

Asthma prevalence among Iraqi children

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DOI: <https://doi.org/10.55145/ajbms.2024.03.01.004>

Received September 2023; Accepted November 2023; Available online December 2023

ABSTRACT: Asthma is a chronic disease resulting from inflammation of the respiratory tract and is more common in children than adults. There are few studies conducted in Iraq to determine the rate of this disease. Previous studies were searched on various scientific research sites such as Scopus, Google Scholar, PubMed, and the Iraqi academic journals website for the period from 2000 to 2023. Five studies were included in this review out of thirty-five studies conducted previously. Studies showed that the highest prevalence of asthma was in the capital, Baghdad, 22.7%, and the lowest was in Erbil Governorate, 7%. This discrepancy may result from the difference in environmental conditions between different regions of Iraq. It is necessary for Iraqi health authorities to conduct comprehensive and modern studies to determine the extent of the prevalence of asthma in Iraq.

Keywords: Asthma prevalence, Iraq, Children, Chronic Diseases, respiratory diseases



1. INTRODUCTION

Asthma is one of the chronic diseases that affect the respiratory system and the bronchi specifically [1]. It is a chronic inflammation of the respiratory tract. These inflammation are usually the result of an exaggerated response to substances that are not over-responsive in normal people [2]. It is controllable but not curable disease [3]. Among the symptoms that appear on the patient with asthma are wheezing, shortness of breath, chest tightness, and coughing, and these symptoms often increase during the night or early morning [4]. Asthma can affect children and adults of all ages, but it is more common in children than adults, and genetic and environmental factors have an important role in the emergence and development of the disease [5]. Among the factors that play a role in exacerbating the disease are smoking, sitting with smokers, polluted air, vitamins, allergens, exposure to microbes, lack of exercise and physical activity, in addition to obesity [5]. Asthma is the most common chronic disease among children. It affects more than 330 million people worldwide [6]. As we mentioned, the rates of asthma vary from place to place, depending on environmental and genetic factors [7]. The percentage of children with asthma in Saudi Arabia, an Arab country bordering Iraq [8], varies according to the governorates, where the percentage was high and reached 33% in Al-Hofuf Governorate, to the lowest percentage in Abha Governorate 9% [9]. Countries and health institutions study the prevalence of diseases in a particular society in order to understand and determine the requirements for health services to deal with disease. Knowing the extent of the disease can also reduce wasted expenditures in health services [10].

The aim of writing this review is to find out the prevalence of asthma among Iraqis, which will show the size of the health problem and will help the concerned authorities in future planning and allocate the necessary resources.

2. Methodology

2.1 studies search

Many websites were used to find the different studies that were conducted in Iraq in order to determine and know the prevalence of asthma in Iraqi society. Among the sites and websites that were searched were Scopus, Google Scholar, Core, PubMed, and the Iraqi academic journals site. The terms asthma, prevalence, children, Iraq and the different Iraqi governorates were used in the research process in order to find as many studies as possible. During the research process, the summaries of the studies and their titles were reviewed in order to identify studies related to the

subject of the research. A group of studies and researches that are believed to be relevant to the subject have been selected in order to study them carefully and in detail, and to determine whether the study is appropriate or not.

2.2 Inclusion and exclusion criteria

All studies conducted in Iraq that evaluated the prevalence of asthma in children up to 2023 are included in this review. Studies that did not study the prevalence of asthma were excluded after careful examination through the study summary, in addition to studies conducted on ages over 19 years that were not included.

2.3 Data collection

The design of the study, the city, the year in which it was conducted, the number of participants, their ages, and the most important findings of the study were extracted.

