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# Barriers to and Resources for Asthma Management in Vermont Elementary Schools

Samantha Boyd

Benjamin Farahnik

Anja Jokela

Emily Keller

Russell Landry

*See next page for additional authors*

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**Authors**

Samantha Boyd, Benjamin Farahnik, Anja Jokela, Emily Keller, Russell Landry, Mikaela Lee, Alice Stoddart, Christopher Ting, Rebecca Ryan, and David Kaminsky

Samantha Boyd, Benjamin Farahnik, Anja Jokela, Emily Keller, Russell Landry, Mikaela Lea, Alice Stoddart, Christopher Ting, Rebecca Ryan, Dr. David Kaminsky, MD

University of Vermont College of Medicine, Burlington VT

## INTRODUCTION

- Asthma is a chronic disease of the lungs that causes wheezing, coughing, and shortness of breath due to airflow obstruction. 10% of children in Vermont suffer from asthma compared to the national average of 9.5%. Asthma is the leading cause of school absenteeism and is one of the top causes of hospitalization.
- The goal of our study was to assess barriers to and resources for asthma management in schools with the hope of identifying potential areas of improvement. We decided to survey school nurses in Vermont because they play an integral role in asthma care for school-aged children. We worked in conjunction with the American Lung Association of Vermont (ALA-VT).



## METHODS

### Survey

- Survey questions were compiled from validated surveys and modified to assess the barriers to and resources for best-practice asthma management in Vermont elementary schools.
- Surveys were distributed using Survey Monkey to 300 nurses using a Vermont Department of Health e-mail list. In addition to the survey, an introductory pre-survey and two reminder post-survey e-mails were sent.
- 114 completed surveys were returned.
- A raffle of asthma educational materials was offered as an incentive to participate in the survey.

### Focus Group

- Medical students met with two Burlington-area nurses with experience at the school and state levels.

## RESULTS

### Major Themes from the Survey/Focus Group:

- There is a lack of communication between health care providers, parents, and school nurses.
- Parents need to provide medications, and physicians need to provide Asthma Action Plans.
- School nurses have limited means in addressing asthma triggers in students' homes.
- There are modifiable asthma triggers in schools.
- 1-on-1 teaching and visual aids (i.e., posters, brochures) are the most effective tools for asthma education.

### Study Population:

- 114 public school nurses that were responsible for grades K-6.
- The majority of them had either Bachelor's (52%) or Master's (28%) degrees.

