

## INTRODUCTION

- Asthma is a chronic illness that results in significant disability and increased mortality. In Winnebago County, 13.4% of households in this region have children with asthma (Rockford Health Council, 2014.)
- School based, culturally-centered asthma education programs such as the American Lung Association's (ALA) *Kickin' Asthma* have been proven to be an efficient approach (Morricca et al, 2016).
- Gaps exist on findings for outcomes such as school absences, asthma control, unscheduled acute visits and grades.

## PURPOSE

*This pilot study introduces asthma education in a school setting and examines the association between participation in the ALA's Kickin Asthma program and:*

- **Written asthma action plans**
- **Improved asthma control**
- **Improved asthma knowledge**
- **Visits to school nurse**
- **Visits to school based health center**
- **School absences**
- **Grades**



## THEORETICAL MODEL: CIRCLES OF INFLUENCE

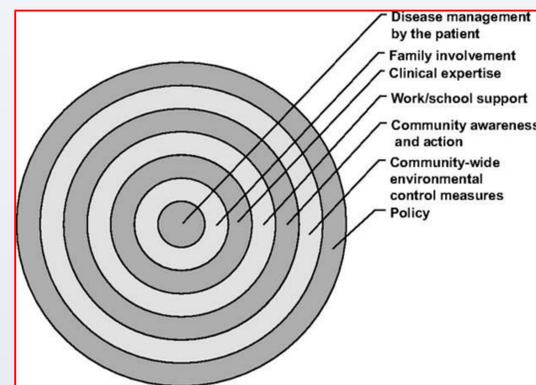


Figure 1  
Permission obtained through RightsLink at the American Academy of Pediatrics. Clark, N., Herman, M., Rand, C. (2009). The effectiveness of asthma and behavioral interventions. *Pediatrics*, 123:3, S185-S192.



## METHOD/PARTICIPANTS

- Prospective, quasi experimental pilot study - met for 4 consecutive weeks for 2 hour in seat sessions
- Assessed at baseline, at end of 4 sessions, and five months post study
- Convenience sample: A cohort of five school age children with asthma, ages 11 to 12, 80% male, 60% African American



## OUTCOMES

Decreased acute case visits to School Based Health Center (SBHC) or school nurse for asthma-related events:

- Fall 2015: 1 visit to SBHC; 2 visits to school nurse
- Fall 2016: 0 visits to SBHC; 1 visit to school nurse
- **Slight downward trend of # of acute episodic asthma-related visits**

Decreased missed school days:

- Fall 2015: 3.5 missed days (SD=4)
- Fall 2016: 0.6 missed days (SD=0.9)
- **Children missed fewer school days after attending program though not significant ( $t=2.021$ ;  $df=4$ ;  $p=.113$ )**

Maintained excellent grades (Table 2):

- Fall 2015: 91.7%
- Fall 2016: 90.1%
- **Grades remained within A range (<1% difference)**

An increase in the number of written asthma action plans or updated existing asthma action plans:

- Baseline: 40% without an asthma action plan
- **Post: 100% with updated asthma action plans**

Improved scores on Asthma Control Test (ACT) (Asthma Control Test, Schatz et al, 2006).

- Baseline mean: 18.1 ACT score
- Post-study mean: 19.5 ACT score
- 5-month follow-up mean: 20 ACT score
- **Improvement noted but not statistically significant**

Improved scores on Asthma Knowledge Questionnaire (Fitzclarence, 1990).

- Baseline mean: 70%
- Post-study mean: 92.5%
- 5-month follow-up mean: 80%
- **Modest improvement in knowledge scores maintained over a 5 month follow-up**

## CONCLUSIONS

The results of this integrative asthma education pilot study indicate:

- ◆ Increased number of up-to-date asthma action plans. This is consistent with current guidelines promoted by the American Lung Association and the American Academy of Pediatrics.
- ◆ Post Asthma Control Test (ACT) scores improved which reflects asthma control.
- ◆ Post study knowledge scores were improved initially but declined slightly at five months. This finding may reflect the need for additional class review time.
- ◆ Fewer missed school days.
- ◆ Decreased number of acute asthma visits to School Based Health Center and school nurse.
- ◆ Although students missed their study hall, their overall GPA remained in the A range.

## IMPLICATIONS FOR NURSING

- **Practice:** APNs and elementary school systems can have successful partnerships to further health care models in childhood chronic disease management.
- **Policy:** Encourage school officials and community groups to work together for the benefit of the children and remove barriers that prevent collaboration.
- **Research:** Capture all outpatient services used; implement in diverse school districts and measure longitudinal sustainability & results.
- **Education:** This model of education for children with asthma can be applied to ongoing care. Expansion to include student nurses and APN faculty should be a priority.

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