

Comparison of Effectiveness of Music Therapy and Visual Imaginary Technique on Anxiety and Depression in Moderate Chronic Obstructive Pulmonary Disease Patients

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ABSTRACT: Introduction: Anxiety and depression is often a component of dyspnea in advanced chronic obstructive pulmonary disease (COPD). The aim is to compare the effects of music therapy (MT) and visual imaginary technique (VIT) on anxiety and depression in moderate COPD patients. **Method:** 70 patients admitted in the hospital for acute exacerbation were screened for inclusion and exclusion criteria and assigned into 2 groups. Group A received music therapy and Group B performed visual imaginary technique. The outcome measures are measured through Spielbergers State Anxiety Inventory (SSAI), State Trait Anxiety Inventory (STAI) and Dyspnea Scale. **Result:** There were clinically significant reduction in outcome variables (anxiety and depression) of SSAI, STAI and dyspnoea scale. The P-value of outcome variables of MT (P= 0.0001) and MT were considered statistically significant than VIT. Therefore MT is effective in reducing anxiety and depression in COPD patients

KEYWORDS: COPD, music therapy, visual imaginary technique, anxiety, dyspnea, relaxation

I. INTRODUCTION

The COPD is highly preventable and treatable disease responsible for a substantial human and economic burden through out the world¹. It is currently the leading cause of death and it will surpass stroke in next decade². Patients with COPD will have a spectrum of symptoms ranging from short term depressive to dysthymia to clinical depression^{3,4}. There is wide range of depression in COPD, ranging from 7% to 80%^{5,6}. Prevalence of anxiety and depression is approximately ten times more than in COPD population than in other conditions. Approximately 2/3rd of the patients with COPD have depression from moderate to severe level⁷. However they were untreated or undertreated in COPD cases and have major implications for 1) compliance with medical treatment, 2) Increased frequency of hospital admission, 3) prolonged length of stay, 4) Increased consultation with physicians. Lack of treatment is also associated with poor quality of life and premature death. Depression adversely affects physical functioning, quality of life and decreased adherence to treatment. Depressive patients has been found to have a profound impact on end of life decisions because depressed patients more often opt for DO NOT RESUSCITATE decision. People who are trying to obtain from smoking often increase their caffeine consumption and it increases agitation and symptoms of raising heart leading to anxiety^{8,9}. Medicines can also cause symptoms of anxiety. β blockers are common blood pressure medications and can cause a racing heart¹⁰. Feeling of breathlessness can provoke panic and breath more shallow which can make to feel more anxious and make it harder to breath resulting in limitation of activities which again makes to feel more anxious resulting in severe difficulty in breathing¹⁰. The link between breathlessness, anxiety and panic attacks also increase social isolation.

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NEED OF THE STUDY: Many COPD patients have transitory mood symptoms during exacerbation which improve spontaneously as physical status improves. But contrast major mood changes are lacking treatment which is not bothered by physicians, therapist in their protocols. Lack of treatment is also associated with poor quality of life and pre mature death^{11,12}. Although the primary underlying pathophysiology is pulmonary, associated systemic effects of COPD contribute to disability. Consequently, there is a recognized need for a shift from a focus on assessment and management of COPD, to the comprehensive assessment and rehabilitation of the diverse extra-pulmonary effects of the disease. By keeping this entire scenario in view the present study is conducted to find out effectiveness of music therapy and visual imaginary technique on anxiety and depression in moderate chronic obstructive pulmonary disease.

Aim : To compare the effectiveness of music therapy music therapy and visual imaginary technique on measures of anxiety and depression in patients with moderate COPD patients .

Objectives: 1. To find the effects of music therapy on anxiety and depression in moderate COPD Patients. 2. To find the effects of visual imaginary technique music therapy on depression and anxiety in moderate COPD Patients. 3. To compare the effects of music therapy and visual imaginary technique on depression and anxiety in moderate COPD Patients

II. METHODOLOGY

Study approach: quantitative approach, Study design - comparative study , setting of the study: Cardio Respiratory Dept, Krishna hospital, Karad, Target population: Moderate COPD patients, Accessible population: COPD patients admitted in Krishna Hospital Karad, Sampling size - 70 Sampling technique - simple random sampling (Lottery method), Study duration - 3 months.

