



## A STUDY ON IMPACT OF PATIENTS COUNSELING TOWARDS MEDICATION ADHERENCE AMONG ASTHMA PATIENTS: A PROSPECTIVE INTERVENTIONAL STUDY

Mufeedha. P<sup>1\*</sup>, Fasila. K T<sup>1</sup>, Niyas Ayoob<sup>1</sup>, Mahesh T M<sup>1</sup>, Karthikeyan V<sup>1</sup> Jesin Kumar<sup>2</sup>

<sup>1</sup>Department of Pharmacy Practice, Grace College of Pharmacy, Palakkad-678004, Kerala, India

<sup>2</sup>Department of Pulmonology Karuna Medical College Hospital, Vilayodi, Chittur, Palakkad-678103, Kerala, India

### ABSTRACT

Background of study: Asthma is a chronic disease requiring lifelong treatment and involves the use of specialized devices. It also requires self-monitoring of treatment by the patient. In our study population the concept of patient counselling is at the infancy stage and data regarding pharmacist provide counselling in asthma are scarce. Objective: To study the impact of patient counselling on medication adherence and factors affecting medication adherence among asthma patients at tertiary care teaching hospital. Method: The study is a prospective Interventional study. The adherence is calculated by using MMAS-8 scale for asthma. Data collected from asthmatic patients and entry into the data collection form and follow up are taken within 20 days. Results: Among study population (n=95) in case of patient observed with low adherence on MMAS-8 score before counselling (Pre-intervention) and after counselling (post-intervention) the score ranges from 2.20±0.83 to 2.10±0.79 which was not statistically significant (p value >0.05) and in case of patient observed with medium adherence on MMAS-8 score before counselling (Pre-intervention) and after counselling (post-intervention) the score ranges from 5.93±1.44 and 6.53 ±1.47 which was statistically significant (p value <0.001) and the score ranges from 4.29±1.679 to 6.61±1.251. Conclusion: In this study the inconsistency on medication adherence were assessed, we found that a good progress in the gap between baseline through up to follow-up. Provision of patient education by healthcare professional is well successful in creating awareness among public about asthma.

**Key words:** Bronchial asthma, medication adherence, Impact of counselling.

### INTRODUCTION

Bronchial asthma is characterized by hyper responsiveness of trachea bronchial smooth muscles to variety of stimuli resulting in narrowing of air tubes often accompanied by increased secretion, mucosal edema, mucosal plugging symptoms include dyspnea, wheezing, cough and may limitation of activity. Medication adherence is an important factor for controlling asthma. Nonadherence to asthma therapy includes several related, but separate issues, such as non-adherence of the 'provider' to asthma treatment and education guidelines, non-adherence of the 'patient' to prescribed medication(s) and improper inhaler technique, which are all frequent problems in asthma care. Asthma is

a chronic disease with considerable burden on health and economy [1-3].

To achieving the benefits of patients counselling the counselling include regarding disease, counselling regarding medication, counselling on inhalation technique and counselling regarding lifestyle modifications. Strategies to enhance outcome of patient counselling include use of placebo inhalers while counselling the asthma patients the pharmacist can use of placebo inhalers so that it become easy to demonstrate to the patient. The other strategies have been proposed to enhance the adherence include distribution of patient information leaflets and use of audio-visual aids.

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Corresponding Author: - Mufeedha. P Email: [mufeedhabinthibrahim42@gmail.com](mailto:mufeedhabinthibrahim42@gmail.com)

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Asthma is one of the common diseases. It cannot be cured but adequate management should be taken to ensure the control of the disease, prevent the disease progression, and even reverse the illness and enable the people to enjoy good quality of life. The fact behind the reason is due to taking your medicine as prescribed or medication adherence is important for controlling chronic condition treating temporary condition and overall health wellbeing. Adherence in asthma results in asthma leads to increase in morbidity, mortality, and increased treatment cost. The correct use of drugs and education of patients are the vital for asthma management. Counselling leads to increased patient confidence in the ability to self-manage asthma, decreased hospital admission rates, increased compliance and improved quality of life. The Morisky Medication Adherence (MMAS-8) item scale is commonly used to measure the adherence level among asthmatic patients.

