

# AN OBSERVATIONAL ASSESSMENT OF INHALER TECHNIQUE IN OLDER PATIENTS



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## BACKGROUND

- 14.2% of individuals aged  $\geq 65$  have COPD.
- COPD is responsible for 19.9% of hospitalizations of adults aged 65-75.
- Studies have shown that 40%-60% of patients with COPD do not adhere to prescribed inhaled therapy regimen.
- Cognitive impairment, weakness, arthritis and visual acuity are some of the limiting factors for inhaler use in elderly.

## OBJECTIVES

This study evaluated Dry Powder Inhaler (DPI) and Metered-Dose Inhaler (MDI) use in older patients. The objectives were:

1. to assess the proportion of correct inhaler techniques executed by patients  $\geq 65$ ;
2. to identify patient comfort level vs. actual accurate technique;
3. to identify barriers to patients for using the inhalers and achieving proper technique;
4. to identify demographics associated with poor technique including: stage of COPD, age, gender, BMI, MME, time since starting inhaler use, comorbidities, type of inhaler and number of inhalers.

## METHODS

- Recruitment sites: Geriatric Faculty Practice, and two Skilled Nursing Facilities.
- Patient survey: demographics and attitudes/practice with use of inhalers
- Pharmacist direct observation of patients using placebo inhalers: scores based on the number of correct steps they performed.
- Outcome variables included observed errors, reported comfort level, reported barriers.

Figure 1. Descriptive Data Of Inhaler Users

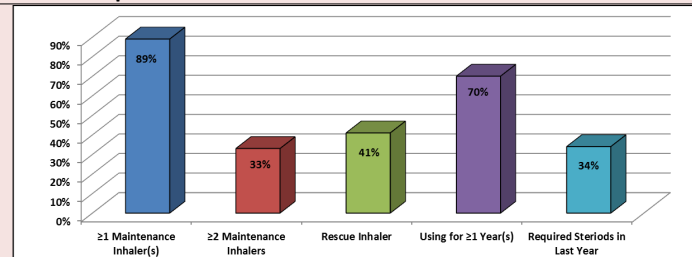


Figure 2. Reported Ease of Use of Inhalers

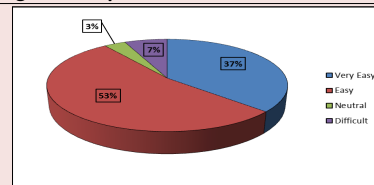


Figure 3. Reported Prior Training

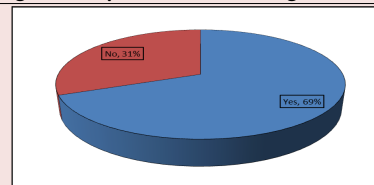


Figure 4. MDI Observed Errors

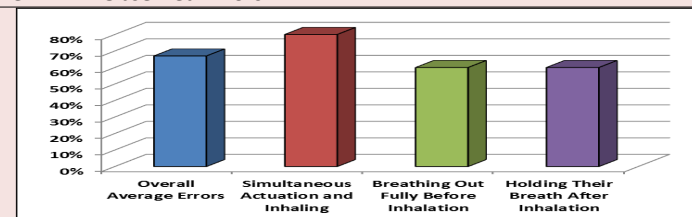
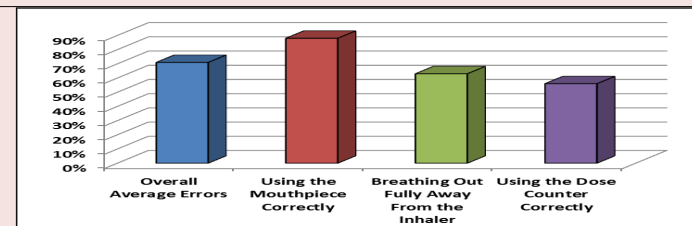


Figure 5. DPI Observed Errors



## RESULTS

- 32 subjects recruited; average age 81 (range: 67-96 years), 74% female, 91% on Medicare, and half were in a SNF.
- 63% had COPD, 39% had asthma, 7% both.
- 89% had  $\geq 1$  maintenance inhaler, 33% had  $\geq 2$ , 41% had  $\geq 1$  rescue inhalers, and 70% had been using an inhaler for at least a year.
- 33% did require intermittent oral/IV steroids at least once in the last year (Fig.1).
- The survey documented reported ease of use by 84% of participants, and 69% reported previous training (Fig. 2 & 3).
- During direct observation by pharmacist, 67% demonstrated errors when using MDI and 71% when using DPI (Fig. 4 & 5).
- 73% required reeducation on their inhaler technique.
- There were no significant differences observed or reported between gender, age, disease type, previous training, or clinical care setting.

## CONCLUSION

- Despite patients' reported long term experience and ease with inhaler use, this study reveals many common errors in their observed technique.
- A targeted educational approach is needed across all geriatric settings with practical advice to improve quality of care for older adults with COPD and asthma.

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