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COPD and Singing for Lung Health: An exploratory cross-sectional study of psychological and physical impacts

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Abstract

Purpose: While pulmonary rehabilitation is crucial for managing Chronic Obstructive Pulmonary Disease (COPD), adherence remains problematic due to various barriers, including self-efficacy and social support. Singing has emerged as a promising complementary intervention, though evidence of its effectiveness remains mixed. This study investigated the psychological and physiological impacts of Singing for Lung Health (SLH) on individuals with COPD, examining both clinical outcomes and participant experiences.

Methods: With institutional ethical approval, a cross-sectional study was conducted using an online survey incorporating the Hospital Anxiety and Depression Scale (HADS) and Likert-scale questions about SLH participation. Participants (N=12) were recruited through SLH group coordinators and social media outreach. Inclusion criteria required participants to be over eighteen, diagnosed with Chronic Bronchitis or Emphysema, and active in SLH programs. Data analysis included descriptive statistics, correlation analysis of HADS scores, and examination of response patterns across demographic variables.

Results: Three key findings emerged: (1) Psychological Impact: Mean HADS-A and HADS-D scores were 2.35 (SD±0.49) and 2.33 (SD±0.37), respectively, with female participants showing higher anxiety levels. No significant correlation was found between anxiety and depression scores (-.478). (2) Social Engagement: 92% of participants reported mood improvements from attendance, with all participants anticipating sessions positively. 83% of participants experienced isolation due to COPD, yet 91% reported making friends through the program. (3) Symptom Management: 58% strongly agreed that their symptoms improved through participation, with improvement rates notably higher

(71%) among those attending for over six months. However, COPD continued to impact daily activities for 83% of participants.

Conclusion: This study reveals SLH as a valuable intervention for COPD management within a small but instructive sample, particularly for its psychological and social benefits. While symptom improvement varies, the program's high enjoyment rates and social engagement suggest potential for improving pulmonary rehabilitation adherence. The gender disparity in anxiety levels and the relationship between attendance duration and perceived benefits warrant further investigation, even given the small sample. Future research should employ longitudinal designs to assess long-term benefits and qualitative methods to explore the mechanisms behind individual variations in response. These findings contribute to the growing evidence base for incorporating singing into comprehensive COPD management strategies while highlighting the need for gender-sensitive approaches and sustained participation for optimal outcomes.

Impact: Given the diverse responses to SLH, physiotherapy has the potential to evolve by offering personalised treatment plans tailored to individual needs, mental health status, and adherence patterns to ensure long-term success. With documented physical improvements over time, SLH could serve as a valuable complement to existing COPD treatments, with physiotherapists integrating singing-based breathing exercises into standard pulmonary rehabilitation protocols. The increasing prevalence of telehealth and virtual rehabilitation presents new opportunities to deliver SLH-inspired programs online, extending accessibility to patients encountering mobility or geographic challenges who may forgo treatment. In summary, SLH could improve rehabilitation engagement, address mental health concerns, and enhance adherence, ultimately fostering a more holistic, social, and patient-centred approach in future physiotherapy practices.