

ABSTRACT

Statement of Purpose: Chronic obstructive pulmonary disease (COPD) is a leading cause of morbidity and mortality in Canada¹; however, research suggests that many individuals diagnosed with COPD have poor knowledge regarding the management of their condition.^{2,3} The purpose of this study was to evaluate a program designed to increase patient knowledge of COPD and improve self-management of this disease.

Methods: 13 individuals with a diagnosis of COPD were recruited to participate in a COPD self-management education pilot program at the Middlesex Centre Family Medicine Clinic covering topics on self-management strategies and exercise plans. Evaluative surveys were administered to participants before and after the program to assess self-reported knowledge/understanding of COPD and level of confidence in managing COPD. A program satisfaction survey was administered following the program.

Results: Both knowledge/understanding of COPD and self-reported level of confidence self-managing COPD increased following the program (Pre-knowledge M=6.15, Post-knowledge M=7.38; Pre-confidence M=6.73, Post-confidence M=7.55). Average participant rating of overall experience of the program was 4.15 on a scale of one (poor) to five (superior).

Conclusions: Participants self-reported an increase in both knowledge of and confidence in managing COPD, as well as a high level of satisfaction with the program. Improving self-management of COPD may help to reduce the severity and frequency of exacerbations, ease the load on the health-care system, and improve health-related quality of life.³ Further sessions are required to better evaluate this pilot program.

STATEMENT OF PURPOSE

Chronic Obstructive Pulmonary Disease (COPD) represents an important public health challenge and is a major cause of chronic morbidity and mortality throughout the world. COPD is currently the fourth leading cause of death in the world but is projected to be the third leading cause of death by 2020. More than 3 million people died of COPD in 2012 accounting for 6% of all deaths globally. The COPD burden is projected to increase in coming decades because of continued exposure to COPD risk factors and aging of the population.⁴

The benefits to COPD patients from pulmonary rehabilitation and self-management education are considerable and rehabilitation has been shown to be the most effective therapeutic strategy to improve shortness of breath, health status and exercise tolerance.⁴ Unfortunately, only 1-2% of Ontarians who would benefit from pulmonary rehabilitation have access to it.⁵

The purpose of this study was to evaluate a pilot program designed to increase patient knowledge of COPD, improve self-management of this disease and help patients safely integrate exercise into their daily life.

PROGRAM

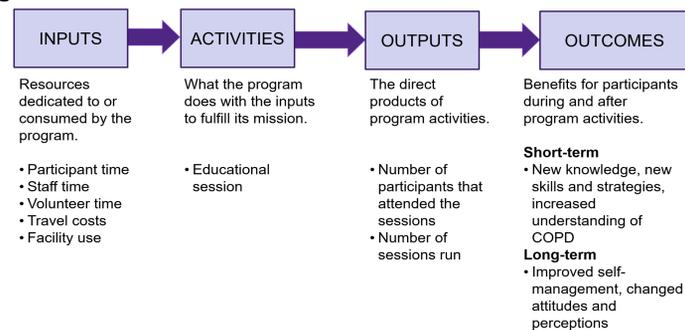
Background: The Thames Valley Family Health Team offers both spirometry for diagnosing of COPD and individual education sessions for education of self-management strategies. As the demand for this service grew, it became important to reach more people in a timely and efficient manner. It also provided an opportunity to add the exercise component of disease management as pulmonary rehabilitation facilities are lacking in our community.

Occupation Therapy, Respiratory Therapy, Pharmacy and Nursing came together and created our COPD self-management program using most recent evidence based studies. We ran the pilot program at 3 TVFHT sites and made revisions based on participant feedback.

