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RESEARCH PAPER

Evaluating Asthma Knowledge among Patients with Bronchial asthma; A Cross sectional study

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Abstract: Asthma is the most chronic respiratory disorder affecting all age groups. As the disease and its effective management continue to be public health challenge, it has been the focus of clinical and public health interventions. Some of the most common reasons for the uncontrolled asthma are non adherence to treatment, poor knowledge and skills in disease management (GINA guidelines, 2005). Aim: The study aimed to evaluate the asthma knowledge among patients with Bronchial asthma Methods: Study was conducted to assess the effectiveness of structured asthma educational program on self care management of Bronchial asthma. Design: Experimental Pre test-post test control group design was chosen. From the patients with confirmed diagnosis of asthma, sample were selected to experimental (n=100) and control (n=50) groups. The Pre-test means between experimental (19.9) and control (18.82) groups were not much significant. There is a significant improvement within the pre test (mean 19.930; S.D 8.84)) and Post test scores in the experimental group (mean 42.31/S.D 3.449). The post test means between experimental (42.31) and control groups (21.28) supports the significant enhancement in the knowledge of the experimental group after asthma education. Conclusion: Asthma education is an important means to equip patients with knowledge and skills required to manage the condition effectively. Adequate knowledge may further motivate patients towards behavior modification and long term management.

Key Words: Bronchial asthma, Effectiveness, Asthma Knowledge, Patient education, Asthma Educational program

INTRODUCTION:

Asthma is a chronic respiratory disorder affecting all age groups. Though the revolutionary changes are noticed in the pharmaceutical and technological advancements, the prevalence of asthma is still on rise worldwide. Raising prevalence and asthma control are negatively associated. The most common reasons are non adherence to treatment, poor knowledge and skills in disease management (GINA guidelines, 2007). Uncontrolled asthma and ineffective management remains a public health challenge in the developing countries like India. Asthma has been defined as "a disease characterized by hyper responsiveness of the airways to various stimuli and manifested by slowing or forced expiration, which changes in severity either spontaneously or with treatment. The World Health Organization recognizes asthma as a disease of public health importance. The uncontrolled asthma can be associated with multi factorial theory of non adherence to treatment, inadequate information about disease and its self management, inability to identify warning signs and symptoms, not able to adopt measures to avoid exposure to asthma triggers etc. There is a noticeable increase in health care burden from asthma in several areas of the world (Ghosh CS et al, 1998).

Much of the morbidity from asthma is believed to be due to factors such as denial of having a chronic condition (Archea C et al., 2007). The rate of asthma increases as communities adopt western life styles and become urbanized with the projected increase in the proportion (WHO-GOI collaborative programme (2004-2005). Asthma education is

the vital component in disease control and self management. Patient education improves the patients' confidence to manage the condition. Appropriate knowledge on when to seek health care advice minimizes the patients' suffering and frequency of hospital visits. Reduced emergency visits save time and resources both for patients and health care providers.

BACKGROUND:

It is estimated that, currently 300 million of people are affected with asthma worldwide. Uncontrolled asthma with increasing prevalence is a major public health issue. India alone has an estimated burden of more than 15 million patients (Masoli M et al 2004). The estimated burden of asthma in India is an overall prevalence of 3% (30 million of people) and among adults over the age of 15 years is 2.4 %(Aggarwal et al 2006). Lack of awareness and patient education may result in to misconceptions on disease management among asthmatic patients. Rai et al (2007) emphasizes on the asthmatic patients' need for adequate information on disease process and self care. Prabhakaran et al, (2006) reported that well-structured asthma education with reinforcing by the health care professionals is the key to achieve effective self-care management of asthma. If patients understand the risks of non-compliance and benefits of compliance and believe the treatment is safe, it will increase their motivation and confidence to improve their self-management practices (Ignacio-Garcia JM et al 1995; GINA report 2005). The present study provides structured asthma education tailored to the patient needs on self- care management with an aim to improve the patients' awareness

on asthma management and disease control.

Aim: The study aimed to evaluate the asthma knowledge among patients with Bronchial asthma

OBJECTIVES:

a.   To assess the knowledge related to triggering factors, warning signs and measures of prevention and self care management among asthma patients.
b.   To evaluate the effectiveness of Asthma education program on patients' knowledge levels in comparison of pre and post test scores.

