

# A Cross-Sectional Study to Assess the Prevalence of Breathing Difficulty Among Urban Population Along with Their Knowledge in Inhaler Use

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## Research Article

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## ABSTRACT

Asthma and COPD are common diseases of the airways and lungs that have a major impact on the health of the population as well as the major limitation to the effective use of inhaled medications are considered as the inability of many patients to use various inhaler devices in proper way. Every patients require an appropriate education in proper handling of inhaled medications. The main objective of this study is to assess the prevalence of breathing difficulty and evaluating the use of inhaler among public in urban areas. The methodology includes a cross sectional questionnaire study that is carried out among 35 people in urban area. The study is mainly based on the use of inhaler techniques among peoples live in a particular locality and had taken their duration of disease, medications, frequency of using the inhaler, mainly to determine the correct way of using the inhaler. The result includes about all 35 patients were responded. Among them 36.5% were female patients and 23.5% were males. Most of the patients have asthma which is about 24% and most often people have correct knowledge about inhaler use. Moreover 59.3% people are using meter dose inhaler and 37% people use Rota haler. About 63% people use inhaler whenever necessary, however 25.9% people use inhaler twice a day, furthermore 3.7% use after a long journey and 7.4% use all of the above. The opportunity for technological innovation and educational interventions to reduce errors is highlighted here, and also the specific challenges faced by children.

## INTRODUCTION

Drug inhalation can be considered as an important and a common mode of administration of drugs used in the management of asthma and other obstructive airway diseases. However, these medications are often administered as pressurized Metered Dose Inhalers (pMDI), Dry Powder Inhalers (DPI), or with nebulizers. The pressurized metered dose and the DPI devices are one of the preferred pulmonary drugs delivery methods in which the patients could use them with their own minimal assistance, only if we taught them well [1]. Asthma may impose a growing burden on society in terms of morbidity, quality of life, and the healthcare costs. Asthma affects approximately 300 million people in total and is estimated to increase to 400 million by 2025. This expected incline is mostly because of increased urbanization and as well as due to increased atopic disorders [2]. Factors that are affecting this disease include urbanization, air pollution, passive smoking, and allergens. The passive smoking has potentially serious risks especially in children and also to the people exposed chronically to it, with an increase in risks of 10% to 43% in adults with COPD. This study was designed to evaluate the patients' knowledge on asthma and COPD diseases and their inhalation techniques [3]. Nevertheless, the incorrect and improper use of inhaler is a significant problem for both asthma

and COPD management. Because, it may result in decreased therapeutic effect, leading to poor control of symptoms and also the lacunae in management of these diseases [4-8]. A proper drug delivery is very crucial for the effective pharmacological treatment. Proper techniques and coordination are needed for efficient MDI use. So many patients with Chronic Obstructive Pulmonary Disease (COPD) and asthma do not know to use the inhaler devices properly, which can also contribute to poor disease control [9]. Risk factors for the inhaler misuse includes; older age, use of multiple inhalers and also the low health literacy. Meanwhile patients require appropriate education in proper handling and using of inhaled medications. The respiratory inhalers are usually used for both; to deliver long-acting bronchodilators to control symptoms and also to prevent exacerbations in patients with severe COPD.

## OBJECTIVE

This study is to conduct a survey based on prevalence of breathing difficulty and evaluating the use of inhaler among public in urban area.

- The objective of this study is to evaluate the prevalence of breathing difficulty and to assess the use of inhaler among public in urban area.
- The prevalence of inhaler uses among both males and females.
- To assess the knowledge about people cleaning their Inhaler.

## METHODOLOGY

A cross-sectional Questionnaire survey was conducted by online survey forms among public in urban area of pattom, accepted by the Institutional Ethical Committee of SUT pattom. The study is mainly aimed to assess the knowledge of inhaler techniques among people living in a particular locality and taken their duration of disease, medications, inhaler using pattern and their knowledge of using the inhaler was also collected and analysed properly. Responses were collected through a time period of 1 month and were recorded. The questionnaire consisted of 13 prevalidated questions. The questionnaire was tested for ease of comprehension and readability among staff members of the department and appropriate modifications were carried out. The questionnaire included multiple choice questions and the questionnaire was developed and employed to collect data from public in urban area of pattom. It was prepared in google form and distributed through google mail.

### Data collection

Data collection was done with the self-filled online forms. And the data were collected during the month, April 2021. Participants who were willing was only chosen for the study. Questionnaires were filled by 50 subjects and 35 individuals had responded to the questions. The study was descriptive, and the data was summarized as counts and as percentages.

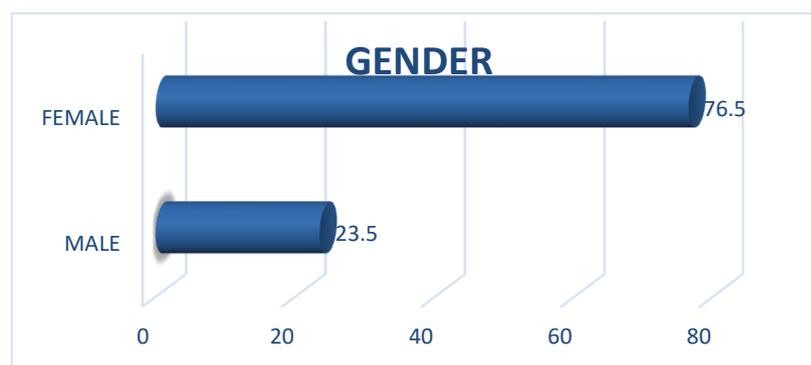
### Statistical analysis

All datas were collected statistically analysed and performed. All statistical assessments were 2-tailed, and the level of significance was set at  $p < 0.05$ .

