

RACIAL AND ETHNIC DIFFERENCES

The Relationship between Caregivers' Post-traumatic Stress Disorder and Their Asthma Health Beliefs in an Ethnic Minority Inner-City Sample

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Objective. Caregivers' asthma health beliefs can impact healthcare decisions. This study aimed to determine whether caregivers with a diagnosis of post-traumatic stress disorder (PTSD) had asthma illness representations less aligned with the professional model of asthma management and whether their children had worse asthma control. **Methods.** Participants were 120 children with asthma (age $M = 9.25 \pm 1.37$) and their caregivers recruited from the Bronx, NY, USA. Participants were Puerto Rican ($n = 55$), African-American ($n = 30$), Afro-Caribbean ($n = 22$), and Mexican ($n = 13$). Caregivers completed: a psychiatric interview to determine diagnosis of PTSD, anxiety and depressive disorders; the Asthma Illness Representation Scale (AIRS) to assess beliefs about their children's asthma; and the childhood asthma control test (C-ACT). **Results.** One in five caregivers had PTSD, and these caregivers had lower total AIRS scores, lower scores on the AIRS Emotional Aspects of Medication Use subscale, and the AIRS Nature of Symptoms subscale, indicating illness beliefs less aligned with the professional model. Caregivers with PTSD were more likely to perceive asthma as an acute, difficult to control illness and focused on the emotional aspects of medication use. There was no relationship between PTSD in caregivers and self-report of their children's asthma control, but children with poorly controlled asthma had caregivers with lower total AIRS scores. **Conclusion.** Caregivers' traumatic experiences impact their beliefs about their children's asthma. Future interventions targeting these beliefs could improve the manner in which they understand and treat their children's asthma.

Keywords asthma control, illness representations, pediatrics, trauma

INTRODUCTION

Caregivers are the gatekeepers of their children's medical treatment and illness management (1). Thus, an awareness and understanding of caregivers' illness representations and beliefs regarding controller medication use is important (2). The professional model of asthma management defines asthma as a chronic disease that is always present, regardless of the level of control or the presence or absence of symptoms (2, 3). Lay models of illness are based on an individual's understanding of the nature and cause of a disease, interpretation of symptoms, beliefs about treatment, and expected outcome and course of the disease (4). The lay model of asthma management regards the disease as episodic in nature, difficult to control, and present only when symptoms are apparent (2). This acute model of asthma may be more prevalent among inner-city minorities, based upon previous research comparing asthma illness representations of caregivers in the Bronx and in upstate Rochester, NY, USA (2).

Caregivers' illness representations can influence the manner in which they treat their children's disease (2). For example, parents might alter the prescribed asthma care plan based on their own beliefs about the illness and

the medications (4). Illness representations also play a role in parents' decisions about use of complementary and alternative medication and inhaled corticosteroids and leukotriene antagonists, which can impact health outcomes (2, 4). Halm and colleagues found that 53% of patients in an inner-city, predominantly minority adult sample, believed that asthma was an episodic disease, which was only present when they were experiencing symptoms. They conceptualized the belief of these patients as the *no symptoms, no asthma* model (5). Patients who had this belief reported worse adherence to inhaled corticosteroids, fewer routine doctor visits for asthma when no symptoms were present, and less frequent use of peak flow meters (5).

Ethnic minorities residing in inner-city areas experience greater rates of asthma (6) and trauma (7). Asthma is one of the most prevalent chronic childhood illnesses in the United States (8). New York City, the Bronx in particular, has some of the highest rates of asthma and highest number of asthma-related hospitalizations and deaths in the country (9). In 2000, it was estimated that 20.8% of children under the age of 18 in the Bronx had a diagnosis of asthma (8). Puerto Rican and African-American children have higher asthma morbidity and mortality rates than Caucasian children (10–12).

A diagnosis of post-traumatic stress disorder (PTSD) follows exposure to a trauma in which one experienced or witnessed an event that involved actual or threatened death or serious injury, or threat to the physical well being of oneself or others (13). Minority populations, as well as

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those in low-income and urban areas, are at a particular risk for exposure to trauma (14). Caregivers and relatives of children with asthma also have a higher prevalence of PTSD than that seen in community samples (15). Kean and colleagues (16) found that 29% of parents whose children experienced a life-threatening asthma event had PTSD. The high asthma burden in the Bronx and the vulnerability of this group to trauma makes it an important sample to focus research efforts on.

