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Prevalence of childhood asthma among school children at Kakatur Village at Nellore, Andhra Pradesh

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Abstract

Background: Asthma is a chronic inflammatory disorder of the airway. Susceptible children, inflammation causes recurrent episode of wheezing, breathlessness chest lightness and cough especially at night or in the early morning. The asthma episodes are associated with air flow limitation or obstruction that is reversible either spontaneously or with treatment.

Aim: The aim of the study was to assess the prevalence of asthma among school children in selected schools.

Objectives: To assess the prevalence of childhood asthma among school children. 2. To find association between the prevalence of childhood asthma and socio demographic variables of school children.

Methodology: 60 school children aged 6-15 years were selected by using Non-probability convenience sampling technique method from Kakatur Village, Nellore District.

Results: Regarding the prevalence of asthma among school children, 42(70%) had no asthma, 6(10%) had intermittent asthma, 8(13.33%) had mild persistent asthma, 2(3.33%) had moderate persistent asthma and 2(3.33%) had severe persistent asthma.

Keywords: Prevalence, childhood asthma, school children

Introduction

“For breath is life and if you breath well you will live long on earth”- Sanskrit proverb.

Asthma is a chronic inflammatory disorder of the airway. Susceptible children, inflammation causes recurrent episode of wheezing, breathlessness chest lightness and cough especially at night or in the early morning. The asthma episodes are associated with air flow limitation or obstruction that is reversible either spontaneously or with treatment. The inflammation also causes an increase in bronchial hyper responsiveness to a variety of stimuli. The inflammation associated with airway hyper responsiveness that leads to recurrent episodes of fatigue, rapid breathing coughing or wheezing, breathlessness and chest tightness this episodes are usually associated with wide spread but variable air flow obstruction with in the lungs^[1].

Although asthma is a common disease, it is not always recognized that asthma has become the most common chronic disease of childhood symptoms of wheezing coughing and / or shortness of breath are indeed common among infants and children. While these symptoms when caused by asthma, usually respond well to appropriate medications the exact diagnosis is not always obvious early in the evaluation of such patient^[2].

Diagnostic errors occur because the differential diagnosis of wheezing and related symptoms is very large for pediatric patient. In fact, asthma mimicking symptoms are caused by more than 50 different childhood disease. Therefore before setting on an asthma diagnosis a prudent physician should define all triggers and categorize the type of asthma. While ruling out other diagnostic considerations and co-morbidities^[3].

Asthma is caused by combination of environmental and genetic interaction. Many environmental factors associated with asthma development and exacerbation including allergens, air pollution and other environmental chemicals, smoking, high ozone level and traffic pollutions associated with both asthma development and increased asthma severity^[4]. Allergic asthma, exercise-induced asthma, cough-variant asthma, occupational asthma (work related asthma) Nocturnal asthma (Night time asthma). Health conditions that mimic asthma. There are many risk factors for developing childhood asthma.

This include nasal allergies (high fever) or eczema (allergic skin rash). A family history of asthma or allergies. Frequent respiratory infections low birth weight exposure to tobacco smoke before or after birth^[5].

Childhood asthma is a common chronic disease among children in United States. Debilitating effects of this conditions are well documented and place a huge burden of millions of children's and their family especially in minority and medical underserved community. Although asthma is a manageable disease, actual management falls for short of recommended care for many children, leading to potentially complex and expensive intervention. Asthma continuous to pose to challenge to public health care providers and researches and majority of children with asthma still suffer from exacerbation of symptoms^[6].

Need for the study

WHO (2018) reported that about 1 in 10 children (10%) had asthma. In 2010 studies states that 3 out of 5 children who have asthma, had 1 or more asthma attacks in the previous 12 month. For the period 20178 to 2018 asthma prevalence was higher among school children. World Health Survey reports that from 2011 through 2018, the greatest rise in asthma rates was among black children, almost a 50% increase. The result revealed that Global Initiatives on asthma (GINA), estimated in Philadelphia more than half (53%) of people with asthma had an attack in 2008. More children (57%) had an attack. 185 children died from asthma in 2007. Asthma was linked to 3,447 deaths in 2017^[7].

A study was performed to assess the prevalence of asthma among school children. A total of 85,582 samples were taken from Japan. The survey questionnaire method was used for the study. The result showed that the mean prevalence of wheeze was highest in the poorest countries (13.3%) followed closely by that in the richest countries (13%). The mean prevalence of diagnosed asthma was highest in the richest countries (9.4%) followed closely by the poorest countries (8.2%). The middle income countries had the lowest prevalence in each case (wheeze 7.6% asthma 5.2%). In each case, these average disguise a wide variation between countries^[8].

