

Asthma Patient's Knowledge Regarding Diagnosis and Treatment

Swati Kambli

Principal of College of Nursing, Dr. D. Y. Patil College of Nursing Nerul, Mumbai, Maharashtra, India

Abstract: *In all, 50 consecutive patients of bronchial asthma attending in and outpatient services of from Dr. D.Y Patil hospital and research center, Nerul, Navi Mumbai were interviewed using questionnaire to determine how well informed they are about their disease. Methodology:- A cross-sectional survey was conducted Mumbai questionnaire regarding pathology, key history points, risk factors, diagnosis, and management of asthma. Findings-Majority of the patients had wrong concepts about etiology of disease management, inhaled therapy, immunotherapy and the prognosis of asthma. Conclusion- Sincere and sustained efforts are required to impart health education to the patients and help them to participate in the self-management plans for asthma.*

Keywords: Asthma, Patient, Knowledge, diagnosis, treatment

1. Introduction

Despite of all advances in the management of asthma, the morbidity and mortality rates are increasing. Both the physician as well as patients play a pivotal role for the under treatment and mismanagement of the disease. This causes concern in the field of asthma care. Unless patient possesses basic knowledge about the ailment and its management, there is no likely hood to make the best use of the available facilities. This study was planned with the aim to collect information about the knowledge, attitudes and practices of asthmatic patients regarding bronchial asthma.

Ever hear the term "asthma" and wonder what it means? When people talk about asthma, they are really talking about asthma, a chronic inflammatory disease of the airways that causes periodic "attacks" of coughing, wheezing, shortness of breath, and chest tightness.

According to the CDC, more than 22 million Americans, including 6.5 million children under 18, suffer with asthma today. Allergies are strongly linked to asthma and to other respiratory diseases such as chronic sinusitis, middle ear infections, and nasal polyps. Most interestingly, a recent analysis of people with asthma showed that those who had both allergies and asthma were much more likely to have night time awakening due to asthma, miss work because of asthma, and require more powerful medications to control their symptoms.

Asthma is associated with mast cells, eosinophils, and T lymphocytes. Mast cells are the allergy-causing cells that release chemicals like histamine. Histamine is the substance that causes nasal stuffiness and dripping in a cold or hay fever, constriction of airways in asthma, and itchy areas in a skin allergy. Eosinophils are a type of white blood cell associated with allergic disease. T lymphocytes are also white blood cells associated with allergy and inflammation.

These cells, along with other inflammatory cells, are involved in the development of airway inflammation in asthma that contributes to the airway hyper responsiveness, airflow limitation, respiratory symptoms, and chronic

disease. In certain individuals, the inflammation results in the feelings of chest tightness and breathlessness that's felt often at night (nocturnal asthma) or in the early morning hours. Others only feel symptoms when they exercise (called exercise-induced asthma). Because of the inflammation, the airway hyper responsiveness occurs as a result of specific triggers.

Therefore, an understanding of patient's attitude, concerns and knowledge regarding asthma is necessary to identify various ways by the health professionals so as to improve their knowledge.

2. Need For Study

Learning is the addition of new knowledge and experience Interpreted in the light of past knowledge and experience. Teaching and learning is an integral part of nursing. Nurses have the responsibility to educate patients related to various aspects and keep themselves updated. Various teaching strategies are used to increase knowledge, such as lecturing, demonstration, discussion and self-education. These methods of self-education has an advantage over the others as the learner can educate himself at his own pace and it also stresses on rereading [10].

Asthma is a chronic inflammatory disorder of the airways. The chronic inflammation causes an increase in airway hyper-responsiveness that leads to recurrent episodes of wheezing, breathlessness, chest tightness, and cough, particularly at night or early in the morning. These episodes are associated with widespread but variable airflow obstruction that is usually reversible, either spontaneously or with treatment. Between 100 and 150 million people around the globe suffer from asthma and this number is rising. World-wide, deaths from this condition have reached over 180,000 annually. Asthma is not just a public health problem for developed countries. In developing countries, however, the incidence of the disease varies greatly.

India has an estimated 15-20 million asthmatics.

- To increase awareness of allergy and allergic diseases as a preventable public health problem among the general public.

- To prepare evidence-based guidelines for the prevention and management of bronchial asthma.
- To educate common people about the relevance of allergic bronchial asthma.

