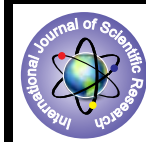


Effectiveness of patient education on quality of asthma management among adult asthmatics; A cross sectional study



Health Care

KEYWORDS : Bronchial asthma, Effectiveness, Patient education, Quality management, Asthma Educational program

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ABSTRACT

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 in rise worldwide. Raising prevalence and asthma control are negatively associated. Uncontrolled asthma and ineffective management remains a public health challenge in the developing countries like India. Aim: The study aimed to assess the effectiveness of structured educational intervention on self care management of 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. Sample were selected randomly in to experimental (n=100) and control (n=50) groups. The Pre-test means between experimental (4.630) and control (4.780) 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: Patient education makes the disease management cost effective and more comprehensive.

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 in 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. Asthma affects 300 million people worldwide (Aggarwal AN, et al, 2006; GINA 2007). Despite advancement in science and technology and pharmacological revolutions, worldwide asthma prevalence is still not adequately controlled. The most common reasons for uncontrolled asthma are non adherence to treatment, poor knowledge and skills in disease management. There is a noticeable increase in health care burden from asthma in several areas of the world (Ghosh CS et al, 1998). Changing life styles and urbanization, Industrialization, environmental pollution and frequency and intensity of exposure to environmental dust and smoke are some of the common predisposing factors for the increasing prevalence of the condition. Inadequate information on the prevention of the exposure to asthma triggers and inability to prevent acute attacks and ineffective use of inhalers are the common reasons for the uncontrolled asthma. Asthma due to its effects on bronchial passage compromises the respiration and intern effects physical and psycho-social aspects of life and impairs the quality of life. Asthma education is the vital component in disease control and self management. Patient education makes the disease management cost effective and comprehensive.

Literature Review/ Background:

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 are 2.4 % (Aggarwal et al 2006). Lack of awareness and misconceptions among asthmatic patients can be due to lack of educational programs for patients (Williams et al 2004). 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 (GINA report 2005).

Aim: The present study aims to assess the effectiveness of asthma education on knowledge related to self care management of bronchial asthma.

Objectives:

To assess the knowledge related to triggering factors, warning signs and measures of prevention and self care management among asthma patients.

To evaluate the effectiveness of Asthma education on patient knowledge levels in comparison of pre and post test scores.

Methodology;

The study was a quantitative approach. An Experimental study was conducted to assess the knowledge on asthma among adult asthmatic patients. Pre-test Post-test control group design was chosen for the study. Among the patients with confirmed diagnosis of asthma, sample were selected in to experimental group (n=100) and control group (n=50) by simple random sampling. The sample were pre tested with the help of a structured Questionnaire and after the pre test the structured asthma education, which was prepared tailored to the learning needs of the subjects was administered.

Inclusion criteria;

Bronchial asthma patients between the age group of 21 to 60 years

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

Exclusion criteria;

Patients with clinical history of psychiatric disorders.

Patients with any associated acute illnesses and with other chronic medical conditions involving breathing difficulties

The study was conducted at the Government General Hospital, Hyderabad, which is 650 bedded tertiary health care setting covering the patients attending from all over the state with respiratory diseases. Knowledge scores were interpreted in to below av-

erage, average and above average categories. 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 with assurance to maintain the confidentiality of the information. Participants were informed about their autonomy in deciding to continue to participate in the study. Structured asthma education was validated prior to administering. The education programme was organized into three educational sections each of 15 minutes duration. Patients in the intervention group were explained, discussed on basics of disease condition, asthma triggers and measures to prevent exposure to triggering factors, how to identify warning signs and symptoms and self-management skills to recognize the features of poorly controlled asthma and how to prevent acute attacks, peak flow monitoring, correct inhalation technique and its importance in disease control and management. 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. Impact of asthma education 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. At the end of the post test, patients were given printed asthma education materials.

Results:

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. 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. In relation to occupation, 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. 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. 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.

About Knowledge scores; there was no significant difference in the mean knowledge scores between the intervention and control groups (t' 0.568 and $'p'$ 0.571) at baseline, which was remarkably enhanced in the post test scores in the experimental group. 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 Exp.group		Pre test%		Post test%	
			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 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: The table below shows the Pre test and Post test percentage distribution of Practices on Inhalation Technique in the Experimental and control groups:

Scale	Pre test %		Post test %	
	Experimental group	Control group	Experimental group	Control group
Below average	32	44	2	35
Average	54	48	12	55
Above average	14	8	86	10

The above distribution shows 14% to 86 % in the above average level in the performance of the inhalation technique, which is a positive skew in the experimental group after the administration of the asthma education; in the control group, there found to be minimal variation of 8 to 10% shift in the above average levels, it was 48 to 55% in the average levels.

In the intervention group 51% of them reported of experiencing any of asthma symptoms more than twice a week, 37% of them said to have 4-6 times in a month and only 5-7% were recorded of having less than once in a week. The variation was not significant in the control group, but it was significantly reported less (55% were reported less than twice in a month) in the experimental group 4 weeks after the education.

Table 3: 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' value	"p" value	Significance
		Pre test	Post test	Pre test	Post test	Pre test	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 that in all the areas calculated "t" values are higher than the table "t" value. Thus it is clear that there is significant difference in the pre test and post test knowledge scores of the patients on the home management of Bronchial asthma.

Table 4: 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	Significance
		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: Though patients' knowledge is an integral component in the long term management of asthma, there is a wide gap between the knowledge and management of asthma (Collins S et al 1998). Asthma mortality and morbidity are largely preventable when patients and their families are adequately educated and have access to quality health care (Nadia M et al 2011). The present study reveals the importance of patient education for the effective management of asthma. The knowledge enhancement on 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. Thus the results support the need for educating asthma patients on self monitoring and self care management of the condition for the adequate disease control and effective management.

Conclusion: Asthma education is an important means to equip patients to manage the condition effectively. Adequate knowledge may further motivate patients towards behavior modification and long term management.

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Conflict of Interest: None

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