

# A study to assess the psychosocial problems and quality of life of asthmatic children

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## Abstract

**Objective:** The objective of the following study is to assess the quality-of-life (QOL) in children with asthma using pediatric asthma quality-of-life questionnaire (PAQLQ). **Settings:** Outpatient and Inpatient of Pediatric Department, Rajah Muthiah Medical College and Hospital, Chidambaram. **Study period:** March 2014 to February 2015. **Materials and Methods:** From the age group of 6 to 12 years of age, 50 asthmatic children were included in the study. The QOL was assessed using the PAQLQ. Severity of asthma was assessed using pulmonary function test (FEV1). **Results:** The majority (74%) of the children in our study had either mild intermittent or mild persistent asthma. There was no child with severe persistent asthma. Younger the age group has increasing in severity of asthma. PAQLQ shows decreasing score for increasing severity. There was a significant change noted in both the activity and emotional domain of the PAQLQ with treatment. **Conclusions:** Although the children improved clinically with treatment there was no significant change in the emotional domain of PAQLQ. In spite of there being a positive change in the groups after intervention, no statistically significant change was noted in the PAQLQ scores. Management of a child with asthma should not only include medical intervention but also psychological support and counselling.


**Keywords:** Pediatric asthma quality of life questionnaire (PAQLQ), Quality of life (QOL) of asthmatic children.

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## INTRODUCTION

Asthma is a serious global health problem affecting all age groups, with increasing prevalence in many developing countries, rising treatment costs, and a rising burden for patients, family and the community. Asthma affects an estimated 300 million individuals worldwide. Although some countries have seen a decline in hospitalizations and death from asthma, it still imposes an unacceptable burden on health care system, and on

society through loss of productivity in the workplace and, especially for pediatric asthma, disruption to the family.<sup>1</sup> This subject is of interest as asthma has increased over the last two decades. Despite therapeutic advances, morbidity and mortality are increasing (Global Initiative for Asthma [GINA], 2015), particularly due to the development of western standards of living, where psychological factors have regained notability. Health care providers managing asthma face different issues around the world, depending on the local context, the health system, and access to resources. In spite of the efforts, and availability of effective therapies, international surveys provide ongoing evidence for suboptimal asthma control in many countries. In the most severe cases of asthma, psychological factors such as depression, anxiety, stress, psychopathology, psychiatric expression of asthma and side effects of medication will be implicated. Therapeutically, in people with moderate to severe asthma, besides the usual, preventive and pharmacological approaches, it is essential to turn to psycho educational and multifamily programs, in order to

increase the control of the illness, and allow more efficient treatment. Globally, bronchial asthma is a major health especially among children. It has recently been recognized as the most common cause of school absence, thus affecting children’s educational potential and adversely affecting a children’s quality of life.<sup>2</sup>The introduction of new and long-acting inhaled drugs has greatly improved the prognosis of asthma and nowadays the focus of concerns has shifted toward improvements in children’s quality of life (QOL). The Quality of life is essentially viewed as a subjective, multidimensional experience involving summary evaluations of the positive and negative attributes characterizing one’s life. In children, QOL used to be based on the conventional assessment of asthma severity, the presence and intensity of symptoms, the need for medication, pulmonary function testing and discussions with parents or caregivers.<sup>3</sup>

## MATERIALS AND METHODOLOGY

Descriptive study

### Source of data

Patient attending the Paediatric department at Rajah Muthaih Medical College and hospital.

### Inclusion Criteria

Parents with children of 6-12 years of age group already diagnosed as asthmatic or using inhalers Both OPDs and Hospitalized patients of Pediatric department in RMMCandH, Chidambaram. With mild, moderate and severe asthmatic children.

### Exclusion Criteria

Evidence of active pulmonary disease other than asthma. Chronic systemic disease. Mental retardation

### Methods of collection of data

Child and parents were interviewed for asthma symptoms, severity of asthma and treatment, allergy history and relevant family history were collected. The severity of asthma was classified as per GINA guidelines. Pediatric Asthma Quality of Life Questionnaire (PAQLQ) was administered to all the children and caregiver of the child. Pulmonary function test (FEV1) was performed on all children.