To educate the public about the potentially fatal risks of allergic asthma and to encourage greater dialogue with their physician's providing better education and increased dialogue could avoid approximately 25,000 deaths due to asthma each year. Mortality due to asthma is not comparable in size to the day-to-day effects of the disease. Although largely avoidable, asthma tends to occur in epidemics and affects young people. The human and economic burden associated with this condition is severe. The costs of asthma to society could be reduced to a large extent through concerted international and national action.

3. Review of Literature

Review of literature involves the systematic identification, location, scrutiny, and survey of the written materials that contain information on research problem. Literature review refers to the activities involved in identifying and developing a comprehensive picture of the state of knowledge on the topic [1]. Related literature both research and non-research was explored to broaden the understanding and gain an insight into the selected problem under study. In this study the literature reviewed is presented under the following headings.

3.1 Incidence / prevalence of Bronchial Asthma

A study was conducted in Manipal to find out the Household and environment factors associated with asthma among Indian women: a multilevel approach. This study aims to find prevalence and risk factors for asthma among Indian women aged 15 to 49 based on Indian National Family Health Survey-3. The overall prevalence of asthma was 17 per 1,000 women. Overweight, obesity, exposure to alcohol, smoking, use of biomass for cooking, and low education are proven to be risk factors for asthma. The study result shows that exposure to biomass fuels were observed to have high population-attributable risk percentage (19%, 18.6%). Control of these variables may reduce major burden of asthma [2].

A field study was conducted in Chandigarh, Kanpur, and Bangalore about prevalence and risk factor for bronchial asthma in Indian adults, through a two stage stratified sampling and uniform methodology using a previously validated questionnaire. Besides demographic data, information on smoking habits, domestic cooking fuel used, atopic system, and family history of asthma was collected. Data from 73,605 respondents were analysed. One or more respiratory symptoms were present in 4.3 to 10.5%. Asthma was diagnosed in 2.28%, 1.69%, 2.05% and 3.47% respondents at Chandigarh, Delhi, Kanpur and Bangalore with overall prevalence of 2.38%. This study pointed out a high overall national burden of disease [3].

A study was conducted in USA to evaluate the asthma prevalence by urban- rural residence. The samples from 50

states all over USA were included in the study and calculated asthma prevalence estimates and generated odds ratios (ORs) for the probability of reporting asthma. The study result shows that overall asthma prevalence (7.9%; 95% CI = 7.73-8.08) was not statistically different ($p = 0.28$) by urban-rural residence. After adjusting for selected characteristics, adjacent metropolitan (OR = 0.96; 95% CI = 0.90-1.02) and remote (OR = 0.95; 95% CI = 0.85-1.05) residents were less likely and micropolitan (OR = 1.04; 95% CI = 0.93-1.16) residents were more likely to report asthma compared with metropolitan residents. The study concluded that Asthma prevalence is as high in rural as in urban areas [4].

A study was conducted in Vellore, Tamil Nadu to find out the Prevalence of bronchial asthma among bank employees by using a simple questionnaire-based data collection. One hundred and twenty bank employees were studied in the age group 25-55 years in 4 centres of Vellore town. A one-page questionnaire in English regarding asthma and allergic symptoms was used to assess the prevalence and the details of medical care utilisation by those who were asthmatics. The prevalence of self-reported bronchial asthma was 8.3% and that of asthma-related symptoms 15.8%. There was a significant association between those who had symptoms of asthma and a positive family history of asthma. Most of the asthmatic subjects using allopathic medicines reported a poor quality of life, despite treatment. The study result shows that prevalence of asthma in Vellore town is more than that reported in other studies carried out at different centers in India [5].

Kadam, A. (2014) found that Structured education programme was highly effective to improve the knowledge score and to improve the attitude score of subjects/ caregiver towards colostomy care of patient [11]. Anjum, S. (2014) conducted study to assess knowledge of contraceptives methods and appraisal of health education among married women and concluded After the health education married women knowledge was improved to 100% about female sterilization followed by condom 99%, skin implants 86%, oral pills 85% and emergency contraceptives 85%. Sociodemographic variable were significantly associated with existing knowledge and level of married women specially age at marriage, age at first child, occupation, income, education [12][13]. Babu, R. L. (2014) concluded that care takers had inadequate knowledge regarding non-curative care of terminally ill cancer patients. The planned education programme on non-curative care of terminally ill cancer patients was highly effective in improving the knowledge of care takers regarding non-curative care of terminally ill cancer patients [13].

