

ASTHMA CORRELATES AMONG ADOLESCENCE IN COUNTRY: AN ORIGINAL RESEARCH

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ABSTRACT

Aim: Purpose of our research is to establish the increased incidence of asthma with adolescent age group

Methodology: A cross-sectional, school-based study carried out amongst 1200 children. In our study, we took into consideration about various demographic patterns like lifestyle patterns, health issues, as well a comparison between asthmatics and non- asthmatics. Comparison between the two groups was done by analysing data using Statistical Analysis Software 25.0.

Results: Among a final sample of 1198 participants, the prevalence of self-reported asthma was found to be 8.2%. Various characteristics were found significantly different between the 2 groups including the gender, the weight and dietary patterns. Self –reported asthmatic were more likely to be males, overweight or obese.

Conclusion: Asthma disease remains prevalent among adolescents and requires higher awareness and better guidance for its prevention and treatment. Further efforts should focus on health promotion and as well as improved quality of life so as to prevent this chronic disease.

Keywords Asthma, Comorbidities, Lifestyle, Adolescents.

INTRODUCTION

The incidence and prevalence of asthma are increasing worldwide making it a global health concern.¹ The International Study of Asthma and Allergy in Childhood (ISAAC) reported

major geographic variations in the prevalence of asthma in more than 50 countries.² Both environmental and genetic factors are thought to influence the prevalence and severity of asthma. Environmental factors may include viral infections,^{3,4} allergen sensitization,⁵ air pollution,^{6,7} and inner-city habitat.⁸ As to genetic factors, similar to hypertension and diabetes mellitus, the inheritance pattern of asthma is complex and can't be characterized by one gene. Moreover, varying disease-modifying genes have been linked to asthma in different populations and geographic zones.⁹⁻¹¹ Asthma may be a chronic disease that affects the airways of the lungs. It is characterized by a hyperresponsiveness of the intrapulmonary airways and a variable resistance to airflow that could be reversible spontaneously or in response to treatment.¹² The World Health Organization estimates that 235 million people worldwide of all ages suffer from asthma.¹³ With the modernization of the lifestyles and consequent urbanization, this prevalence remains on an increase.¹⁴ According to the National Institute of Health, the prevalence and severity of asthma is well associated with gender differences, with asthma being more common among males during childhood.¹⁵ Besides its increasing prevalence, asthma has been linked to many health and lifestyle correlates, including the increasing technology and social media use by adolescents; asthmatic children are found to use technology and spend more time on social media than non-asthmatics.¹⁶ Asthma is among the highest twenty chronic conditions for global ranking of disability-adjusted life years in children; within the mid-childhood ages 5–14 years it's among the highest 10 causes. The burden of asthma on patients, family, and society is inexplicably high in low-income and middle-income countries, where access to adequate treatment isn't available. Although there's a worldwide downward trend of asthma mortality in adults and youngsters over the past 25 years, a good global disparity remains in years of life lost because of asthma.¹⁷ In a recent meta-analysis, many higher comorbid conditions were found to be associated with asthma, such as cardiovascular disease,^{18,19} hypertension,²⁰ diabetes,²¹ allergies,²² obesity,²³ metabolic and endocrine conditions,²⁴ gastro-esophageal reflux disease²⁵ and urinary tract conditions.²⁴ Not sparing psychological aspects, adolescents with asthma are more likely to have depression and reduced quality of life, and are at increased risk of suffering from behavioural and psychological problems including school and cyber bullying.²⁶ Asthma has been severely affected by modernization as well as change in dietary habits as well. It has been seen that fast food, soda consumption, sedentary pattern of lifestyle and less amount of physical activity, increases the prevalence of chronic diseases like asthma.^{27,28} At another level, school performance is well associated and affected by asthma. Several studies have shown existence of significant school issues in asthmatic children,²⁹ and this has been partly credited to abnormal sleep patterns due to nocturnal asthma and night time awakening in affected children.³⁰

AIM OF THE STUDY

Purpose of our research is to establish the increased incidence of asthma within adolescent age group population based on their lifestyle.

METHODOLOGY

A school-based, cross-sectional study was conducted amongst 1200 children, aiming to identify health risk behaviours and status among adolescents. study measured adolescents' health dangers, clinical anthropometric evaluations, and laboratory investigations utilizing

data from self-administrated questionnaires. Intended for the present study, inclusion criteria were: (1) subjects aged amongst 10 and 18 years (2) accessible information if the individual participant were asthmatic or not. Presence of asthma was supported adolescents' self-report of whether or not that they had a diagnosis of asthma. The study was mainly based on (1) demographic features like age, gender and family and economical status; (2) health variables including comorbidities and BMIs, (3) dietary habits such as number of meals and different food intake (4) activities including physical activity and technology use. Participants were divided in 2 groups supported presence or absence of asthma. Data were analysed and adjusted using SPSS 25.0. For categorical variables, we measured frequencies and percentages, as for continuous variables, we took into consideration means and standard deviations. Asthmatic and non-asthmatic patients' alterations were perceived using the chi-square test. Results were reported as odds ratio (OR), and 95% confidence interval (CI). A p-value < 0.05 indicated that the results was significant statistically.

