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# Assess the Knowledge Regarding Breathing Exercise Among Children with Asthma at Saveetha Medical College and Hospital

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## ABSTRACT

Asthma is a chronic inflammatory disorder of the airways. In susceptible children, inflammation causes recurrent episodes of wheezing, breathlessness, chest tightness, and cough, especially at night or in the early morning. The Objectives of the study are to assess the knowledge of children regarding breathing exercise and to find out the association between knowledge of children with asthma and with selected demographic variables. Quantitative approach descriptive design was adopted for the present study. 60 children with Bronchial Asthma who met the inclusion criteria were selected by convenient sampling technique .The study was conducted in Saveetha Medical College & Hospital .The data was collected using semi structured questionnaire and knowledge questionnaire to assess the knowledge on breathing exercise among children with asthma. This study results reveals that among 60 samples 10 (16.6%) had adequate knowledge and 16 (26.7%) had moderate knowledge and 34 (56.7%) had inadequate knowledge. The study reveals that majority of the study participant's respondents had inadequate knowledge about breathing exercise; very few participants have adequate knowledge .Still extensive efforts of the health personnel's are essential to teach the children about breathing exercises to prevent breathing difficulties .

**KEYWORDS:** Knowledge, Breathing exercise, Asthma.

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## INTRODUCTION

Bronchial Asthma (BA) is a chronic inflammatory disease of the airways that can cause difficulty in breathing, recurrent wheezing, recurrent cough and chest tightness at rest. It can leads to mild, moderate and severe which affects the quality of life. In susceptible children, inflammation causes recurrent episodes of wheezing, breathlessness, chest tightness, and cough, especially at night or in the early morning. These asthma episodes are associated with airflow limitation or obstruction that is reversible either spontaneously or with spontaneously or with treatment. The inflammation also causes an increase in bronchial hyper responsiveness to a variety of stimuli (National Asthma Education and Prevention Program,2007).Recognition of the importance of inflammation has made the use of anti-inflammatory agents, especially inhaled steroids, a key component in the treatment of asthma[1].

Asthma is classified into four categories based on the symptom indicators of disease severity. These categories are intermittent, mild persistent, moderate persistent, and severe persistent. The intermittent category has the least number of symptoms; symptoms increase in frequency or intensity until the last category of stepwise approach to the Pharmacologic management, environmental control, and educational interventions needed for each category. A new component of the asthma severity classification system includes the domains of impairment and risk for each category: these categories emphasize the multifaceted aspect of the disease for consideration of effects on present quality of life and functional capacity and the future risk of adverse events[1].

According to the World Health Organization's global health estimates, the total number of deaths in 2011 was recorded to be 54,591,414, and noncommunicable diseases contributed to 66% of the total deaths. The severity of asthma is visible through its contribution toward 3, 74,678 deaths in 2011. Asthma, being a most common chronic disease, accounts for about 300 million individuals out of the total world population. Asthma prevalence in children is increasing worldwide. Asthma prevalence, morbidity, and mortality are increase in the United States, especially among African-Americans. These increase may result from worsening air pollution, poor access to medical care, or under diagnosis and undertreatment.Asthma is the most common chronic disease of childhood, the primary cause of school absences, and the third leading cause of hospitalizations in children under the age of 15.Although the onset of asthma may occur at any age, 80% and 90% of children have their first symptoms before 4 or 5 years of age. Boys are affected more frequently than girls until adolescence, when the trend reverse[2].

The clinical manifestations of asthma are coughing (hacking, paroxysmal, irritative, and nonproductive) become rattling and productive of frothy, clear, gelatinous sputum. Respiratory

related signs are shortness of breath, prolonged expiratory phase, audible wheeze, lips deep dark red color, may progress to cyanosis of nail beds or circumoral cyanosis[2].

