

## **The Effect of Mobile Self-monitoring on Self-care Behaviors in Heart Failure and COPD Patients: A Feasibility Study**

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Exacerbations of heart failure (HF) and chronic obstructive lung disease (COPD) are among the most costly illnesses. Patient recognition of changes in symptoms cueing imminent exacerbation is poor. Innovative strategies to improve patient symptom recognition, self-care behaviors and treatment seeking are necessary to improve overall health outcomes.

The aim of this pilot study was to test the feasibility of a wireless health monitoring device and cell phone app in 10 patients (5 with COPD and 5 with HF). This collaborative multidisciplinary study is innovative in its inclusion of the patient as an active partner in the use of technology to monitor changes in physiologic indicators to alert them to baseline status changes and guide self-care decision-making. The nurse-engineer team worked to develop devices that met the data collection needs of the research team, while being mindful of comfort and body image concerns of the patient. Additionally, the engineers provided the nurse researchers essential training on troubleshooting technology problems in the field. Weekly home visits with participants provided ongoing feedback that impacted design decisions and revisions throughout the data collection period.

Data were collected on self-care (SCHFI) at enrollment and post intervention. Participants had a mean age of  $67.7 \pm 11.9$  years, EF of  $26.5 \pm 11.8$ , 60% male, 70% married. Mixed between-within subjects' analysis of variance was conducted to test the impact of the intervention on the participant's self-care scores. There was no significant interaction between group and time, Wilk's Lambda = .97,  $F(1, 17) = .46$ ,  $p = .51$ . There was no significant main effect for time Wilk's Lambda = .94,  $F(1, 17) = 1.14$ ,  $p = .30$ . Self-care maintenance (31 vs 31.7), management (49.2 vs 63) and confidence (58.2 vs 58.7) scores were inadequate at each time but did increase after intervention.

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