

School-based program helps adolescents cope with asthma

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A school-based intervention program designed for adolescents with asthma significantly improves asthma management and quality of life for the students who participate, and reduces asthma morbidity, according to researchers in New York City, who studied the effect of the program aimed at urban youth and their medical providers. The Asthma Self-Management for Adolescents (ASMA) program is an eight-week intervention geared toward helping adolescents learn more effective ways of managing their symptoms and controlling their asthma.

The findings were published online ahead of the print edition of the American Thoracic Society's [American Journal of Respiratory and Critical Care Medicine](#).

"We found that, relative to controls, ASMA [students](#) reported significantly more confidence in managing their [asthma](#), greater use of their controller medication and written treatment plans, fewer days with asthma-related activity restrictions and fewer emergency department visits and hospitalizations, as well as an improved quality of life," said Jean-Marie Bruzzese, PhD, assistant professor of child and adolescent psychiatry at NYU School of Medicine. "Our findings indicate ASMA is effective in improving asthma self-management and in reducing asthma morbidity and urgent health-care use in low-income, urban minority adolescents."

Collaborating with Robert B. Mellins, MD and David Evans, PhD of Columbia University College of Physicians and Surgeons, and the NYC

Department of Education, the researchers enrolled 9th and 10th graders from five New York City high schools. To aid in selection, students in these grades were asked to complete a case detection survey, which asked students if they had been diagnosed asthma and gathered information about the frequency of symptoms and the use of prescribed asthma medication. Following parental consent, researchers enlisted 345 students who reported an asthma diagnosis, symptoms of moderate to severe persistent asthma and asthma medication use in the previous 12 months, and randomized them to ASMA or a wait-list control group. Of the enrolled students, 46 percent identified themselves as Latino and 31 percent identified themselves as African-American.

During the study period, trained staff performed assessments of the students every two months over a 12-month period, in addition to the more detailed interviews that occurred at the start of the study and at 6 and 12 months following enrollment. Comprehensive surveys assessed self-management and medical management of asthma, including symptom management and use of written management plans and controllers; health outcomes, including symptom days and asthma-related school absences; and urgent health-care use, including medical visits and hospitalizations.

Those randomized to participate in the ASMA program underwent an eight-week, intensive program aimed at helping students manage their symptoms through three educational group sessions and individual coaching sessions, held at least one each week for five weeks. Students received coaching about medical visits and how to work with their medical provider to more effectively control their asthma. In addition, the students' medical providers were contacted to inform them of the study, and were given written materials and telephone consultations with pediatric pulmonologists or adolescent medicine specialists about the program's concepts and National Heart, Lung, and Blood Institute (NHLBI) guidelines for treatment of asthma. Providers were encouraged

to give students written treatment plans and to prescribe anti-inflammatory medicines for students with persistent asthma. Students without medical providers were given a referral to a primary care provider in their neighborhood, or to a school-based health center, when available.

"Research has shown adolescents are less likely to receive regular medical care compared to younger children, and minority adolescents are less likely to use preventive medicine than white, non-Hispanic youth," Dr. Bruzzese said. "The ASMA program helps teach these children, and inform their caregivers, of the steps they can take to gain control of their symptoms and their treatment program. The cognitive and psychosocial developments of adolescence make this period an ideal time to teach these skills."

The researchers found that, at each follow-up interview, students enrolled in ASMA took significantly more steps to prevent asthma symptoms from occurring and had improved self-confidence in managing their asthma compared to the control group. In addition, at six months, the odds of appropriately using a controller medication were twice as high in the ASMA group, compared to the control group.

Morbidity was also decreased in the ASMA group compared to control. ASMA participants reported a 31 percent reduction in night awakenings and a 42 percent reduction in activity restriction due to asthma, as well as a 28 percent reduction in acute medical visits, a 49 percent reduction in emergency department visits and a 76 percent reduction in hospitalizations compared with controls.

"ASMA addresses an illness with high public health significance and, as such, can serve as a model for other populations of adolescents, including those in rural and suburban communities, or for adolescents with other chronic illnesses," said Dr. Bruzzese.

Schools or districts that lack resources to implement the program may consider partnerships with insurance providers or local medical schools with pediatric pulmonologists or allergists on staff, the researchers noted.

"Adoption of ASMA by schools would contribute to reducing the burden of asthma on adolescents, as well decreasing the health-care burden of the community at large," said Dr. Bruzzese.

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