### Quotes from the Survey/Focus Group:

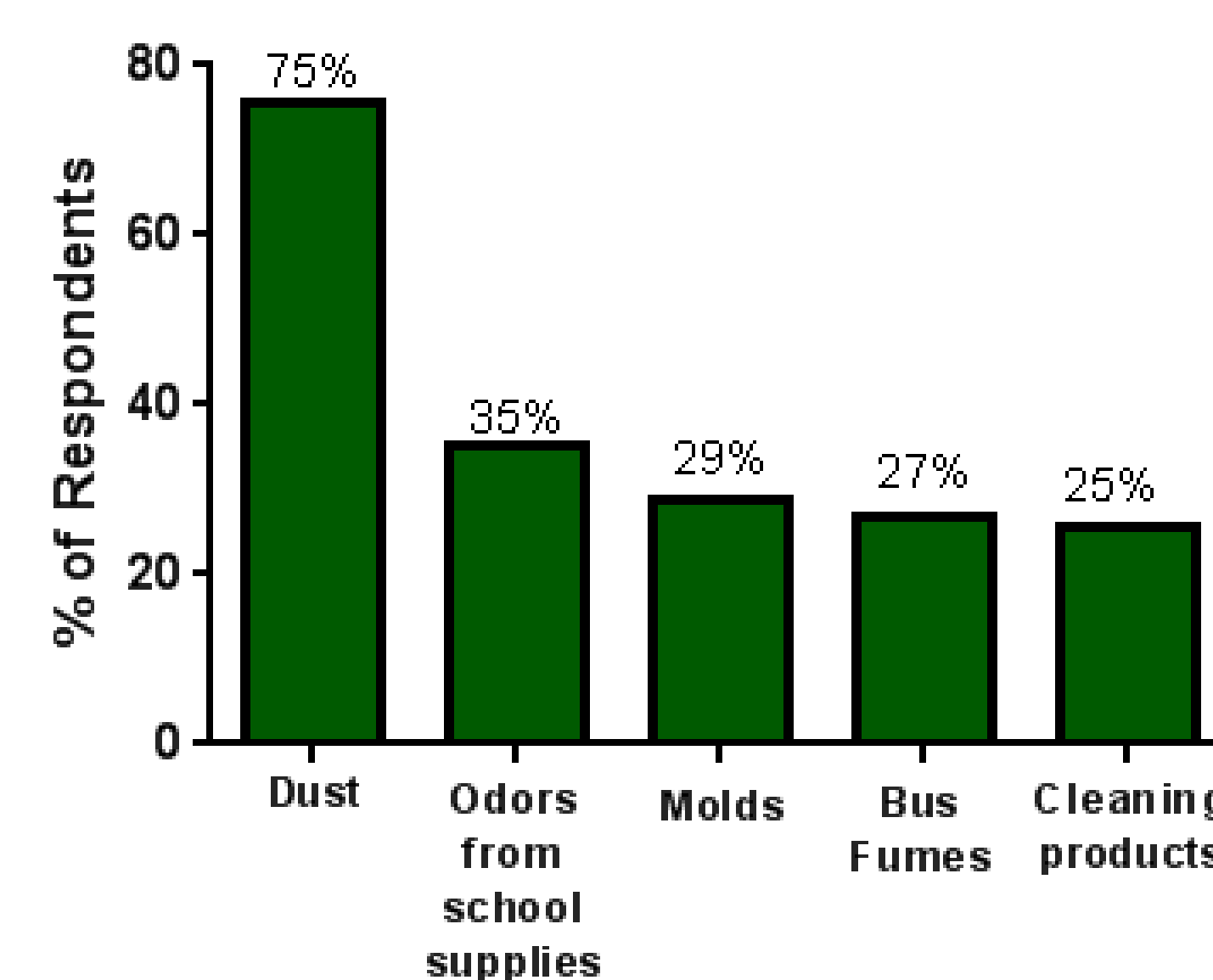
"During orientation, the school nurse only has five minutes to talk about asthma" - Survey

"I've only had one kid in all my years who actually knew the proper way to use an inhaler" - Focus Group