Overview: In November 2016, the COPD self-management education program at Middlesex Centre Family Medicine Clinic had recruited 13 participants with a diagnosis of COPD (5 female, 8 male; age range: 60-70+). 2.5 hour sessions were offered once weekly over 3 weeks. The first half of each session was seated instruction in self-management strategies including proper medication technique, flare up management, completion of COPD action plans, dyspnea management and energy conservation strategies. The second half of each session provided instruction and participation in flexibility, balance and strengthening exercise. Instruction was also provided in cardiovascular exercise but participants were encouraged to perform this at home. The program was facilitated by a Respiratory Therapist and an Occupational Therapist.

EVALUATION

Logic Model:



Design: This pilot program was evaluated by administering pre- and post- surveys and a satisfaction survey to participants. Demographics were collected including gender, age group and any past participation in COPD education. Participants were asked to self-rate their level of knowledge/understanding of and level of confidence in managing their COPD on a scale of 0-10, with 0 being least confident and 10 being very confident (Figure 1). Participants were then asked to answer 12 COPD knowledge questions (Figure 2). Lastly, participants were asked to complete a program satisfaction survey.

Evaluation questions:

- 1) Does an educational session on COPD affect patient self-reported knowledge/understanding of COPD?
- 2) Does an educational session on COPD affect actual patient knowledge/understanding of COPD?
- 3) Does an educational session on COPD affect patient self-reported confidence in managing COPD?
- 4) Are participants satisfied with the education group?

Indicators: Self-reported scores of knowledge/understanding of and confidence in managing COPD, number of questions answered correctly out of 12 COPD knowledge questions, patient responses

Data source: Pre- and post- surveys, program satisfaction surveys

Timing: Pre-education group surveys were administered before the start of the session, post-education group surveys and program satisfaction surveys were administered following the session

5. On a scale of 0-10 please rate your knowledge/understanding of COPD?
(0 being least confident and 10 being very confident)

0 1 2 3 4 5 6 7 8 9 10

6. On a scale of 0-10 please rate your level of confidence in managing your COPD?
(0 being least confident and 10 being very confident)

0 1 2 3 4 5 6 7 8 9 10

Figure 1. Sample rating scale on pre- and post- surveys.

	Agree	Disagree	Don't Know
1. COPD is reversible.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Emphysema and chronic bronchitis are a part of COPD.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Sputum, frequent coughing, wheezing and shortness of breath can be signs of COPD.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. If you stop smoking, the decline in your lung function can be slowed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Factors that can worsen COPD are: pollution, emotions and respiratory infection.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. It doesn't matter what technique you use to take your puffer, as long as you take it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. It is okay to miss taking prescribed antibiotic medication.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Pursed lip breathing involves breathing in through nose and out through pursed lips.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Pursed lip breathing is a strategy to help manage breathing during extreme activities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Exercise can have just as much impact as medication on COPD management.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. COPD Action plan helps to manage flare ups.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. I can adjust how I do my activities to help manage my breathing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Figure 2. COPD knowledge questions evaluated pre- and post- education session.

ACKNOWLEDGEMENTS

We would like to thank everyone at The Thames Valley Family Health Team for their support on this project, Lauren Siegel for research assistance and preparation of this poster, and The Middlesex Centre Family Medicine Clinic site director Dr. Howard for her assistance and support.

RESULTS

Mean level of self-reported knowledge/understanding of COPD and mean level of confidence in self-managing COPD increased following the program (6.15 to 7.38; 6.73 to 7.55, respectively) (Table 1). Mean number of questions answered correctly out of twelve COPD knowledge questions increased following the program (7.71 to 9.71) (Table 2) and number of correct responses increased following the session for all questions with the exception of question 9 (Figure 3). Question 9 was poorly answered both pre- and post- education, possibly due to confusion with wording. Average participant rating of overall experience of the program was high (4.15 on a scale of 1(poor) to 5(superior)). Majority of participants reported being either confident or very confident that they would continue to practice and apply what they learned in the program. Open-ended questions revealed developing exercise plans, learning how and when to take different medications, and practicing breathing strategies to be beneficial to participants. Participant feedback included changing the time of day the program was run and slowing the pace of instruction. These are preliminary results. Future program sessions will be evaluated.

