

**THE PREVALENCE OF ASTHMA AND ALLERGIC DISEASES IN SCHOOL AGE CHILDREN IN ALBAYDA-LIBYA**Mohamed Thabet Ali\*<sup>1</sup>, Najwa H. Abduljawad<sup>1</sup> and Abdalla Saad Abdalla Al-Zawi<sup>2</sup><sup>1</sup>Department of Paediatrics, Omar Al Mukhtar University, Albayda – Libya.<sup>2</sup>Basildon & Thurrock University Hospital, Essex-England.**\*Corresponding Author: Dr. Mohamed Thabet Ali**

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**ABSTRACT**

**Objective:** The aim of this study was to determine the prevalence of asthma and other allergic diseases as well as the factors affecting this condition in school children in Albayda-Libya. **Method:** This cross-sectional population-based study using the International Study of Asthma and Allergies in Childhood (ISAAC) protocol was carried out on 478 school-children aged between 6-15 years during March to June 2019. **Results:** There were 236 (49.4%) boys and 242 (50.6%) girls. The prevalence of asthma, allergic rhinitis and eczema in the 6-15 year-old children was found to be 12.3%, 13.3% and 8.3%, respectively. The prevalence of asthma was highest in 6-9 year-old school-children (14.1%), and lowest (5.0%) in 13-15 year-old children. The prevalence of asthma diagnosed by a doctor was 5.0%. The cumulative and current prevalence of wheezing were found to be 18.0% and 13.1%, respectively. The cumulative prevalence of allergic disorders was found to be 22.5%. The presence of domestic animals at home and dampness of the home were found to be important risk factors for asthma. Family history of asthma, eczema, clinician-diagnosed asthma, and history of frequent sinusitis were found to be significantly higher in asthmatics. **Conclusion:** The observed asthma prevalence in the study group ranges from 8.3% to 13.3%, this is comparable to what have been found in the previous literature reports, and the data reflects the significant impact of the asthma as a chronic illness affecting a notable number of children in the area of Albayda-Libya.

**KEYWORDS:** Prevalence of asthma, children.**INTRODUCTION**

Wheezy respiratory illnesses and Asthma are the most common acute and chronic illnesses in childhood.<sup>[1]</sup> Current surveys from many countries have shown a steady increase in the prevalence of atopic disease.<sup>[2]</sup> The causes of this increase are unclear but it may result from an increase in recognition of the diseases or a true increase in the prevalence of the diseases.<sup>[3]</sup> The protocol of the International Study of Asthma and Allergies in Childhood (ISAAC) has been prepared for assessment of the prevalence, and it standardizes methods and terminologies.<sup>[4]</sup> The aim of this study was to determine the prevalence of asthma and other allergic disorders in school-children in Albayda and the related factors using a modified ISAAC protocol. Albayda is the largest city in Aljabal Alkhdar region in the eastern part of Libya, which has a typical Mediterranean climate.

**PATIENTS AND METHODS**

This cross-sectional population-based study was carried out on 478 school-children aged between 6-15 years living in Albayda. The schools were randomly chosen from different areas of Albayda. The questions were based on ISAAC questionnaires. Additional questions dealing with the factors affecting allergic diseases (such

as heating systems, dampness, the number of people living in the home, family income, and domestic animals in the home) were included. The questionnaires were completed by the parents of children younger than 12 years old, and by the students themselves if older than 12 years. The study was conducted between March and June 2019. The questionnaire included questions regarding presence of wheezing, eczema, and rhinitis in the children. The prevalence of asthma was diagnosed if the child fulfilled the following criteria: Presence of an attack of breathless wheezing ever in life, and within the last 12 months; asthma diagnosed by a physician; or presence of three or more episodes of bronchitis (generally the terms such as allergic bronchitis, bronchitis, chronic bronchitis, and spastic bronchitis are used instead of asthma. The statistical analysis was done using the SPSS- version 14.0 for Windows.

**RESULTS**

A total of 500 questionnaires were sent to the families of which 478 were returned (95.6%). A total of 236 (49.4%) boys and 242 (50.6%) girls were included in this study (Table I). The prevalence of asthma in children between 6-15 years old was found to be 12.3%. The prevalence of asthma was higher in children between 6-9

years old (14.1%) and lowest (5.0%) in those between 13-15 years old (Table II).