METHODOLOGY:

The study is undertaken at a Government based Chest diseases Hospital. Patients with confirmed diagnosis of asthma and on inhaler therapy were selected in to experimental (n=100) and control (n=50) groups randomly. An Experimental study was conducted with Pre-test Post-test control group design. The first section of the structured questionnaire was developed to collect factual information on the subjects' demographics, family history, and duration of suffering with asthma, history of smoking, frequency of symptom experience and previous exposure to information and sources of information. The second section includes the questions to assess knowledge related to basics of disease process, identifying triggering factors, warning signs and measures of prevention and self care management among adult asthmatic patients.

After the pre test the structured asthma education was provided, which was provided as per the learning needs of the patients. Two weeks after the education, post test was conducted with the same structured knowledge questionnaire was administered to assess the impact of asthma educational intervention in comparison of pre and post test scores.

A.   Inclusion criteria;

a.   Patients with confirmed diagnosis for Bronchial asthma and on inhaler therapy between the age group of 21 to 60 years

b.   Asthma patients who knows Telugu and/or Hindi and/or English languages.

B.   Exclusion criteria;

a.   Patients with clinical history of psychiatric disorders.
b.   Patients with any associated acute illnesses and/or any other chronic medical conditions involving breathing difficulties

Knowledge scores were interpreted in to below average, average and above average categories. The right was scored as '1' and the uncertain or wrong answer as '0'. The tool reliability was tested and obtained r= 0.96 by test-re test by coefficient of correlation method. Study protocol was approved by the ethics committee of the institution. Nature and purpose of the study was explained to the study participants and informed consent was secured from the participants. Structured asthma education was prepared as per the learning needs of the subjects and was validated prior to administering. Two weeks after administering structured asthma education to the experimental group, post test was conducted to both the groups. Knowledge levels were measured on identification of asthma triggers, warning signs and preventive measures and self care management. Inhaler technique was measured by observational checklist. Impact of the educational intervention was assessed in comparison to pre test and post test scores of the experimental group and comparing the post test distribution between the experimental and control groups.

RESULTS:

The present study focuses to assess the patients' awareness on the disease condition and measures to keep their disease under control. Among the subjects maximum of 51% in the experimental group and 50% of the control group were between the age group of 51 to 60 years of age (Figure1). In reference to Gender; 63% were men and 37% were women in the experimental group, where as it was 58% and 42% in the control group.
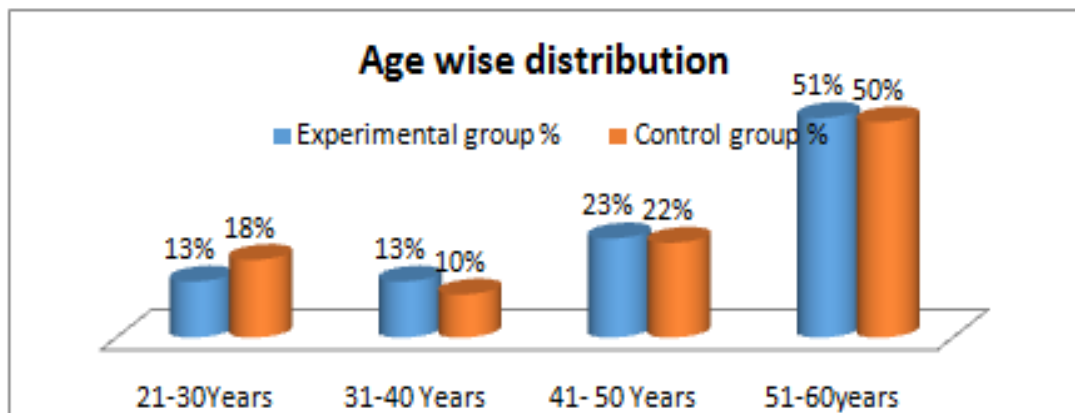

Figure 1: Percentage Distribution of Asthma Patients according to Age:

Regarding Education about 52 % and 56% were illiterates in the experimental and control groups respectively and only 4

% to 5% were recorded of having graduate level of education.

