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**Orignal Article**

# Comparison of Jacobson's Progressive Relaxation Technique and Laura Mitchell's Relaxation Technique on quality of life and Sleep in COPD Patients

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## ABSTRACT

Chronic Obstructive Pulmonary Disease (COPD) is progressive respiratory disease characterized by cough, sputum, and shortness of breath due to increased airway resistance. Long term effects of different treatments lead to decrease the quality of life. Relaxation techniques are simple and improve the relaxation of whole body. **Objective:** The objective was to compare the effects of Jacobson's and Laura Mitchell's technique on the quality of life and sleep in COPD patients. **Methods:** It was a randomized clinical trial. Sample size of 68 was calculated by keeping 95% confidence internal and 0.05 margin of error. Patients were induced through convenient sampling technique and then allocated by simple randomization process by opaque sealed envelope into group A and Group B. Group A was treated with Laura Mitchell Relaxation Technique and group B was treated with Jacobson's Progressive Relaxation Technique for 5 sessions per week for 2 weeks. Post treatment evaluation was done by assessing sleep quality through Pittsburgh Sleep Quality Index Questionnaire and quality of life via St. George's Respiratory Questionnaire. **Results:** Data analysis was done by using IBM-SPSS 25. Mean and Standard deviation of age and Body Mass Index (BMI) were as group A 40.13 + 5.06 years comparable to group B as 38.63 + 5.04 years. Body Mass Index (BMI) in group A was 23.86 + 4.139 kg/m2 and in group B was 23.80 + 4.130 kg/m2. It was determined that both methods of relaxation improved quality of life and sleep in COPD patients in which Laura Mitchell's Relaxation Technique was clinically more significant as compared to Jacobson's Progressive Relaxation Technique. **Conclusion:** It was concluded that both Laura Mitchell's Relaxation Technique and Jacobson's Progressive Relaxation Technique were effective on quality of life and sleep quality in COPD patients among stage 3 and stage 4 individuals

## INTRODUCTION

Chronic obstructive pulmonary disease (COPD) describes the obstructive or narrowed route of airflow which is partly reversible. COPD is one of a chief cause of death but it is a preventable disease, but it is difficult to treat after its onset [1]. The universal influence of COPD is about 65 million all over the world in which it comes up with 5% of gross death rate, throughout the world [2]. Smoking is the major cause of COPD and other risk factors consist of exposure with pollutants which can be vocational. COPD is illustrated by the persistent airflow obstruction caused by inflammation in the bronchioles and destruction in parenchyma which leads to a condition called as emphysema, and the related impacts which are fluctuated from individual to individual [3]. Quality of life (QoL) might be strictly reduced in COPD patients. It generally indicate deterioration in lung performance and gradual loss of physical functions. Impairment in the life standard is related to the increased severity of the sickness and the principal territory for

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measuring effects of long-term diseases is quality of life [4, 5]. Breathlessness & tiredness are the most irksome symptoms which influence the daily self-care actions and ultimately lessen the quality of life, as QoL is linked with breathlessness, reduction in physical activity, alleviated physical performances, low-spirited behavior, depression, and agony [6]. Activity of daily living is reduced by shortness of breath which is caused by exertion in COPD patients and lessened activity of daily living further give rise to decreased strength in muscles ultimately worsening the breathing [7]. Health situation can be affected by the quality of sleep for both insignificant and prolonged conditions. There is disturbance in the memory, concentration, sluggish response, and gradual decrease in activity of daily livings by deranged quality of sleep-in patients, and this concern can be settled by Progressive Relaxation Technique [8]. In cardiopulmonary rehabilitation program breathing techniques are used to improve the respiratory muscle performance and endurance in COPD patients by eliciting physiological effects [9]. Quality of sleep and its subscales are improved by progressive muscle relaxation techniques [10]. Poor sleep quality is influenced by certain factors which include explicit disease symptoms, associated medications, age specific, anxiety and depression, and comorbidity incidence. During sleep disruption in respiration is usually concerned with lack of oxygen content, reduced pulmonary function, and progressive hypoventilation. Pulmonary rehabilitation improves the sleep quality; wellness related life's quality, along with aerobic capacity in COPD [11]. Relaxation techniques are efficient in improving immune function and reducing depression as well. It is also demonstrated to be helpful in decreasing anxiety and stress. Thus it is believed to be useful in enhancing psychological health in COPD patients [12]. Patients with COPD getting muscular relaxing technique that is progressive in nature have improved sleep quality [13]. Relaxation techniques help us to enhance physical health and welfare via relaxed mental condition and body. There are various relaxation techniques that are used in muscle relaxation and used as practices all over the world. But to expose the effective relaxation technique is of important concern. Rehabilitation techniques play a constructive role in improving pulmonary function in COPD patients [14]. Relaxation techniques are frequently used to curb depression, elevating the insight of patient and regulation of self-control responses to encourage the recognized welfare of the individual. Laura Mitchell's technique and Jacobson's progressive muscle relaxation technique are very effective in improving muscular relaxation [15, 16]. The objective of the study was to find the comparative the effects of Jacobson's and Laura Mitchell's technique on the quality of life and sleep in COPD patients

