ASSOCIATION BETWEEN VIDEO ASSISTED TEACHING PROGRAM AND TRADITIONAL DEMONSTRATION OF PRANAYAMA ON SELECTED PHYSIOLOGICAL PARAMETERS AMONG PATIENTS WITH COPD

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ABSTRACT

The third-leading cause of death in the very first two decades of the 20th century is expected to be COPD worldwide and the fifth greatest cause of disability, according to the global burden of Illness research. In developing nations, COPD is anticipated to rank third for women and fourth for men in terms of the primary causes of disability in 2020. A thorough yoga program can enhance general wellbeing and respiratory function, which will improve a person's capacity to complete daily chores. It is common knowledge that COPD exacerbates emotional sensitivity, a lack of activity and decreased muscle mass. To facilitate diffusion and transport. The environment inside the alveoli and bronchial vessels particularly at the bronchi-capillary membranes, may change as a result of this pranayama routine. We made the decision to use physiological testing to study the impact of pranayama on a sample of COPD patients, because we have not found any research on how it affects the lung's transfer factor for carbon monoxide. Accordingly, the current study aimed to determine the relationship between a traditional pranayama demonstration and a video-assisted training program on a set of physiological indicators in elderly COPD patients.

KEYWORDS: Assess, pranayama, COPD, physiological parameters, effectiveness.

INTRODUCTION AND BACKGROUND

COPD is a complex disorder that has an impact on a person's quality of life via pulmonary and systemic causes.[1] It moves forward and can't be stopped. In the absence of major side effects or a deterioration of the disease, long-term regular medical therapy must continue at the same level.[2,3] The disease's progression can be slowed down with the use of preventive measures, the most significant of which is quitting smoking; nevertheless, extra intervention through rehabilitation is indicated. Pranayama, a powerful breathing technique, has been widely applied with COPD patients in India.[4,5] Pranayama is a powerful adjunctive therapy and rehabilitation strategy for people with COPD. This technique is a meticulously designed maneuver that, if mastered, involves minimal effort and is also free. The patient's symptoms are reduced to the point where they no longer necessitate medical attention, according to the authors' observations.[6,7] Researchers hypothesize that the mechanism for improvement in the systemic signs of COPD is the movement or massage of the abdominal viscera during abdominal respiration, as per the techniques of pranayama.[8,9,10] For maintaining the disease-related weak and collapsed airways clear to expel the secretions by ciliary activity and, consequently, to prevent irritation of the respiratory passages, deep, slow breathing helps to battle secretions. As a result, both the root of the inflammation and all of its symptoms are reduced. Pranayama is practically cost-free because it is simple to comprehend and practice, requiring little effort. Its routine maintenance only takes about 15 to 20 minutes.[11,12,13] Suryabhedana The practitioner closes his or her left nostril using the ring and little fingers on the right hand and inhales slowly and deeply through the right nostril. The practitioner then closes the right nostril with the right thumb and exhales slowly and deeply through the left nostril. The exhalation should be longer than the inhalation. The practitioner repeats the cycle.[14] Nadi Shuddhi The practitioner closes his or her right nostril with the right thumb, exhales completely with the left nostril, and then inhales deeply throught the same nostril. The practitioner then closes his or her left nostril with the ring and little finger of the right hand and exhales slowly and completely through the right nostril. The practitioner repeats the rounds, alternating the nostrils.[15,16] Bhramari The practitioner inhales deeply

and then exhale to produce a low-pitched sound resembling the humming of a bee, feeling the vibrations in his or her entire head. The practitioner repeats the process.[17]

OBJECTIVE
To find the association between Video Assisted Teaching Program of pranayama and demonstration of traditional pranayama on selected physiological parameters among old age patient with COPD.

