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EFFECTS OF SELECTED RELAXATION TECHNIQUES ON PHYSIOLOGICAL PARAMETERS IN PATIENTS WITH BRONCHIAL ASTHMA AT LHDM AND DR PREM HOSPITAL: A QUASI-EXPERIMENTAL APPROACH. PANIPAT

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Abstract:

Background of the study: Asthma is the most common chronic respiratory condition in the world, and its prevalence is rising. Because asthma cannot be cured, alternative therapies such as Deep Breathing Exercises, Pursed Lip Breathing, Incentive Spirometry, and others are available. **Aim:** The current study sought to assess the efficacy of various relaxation techniques on physiological parameters in patients with bronchial asthma at LHDM and Dr Prem Hospital. Panipat. **Methodology:** The quantitative research strategy served as the foundation for the methodology adopted in the current investigation. For this study, a quasi-experimental research approach was used. This research was carried out at LHDM and Dr. Prem Hospital. Oscar Hospital in Panipat and Panipat. The sample was equally split into two groups. Group 1 patients will receive specific relaxation techniques, such as progressive muscular relaxation exercises and pursed-lip breathing exercises (30 samples in each group). Routine nursing care was provided to group 2 subjects for their bronchial asthma. The non-probability purposive sampling strategy served as the foundation for the methodology used in this study. Modified Borg Dyspnoea Scale was the instrument used for data collection. Six participants participated in a pilot study to evaluate the viability of the research methodology. The data collection process demonstrates that the Modified Borg Dyspnoea Scale was used to evaluate the subjects' breathing issues. Then came these The individuals practised pursed lip breathing for three minutes, three times per day for five days. The 10-day post-test was conducted using the same instrument at the conclusion. Just the experimental group received the Breathing Technique instruction, and subjects practised it three times daily for 10 minutes each. Subjects in the intervention group began using the Coach 2 gadget for incentive spirometry. Both groups underwent a supervised

session of their assigned breathing exercise twice: once in the morning and once in the late afternoon. On the fifth day, the Modified Borg's Dyspnoea Scale was used for the post test. The control group received standard nursing and medical treatment. Statistics were used for both descriptive and inferential data analysis. **Results**: The mean and standard deviation of the post-test dyspnoea levels score for the experimental group was 3.54 ± 1.548. During the post-test, the average level of dyspnea in the control group was 8.23 ± 1.006, and the independent "t" test score was 14.041, with 58 degrees of freedom. At a p value of less than 0.001, it was statistically important. This shows that there was a difference in the level of dyspnoea among subjects in experimental and control group. **Conclusion:** It was discovered that Deep Breathing Exercises, Pursed Lip Breathing, Incentive Spirometry, etc. were significantly useful in improving the respiratory physiological parameters of bronchial asthma patients.

Key Words: Evaluate, Selected relaxation techniques, Physiological Parameters

Introduction:

Lungs are important organ. If the lungs are not functioning properly, it affects the respiratory pattern of humans. Therefore, patients with respiratory disorders require breathing exercises. Breathing exercises are beneficial and specific methods for increasing the volume of air entering and leaving the lungs.[1]

In the new millennium, managing patients with bronchial asthma disease is a formidable challenge. Asthma is a chronic condition that is incurable. However, the majority of asthmatics can control their symptoms. The global incidence of bronchial asthma disease is 0.8%. (Halberd et al 2003).[2]

Asthma is a chronic condition characterised by episodes of wheezing, shortness of breath, chest tightness, and coughing. Although there is no cure for asthma, most people can manage the condition and live normal, active lives. Different factors cause asthma attacks in different people. Air pollution, cold air, pollen, animals, house dust, moulds, strong odours such as perfume or bus exhaust, wood dust, exercise, and industrial chemicals can all set off an attack. Meditation is a self-directed practise that helps to relax the body and calm the mind. Regular meditation can improve longevity and quality of life while also alleviating anxiety and stress.[3]

The number of people with asthma is going up by 50% every 10 years around the world. The World Health Organization says that by 2020, asthma and chronic obstructive pulmonary disease will be the third leading cause of death, after heart disease and cancer. WHO estimates that 57,000 people in India died from asthma in 2004, making it one of the leading causes of illness and death in rural India (Smith2000). Aggarwal et al. (2006) estimate that by 2009, there will be 30 million people with asthma in India, and the median prevalence will be 2.4% among adults over the age of 15.[4]

