Evaluation of Remote Patient Monitoring App for Spirometry

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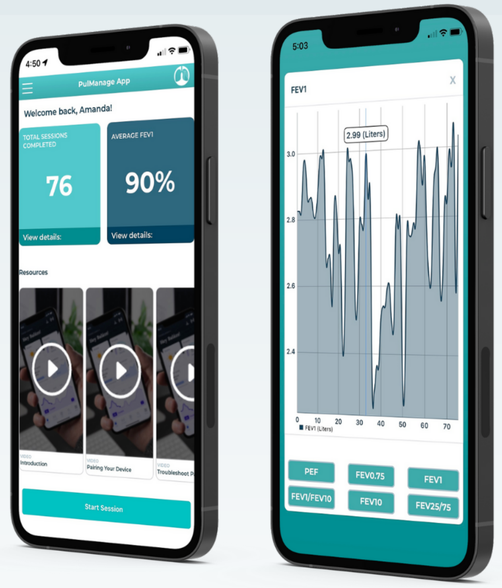
BACKGROUND

Chronic obstructive pulmonary disease (COPD) is associated with substantial functional morbidity including activity-limiting symptoms such as dyspnea and fatigue. Self-management interventions aid in symptomatic management of COPD and have been shown to produce positive outcomes on quality of life (QOL) and hospital admissions. The purpose of this study is to evaluate the feasibility and acceptability of our team's innovative, technology-enhanced COPD self-management application (PulManage) that integrates real-time spirometry, symptom tracking, and bidirectional provider communication within one platform.

METHODS

A total of 20 participants were recruited for this mixed methods feasibility trial. Participants received remote spirometry devices and downloaded PulManage software on their phones. Participants tracked symptoms, temperature, and respiratory rate, and completed a minimum of two spirometry sessions (defined as three efforts) daily for two weeks. A total of 18 participants (90%) completed the two-week trial. Acceptability was evaluated with the Technology Acceptance Model. Following the trial, system usability was evaluated with multiple choice questions and qualitative interviews explored perceptions of usability, acceptability, and satisfaction amongst participants.



The remote patient monitoring app is feasible and acceptable.
Continuing efforts are focused on developing personalized feedback mechanisms and educational modules.

ACKOWLEDGEMENTS

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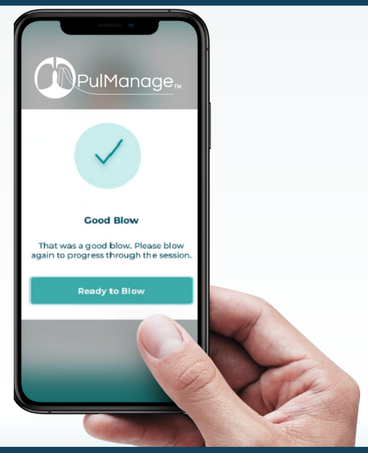
RESULTS

Of the 11 participants who responded to feedback surveys, 100% indicated that they had the necessary knowledge and resources to use the PulManage system. 81.8% found the system useful and 90.9% indicated that it was easy to use. When evaluating overall reaction to the system construct (usefulness, ease of use, attitude toward system, intent to use), a total of 90.9% of the respondents had a positive attitude towards the system. Feedback included the desire for personalized feedback of spirometry performance, educational tools.

REALTIME FEEDBACK



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DISCLOSURES

AC, BS, and NH are employees of PulManage. PD is a consultant to PulManage. CS has grants to MUSC from Adverum, Arrowhead, AstraZeneca, CSA Medical, CSL Behring, Grifols, MatRx, Nuvaira, Pulmonx, Takeda, and Vertex. He is a consultant for AstraZeneca, CSL Behring, GlaxoSmithKline, PulManage, Uptake Medical, UpToDate, Takeda, and Vertex. SM has no disclosures.