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## Background

Oxygen is a dangerous medication because of its oxidizing properties. Its use can be difficult for patients with respiratory insufficiency. Because of the impact on quality of life, the oxygen-dependent patients have a low therapeutic adherence (1). This can lead to an increase of rehospitalizations and comorbidities. We have proposed education sessions about the proper use of oxygen for these patients.

## Objective

The aim of the study was to describe a population receiving oxygen therapy and assess the impact of educational session on patients knowledge.

## Materials and Methods

Documents for the session came from a collaboration between pharmacists, pulmonologists, physiotherapists, nurses and an oxygen provider service. It deals with pathophysiology, oxygen safety, different types of equipment and travelling with oxygen in France or abroad.

Sessions last 2 hours, once a month, and are accessible to all patients of the institution with oxygen therapy. A hospital pharmacist and a pharmacist from the oxygen provider service moderate the course by group from 1 to 10 patients.

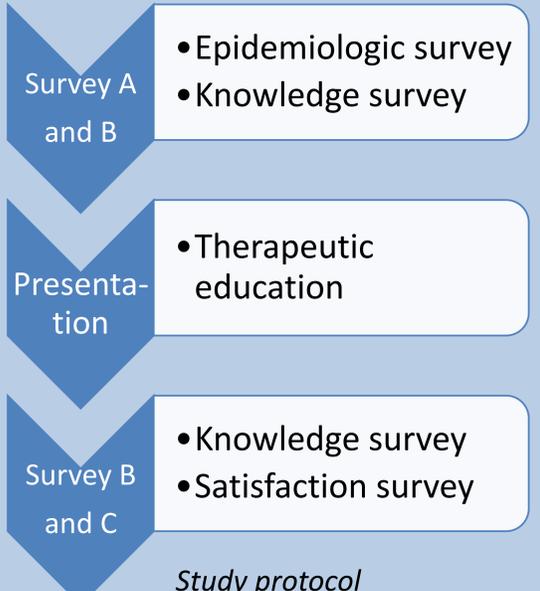
Surveys are given to patients during this education : *Survey A* to characterize the population, *Survey B* to measure the improvement of their knowledge before/after the course (contain 20 questions, each question worth 1 point), and *Survey C* to assess their satisfaction.

Survey are anonymized by a specific code to each patient.

Survey A

Survey B

Survey C



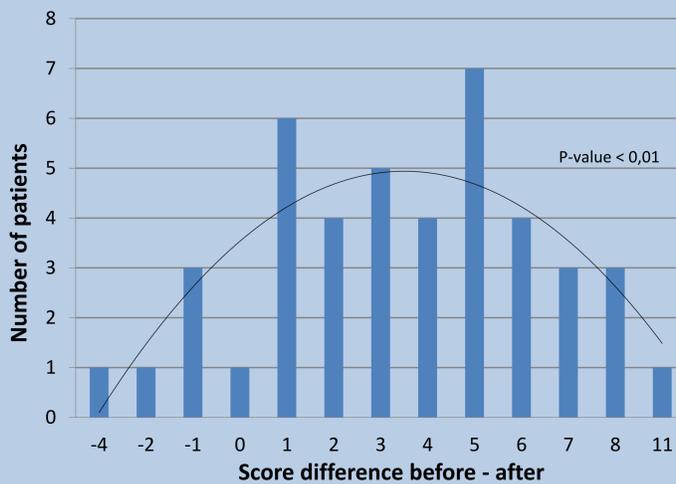
Study protocol

## Results

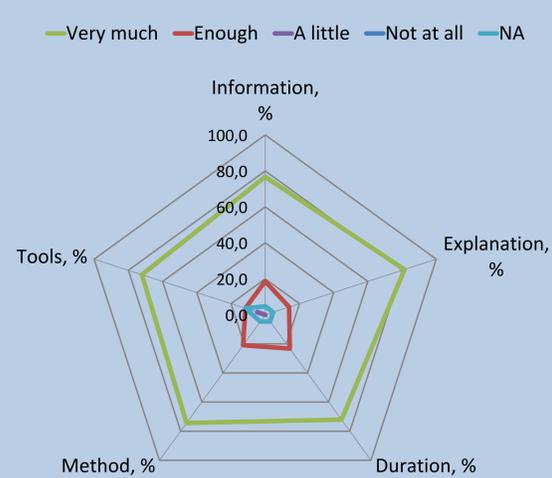
We collected data from 43 patients. The mean age is 66.1 years and the sex ratio is 1.26 (m/f). The most representative pathology in our population is COPD and emphysema with respectively 72,1% and 55,8%. 79,1 % are retired and about a half are single (53,5%), 74.4% received oxygen since one year at least and 48.8% of them have been hospitalized for pulmonary reason during the last year. 60.5% of patients never received any education about oxygen therapy and 32.6% were non-observant for ambulation with oxygen. After this education, the progression of patients is on average 4.6 point/20. The difference is significant ( $p < 0.01$ , unilateral Student test, paired values). All patients are satisfied with this education, but 20.9% of them say they have felt concentration difficulties.

Epidemiologic table (n=43)	
Age, yr	66,1
Sex ratio	1,26
Pathology, %	
COPD	72,1
Emphysema	55,8
Asthma	7,0
Cystic fibrosis	2,3
Fibrosis	11,6
Bronchiectasis	18,6
Other	14,0
Activity/Job, %	
Full-time	4,7
Part-time	2,3
without activity	14,0
Retired	79,1
Family, %	
Single	53,5
Joint/Married	44,2
Have children	23,3
NA	2,3
Duration with oxygen, %	
<1 year	20,9
1-5 years	46,5
>5 years	27,9
NA	4,7
Health care utilization past year, %	
Yes	48,8
No	48,8
NA	2,3
if yes	
< 2 times	70,0
> 2 times	30,0
Oxygen education, %	
if yes	
Hospital health care professional	45,5
Oxygen delivery professional	40,9
City health care professional	13,6
Length of time away from home per day, %	
1h	2,3
1-4h	51,2
4h	37,2
NA	7,0
leave away from home without oxygen, %	
Yes	32,6
No	62,8
NA	4,7

### Patient's score improvement after education



### Patients's satisfaction after education



## Conclusion and Relevance

Almost 1/3 of these patients are non-adherent and 2/3 of them never had education about oxygen therapy. The use of this essential medication must be considered at risk because it requires safety information, and can cause disorders in case of misusing. The results of this study highlights the interest of the education for these patients. These patients have chronic hypoxemia which causes disturbances in concentration (2) and could make therapeutic education difficulties. We will test in a new part of the study a participative education with electronic devices to keep their attention.

### Références

- (1) JACOBS, Susan S., LINDELL, Kathleen O., COLLINS, Eileen G., et al. Patient perceptions of the adequacy of supplemental oxygen therapy. Results of the American Thoracic Society Nursing Assembly Oxygen Working Group survey. *Annals of the American Thoracic Society*, 2018, vol. 15, no 1, p. 24-32.
- (2) KARAMANLI, Harun, ILIK, Faik, KAYHAN, Fatih, et al. Assessment of cognitive impairment in long-term oxygen therapy-dependent COPD patients. *International journal of chronic obstructive pulmonary disease*, 2015, vol. 10, p. 2087.