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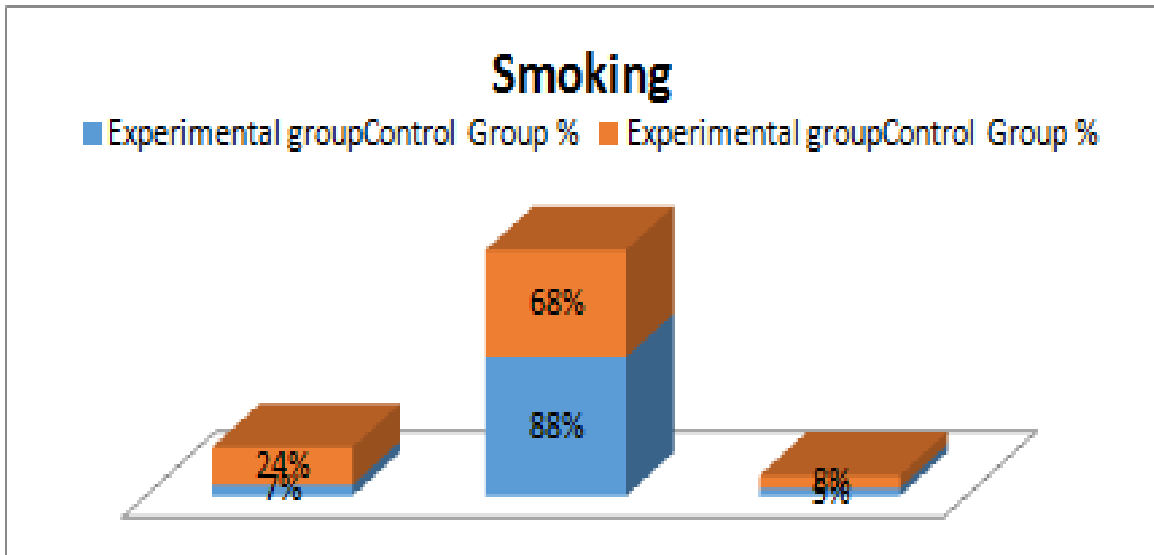
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Figure 2: Percentage Distribution of Asthma Patients according to History of Smoking:

Majority of the subjects' i.e.88% in the experimental and 68% in the control groups were passive smokers and only 5 to 8% of them respectively reported of not exposed to smoking (Figure 2). . In the experimental group maximum of 30% were laborers and minimum of 7% were skilled workers whereas professionals were 15% and 25% in to business. In the control group, 24% of them were laborers and majority of 60% were in to various other group of occupation and 6% each in business and skilled work, minimum of 4% were in professional jobs.

The knowledge levels in the Pre test were 56% and 62% in the below average , 37% and 36% in the average and only 7% and 2% were in the above average category both in the experimental and control groups respectively. In the post test distribution, the variation in the distribution is remarkably positive in the experimental group i.e., only 4% were in the below average and 8% in the average groups and majority of 88% were recorded with above average knowledge levels.

Table 1: The Table below represents the Pre and Post test Percentage distribution of Knowledge levels in the Experimental and Control groups:

S.NO	Level of Knowledge		Pre Test%		Post Test%	
			Exp.Group	Contr.Group	Exp.Group	Contr.Group
1	Area I	Below Average	56	62	4	52
		Average	37	36	8	40
		Above average	7	2	88	8
2	Area II	Below Average	75	66	1	62
		Average	17	28	17	30
		Above average	8	6	82	8
3	Area III	Below Average	83	80	3	74
		Average	14	16	12	21
		Above average	3	4	85	5
4	Total Knowledge	Below Average	74	76	3	72
		Average	18	19	8	22
		Above average	8	5	89	6

In all the areas the Knowledge levels were remarkably skewed from below average levels to above average levels from Pr test to Post test in the experimental group after the

Educational intervention; the pretest below average levels in the area II on preventive measures and warning symptom identification were 75%, which have been 82% in to above

average in the post test distribution; In area III self care management also the post test levels in the experimental group were 85% where as the control group has 74% in the below average with 6% of variation with pre test levels; Total knowledge reveals 8 to 89% in the experimental group, where as it was recorded only 5 to 6% in the control group; which shows remarkable enhancement in the experimental group after the Asthma educational intervention.