## METHODS

The study design was Randomized Clinical trial with Registration No. S20C14G36012. . Sample size of 60 https://www.irct.ir/trial/58058 measured by using G Power Analysis Software, Version (3.1.9.2) with 0.80 power of study, with 0.05 margin of error and 95% confidence interval with effect size of 0.725 from quality of life of previous study [17]. Patients were recruited by assuming 10% attrition rate and will be divided into two groups with 30 patients each. Convenient sampling technique was used to recruit the patients in the study and after that simple randomization was done by sealed opaque envelop method and then analyzed as per Consort guidelines Figure 1. Patients were recruited as inclusion criteria of age between 20-45 years and patients with stage 3 or 4 COPD since last 6 months. Patients were excluded it there is recent history of acute asthmatic attack in last one month, cough and active hemoptysis and cardiac instability [18, 19]. After taking consent form, method was demonstrated to both the groups. In Group-A patients were dealt with Laura Mitchell Relaxation Technique and in Group-B patients were dealt with Jacobson's Progressive Relaxation Technique for two weeks. Evaluation was done by assessing Pittsburgh Sleep Quality Index and St. George's Respiratory Questionnaire.

**Group A: Laura Mitchell Relaxation Technique:** This technique was used to eliminate muscular tension. Patients were taught to contract muscles opposite to the strained muscle groups, eventually to 'cease' shrunken them, and then to roster the position adaptation of the body structure. Patient was comfortably positioned. **Shoulders:** Drag your shoulders down towards your feet. Hold for a build up to 5 and afterward delivery to a count of 10. Feel the new situation as you discharge the muscles. **Elbows:** Stretch your elbows with the goal that your arms fix. Hold for a build up to 5 and afterward delivery to a count of 10. Feel the new situation as you discharge the muscles. **Hands:** Stretch your fingers out evenly. Hold for a build up to 5 and afterward delivery to a count of 10. Feel the new situation as you discharge the muscles.

**Trunk:** Drive your trunk into the bed or seat so your body connects with the seat or bed. Release it. Feel the new place of your body as you discharge the muscles. Feel that your body is totally upheld by the seat and body and your muscles aren't fixing to help you.

**Thighs:** Roll your thighs from each other, hold for a build up to 5 and afterward let them go. Feel the new situation as you discharge the muscles.