MATERIALS AND METHOD
The one group pre-test and post-test design in a quasi-experimental study was used to collect 100 samples by using non probability sampling method to collect data with the help of tool prepared by researcher among the patient's elderly people residing in old age homes with COPD. The tool was having two sections in which 1. Section A was questionnaire about demographic and 2. Section B was checklist to assess the physiological parameters including pulse rate, respiration rate, saturation, blood pressure, walk in distance. Inclusion criteria -COPD patients, old age patients who are willing to participate, old age clients who are available during time of study and Exclusion criteria- Patient with other respiratory disorder except COPD.Informed consents were taken from the participants and complete confidentiality was maintained.

RESULTS
In Video assisted teaching, Physiological Parameters, it is found that Age in Years, source of information regarding Pranayama, educational status, marital status, bad habits, hospitalization in last 12 months of patients, Co-morbidity in COPD patients is statistically not associated with their Respiratory Rate score. And it is interpreted that the Respiratory Rate score of patients with COPD has a statistical association with their gender and past occupation. And it is interpreted that the Respiratory Rate score of patients with COPD has a statistical association with their gender and past occupation.

In traditional Demonstration, Physiological Parameters, it is found that Age in Years, gender, source of information regarding Pranayama, educational status, bad habits, hospitalization in last 12 months of patients, of patients with COPD is statistically not associated with their Respiratory Rate score. And it is interpreted that marital status, previous occupation of patients and Co-morbidity with COPD was statistically associated with patients Respiratory Rate Score.

Table 1: Association between Respiratory Rate of patients with COPD in relation with their Gender in video assisted teaching programmed.

n=50

Gender	No. of patients	Mean Respiratory Rate score	t-value	p-value
Male	28(56%)	19.03±1.57	3.33	0.022 p<0.05
Female	22(44%)	20.55±1.33		
Transgender	0(0%)	0±0		

The calculated 't' value, 3.33 at the 5% level of significance, was less than the tabulated 't' values of 2.00 (df=48). Additionally, the computed 'p' of 0.022 fell below the permissible level of significance, which is 'p'=0.05. As a result, it is inferred that the gender of COPD patients and their Respiratory Rate score are statistically related.

Table 2: Association between Respiratory Rate of patients with COPD in relation with their Previous Occupation in video assisted teaching programmed.

n=50

Previous Occupation	no. of patients	Mean Respiratory Rate Score	t-value	p-value
Industrial Worker	14(28%)	19.78±1.52	4.50	0.007 p<0.05
Self Employed	10(20%)	20.40±1.71		
Civil Servant	17(34%)	19.70±1.44		
Others	9(18%)	18±1.22		

The computed 't' value, 4.50 at the 5% level for have significance was less than the calculated 't' values of 2.76(df=3,46). Additionally, the calculated 'p' of 0.007 was lower than the accepted level of significance, which is 'p' of 0.05. Therefore, it is inferred that the Respiratory Rate score of COPD patients with prior employment is statistically linked.

Table 3: Association between Respiratory Rate of patients with COPD in relation with their Bad Habits in video assisted teaching programmed.

n=50

Bad Habits	no. of patients	Mean Respiratory Rate Score	t-value	p-value
Cigaratte Smoke	16(32%)	19.06±1.69	2.34	0.085 p<0.05
Pipe Cigar Smoke	8(16%)	19.25±1.28		

Tobacco Smoke	13(26%)	19.38±1.80		
None of the above	**13(26%)**	**20.53±1.33**		

The estimated 't' value was 2.34 at the 5% level of have significance however the calculated 't' values were 2.76(df=3,46), which are higher. Additionally, the calculated 'p' of 0.08, which fell short of the accepted level of statistical significance of 0.05, was calculated. As a result, it is inferred that COPD patients' poor habits are statistically related to their Respiratory Rate score.