Although asthma cannot be cured, its symptoms can be managed using alternative or complementary physical therapy. Buteyko Breathing Method is one of the most effective breathing techniques. The late Professor Konstantin Buteyko (1923-2003) was a Russian physiologist who gave his name to a revolutionary therapeutic technique for asthma sufferers that is currently being used in a number of nations.[5] Eight Buteyko Breathing Technique classes are currently offered in Europe, Australia, New Zealand, and the United States.[6]

Edmund Jacobson created the Progressive Relaxation Technique (PRT) in the 1920s. Jacobson published his findings in PRT in 1920.[7] PRT is a set of exercises that involve contracting a muscle group, holding the contraction, and then relaxing. Contraction teaches the sensation of muscle tension. Relaxing the muscle teaches the absence of tension and how it can be induced voluntarily. Isometric contraction is used in PRT. PRT benefits include being able to deal with stress more effectively, identifying signs of stress, and reducing anxiety.[8]

Yoga breathing is based on the straightforward concepts of adho mukha svanasana and pranayama.[9] The word "pranayama" comes from the Sanskrit words "prana," which means "vital life energy," and "ayama," which means "restriction." Hence, the definition of pranayama is "the regulation or control of life force." By calming the mind, pranayama aids in energy conservation by regulating the rate and rhythm of breathing. Due to the fact that it lessens and relieves bronchospasm, makes it easier for the diaphragm to relax, and promotes controlled rhythmic breathing, it has significant impact on obstructive lung disorders and asthma. Adho mukha svanasana is also known as adho mukha svanasana (dog). This pose increases self-assurance, enhances cognition and brain function, lessens stress, depression, and anxiety, strengthens the legs, elongates the spine, and decreases stress.[10]

Psychological problems may also cause asthma. Asthma patients' elevated perceived stress lowers their QOL and is closely linked to poor asthma control and treatment adherence. Psychosocial distress is linked to over-perceiving dyspnea and unmeasured respiratory symptoms. Patients must distinguish between asthma symptoms and associated affect-related sensations and cognitions to respond properly and prevent symptom exacerbations. Self-management programmes usually teach about external triggers and medication use, but psychological therapies have not been proved to be effective. Biofeedback, relaxation, breathing exercises, and yoga, utilised by 40% of asthma patients, have not proven any benefit. Mindfulness training teaches non-reactive awareness of thoughts, feelings, and sensations. Mindfulness-Based Stress Reduction (MBSR) is a widely available group-based mindfulness training programme that reduces perceived stress, disease-related distress, and medical symptoms in a variety of stress-related disorders and chronic diseases, but its effects on asthma QOL and management have not been studied.[11] In order to determine whether or whether certain relaxation techniques are helpful for people with bronchial asthma, this study was conducted.

Objectives:

1. To assess pre – test and post-test physiological parameters of patients diagnosed with bronchial asthma in both groups.
2. To evaluate the effectiveness of selected relaxation techniques on physiological parameters of patients diagnosed with bronchial asthma in experimental group.
3. To determine association between pre-test physiological parameters of patients diagnosed with bronchial asthma with selected socio-demographic variables in both groups.

Hypotheses:

All hypothesis was tested at the p value $\leq$ than 0.05 level of significance.

H_1: There will be a significant effect on the selected relaxation techniques on physiological parameters of patients diagnosed with bronchial asthma in experimental group.

H_2: There will be a significant association between pre-test physiological parameters of patients diagnosed with bronchial asthma with selected socio-demographic variables in both groups.

Methodology:

Research Approach and Design: The research approach used in the current study was based on the quantitative research approach. The research design adopted for this study was quasi - experimental design.

Setting of the study: LHDM & Dr Prem Hospital. Panipat.

Sample size: Samples were split into two equal groups. I.e., group-1 and group-2, with 30 samples in each group. People in group-1 will be taught certain ways to relax, like progressive muscle relaxation and pursed-lip breathing. For their bronchial asthma, the people in group 2 got regular nursing care.

Sampling Technique: Non-probability purposive sampling technique. Purposive sampling technique.

Tool: The tool for data collection was consist of three sections namely,

- ✓ **Section A:** Demographic data
- ✓ **Section – B:** Modified Borg Dyspnoea Scale
- ✓ **Section C:** Observational checklist for physiological parameters

Procedure for Data Collection: Data was collected over six weeks. LHDM & Dr Prem Hospital, Panipat gave signed clearance for the primary study. Non-probability purposive sampling was used. Self-introduction followed sample selection. Samples consented orally. Data collecting required the individual to sit comfortably. Both experimental and control groups had a respiratory physiological pre-test (pulse rate, respiratory rate, and peak expiratory flowmeter) Modified Borg Dyspnoea Scale measured subject breathing issues. Pursed lip breathing was taught for 3 minutes, 3 times a day for 5 days. 10th-day post-test was done using same instrument. Only the experimental group conducted Breathing Technique three times a day for 10 minutes. Intervention group participants used Coach 2 incentive spirometry. Both groups had supervised morning and afternoon breathing exercises with 10 repetitions. The Modified Borg dyspnoea scale was used for the fifth-day post test. The control group received standard medical and nursing treatment. The control group was told their respiratory status will be examined to determine sickness severity.