**Calves:** Pull your toes and lower legs up so the rear of your calves stretch. Hold for a build up to 5 and afterward let

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them go. Feel the new situation as you discharge.
**Eyes:** Shut your eyes however cause a commotion up to the extent they will go. Feel the snugness in the muscles in your temple for a build up to 5. Then, at that point, just let them go. Feel the new situation as you discharge them.
**Mouth and jaw:** Keep your lips daintily together yet allowed your teeth to part and ensure that your tongue is hanging in your mouth. Feel the distinction in your mouth and cheek muscles as you do this.
**Breathing:** With every breath feel yourself unwinding further down into the surface you are leaning against [20].
**Group B: Jacobson's Progressive Relaxation Technique:** In this technique patients were advised as follows.
**Hands:** Hold every clench hand independently (right and left), feel the strain in the clench hand and lower arm separately for 5 seconds Delivery the clench hand, unwind, and feel unwinding for 10 seconds.
**Arms:** Twist both arms independently (right & left) up to the elbow and tight the biceps, keep the hand loose, feel the strain for 5 seconds. Discharge the arm, unwind and feel unwinding for 10 seconds. Fix the arm independently (right & left) and stiff the rear arm muscles leaving the lower arms upheld by the seat with the hands loose, feel straining for 5 seconds. Unwind and feel unwinding for 10 seconds.
**Facial Muscles:** Crease your temple; attempt to make your eyebrows contact your hair line which makes pressure, feel the strain for 5 seconds. Discharge the eye foreheads unwind and feel unwinding for 10 seconds. For 5 seconds, close your eyes and tighten the muscles around your eyes. For 10 seconds, release, relax, and feel relaxed. Tense the jaw by chewing the teeth together for 5 seconds, feeling the strain in the jaw muscles. For 10 seconds, discharge, unwind, and experience unwinding. With the lips closed, press the tongue hard and level on the top of the mouth. Observe and feel the strain in the throat for 5 seconds. For 10 seconds, discharge, unwind, and experience unwinding.
**Neck & shoulder:** Push the head back the extent that it will conflict with (a seat), feel the pressure for 5 seconds. Haul your head back to its original position, then unwind and relax for 10 seconds. For 5 seconds, tilt the head down and press the jawline against the chest. Carry the head to its proper posture, then unwind and relax for 10 seconds. Tense shoulder by fixing and contracting shoulders (raise your shoulders to your ears and shrug), feel the pressure for 5 seconds. Discharge, unwind and feel unwinding for 10 seconds.
**Chest:** Take a deep inhale, totally filling your lungs, hold it for a few seconds, and then release slowly. For 10 seconds, relax and feel relaxed.
**Stomach:** For 5 seconds, pull in the stomach and strain the stomach muscle. Allow the stomach to relax, loosen up and feel loosening up for 10 seconds.
**Back:** Curve your move in an opposite direction from the seat feel strain for 5 seconds. Unwind and feel unwinding for 10 seconds.
**Thighs & Buttocks:** Both the thigh and buttock muscles should be tense by crushing muscles together and feel straining for 5 seconds. Discharge the muscles, unwind and feel unwinding for 10 seconds.
**Lower Legs:** Tension in the calf muscles is created by pointing your toes towards your head. Feel the calf muscles tensing for a few seconds. For 10 seconds, relax and feel relaxed. Feel the tension for 5 seconds by arching your foot away from your head. For 10 seconds, relax and feel relaxed.
**Toes:** Unwind and feel unwinding for 10 seconds [21].

## RESULTS

Data analysis was done by using IBM-SPSS 25. The comparison of socio-demographic variables such as age, weight, height, and Body Mass Index (BMI) was summarized. It was determined that the mean age of patients in group 1 was 40.13 + 5.06 years comparable to group 2 which was determined as 38.63 + 5.04 years. In Group 1, mean value of weight was 66.93 + 11.72 kg, while in group 2 was 63.93 + 10.89 kg. Mean value of height in group 1 was 5.56 + .405 inches, while in other group it was 5.40 + .349 inches. Mean value of BMI in group 1 was 23.86 + 4.139 kg/m2, and in group 2 was 23.80 + 4.130 kg/m2. To compare mean changes between groups, independent t-test was used. Significance level was set at p=0.05. Results are as in table 1.