The prevalence of asthma and related symptoms are shown in Table III. The cumulative and current

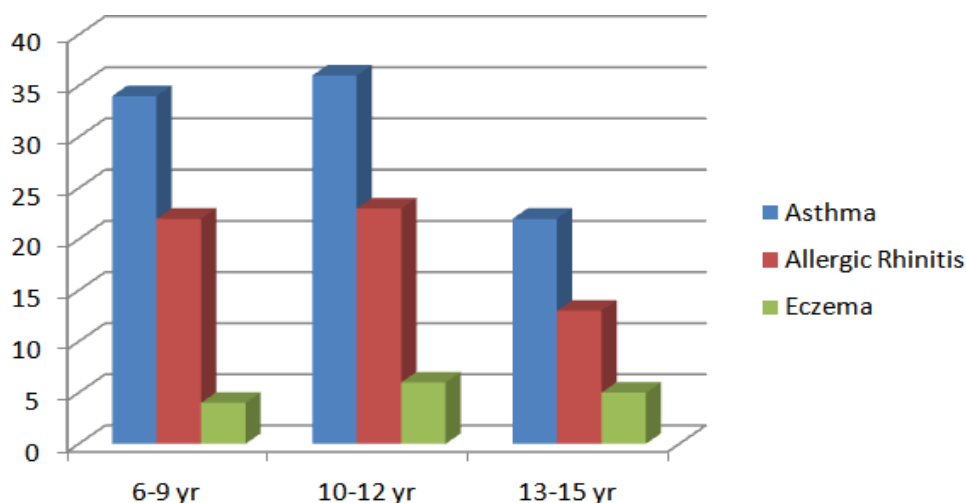
prevalence of wheezing were found to be 18.0% and 13.1%, respectively, the cumulative prevalence of allergic disorders was found to be 22.5%.

**Table I. Distribution of Age and Gender.**

Age (year)	Girls		Boys		Total	
	N	%	N	%	N	%
6-9	121	50.4	119	49.6	240	50.2
10-12	81	50.9	78	49.1	159	33.3
13-15	40	50.6	39	49.4	79	16.5
<b>Total</b>	<b>242</b>	<b>50.6</b>	<b>236</b>	<b>49.4</b>	<b>478</b>	<b>100</b>

**Table II. Prevalence of Asthma, Allergic Rhinitis and Eczema According to Age and Gender.**

Age (yrs)	Asthma		Allergic rhinitis		Eczema	
	N	%	N	%	N	%
6-9	34	14.16	36	15	22	9.1
10-12	22	13.8	23	14.4	13	8.1
13-15	4	5	6	7.5	5	6.3
Male	28	13.2	31	47.69	17	42.5
Female	32	11.8	34	25.3	23	57.5
Total	60	12.3	65	13.3	40	8.3



**Fig. 1: Asthma, Allergic Rhinitis and Eczema related to age.**

**Table III. Prevalence of Asthma and allergic diseases**

Clinical symptoms	N	Prevalence (%)
Known asthma	60	12.3
Asthma diagnosed by a physician	24	5
Attacks of asthma in past 12 months	17	3.5
•1-2	10	2
•3-4	5	1
>4	2	0.4
Sleep disturbed by wheezing in the last year	29	6
Wheezing after exercise in the last year	44	9.2
Wheezing	86	18
Symptoms of wheezing in past 12 months	63	13.1
Breathlessness and wheezing	80	16.7
Symptoms of breathlessness and wheezing	42	8.78
Cumulative allergic disease	108	22.5

## DISCUSSION

Asthma is a serious health problem in Libya, as in the rest of the world. We investigated 478 school-children living in randomly selected regions of Albayda. The overall prevalence of asthma diagnosed by a doctor was 5.0%. Our results showed that the rates of those children who had wheezed earlier were found to be same as those of studies conducted in other Mediterranean regions as for example in Turkey.<sup>[5]</sup> It was, however, found to be lower than those of the studies conducted in Germany, England, New Zealand and Australia.<sup>[6]</sup> Gender was not found to be an important risk factor for asthma in our study. But some studies have shown that being male was an important risk factor for asthma.<sup>[7]</sup> Age seems to be a significant risk factor in the development of asthma. We found that 6-9 year-old children had a higher prevalence of asthma than those of other ages and the risk was much less in 13-15 year-old children. The younger children are exposed to different allergens and infectious agents. Crain *et al.*, in 1994, reported that 0-4 year-old children were at the highest risk for asthma.<sup>[8]</sup> They were followed by the 12-17 year-old children and finally by the 5-11 year olds. On the other hand, Robertson *et al.*, in 1993, showed that the risk of asthma decreased with age.<sup>[9]</sup> The presence of bronchitis, eczema, a family history of atopy, and sinusitis were also found to be significant risk factors affecting the prevalence of asthma. The role of the genetic factors in asthma is also important. Family histories of asthma, eczema, and diagnosis made by a doctor were found to be significantly higher in asthmatics. Passive smoking, keeping a domestic animal at home and dampness of home were found to be important risk factors for asthma as shown formerly by other studies<sup>10</sup>. Asthmatic patients, being prone to infections, are most likely to suffer from various respiratory diseases.

## CONCLUSION

Asthma is a chronic disease, causes a significant morbidity during childhood. The observed asthma prevalence in the study group ranges from 8.3% to 13.3%, this is comparable to what have been found in the previous literature reports, and the data reflects the significant impact of the asthma as a chronic illness affecting a notable number of children in the area of Albayda-Libya. The socio-economic status of the family constituted a risk for asthma, poor housing standard, poor living conditions, insufficient unbalanced diet, lack of proper treatment and follow-up, all are associated with increased the risk of asthma.

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