Published in final edited form as:

Ann Allergy Asthma Immunol. 2016 May ; 116(5): 473–475. doi:10.1016/j.anai.2016.03.005.

School Asthma Policies and Teachers' Confidence and Attitudes about their Role in Asthma Management

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Keywords

asthma; inner-city schools; students; management; teachers

The National Heart, Lung, and Blood Institute (NHLBI) recommends that schools develop and adopt specific policies on asthma management to empower teachers in supporting students with asthma.¹ This is particularly pertinent in schools located in inner cities such as the Bronx, New York (NY), where the prevalence of asthma in school-aged children is 25%.² Since children spend many hours in school, classroom teachers are at the forefront if a student has an asthma attack and should be prepared to help manage a student's asthma.³ Further, some schools have limited or no access to a school nurse, giving teachers an increased responsibility of care for children with asthma.^{4, 5}

Prior research revealed that many teachers lack the appropriate training, knowledge and confidence in handling acute asthma.^{3–7} The development of written school asthma policies and provision of education on asthma management may improve teacher competency in recognizing and managing asthma.⁸ However, many schools lack such policies and asthma education for teachers.⁹

Little is known about the impact of school asthma policies on teacher confidence and attitudes related to asthma management. Therefore, the objectives of this study were to assess: 1) Teacher report of the presence of a written school asthma policy and 2) Whether

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Clinical Trial Registration: clinicaltrials.gov Identifier: NCT01873755

Conflicts of Interest: Authors have no conflicts of interest to disclose.

This study was presented in part at the 2015 Pediatric Academic Societies Meeting on April 28, 2015.

teacher report of a school having an asthma policy influences teacher confidence in asthma management and attitudes about NHLBI guidelines on asthma management.

We conducted a cross-sectional survey of classroom teachers who taught 2nd–5th grades and worked at the school for at least one year. The study took place at four Bronx elementary schools during 2012–2014 academic years with a nurse present during school hours. This survey was part of a larger school-based intervention trial. The study was approved by Montefiore Medical Center and the New York City Department of Education Institutional Review Boards. Written consent from teachers was obtained prior to study participation.

Teachers answered 20 items on a structured self-completion anonymous survey to assess confidence and attitudes about their role in asthma management. We developed survey questions based on the NHLBI guidelines on asthma management in schools and recommendations on the role of teachers in asthma management.¹ There were five categories of questions: (1) Teacher experience with having students with asthma in their classroom; (2) Teacher worry about students developing an attack in classroom; (3) Teacher awareness about the school having a written asthma policy; (4) Teacher confidence in classroom asthma management; and (5) Attitudes on NHLBI guideline recommendations.

Differences in proportions were tested by Chi-square analysis. A two-sided $\alpha < 0.05$ was considered statistically significant. We used IBM SPSS V20.0 software (Statistical Product and Service Solutions 20.0, SPSS Inc., Chicago, IL).

Overall, 70 classroom teachers from 2–5th grades were invited and 65 (93%) participated and completed the surveys (95% female, 25% Hispanic, 37% African American, 53% Caucasian; mean years of teaching 8 years). Almost all teachers (98%) reported having a student with asthma in their classroom during the current school year. However, 69% felt uncomfortable with assessing and 66% with managing the situation if a student developed an asthma attack in the classroom. In addition, 43% stated they were worried when one of their students developed an asthma attack in the classroom. Only 30% of teachers reported that their school had a written policy about managing asthma attacks in the classroom and 16% did not know if such policy existed at their school.

Figure 1 shows differences in teacher confidence based on whether or not they reported having a written asthma management policy in their schools. Significantly more teachers who reported having a written asthma policy, compared to those with report of no policy, knew what to do if a student developed an attack (89.5% vs. 53.5%, $p = .006$). These teachers were also more likely to feel confident in assisting students with asthma medications (68.4% vs. 29.5%, $p = .004$), reducing asthma triggers in the classroom (52.6% vs. 20.5%, $p = .011$), and communicating effectively with parents about student's asthma (68.4% vs. 40.9%, $p = .045$).

Regardless of whether they reported having a written asthma policy, most teachers agreed with national guidelines recommending that classroom teachers consult with the school nurse or principal for updated policies and procedures for managing students with asthma, including managing medication and responding to an asthma attack, and developing a clear procedure with the student and parents for handling missed schoolwork (92% and 95%,

respectively). Further, nearly all teachers (99%) agreed that teachers should alert parents and the school nurse if the student's symptoms interfere with learning or activities with peers, and 100% agreed that they should alert school administrators, nurses and parents of changes in student's performance or behavior that might reflect trouble with asthma.

In summary, our study revealed that teacher report of a written school asthma policy was associated with feeling confident in asthma management. The majority of teachers agreed with the NHLBI recommendations on the teacher's role in asthma management. However, less than one third of teachers reported having a written asthma management policy in their schools. This is consistent with a study conducted 14 years ago, which found a lack of written asthma policies in different Bronx, NY schools⁹ suggesting that little progress has been made in this area.

Our study had limitations. The study was conducted in urban public elementary schools in the Bronx, NY, thus, the conclusions may not be generalizable to schools in different communities. We only included classroom teachers in 2–5th grades, as part of a larger study of students with asthma. Finally, this is a cross-sectional study and conclusions about causality are therefore limited.

Written asthma policies may help empower teachers with the knowledge and confidence needed to proactively support students with asthma. Such policies may ultimately improve school asthma management and help students with asthma achieve optimal care. Written asthma management plans allowing school medication administration are often unavailable in schools making asthma management challenging.² School-based asthma interventions should consider including teacher education about asthma management, provision of asthma management plans, as well as guidance for schools to develop and disseminate written asthma policies based on national guidelines.

Acknowledgments

The authors thank research assistants Elana Greenberg, Florinda Islamovic and Maria Ivanna Avalos for help with data collection. The authors also thank the teachers who took part in the study.

Financial Support: This study was supported by 5K23HD065742 (Reznik: PI) from the National Institutes of Health (NIH) Eunice Kennedy Shriver National Institute of Child Health & Human Development, the Stony Wold-Herbert Foundation, Monaghan Medical Corporation, and Department of Pediatrics/Children's Hospital at Montefiore.

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Figure 1.
Differences in Teacher Confidence in Asthma Management Based on the Reported Presence or Absence of Written Asthma Policy