| Variables | | Treatment groups | | p value |
|---|---|---|---|---|
| | | Group A | Group B | |
| Sleep Quality Index Pittsburgh | Pre -treatment Mean + SD | 13.5 + 2.46 | 13.80 + 2.35 | 0.101 |
| | Post -treatment Mean + SD | 4.10 + 1.26 | 5.3 + 1.41 | 0.001 |
| St. George Respiratory Questionnaire | Pre -treatment Mean ± SD | 69.70 ± 4.8 | 69.76 ± 2.09 | 0.885 |
| | Post -treatment Mean ± SD | 22.83 ± 1.23 | 36.00 ± 6.5 | 0.000 |

**Table 1:** Between group comparison of sleep and quality of life

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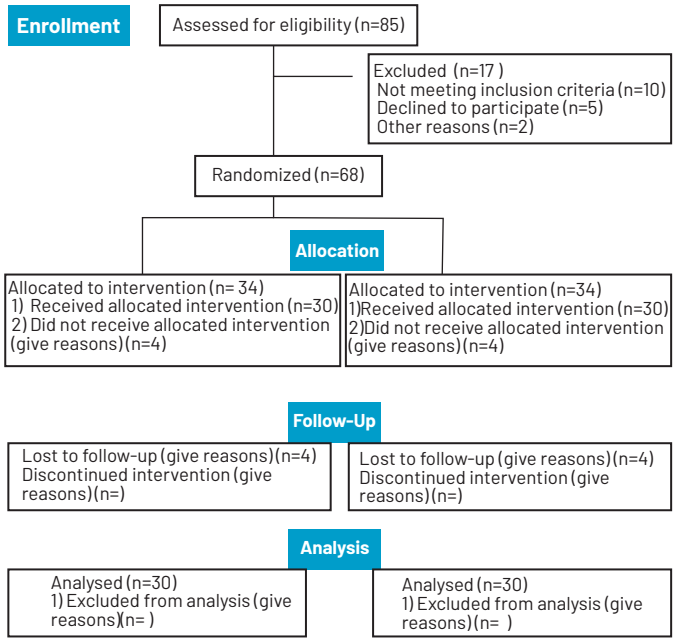


**Figure 1:** Consort Flow Diagram

## DISCUSSION

COPD is a prevalent respiratory illness that causes dyspnea, sleep disruption, discomfort, and anxiety. This study is about to find out the effects two techniques that includes Jacobson's Progressive Relaxation Technique and Laura Mitchell's technique to ameliorate the quality of life and sleep in COPD patients. There are numerous researches in the literature that demonstrate the benefits of relaxation exercises; however, the overall studies that demonstrate the benefits of relaxation techniques for COPD patients are rather limited. This study demonstrated the effects of Laura Mitchell's method.In a previous study it was discovered that there was no discernible change in QOL scores between men and women. Patients with COPD who had more dyspnea experienced a drop in sleep activity and total sleep duration, an increase in awaking from sleep, and a decrease in deep sleep and REM sleep, with sleep quality deteriorating in tandem as a result of the alterations in sleep organization [6]. Whereas, this study demonstrated that there is improvement in quality of sleep by applying Laura Mitchell and Jacobson's Relaxation Technique. Lehrer PM conducted a study to compare Jacobson's progressive relaxation method to modified procedures that suggest brief and an impression of large differences between pressure and relaxation. In comparison to modified procedures, Jacobson's progressive muscle relaxation is more efficient in psychological and physiological ailments, according to the study [12]. The effect of PMR on increasing certain sub dimensions of sleep habits, such as sleeping patterns, actual sleep, sleep period, and adequate sleep effectiveness was demonstrated experimentally. Sahin et al also discovered that Progressive muscle relaxation had an influence on global sleep quality along with all of its predictor variables [10]. This Study also showed that progressive muscle relaxation techniques facilitate good sleep quality among COPD patients. Both of the strategies are simple to implement, self-administered, and have no negative side effects, and they have a positive impact on quality of sleep, and overall quality of life. These easy relaxation exercises can also help subjects enhance their self-esteem.

## CONCLUSION

It was concluded that both Laura Mitchell's Relaxation Technique and Jacobson's Progressive Relaxation Technique were effective on quality of life and sleep quality in COPD patients. But Laura Mitchell's Technique had greater clinical effects

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