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Beliefs about Regular Inhaled Therapy among Chronic Obstructive Pulmonary Disease Patients

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Introduction

Treatment goals of Chronic Obstructive Pulmonay Disease (COPD) are to:[1]

1) **Reduce symptoms:** Can be evaluated by Modified Medical Research Council (**mMRC**) dyspnea scale.

2) **Reduce exacerbation risk:** Can be evaluated by **number of exacerbation per year.**

The use of regular inhaled therapy has shown to achieve such goals. However, **patient's belief** is one of the factors affecting their **treatment adherence**. This study was carried out to determine the **belief about regular inhaled therapy** among COPD patients in Sibu Hospital.

Materials and methods

Study Design: Cross-Sectional study
Target population: Stable COPD patient
Sampling method: Convenient sampling

Research Tool: BMQ-COPD

COPD specific Belief about Medicines Questionnaire [2]

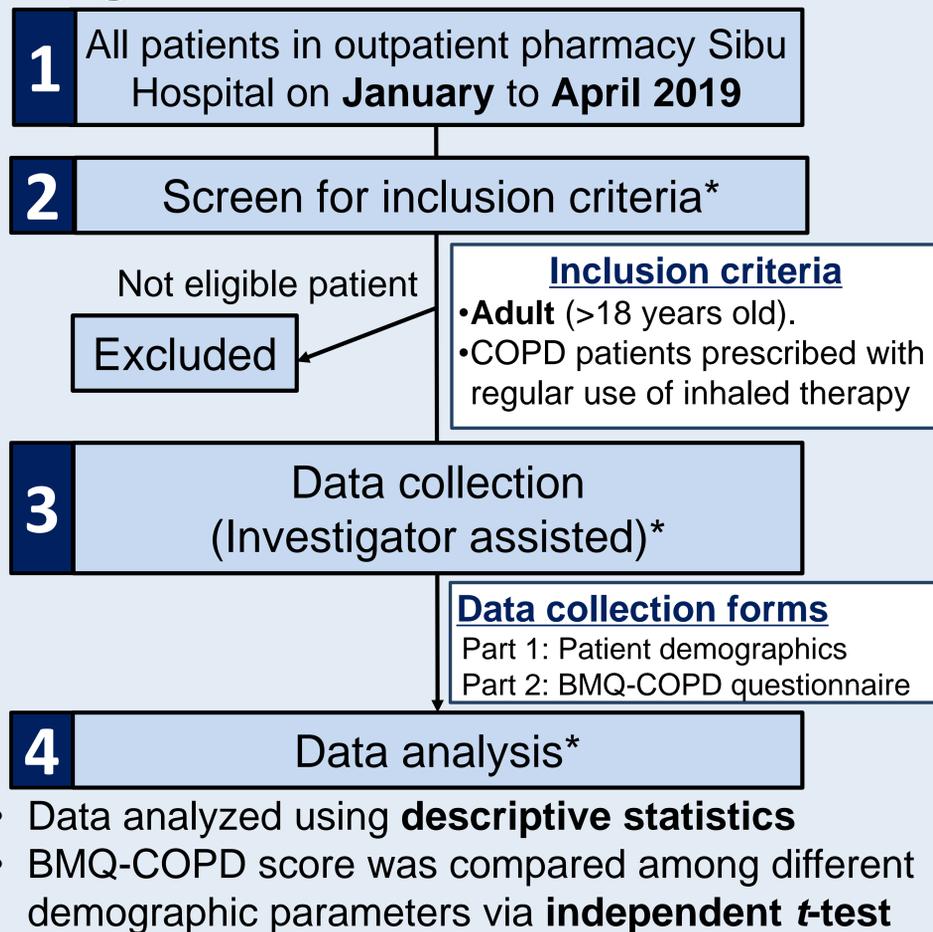➢ **Validated questionnaire** consists of 2 domains:

1. **Necessity** domain (7 questions, score range: 7-35): Assess patient's belief on the necessity of their inhaled therapy.

2. **Concern** domain (15 questions, score range: 15-75): Assess patient's concern on regular use of their inhaled therapy.

Figure 1: Research workflow

1 All patients in outpatient pharmacy Sibu Hospital on **January** to **April 2019**

2 Screen for inclusion criteria*

Not eligible patient

Excluded

Inclusion criteria
- **Adult** (>18 years old).
- COPD patients prescribed with regular use of inhaled therapy

3 Data collection (Investigator assisted)*

Data collection forms
Part 1: Patient demographics
Part 2: BMQ-COPD questionnaire

4 Data analysis*

- Data analyzed using **descriptive statistics**
- BMQ-COPD score was compared among different demographic parameters via independent *t*-test

Results

Result 1: Demographic data. (n=50)

Parameter	Mean (SD)	Median (IQR)
Age	-	66 (14)[a]
Number of years using inhalers	-	5 (8)[b]
mMRC	2.22 (0.86)	-
Number of exacerbation per year	1.32 (1.11)	-
Overall necessity score (Max: 35)	15.88 (3.93)	-
Overall concern score (Max: 75)	48.92 (5.29)	-

[a] Age was Skewed to the left; [b] Number of years using inhalers Skewed to the right

About **80%** of COPD patients still have **high COPD symptoms** (with mMRC score ≥ 2) despite on regular inhaled therapy.

Result 2: Comparing Necessity score

Variable	n	Mean Necessity score (SD)	*t*- statistics (df)	p-value
mMRC scale				
<2	10	18.60 (3.50)	2.580 (48)	0.013
≥2	40	15.20 (3.78)		
Number of exacerbation per year				
<2	29	16.89 (3.49)	2.231 (48)	0.030
≥2	21	14.48 (4.17)		

*Other parameters did not show significant difference.

Patients with **less symptoms (mMRC<2)** and **less exacerbation (<2 per year)** had **higher necessity score**. This could be resulted from better adherence towards the use of regular inhaled therapy among patients with higher necessity belief, which in turn improves symptoms and reduce exacerbation.

Result 3: Comparing Concern score

Variable	n	Mean Concern score (SD)	*t*- statistics (df)	p-value
Number of years using inhalers				
< 5 years	26	47.35 (5.47)	-2.283 (48)	0.027
≥ 5years	24	50.63 (4.60)		

*Other parameters did not show significant difference.

Patients **using inhaler ≥5 years** have **higher concern score** (*P*=0.027).
The highest concern was the statement "I sometime worries about becoming too **dependent** on this inhaler" in which 58% of subjects agreed.

Discussion/ Conclusion

Patients with **higher necessity belief** seem to have **better control of symptoms** and **less exacerbation**. COPD patients may have **concern regarding being dependent** on inhalers especially if it has been used for more than 5 years. Hence, **prescribers and pharmacists should assess patient's concern** if they have used regular inhaled therapy for **more than 5 years.**

REFERENCES:
1. Global Initiative for Chronic Obstructive Lung Disease (GOLD): Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Pulmonary Disease 2018 Report
2. Horne R, Weinman J, Hankins M. The beliefs about medicines questionnaire: the development and evaluation of a new method for assessing the cognitive representation of medication. Psychology and health. 1999 Jan 1;14(1):1-24