Pharmacologic therapy is used to prevent and control asthma symptoms, reduce the frequency and severity of asthma exacerbation, and reverse airflow obstruction. A stepwise approach is recommended based on the severity of the child`s asthma. Because inflammation is considered an early persistent feature of asthma, therapy is directed toward long-term suppression of inflammation. Asthma medications are categorized into two general classes: long-term control medications (preventive medications) to achieve and maintain control of inflammation, and quick-relief medications (rescue medications) to treat symptoms and exacerbations[3].

Breathing exercises and physical training help produce physical and mental relaxation, improve posture, strengthen respiratory musculature, and develop more efficient patterns of breathing. For motivated children, breathing exercise and controlled breathing are of value in preventing over inflation and improving efficiency of the cough. However, these exercises are not recommended during acute, uncomplicated exacerbation of asthma[4].

In India, an estimated that 57,000 deaths were attributed to Asthma in 2004 (WHO 2004) and it was seen as one of the leading cause of morbidity and mortality in rural India(Smith 2000).Though effective screening, evaluation, and management strategies for asthma are well established in high-income countries, these strategies have not been fully implemented in India as evidence had previously suggested that Asthma is not to be treated independently but fitted into the general spectrum of respiratory diseases. Furthermore, even though medicines that treat asthma effectively are available at affordable costs, they rarely more than one percent of those who would benefit from it[5].

The total estimated burden of asthma in India at an overall prevalence of 3%, Asthma and bronchitis takes major roll in India. It has recorded to be highest in Karnataka and lowest in Punjab. The risk factors for asthma include tobacco, smoking (active and passive) in and outdoor pollution, urbanization, obesity, extreme emotional expression, family history, genetic factors and prenatal influences. The estimated annual cost of treating a child with asthma is higher than the cost per adult with asthma[6].

A study was conducted to assess time trends and the overall prevalence rate of bronchial asthma among Indian children. The study results revealed that the mean prevalence was $7.24^{+}\_SD$ 5.42. The median prevalence was 4.75%. Overall weighted mean prevalence was found to be 2.74. Childhood asthma among children 6-14 years of age was high. The study concluded that the burden of bronchial asthma in Indian children is higher than was previously understood[7].

Pulmonary rehabilitation is effective to improve the respiratory status and reduces the episodes of asthma attacks. Buteyko breathing is based on the idea that asthma and other diseases are caused by breathing that is too fast or too deep (called over breathing or hyperventilation).Some people think that over breathing can mean too little carbon dioxide in blood, which causes problems throughout body. The theory is that little carbon dioxide for a long time disrupts the balance of chemicals in the body. Dr Buteyko thought this could stop a child`s immune system working properly, and cause it to overact to allergens, such as per fur[8].

A clinical trial was conducted to examine whether the Buteyko breathing technique is an effective therapy. Those who practice Buteyko breathing reduced hyper ventilation and their use of $B_2$ agonists. A trend reduced inhaled steroid use and better quality of life was observed[9].

One school of thought says that usefulness of breathing technique in asthmatics is limited and should be further investigated. Though medications are used to control the symptoms of bronchial asthma but it will not give permanent cure. Performing the breathing exercise reduces the frequent asthma attacks and improves relaxation and pulmonary function[10]. So, the researcher found it is relevant to improve the knowledge regarding breathing exercise among children with asthma.

## OBJECTIVES

1. To assess the knowledge of children regarding breathing exercise.
2. To find out the association between knowledge of children with asthma and with selected demographic variables.

## METHODOLOGY

Quantitative approach descriptive design was adopted for the present study. The study was conducted among children`s attending the OPD in Saveetha Medical College & Hospital. 60 children with Bronchial Asthma who met the inclusion criteria were selected by convenient sampling technique. The inclusion criteria for the study are Children`s with asthma, children who are available during the time of study and those who are willing to participate in the study. The data was collected using semi structured questionnaire and knowledge questionnaire to assess the knowledge on breathing exercise among children with asthma. The data were analyzed by using descriptive statistics. The project has been approved by the ethical committee of the institution. Informed consent was obtained from the participants before initiating the study.

