CAN AN ASTHMA SELF-MANAGEMENT INTERVENTION IMPROVE QUALITY OF LIFE IN CHILDREN WHO HAVE ASTHMA?

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DISCLOSURE

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OBJECTIVES

Describe asthma self-management intervention with learning activities appropriate for children ages 7-12.

Summarize evidence of how asthma affects a child’s quality of life (QOL).

Compare asthma-related quality of life between intervention groups and between racial/ethnic groups.

Interpret study results for application to clinical populations.
Asthma is a major public health problem in childhood. It disproportionately affects lower socioeconomic status families, and children who are members of racial/ethnic minority groups (Akinbami et al., 2012).

Frequency of days with asthma symptoms that require urgent management (rescue medicine), disturb sleep, and limit children’s daily activities contribute to worsening QOL (Moreira et al., 2013).
Current Asthma Prevalence by Age Group, Sex, Race and Ethnicity, Poverty Status, Geographic Region, and Urbanicity: United States, Average Annual 2008-2010

- Children, females, Blacks, and Puerto Ricans are more likely to have asthma.
- People with lower annual household income were more likely to have asthma.
- Residents of the Northeast and Midwest were more likely to have asthma.
- Living in or not in a city did not affect the chances of having asthma.
STUDY DESIGN

Randomized controlled trial comparing asthma self-management intervention to an attention control intervention of general health promotion.

Sample:
Children, grades 2 – 5; 7-12 years old
Physician/Healthcare provider diagnosed asthma
Asthma symptoms in the past 12 months (current asthma)
AIMS & HYPOTHESIS

Aim 1: To report results of the intervention on children’s asthma-related QOL.

Hypothesis: Children in the treatment group will report significantly better asthma-related QOL than children in the attention control group.

Noting the heavier burden of asthma on members of ethnic/racial minority groups;

Aim 2: Explore differences in QOL between Hispanic, Black, and non-Hispanic white children.
INTERVENTION

Intervention was designed to improve children’s self-management (Horner & Brown, 2014; Raymond et al., 2012). Learning activities focused on:

- Recognizing asthma triggers;
- Acting to prevent or treat asthma symptoms;
- Problem-solving using common everyday scenarios that children experience (asthma in class, at recess/playground, sports, playing after school, riding bus, and doing chores);
- Learning to self-monitor (recognizing symptoms, use of a peak flow meter);
- Using a metered dose inhaler correctly.
DATA COLLECTION & QUALITY OF LIFE

All materials were written in dual-language format of English and Spanish.

Data on QOL were collected at baseline at the time of study enrollment & again at 12 months.

Repeated measures ANOVA were run to examine changes from baseline to 12 months (Field, 2013).

Juniper’s Pediatric Asthma QOL scale*:

- Symptom burden;
- Emotional functioning;
- Activity limitations.

* higher scores = worse QOL
SAMPLE

N = 293 enrolled at baseline
N = 257 completed the study, 88% retention
Boys = 163 (63.6%)
Girls = 94 (36.4%)
Hispanic = 58%
Black = 21%
Non-Hispanic white (White) = 19%
Mean age = 8.82 years (SD = 1.2)
AIM 1, RESULTS

1. Baseline demographic data (gender, age, race/ethnicity) & QOL were compared between groups; no significant differences were found. Groups were comparable.

2. At 12 months: QOL was significantly improved in the treatment group.
   - QOL Total Score, $F = 7.53$, $p = .007$
   - QOL Emotional Functioning, $F = 4.05$, $p = .02$
   - QOL Asthma Symptoms, $F = 3.28$, $p = .04$
   - QOL Activity Limitations were not significantly different at 12 months between groups, both groups had fewer days with limited activities.
AIM 2, RESULTS

Comparing baseline data for racial/ethnic groups, revealed significant differences at baseline in children’s QOL.

QOL Total Score: $F = 7.05, p = .001$

QOL Activity Limitations: $F = 5.89, p = .003$

QOL Emotional Functioning: $F = 3.46, p = .03$

QOL Asthma Symptoms: $F = 8.21, p < .001$

Black children reported significantly worse QOL than the other two racial/ethnic groups.
AIM 2, RESULTS

QOL improved after the intervention, but there continued to be differences between racial/ethnic groups 12 months later:

QOL Total Score: $F = 3.62, p = .03$

QOL Activity Limitations: $F = 3.18, p = .04$

QOL Asthma Symptoms: $F = 4.52, p = .01$

QOL Emotional Functioning was not significantly different.
DISCUSSION

The hypothesis was supported – the intervention significantly improved children’s QOL.

QOL is a patient-centered indicator of well-being and health.

The intervention focused on symptom recognition, self-monitoring, problem-solving, and skill development was an effective way to improve Qol in children with asthma.

It is important to note that the groups were equivalent in terms of gender and race/ethnicity.
Further examination of QOL by racial/ethnic group did reveal significant differences in QOL for children at baseline and at 12 months.

The QOL did improve after the intervention, but differences in QOL scores between racial/ethnic groups persisted at 12 months.

This highlights the need for continued work to look carefully at ways to improve asthma self-management and thereby improve the health and well-being of children with asthma (Sweet et al., 2014).

Interventions may require tailoring to address specific issues of concern to parents and children with asthma who are members of racial/ethnic groups.
REFERENCES


