



# EVALUATION OF ASTHMA KNOWLEDGE IN THE EMERGENCY ROOM SETTING

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## BACKGROUND

Asthma is a chronic inflammatory condition of the airways that can result in ongoing physical, emotional and financial burden for patients and families. Studies assessing parental knowledge of preventive asthma care showed that only 32% had an Asthma Action Plan, and almost 50% of parents whose children used an inhaled corticosteroid did not know its use or mechanism of action in asthma. Data notes that up to 40% of the risk of asthma symptoms in minority children is attributable to exposure to residential allergens that could be reduced, if not eliminated (3). Parental knowledge of preventive measures, such as proper use of controller medications and avoidance of triggers, could play a major role in reducing asthma severity. This study sought to examine the relationship between parental knowledge of asthma triggers, and its association of asthma control in a predominant minority and urban population.

## OBJECTIVES

1. To evaluate parental knowledge of asthma triggers and its correlation with asthma severity
2. To compare demographic variables and their relationship to asthma severity in a high risk patient population

## METHODS

This pilot study consisted of a 3-part survey. The survey was administered to an initial convenience sample size of 200 voluntary parents/caregivers. The inclusion criteria were (1) parents of children coming to the ED with an asthma exacerbation, (2) children ages 2-12 years old, and (3) a history/diagnosis of asthma with previous bronchodilator use. Exclusion criteria were (1) children <2 years or > 18 years of age, (2) children with cystic fibrosis or congenital cardiac disease, (3) parent/caregiver present not primarily English-speaking. Parts A, B, and C of the survey collected information on demographics, triggers, and asthma severity, respectively. Part C, the TRACK questionnaire, is a validated tool used to score asthma severity based upon frequency of symptoms; a score of  $\geq 80$  is consistent with good asthma control.

## RESULTS

N = 199. Two-hundred surveys were completed; one survey was not included in our results due to parent denying a history of asthma on the survey. The majority of patients were African American (97%), with a male/female ratio of ~2:1. The mean patient age was 6 ( $\pm 3$ ). The mean

parent age was 30 ( $\pm 8$ ). Patients were divided into "controlled" and "not controlled" groups based upon their TRACK Questionnaire score from Part C of the survey. Univariate analysis was used to compare both groups with a number of variables. When comparing parental knowledge of triggers with patient control, there was not a positive correlation. In fact, patients whose parent/caregiver could identify triggers had uncontrolled asthma symptoms ( $p = 0.01$ ).

**Table 1. Demographics**

	n (%) or Mean (SD)
patient age	6(3)
patient race	
African American	193(97)
Caucasian	2(1)
Hispanic	4(2)
patient gender	
Male	137(69)
Female	62(31)
parent age	30(8)

**Table 2. Univariate analysis for the risk factors in controlled and not controlled pediatric patients**

	controlled (n=82)	not controlled (n=117)	p-value
Trigger "yes" number (mean)	5.28(2.51)	6.21(2.78)	0.0161
Trigger "not sure" number (mean)	2.52(2.15)	2.24(1.48)	0.4012
Controller medicine			0.2527
Yes	36(37)	61(63)	
No	46(45)	56(55)	
Primary care doctor			0.3016
Yes	77(42)	105(58)	
No	5(29)	12(71)	
Parent age (mean)	28.7(8.2)	30.4(7.8)	0.1513
Hospitalized for breathing problem			0.0076
Yes	20(29)	50(71)	
No	62(48)	67(52)	
Patient age	5.1(2.8)	6.6(3.1)	0.0007

**Table 3. Correlation between parent age and the trigger number**

	Parent age
Trigger "yes"	p=0.0023
Trigger "not sure"	p=0.0619

The greatest number of patients on a controller medication were in the "not controlled" group, although this was not statistically significant ( $p = 0.25$ ). The mean patient age in both groups was ~5-6 years of age; therefore it did not appear that any specific age range was better controlled ( $p = 0.00$ ). When analyzing a possible relationship between parental/caregiver age and triggers identified, older parents/caregivers were able to identify more triggers.

## CONCLUSION

Based upon the results of our study, there was not a positive correlation between parental knowledge of triggers and patient asthma severity. In fact, more triggers were identified by parents whose child's asthma was not controlled. There was also not a statistically significant correlation between using a controller medicine and asthma severity. These findings are likely multifactorial (i.e., improper use of controller, inability to avoid triggers despite identification). We did identify a positive correlation between identification of triggers and older parents/caregivers. This may be a reflection of asthma knowledge in general for younger parents. Since this was a pilot qualitative study, further evaluation in the future will allow us to better understand the relationship between parental knowledge and patient asthma severity. Hopefully, with further research, we can use results to tailor and improve the education that we provide to our families.

## REFERENCES

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