## RESULTS

This present study results reveals that among 60 samples 22 (36.6%) belong to the age group of 13-15 years , 44 (73.3%) were male , 30 (30%) had both primary and secondary school

education , 34 (56.6%) reside in urban area , 44 (73.3%) were under treatment for asthma , 20 (33.3%) had equal percentage of duration of asthma for 1-3 years and 4-6 years .

**Table 1: Frequency and percentage distribution of knowledge of breathing exercise among children with asthma.**

| Knowledge on breathing exercise among children with asthma | Adequate | | Moderate | | Inadequate | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| | 10 | 16.6% | 16 | 26.7% | 34 | 56.7% |

This present study results reveals that among 60 samples 10 (16.6%) had adequate knowledge and 16 (26.7%) had moderate knowledge and 34 (56.7%) had inadequate knowledge.

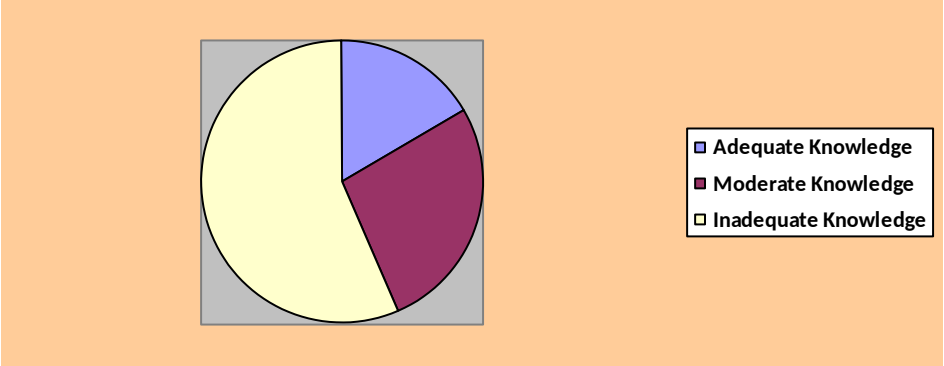


**Figure 1 Frequency and percentage distribution of knowledge of breathing exercise among children with asthma.**

## DISCUSSION

This present study results reveals that among 60 samples 22 (36.6%) belong to the age group of 13-15 years , 44 (73.3%) were male , 30 (30%) had both primary and secondary school education , 34 (56.6%) reside in urban area , 44 (73.3%) were under treatment for asthma , 20 (33.3%) had equal percentage of duration of asthma for 1-3 years and 4-6 years .

This present study results reveals that among 60 samples 10 (16.6%) had adequate knowledge and 16 (26.7%) had moderate knowledge and 34 (56.7%) had inadequate knowledge.

The present study is supported by **Anita Kotwani, Chhabra, VandanaTayal, Vijayan (2012)** conducted a study to investigate the quality of asthma management, knowledge about asthma and quality of life of asthma patients referred to a public tertiary care chest hospital in Delhi. Diagnosis of the patients was confirmed by symptoms and 40 reversible spirometry, administered AQLQ, asthma knowledge questionnaire in 50 referred patients on their first visit. The findings revealed that 60 % of them were informed about their disease, 10 % had undergone lung function tests previously. Only 44 % of them were prescribed preventive inhalers. None were provided with any educational material. Patients had poor knowledge of etiology, Pathophysiology, medication, and how to assess the severity of their asthma. The mean score of AQLQ indicated a moderate

degree of impairment in quality of life. Hence the study concluded that suitable interventions have to be implemented to improve asthma management according to the standard treatment guidelines in the community[11].

## CONCLUSION

The study reveals that majority of the study participant's respondents had inadequate knowledge about breathing exercise; very few participants have adequate knowledge .Still extensive efforts of the health personnel's are essential to teach the children about breathing exercises to prevent breathing difficulties .

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## AUTHORS CONTRIBUTION

All the authors actively participated in the work of the study. All authors read and approved the final manuscript.

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