

Assess the Effectiveness of Pulmonary Rehabilitation Programme on Physiological and Psychological Variables among Patients with Pulmonary Tuberculosis: A Feasibility Study

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ABSTRACT

Introduction: Pulmonary Tuberculosis (PTB) adversely affects physiological and psychological health, leading to impaired quality of life. Pulmonary Rehabilitation Programme (PRP) is an effective non-pharmacological intervention aimed at improving these outcomes.

Objective: This study assessed the effectiveness of PRP among PTB patients.

Materials and Methods: A quasi-experimental non-equivalent control group pretest–posttest design was adopted. The study was conducted on 10 PTB patients (experimental n=5; comparison n=5) at MMIMS&R Hospital, Mullana. The experimental group received PRP, including breathing exercises (deep breathing, pursed-lip, diaphragmatic and pranayama: anulom-vilom), twice daily for 5 days, while the comparison group received routine care. Data were collected using modified Medical Research Council (mMRC) dyspnoea scale, physiological parameters, Hospital Anxiety and Depression Scale (HADS), and Rosenberg Self-Esteem Scale. Inferential statistics including independent t-test, RM-Anova

and one-way ANOVA were used for data analysis. Based on the previous study findings, the calculated sample size for the final study will be 70 participants including possible attrition rate.

Results: The experimental group showed improvement in physiological and psychological variables post-intervention. Dyspnea reduced from 3.00 ± 0.70 to 2.00 ± 0.70 , SpO_2 improved from 96.7 ± 0.85 to 97.4 ± 0.54 , and respiratory rate showed statistically significant improvement ($t=4.0$, $p=0.01$). Psychological variables also improved, with reduction in anxiety (3.00 to 2.60) and depression (2.80 to 2.60), and increase in self-esteem (1.40 to 2.00), compared to minimal or no change in the comparison group.

Conclusion: PRP was found to be an effective, safe, and cost-effective adjunct to routine care in improving both physiological and psychological outcomes among PTB patients. Its integration into standard TB management is recommended to promote holistic recovery.

Keywords: Hospital anxiety and depression scale, Pulmonary tuberculosis patients, Rosenberg self-esteem scale, Quality of life.

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