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# A Cross-Sectional Study in Iraq to Evaluate the Quality of Life of Pediatric Patients with Asthma

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***Abstract: Background: Children are the group most at risk of developing asthma, a condition that can significantly impact their quality of life.***
***Objective: The focus of our study was largely on the asthma impact of asthma on the quality of life of children.***
***Patients and methods: A cross-sectional study of asthma patients identified at different hospitals in Iraq between March 14th, 2022, and May 25th, 2023, was provided. Children with asthma, ages 6 to 13, were enrolled in our study. Proceeding from that, we evaluated the kids' quality of life using the Peds QL score for (social performance, physical performance, emotional performance, and school performance). The data from the study were statistically analysed using SPSS version 25.***
***Results: Our study has indicated that asthma have affected on children patients ages from 8-13 years. Walking and playing football were the two patient activities that were shown to be most influenced by asthma in our study: 22% and 20% of children with asthma, respectively. Secondary outcomes included the quality-of-life assessment for asthma patients using Peds QL, which showed that the most important elements for both male and female children's development are their physical and emotional performance. The risk variables that were shown to have an influence on the quality of life of pediatric patients were family history, parental smoking exposure, and the severity of the patient's asthma. These factors were shown to be the most important.***

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***Conclusion: According to our findings, the most significant risk variables affecting the quality of life for patients' children are age, obesity, family history, the severity of their asthma, and parental smoking exposure.***

***Keywords: Asthma, Peds QL Quality of Life, and Children.***

## 1. INTRODUCTION

Asthma is a chronic inflammatory disease of the bronchial tubes that varies in severity and frequency [1]. It is influenced by both genetic and environmental factors, including climate, exercise, infections, allergens, and emotions. In addition, certain medications like aspirin, nonsteroidal anti-inflammatory drugs, and beta-blockers can trigger an attack. [2-4] Symptoms typically manifest during the night or in the morning, as airflow is restricted, and the airways become narrow. Poorly controlled asthma can impact the well-being of both patients and their carers or family members. [5-7]

Asthma in children has a negative impact on the quality of life of both the children and their caregivers, who are typically their parents and mostly mothers. Health-related quality of life refers to an individual's value judgments on the consequences of their condition or treatment. Controlling the disease, specifically asthma in children, is associated with an improvement in the quality of life of caregivers. Validated questionnaires are available to assess the quality of life in individuals with asthma and caregivers of children and adolescents with asthma. [8-11] Assessment of asthma control takes into account clinical manifestations, inflammatory markers, lung function, use of rescue bronchodilators, activity limitations, and exacerbation presentation. Proper treatment is a crucial factor in achieving lasting overall control of asthma. [9-13]

The exacerbation of asthma in children affects the emotional well-being of their careers, restricts their activities, and reduces their quality of life. Family functioning of paediatric asthma patients is also reliant on socioeconomic and educational characteristics, as well as limited social support programmes, particularly in developing nations. [14,15]

Effective pharmacotherapy and immunotherapy can control asthma if conveniently provided. It is important to train caregivers to administer appropriate treatment. Factors contributing to uncontrolled asthma include patient-related factors, the caregiver's emotional or work status, health personnel, the health system, family characteristics, and the environment. It has been theorised that uncontrolled asthma in children leads to a substandard quality of life for caregivers, who are commonly parents and has a negative impact on patients. This aspect of medical care for children with asthma and their caregivers has received limited attention in Europe. Therefore, we believe it would be beneficial to investigate it as a medical-social matter of interest to healthcare systems in order to enhance medical care for populations [16-18].

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## 2. PATIENTS AND METHODS

**Study Design:**
A cross-sectional study was presented of patients with asthma who were diagnosed in different hospitals in Iraq from 14th March 2022 to 25th May 2023.

**Sampling and Data Collection:**
Our study included children with asthma aged between 6 and 13 years. This study was focused on assessing the quality of life of children patients. Classification of children patients were depended on the degree of severity of asthma. This study recruited 120 cases with asthma, where the obesity rate was classified based on BMI into normal, obese, and overweight. Our study was determined clinical demographic characteristics, including age, sex, BMI, parental smoking exposure, asthma severity, which ranged from mild intermittent to severe persistent, medications used, and duration of asthma. to achieve the purpose of the study, we recorded the rate of patients' activities affected by asthma in terms of playing football, playing during school, running, sleeping, walking, and studying. Based on that, we conducted an assessment for children's quality of life by Peds QL score, which ranged from (0-100) where 0 presented as the worst value and 100 and the best value in terms of (physical performance, emotional performance, social performance, and performance at school). Our study was presented risk factors affecting children's quality of life.