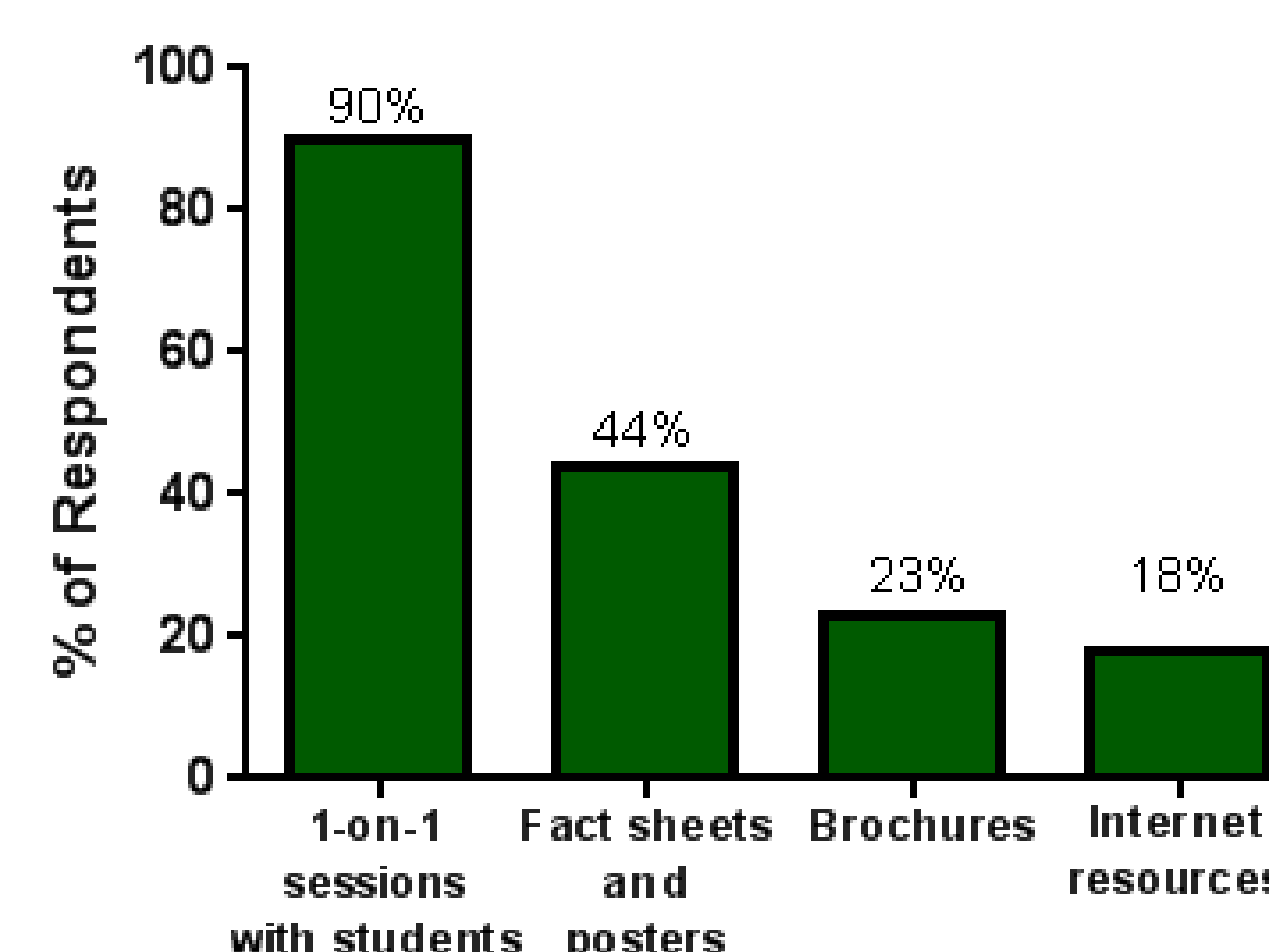
"When I ask docs about [teaching students about taking asthma medications], they say, 'well the pharmacist is supposed to teach them.' If you ask the pharmacist, they'll say the doctors are supposed to teach them..." - Focus Group

"If you have a nurse there to teach them, they won't be sick, they won't be missing class time, they'll be in the seat learning. Let the higher-ups know the nurses aren't just sitting there - they can do this for your students to keep them in school and out of the ERs." - Focus Group