Data Analysis: Descriptive and inferential statistics will analyse the data. This study described mean, standard deviation, and percentage. Inferential statistics uses a one-sample paired t-test to determine the relationship between demographic variables and evoked problems.

Results:

Table I shows the frequency and percentage distribution of subjects in the Experimental and Control Groups based on demographic variables.

In terms of age, the majority of participants in the experimental group (11; 36.7%) were between the ages of 41 and 50, whereas the majority of subjects in the control group (nine; 30%) were between the ages of 31 and 40. Both groups contained an equal number of male and female subjects. Men comprised 46.7% of the population, while females comprised 53.3%.

The majority of subjects in the experimental group, 20, are married, while the majority of subjects in the control group, 21, are married. About the educational standing. In the experimental group, the majority of participants,

nine (30%), have a high school diploma, while in the control group, thirteen (43.3%) only have an elementary education. Occupational status suggests that the majority of experimental group subjects (16, 53.3%) are employed in the private sector. Among the 19-year-olds in the control group, 63.3% had private occupations. In terms of monthly family income, the bulk of experimental group subjects (36.7%) earned between 6,000 and 18,000 Rupees. The majority of the 15 participants in the control group (50%) had a monthly household income between Rs 30,001 and Rs 30,001 – 50000. The majority of participants in the experimental group, fourteen (46.7%), were passive smokers. The bulk of 12 (40%) of the patients in the control group were passive smokers. Regarding allergic factors, the majority of subjects in the experimental group (12, 40%) were allergic to pollen, while the majority of subjects in the control group (14, 46.7%) were allergic to pollen.

Seasonal attacks of the participants reveal that in the experimental group, 15 (50%) of the patients had seasonal attacks, while 15 (50%) of the subjects did not. The majority of 17 (56.7%) of the control group had seasonal attacks. Regarding the duration of disease, the majority of 16 (53.3%) of the experimental group's subjects had two to five years. In contrast, the majority of participants in the control group, 21 (70%), experienced the illness between 2 and 5 years.

Table – I: Demographic Distribution of Experimental and Control Group Subjects

(N = 60)

S. No	Demographic Variables		Experimental Group		Control Group	
			f	%	f	%
1	Age (Years)	20 - 30	6	20.0	6	20.0
		31 - 40	6	20.0	9	30.0
		41 - 50	11	36.7	7	23.3
		51 - 60	6	20.0	6	20.0
		61 - 80	1	3.3	2	6.7
2	Gender	Male	14	46.7	14	46.7
		Female	16	53.3	16	53.3
3	Marital Status	Un Married	5	16.7	6	20.0
		Married	20	66.7	21	70.0
		Divorced	3	10.0	3	10.0
		Widow	2	6.7	0	0
4	Educational Status	No formal education	6	20.0	5	16.7
		Primary education	4	13.3	13	43.3
		Secondary & higher secondary	7	23.3	8	26.7
		Diploma	9	30.0	4	13.3
		Graduate and post - graduate	4	13.3	0	0
5	Occupational Status	Unemployed	3	10.0	3	10.0
		Private employee	16	53.3	19	63.3
		Govt employee	2	6.7	5	16.7

		Factory worker / Laborers / Daily Wages	9	30.0	3	10.0
6	Family income (Rupees)	6000 – 18000	11	36.7	5	16.7
		18001 – 30000	9	30.0	10	33.3
		30001 – 50000	10	33.3	15	50.0
7	Smoking status	Non – smoker	6	20.0	10	33.3
		Passive smoker	14	46.7	12	40.0
		Smoker	6	20.0	4	13.3
		Ex - smoker	4	13.3	4	13.3
8	Allergic factors	House dust mite	2	6.7	3	10.0
		Pollen	12	40.0	14	46.7
		Fungal spore	9	30.0	3	10.0
		Pet	7	23.3	10	33.3
9	Seasonal attacks	Yes	15	50.0	17	56.7
		No	15	50.0	13	43.3
10	Duration of illness	< than 2 years	3	10.0	7	23.3
		2 – 5 years	16	53.3	21	70.0
		> than 5 years	11	36.7	2	6.7

Figure 1 shows the Experimental Group's Frequency and Percentage Distribution of Dyspnoea Levels. 20 experimental subjects (66.7%) experienced severe dyspnoea pre-test. 10 (33.3%) had moderate dyspnoea. 17 (56.7%) had mild dyspnoea post-test. Four (13.3%) trial participants had no dyspnoea.