## MATERIALS AND METHODS

A prospective Interventional study conducted on asthma patients in the Pulmonology department of Karuna Medical College Hospital, Vilayodi, Chittur. The study was conducted for a period of six months and a total of 95 patients were included in the study. The inclusion criteria consist of all asthmatic patients, patients taking asthma medication for at least one year and patient receiving inhaler period of six months, and the patient excluded with poor or critically ill or severe mental illness and the patient who are not willing to respond the questionnaires.

All participants were enrolled after obtaining their informed consent. Face- face interviews of participants were conducted by using assessment questionnaires using medication adherence. The baseline score of medication adherence questionnaire was noted using validated Morisky Medication Adherence scale (MMAS-8) and factors affecting medication adherence was identified. After the collection of baseline data patient counseling was given orally and visually. The effect of pharmacist intervention was assessed by comparing the scores of medications adherence after pre and post counseling session. The gathered data were characterized into different groups and statistically analyzed by MS-Excel 2019 to calculate the percentage of various parameters. Paired student t-test, and unpaired student t-test will be used comparison of MMAS-8 of asthma patients' relationship between these variables was expressed as Mean  $\pm$ SD [5-7].

## Results & Discussion

A total of 95 consecutive patients were enrolled and filled questionnaires were documented. The patient's medical record and prescription were reviewed for counseling and medication adherence was measured.

In gender wise distribution among study population (n=95), Asthma is more prevalent in females (52.6%) compared to males (47.3%). The above pattern is

analogues to another study conducted by *Nowrin U Chowdhury et al., (2018)* and *Andrea hammerleinet al., (2011)* the study result showed that Females have higher occurrence of asthma than males for women fluctuation in sex hormone level during puberty menstrual cycle and pregnancy associated with pathogenesis of asthma.

Among study population (n=95) having Uneducated (14.73%), Primary (51.57%), Higher secondary (23.15%) and graduate (10.57%). This pattern also analogues to study conducted by *Abdallah H K Ali et al., (2020)* Patient with high level of education were 4.8 times more likely to be adherent to asthma medication compared to those with low level of education.

Among study population showed that on asthma and Social habits are more prevalent in smoking patients (25.26%), betel chewer (24.21%), smoker+ alcoholic (18.94%), others (11.57%) no addiction (9.47%). Above pattern is analogues to study conducted by *E. Livingston et al., (2020)* Tobacco smoke is a powerful trigger of asthma symptoms and irritating lining air ways also second-hand smoke can be even be more harmful to person with asthma. *Debra Sullivan et al., (2016)* Alcohol can make symptoms worse. It can also trigger a full-blown asthma attack.

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Among study population the present study shows that asthma is more prevalent in with Low socioeconomic status (40%), and it is lesser in patients with high economic status (22%) and more than in middle income patients (36%) and we found that low socioeconomic status contributes low adherence to the treatment plan. above pattern is analogues to study conducted by *Anitha.L. Kozyrskij et al., (2019)* studies report asthma to be more prevalent among low-SES children, even in countries with universal health care insurance

Among the study population (n=95) dust allergy was found most among asthma patients (25%) followed by smoke (19%), cold (17%), pollen (5%) and (34%) having no allergy this pattern also similar to study conducted by *shiare john et al., (2018)* risk factors for asthma may include allergic sanitization, environmental tobacco,

exposure to cold, allergy with the pollen and also occupational exposure constitute a common risk for asthma.