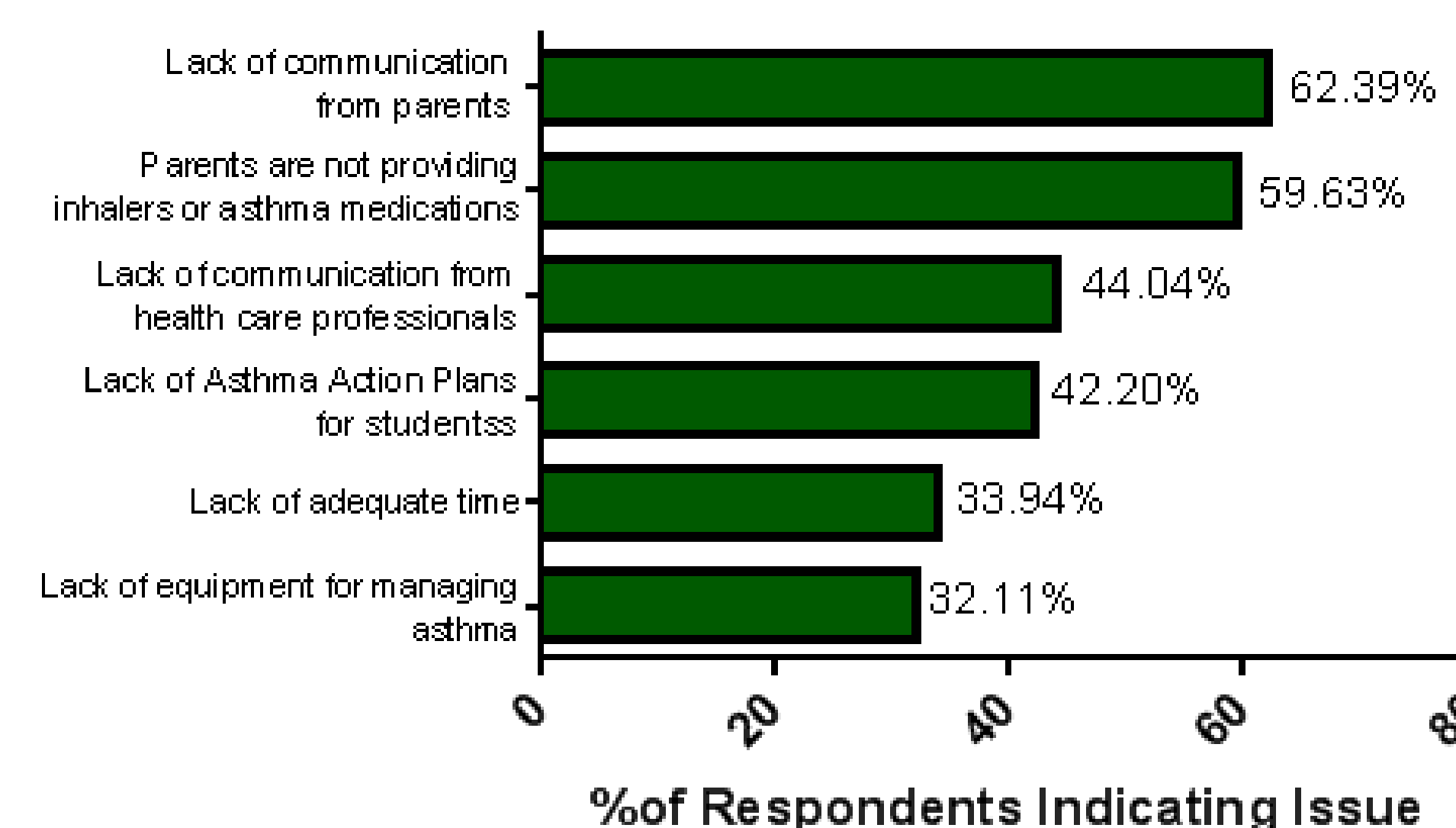
"Which environmental triggers in your school do you think affect students with asthma (check all that apply)"



