

EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE AND TECHNIQUE REGARDING METERED DOSE INHALER AMONG BRONCHIAL ASTHMA PATIENTS IN SELECTED HOSPITAL CHENGALPATTU DISTRICT, TAMILNADU.

¹Haripriya.S, ²Anbu.K, ³Joshuva Jerish.S, ⁴Shakthi.S, ⁵ Stephen raj.S

¹B.Sc. Nursing 4th year students, Chettinad College of Nursing, Chettinad Academy of Research and Education, Chettinad Hospital and Research Institute, Rajiv Gandhi salai, Kelambakkam, Chengalpattu District, Tamil Nadu, India.

²Nursing Tutor, Department of Medical Surgical Nursing, Chettinad Academy of Research and Education, Chettinad Hospital and Research Institute, Rajiv Gandhi Salai, Kelambakkam, Chengalpattu District, Tamil Nadu, India.

CORRESPONDING AUTHOR: Anbu.K Msc.Nursing,

Department of Medical Surgical Nursing, Chettinad College of Nursing,

Chettinad Academy of Research and Education, Chettinad Hospital and Research Institute, Rajiv Gandhi Salai, Kelambakkam, Chengalpattu District, Tamil Nadu, India. Pin -603103.

Abstract-

Objectives/Aim: The burden of asthma is becoming greater as communities adopt western lifestyles and become urbanised. Asthma is a chronic inflammatory disease of the airways that causes airway hyper responsiveness, mucosal edema and mucus production. It differs from other obstructive lung disorders in that it is largely reversible, either spontaneously or with treatment. This inflammation ultimately leads to recurrent episodes of asthma symptoms; cough, chest tightness, wheezing and dyspnea. Patients with asthma may experience symptom free periods alternating with acute exacerbations that last from minutes to hours or days. Asthma is the most common chronic disease of childhood and can occur at any age. Allergy is the strongest predisposing factor for asthma. Chronic exposure to airway irritants or allergens also increases the risk of asthma. Common allergens can be seasonal (grass, tree and weed) or perennial (mold, dust, roaches, animal dander). Common triggers for asthma symptoms and exacerbations include airway irritants (air pollutants, cold, heat, weather changes, strong odors or perfumes, smoke), exercise, stress or emotional upset, sinusitis with postnasal drip, medications, viral respiratory tract infections and gastro esophageal reflux. A Metered Dose Inhaler (MDI) is a device that delivers a specific amount of medication to the [lungs](#), in the form of a short burst of aerosolized medicine that is usually self-administered by the patient via inhalation. It is the most commonly used delivery system for treating [asthma](#), [Chronic Obstructive Pulmonary Disease](#) (COPD) and other respiratory diseases. The objective of the study is to assess the knowledge and technique regarding the Usage of metered dose inhaler and evaluate the effectiveness teaching regarding metered dose inhaler..

Materials and Methods:

Evaluative Research Approach and experimental research design was adopted for this study. Non probability sampling technique was used to select the samples and the samples size was 69. The tool selected for the present study included questions for demographic data and questionnaire tool for the assessment of level knowledge regarding Metered dose inhaler and to assess the technique using observational checklist regarding metered dose inhaler. The data collection was done for a period of 1 week. The data collected for the study was compiled and analyzed as per the objectives of the study. Descriptive statistics were used to analysis the data, interpreted in terms of objectives of the study. The study findings shows that the structured teaching program is used to improving the knowledge in all aspects of the areas. There is the good level of knowledge and technique regarding the MDI among the bronchial asthma patients.

Conclusion: The purpose of this study was used to assess the knowledge and technique regarding the metered dose inhaler among bronchial asthma patients. and to improve the knowledge to use the metered dose inhaler. On the whole, carrying out the present study was really an enriching experience to the investigator. It also helped a great deal to explore and improve the knowledge of the researcher and the respondents.

Keywords: Effectiveness, Bronchial asthma, structured teaching programme, Metered dose inhaler.