Paired Samples Statistics					
	Mean	N	Std. Deviation	Std. Error Mean	
Pair 1	knowledge1	6.15	13	2.340	.649
	knowledge2	7.38	13	1.502	.417
Pair 2	confidence1	6.73	11	1.272	.384
	confidence2	7.55	11	.820	.247

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Pre_Correct	7	4	11	7.71	2.215
Post_Correct	7	5	11	9.71	2.138
Valid N (listwise)	7				

Table 1. Mean values of self-reported knowledge and confidence pre- and post- session.

Table 2. Mean number of questions correct out of 12 COPD knowledge questions pre- and post- session.

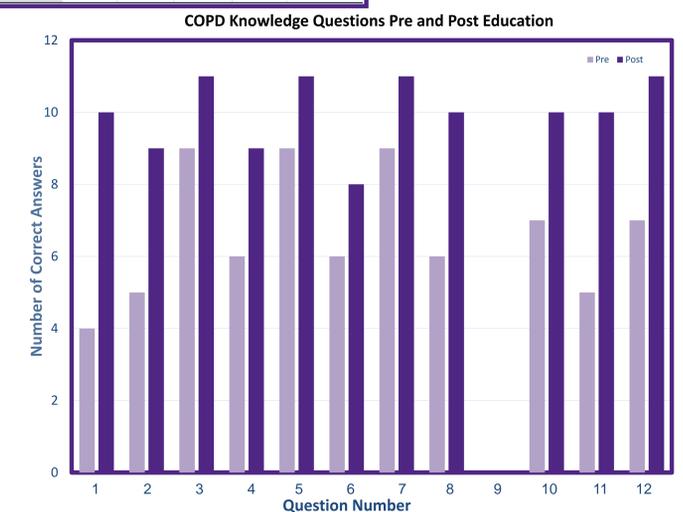


Figure 3. Number of participants that answered correctly for each COPD knowledge question pre- and post- session.

CONCLUSIONS

Preliminary results revealed average increases in self-reported level of knowledge/understanding of COPD, self-reported level of confidence in self-management, and COPD knowledge. In general, participant feedback was positive.

RECOMMENDATIONS

Recommendations for future COPD groups include:

- Slow rate of verbal instruction
- Provide clear instruction for surveys (some participants missed the back side of the surveys resulting in a low response rate)
- Avoid "trick" questions or ambiguous wording (as in Question 9)
- Increase physical space to facilitate more exercise and movement
- Reduce and streamline the exercises to increase the amount of time spent on each exercise -- less 'showing' more 'doing'
- Provide community resources for exercise/activity
- Participant feedback about specific barriers to continuing exercise

REFERENCES

1. Evans J, Chen Y, Camp PG, Bowie DM, McRae L. Estimating the prevalence of COPD in Canada: Reported diagnosis versus measured airflow obstruction. *Statistics Canada*.
2. Hernandez P, Balter M, Bourbeau J, Hodder R. Living with chronic obstructive pulmonary disease: A survey of patients' knowledge and attitudes. *Respir Med*. 2009;103:1004-12.
3. Thakrar R, Alaparthi GK, Kumar SKK, Vaishali K, Zulfequeer CP, Aanad R. Awareness in patients with COPD about the disease and pulmonary rehabilitation: A survey. *Lung India: Official Organ of Indian Chest Society*. 2014;31(2):134-138. doi:10.4103/0970-2113.129837.
4. Pocket guide to COPD diagnosis, management, and prevention. Global initiative for chronic obstructive lung disease. <http://goldcopd.org/wp-content/uploads/2016/12/wms-GOLD-2017-Pocket-Guide.pdf> Published 2017. Accessed May 15, 2017.
5. Bowen JM, Campbell K, Sutherland S, et al. Pulmonary rehabilitation in Ontario: A cross-sectional survey. *Ont Health Technol Assess Ser*. 2015;15(8):1-67.