Deshmukh M (2014) concluded that the structured education was effective on knowledge and practice of staff nurses regarding venous access device care [14]. Study findings from Bhudhagaonkar, J. (2014) reveals that structured education is effective regarding menstrual hygiene practices among adolescent girls [15].

A study conducted in Lucknow to assess the Perception of Patients about Bronchial Asthma. In all, 135 consecutive

patients of bronchial asthma attending in and outpatient services of Department of TB and Chest diseases were interviewed using a questionnaire. The mean age of patients was 27.7 ± 3.1 years. Mean duration of illness of patients was 13.4 ± 3.5 years. The ratio of urban to rural population was 2.6. Majority of patients i.e. 81(60%) belonged to middle class, 42(31.1%) patients to lower class and 12(8.9%) patients to upper class. One hundred and seven patients (79.3%) showed ignorance about the aetiology of asthma. Only 6 (4.4%) patients were aware about the various medications prescribed for asthma. As many as 52 (38.5%) patients were aware of allergy test and 39 (28.9%) about immunotherapy. None of the patients knew about peak flow meter, lung function tests as tools for monitoring of their disease. Most of the patients i.e. 98(72.6%) were from urban population, yet were ignorant about their disease. A large number of (95.6%) patients were not having any knowledge about the types of treatment for asthma. The present study reveals that an average asthmatic patient is generally ignorant about his ailment and has misconceptions [6].

A study was conducted in Egypt to assess the effect of therapeutic Guidelines for Bronchial Asthma on Adult Patients' Knowledge, Practice, Compliance, and Disease Severity. The study was carried out on a convenience sample of 60 asthmatic adults between 22 and 80 years of age. Four tools were used for data collection, an Interview form, an observation check list, a Compliance assessment form, an Asthma severity assessment scale. Two thirds (66.7%) of the patients were females and from rural areas, and more than three quarters (76.2%) were married and illiterate. Only less than one third (31%) of the patients were employed, with mostly sufficient income (59.5%). Only 14.3% of them were smokers. The duration of asthma ranged between 5 and 35 years. The study result shows that about two thirds (64.3%) of the patients' total knowledge was unsatisfactory before implementation of the guidelines. The decrease knowledge was regarding exercises, which was unsatisfactory among all the studied patients. The post guidelines phase showed a statistically significant improvement in patient's knowledge ($p < 0.001$) [7].

A study was conducted in Ranchi to assess the impact of optimal asthma education programme on asthma morbidity, inhalation technique and asthma knowledge. One hundred and seventy two patients of persistent bronchial asthma aged 12 years or more, were included in the present study. The results show that there was a significant improvement in asthma morbidity and a significant decrease in patients with moderate and severe persistent asthma. Before optimal AEP, 30 (17.4%) patients had visited the hospital thrice or more due to asthma sickness, after optimal AEP only 5 (8.6%) patients made unscheduled visits only once to hospital ($p < 0.05$). Limitation of physical activities was present in 80 (46.51%) patients before AEP which was significantly reduced to 15 (8.7%) patients after optimal AEP ($p < 0.05$). Before AEP, inhalation technique was incorrect in 140 (81.3%) patients and after AEP none of the patients had incorrect technique ($p < 0.001$). Only 24 (13.9%) patients had satisfactory knowledge of asthma before AEP and after AEP the number increased significantly to 120 (69.7%) ($p < 0.001$). This study concluded that Optimal asthma

education is an integral part of asthma management which decreases asthma related morbidity, improves inhalation technique and asthma knowledge [8].

