ASSESSMENT OF KNOWLEDGE REGARDING ASTHMA & BREATHING EXERCISES AMONG BRONCHIAL ASTHMA PATIENTS

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ABSTRACT

Background: Asthma is chronic inflammatory, airway hyper-responsiveness, reversible disorder and patients' awareness of the disease, medication adherence and treatment outcomes. The objective of the present study was to assess the knowledge of the patients towards their disease and breathing exercise in asthma patients. **Materials and methods:** This was a cross-sectional hospital-based study in a tertiary care teaching hospital at SMS Medical College, Jaipur for two months. The data was collected by face to face interview of out-patients and inpatients of Medicine departments by administering the questionnaires for the assessment of knowledge towards the bronchial asthma disease and breathing exercise.**Results:** A total of 60 confirmed case of bronchial asthma were included, out of which male patients were 37(62%) and female patients 23(38%). The knowledge score was assessed in two areas such as knowledge on Asthma and knowledge on breathing exercise with test items of 12 & 9 in each. The mean knowledge of Asthma was 7.6 ± 2.42 while the mean score of knowledge on Breathing exercise was 4.08 ±1.3. The overall knowledge on asthma and Breathing exercise has resulted with mean 5.84±1.87. On an average, the sampled subjects had poor knowledge on breathing exercise. **Conclusion:**This study shows that the knowledge of asthma self-management of adult patients in is low & there is a need to improve knowledge of asthma self-management among adult patients especially those who are less well educated, either via their physicians or by other appropriate means.

Keywords: Bronchial Asthma, Breathing exercise, Knowledge,

INTRODUCTION

Asthma is a complex disorder of lung which involving biochemical immunology, endocrine, infectious, autonomic and psychological factors &characterized by airway obstruction, inflammation and increased responsiveness to a variety of stimuli. The clinical course of asthma is unpredictable ranging from paroxysms of dyspnea, wheezing and cough, this may be mild, and difficult to detect to severe and unremitting symptoms such as status asthmaticus**(1)**.

Bronchial asthma is that most common chronic respiratory disorder among all age groups with a prevalence of 5 to 10 percent. The disease affects 155 million individual in the world. Currently,

there is no cure for asthma, which is a significant problem for public health**(2)**.

The prevalence of Asthma has increased more than 60% in the last ten years the mortality rate associated with asthma is dramatic. It affects school attendance, occupational choices, physical activity and many another aspect of life. The mortality rate is more than doubled since 1978.**(3)** Between the ages of 15-44 years, the asthma death rate for American – African is a least five times higher than for Caucasians. The high mortality rates related to asthma may be related to an inaccurate assessment of diseases severity. Increase allergens in the environment, delay in seeking help, inadequate medical treatment, and limited access to health care and non-compliance with prescribed therapy (Pamela Becker 2000)

Asthma is one of the most widespread chronic health problems in India, India has an estimated 15-20 million asthmatics**(4)**, and prevalence is increasing worldwide and especially in India. Asthma is one of the leading causes of hospitalization and school absenteeism of children in India and is prevalent in all age groups.

However, Asthma is treatable if better diagnosed; a team effort between patients, doctors, nurses and all health professionals with a written Asthma action plan will help effective asthma management. Up to 60% of Asthma deaths may be associated with avoidable factors. Asthma is not a condition merely causing acute attacks of wheeze and troublesome breathing. It is a chronic condition due to persistent abnormalities of the airway passages requiring long-term attention.

Patient with bronchial Asthma used to have adequate knowledge and practice of self-care activities. Asthma may be allergic and idiopathic. It can be controlled by medication therapy but also require supportive therapy to control and prevent asthma. So the aim of this study to evaluate the knowledge regarding breathing exercises among bronchial asthma patients so that patients with some knowledge to prevent the occurrence and through exercise, it helps to improve respiratory function.

In this study, we had assessed the existing knowledge of bronchial asthma patients regarding the exercise to prevent asthmatically attack.

METHOD

The research design selected for the present study was cross-sectional design. The study was conducted in the SMS hospital Jaipur, and the target population of the study is selected bronchial asthma patient admitted in the general ward or visit OPD in the SMS hospitals as available at the time of conducted study during May –June 2010. In the present study, 60 bronchial asthma patients between 20-60 years age group were included. Convenient sampling technique, which is a non-probability judgment sampling, was used to select the sample for the study. The bronchial asthma patients who are critically ill were excluded.

Cases were having other significant broncho-pulmonary diseases associated with asthma, for example, tuberculosis, bronchiectasis, viral infections, bronchiolitis, and patients not willing to participate in the study were excluded from the study.