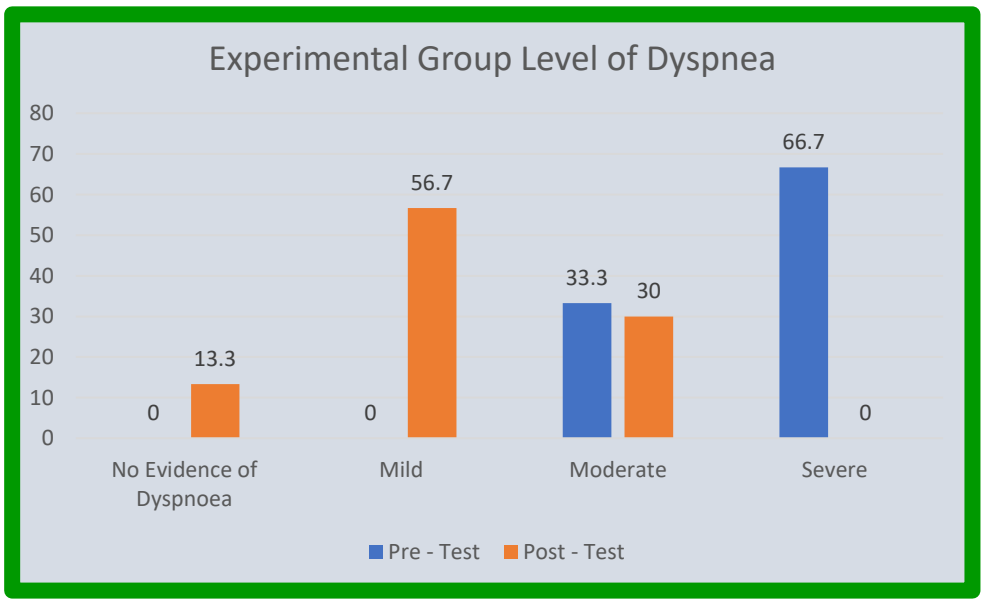

Figure – I: Percentage Distribution of Subjects According to Level of dyspnoea in experimental group

Figure 2 shows the frequency and percentage of subjects in the control group by dyspnoea level. 27 (90%) control group individuals exhibited severe dyspnoea pre-test. 3 (10%) had moderate dyspnoea. At post-test, 22 (73.3%) had severe dyspnoea. 8 (26.7%) had moderate dyspnoea

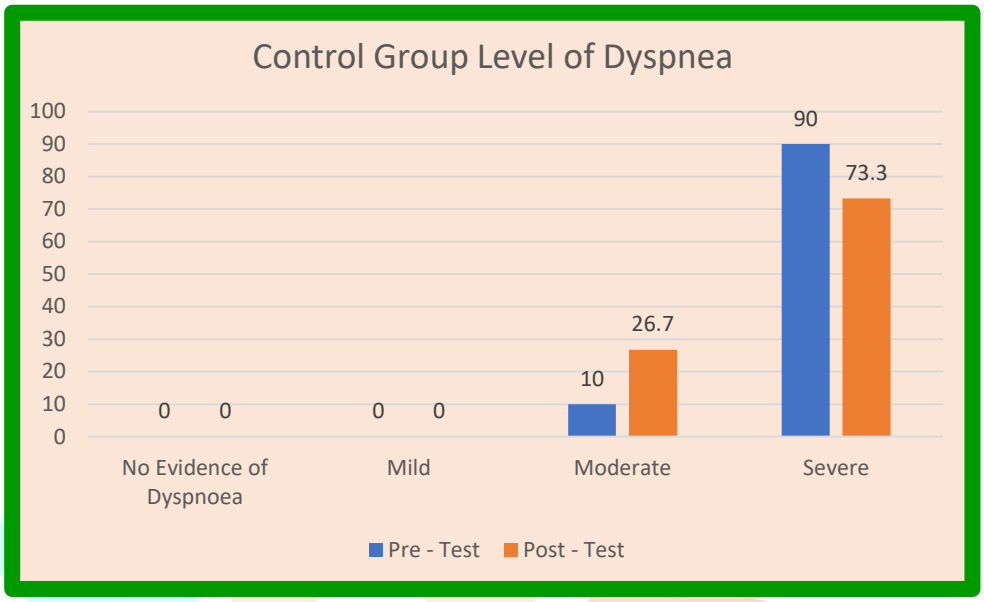

Figure – II: Percentage Distribution of Subjects According to Level of dyspnoea in control group

Table II displays the Mean, Standard Deviation, and Variance of the selected physiological parameters for the Experimental Group of Subjects.

