

351: Respiratory Emergency Department Visits More Common Among Native American Children than Non-Native American in South Dakota.



Luis M. Acosta, MD¹, Virginia A. Rauh, PhD², Joyti Angal, MPH³, Christa Friedrich, MS³, Ping Ye, PhD³, Michael M. Myers, PhD⁴, William P. Fifer, PhD⁴, Amy J. Elliott, PhD³, Matthew S. Perzanowski, Ph.D.¹

¹Department of Environmental Health Sciences, Mailman School of Public Health, Columbia University, New York, NY; ²Department of Population and Family Health, Mailman School of Public Health, Columbia University, New York, NY;

³ Center for Pediatric & Community Research, Avera McKennan Hospital & University Health Center, Sioux Falls, SD, USA; ⁴Division of Developmental Neuroscience, Department of Psychiatry, Columbia University College of Physicians and Surgeons, New York, New York, USA.

BACKGROUND

- A goal of proper asthma care is to minimize urgent care visits.
- African American and Latino children in the United States have higher rates of emergency department (ED) use for asthma.¹
- US national data suggest that asthma is 1.6-1.8 times higher in AI/AN children than in non-Hispanic white children.^{2,3}
- There is also high frequency of ED visits for asthma among asthmatics in the AI/AN population (twice as high as for non-Hispanic whites), which remains poorly understood.⁴⁻⁶
- We examined respiratory health outcomes and use of ED visits among American Indian/American Native (AI/AN) children and non-AI/AN living in South Dakota (SD).

HYPOTHESIS

Emergency department visits for respiratory symptoms would be more frequent among American Indian/American Native children in South Dakota.

METHODS

- Children living in South Dakota were recruited for the Safe Passage (PASS) and Environmental Influences on Child Health Outcomes (ECHO) study, an ongoing prospective birth cohort study originally designed to investigate prenatal exposures and risk for sudden infant death syndrome and stillbirth.
- Questionnaire data at age 2-4 years, about respiratory outcomes and emergency department (ED) visits in the past 12 months were collected.

REFERENCES

1. Celedón *et al.* Ann Am Thorac Soc 2017;14:814-26.
2. Hale *et al.* J Comm Health 2016;41:451-60.
3. Lutfiyya MN *et al.* Rural Remote Health 2008; 8:875.
4. Brim SN *et al.* Pediatrics 2008; 122:e217-22.
5. Law HZ *et al.* J Asthma 2011; 48:405-13.
6. Liu LL *et al.* Arch Pediatr Adolesc Med 2000; 154:991-6.