**Statistical Analysis:**
Data methodology was conducted by the SPSS program, version 25. The data was modelled to predict outcomes related to primary outcomes, aiming to analyse secondary outcomes associated with risk factors to assess the quality- of life of children patients with asthma.

## 3. RESULTS

Table 1: Distribution of children patients with asthma based on ages.

| Variables performed into ages (6-13) years | | Outcomes |
|---|---|---|
| N | V | 120 |
| | Mi | 0 |
| M | | 9.5000 |
| Med | | 9.5000 |
| Mo | | 6.00[a] |
| SD | | 2.30089 |
| Min | | 6.00 |
| Max | | 13.00 |

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Table 2: Determine the gender of children patients with asthma.

| Gender | | Number of children patients: 120 | Percentage (%) |
|---|---|---|---|
| V | Female | 40 | 33.3 |
| | Male | 80 | 66.7 |
| | T | 120 | 100.0 |

Table 3: Classification of the obesity rate in children with asthma on the basis of BMI.

| | Number of children patients: 120 | Percentage (%) |
|---|---|---|
| Obese | 50 | 41.7 |
| Normal | 44 | 36.7 |
| Overweight | 26 | 21.7 |
| T | 120 | 100.0 |

Table 4: Parental smoking exposure.

| | | Number of children patients: 120 | Percentage (%) |
|---|---|---|---|
| V | No | 40 | 33.3 |
| | Yes | 80 | 66.7 |
| | T | 120 | 100.0 |

Table 5: Classification of children patients based on asthma severity, Pediatric Asthma Severity Score (PASS) for Asthma Exacerbation Severity

| Asthma degree | Number of children patients (120) | Percentage (%) |
|---|---|---|
| Mild intermittent | 10 | 8.33% |
| Mild persistent | 25 | 20.83% |

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| | | |
|---|---|---|
| Moderate persistent | 31 | 25.83% |
| Severe persistent | 54 | 45% |

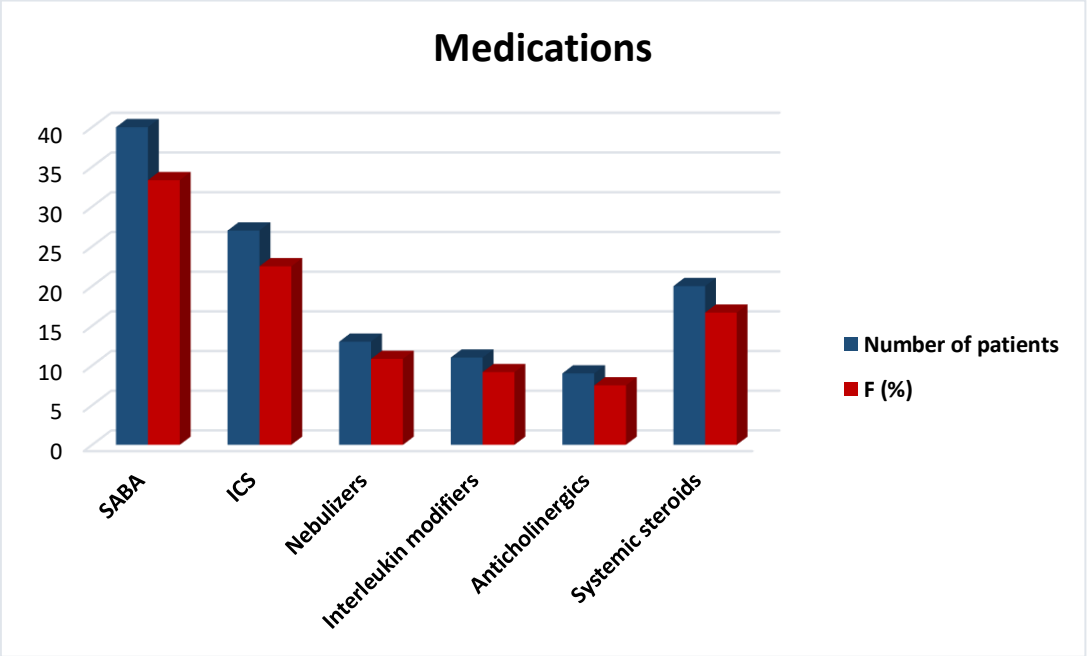


Figure 1: Identify the medications that are used for children who have asthma.