## RESULTS

**Table 1:** Age distribution of the study subjects

AGE (completed years)	Number of Children	%
6	4	8
7	6	12
8	9	18
9	7	14
10	12	24
11	5	10
12	7	14
<b>TOTAL</b>	<b>50</b>	<b>100</b>

38 out of the 50 children (76%) were between 6 and 10 years of age. Younger age group children are more affected in our study and morbidity is high in this age group.

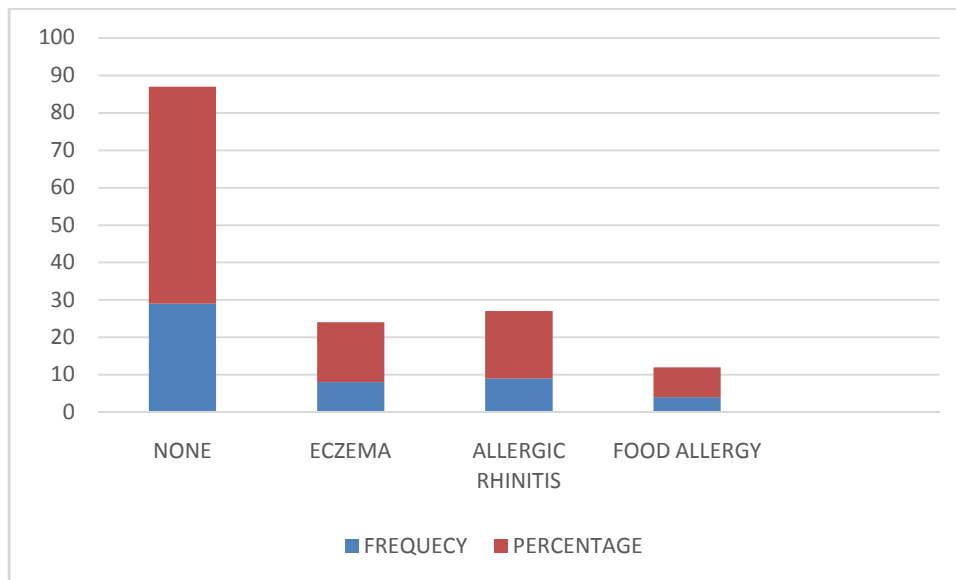
**Table 2:** Results PAQLQ (Pediatric Asthma Quality of Life Questionnaire)

Asthma Classification		Activity limitation score	Symptoms Score	Emotional function score	Overall score
<b>Mild Intermittent Asthma</b>	median	5.0000	4.4500	4.2500	4.6000
	25	3.9500	Percentile 3.6250	3.6500	3.8500
	50	5.0000	4.4500	4.2500	4.6000
	75	6.1000	5.4750	5.1500	5.1500
	median	4.6000	3.8000	3.6000	4.0000
<b>Mild Persistent asthma</b>	25	3.1000	Percentile 3.2000	2.9000	3.0500
	50	4.6000	3.8000	3.6000	4.0000
	75	4.8000	4.8000	4.7000	4.7000
	median	4.0000	4.0500	3.8000	4.0000
	<b>Moderate Persistent Asthma</b>	25	2.9500	Percentile 1.3750	1.5750
50		4.0000	4.0500	3.8000	4.0000
75		5.5750	5.9250	5.3000	5.3000
median		4.0000	4.0500	3.8000	4.0000

The overall median PAQLQ score was higher among the children with Mild Intermittent Asthma (4.6000) compared to the children with Mild Persistent or Moderate Persistent Asthma(4.0000). The median activity limitation domain score was higher among children with Mild Intermittent Asthma(5.0000) compared to the children with Mild Persistent Asthma(4.6000) and the median activity limitation domain score was higher among the children with Mild Persistent Asthma compared to the children with Moderate Persistent Asthma(4.0000). The median symptoms domain score was higher among children with Mild Intermittent Asthma(4.4500) compared to the children with Mild Persistent(3.8000) or Moderate Persistent Asthma(4.0500). The median emotional function domain score was higher among children with Mild Intermittent Asthma(4.2500) compared to the children with Mild Persistent(3.6000) or Moderate Persistent Asthma (3.8000).