During the pre-test, the mean pulse rate and standard deviation score was 78,00 ± 9,082. During the post-test, the average pulse rate and standard deviation score were 77.87 ± 4.066. Pre-test variance scores were 88.483 and post-test variance scores were 16.533.

At the pre-test, the mean respiration rate and standard deviation score was 20.20 ± 3.253, but the post-test mean respiration rate and standard deviation score was 17.87 ± 2.345. Variance scores on the pre-test were 10,579 and, on the post-test, they were 5,499.

Table – II: Mean, Standard Deviation and Variance of the of the selected physiological parameters of the subjects in Experimental Group

(n = 30)

Parameters	Pulse Rate Pre – Test	Pulse Rate Post – Test	Respiratory Rate Pre – Test	Respiratory Rate Post – Test
Mean ± S.D	78.00 ± 9.082	77.87 ± 4.066	20.20 ± 3.253	17.87 ± 2.345
Variance	82.483	16.533	10.579	5.499

The selected physiological parameters of the Control Group individuals' mean, standard deviation, and variance are displayed in Table III.

During the pre-test, the mean pulse rate and standard deviation score were 78.8 ± 6.183. The mean pulse rate and standard deviation score during the post-test, however, were 79.13 ± 3.471. Pre-test variance scores were 38.234; post-test variance scores were 12.051.

In the pre-test period, the mean respiration rate and standard deviation score were 20.33 ± 3.021; in the post-test period, they were 20.53 ± 2.161. Variance scores at the time of the pre-test were 9.126, and at the time of the post-test, they were 4.671.

Table – III: Mean, Standard Deviation and Variance of the selected physiological parameters of the subjects in Control Group

(n = 30)

Parameters	Pulse Rate Pre – Test	Pulse Rate Post – Test	Respiratory Rate Pre – Test	Respiratory Rate Post – Test
Mean ± S.D	78.8 ± 6.183	79.13 ± 3.471	20.33 ± 3.021	20.53 ± 2.161
Variance	38.234	12.051	9.126	4.671

Figure III shows the frequency and percentage distribution of subjects in the experimental group based on their peak expiratory flow rate. Most of the 21 people who took the pre-test assessment (70%) were in the red zone. And there were 9 (30%) people in the yellow zone. When it came to the subjects' PEFR zones during the post-test, 20 (66.7%) were in the green zone and 10 (33.3%) were in the yellow zone.

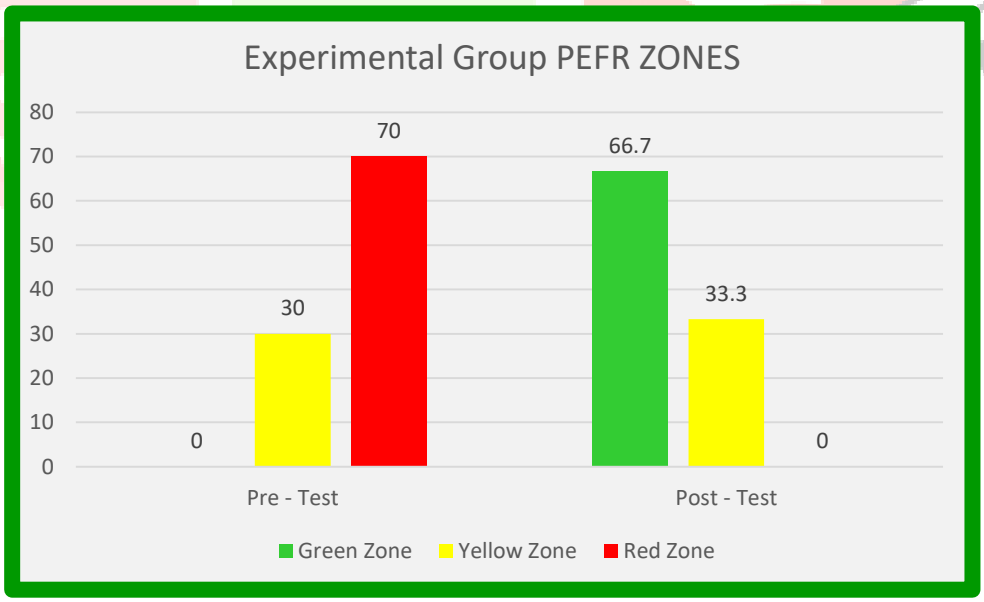

Figure – III: Percentage Distribution of Subjects According to PEFR Zones in Experimental group

Figure IV depicts the frequency and percentage distribution of subjects in the Control Group based on peak expiratory flow rate. During the pre-test assessment, the majority of the subjects (20, or 66.7%) were in the red zone. The proportion of those in the yellow zone was 10 (33.3%). In terms of the PEFR zones of the subjects during the post-test, the majority (17 (56.7%) were in the green zone, while 13 (43.3%) were in the yellow zone.