Diagnosis of asthma in selected was based upon GINA Guidelines[5]. Wheezing, high pitched whistling sound when breathing out with the history of any of the following: Course worse particularly at night, recurrent wheeze, recurrent difficult breathing, recurrent chest tightness, family history of any allergy or bronchial asthma. The patients were evaluated for confirmation of the diagnosis of bronchial asthma with the help of history, examination, and spirometry before and after bronchodilators inhalation.

The Questioning technique was selected for the study to assess the knowledge of bronchial asthma patients regarding bronchial asthma & breathing exercises. It is considered the most appropriate tool to elicit the response from the patients. The tool was developed by the investigator with his personal and professional experience and with the detailed review of the literature, like books. Journals, periodicals, and published research studies and mass education media and the advanced tool was refined and validated by the subject's experts. The instrument used for this study was knowledge questionnaire consists of demographic variables and Knowledge questionnaire regarding Asthma and breathing exercise. Information regarding demographic data was collected from selected patients on six variables based upon their answers a tick mark (✓) is put for the appropriate option of each item. The knowledge and breathing exercise related part were had the total of 21 statements each correct responses carried score one, and each wrong response scored zero. The cut-off level of < 50% was Inadequate knowledge, 51-75% was Moderately adequate knowledge and > 75% was considered adequate knowledge about asthma & breathing exercise.

A pre-test was done to establish the reliability and to determine the language clarity and using the split-half method with accessed feasibility of the tool. Reliability of the tool for knowledge statement was found to 0.92 means r=0.92.

The proposed study was conducted after the approval of the research committee of the college Permission was obtained from the concerned authority of the SMS hospital. The oral consent of each was obtained before data collection. The assurance was given to the study participants regarding the confidentiality of the data collected.

Statistical Data Analysis: Statistical analysis was performed using SPSS Software version 10. Descriptive statistics were calculated. Mean, median, mode, standard deviation and range were calculated for qualitative variables as mentioned above. Frequencies and percentages were calculated for qualitative variables as mentioned above. Comparison of variables was made using the chi-square test. P value <0.05 was considered as significant.

RESULTS

Table-1 shows that the selected Bronchial asthma patients were more (41.7%) in the age group of 50-60 yrs. A majority, 61.7% was found to be male Bronchial asthma patients. The frequency and percent of study subjects according to their educational status, nearly one third (30%) of the subjects were illiterates, and 70% were educated.

A majority, 55% was found to be Bronchial asthma patients are vegetarians and 38.3% were having a monthly income of below 4500 Rs. / month. Overall they were earning poor income per month, & distribution of subjects by their occupation.

With regard to the overall knowledge regarding identifying measures taken to avoid triggers 28 (48.33%) have below average level of knowledge, 37 (61.67%) have an average level of knowledge, and none of them have above average level of knowledge.

Concerning the knowledge regarding identifying the warning signs of asthma and measures taken to prevent the acute attack of asthma 44 patients (77.33%) have below average level of knowledge, 14 (23.33%) have an average level of knowledge, 2 (3.33%) have above average level of knowledge. About knowledge regarding regular medications, 37 (61.67%) patients have below average level of knowledge, 21 (35.0%) have an

average level of knowledge, 1 (3.33%) have above average level of knowledge. About overall knowledge regarding home management of asthma, 35 (58.33%) patients have below average level of knowledge, 23 (38.33%) have an average level of knowledge, and two of them have above average level of knowledge.

Table-1: Distribution of subjects by Demographic characteristics

S.No.	Demographic characteristics	Frequency	%
1	**Age(yrs)**		
1.1	20 – 30	7	11.7
1.2.	31 – 40	10	16.6
1.3.	41 – 50	18	30
1..4	51 – 60	25	41.7
2.	**Sex**		
2.1	Male	37	62
2.2	Female	23	38
3.	**Education**		
3.1	Illiterate	18	30
3.2	Primary school	9	15
3.3	Middle school	13	21.7
3.4	High school	9	15
3.5	Degree & above	11	18.3
4.	**Diet**		
4.1	Vegetarian	33	55
4.2	Non-vegetarian	27	45
5.	**Monthly family income**		
5.1	<4500	23	38.3
5.2	4501-6500	16	26.6
5.3	6501-8500	13	21.7
5.4	8501-10500	4	6.7
5.5	>10500	4	6.7
6	**Occupation**		
6.1	Industry worker	17	28.3
6.2	House-wife	13	21.7
6.3	Agriculture	7	11.7
6.4	Business	9	15
6.5	Govt job	12	20
6.6	Others	2	3.3

Table-2: Mean, SD and mean score percent of knowledge score

S. No.	Knowledge	Max possible score	Mean	SD	Mean score %
1.	Asthma	12	7.6	2.42	38
2.	Breathing exercise	9	.08	1.31	34
3.	Overall	21	5.84	1.87	36