The present study reveals that poor medication adherence was most common among patients contributing to major public health challenges. Poor adherence leads to poor health outcome and huge medical spending on drug related morbidity .In fact, majority of participants had low medication adherence at pre intervention level (46.3%) & at post-intervention level is up to (20%).Results shows that no of patients with low medication adherence is reduced .increase in medication adherence was noted at pre-intervention level (35%) of patients having medium

adherence and after that at post-intervention stage is (39%), and (16%) of patients having high medication at pre-intervention level, about (37%) of patients shows high adherence on post medication adherence checking .Our study results agrees with study conducted by *Ana Janezic et al.,(2017)* MMAS-8 scores ranged between 0.75 and 8 points, with a median of 8. Patients’ response showed that the most common reason for non-adherence was forgetfulness, followed by skip-ping doses when feeling better and other reasons besides forgetfulness. Our study also explores the major factor contributing to medication adherence on patients.

**Table 1. Demographic details**

	NO OFPATIENTS (n=95)	PERCENTAGE (%)
<b>Gender Wise Distribution</b>		
<b>MALE</b>	45	47.3
<b>FEMALE</b>	50	52.6
<b>Age Wise Distribution</b>		
<b>&lt;18</b>	24	25.26
<b>18-34</b>	18	18.94
<b>35-54</b>	12	12.63
<b>55-65</b>	19	20
<b>&gt;65</b>	22	23.2
<b>Education Status</b>		
<b>UNEDUCATED</b>	14	14.73
<b>PRIMARY</b>	49	51.57
<b>HIGHERSECONDARY</b>	22	23.15
<b>GRADUATE</b>	10	10.57
<b>Social Habits</b>		
<b>BETEL CHEWER</b>	23	24.21
<b>SMOKER</b>	24	25.26
<b>ALCOHOL</b>	10	10.52
<b>SMOKER+ALCOHOLIC</b>	18	18.94
<b>OTHERS</b>	11	11.57
<b>NO ADDICTION</b>	9	9.47
<b>SOCIOECONOMIC STATUS</b>		
<b>LOW</b>	38	40
<b>MIDDLE</b>	36	38
<b>HIGH</b>	21	22

**Table 2. Distribution of 8 item morisky medication adherence scale**

Medication adherence	Pre-intervention (n=95)	Percentage (%)	Post-intervention (n=95)	Percentage (%)
<b>LOW (3-8)</b>	<b>44</b>	<b>46.3</b>	<b>19</b>	<b>20</b>
<b>MEDIUM (1-2)</b>	<b>35</b>	<b>36.8</b>	<b>39</b>	<b>41.9</b>
<b>HIGH (0)</b>	<b>16</b>	<b>16.8</b>	<b>37</b>	<b>38.94</b>

**Table 3. Statistical Analysis of Mmas-8 Item Scale.**

MMAS	Pre-Intervention	Post-Intervention	p - Value
	Mean±SD	Mean±SD	
Low	2.20±0.83	2.10 ±0.79	0.5795
Medium	5.93 ±1.44	6.53 ±1.47	0.0001
High	-	-	-

Among study population (n=95) in case of patient observed with low adherence on MMAS-8 score before counseling (Pre-intervention) and after counseling (post-intervention) the score ranges from 2.20±0.83 to 2.10±0.79 which was not statistically significant (p value > 0.05) and in case of patient observed with medium adherence on MMAS-8 score before counseling (pre-intervention) and after counseling (post-intervention) the score ranges from 5.93±1.44 and 6.53 ±1.47 which was statistically significant (p value < 0.05).

### CONCLUSION:

In this study the inconsistency between patients' medication adherence were assessed. We found that a good progress in the gap between baseline through up to follow-up. Provision of patient education by healthcare professional is well successful in creating awareness among public about asthma. We recognize that this study could have been better powered with bigger sample size and long duration of study. A completely true reflection of asthma burden in our society could have been obtained if

patients from lowest income strata could also be included.

From this study we concluded that patient education is the corner stone of treatment and patient should be assessed during every subsequent visit for controlling disease progression and preventing further exacerbation by adopting proper medication regimen along with medication adherence for increasing the life expectancy of patients. So as a healthcare professional have a role in providing information about medication adherence to prevent disease progression from drug therapy, by encouraging proper medication adherence in order to achieve better clinical outcome

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### CONFLICT OF INTEREST

We declare that we have no conflict of interest.

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