INTRODUCTION

The burden of asthma is becoming greater as communities adopt western lifestyles and become urbanised. Asthma is a chronic inflammatory disease of the airways that causes airway hyper responsiveness, mucosal edema and mucus production. It differs

from other obstructive lung disorders in that it is largely reversible, either spontaneously or with treatment. This inflammation ultimately leads to recurrent episodes of asthma symptoms; cough, chest tightness, wheezing and dyspnea. Patients with asthma may experience symptom free periods alternating with acute exacerbations that last from minutes to hours or days. Asthma is the most common chronic disease of childhood and can occur at any age, Allergy is the strongest predisposing factor for asthma. Chronic exposure to airway irritants or allergens also increases the risk of asthma. Common allergens can be seasonal (grass, tree and weed) or perennial (mold, dust, roaches, animal dander). Common triggers for asthma symptoms and exacerbations include airway irritants (air pollutants, cold, heat, weather changes, strong odors or perfumes, smoke), exercise, stress or emotional upset, sinusitis with postnasal drip, medications, viral respiratory tract infections and gastro esophageal reflux. Most people who have asthma are sensitive to a variety of triggers. A person's asthma changes depending on the environment activities, management practices and other factors.

A Metered Dose Inhaler (MDI) is a device that delivers a specific amount of medication to the [lungs](#), in the form of a short burst of aerosolized medicine that is usually self-administered by the patient via inhalation. It is the most commonly used delivery system for treating [asthma](#), [Chronic Obstructive Pulmonary Disease](#) (COPD) and other respiratory diseases. The medication in a Metered Dose Inhaler is most commonly a [bronchodilator](#), [corticosteroid](#) or a combination of both for the treatment of asthma and COPD.

It has long been appreciated that many patients have difficulties with inhalers. More than 75% of patients with COPD experience difficulty using MDI. There are also other devices that pose difficulties for many patients. Furthermore, some studies show that patients may not maintain a proper technique over time. Inhalation technique should therefore be assessed, reviewed, and verified on a periodic basis to ensure appropriate drug delivery and subsequent efficiency

It is now widely accepted that a demonstration of the inhalation technique is the most effective way to teach and assess patient skills. However, several studies have shown that many health care professionals have a poor understanding of the devices and are unable to demonstrate the correct technique themselves. It is obvious that to maximize the benefits of inhaled medication, it is essential that the health care professional has the required knowledge and ability to successfully choose the most appropriate device and be an effective teacher. Despite increased knowledge regarding pathology of asthma and the development of better medications and management plans, the death rate from this disease continues to increase. For most patients, asthma is a disruptive disease, affecting school and work attendance, occupational choices, physical activity and general quality of life

STATEMENT OF THE PROBLEM:

Effectiveness of Structured Teaching Programme on Knowledge and Techniques Regarding Metered Dose Inhalers (MDI) among Bronchial Asthma Patients in Selected Hospitals, Chengalpattu district, Tamil nadu.

OBJECTIVES OF THE STUDY:

To assess pre test knowledge and techniques regarding metered dose inhaler among bronchialasthma patients

Evaluate the effectiveness of structured teaching program on knowledge and techniques regarding metered dose inhalers among bronchial asthma patients..

Find the out the correlation between knowledge and techniques regarding metered dose inhaleramong bronchial asthma patients.

Find out the association between the post test knowledge score and techniques among selected demographic variables among bronchial asthma patients

MATERIAL AND METHOD

The study adopted on evaluative research approach. The study was conducted in selected hospital . The inclusion criteria were people who were willing to participate in the study, Peoplewho are at the time of data collection , people with bronchial asthma , and exclusion criteria washose patients who were not available on the time of data collection.

The tool had three parts:

Part 1 Demographic profile.

Part 2 Structured Knowledge questionnaire for bronchial asthma patients regarding MDI
Part 3; Observational checklist to assess the technique regarding MDI.

The data collection was done in 1week through printed forms. The study was initiated afterobtaining IHEC Approval, prior permission from Principal, Chettinad College of Nursing.

RESULTS AND DISCUSSION SECTION I

Frequency and percentage distribution of demographic variables of asthma patients

s.no	Demographic variables	Frequency	Percentage
1	Age		
	31-40yrs	20	2
	41-50yrs	27	39.1
	51-60yrs	12	17.4
	Above 60yrs	10	14.5
2	Gender		
	Male	37	53.6
	Female	32	46.4
	Transgender	0	0
3	Education status		
	illiterate	8	33.3
	primary	22	31.9
	higher secondary	23	33.3
	any degree	16	1.4
4	Monthly income		
	>5000	23	33.3
	15000-20000	23	33.3
	20,000-40,000	23	33.3
5	Type of family		
	Nuclear	37	53.6
	Joint	32	46.4

6	Occupation profession business		
	agriculture	23	33.3
		30	43.5
		16	23.2
7	Duration of illness		
	<1	24	34.8
	2-3	23	33.3
	3-4	13	18.8
	>5	9	13
8	Duration of using MDI		
	<1	25	36.2
	2-3	29	42
	3-4	15	21.7
	>5	0	0
9	History of asthma		
	Yes No	31	44.9
		38	55.1
10	Info regarding MDI		
	Yes	38	55.1
	No	31	44.9