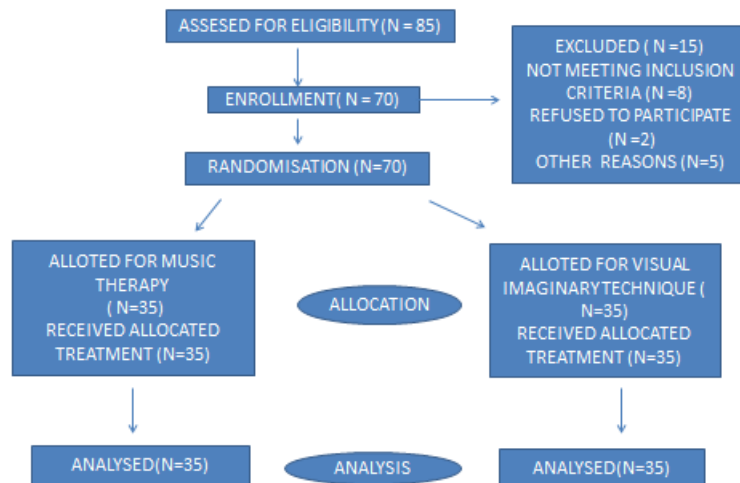


Figure no 2.1. Flow chart of the sample selection

Inclusion criteria: 1. Age ≥ 55 yrs, 2. Both sex 3. A diagnosis of moderate COPD on GOLD classification ($FEV1/FVC = 70\%$; $30\% \leq FEV1 < 50\%$ predicted) 4. Minimal score of 4 in PRIME-MD screening questionnaire for depression and anxiety 5. Self reported shortness of breath. 6. Ability to provide informed consent. Exclusion criteria: 1. Patients who have received tricyclic anti depressants or major anti psychotic drugs 2. Inability to communicate because of language skills 3. Hearing or cognitive impairment 4. Aversion of music 5. Individuals with comorbid conditions which affect the safety of the patients and 6. Symptomatic cardiovascular problems.

Treatment: conventional therapy with music therapy and visual imaginary technique was given for duration of 30 min/session twice a day for 3 days for group A and group B respectively.

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Conventional physiotherapy: Breathing exercises daily- Patients received a daily 30-minute class including stretching of major muscle groups and instruction on diaphragmatic and pursed lip breathing. 2. Self management education and psychological and social support were provided through lectures, relaxation classes and recreational activities at least twice a week for 30 minutes.

Music therapy: The music was chosen based on patients personal taste following an interview. Subjects had to select one record from a collection of five lyric Indian classical music. The collection was of 60-80 beats/minutes is known to have relaxing effect. The music is streamed via headphones in the patient^{13,14}. Position of patient- supine lying or relaxed arm chair sitting. They can be offered with a mask which avoid visual stimuli and concentrate in music.

Visual imaginary technique: Step: 1 Close the eyes and breath slowly and deeply to calm down. Step : 2 Choose Your Setting ,Feel Relaxed And Picture Yourself In Most Peaceful environment and elaborate it with imagination. Step: 3 Stay in that position for 30 minutes. Keep in mind that imaginary is more effective when all the senses were used. The more the senses used more the relaxation. VIT was well explained to the patients after randomisation.

Development and description of tool/outcome measure: : The following standard scale were used to measure the outcome variables (anxiety and depression).

Spielbergers State Anxiety Inventory (SSAI): The Questionare has 20 questions pertaining to how the patient feels on the day(state) and Spielbergers trait anxiety inventory (STAI) has 20 questions pertaining to how the patient feels on that day . Dyspnoea scale : Assessed with visual analogue dyspnea scale(VADS). It consists of 100 Mm vertical scale with points as bad breathlessness at top and no breathlessness at bottom^{15,16}. **Ethical clearance:** Ethical clearance was obtained from concerned institutional ethical committee. The study methodology was accepted by institutional protocol comitee& ethical comitee and informed consent were obtained from patient after explaining the purposes and objectives of the study.

