

# Pilot Study of an Online Dyspnea Self-Management Program for COPD

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*To address some of the shortcomings to providing timely and convenient education and support to patients with COPD, especially in the management of dyspnea, the Internet was considered a viable medium to deliver a previously tested program at a distance to reach more patients. Older COPD patients were able to participate in the program and most were very satisfied with the program. Changes were noted in dyspnea, support, self-efficacy, and exercise.*

## Background

Approximately 66% of US adults had Internet access in 2002 (Harris Poll) with those in the 50-64 age range as equally represented online as younger users. Although access is still limited for many population segments, the current trend in growth suggests that the Internet will become a pervasive and accessible form of media in the years to come. The purpose of this study was to determine the feasibility, acceptability, and preliminary effectiveness of a nurse-facilitated and peer supported Internet-based dyspnea self-management program (iDSMP) for people with chronic obstructive pulmonary disease (COPD). The iDSMP was modeled after a successful face-to-face (F2F) program<sup>1</sup> based on Social Cognitive Theory. Participation in the iDSMP is hypothesized to improve dyspnea, self-efficacy for managing dyspnea, perceptions of social support, and exercise behavior. A second aim of the study was to test whether this medium could serve as an independent intervention or if this technology is more appropriate only as an adjunct to previous F2F contact.

## Methods

Two groups were evaluated at baseline and 3 months. Subjects were recruited from a database of patients who had participated in a F2F DSMP, allowing a test of a “booster” effect (n=7). A second group of subjects (n=9) were recruited from all other sources and had no previous relationship with the investigators in order to evaluate the program as a “primary” intervention. Home visits were conducted. The

intervention consisted of: 1) Weekly structured self-management education via live text chat. 2) Exercise Monitoring, Goal Setting and Feedback. 3) Pulmonary Function and Symptom Monitoring. Subjects monitor lung function using the Airwatch and data can be uploaded to the site. 4) Peer and Professional Communication via chats, bulletin board, and email. Process metrics were tracked over 3 mos. Outcomes were assessed online. Descriptives and calculations of effect sizes ( $X_{pre} - X_{post}/SD_{pooled}$ ) were performed.

## Results

Mean age of iDSMP subjects was 69.1 (range 55-82), FEV1/FVC 41±7%, use of Internet for 5 years, and 4 mos with live chats. Data for both groups were pooled since there were no differences between the two groups in demographic or usage characteristics and study outcomes. The first month registered the most logins (330) compared to 104 in the final month. 73% reported being very to completely satisfied with the program and that participation increased their access to information. Improvements were noted for dyspnea (effect size (ES)=0.86), self-efficacy for managing dyspnea (0.94), support (0.32), and endurance exercise (0.27) for the overall sample.

## Discussion

Our findings suggest that older patients with COPD are able to successfully participate in an online DSMP and that certain health outcomes can be improved. Since this study did not have a control group and inadequate power to detect significant improvements, larger controlled trials are needed to confirm these early positive results. Programs like the iDSMP could be helpful adjuncts to regular clinic contacts in promoting successful self-management for a variety of other chronic illnesses.

## References

1. Stulbarg MS, Carrieri-Kohlman V, Demir-Deviren S, Nguyen HQ, et al. Effect of exercise training on dyspnea, exercise performance and health related quality of life: how much training is enough? *Journal of Cardiopulmonary Rehabilitation*. 2002;22:109-21.