Table 4: Association between Respiratory Rate of patients with COPD in relation with their Co-morbidity in video assisted teaching programmed.

n=50

Co-morbidity	no. of patients	Mean Respiratory Rate Score	t- value	p- value
Hypertension	23(46%)	18.82±1.66		
Diabetes Mellitus	27(54%)	20.18±1.35	10.08	**0.003 p < 0.05**
Anaemia	0 (0%)	0 ±0		
Thyroid	**0 (0%)**	**0 ±0**		

The computed 't' value, 10.08 at the 5% level of have significance was smaller than the tabulated 't' values of 2.00 (df=48). Additionally, the estimated 'p' of 0.003 fell below the accepted level of significance, which is 'p'=0.05. Therefore, it is concluded that the Respiratory Rate score of COPD patients with co-morbidity is statistically linked.

Table 5: Association between Respiratory Rate among patients with COPD in relation to source of information about Pranayama in traditional demonstration program.

n=50

Source information	No. of patients	Mean Respiratory Rate score	t- value	p- value
Internet	12(24%)	18.58±1.37		
Newspaper	13(26%)	19.15±1.51	2.25	**0.095 p<0.05**
Magazine	11(22%)	19.72±1.55		
Others	**14(28%)**	**19.85±1.02**		

The estimated 't' value was 2.25 at the 5% level of significance, however the tabulated 't' values were 2.76(df=3,46), which are higher. Additionally, the calculated 'p' of 0.09, which fell short of the acceptable level of significance of 0.05, was calculated. As a result, it is inferred that the Respiratory Rate score of patients with COPD is statistically connected with the source of information about their Pranayama.

Table 6: Association of Respiratory Rate among patients with COPD in relation to their Marital Status in traditional demonstration programmed.

n=50

Marital Status	no. of patients	Mean Respiratory Rate Score	t- value	p- value
Married	40(80%)	19.07±1.36		
Unmarried	1(2%)	21±0	4.00	**0.025 p<0.05**
Divorced	9(18%)	20.33±1.22		
Widowed	**0(0%)**	**0±0**		

The computed 't' value, which is 4.00 at the 5% level of have significance was less than the calculated 't' values of 3.15(df=2,47). Additionally, the calculated 'p' of 0.025 fell below the allowed level of have significance which is 'p'=0.05. Thus, it is concluded that the Respiratory Rate score of COPD patients is statistically related to their marital status.

Table 7: Association of Respiratory Rate among patients with COPD in relation to their Previous Occupation in traditional demonstration program.

n=50

Previous Occupation	no. of patients	mean Respiratory Rate Score	t- value	p- value
Industrial Worker	8(16%)	18.25±1.03		
Self Employed	13(26%)	19.46±1.66	3.76	**0.017 p<0.05**
Civil Servant	16(32%)	20.06±1.18		
Others	**13(26%)**	**19±1.22**		

The computed 't' value was 3.76 at the 5% level of significance, whereas the tabled 't' values were 2.76(df=3,46). Additionally, the calculated 'p' of 0.017 fell below the permissible level of significance, which is 'p'=0.05. Therefore, it is inferred that the Respiratory Rate score of COPD patients with prior employment is statistically linked.

DISCUSSION

In this study the researcher aims to assess the effectiveness of Video Assisted Teaching program of pranayama and demonstrations of traditional Pranayama on selected physiological parameters among patients with COPD in selected old age home in Pune City. To achieve the desired goal the researcher constructed a tool which consisted of 9 demographic variables, 5 physiological parameters and modified CAT score test. By using Parallel form method of reliability, it is found to be 0.949 and hence tool is reliable and valid. 15 professionals further validated this tool in the field of Clinical Research and Educational Research for validity. Further the researcher conducted a Pilot Study on 17-10-2022 to 27-10-2022 for a period of 10 days on 10 selected subjects. Subject were selected based on the sampling criteria to determine whether the investigation is feasible. Hence, Pilot study proven that the study was feasible and can be carried be out on large scale. The final study was conducted on 100 samples. The researcher applied Pearson's correlation Coefficient to assess the correlation between video assisted teaching and traditional demonstration.

