

Andning och träning i medveten närvaro för personer med hjärtsvikt studier av erfarenheter och effekter på symtom och tecken, välbefinnande och hälsa

Akademisk avhandling

som för avläggande av filosofie doktorsexamen vid Sahlgrenska akademien, Göteborgs universitet kommer att offentligens försvaras i hörsal 2119, Arvid Wallgrens backe, Hus 2, Göteborg, den 8 juni 2023, klockan 13.00

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Avhandlingen baseras på följande delarbeten

- I. Ekman I, Kjellström B, Falk K, Norman J, Swedberg K. Impact of device-guided slow breathing on symptoms of chronic heart failure: a randomized, controlled feasibility study. *Eur J Heart Fail.* 2011;13(9):1000-5.
doi.org/10.1093/eurjhf/hfr090
- II. Norman J, Fu M, Ekman I, Björck L, Falk K. Effects of a mindfulness-based intervention on symptoms and signs in chronic heart failure: A feasibility study. *Eur J Cardiovasc Nurs.* 2018;17(1):54-65.
doi.org/10.1177/1474515117715843
- III. Norman J, Falk K, Fu M, Rejnö Å, Björck L. Effects of a mindfulness-based intervention on psychological distress and health in patients with heart failure in a parallel-group, controlled feasibility (i manus)
- IV. Norman J, Rejnö Å, Falk K, Fu M, Björck L. Experiences and management of breathing and shortness of breath in persons with heart failure – A qualitative study (i manus)

SAHLGRENKA AKADEMIN
INSTITUTIONEN FÖR VÅRDVETENSKAP OCH HÄLSA



Breathing and mindfulness-based training for persons with heart failure

studies of experiences and effects on symptoms and signs, wellbeing, and health

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Abstract

Despite care and treatment, many patients with heart failure (HF) are limited by symptoms, such as shortness of breath (SOB) and fatigue, that is difficult to treat. Research shows that slow breathing and mindfulness-based interventions (MBI) have the potential to reduce stress, improve symptoms and physical functioning, reduce anxiety and depression, and improve quality of life. Few studies have included patients with HF and the knowledge on complementary methods for symptom relief in HF is insufficient. The **overall aim** of this thesis was therefore to explore the feasibility, experiences and effects of breathing and mindfulness-based training on symptoms and signs, well-being, and health in persons with HF. Moreover, the aim was to gain an understanding of the subjective experiences of breathing, SOB, and management strategies in a stable phase of treated HF.

Two interventional studies with randomized design and parallel groups were conducted. Stable, but still symptomatic patients with HF, despite treatment, were enrolled. The studies included one visit before and one after the study period, with repeated measures (Study I, II & III). Study I investigate if slow device-guided breathing (DGB) could improve symptoms in HF. Study II explores the feasibility and effects of MBI on symptoms and signs, and study III secondary outcomes on psychological distress and health. In Study IV, a descriptive design and qualitative content analysis, was applied. Data was collected in semi-structured interviews, using an instrument, Experiences of breathing and shortness of breath (Exp-BeSoB), which was developed in the project.

In Study I, there was no improvement in symptoms in the DGB group compared to the music listening (ML) group. Participants in the DGB group, who followed (*responders*) the DGB and learned to breath in a slow pace and increased the exhaling time, reported significantly improved breathlessness and HF functional class, compared to *non-responders*.

An 8-week MBI, in addition to conventional treatment, significantly reduced the impact of fatigue, symptoms of unsteadiness/dizziness, and breathlessness/tiredness related to physical functioning (Study II). Participants in the MBI-group also reported reduced psychological distress and improved general health. Meanwhile, participants in the control group rated their health lower at follow-up (Study III). Findings in Study IV showed varied experiences of SOB. Participants developed strategies for management of symptoms. Three main categories of experiences were identified: *Shortness of breath as a threat to life*, *Difficulty breathing slows down body and traps mind*, and *Breathing as no problem and not in mind*.

Overall, results in this thesis shows good feasibility and applicability for DGB and MBI, as complementary methods to alleviate symptoms in peoples with heart failure. Additionally, MBI, may have the potential to reduce self-reported psychological distress and improve health. The findings help to understand the subjective experiences of SOB and shows the importance of clinicians to be aware of patients' symptom experiences to initiate breathing intervention. The results are of high clinical relevance hence, larger studies are needed to determine the effects.

Keywords: Heart failure, mindfulness-based intervention (MBI), breathlessness, dyspnea, slow breathing, fatigue, well-being, general health, patient reported outcome measures (PROM), qualitative content analysis

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