Title:
Discharge Instructions Using a Chronic Obstructive Pulmonary Disease Action Plan: A Feasibility Study

Patricia Conley, PhD[1]
Teresa Kelechi, PhD[2]
Lynne S. Nemeth, PhD[2]
Martina Mueller, PhD[3]
(1)Progressive Care Unit, Research Medical Center, Kansas City, MO, USA
(2)College of Nursing, Medical University of South Carolina, Charleston, SC, USA
(3)Medical University of South Carolina, Charleston, SC, USA

Keywords:
COPD, COPD action plan and self-management

References:
 American Lung Association. (2014). COPD action plan. http://action.lung.org/site/DocServer/action-management-plan.pdf.

 Choi, J. Y., Chung, H. I., & Han, G. (2014). Patient outcomes according to COPD action plan adherence. J Clin Nurs, 23(5-6), 883-891. doi: 10.1111/jocn.12293

 Jalota, L., & Jain, V. V. (2016). Action plans for COPD: Strategies to manage exacerbations and improve outcomes. Int J Chron Obstruct   Pulmon Dis, 11, 1179-1188. doi: 10.2147/copd.s76970

Pleasants, R. A., Riley, I. L., & Mannino, D. M. (2016). Defining and targeting health disparities in chronic obstructive pulmonary   disease. International Journal of Chronic Obstructive Pulmonary Disease, 11, 2475–2496. http://doi.org/10.2147/COPD.S79077

   Rizzo, E. (6). Stats on the Cost of Readmission for CMS-Tracked Conditions. Retrieved February, 2, 2015.

   Sánchez-Nieto, J. M., Andújar-Espinosa, R., Bernabeu-Mora, R., Hu, C., Gálvez-Martínez, B., Carrillo-Alcaraz, A., ... & Abad-Corpa,   E. (2016). Efficacy of a self-management plan in exacerbations for patients with advanced COPD. International Journal of Chronic Obstructive Pulmonary Disease, 11, 1939.

   WHOQOL-BREF, Questionnaire, June 1997, Updated 1/10/2014.

Abstract Summary:
This feasibility study provides the groundwork for implementing discharge instructions to critically ill participants with COPD who are hospitalized. In addition, the study utilized the World Health Organization

Quality of Life-Bref questionnaire to assess quality of life at discharge and then during a 30 day follow-up per phone call.

Learning Activity:

LEARNING OBJECTIVES	EXPANDED CONTENT OUTLINE
The learner will be able to identify two components that can improve self-management knowledge for patients with chronic obstructive pulmonary disease (COPD).	1) Provide a color coded COPD action plan that briefly describes changes in respiratory symptoms and appropriate actions for patients to take and when to contact their health care provider. 2) Individual nurse to patient instructions with teach back from the patient to confirm their understanding.
The learner will be able to describe two ways to evaluate patient outcomes following implementation of a COPD action plan.	1) Patients will be able to describe appropriate actions to take for deterioration in respiratory symptoms. 2) Nurses will be knowledgeable of how to measure health care utilization 30 to 90 days following discharge using parameters of unscheduled office visits, emergency department visits and/or hospitalizations for COPD.
The learner can explain two factors that can impair outcomes among patients with COPD	1) Low socioeconomic status is one factor that can impair outcomes among patients with COPD. 2) Lack of knowledge related to self-management of COPD, in particular identifying worsening respiratory symptoms which can impact the frequency of acute exacerbations of COPD and hospitalizations. 3) Lack of access to health care can influence health outcomes of patients with COPD.