A cross-sectional descriptive study was conducted among chronic asthma patients attending three institutes of Dhaka to assess the level of knowledge regarding inhaler use. Convenient sampling was adopted. Total 298 samples are included in the study out of the 231(78%) are males and 67(22%) are females. Data were collected using one semi-structured questionnaire through face-to-face interview. The patients were aged from 18 to 75 years with mean age being 40.68 years. The mean monthly income of the respondents found was 8278.52 taka. Mean duration of bronchial asthma was 9.44 years. Total 150(50.3%) were not having any family history of asthma. Out of the total 298 respondents 103(35.8%) possessed "excellent knowledge" on inhalers. Ninety one (31.6%) had "adequate knowledge", sixty nine (24.0%) had "poor knowledge" and thirty five (8.7%) respondents were found having "no knowledge" about inhalers. Males were seen having better knowledge than the females ($\chi^2 = 66.582$, $df = 3$, $p < 0.001$). Respondents with higher education possessed more than the respondents with lower education ($p < 0.001$) [9].

4. Methodology of Research

Methodology of research organises all the components of the study in a way that is most likely to lead to valid answers to the sub-problems that have been posed.

a) Research Approach

A descriptive survey approach was adopted to determine knowledge regarding Bronchial Asthma among Bronchial Asthma patients.

b) Research Design

A descriptive survey was adopted for the study. Surveys are carried out for the purpose of providing an accurate portrayal of a group of subjects with specific characteristics. This study intended to ascertain the knowledge of patients regarding bronchial asthma.

c) Dependent variable

In this study, the dependent variable is the knowledge regarding bronchial asthma.

d) Extraneous variable

In this study, the extraneous variables are age of the patient, gender, educational status, and duration of illness.

e) Setting of the study

The setting is where the population or the portion of that is being studied is located and where the study is carried out.

f) Population

The target population is the total elements about whom the investigator is interested and to whom the results could reasonably be generalised.

g) Sample

The sample for this study composed of 50 Bronchial Asthma patients in the age group of 21 to 60 years and above.

h) Sampling technique

Purposive sampling technique was used to select the sample.

- **Inclusion criteria for sampling**

The samples were selected with the following predetermined criteria:

- **Exclusion criteria for sampling**

Asthmatic patients who are not willing to participate in the study

Tool**Section 1: Baseline proforma**

It consisted of 10 items namely, age, gender, religion, education, occupation, family income, marital status, area of residence, duration of illness and family history of asthma

Section 2: Structured knowledge questionnaire

Structured knowledge questionnaire consisted of 25 items covering 9 aspects on bronchial asthma. The areas included were definition, risk factors, signs and symptoms diagnostic measures, management, control of triggering factors, medication, use of inhalation devices and home management. The items were of multiple-choice type with one correct answer. Each correct response carried a weightage of one score. Thus the maximum score was 25 and the minimum score was zero.

Plan for data analysis

The data obtained in this study was entered into a master data sheet prepared by the investigator to analyse the data. The data would be analysed based on the objectives and hypothesis using descriptive and inferential statistics.

5. Major findings of the study**Section-I: Sample Characteristics**

Less than half (36%) of the subjects belonged to the age of 21-30 years. Similar findings regarding the age group ranging between 21-30 years reported a higher prevalence of bronchial asthma in a study conducted in Lucknow. This indicates that people of 21-30 years have shown higher prevalence in bronchial asthma[6].

Majority 52% of samples were males. This finding is supported by the findings of the study conducted in Dhaka which indicates that bronchial asthma is more prevalent among men (78%)[9]. Less than half (32%) of the subjects were unemployed. This finding can be supported by the findings of the study conducted in Egypt which showed that most of the subjects are unemployed (69%) and illiterate. 18 Majority (56%) of the subjects are living in rural area. This finding can be supported by findings of the studies conducted in Egypt to assess the effect of therapeutic Guidelines for Bronchial Asthma on Adult Patients' Knowledge, Practice, Compliance, and Disease Severity which showed that most of the bronchial asthma patients are from the rural area (66.7%)[7]. Majority (52%) of the subjects were not having the family history of asthma. This finding can be supported by findings of the study conducted

in Dhaka which

showed that most of the samples (50.3%) had no family history of asthma[7].

