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Appraisal

Critically appraised paper: Breathing retraining programs, delivered either via a DVD or face-to-face, improve health-related quality of life in people with asthma

Synopsis

Summary of: Bruton A, Lee A, Yardley L, Raftery J, Arden-Close E, Kirby S, et al. Physiotherapy breathing retraining for asthma: a randomised controlled trial. *Lancet Respir Med* 2018;6:19–28.

Question: For people with asthma, is breathing retraining delivered via a digital, audiovisual and self-guided program more effective than usual care, and as effective as face-to-face breathing retraining, at improving asthma-related quality of life? ***Design***: Randomised controlled trial with concealed allocation and blinded outcome assessment. ***Setting***: In participants' homes, Southampton, United Kingdom. ***Participants***: Adults with mild and moderate asthma (diagnosed by a physician), who had been prescribed at least one asthma medication in the previous year, and had a score on the Asthma Quality of Life Questionnaire < 5.5. Exclusion criteria were concomitant diagnosis of chronic obstructive pulmonary disease with a forced expiratory volume in one second $<$ 60% of predicted. Randomisation (2:1:2) of 655 participants allocated 261 to a digital, audiovisual, self-guided program group (referred to as DVD group), 132 to a face-to-face group, and 262 to a control group. ***Interventions***: The DVD group were provided with a DVD and booklet that included an explanation of how to complete the breathing retraining exercises (eg, diaphragmatic breathing, nasal breathing, slow breathing, controlled breath holds, and simple relaxation exercises), motivational components (eg, rationale for exercises and common concerns) as well as supportive features such as a daily planner and progress charts. The face-to-face group were provided with the booklet and underwent breathing retraining for three 40-minute one-on-one sessions with a physiotherapist once every 2 weeks after randomisation. The control group received usual medical care. ***Outcome measures***: The primary outcome was health-related quality of life, measured with the Asthma Quality of Life Questionnaire at 12 months. ***Results***: A total of 598 participants completed the 12-month assessment (230 in the DVD group, 122 in the face-to-face group, and 246 in the control group). At 12 months, compared with the control group, both the DVD group and the face-to-face group had a better score on the Asthma Quality of Life Questionnaire (MD 0.28, 95% CI 0.11 to 0.44; and 0.24, 95% CI 0.04 to 0.44, respectively). There was no difference between the two intervention groups (MD 0.04, 95% CI –0.16 to 0.24). ***Conclusion***: A breathing retraining program, delivered as either a self-guided, digital and audiovisual program or a face-to-face program, produces similar improvements in asthma-related quality of life for people with partially controlled asthma.

Provenance: Invited. Not peer reviewed.

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Commentary

Asthma is a heterogeneous condition that affects people in many ways; most importantly, it impairs their quality of life. Although pharmacological treatment is effective, most people continue to have ongoing symptoms and quality of life impairment. Several non-pharmacological interventions have been suggested for people with asthma,[1] but data pertaining to their effectiveness is inconclusive. Breathing retraining exercises have been recommended for people whose symptoms are not adequately controlled by pharmacological treatment.[2]

The study by Bruton et al aimed to evaluate whether breathing retraining delivered either face-to-face or via a digital, audiovisual and self-guided program (DVD group) improves asthma-related quality of life compared with usual care. The authors should be commended on the methodological quality of their study, which included: recruiting the largest number of participants from all studies that aimed to evaluate the effect of non-pharmacological interventions in people with asthma; conducting a pragmatic trial, which assessed the real-world effectiveness of an intervention, using minimal exclusion criteria; incorporating clinical and pathophysiological outcomes; performing a cost-effectiveness analysis; and having a 12-month follow-up assessment.

This well conducted and relevant study demonstrated that, after 12 months, participants in the face-to-face group and those in the DVD group had similar quality of life, which was better than the quality of life of participants who received usual care. In addition, both interventions were cost-effective. However, breathing retraining did not improve pathophysiological outcomes such as clinical control, airway inflammation (exhaled nitric oxide), lung function or psychosocial comorbidities (ie, anxiety and depression symptoms). It is impressive how well-developed interventions that include as little as three face-to-face, one-to-one sessions (40 minutes each) or a self-guided DVD, which can both be easily incorporated into clinical practice, produce such substantial improvement in asthma-related quality of life in people with incompletely controlled asthma.

Provenance: Invited. Not peer reviewed.

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