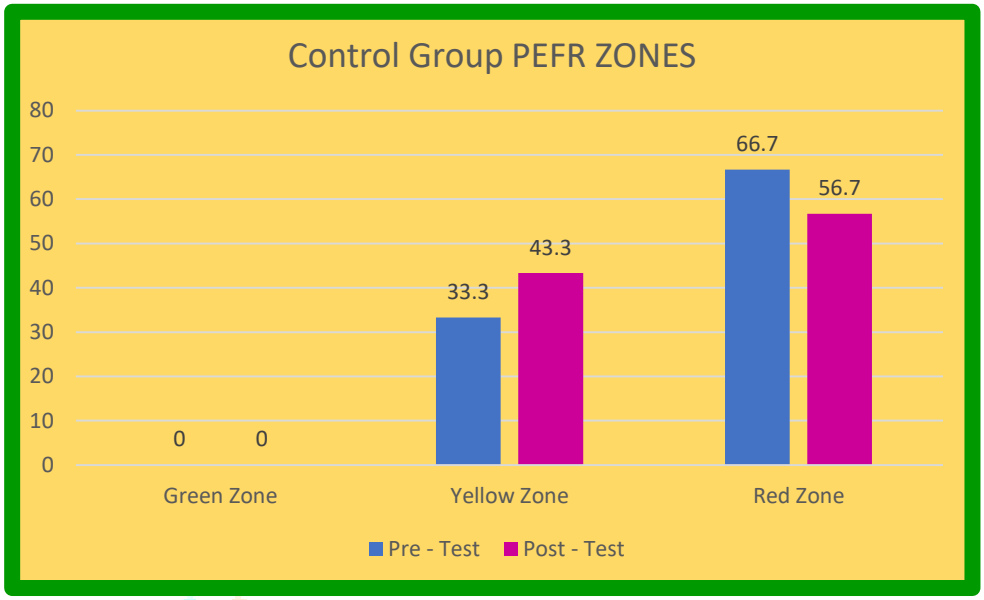

Figure – III: Percentage Distribution of Subjects According to PEFR Zones in Control group

Table – IV: **Comparison of pre-test and post – test Activity tolerance level of subjects in Experimental and Control group using paired 't' test**

(N = 60)

Test	Mean	Mean Difference	Standard Deviation	Paired 't' test	'p' value
Experimental Group					
Pre - Test	7.87	4.37	1.042	15.078	0.001*
Post - Test	3.5		1.546	(df = 29)	Significant
Control Group					
Pre - Test	8.67	0.44	1.061	2.037	0.071
Post - Test	8.23		1.006	(df – 29)	Not significant

Using the paired 't' test, Table IV compares the pre- and post-test dyspnoea levels of participants in the experimental and control groups.

In the experimental group, the mean pre-test dyspnoea levels and standard deviation were 7.87 $\pm$ 1.042. During post-test, the mean and standard deviation of individuals' dyspnoea levels were 3.51 $\pm$ 1.546. The average disparity was 4.37. The obtained paired 't' test score for degree of freedom 29 was 15.078. It was statistically significant when the value of 'p' was less than 0.001.

In the control group, the mean and standard deviation of pre-test dyspnoea levels were 8.67 $\pm$ 1.061. During post-test, the mean and standard deviation of patients' dyspnoea levels were 8.23 $\pm$ 1.006. The average disparity was 0.44. The resulting paired 't' test score for degree of freedom 29 was 2.037. At a 'p' value less than 0.001, it was not statistically significant.

Table V: Comparison of Pre-test and Post – test Level of Dyspnoea among subjects in experimental and control group using Independent 't' test

(N = 60)

Post - Test	Mean	Mean Difference	Standard Deviation	Independent 't' test	'p' value
Experimental Group	3.50	4.73	1.548	14.041 (df = 58)	0.001 Significant*
Control Group	8.23		1.006		

Table V compares the pre-test and post-test dyspnoea levels of participants in the experimental group and the control group using an independent 't' test.