Table 2 showed the summary of statistical outcomes of knowledge on breathing exercise of Bronchial asthma patients. The knowledge score was assessed in two areas such as knowledge on Asthma and knowledge on breathing exercise with test items of 12 & 9 in each. The mean knowledge of Asthma was 7.6 with SD 2.42. The mean score percent was computed, and it was found to be 38%. The mean score was little higher in the area of knowledge on Breathing exercise, i.e. mean, 4.08 with SD 1.31. Mean score percent 34%. The overall knowledge on asthma and Breathing exercise has resulted with mean 5.84, SD 1.87 out of 21 with low score percent 36%. On an average, the sampled subjects had poor knowledge on breathing exercise.

DISCUSSION

This was a cross-sectional study at tertiary care hospital and in this study represented that age distribution shows that the 37.7 percentages of bronchial asthma patient were in age group of 50-60, 61.7% males were bronchial asthmatic, 30% were illiterate and 21.7% have high school education level, 55% are vegetarian, and 45% are non-vegetarian, It is observed that majority of (38.3%) samples had monthly income below 4500 Rs/month, 26.6% income between 4501-6500, 21.7% income between 6501-8500Rs/month and 6.7% income each in 8501-10500 and above 10500Rs/month.

Overall knowledge on asthma breathing exercise has resulted with mean 5.84, SD 1.87 out of maximum possible score 21 with mean percentage was 36%. It indicates that the sampled subjects had poor knowledge of asthma breathing exercise.

In term of general knowledge, previous studies described a very low level of asthma knowledge among study samples. For example, Madhushani and Subasinghe established that only 34% of their patients in Sri Lanka had good knowledge of asthma and associated medications[6]. Sharifi et al[7] described that only 7.5% of Iranian asthma patients were knowledgeable about their asthma, while this was 6%–10% among Indians[8-9]. A multicenter study in China assessed Knowledge of parents of children with asthma presented a low level of disease-related awareness, with the poor understanding of the clinical manifestations of asthma and indicators of an acute attack[10]. Similarly, inadequate knowledge levels were proved by Merghani et al. in Sudan38 and by Borges et al. in Brazil[11]. In India, many factors may include to the poor level of asthma knowledge. First, communication with the physician is the primary source of education about asthma. Although there are other ways to get knowledge in India (e.g., mass media, patients' clubs, education leaflets, and so on), these are very limited in some areas.

CONCLUSION

This study shows that the knowledge of asthma self-management of adult patients in is low & there is a need to improve knowledge of asthma self-management among adult patients especially those who are less well educated, either via their physicians or by other appropriate means (e.g., via the mass media). This knowledge is correlated

with education level. A good relationship was found between asthma self-management and asthma control, that is, the higher the level of asthma control, the better the knowledge of asthma self-management (and vice versa).

REFERENCES

1. World health organization. Air Quality Guidelines: Global Update 2005 available from. URLhttp://www.euro.who.int/__data/assets/pdf_file/0005/78638/E90038.

2. Campo, Monica, Finn, Patricia W. Article related to Bronchial asthma. Indian Journal of Medical Research. 2005 ;34(2):434-438.

3. Lewis.et al, Nursing care in obstructive pulmonary disease. Medical-Surgical Nursing. Fourth edition; Missouri: Mosby; 1996.p. 682-683.

4. http://www.who.int/mediacentre/factsheets/fs206/en/

5. https://ginasthma.org/2018-gina-report-global-strategy-for-asthma-management-and-prevention/

6. MadhushaniHPD, SubasingheHWAS. Knowledge attitudes and practices of asthma; Does it associate with demographic factors of adult patients? Asian Pac J Health Sci. 2016;3(4S):94–99.

7. Sharifi L, Pourpak Z, Heidarnazhad H, Bokaie S, Moin M. Asthma knowledge, attitude, and self-efficacy in Iranian asthmatic patients. Arch Iran Med. 2011;14(5):315–320.

8. Malarvizhi M, Hariprasad B, Bhavani M. Determine the level of knowledge and practice among asthmatic patients attending chest opd at selected hospitals, Chennai. IJAICT. 2014;1(3).

9. Kambli S. Asthma patient's knowledge regarding diagnosis and treatment. Int J Sci Res. 2014;3(6):1871–1876.

10. Zhao J, Shen K, Xiang L, et al. The knowledge, attitudes, and practices of parents of children with asthma in 29 cities of China: a multi-center study. BMC Pediatr. 2013;13:20

11. Borges MC, Ferraz É, Pontes SM, et al. [Development and validation of an asthma knowledge questionnaire for use in Brazil]. J Bras Pneumol. 2010;36(1):8–13.