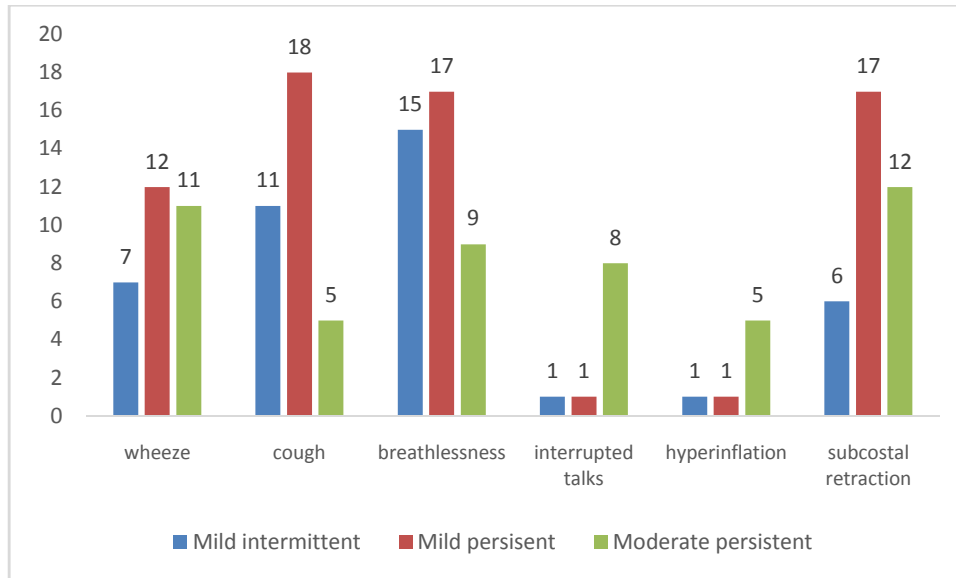
**Table 3:** Incidence of Eczema, Allergic Rhinitis and Food Allergy

Otherallergic Disease	Frequency	Percentage
NONE	29	58
ECZEMA	8	16
ALLERGICRHINITIS	9	18
FOODALLERGY	4	8
<b>TOTAL</b>	<b>50</b>	<b>100</b>



**Figure 1:** Incidence of Eczema, Allergic Rhinitis and Food allergy

21 out of the 50 children(42%) who participated in the study had an associated allergic disorder. 9 out of the 50 children (18%)had associated allergic rhinitis, 8 out ofthe50 children (16%)had associated eczema and 4 out ofthe50 children (8%)had associated food allergy.



**Figure 2:** clinical features and severity of asthma

In this study, cough, breathlessness and subcostal retraction is the most common clinical feature presented in the children with mild persistent and moderate persistent. Mild intermittent asthma presented most commonly with cough and breathlessness.

**Table 4:** Variation of FEV1 and severity of asthma

	N	Mean ± SD	P value
Mild intermittent	18	16.56 ± 3.43	
Mild persistent	19	19.53 ± 3.42	0.000
Moderate persistent	13	31.23 ± 1.24	

Grading of asthma was done based on FEV1 values before and after treatment. All the cases shows significant variation (P=0.000) with the severity of asthma in this study.

**Table 5:** Changes in FEV1 with pre and post medication

	>80%		60-80%		<60%	
	Before Treatment	After Treatment	Before Treatment	After Treatment	Before Treatment	After Treatment
Mild intermittent	0	11	16	6	1	0
Mild persistent	0	19	19	1	1	0
Moderate persistent	0	8	0	5	13	0

In this study, no children had FEV1 >80% before treatment and <60% after treatment. 35 cases had FEV1 60-80% and 15 cases were with FEV1 <60% before treatment. After treatment, 38 cases had FEV1 >80% and 12 cases had FEV1 60-80% which concludes Mild persistent asthma. No children presented with sever persistent asthma.

**Table 6:** Good control and severity of asthma

	N	Mean ± SD	P value
ICS	12	18.00 ± 5.85	
ICS + Beta 2 agonist	15	26.87 ± 6.90	
ICS + Montelukast	6	22.33 ± 7.28	0.001
Beta 2 agonist	10	19.30 ± 2.87	
Montelukast	7	18.43 ± 3.99	
<b>Total</b>	<b>50</b>	<b>21.50 ± 6.66</b>	

According to the highly significance (P=0.001), severity of asthma has good control with the corresponding medications. ICS with Beta 2 agonist shows very good control with asthma children as per the study.