The post-test mean and standard deviation score for dyspnoea levels in the experimental group was 3.54 $\pm$ 1.548. In the control group, the mean and standard deviation of dyspnea levels during the post-test were 8.23 $\pm$ 1.006, and the independent 't' test score was 14.041, with 58 degrees of freedom. It was statistically significant when the 'p' value was less than 0.001.

Table – VI: Level of Association Between Level of Dyspnoea of Subjects with Demographic Variables in Experimental Group

(N = 30)

S. No	Demographic Variables		Post-Test Level		$\chi 2$ value	'P' value
			Moderate	Severe		
1	**Age (Years)**	20 - 30	3	3	**5.386**	**0.250**
		31 - 40	3	3	**(df = 4)**	**Not**
		41 - 50	2	9		**Significant**
		51 - 60	1	5		
		61 - 80	1	0		
2	**Gender**	Male	5	9	**0.067**	**0.550**
		Female	5	11	**(df = 1)**	**Not Significant**
3	**Marital Status**	Un Married	2	3	**1.875**	**0.599**
		Married	7	13	**(df = 3)**	**Not**
		Divorced	0	3		**Significant**
		Widow	1	1		
4	**Educational Status**	No formal education	2	4	**4.196**	**0.380**
		Primary education	0	4	**(df = 4)**	**Not Significant**
		Secondary & higher secondary	2	5		
		Diploma	5	4		
		Graduate and post - graduate	1	3		
5		Unemployed	2	1		

	Occupational Status	Private employee	5	11	**2.281 (df = 3)**	**0.516 Not Significant**
		6Govt employee	1	1		
		Factory worker / Laborers / Daily Wages	2	7		
6	**Family income (Rupees)**	6000 – 18000	2	9	**3.186 (df = 2)**	**0.203 Not Significant**
		18001 – 30000	5	4		
		30001 – 50000	3	7		
7	**Smoking status**	Non – smoker	3	3	**4.286 (df = 3)**	**0.232 Not Significant**
		Passive smoker	5	9		
		Smoker	0	6		
		Ex - smoker	2	2		
8	**Allergic factors**	House dust mite	1	1	**0.321 (df = 3)**	**0.956 Not Significant**
		Pollen	4	8		
		Fungal spore	3	6		
		Pet	2	5		
9	**Seasonal attacks**	Yes	5	10	**0.005 (df = 1)**	**0.650 Not Significant**
		No	5	10		
10	**Duration of illness**	< than 2 years	1	2	**4.909 (df = 2)**	**0.286 Not Significant**
		2 – 5 years	8	8		
		> than 5 years	1	10		
11	**Duration of disease**	Acute	1	2	**0.001 (df = 1)**	**0.743 Not Significant**
		Chronic	9	18		
12	**Treatment being taken**	Albuterol	4	6	**0.600 (df = 2)**	**0.741 Not Significant**
		Beclomethasone.	4	11		
		Others	2	3		
13	**Any other Co – Morbidities**	Diabetes mellitus	1	5	**12.039 (df = 2)**	**0.002* Significant**
		Hypertension	4	15		
		Both	5	0		

Table VI demonstrates the association between the experimental group's pre-test level of dyspnoea and demographic characteristics.

In the Experimental group, demographic characteristics, as well as other co-morbidities, were found to have a significant relationship with the pre-test degree of dyspnoea. The chi-square value for any other co-morbidities associated with pre-test dyspnoea scores was 12,039 for degree of freedom 2, which was statistically significant at $p < 0.002$.

Table – VII: Level of Association Between Level of Dyspnoea of Subjects with Demographic Variables in Control Group

(N = 30)