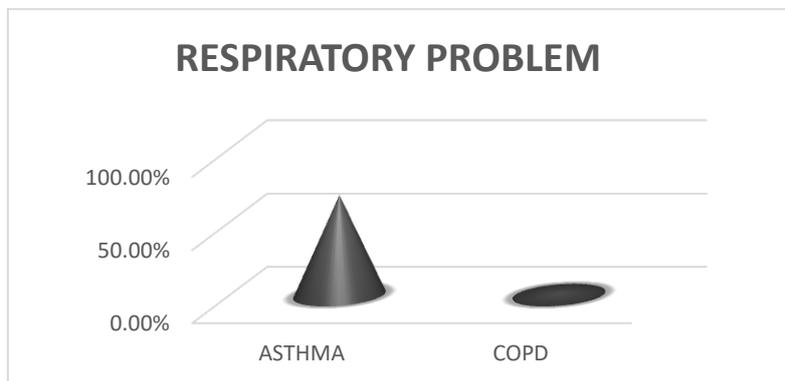
## RESULTS

35 people were responded in this study. Of which, 9 were males and 26 were females. Among these 35 responses, all of them knew the proper knowledge about the use of inhaler techniques. Most of the patients had asthma (25) among which 16 people use the meter dose inhaler ,10 of them use Rota halers and 1 in them use the dry powder inhaler. About 17 people use inhaler whenever necessary, 7 use inhalers twice a day and 1 in them use inhaler after a long journey (Figures 1-4).

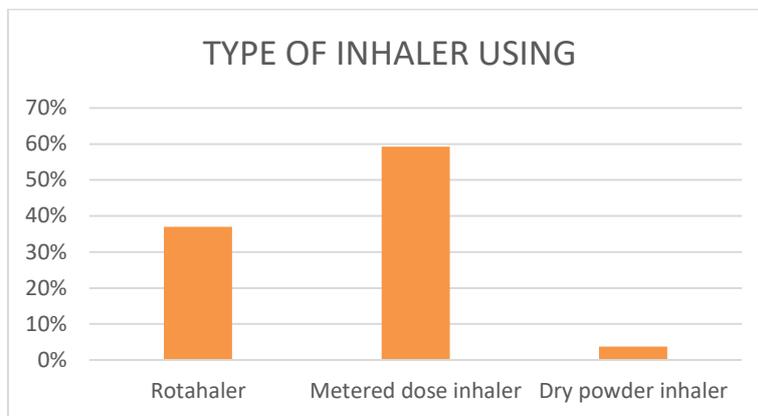
**Figure 1.** Among 35 response, 76.5% (n=26) of females and 23.5% (n=8) of males had used inhaler.



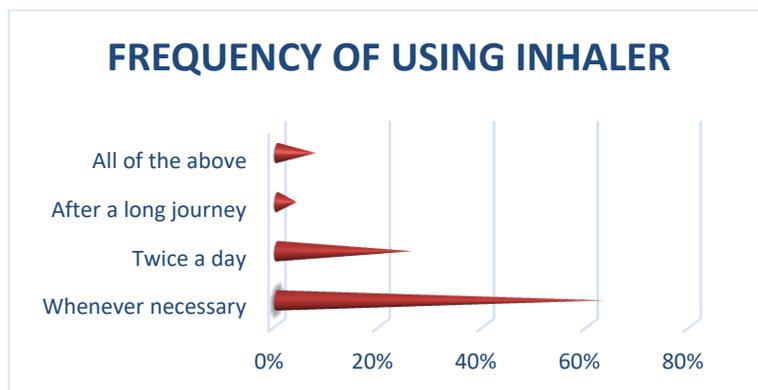
**Figure 2.** About 68.5% (n=24) had Asthma, 2.85 (n=1) had COPD and the remaining 28.5% (n=10) had breathing difficulty and was on inhaler usage.



**Figure 3.** About 59.3% (n=16) of individuals were using metered dose inhaler, 37% (n=10) were using Rotahaler and 3.7% (n=1) were using dry powder inhaler.



**Figure 4.** About 63% (n=17) individuals were using inhaler whenever necessary, 25.9% (n=7) were using inhaler twice a day, 3.7% (n=1) were using inhaler after a long journey and 7.4% (n=2) were using inhaler all the above. The P-Value is <math><0.00001</math>. The level of significance was set at



## DISCUSSION

This cross-sectional questionnaire study was carried out among 35 people in urban area. This study was mainly based on the proper use of inhaler techniques among people living in a particular locality and their duration of disease, medications, frequency of inhaler usage. This was to determine the proper way of using the inhaler. About 35 patients were responded to this study. Among them 76.5% were female patients and 23.5% were males. Most of the patients have asthma (68.5%). Most often people had appropriate knowledge about Inhaler usage. 59.3% people was using meter dose inhaler, 37% people use the Rota haler, and 3.7% people used the dry powder inhaler. About 63% people had used inhaler whenever necessary, 25.9% people used inhaler twice a day, 3.7% use after a long journey and 7.4% used all the above. Most of the patients cleaned their inhaler (55.6%) weekly, (25.9%) every use and (18.5%) Monthly. It was observed that most patients have asthma from the overall study.

## CONCLUSION

Inhaled route is the first line administration method in the management of asthma, it is also well documented that patient can have problems adopting the incorrect inhaler technique and thus receiving adequate medication. The opportunity for technological innovation and educational interventions are to reduce the errors and is highlighted, as well as the specific challenges faced by children.

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## CONFLICTS OF INTEREST

The author declares no conflict of interests.

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