RESULTS

In our study, 1198 participants, with a occurrence of self-reported asthma reaching 8.2% (95% CI: 7.7–8.8%). Fifty one percent of the participants were males, and 28.4% between the age group of 10 and 14 years. Regarding gender, self –reported asthmatics were significantly more likely to be males as compared to non-asthmatics (65.3% vs. 49.9%, $p < 0.001$). The majority of scholars consumed a daily number of main meals and snacks and ordered nutriment with no difference between self-reported asthmatics and non-asthmatics. asthmatics intake of soft drinks (63.0% vs 58.7%, $p = 0.01$) and power drinks (26.4% vs 20.9%, $p < 0.001$) was higher and more frequent than non-asthmatics. Also, non-asthmatics consumed less milk as compared to self-reported asthmatics (55.3% vs 50.6% did not consume any milk, respectively, $p = 0.02$). As for BMI, asthmatics tended to be more overweight or obese (OR 1.33; 95% CI, 1.09 to 1.63, $p = 0.005$ and OR 1.78; 95% CI, 1.50 to 2.13, $p < 0.0001$, respectively). It showed that asthmatics compared to non-asthmatics were less likely to be females (OR 0.62; 95% CI, 0.54 to 0.73, $p < 0.0001$). As for BMI, asthmatics tended to be more overweight or obese (OR 1.33; 95% CI, 1.09 to 1.63, $p = 0.005$ and OR 1.78; 95% CI, 1.50 to 2.13, $p < 0.0001$, respectively).

Table 1- Demographic characteristics asthmatics and healthy controls

Variables	Non-asthmatic (%)	Asthmatic (%)	P value (%)
Age			
10-14 years	28.2	29.9	0.28
15-18 years	71.8	70.1	
Gender			
Male	49.9	65.3	< 0.001
Female	50.1	34.7	
Income status of family	70.7	74.8	0.05

Table 2- Comorbidities of asthmatics and healthy controls

Variables	Non-asthmatic (%)	Asthmatic (%)	P value (%)
Diabetes	0.7	0.7	0.95
Allergies other than asthma	3.6	4.9	0.05
Hematological disorder	4.0	12.2	< 0.001
BMI			
<i>Underweight</i>	15.1	15.6	< 0.001
<i>Healthy</i>	55.7	45.2	
<i>Obese</i>	29.2	39.2	

Table 3- Difference in diet and nutrition patterns and lifestyle in asthma and healthy controls

Variables	Non-asthmatic (%)	Asthmatic (%)	P value (%)
Regular number of snacks per day	81.4	79.9	0.25
Fast food intake more than twice in the past 7 days	31.1	33.6	0.11
Exercise for 30 minutes in the last 7 days			
< 3	71.9	70.6	0.40
≥3	28.1	29.4	
Frequent Soft drinks intake	58.7	63.0	0.01
Frequent Power drinks intake	20.9	26.4	< 0.001
Number of milk drinks per day			
0	55.3	50.6	0.02
1-2	38.9	42.5	
>2	5.8	6.9	

DISCUSSION

Various Allergy disorders and asthma in particular have a wide variety of risk factors which are not fully understood according to a study conducted by Bazzazi et al. many theories have been proposed that tend to link environmental factors between various allergies as well as asthma prevalence. Hygiene hypothesis are one of the prominent theories which state that

change in the pattern of microbial exposure amongst children due to westernization leads to the increasing severity and prevalence of atopic disorders.³¹ Similar to other studies, our study revealed gender differences, with male adolescents being more likely to be self-reported asthmatics than females. This male preponderance to asthma has been explained by differential growth of lung/airway size, and immunological differences.³² Similar to others' reports, we found that self-reported asthma was associated with lower socioeconomic backgrounds. This is vital to think about as higher-educated parents may have more asthma knowledge that permits them to supply better look after their asthmatic children and be better equipped to provide the appropriate care.³³ The co-morbidities and various health conditions related to asthma can significantly affect asthma and be suffering from asthma. We came to know that adolescents who were overweight reported presence of breathing difficulty in their questionnaire. The prevalence of asthma has increased worldwide among obese children, adolescents and adults regardless of ethnic origins.³⁴ The literature shows strong links between asthma and lifestyle factors, school behaviours, children's mental state and violence. Poongadan et al. showed an increasing association between sedentary lifestyle and asthma, and reported that asthmatics watch more TV and have increasing mental stress.³⁵ It is prudent to bear in mind the individual's health correlates and lifestyle as this will impact the disease and affect the standard of life. Assessment and management of asthma involves a comprehensive care that conveys both medical treatment and healthy habits and lifestyle.

CONCLUSION

Being a chronic disease, there's a requirement to deal with asthma awareness specifically in reference to adolescents' eating and drinking habits. Knowledge regarding to asthmatic disease process needs prompt attentiveness so as to manage the risks associated.

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