



# Understanding the Comorbidity of Asthma and Anxiety in Childhood: Characteristics, Vulnerabilities, and Treatment Implications

Nicole Fleischer, M.S., M.S., Dr. Elizabeth Gosch, PhD, ABPP, PCOM; Dr. Phil Kendall, PhD, ABPP, Temple University

## INTRODUCTION

Asthma and anxiety disorders are often co-occurring conditions, and comorbidity may increase complications related to both conditions (Meuret et al., 2006). Comorbidity is associated with decreased asthma control, increased medication use and asthma severity, and diagnoses such as separation anxiety, generalized anxiety, and panic disorder (Roy-Byrne et al., 2008). Given the high incidence of asthma and anxiety comorbidity, clinicians should be informed of the unique presentation of these clients in clinical practice. Although much is known about the development and characteristics of childhood anxiety, less is known about children with anxiety and comorbid asthma. Few studies have examined how the comorbidity of asthma and anxiety may impact CBT treatment for anxiety. While CBT treatment is empirically supported in treating childhood anxiety, little research has been conducted on how children with comorbid asthma may respond to traditional CBT treatments. Overall, the current research on treatment for childhood anxiety and asthma comorbidity has several limitations. Most research has been conducted on adults. Furthermore, both adult and childhood studies have smaller sample sizes and are not generalizable to other individuals with this comorbidity. Further research is needed to demonstrate whether traditional anxiety disorder treatment protocol can help reduce the severity and impact of both illnesses (Lehrer et al., 2008) in children. Additionally, more information is needed to fully understand how children experiencing anxiety and asthma differ from children experiencing anxiety alone, as such differences may have treatment implications.

## HYPOTHESES AND METHOD

**Hypothesis 1:** Children with comorbid asthma and anxiety will exhibit higher levels of physical symptoms, parent psychopathology, panic symptoms, generalized anxiety symptoms, and separation anxiety symptoms than children without comorbid asthma and anxiety. **Questionnaires:** Physical Symptoms Questionnaire (PSC), State-Trait Anxiety Scale (STAI), Screener for Child Anxiety Related Disorders (SCARED) panic scale, GAD scale, and Separation Scale

**Hypothesis 2:** Children with comorbid asthma and anxiety will demonstrate lower rates of negative self talk than children without comorbid asthma and anxiety. **Questionnaire:** Negative Affect Self-Statement Questionnaire (NASSQ)

**Hypothesis 3:** Children with comorbid asthma and anxiety will exhibit more worry themes consistent with physical worries than children without comorbid asthma and anxiety. **Questionnaire:** Coping Questionnaire (CQ-C)

**Hypothesis 4:** Children with comorbid asthma and anxiety will demonstrate higher anxiety scores post-treatment than children without comorbid asthma and anxiety. **Questionnaire:** Pediatric Anxiety Rating Scale (PARS)

### Sample:

Archival Data from original CAMS study  
488 Children enrolled in anxiety treatment at 6 locations throughout the U.S.  
88 of these children had comorbid asthma and anxiety.

Table 1

*Demographic Data of Sample*

|                                  | Children with Asthma | Children Without Asthma |
|----------------------------------|----------------------|-------------------------|
| Gender                           |                      |                         |
| Male                             | 33 (37.5%)           | 134 (33.7%)             |
| Female                           | 55 (62.5%)           | 264 (66.3%)             |
| Race                             |                      |                         |
| Black                            | 6 (6.8%)             | 38 (9.5%)               |
| Asian                            | 6 (6.8%)             | 6 (1.5%)                |
| White                            | 67 (76.1%)           | 317 (79.6%)             |
| American Indian                  | 2 (2.3%)             | 4 (1.0%)                |
| Native Hawaiian/Pacific Islander | 0 (0%)               | 2 (0.5%)                |
| Other                            | 7 (8.0%)             | 31 (7.8%)               |

## CONCLUSION

- This research demonstrates that children with comorbid asthma and anxiety may not differ significantly from children with anxiety only in their presentation of anxiety symptoms, and parent psychopathology.
- Children with asthma and anxiety comorbidity demonstrated higher NASSQ score than children without asthma. This may be related to questions regarding somatization, feeling frightened, and feelings that they may die. Children with asthma may identify more with these feelings of dying, especially if they have experienced life-threatening asthma attacks.
- Traditional CBT treatments may benefit children with mild to moderate asthma. Severe medical illnesses were an original exclusion to this study.
- Limitations: Archival data, - unknown levels of asthma diagnosis; large difference between groups (88 in asthma group).
- Further Research: Focus on severe asthma and the impact it may have on anxiety treatment; understanding negative self-talk in children with asthma and anxiety; understanding other characteristics in children with comorbid asthma and anxiety, including anxiety sensitivity.
- Implications: This study can help facilitate effective anxiety treatment for children with asthma and anxiety by addressing these negative self-talk themes, and discussing the ways asthma may increase their social or separation concerns.

## RESULTS & DISCUSSION

Table 2  
*Means and Standard Deviations for Outcome Variables*

|                     | Children with Asthma | Children without Asthma |
|---------------------|----------------------|-------------------------|
| NASSQ               | 35.97 (18.19)        | 31.38 (17.21)           |
| PSC                 | .35 (.29)            | .30 (.24)               |
| Scared – Panic      | 4.23 (4.27)          | 4.38 (4.86)             |
| Scared – General    | 6.85 (4.75)          | 6.05 (4.85)             |
| Scared - Separation | 4.86 (3.99)          | 4.24 (3.84)             |
| PARS (Post)         | 12.07 (5.53)         | 10.44 (5.27)            |
| STAI                | 37.28 (7.43)         | 39.06 (8.56)            |

Table 3  
*Frequency Results for the Coping-Questionnaire Situations*

|                               | Children with Asthma | Children without Asthma |
|-------------------------------|----------------------|-------------------------|
| Academic/Performance Concerns | 43 (16.3%)           | 173 (14.8%)             |
| Social/Evaluation Concerns    | 113 (48.2%)          | 452 (38.8%)             |
| Physical/Natural Concerns     | 29 (11%)             | 195 (16.7%)             |
| School phobia/Refusal         | 1 (0.4%)             | 6 (0.5%)                |
| Specific Fear                 | 17 (6.4%)            | 73 (6.3%)               |
| Separation Concerns           | 61 (23.1%)           | 266 (22.8%)             |

**Hypothesis 1:** The findings were not statistically significant, therefore no relationship was determined between a comorbidity of asthma and anxiety, and parent psychopathology, physical symptoms, panic symptoms, generalized anxiety symptoms, and separation anxiety symptoms.

**Hypothesis 2:** Findings were statistically significant. ( $F(1,484) = 5.019, p = .026$ ; however, significance was found in the opposite direction; children with comorbid asthma and anxiety had higher NASSQ scores than children with anxiety only.

**Hypothesis 3:** No significant differences were found between comorbid asthma and anxiety, and the themes of their worries.

**Hypothesis 4:** Due to a significant Levene's test (therefore  $p < 0.01$ ), significance could not be determined if asthma and anxiety comorbidity affected post-treatment anxiety scores ( $F(1,478) = 5.733, p = 0.017$ ). All asthma children were responders to treatment.

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