Table 2: Test of Significance showing the difference of Pre test and Post test Knowledge Scores in the Experimental group;

S.No.	Areas of Knowledge	Mean		S.D		SEM		't' test value	"p" value	Signifi cance
		Pretest	Post test	Pretest	Post test	Pretest	Post test			
1	Identifying Asthma triggers	10.13	19.05	3.969	1.167	0.397	0.117	21.563	0.000	**
2	Warning signs and prevention of acute attacks	5.59	12.19	3.452	1.721	0.343	0.172	17.189	0.000	**
3	Self monitoring and self care management	4.18	11.07	3.01	1.182	0.301	0.188	19.411	0.000	**
4	Total Knowledge	19.9	42.31	8.841	3.449	0.884	0.345	23.614	0.000	**

The above table shows higher 't' that in all the areas of Post test in comparison to Pre test, indicating the significant impact of the patient education on asthma patients.
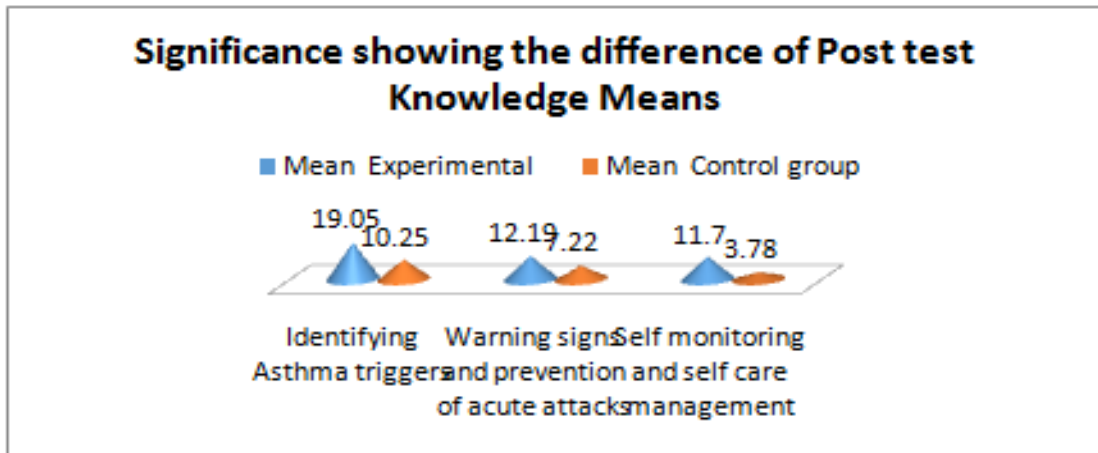

Figure 3: Test of Significance showing the difference of Post test Knowledge Means:

Table 3: Test of Significance showing the difference of Post test Knowledge Scores between the Experimental and Control groups;

S.No.	Areas of Knowledge	Mean		S.D		SEM		't' test value	"p" value	Signific ance
		Exp	Contr	Exp	Contr	Exp	Contr			
1	Identifying Asthma triggers	19.05	10.25	1.167	3.226	0.117	0.456	24.258	0.000	**
2	Warning signs and prevention of acute attacks	12.19	7.22	1.721	2.452	0.172	0.347	14.396	0.000	**
3	Self monitoring and self care management	11.7	3.78	1.882	2.27	0.188	0.321	20.850	0.000	**
4	Total Knowledge	42.31	21.28	3.449	6.743	0.345	0.954	25.312	0.000	**

As the table above indicates, the Knowledge scores in the experimental group were significantly high in comparison to post test scores of the control group, which shows the significance of the education and the positive impact of the asthma education intervention.

DISCUSSION:

Educating asthma patients on disease management and prevention of acute attacks is the most commonly neglected area in the management of asthma. Study conducted on patient education (Nadia M et al, 2011), reports that asthma morbidity and mortality are largely preventable when patients and their families are adequately educated about the disease and have access to high quality health care. Rai et al (2007) emphasizes on the asthmatic patients' need for

adequate information on disease process and self care. The present study focuses to assess the patients' awareness on the disease condition and measures to keep their disease under control. With regard to the knowledge regarding identifying measures taken to avoid triggers 56% in the experimental group and 62% in the control group were in the below average level of knowledge in the pre test, which have been positively skewed to 88% in the above average group in the experimental group in the post test and the minimal variation as recorded in the control group post test distribution as shown; 52% in the below average, 40% in the average and 8% in the above average groups. The study has identifies the need for educating asthma patients on self care management of the condition for the effective disease control and to improve the quality of living.

CONCLUSION:

Asthma education should be the vital aspect of self care management program, which may lead to optimum disease control outcomes. Comprehensive patient education with necessary information and skills equip them should be part of asthma management in continuous basis.

LIMITATION AND RECOMMENDATIONS:

Retention of Knowledge and practices may be followed after 12 to 24 months. The study may be conducted to evaluate the impact of education in bringing behavior modification in asthmatic patients on long term basis.

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