Abstract Text:

Background: Discharge instructions for hospitalized patients with chronic obstructive pulmonary disease (COPD) are essential to promote improved health outcomes, reduce incidence of hospitalization, and improve perception of quality of life (QOL). COPD, that causes air flow limitation, is the third leading cause of death in the United States as well as a major cause of disability. The average cost of one initial hospitalization for COPD is $7,100 and a reported 17.3% readmission rate is reported to cost an average of $10,900 for a COPD (or COPD related readmission) (Rizzo, 2015). Low socioeconomic status has been found to impact morbidity and mortality in patients with COPD (Pleasants, Riley & Mannino, 2016). From review of the literature, most studies examined discharge instructions provided to participants in the outpatient setting. Additionally, there is mixed evidence on improvement of QOL scores from intial measurement before COPD instructions in comparison to a repeat score of QOL following discharge instructions (Choi, Chung & Han, 2014). Jalota and Jain (2016) point out how there have been more studies to assess the effectiveness of asthma action plans (400) compared to COPD action plans (69).

Objectives: This study evaluated the feasibility of implementing the American Lung Association's modified COPD Action Plan (page 1 of 2) for discharge instructions and assessment of QOL among participants hospitalized on a Progressive Care Unit (PCU) for an acute exacerbation of COPD or COPD as a principal or secondary diagnosis. Also, the study compared QOL using the World Health

Organization Quality of Life-BREF (WHOQOL-BREF) as a valid instrument to measure participant response scores before discharge, and at 30 days post discharge. The discharged participants' perceptions related to the action plan was measured from rated reponses, regarding whether or how this instrument assisted them to gain knowledge of self-management with COPD. Health care untilization was measured by reported feedback from participants (e.g., number of hospitalizations, emergency department (ED) visits, etc.).

Methods: The study was conducted on a cohort of critically ill participants with COPD hospitalized on a Progressive Care Unit. The Principal Investigator administered the World Health Organization Quality of Life-Brief questionnaire to assess QOL in four domains (physical, social, psychological, and environment) before discharge and 30 days after discharge via phone call. A trained nurse and Principal Investigator delivered the action plan to the participants and each received a copy to take home. Reach, Effectiveness, Adoption, Implementation and Maintenance (RE-AIM Framework was used to evaluate outcomes from the discharge intervention. Participants were given a $5.00 gift card following completion of the in hospital portion of the study and a$5.00 gift card was mailed to the participant following completion of the post discharge phone call portion of the study.

Results: In hospital enrollment (n = 50 participants); 13 completed both the in hospital and 30-day follow-up assessments. Participants' answered to whether self-management skills were learned from the action plan (12; 92.3% answered "Yes"). QOL scores were compared using the Wilcoxon signed-ranks test; there were no statistically significant differences between in hospital and 30 day follow-up scores. QOL scores: physical domain (mean, +/- standard deviation, $p$value) 54.4, +/-15.4, p = 0.78; psychological 66.0, +/-17.1, p = 0.40 social 57.1, +/-18,3, p = 0.79; and environment 74.8, +/-12.2, p = 0.59. Most frequent principal admitting diagnosis was acute respiratory failure and secondary diagnosis was COPD. On follow-up, one participant's comment from a question related to asking if they perceived improved self-management skills, "Doing exceptionally well. Eating healthy and stopped smoking." Health care utilization reported by participants on 30 day follow-up were: 99% no hospitalizations, 1% 2 day rehospitalization for COPD; 12, 99% no ED visits, 1, 1% one ED visit for "insulin reaction"; 13, 100% no calls to #911, and 13, 100% no unscheduled office visits for COPD.

Conclusions: The in hospital portion of the study was feasible but the 30 day follow up lacked retention in this vulnerable and fragile patient population. This study was unique because it implemented discharge instructions to critically ill hospitalized patients with COPD. Further research is needed with a larger sample size, to include other hospital units and revise the 30 day follow up with an alternative to replace the phone call to participants. Administration of COPD education can increase patient satisfaction in receiving self-management instructions from an action plan near time of discharge based on a small follow-up sample (n = 13). Bedside nurses are at the forefront in being able to deliver effective discharge instructions to patients with COPD which can impact their ability to identify changes in their respiratory symptoms and take appropriate actions in use of inhalers, pursed lip breathing, and when to seek medical attention. Empowering patients with knowledge on self-management from COPD action plans that are color coded and concise could potentially help them to better care for themselves.