table 3)

The present study findings were supported by a NamrataPundir, Rajkumari Sylvia, SanjenbamEmonChanu, SanchitaPugazhendi, Chandan Kumar (2018) led an examination to survey the adequacy of breathing activities as play method on cardiopulmonary parameters among children with acute respiratory tract infections. The mean posttest heart rate (96.47), respiration rate (25.47), and Spo2 (95.2) of the experimental group was significantly near to normal as compared to the control group. The mean posttest cough score (1.62), breath sound score (2.18), chest expansion score (2.16), and dyspnea score (3.74) of experimental group was significantly low than the control group. There was significant association between cardiopulmonary parameters and selected demographic variables. (Pundir et al., 2018)

The association of the demographic variables revealed that age of the child and education had shown statistically significant association with post-test level of peak expiratory flow rate at

$p < 0.001$ level and duration of hospitalization had demonstrated factually critical relationship with the post-test level of pinnacle expiratory stream rate at $p < 0.001$ level and term of hospitalization had indicated measurably huge relationship with post-test level of respiratory parameters in the experimental group.

CONCLUSIONS

A study conducted on the effectiveness of Strelinikova Breathing Exercise proved that there is a decrease of respiratory signs and improvement of respiratory parameters and improve the lung function.

Conflict of interest

The authors declare that they have no conflict of interest for this study.

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