Section II: Knowledge Level Regarding Bronchial Asthma

The study result shows that 38% of the sample had poor knowledge regarding bronchial asthma and 56% had average knowledge and 6% had good knowledge regarding bronchial asthma. This findings can be supported by findings of the study conducted in Lucknow which showed that majority of the subjects (95.6%) were not having any knowledge about bronchial asthma. This indicates the need to develop an information booklet which is an accepted strategy for increasing the knowledge of the patient[6]. The study result shows that there was no significant association between the pre-test knowledge score of patients' and age, education, and duration of illness

6. Conclusion

The burden of Asthma in developing countries such as India is of significant magnitude to warrant its recognition as a priority in government health strategies. Particular resources need to be provided to improve the care of disadvantaged groups with high morbidity, including certain racial groups and those who are poorly educated, who are poor and live in large cities. The main purpose of this study was to assess the knowledge of patients with bronchial asthma on management and its prevention. In most of the patients asthma mainly occurs due to allergic reaction. Prompt education on asthma and its management will help them to prevent and manage further occurrence.

6.1 Implications of the study

Bronchial asthma has reached epidemic proportions worldwide as we enter the new millennium. Along with rising economy diseases of affluence are growing. More studies are needed to bring out an effective preventive intervention. The findings of the present study may be helpful for such future studies. In this context the findings of the study has valuable implications towards nursing education, administration and research.

6.2 Nursing education

The healthcare delivery system at present is giving more emphasis on the preventive rather than the curative aspect. The nursing curriculum should incorporate activities like preparation of booklets, handouts, pamphlets, and self-teaching materials for the patients to carry home for further reference. The curriculum should give importance to health education. In-service education should be conducted to improve the knowledge and skill of healthcare professionals. Nursing students should be prepared and motivated to conduct health teaching programmes.

The study also implies that health personnel have to be properly trained on how to prepare information booklets to teach the public regarding bronchial asthma. Nursing

students should be trained to acquire knowledge and ability in assessing the learning needs of the patients with bronchial asthma and to plan out teaching programmes based on hospital and in the community setting. The information booklet developed can be used for educating nursing students and health workers to equip them with necessary knowledge and to educate the community regarding Bronchial Asthma.

The nursing students should be made aware of their responsibility in the prevention of bronchial asthma. They should arrange for health teaching programmes on different topics and make people participate in the programme through role plays and puppet shows. Institute of Nursing Education can conduct health camps, research, and teaching on prevention of bronchial asthma. Today nursing curriculum, although includes a course in communication skill, yet it needs to lay further emphasis on information as a process. The traditional system of nursing education considers nursing as giving care and not to make the patient or family members participate. Therefore a need is felt for changing the knowledge and attitude of nursing towards helping patients and become partners in their health care.

6.3 Nursing practice

Learning is an active goal directed process transforming knowledge skills and values into new behaviour. Nurses should carefully assess the learners, set the teaching environment, develop good rapport and communication, skilfully deliver the content, and maintain appropriate documentation. Such educational techniques will help the patients to gain knowledge regarding bronchial asthma. Nurses can work as a school health nurse so communication between the teachers and nurses will increase that will help to reduce the incidence of asthma among school children²³. Nurses have a major role in the preventive aspect than the curative aspect

6.4 Nursing administration

The findings of the study could be made use of by health personnel holding administrative position to formulate policies and make necessary changes in educative and healthcare delivery systems. Nursing administrators should make arrangement for providing educational programme to the patients, relatives and caregivers during their stay in the hospital and also during follow-up. They should provide sufficient money, manpower, materials, methods and time to conduct educational programmes. Nurse administrators should conduct in-service education for the staff and students to keep them abreast with all aspects of asthma.

More awareness programmes could be organised and information could be disseminated through media, newspapers, magazines, television and the Internet. Adequate administrative support may be provided to conduct such activities. Periodic surveys should be conducted to find out the prevalence or severity of asthma and causative factors.

6.5 Nursing research

The ultimate goal of any profession is to provide its clients with maximum, effective, and efficient services. A profession seeking to improve the practice of its members and to enhance its professional stature strives for the continual development of a relevant body of knowledge. The present study throws light on patients knowledge on bronchial asthma. Nurses need to engage in multidisciplinary research so that it will help to improve the knowledge and by applying it, health problems can be solved.

Extensive nursing research in exploring the knowledge level on bronchial asthma is needed, so that mortality and morbidity could be reduced. The need of the patients with asthma have to be explored to prepare effective teaching methods thereby contributing to effective and quality nursing care.

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Author Profile



Swati Kambli is Working as Principal, Dr D Y Patil Deemed University; S College of Nursing Nerul, Mumbai, Maharashtra, India

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