The similar kinds of finding are in the study conducted by:
2017; David A. Kaminsky (Et al.). Exercise tolerance in those with chronic obstructive lung disease is increased by pulmonary rehabilitation. (COPD). Even so, a large number of patients are unable to take part in pulmonary rehabilitation regimens. In place of pulmonary rehabilitation, we suggested pranayama's, or yoga's of breathing, may be practiced alone at home to improve exercise tolerance. Additionally, we were interested in finding out if patients could pick up pranayama from yoga amateurs. The 6MWD increased in the pranayama group and decreased in The Control Group ([95% confidence intervals] = 28m [-5 to 61])., with a moderately significant treatments effect (p = 0.06) favouring Pranayama's. (-15 m [-47 to 16]). After practicing, there were also marginal improvements in air trapping and inspiratory capacity. However respiratory system impedance did not alter generally., oxidative stress indicators, or indicators of chronic inflammation in either group despite both groups exhibiting discernible improvements in a number of symptom assessments. [18]

CONCLUSION

The findings indicate that the physiological parameters were an officious strategy in assessing the Effectiveness of Video Assisted Teaching Program of Pranayama and Demonstration Of Traditional Pranayama on selected physiological parameters among patients with COPD. The tool was an acceptable and appropriate method for assessment of COPD. The important interest of present study was to find the association of video assisted teaching programs of pranayama and demonstration of traditional Pranayama on selected physiological parameters among patients with COPD in selected elderly home in Pune city. In order to improve the health status among old age people with COPD, Pranayama education is important. It is effective complementary therapy to improve the health status. Traditional demonstration in more effective than the video assisted teaching program.

Recommendation

- Regardless of underlying comorbidity, a similar study can be carried out among the general population.
- Various settings can be used for a comparable study.
- A sizable sample can be used to duplicate a study of this nature.
- Two populations, those with underlying comorbidities and those without any underlying comorbidities, can be compared.
- People of different ages can also be studied in a similar way.

Key points for policy, practice and/or research

- A study investigating the potential for general practice nurses to act as health mentors to assist COPD patients implementing self-management.
- Nursing and public policy: a tool for excellence in education, practice, and research. Assessing nurses' capacity for health research.
- The effectiveness of pranayama on selected physiological parameters among old age patient will

describe the future reference of physiological among this type of conduction of studies.

- The fact that pranayama is a simple self-control technique that increases the awareness of breathing and shows that it is an influential and cost-effective
- Practice that has shown to be effective through research allows nurses to better advocate for patients and provide the best possible care.

REFERENCES

1. Agusti AG, Noguera A, Sauleda J, Sala E, Pons J, Busquets X., "Systemic effects of chronic obstructive pulmonary disease," PubMed, Feb., 2003; 21(2): 347-60. https://pubmed.ncbi.nlm.nih.gov/12608452 DOI: 10.1183/09031936.03.00405703

2. Casaburi R, Porszasz J, Burns M, et al., "Physiologic benefits of exercise training in rehabilitation of patients with severe chronic obstructive pulmonary disease," American Journal of Respiratory and Critical Care Medicine, 01 May., 1997; 155(5): 1541-1551. http://europepmc.org/article/MED/9154855

3. Casaburi R, ZuWallack R., "Pulmonary rehabilitation for management of chronic obstructive pulmonary disease," The New England Journal of Medicine, 01 Mar., 2009; 360(13): 1329-1335 http://europepmc.org/article/MED/19321869

4. Celli BR, Cote CG, Marin JM, et al., "The body-mass index, airflow obstruction, dyspnea, and exercise capacity index in chronic obstructive pulmonary disease," N Engl J Med, Mar 4, 2004; 350(10): 1005-12. https://pubmed.ncbi.nlm.nih.gov/14999112. DOI: 10.1056/NEJMoa021322

5. Cooper C., "Airflow obstruction and exercise," Respiratory Medicine, 13 Dec., 2008; 103(3): 325-334. https://doi.org/10.1016/j.rmed.2008.10.026