A prevalence study was performed to assess the prevalence of asthma and wheeze and factors associated with it in children aged 6-7 and 13-14 years. Recent report shows wide variation (4-19%) in the prevalence of asthma in school environmental factors including increase exposure to pollution allergies environmental tobacco smoke and sedentary life style have been identified as risk factor for asthma there was a low prevalence of asthma (2.3%-3.3%) in the children surveyed in North India. A higher prevalence of wheeze was reported as compared to asthma among school children from both age categories. Reported prevalence of asthma in rural children from Ludhiana and Punjab was 2.6% and 1% respectively^[9].

Statement of the problem

A study to assess the prevalence of childhood asthma among school children at Kakatur Village at Nellore, A.P.

Objectives

1. To assess the prevalence of childhood asthma among school children.

2. To find association between the prevalence of childhood asthma and socio demographic variables of school children.

Delimitations

- Children studying in selected schools at Kakatur Village, Nellore.
- Sample size was 60 school children.

Methodology

Research approach

A quantitative approach was adopted to determine the research study.

Research design

The present study was conducted by using descriptive research design

Setting of the study

The study was conducted at selected schools at Kakatur Village, Nellore.

Target Population

The target population for the present study was school children.

Accessible population

The accessible population for the present study was school children aged 6-15 years and who fulfilled the inclusion criteria.

Sample size

The samples consists of 60 school children.

Sampling technique

Non-probability convenience sampling technique was adapted for the study.

Criteria for sampling selection

Inclusion criteria

- School children aged 6-15 yrs.
- Children who are present in school at the time of data collection
- Children of both male and female.

Exclusion criteria

- Children with chronic illness.
- Children who are not available in the school at the time of data collection
- Mothers of children who are not willing to participate in the study.

Description of the tool

Part-I: Socio demographic variables. It includes age, sex, income, religion, birth history, immunization status, breast feeding, history of nutritional disorders, body build, history of allergy and exposure to passive smoking.

Part-II: Semi structured questionnaire to assess the history of asthma.

Part-III: Observational checklist to assess the severity of asthma symptoms.

Data Analysis and discussion

Table 1: Frequency distribution of prevalence of asthma among school children. (N=60)

S. No	Severity of Asthma	Frequency (F)	Percentage (%)
1.	No Asthma	42	70
	Intermittent Asthma	6	10
2.	Mild persistent Asthma	8	13.33
3.	Moderate persistent Asthma	2	3.33
4.	Severe persistent Asthma	2	3.33
	Total	60	100

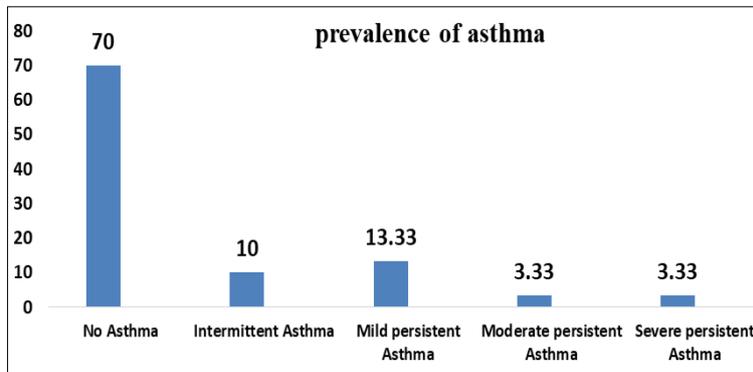


Fig 1: Frequency distribution of prevalence of asthma among school children.

Table 2: Mean and standard deviation of prevalence of asthma among school children. (N=60)

Prevalence of asthma	Mean	SD
School children	6.21	4.114

Major Findings of the Study

- Regarding the prevalence of asthma among school children, 42(70%) had no asthma, 6(10%) had intermittent asthma, 8(13.33%) had mild persistent asthma, 2 (3.33%) had moderate persistent asthma and 2(3.33%) had severe persistent asthma.
- The mean prevalence rate of asthma among school children was 6.21 and standard deviation was 4.114.
- Regarding association with demographic variables, age, sex, dietary pattern, nutritional disorder, history of allergy and history of exposure to passive smoking had significant association with prevalence rate at $P < 0.05$ level.

Conclusion

The study concluded that most of the children 42(70%) of them had no asthma and 18(30%) had various form of asthma.

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