From the above table shows that 39.1% of asthma patients belonged to the age group of 41-50 years, 17.4% of patients were belonged to the 51-60yrs,14.5% of patients were belonged to the age group of above 60 years remaining 2% of patients in 31-40 yrs of age, the majority of the participants of 53.6% were male whereas 46.4% of people were female the significant percentage of participants 33.3% were higher secondary educated,31.9%of people were primaryeducated,33.3% of patiets were uneducated remaining 1.4 of people were degree holder, 33.3% of patients were getting income of >5000,15,000-20,000and 20,000-40,000, majority(53.6%) of the patients were living in nuclear family remaining 46.4% were joint family majority of the patients were 43.5%businessmen,33.3% of patients had illness of past 2-3 years, 42% of patients were using MDI for past 2-3 years, most of the patients had history of asthma 55.1%,55.1% of patients had information about MDI

Pre test frequency and percentage of knowledge

Knowledge	Frequency	Percentage
High knowledge	2	2.9
Average knowledge	13	18.8
Low knowledge	54	78.3

The data presented in table 2 shows that in the pre test Majority 78.3% of the bronchial patients had the low knowledge and 18.8% of average knowledge and 2.9% had high knowledge acquired average knowledge regarding MDI.

Pre test frequency and percentage of technique of asthma patients

Technique	Frequency	Percentage
Poor technique	47	68.1
Moderate technique	18	26.1
Good technique	4	5.8

The data presented in table 3 shows that in the pre test 68.1% of bronchial asthma patients had poor technique and 26.1% had moderate technique regarding MDI.

Post total frequency and percentage distribution of asthma patients

Knowledge	Frequency	Percentage
High knowledge	24	34.8
Average knowledge	41	59.4
Low knowledge	4	5.8

The data presented in table 4 shows in the post test 59.4% of bronchial asthma patients had the average knowledge regarding the MDI

Post total frequency and percentage distribution of asthma patients

TECHNIQUE	FREQUENCY	PERCENTAGE
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Poor technique	4	5.8
Moderate technique	36	52.2
Good technique	29	42.0

The data presented in the table 5 shows that the majority of the bronchial asthma patients had the moderate technique 52.2% and had the good technique of 42.0% regarding the technique of MDI

Association of post knowledge of asthma patients with their demographic variables

s.no	Demographic variables	Category	(n)	Knowledge level			X2	pvalue
				high	Average	Low		
1	Age in years	31-40yrs	20	9	11	0	4.160	Df=6 0.652(NS)
		41-50yrs	27	10	15	2		
		51-60yrs	12	2	9	1		
		Above 60yrs	10	3	6	1		
2	Gender	Male	37	11	23	3	1.422	Df=2 0.481(NS)
		Female	32	13	18	1		
		Transgender	0	0	0	0		
3	Educationalstatus	Illiterate	8	5	3	0	5.956	df=6 0.428(NS)
		Primary	22	7	14	1		
		higher secondary	23	9	13	1		
		any degree	16	3	11	2		
4	Monthlyincome	>5000	23	7	15	1	3.030	Df=4 0.553(NS)
		15000-20000	23	11	11	1		
		ABOVE20000	23	6	15	2		
5	Occupation	Profession	23	9	12	2	2.723	Df=4 0.605(NS)
		Business	30	8	21	1		
		Agriculture	16	7	8	1		
6	Family type	Nuclear	37	15	19	3	2.370	Df=2 0.306(NS)
		Joint	32	9	22	1		
7	Duration ofillness	≤1	24	7	16	1	6.029	Df=6 0.420(NS)
		2-3	23	10	11	2		
		3-4	13	2	10	1		

		>5	9	5	4	0		
8	Duration usingMDI	<1	25	11	13	1	4.130	Df=4 0.389(NS)
		2-3	29	7	19	3		
		3-4	15	6	9	0		
		>5	0	0	0	0		
9	Asthma history	Yes	31	17	14	0	11.699	Df=2 0.003(S)
		No	38	7	27	4		
10	Info regardingMDI	Yes	38	14	22	2	0.178	Df=2 0.915(NS)
		No	31	10	19	2		

NS Indicates as Non significant. S Indicates as Significant.

The above table 6 shows that there is the the association between the knowledge with selected demographic variables the post test knowledge of bronchial asthma is influenced by any other selected demographic variables.