3. Results

This is the first review aimed at summarizing research related to the prevalence of asthma in children in various regions of Iraq. The studies included children and adolescents of different ages. Only five studies were included in this review out of 35 studies that were selected and the title and abstract read carefully. These studies were conducted in various regions of Iraq in the north, center and south. All studies were cross-sectional studies conducted for the period from 2000 to 2022. The results of all studies are shown in Table 1. The highest prevalence rate of asthma was in children living in Baghdad 22.3%, and the lowest rate was in children in northern Iraq in Erbil governorate 7%. Asthma prevalence rates were high in people who take care of animals, who use home cooking, who live with smokers, and who raise plants and flowers. The results also showed higher rates in people who live in cities rather than rural areas [11] [12] [13] [14] [15].

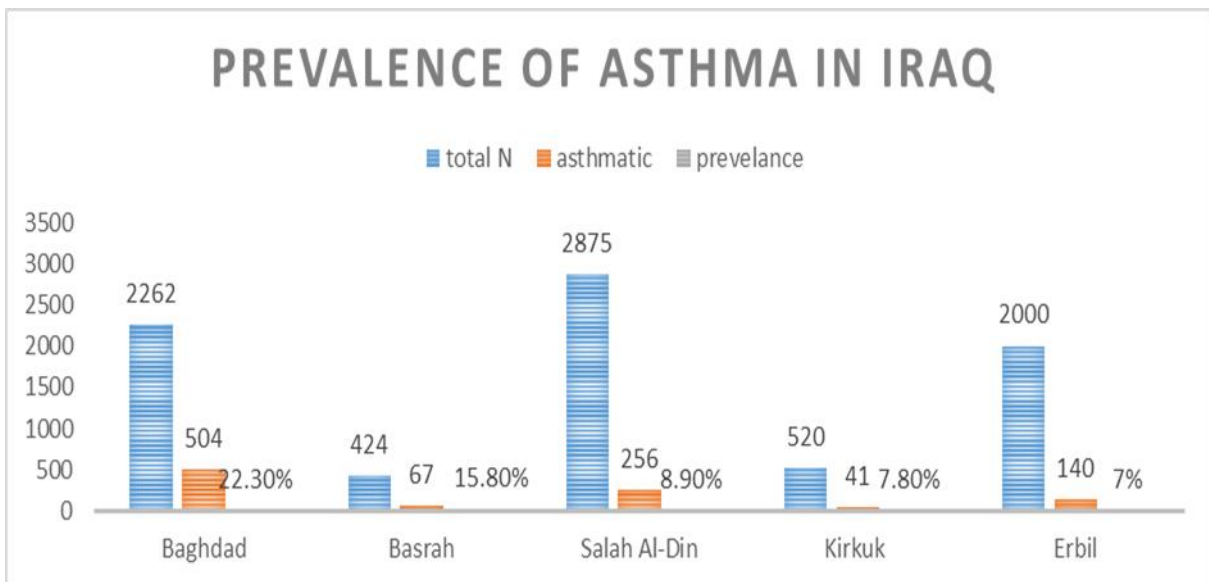


FIGURE 1. - The prevalence of asthma in Iraq

Table 1. - Studies that investigated the prevalence of asthma among children in Iraq

Reference	Study design	Year	city	N. participants	Age groups	Approaches of assessment	Outcomes
Alsaadi, Ismael (Alsaadi & Al-Tawil, 2022)	cross sectional study	2021-2022	Erbil city	2000	12-19 y	European Community Respiratory Health survey (ECRHs)	1-The prevalence rate of asthma among children in Erbil was 7%. 2-The most common risk factor for asthma was the use of a home heating system, including kerosene.
Waqar Al – Kubaisy (Al-Kubaisy & Al-Thamiri, 2017)	cross sectional study	2000-2002	Baghdad	2262	6-12 y	Modified ISAAC	1-The prevalence rate of asthma among children in Baghdad was 22.3%. 2-The prevalence of wheezing was 25%. 3-Increased crowding is the most important risk factor for asthma
m.b salim (Salem et al., 2002)	cross sectional study	2001	Basrah	424	2 month – 5 y	-	1- 15.8% of children suffer from wheezing. 2- The percentage of children suffering from wheezing was higher in cities than in the rural area
Abdulghani alsamarai (Alsamarai et al., 2009)	cross sectional study	2002	Salah Al-Din	2875	11-14 y	-	1- The prevalence rate of asthma among adolescents in Salah al-Din was 8.9% during the clinical examination. 2- The most important risk factors associated with asthma were exposure to oil and wood smoke.
Abdulameer A. Samad (Samad & Kanbar, 2019)	cross sectional study	2017	Kirkuk	520	1-19 y	ISAAC	The prevalence rate of asthma among children and adolescents aged 1-19 years in Kirkuk governorate was 7.8%.