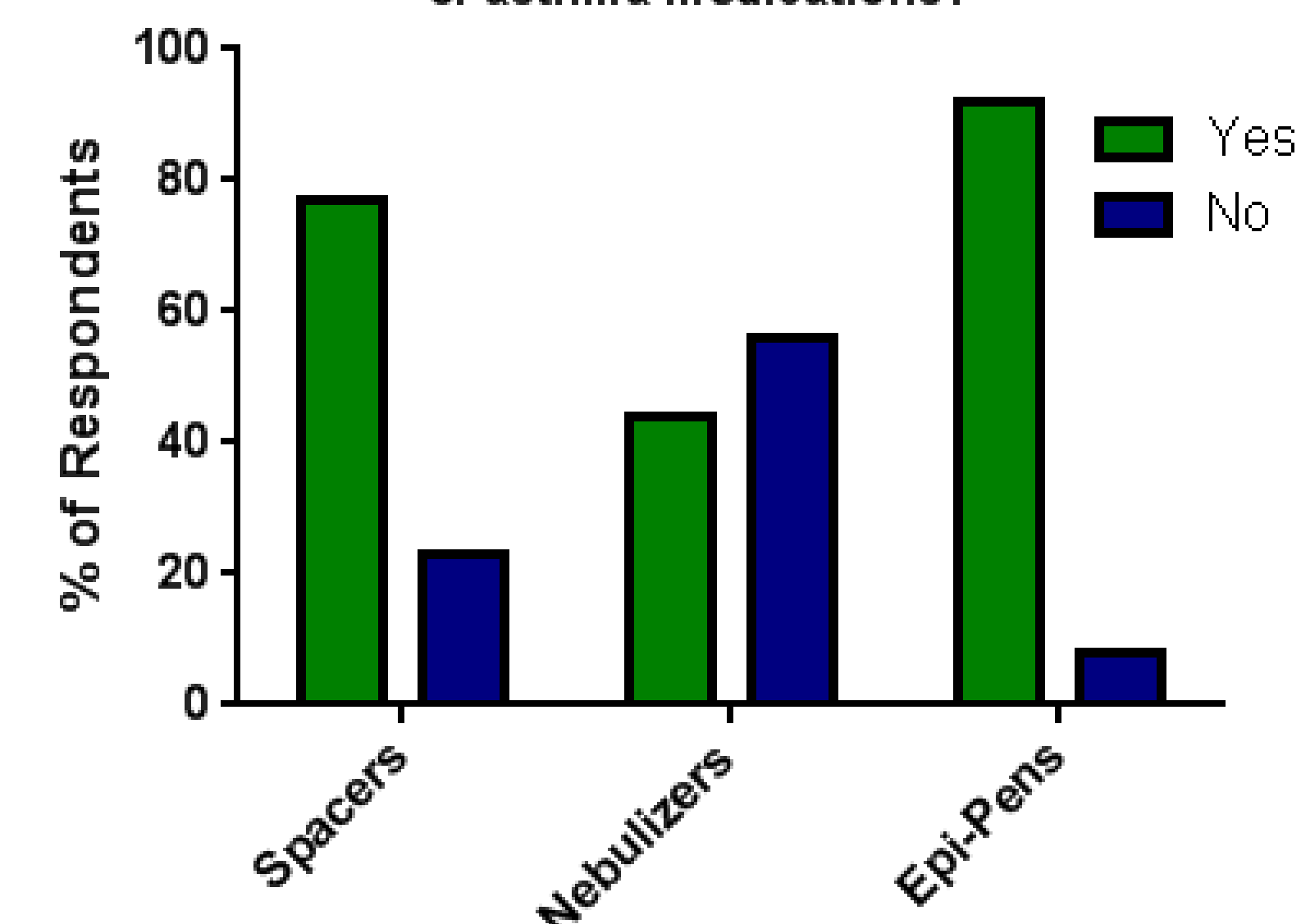
"Which types of asthma educational materials or venues have you found to be the most effective for students in the school setting? Check all that apply"



Major Obstacles in Asthma Management in Schools



"Does this school have the following equipment to support the administration of asthma medications?"



## DISCUSSION

### Impact of Research

- In addition to one-on-one sessions, 44% of respondents indicated that visual materials were most useful in asthma education. Over 30% indicated that a lack of these resources presented a major obstacle to asthma education. This is a concrete, immediate need that could be addressed.
- Primary care providers can improve school asthma management by submitting updated asthma action plans.
- Nurses identified environmental triggers at home and at school as major issues. Public health efforts to modify the home environment are needed.

### Limitations

- Although 13 of 14 Vermont counties are represented in the data, responses were limited to public schools nurses.
- The focus group was limited in size.
- Generalizability limited to Vermont.

### Future direction of research

- Future studies exploring the healthcare providers' perspective would identify key interventions to address the communication gaps such as a lack of asthma action plans in schools.
- Sub-analysis of our results could yield county-by-county differences with regards to obstacles to treating asthma.

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