S, No	Demographic Variables		Pre-Test Dyspnoea		χ2 value	'P' value
			Moderate	Severe		
1	Age (Years)	20 - 30	1	5	4.756 (df = 4)	0.313 Not Significant
		31 - 40	2	7		
		41 - 50	4	3		
		51 - 60	1	5		
		61 - 80	0	2		
2	Gender	Male	4	10	0.49 (df = 1)	0.574 Not Significant
		Female	4	12		
3	Marital Status	Un Married	2	4	0.292 (df = 2)	0.864 Not Significant
		Married	5	16		
		Divorced	1	2		
4	Educational Status	No formal education	1	4	0.685 (df = 3)	0.887 Not Significant
		Primary education	3	10		
		Secondary & higher secondary	3	5		
		Diploma	1	3		
5	Occupational Status	Unemployed	2	1	12.201 (df = 3)	0.007 Not Significant
		Private employee	1	18		
		Govt employee	3	2		
		Factory worker / Laborers / Daily Wages	2	1		
6	Family income (Rupees)	6000 – 18000	1	4	0.682 (df = 1)	0.711 Not Significant
		18001 – 30000	2	8		
		30001 – 50000	5	10		
7	Smoking status	Non – smoker	3	7	4.347 (df = 3)	0.226 Not Significant
		Passive smoker	5	7		
		Smoker	0	4		
		Ex - smoker	0	4		
8	Allergic factors	House dust mite	1	2	0.390 (df = 3)	0.942 Not Significant
		Pollen	3	11		
		Fungal spore	1	2		
		Pet	3	7		
9	Seasonal attacks	Yes	6	11	1.493 (df = 1)	0.222 Not Significant
		No	2	11		
10	Duration of illness	< than 2 years	1	6	6.136 (df = 2)	0.04* Significant
		2 – 5 years	5	16		
		> than 5 years	2	0		
11	Duration of disease	Acute	0	3	1.212 (df = 1)	0.379 Not Significant
		Chronic	8	19		
		Albuterol	3	6		

12	**Treatment being taken**	Beclomethasone. Others	4 1	16 0	3.409 (df = 2)	0.182 Not Significant
13	**Any other Co – Morbidities**	Diabetes mellitus Hypertension Both	2 5 1	6 14 2	3.84 (df = 2)	0.167 Not Significant

The association between baseline dyspnoea scores and control group demographics is displayed in Table - VII. The pre-test degree of dyspnoea in the control group was found to be significantly correlated with demographic characteristics such sickness duration. The chi-square value for duration of sickness with pre-test dyspnoea scores was 6,136 for degree of freedom 2, which was statistically significant at $p < 0.04$.

Discussion:

The present study's findings on subject distribution were backed by **Aby Thankachan (2018)**'s To Assess the Efficacy of Respiratory Care Bundle on Dyspnoea Among Patients with Bronchial Asthma at Selected Hospitals, Pudukkottai. The experimental group had 11 (36.67%) 41–45-year-olds, 18 (60%) males, and 16 (53.3%) Hindus. Most 14 (46.67%) had primary education; most 13 (43.33%) were private employees; 15 (50%) had monthly income of less than Rs.5000; 16 (53.33%) were sick for less than 6 months; 25 (83.33%) had no family history of respiratory illness; 24 (80%) were using drugs for respiratory disorders; majority 14 (46.67%) occasionally smokes; 18 (60%) did not exercise; and 17 (56.7%) did not obtain incidental breathing exercise teaching. In the control group, majority 13 (43.33%) were 41–45 years old; 21 (70%) were male; 19 (63.33%) were Hindus; majority 11 (36.67%) had no formal education; 16 (53.33%) were self-employed; 13 (43.3%) had monthly income of less than Rs.5000; 18 (60%) were sick for less than 6 months; majority 24 (80%) had no family history of respiratory illness; 20 (66.67%) were taking drugs for respiratory disorders, 16 (53.33%) occasionally smoked, 15 (50%) rarely exercised, and 14 (46.67%) had no incidental breathing exercise education.[12]

Huidrom K, Shiroor G, and Ray P.S. conducted a study in 2016 to determine the efficiency of the Buteyko Breathing Method on respiratory physiological parameters. The majority 26 (86.7%) of Bronchial asthma patients in the experimental group had moderate asthma (score 5-8). In the control group, 21 (70%) patients with Bronchial asthma had moderate asthma (Score5-8). Distribution by percentage of Bronchial asthma patients in the experimental group following intervention. The majority of Bronchial asthma patients (86.7%) in the experimental group's pre-test had moderate asthma (score 5-8). 18 (60%) of Bronchial asthma patients had mild asthma at post-test (score 1-4).[13]

Jincy Ealias and Binu Babu (2016) investigate the effect of pursed lip breathing exercise on physiological parameters such as respiratory rate, heart rate, and peak expiratory flow rate in COPD patients living in Udupi district, Karnataka. 66% (33) of COPD patients were in tolerable health prior to the test, 34% (17) were in poor condition, and none of them were in good condition. After pursed lip breathing, 90% (45) of individuals were in good health, while 10% (5) were in fair health. It was statistically significant (t = 16,335, p 0.05).[14]

Conclusion:

Patients with bronchial asthma can significantly lessen their symptoms of shortness of breath with the use of a few carefully chosen relaxation techniques (including pursed lip breathing exercises, deep breathing exercises, and spirometry). Clinical research on breathing strategies for relaxation—including pursed-lip breathing, deep breathing, and spirometry—corroborates with the results of the current study.

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