6. Garcia-Rio F, Lores V, Mediano O, et al., "Daily physical activity in patients with chronic obstructive pulmonary disease is mainly associated with dynamic hyperinflation," American Journal of Respiratory and Critical Care Medicine, 19 Jun., 2009; 180(6): 506-512. https://doi.org/10.1164/rccm.200812-1873oc

7. Halbert RJ, Natoli JL, Gano A, Badamgarav E, Buist AS, Mannino DM., "Global burden of COPD," Eur Respir J., Sep., 2006; 28(3): 523-32. https://pubmed.ncbi.nlm.nih.gov/16611654, Doi: 10.1183/09031936.06.00124605

8. Hannink J, van Helvoort H, Dekhuijzen P, Heijdra Y., "Dynamic hyperinflation during daily activities. Does COPD Global Initiative for Chronic Lung Disease stage matter Chest," Chest, 01 Dec, 2009; 137(5): 1116-1121. https://doi.org/10.1378/chest.09-1847

9. Katiyar SK, Bihari S., "Role of pranayama in rehabilitation of COPD patients—a randomized controlled study", Indian J Allergy Asthma Immunol, 2006; 20(2): 98-104. https://www.researchgate.net/profile/Shailesh-Bihari/publication/228469117

10. MacNee W., "ABC of chronic obstructive pulmonary disease: pathology, pathogenesis, and pathophysiology," *BMJ.*, 2006; 332, Doi: https://doi.org/10.1136/bmj.332.7551.1202

11. Martarelli D, Cocchioni M, Scuri S, Pompei P., "Diaphragmatic breathing reduces exercise-induced oxidative stress," Evidence-based Complementary and Alternative Medicine, 10 Feb 2011, 2011: 932430. https://doi.org/10.1093/ecam/nep169

12. Anupama Gupta, "Pranayam for Treatment of Chronic Obstructive Pulmonary Disease: Results From a Randomized, Controlled Trial," Integr Med (Encinitas), Feb., 2014; 13(1): 26–31. PMID:26770079. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4684118/

13. Murray CJ, Lopez AD., "Mortality by cause for eight regions of the world: Global burden of disease study," May 3, 1997; 349(9061): 126976. https://pubmed.ncbi.nlm.nih.gov/9142060 DOI: 10.1016/S0140-6736(96)07493-4

14. O'Donnell D., "Hyperinflation, dyspnea, and exercise intolerance in chronic obstructive pulmonary disease," Proceedings of the American Thoracic Society, 01 Apr 2006, 3(2): 180-184. https://doi.org/10.1513/pats.200508-093do

15. Valenza C, Valenza-Pena G, Torres-Sanchez I, et al., "Effectiveness of controlled breathing techniques on anxiety and depression in hospitalized patients with COPD: A randomized clinical trial," Respiratory Care, 23 Jul, 2013, 59(2): 209-215. https://doi.org/10.4187/respcare.02565

16. Ritu Soni, Kanika Munish, KP Singh, Savita Singh., "Study of the effect of yoga training on diffusion capacity in chronic obstructive pulmonary disease patients: A controlled trial," Int J Yoga, Jul-Dec, 2012; 5(2): 123–127. Doi: 10.4103/0973-6131.98230

17. Behera D., "Yoga therapy in chronic bronchitis," J. Assoc Physicians India, Feb. 1998; 46(2): 207-8. https://pubmed.ncbi.nlm.nih.gov/11273114

18. David A Kaminsky, Kalpalatha K Guntupalli, Joan Lippmann, Stephanie M Burns., "Effect of Yoga Breathing (Pranayama) on Exercise Tolerance in Patients with Chronic Obstructive Pulmonary Disease," Journal of Alternative Complementary Medicine, Sep. 2017; 23(9): 696-704. Epub 2017 Jul 17. https://pubmed.ncbi.nlm.nih.gov/28714735/ DOI:10.1089/acm.2017