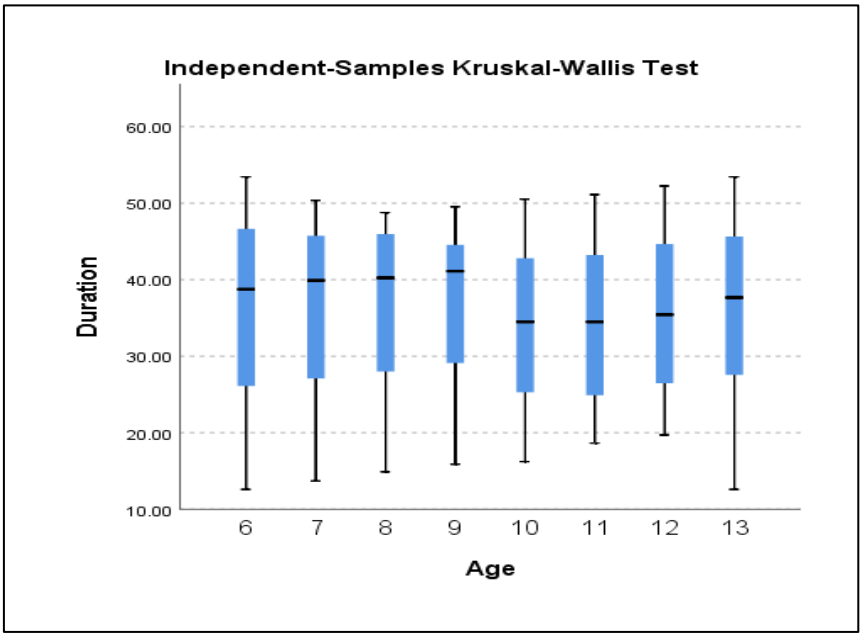


Figure 2: Duration of asthma (months)

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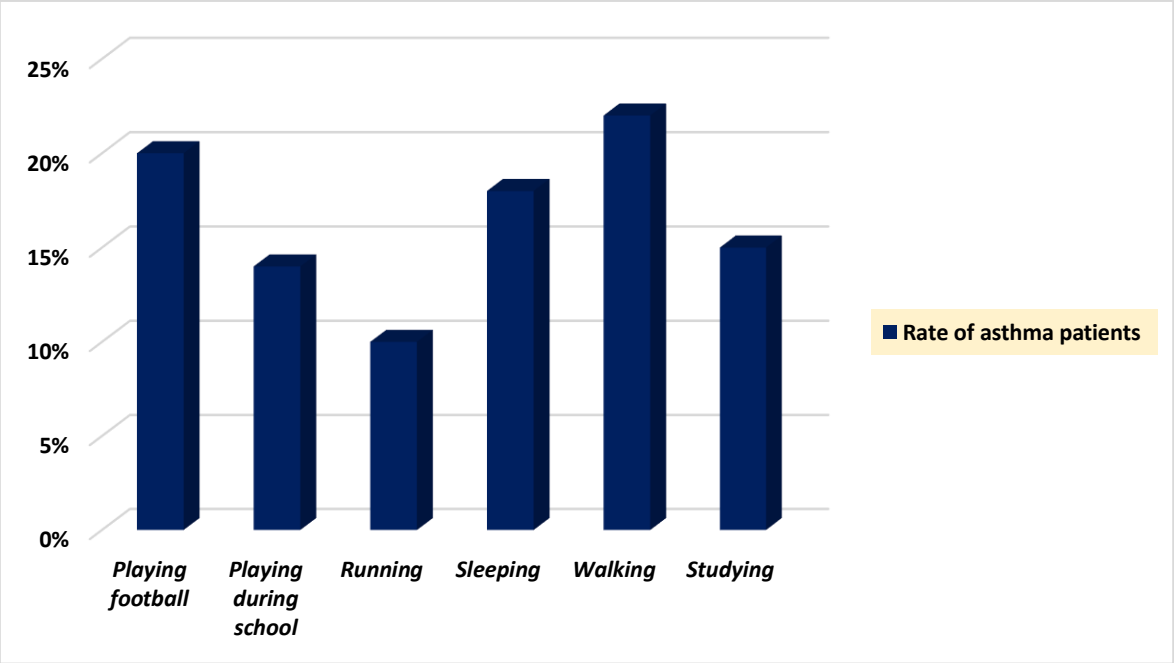


Figure 3: Identifying the rate of patient activities affected by asthma.

