



Original Research Article

Assessment of bronchial asthma among school children of urban area of Gujarat: A cross-sectional study

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ABSTRACT

Aim: Current research was performed to evaluate the prevalence and allied aspects of bronchial asthma amongst school children of urban region of Gujarat.

Methodology: Current research performed in the urban region of Gujarat, India. Least sample size was established to be 200 patients. A pretested and authenticated questionnaire was intended on the position of the International Study on Allergy and Asthma in childhood questionnaire.

Results: Out of 200 children, 32 had account of wheeze several time in the past. Nine out of 200 children had wheezing history in the past one year. Wheezing was significantly connected with allergic rhinitis, relatives, and maternal history of asthma.

Conclusions : Asthma amongst school children is a community health dilemma in urban area of Gujarat. Interference on revelation to passive smoking and stipulation of smoke passages may assist in the decrease of trouble of illness at the population level.

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1. Introduction

Bronchial asthma is significant health subject, particularly in developing countries like India. It is a chronic respiratory disease, describes by events of weaken breathing, distressing up to 10% of adults and 30% of children.^{1,2} Symptoms are due to inflammation of diminutive airways and might comprise bronchial hyper responsiveness, recurring events of wheezing, shortness of breath, chest tension and coughing, mainly at nighttime or early daybreak. The changeable airflow obstacle is frequently reversible, each impulsively or by management with bronchodilators or corticosteroids.^{3,4}

Distant from the foremost reason of hospitalization for children, it is mainly significant chronic circumstances causing simple school absence. It has too augmented the amount of avoidable hospital emergency appointments and

access.^{5–7}

It is expected that 14% of children in the globe perform asthma symptoms.⁸ The occurrence has been seen additional in urban than in rural areas.⁹ When isolate by gender and age, asthma is observed extra in boys in the age group of 12–14 years and additional in girls in the age group of 14–16 years.^{10,11}

It is frequently under diagnosed throughout the childhood, which may guide to strict psychosocial instability in the kin.¹² Spirometer can be utilized to analyze asthma, but its outcome are frequently regular, and too it is tricky to execute spirometer in small children.

There is scarcity of data on the epidemiology of asthma in Urban India. Involvement of every risk factor may differ in dissimilar settings and considerate the peril reason connected with asthma such as family history, kind of fuel utilized, indoor air pollution, smoking amongst family members, and others will assist in accepting suitable precautionary approaches. Present research was performed to evaluate the prevalence and linked aspects of bronchial

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asthma amid school children of urban area of Gujarat.

2. Material and Methods

Current research performed in the Department of Tuberculosis and Respiratory Medicine, GMERS Medical College, Dharpur, Patan, India for the duration of one year. Ethical approval was taken from the institutional ethical committee and written informed consent was taken from all the participants. Lowest sample size was established to be 200 patients based on 22% prevalence rate, precision of 25%, and non-response rate of 10%.

2.1. Inclusion criteria

Every child in the age group of 6–14 years existed in the recognized environmental region were incorporated in the study.

2.2. Exclusion criteria

Children having lung disease such as tuberculosis or any preventive lung diseases and children having congenital heart diseases.

Aforementioned written consent was acquired from the principals of schools to let the students to contribute in the research. A pretested and validated questionnaire was deliberate on the appearance of the International Study on Allergy and Asthma in childhood.¹³ It was then transformed to the local language and decoded reverse into English to make certain reliability and validity. A pilot test was carry out prior to beginning the research to deem the probability of management of the questionnaire and there fore's light alterations were conceded out. Following acquiring the informed consent, the elected respondent was interviewed as per the questionnaire. A semi-structured preform include information about age and linked factors that comprise family history of asthma, type of fuel used, number of windows in sleeping room, smoking among family members, and smoke opening were collected.

2.3. Statistical analysis

The recorded data was compiled and entered in a spreadsheet computer program (Microsoft Excel 2007) and then exported to data editor page of SPSS version 15 (SPSS Inc., Chicago, Illinois, USA). For all tests, confidence level and level of significance were set at 95% and 5% respectively.

3. Results

As per to the modified Kuppaswamy scale, among 200 study participants, 20% belonged to the upper class, 37.5% fit to middle class and the residual 42.5% fit to the lower class. Thirty two children had a history of wheeze anytime in the precedent. Nine children out of 200 had a history

of wheezing in the past 1 year [Table 2]. Wheezing was significantly linked with allergic rhinitis, family, and maternal history of asthma. Even though supplementary factors such as family history of asthma, other allergies, paternal asthma, and atopic dermatitis amplify the danger of wheezing, it was not statistically significant.

Table 1: Age and sex distribution of the participants

Age group (years)	Male	Female
6-9 (79)	42 (53.1)	37 (46.83)
10-14 (121)	60 (49.58)	61 (50.41)
Total (200)	102 (51)	87 (49)

Table 2: Percentage of male/female population having wheeze at any time and in the past one year

Age group	Wheeze at any time		Wheeze in the past year	
6-9 (79)	8 (10.1)	4 (5.06)	5 (6.3)	2 (2.53)
10-14 (121)	9 (7.43)	11 (9.09)	4 (3.3)	5 (4.13)
Total (200)	17 (8.5)	15 (7.5)	9 (4.5)	7 (3.5)

4. Discussion

Bronchial asthma amongst children is significant health's subject for the related the system in developing countries like India. Urban and male preponderance was pragmatic with extensive interregional difference.¹⁴ Current researches in India demonstrated diverse occurrence rates in diverse age groups and positions ranging from 0.9% to 15.7%.^{15–22}

In the current research, male: female ratio was established to be 1.02. Almost 50% were in the age group of 10–14 years. From the past few years, available data offers a improved indulgent of the etiology of childhood asthma, humanizing the significance of socio-demographic and environmental determinants in disease expansion.²³ The abridged probability of diagnosing asthma in girls could be somewhat clarify by the previous beginning of symptoms and a longer the past of wheeze in boys, which gives them additional time to be recognized as asthmatics.²⁴ Newly, sex-specific tendency exposed an augmented prevalence amongst females grounds a allocation towards the equalization, though male predominance persevere in diagnosed asthma.²⁵

In the present research, greater part of the children were from middle and lower socioeconomic class as per modified Kuppaswamy classification which is comparable to the research done by Jain et al.,²⁶ Upper socioeconomic status was established to be an important peril issue for asthma by Prasad et al.,²⁷ Children residing in urban areas accounts current wheeze additional repeatedly than rural children.

A research performed in Shimla city amid school children aged 6-13 years demonstrated the occurrence as

2.3%.²¹ Findings from rural areas also demonstrate diverse occurrence rates. A current research from rural Pondicherry demonstrated the prevalence as 8.6%, which is superior than that originate in the current study.²⁸

In the present research prevalence is significantly additional amid those with a family history of bronchial asthma comparable to various findings.^{25,26} Indoor air pollution owing to biomass or solid fuel burning is significant risk factor in the Indian setting²⁹ findings of the present research had revealed that the amount of cases was considerably fewer amongst those who exist in houses with smoke passages. Disclosure to submissive tobacco smoke was revealed to be significant risk factor in the present research, comparable to that in various researches.^{20–22} These results were in accordance with present research.²⁹

5. Conclusions

Asthma amid school children is a public health dilemma in urban area of Gujarat. Present research offers precious data on the scale of the difficulty and various risk factors. Additional data is necessary to discover the risk factors of bronchial asthma amid children in diverse geological areas.

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