Singing and COPD: building theory and practice through research

Background and rationale

Chronic obstructive pulmonary disease (COPD) is the name given to describe a number of lung conditions, including emphysema and chronic bronchitis (British Lung Foundation [BLF online]) where airways become narrower, making breathing difficult. About 115, 000 people are diagnosed with the disease each year in the UK. COPD is not curable, but symptoms may be controlled through measures such as stopping smoking, taking prescribed medication, or through pulmonary rehabilitation (NICE, 2018).

There has recently been interest in the idea of singing to improve wellbeing, and particularly to ease symptoms of breathing. A number of reviews of evidence and research trials have reported that group singing has the potential to improve symptoms of COPD, but the findings to date are not conclusive. On the other hand, research which reports on interviews with, or written comments by people with COPD who have sung in a group has found feedback to be very positive. We therefore felt that further research was needed to explore the issue in depth, which we undertook through three related studies using different research approaches.

Study 1

Firstly, we conducted a randomised controlled trial (RCT), which compared a structured singing programme once a week and home practice for at least an hour between sessions over ten weeks, with a usual COPD treatment control. The trial was open to participants with a diagnosis of COPD who were under the care of the respiratory service of Medway Community Healthcare organisation in South East England, and who were willing to be assessed, randomized, and able to attend one of the two groups planned. Recruitment was through publicity and letters sent out via the respiratory service, and 36 individuals were initially recruited, though only 24 remained to the end of the trial.

After the study was approved by an NHS ethics committee, all participants had measures of respiratory function and exercise tolerance taken, and completed a questionnaire about their

physical and mental health (baseline assessment). Singers then attended a 10 week singing programme led by experienced facilitators, which included breathing exercises and a graded programme of songs demanding increasingly challenging singing exercises and repertoire. Non-singers continued with their usual treatment only. Following the singing programme all these measures were taken again for all participants. We had intended to repeat the measures after another 3 months but had to abandon this in view of the pandemic.

The results showed no significant difference between the singing and control groups on most of the follow up measures. This means that a ten-week group singing intervention for people with COPD does not result in overall improvement for the singing group relative to the control group using these measures. However, there was some improvement in reported activity levels for the singing group, which may be a result of participants finding that having COPD did not prevent them from taking up a new activity. Further, it must also be noted that the number of participants recruited was less than anticipated and, had the sample been larger, it may be that some significant differences between groups may have been found.

Clift, S., Skingley, A., Meadows S. & Dickinson, J. (2022) Singing and COPD: a pilot randomised controlled trial of wellbeing and respiratory outcomes. *Journal of Music, Health & Wellbeing*.

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Study 2

The second study aimed to expand on this work, by exploring why there appears to be an inconsistency between the RCT and what we learn from previous research which uses different methods. We posited that the mismatch between the qualitative and quantitative findings, with mixed evidence from quantitative findings, but consistently positive findings from qualitative research, could be explained by Leventhal, Meyer and Nerenz's (1980) Common Sense Model of illness representations. The Common Sense Model states that the participants' perceptions of their condition influences how they experience the physiological symptoms of COPD alongside their emotional representations of the illness. Improvements in how they manage their condition may lead to participants perceiving physiological changes although there are no actual objective physiological changes to symptoms such as breathlessness. This means a focus on participants' experiences is important.

The research sought to address two related questions: 1) How does a participant's experience of their COPD change throughout the time they are attending a singing group? 2) How do participants make sense of the impact of attending the singing group on their experience of COPD?

In-depth interviews were conducted via online platform Zoom or via the telephone with five participants drawn from the RCT groups. Participants were asked to talk about the impact of the singing group and how they explain the mechanisms that led to this impact. The data gathered from the interviews were then analyzed using Interpretive Phenomenological Analysis (IPA), which is a method used to explore how individuals make sense of their experiences.

The participants reported stigma over their condition before the group and that COPD has a restrictive impact on their lives. Following attending the singing group, they experienced a change in their attitudes towards their condition, feeling a greater sense of confidence and control over their condition. The participants felt the factors involved in this change were the social connections both with their peers and the group leader, the positive emotional changes during and following the group and the impact of the breathing techniques they were taught.

Although the positive experiences of participants elicited in the study are not new, interpreting and exploring the narratives within a strong theoretical framework (the Common Sense Model) has allowed for a more coherent explanation of the mechanisms at work than most previous qualitative studies, and may also help explain why quantitative findings from the literature and our previous work do not always pick up many benefits from singing groups.

The finding highlighting the importance of self-confidence and control in the individual's view of successful outcomes from a singing programme suggests that future such programmes should therefore aim to promote self-efficacy and self-management for participants.

Lane, I., Cooke, D. & Skingley, A. (2022) Singing and COPD: exploring the experiences of people attending a group activity. *Journal of Music, Health & Wellbeing*.

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Study 3

Promoting such self-management of COPD, through the use of a singing for health resource for home practice, was one of the areas we explored in the third study. The Singing for Better Breathing (SfBB) resource comprises a DVD of 13 films and accompanying handbook. It was developed as a practical tool for participants to use at home, as an adjunct to health education provided in the singing for COPD research project. The films progress through physical and vocal warm-ups plus songs which gradually demand greater vocal production and breath control.

Participants were encouraged to complete a diary as a record of their use of the resource on a regular basis during the intervention phase of the research. In addition, interviews were conducted

with eight participants and one facilitator after the final singing session. Thematic analysis was identified as a suitable approach to extract patterns of meaning, since the small sample size (n=10), and overwhelmingly qualitative nature of the data, reduced the likelihood of missing nuances.

Of the ten participants who completed diary entries on a weekly basis, nine spoke positively regarding the format of the resource. One was unable to watch the films due to a lack of DVD player, however they used the handbook to sing through the songs unaccompanied at home.

Frequency of use varied considerably from one hour per week to several times per day, with five participants reporting that they chose the more difficult songs from the start, rather than working through gradually over the course of the project. Two participants stopped using the resource after a few weeks, with one explaining that she did not like the choice of songs or the sound of the singers on the DVD. However, the majority found the songs to be engaging and uplifting, commenting favourably on the vocal range and repertoire, and the experience of being able to sing along with the choir. This view was supported in the facilitator interview.

Participants chose to use the resource in a variety of ways, not always anticipated by its designer, for example using the handbook for unaccompanied singing, expressing a preference for the You Tube version or differing frequency of use. This demonstrates an element of personal control and self-determination in choice of how to use the resource, supported in the self-management literature (Barlow et al, 2002).

Given the existing evidence for the positive impact of singing for people living with long-term conditions, the findings suggest that this resource may be of value to anyone wishing to use singing to promote their wellbeing.

Price, S. & Skingley, A. (2022) Singing and COPD: Development, implementation and evaluation of a resource to support home practice and disease self-management. *Journal of Music, Health & Wellbeing.*

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