4. Discussion

Asthma is one of the most common chronic diseases in children [16]. The prevalence of asthma began to increase in recent decades and became more common, especially in western and developed countries [16]. In Iraq, there are few studies that showed the prevalence of asthma in Iraqi children. Five studies are included in this review. These studies were conducted in different regions of Iraq, in the north, center and south. Most of these studies were conducted in the first decade of the twenty-first century. In northern Iraq, specifically in Erbil Governorate, the study was conducted in order to evaluate the rate of asthma on a group of 2,000 children, and it was found that 140 children suffered from asthma at a rate of 7%. As for Basra, in the far south of Iraq, a study was conducted more than 20 years ago and found

that the prevalence rate of asthma was more than 15%, meaning that it was double what was found in Erbil. In Salah al-Din, which is located in central Iraq, the rate of asthma in children aged from eleven to fourteen years was 8.9%. In Kirkuk Governorate, which is located in northern Iraq, near Erbil, the prevalence rate of asthma among children and adolescents under 19 years was 7.8%, which is similar to what was found in Erbil (7%). The highest prevalence rate of asthma was in Baghdad governorate, according to the study published in 2002, which found the prevalence rate of asthma to be 22.3%, meaning that it is three times more than what was found in Erbil, Kirkuk and Salah al-Din. The study indicated that the most important factor affecting the increase in the prevalence of asthma in Baghdad is that Baghdad is densely populated and inhabited by nearly seven million people. The percentages and rates of pollution in Iraq range from 7% in Erbil to 22.3% in Baghdad, and the percentages vary according to the climate, the level of pollution, and the population numbers of each city. The prevalence of asthma in Iraq is rather high compared to nearby and neighboring countries. The prevalence of asthma among children in Iran was less than 11% [17], Bahrain 10.8% [18], Jordan less than 9.5% [19], Kuwait less than 16% [20], Oman less than 20.7% [21], and Syria less than 5.1% [22]. It is possible that the incorrect diagnosis or the lack of adequate studies and recent studies can affect the rates of asthma in children [23] [24]. Among the factors associated with the increase in the global prevalence of asthma, exposure to heavy traffic [25], exposure to smoke from various sources [26], high levels of humidity and mold in homes [27], in addition to the use of certain medications such as paracetamol [28]. Knowing the prevalence of asthma helps in providing the necessary medicines and supplies for asthma. It also helps institutions to develop future plans and train health personnel to properly deal with asthma cases and asthma exacerbations. It can also make it easier for doctors to diagnose and predict disease [7]. Predicting asthma and disease predisposition by providing the necessary medicines and supplies, in addition to treating symptoms from their inception before the condition worsens, can reduce the treatment costs that countries and health institutions require [29].

5. Conclusion

Few studies have been conducted to determine the prevalence of asthma among Iraqi children, as the results of the studies showed that the prevalence of asthma varies according to geographical regions in the country. The highest rates of asthma were in the capital, Baghdad, and the lowest in the far north, in Erbil Governorate. Most of the published studies date back to ancient history, and there is a need to conduct a new study to determine the prevalence of asthma in Iraq, determine financial allocations, and address the resulting environmental problems that would interfere with the treatment method and quality of life for asthma patients.

Funding

None

ACKNOWLEDGEMENT

The authors would like to thank the anonymous reviewers for their efforts.

CONFLICTS OF INTEREST

The authors declare no conflict of interest

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