Association of post test techniques of asthma patients with their demographic variables

s.no	Demographic variables	Category	(n)	Knowledge level			X2	Pvalue
				Poor	average	Good		
1	Age in years	31-40yrs	20	1	9	10	2.915	Df=6 0.819 (NS)
		41-50yrs	27	2	13	12		
		51-60yrs	12	1	13	12		
		Above 60yrs	10	0	6	4		
2	Gender	Male	37	2	21	14	0.676	Df=2 0.713 (NS)
		Female	32	2	15	15		
		Transgender	0	0	0	0		
3	Educationalstatus	Illiterate	8	0	3	5	4.703	Df=6 0.582 (NS)
		Primary	22	1	12	9		
		higher secondary	23	1	11	11		
		any degree	16	2	10	4		
4	Monthly income	>5000	23	1	13	9	3.598	Df=4 0.463 (NS)
		15000-20000	23	1	9	13		
		20,000-20,000	23	2	14	7		
5	Occupation	Profession	23	1	10	12	3.233	Df=2 0.520 (NS)
		Business	30	2	19	9		
		Agriculture	16	1	7	8		
6	Family type	Nuclear	38	1	18	18	2.340	Df=20.310 (NS)
		Joint	31	3	18	11		
7	Duration of illness	≤1	24	1	14	9	4.981	Df=6 0.546 (NS)
		2-3	23	2	9	12		
		3-4	13	1	9	3		
		>5	9	0	4	5		

8	Duration usingMDI	<1	25	1	12	12	2.647	Df=4 0.619 (NS)
		2-3	29	3	15	11		
		3-4	15	0	9	6		
		>5	0	0	0	0		
9	Asthma history	Yes	31	0	14	17	5.991	Df=2 0.050(S)
		No	38	4	22	12		
10	Info regardingMDI	Yes	38	4	18	16	3.638	Df=20.162 (NS)
		No	31	0	18	13		

The above table 7 shows that there is the the association between the technique With the selected demographic variables the post test of technique regarding MDI is influenced by any other selected demographic variables.

Mean and standard deviation of knowledge and techniques of MDI

	Mean	Standard deviation
Knowledge	1.71	0.593
Techniques	2.36	0.571

The above table 8 shows that the mean value regarding knowledge is 1.71 and the standard deviation value is 0.593. The mean value regarding technique is 2.36 and standard deviation value is 0.571.

Correlation between knowledge and techniques of MDI

	Correlation value
Knowledge	1
Techniques	

The correlation value is positive hence its supports the hypothesis.

SECTION II DISCUSSION

This chapter deals with the discussion of the data analyzed based on the objectives of the study. The main aim of the study was to assess the level of knowledge and technique regarding the metered dose inhaler and evaluate the structured teaching program on metered dose inhaler discussed below along with the objectives,

In the pre test Majority 78.3% of the bronchial patients had the low knowledge and 18.8% of average knowledge and 2.9% had high knowledge acquired average knowledge regarding MDI.

In the pre test 68.1% of bronchial asthma patients had poor technique and 26.1% had moderate technique regarding MDI

In the post test 59.4% of bronchial asthma patients had the average knowledge regarding the of MDI.

In the post test the majority of the bronchial asthma patients had the moderate technique 52.2% and had the good technique of 42.0% regarding the technique of MDI Correlation between knowledge and technique the mean score and standard deviation was the mean value regarding knowledge is 1.71 and the standard deviation value is 0.593. The mean value regarding technique is 2.36 and standard deviation value is 0.571. .

Data findings revealed that there was a statistically significant association found between the level of knowledge with number of bronchial asthma patients at $p < 0.05$ level of significance.

There is the significant association found between knowledge and technique with demographic variables as the calculated by chi - square value was less than the table value at $p < 0.05$ level.

CONCLUSION

The purpose of this study was used to assess the knowledge and Technique regarding metered dose inhaler among bronchial asthma patients . From the above findings shows the bronchial asthma patients had good level of knowledge and had moderately technique regarding usage of metered dose inhaler. The structured teaching programme is improve the knowledge to the bronchial asthma patients, carrying out the present study was really an enriching experience to the investigator. It also helped a great deal to explore and improve the knowledge of the researcher and the respondents.

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CONFLICT OF INTEREST

Conflict of interest: nil Sources of funding: self

Ethical clearance: Chettinad Academy of Research and Education, Institutional Human Ethics Committee on 22.02.2023

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