## DISCUSSION

Asthma is a common disease causing considerable morbidity. In any medical condition there are three basic reasons for treating patients:

1. To improve their well-being(Quality of Life)
2. To prevent the risk of chronic obstructive pulmonary disease

In pediatric asthma, the conventional clinical outcomes such as FEV1, PEF and symptoms are used to assess asthma control and are primarily used to gauge whether the first two goals are being achieved. In the past, it was frequently assumed that these clinical measures also provide insight into patient well-being. Certainly children with very severe asthma tend to have worse quality of life than children with milder disease, but recent research has shown that not only does quality of life not correlate closely with asthma control, it is a very distinct component of overall asthma health status.<sup>4</sup> Therefore the impact that asthma has on child's quality of life cannot be inferred from the clinical indices it must be measured directly. In Indian literature there is a paucity of research on the association between Quality of Life(QOL) and asthma. Hence the need for the study. The Pediatric Asthma Quality of Life Questionnaire(PAQLQ) is scientifically validated disease specific instrument that has been used to describe Health Related Quality of Life(HRQOL)among asthmatics all over the world for nearly a decade. Its simplicity, broad applicability (due to availability of several modified versions as well as many linguistic translations), and large clinical and research experience have made it one of the most widely used HRQOL measures in asthma management. Comparative data suggests the PAQLQ might be the best among its peers in this regard.<sup>5</sup> The overall PAQLQ scores as well as the PAQLQ domain scores(activity limitation, symptoms and emotional function) were higher in children with intermittent asthma compared to those with persistent asthma in our study. A significant decrease in overall PAQLQ score( $p=.001$ ), as well as PAQLQ domain scores–activity limitation( $p=.001$ ), symptoms( $p=.002$ ) and emotional function( $p=.001$ ) was observed with increasing asthma severity. A similar association between pulmonary function (FEV1) and severity of asthma was observed( $p=.003$ ). A worsening of the

Health Related Quality of Life(HRQOL) with increasing asthma severity was observed among the children in our study. A similar observation has been reported in other studies.<sup>6,7,8</sup>

## CONCLUSION

The majority(74%) of the children in our study had either mild intermittent or mild persistent asthma. There was no child with severe persistent asthma. Younger the age group children are more affected in our study. Female children (54%) are more affected than the male children (46%) Cough, breathlessness and subcostal retraction was the most common symptoms of asthma in our study. A significant number of children in our study had associated allergic rhinitis(18%) and eczema (16%). In PAQOL, activity limitation of children are more worried about pet animals and their handling. In symptoms, wheezing are more worried complaint and in emotional function, children feel angry and worried at the time of asthmatic attacks. Severity of asthma and FEV1 correlates with each domain. The treatment with ICS with beta 2 agonist shows good control in the asthma in our study.

## REFERENCES

1. Global strategy for asthma management and prevention, GINA updated 2015 (at [www.ginasthma.org](http://www.ginasthma.org).)
2. Ramos-Barbon D. Asma[Asthma]. Archivos de bronconeumologia, 2007, 43(Suppl. 2):3–14.
3. Van Gent Retal. Quality of life in children with undiagnosed and diagnosed asthma. European journal of pediatrics, 2007, 166(8):843-8.
4. Spergel JM. Atopic march: link to upper airways. Curr Opin Allergy Clin Immunol. 2005;5:17-21.
5. McSweeney AJ, Creer TL. Health-related quality-of-life assessment in medical care. Dis Mon 1995; 41: 3–71.
6. Ricci G, Patrizzi A, Baldi E, Menna G, Tabanalelli M, Masi M. Longterm followup of a topic dermatitis: retrospective analysis of related risk factors and association with concomitant allergic diseases. J Am Acad Dermatol. 2006;55:765-71.
7. R. Abdel Hai, I.E. Taher I and M. Abdel Fattah 2: Assessing validity of the adapted Arabic Paediatric Asthma Quality of Life Questionnaire among Egyptian children with asthma
8. Allergy and allergic diseases. N Engl J Med 2001;344:30-37.

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