Table 6: Assessment of quality of life for patients with asthma by Peds QL.

| Items | Children (Males) | Children (Females) | P-value |
|---|---|---|---|
| Physical performance | 25 ± 7.8 | 45.75 ± 12.65 | 0.0257 |
| Emotional performance | 22.6 ± 8.86 | 20.97±11.87 | 0.048786 |
| Social Performance | 65.74 ± 12.57 | 43.76 ±11.57 | 0.042 |
| Performance at school | 68.79 ± 4.778 | 41.87± 14.57 | 0.0428 |

Table 7: Risk factors affecting children's quality of life.

| Variables | S.E. | OR | 95% CI | P-value |
|---|---|---|---|---|
| Sex | 0.379 | 2.34 | 1.872-2.93 | 0.0233 |
| Family history | 0.110 | 0.745 | 0.545-1.454 | 0.594 |
| Duration of Asthma | 0.104 | 1.088 | 0.42-1.664 | 0.687 |
| BMI | 0.424 | 0.775 | 0.41-1.47 | 0.623 |

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| | | | | |
|---|---|---|---|---|
| Anticholinergics | 0.232 | 1.98 | 0.711-1.894 | 0.224 |
| Level of asthma severity | 0.445 | 2.78 | 2.34-3.67 | 0.024 |
| Parental smoking exposure | 0.4871 | 1.242 | 0.677-2.42 | 0.2445 |

Table 8*:* Explaining the reasons that led to absence from school.

| v | F | P% |
|---|---|---|
| Lack of good supervision | 55 | 45.8 |
| Air pollution in the school environment | 20 | 16.6 |
| Number of students in the classroom | 30 | 25 |
| Humidity in classrooms | 20 | 16.6 |

Table 9: Evaluation of school absence according to the severity of asthma

| Variable | Mean ± SD (days) |
|---|---|
| Mild intermittent | 8±3.7 |
| Mild persistent | 11.2±4.9 |
| Moderate persistent | 14.7±5.5 |
| Severe persistent | 19.9±5.9 |

## 4. DISCUSSION

This study evaluated the impact of asthma on the quality of life of child patients aged 8 to 13 years. Our findings indicate that asthma affects a higher number of male patients (80, 66.7%) than female patients (40, 33.3%). Moreover, our clinical study found that 76 patients were classified as obese or overweight according to their BMI. Additionally, clinical and demographic results have shown that parental smoking exposure has affected children at home with 66.7%. Furthermore, we have classified children patients based on the degree of asthma, where children with severe persistent asthma accounted for 45%. in addition, identified medications used showed that children received SABA as the most prescribed treatment, with 40 (33.33%) patients receiving it. The study investigated how asthma affects patient activities, finding that 22% of children with asthma walked and 20% played football. The study also assessed patients' quality of life using the Peds QL scale, identifying physical

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and emotional performance as key factors for patients' children who have asthma. A study carried out in the United States discovered a significant correlation between paediatric asthma and diminished quality of life, with the severity of the asthma being measured by the Child Health Questionnaire Parental Form. Additionally, school absenteeism can indicate inadequate asthma management in children and is linked to poorer PAQoL scores, particularly in relation to emotional domains and PAQoL symptoms of participants in the study. [19,20] a correlation between low quality of life and male gender was evidenced through a multivariate analysis. However, this study found a higher probability of low quality of life in female patients in contrast to our outcomes. This study attributed this to a higher rate of second-hand smoke exposure among women in his study. Our study also revealed an observable link between exposure to secondary smoking and more severe asthma cases. [21,22] our analysis revealed that an increased BMI had no noticeable impact on either PAQoL or asthma control. However, previous studies involving asthmatic children with higher BMIs showed lower QoL and asthma control scores. In our research, higher BMI was significantly affects either asthma control or PAQoL scores, which may be due to the larger proportion of patients in our sample with low BMIs. [23] according to some studies, the severity of their asthma can predict a child's quality of life. Children with asthma may miss school, cannot engage in certain physical activities, or experience other forms of impairment due to their asthma, which can be psychological, social, or physical. These effects are more likely to occur in those with severe asthma. [24] another study conducted in the Arab world found that asthma significantly reduced children's quality of life, as evidenced by the high frequency of behavioral and emotional problems, as well as worsening academic performance and a rise of school absenteeism. [25]

## 5. CONCLUSION

This study has demonstrated that children aged 8-13 years who are patients experience impairment in their quality of life, with physical and emotional performance being most severely affected in both genders, while social performance and performance at school are more improved in males than in females. Our findings suggest that age, obesity, family history, asthma severity, and parental smoking exposure are the most significant risk factors affecting the quality of life of child patients. this study is recommended that conducting multiple precise studies on the detrimental effects of asthma on children and the application of psychological interventions to aid acceptance and positive coping following diagnosis would be beneficial. Also, it is recommended that these studies be carried out to support paediatric patients through the diagnosis and treatment of asthma.

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