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## ABSTRACT

Asthma is a common chronic pulmonary disease whose prevalence varies greatly with the sex and age of the patient. Among children suffering from Asthma in Baltimore's inner-city, 12.7% of black children are known for suffering from asthma compared with 7.9 percent of whites. Moreover, black children are more likely to visit the emergency room and are more likely to die from asthma related complications. The objective of this preliminary study is to gather data from a community sample to examine pediatric asthma medication compliance among low-income minority children in Baltimore City who use an inhaler. We hypothesize that the majority of participants are not knowledgeable about the proper use of asthma inhalers and have children who are more likely to visit emergency rooms for asthma related conditions. Community residents were approached at various Baltimore community events and asked to complete a brief community asthma survey. The survey included demographic questions, asthma inhaler compliance, asthma control, and asthma symptomatology. Descriptive analyses were performed to assess the primary study objectives. In conclusion, preliminary findings suggest that there may be a need to develop an asthma monitoring system to track asthma dosage compliance.

## CONTACT

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## INTRODUCTION



Asthma is a disease that affects ones lungs. It is a common long-term disease that results in wheezing, breathlessness, chest tightness, and coughing.<sup>1</sup>

Asthma affects people of all ages, but it most often starts during childhood. In the United States, more than 22 million people are known to have asthma. Nearly 6 million of these people are children.<sup>2</sup> Among children suffering from asthma in Baltimore's inner-city, 12.7% of black children suffer from asthma compared to 7.9 percent of whites. Moreover, black children are more likely to visit the emergency room and are more likely to die from asthma related complications. The annual cost of asthma is about \$56 billion dollars.<sup>3</sup> Problems preventing intentional & non-intentional asthma inhaler compliance among minority children with frequent intermittent or persistent asthma include: 1) forgetfulness; 2) complex or difficult to follow dosing regimens; and 3) improper inhaler techniques. Given these findings, it is important to understand asthma compliance in minority children.

The objective of this preliminary study is to gather data from a community sample to examine pediatric asthma medication compliance among low-income minority children in Baltimore city who use an inhaler. Data were gathered from a community sample in Baltimore City. We hypothesize that the majority of participants are not knowledgeable about the use of asthma inhalers. We also hypothesize that their children are more likely to visit emergency rooms for asthma related conditions.

## METHODS

### Participants

23 parents of children with asthma  
83% African American/Black  
92% Children with asthma  
95% Developed asthma between birth -10 years old

### Materials

19 Item Community Asthma Survey

### Procedure

- IRB exemption obtained.
- Community residents were approached at various Baltimore community events and asked to complete a brief Community Asthma Survey.
- Participants were thanked for their participation.

## RESULTS

|  | N  | %  |
|--|----|----|
| <b>Type of Inhaler offered</b>                   |    |    |
| Meter dosed                                      | 5  | 24 |
| Dry powder inhaler                               | 7  | 33 |
| Smart mist                                       | 6  | 29 |
| Other  | 3  | 14 |
| <b>Proper Training to Use Inhaler</b>            |    |    |
| Yes  | 9  | 79 |
| No   | 5  | 21 |
| <b>Frequency of asthma pump misplaced</b>        |    |    |
| Once a day/ once a week                          | 2  | 9  |
| Several times a month                            | 4  | 18 |
| Never  | 16 | 73 |
| <b>Hospital visits in last 6 months</b>          |    |    |
| Yes  | 8  | 64 |
| No   | 14 | 36 |
| <b>Offered Tracking Device</b>                   |    |    |
| No   | 21 | 95 |
| Yes  | 1  | 5  |
| <b>Past 4 weeks child had problems breathing</b> |    |    |
| More than 1 time a day                           | 1  | 5  |
| 1 – 2 times a week                               | 14 | 67 |
| 3-6 times a week                                 | 1  | 24 |
| Not at all                                       | 5  | 5  |
| <b>Use of rescue inhaler</b>                     |    |    |
| Once a day                                       | 6  | 26 |
| Once or two times a day                          | 7  | 30 |
| Three-six times a week                           | 5  | 22 |
| Not at all                                       | 5  | 22 |