RESULTS

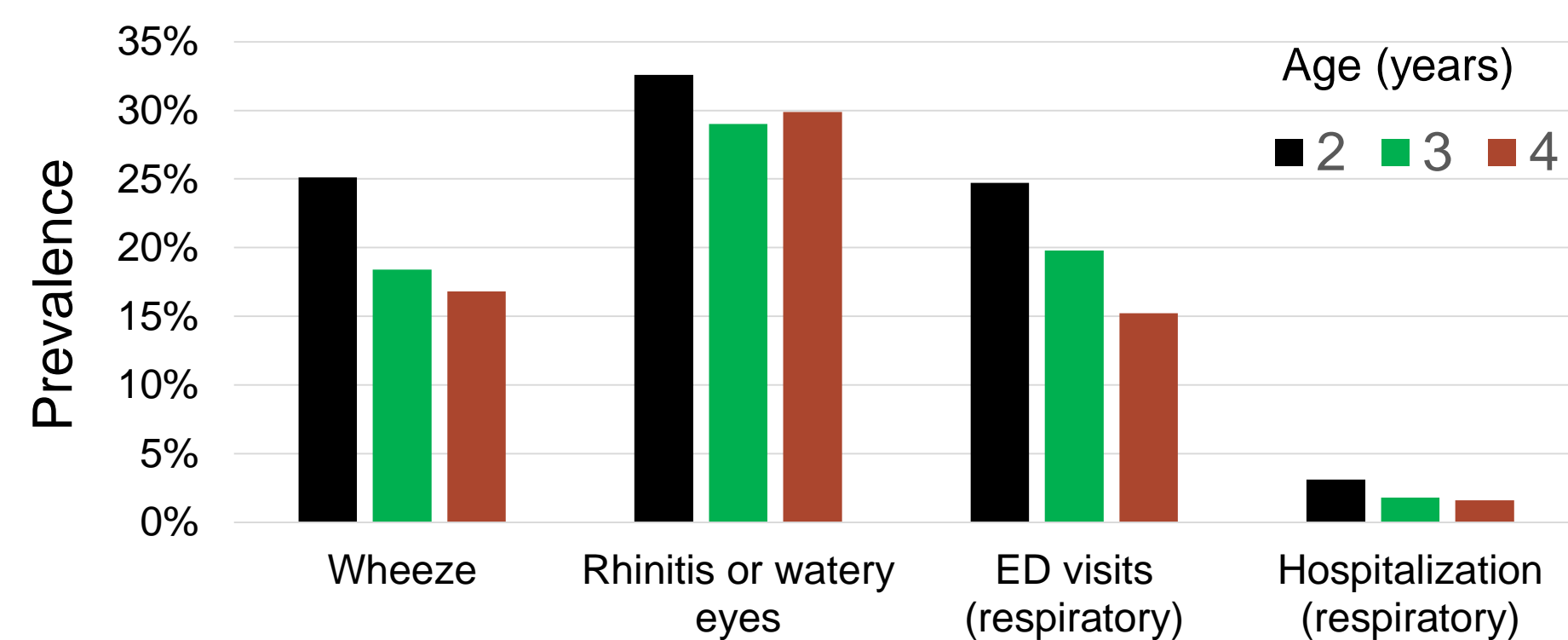


Figure 1. Prevalence of respiratory outcomes among 2, 3 and 4 year olds (n=227, 217 and 244, respectively). There were n=7, and n=9 children younger than 2 and older than 4, respectively.

- Data were available on n=704 children.
- Report of wheeze, rhinorrhea and/or watery eyes, and ED visits were common, while hospitalizations were uncommon (Figure 1).
- As compared with girls, boys were more likely to have a report of wheeze and rhinorrhea and/or watery eyes (P=0.009), but not ED visits (Figure 2).
- Despite no significant difference in prevalence of wheeze or rhinorrhea and/or watery eyes, ED visits were more common among children of AI/AN parents (Figure 3).
- In a model adjusted for age, sex, urban/rural, smoker in the home, rhinitis symptoms and wheeze in the past year, children with an AI/AN parent were more likely to have had an ED visit for respiratory problems [Prevalence Ratio = 1.5, P=0.037].