Pilot Study: The Pilot study was done and based on the difference (D At 5% And Power At 80%). Reference table is made and required sample size was calculated for each groups^{17,18}. It is 32- 37 in each Group so the sample size is taken as 35.

Data collection: The treatment protocol is explained to the patients. Demographic and baseline assessments are done to compare group equivalency. Intervention is done on the next day. Group A received music therapy and conventional physiotherapy with medications 30 minutes /session for 3 days. Group B received visual imaginary technique and conventional physiotherapy with medications for 30 minutes /session for 3 days .Pre test values were taken and post test values were measured after the intervention the values of both the groups were analysed and compared for the results.

Analysis and interpretation: Data analysis was blinded. ANOVA with repated measures was used to analyse the changes in outcome variables in pre and post test in both the sessions and in between the groups.

III.RESULT

GROUP	SESSION	SSAI	STAI	DYSPNEA
MUSIC	I SESSION(pre)	32.59 ± 11.3	31.03 ± 7.7	49.06 ± 17.1
	I SESSION(post)	28.38 ± 9.8	28.72 ± 7.3	34.69 ± 14.3
	II SESSION(pre)	32.41 ± 11.5	28.91 ± 7.2	47.03 ± 16.2
	II SESSION(post)	24.00 ± 8.4	27.47 ± 6.7	23.91 ± 10.2
VIT	I SESSION(pre)	28.22 ± 6.4	30.78 ± 3.2	45.88 ± 13.0
	I SESSION(post)	25.72 ± 5.7	30.50 ± 3.1	38.38 ± 14.6
	II SESSION(pre)	28.66 ± 4.8	30.84 ± 3.1	45.44 ± 11.3
	II SESSION(post)	24.00 ± 3.3	29.91 ± 3.3	32.47 ± 14.4

Table No.3.1. Mean changes in outcome variables in MT & VIT

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The anxiety and depression have reduced with MT considerably in the I and II session pre and post values and in VIT the values were reduced but the patients did not perceive much reduction in anxiety and depression.

THERAPY		SSAI	STAI	DYSPNEA
MUSIC	F	62.621	19.528	63.885
	P	0.0001	0.0001	0.0001
VIT	F	6.024	10.659	12.889
	P	0.0003	0.0001	0.0002

Table No.3.2..Changes between session & comparison between groups

The level of significance in MT for SSAI,STAI and dyspnea shows $p=0.0001$ and in VIT the p value for SSAI is 0.0003 ,STAI is 0.0001 and dyspnea scale is 0.0002.The MT group showed to be statistically significant in reducing anxiety and depression in moderate COPD patients.



Graph No 3.3 Graphical representation of Mean Difference Between MT & VIT

IV. DISCUSSION

The study showed statistically significant improvement in reduction of anxiety and depression in moderate COPD patients following MT at par with VIT. The findings suggest that the symptoms of anxiety and depression started to reduce after the second session in patients with hospitalised moderate COPD who are medically stabilised. The mean change in MT group is more statistically significant compared with VIT .

VIT is more of active technique and requires more concentration an attention .as human tendency of not concentrating or performing the technique properly may be the reason for reductions in improvement Music is more

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of passive technique and requires no attention and has soothing effect. Music has been effective in relieving is explained at different schools of thought. One mechanism states that there is parallel processing of dyspnea, distress and breathing. The sensory stimuli like dyspnea are processed at preconscious level, if pre conscious level are flooded with music then dyspnea genic elements can not reach conscious level there by reducing dyspnea related anxiety. Physiological theory explains the phenomenon of relaxation training is through body's own analgesic system – ENDORPHIN. There are evidence that relaxation can increase the blood level of endorphins and increase person's ability to relax muscle tension and arousal.

V. CONCLUSION

Based on the literature and outcome of statistical analysis there is statistically significant improvement on anxiety and depression in hospitalised moderate COPD patients. Recommendations: 1. Inclusion of vital signs as outcome measures 2. Effects of those technique evaluated in a long term basis. 3. study to be done on mild and severe COPD patients 4. Future research is warranted to show the effect of these techniques on pulmonary function test. Limitation: Study was conducted in one part of India so generalization of results may be limited.

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