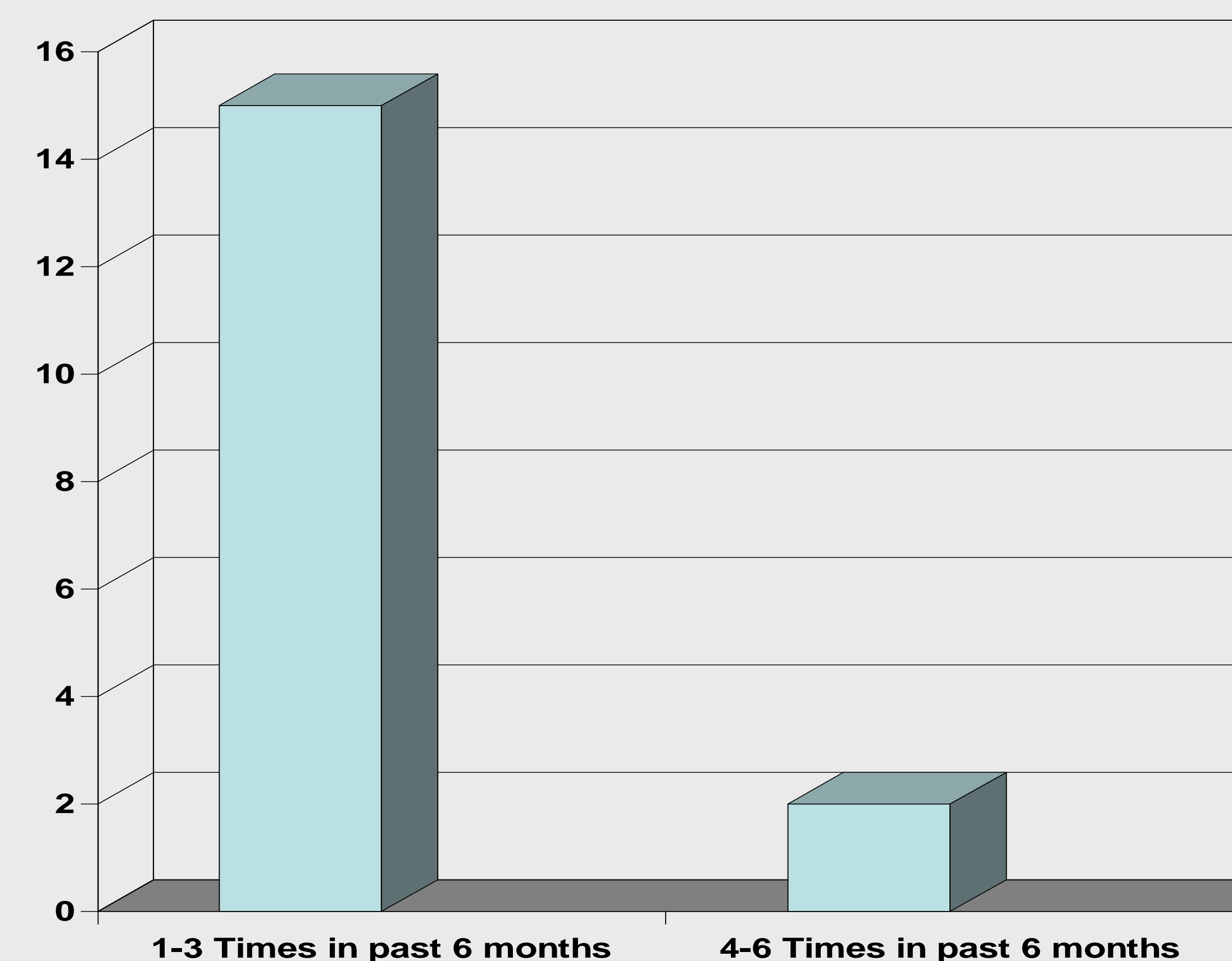


Figure 1 Emergency room visits in past 6 months.

## DISCUSSION

This preliminary study was designed to examine pediatric asthma medication compliance. Preliminary findings from a community survey suggest that the majority of participants are knowledgeable about the proper use of inhalers. This hypothesis was not supported.

Findings also suggest that participants have children who visited the emergency room for asthma related conditions at least 1 – 3 times in 6 months. This hypothesis was supported.

### Limitations

Small sample size  
Limited generalizability  
Limited demographic data on participant and target child (children)

## CONCLUSIONS

Preliminary findings suggest that there may be a need to develop an asthma monitoring system to track asthma dosage compliance. While this is a small sample, the majority of the participants indicated that their child had visited the emergency room for asthma conditions and had to use their rescue inhaler. Children also experienced problems with breathing. This suggests a need to develop a monitoring system to prevent emergency room visits and respiratory problems associated with asthma.

Future research will further examine the feasibility of developing an asthma monitoring device through an updated survey and focus groups with a community sample.

## REFERENCES

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