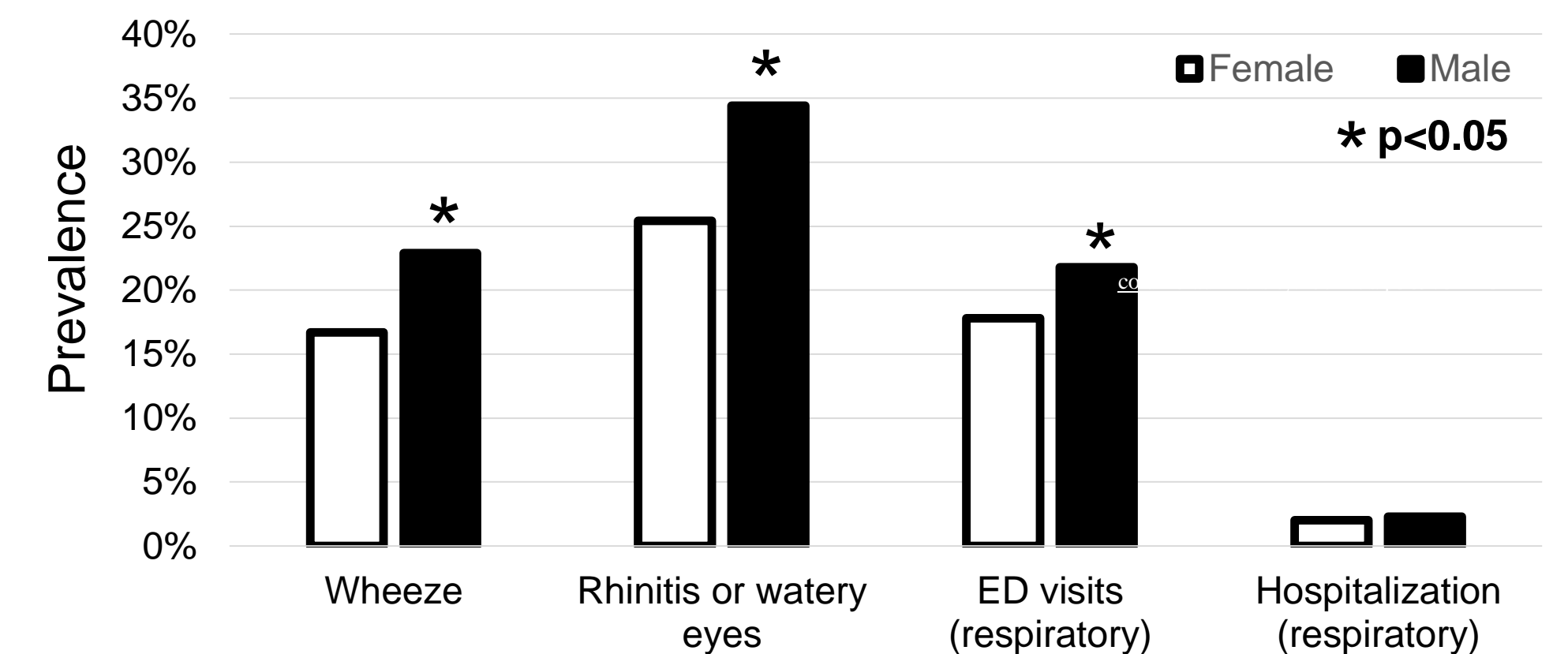


Figure 2. Prevalence of respiratory outcomes by sex.

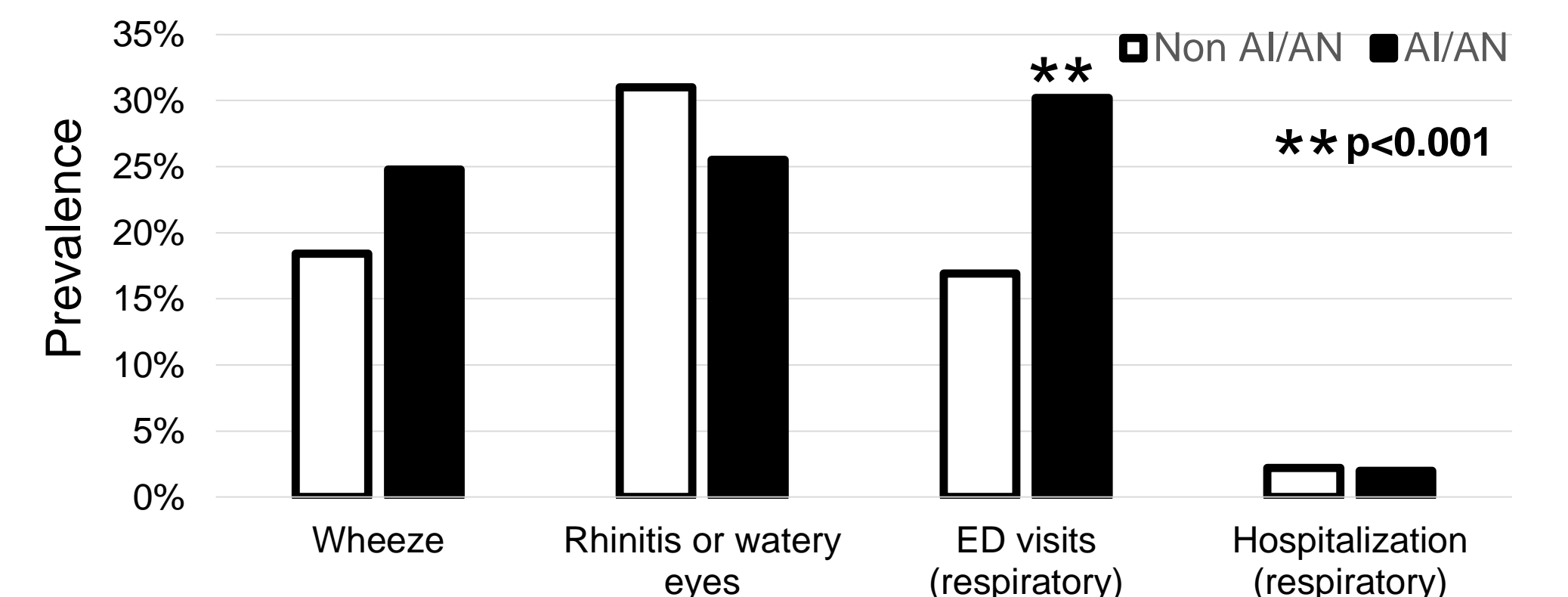


Figure 3. Prevalence of respiratory outcomes by sex.

CONCLUSIONS

AI/AN children had greater ED visits for respiratory problems in this cohort, independent of indicators of asthma severity. Elucidating the underlying causes needs further study.

FUNDING

NIH U01/HD045935, U01HD055155-10, Environmental Influences on Child Health Outcomes (ECHO) UG3AI023279-01 and UG3 OD023279, P30 ES09089