Stress in caregivers has been connected to increased rates of asthma morbidity and mortality, wheezing, hospitalizations, and poor asthma control in their children (17). Lange and colleagues (17) found that paternal PTSD symptoms were significantly related to greater reports of asthma symptoms and oral steroid use in children at the age of 1, with a trend toward significance at age of 3. Maternal stress appears to affect the *in utero* environment and impacts the sympathetic and adrenomedullary system and the hypothalamic-pituitary-adrenocortical axis. Studies suggest that this disturbance can result in hypersensitive inflammatory disorders, such as asthma, in the offspring (18). Additionally, a connection between PTSD symptoms in children with asthma and asthma control was shown in a pilot study of inner-city youth (ages 7–17), which found that a higher number of PTSD symptoms in the children was associated with worse asthma control on the Asthma Control Questionnaire (19).

The main aim of our study was to determine whether caregivers with PTSD would report different asthma illness representations than caregivers without PTSD. We hypothesized that caregivers with PTSD would report asthma illness representations less aligned with the professional model of asthma management, and that their children would have poorly controlled asthma. Additionally, we examined whether the traumatic events reported by the caregivers with PTSD were related to their child's asthma. Exploratory analyses were conducted to determine whether the relationship between PTSD and asthma illness representations was specific to a diagnosis of PTSD, or related more generally to DSM-IV-TR diagnoses of anxiety (excluding PTSD and specific phobias) or depressive disorders across the lifetime in caregivers.

METHODS

Participants

There were 120 primary caregiver-child dyads who participated in the study, and they were recruited from an inner-city hospital and through mailings targeting the hospital's catchment area. Inclusion criteria for children were: English or Spanish-speaking; diagnosis of asthma confirmed through medical chart review; reported active asthma symptoms within the past year; between ages of 7 and 11 at the time of recruitment; primary caregiver who self-identified as Puerto Rican, Puerto Rican-American, Mexican, Mexican-American, African, African-American, Jamaican, or Afro-Caribbean/West Indian; and had resided with the child participant for at least 9 months of the past year. Exclusion criteria included: vocal cord dysfunction;

cognitive disabilities that made it difficult for children to follow the study protocol; caregivers without definitive PTSD or non-PTSD diagnosis.

The majority of the children were male ($n = 70$) with a mean age of 9.20 ± 1.35 in the PTSD diagnosis group and a mean age of 9.26 ± 1.39 in the non-PTSD diagnosis group. All children were interviewed in English and 14 caregivers were interviewed in Spanish. Caregivers of Puerto Rican origin were the most represented group in the study ($n = 55$), then African-American ($n = 30$), Afro-Caribbean ($n = 22$), and Mexican ($n = 13$). The majority of the primary caregivers were biological mothers ($n = 108$).

Measures

Asthma Illness Representation Scale and Asthma Illness

Representation Scale-Spanish: The Asthma Illness Representation Scale (AIRS) available in English and Spanish (AIRS-S) contains 37 items with five subscales and a total score. The total score on the AIRS has a Cronbach's α value of 0.82 and on the AIRS-S has a Cronbach's α value of 0.77 (2, 20). The scale compares caregivers' representations of their children's asthma with the professional model of asthma management. It was created to help healthcare professionals identify illness beliefs that could be barriers to adequate asthma treatment. Caregivers with more education have higher total AIRS scores than those with less education (2). Items are measured on a 5-point scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*), with higher values indicating greater agreement with the professional model of asthma management. Examples of items in the AIRS subscales are listed below (2, 20):

Treatment Expectations (eight items; English Cronbach's $\alpha = 0.71$; Spanish Cronbach's $\alpha = 0.66$): "I have a lot of stressors related to taking care of my child's asthma right now"; "I believe that my child can be symptom-free most of the time."

Attitudes toward Medication Use (eight items; English Cronbach's $\alpha = 0.83$; Spanish Cronbach's $\alpha = 0.77$): "Using inhaled steroids should be a last resort in treating asthma"; "Parents should try to get their children off inhaled steroids as soon as possible."

Facts about Asthma (11 items; English Cronbach's $\alpha = 0.54$; Spanish Cronbach's $\alpha = 0.52$): "It's more important for children with asthma to be medication-free than to be symptom-free"; "Airway inflammation causes asthma symptoms."

Nature of Asthma Symptoms (five items; English Cronbach's $\alpha = 0.62$; Spanish Cronbach's $\alpha = 0.53$): "Asthma symptoms are unpredictable"; "Asthma symptoms come on suddenly."

Emotional Aspects of Medication Use (five items; English Cronbach's $\alpha = 0.67$; Spanish Cronbach's $\alpha = 0.30$): "Taking daily medication makes a child feel different from other children"; "My child is reluctant to use an inhaler in front of other children."

PTSD, Other Anxiety Disorders, and Depressive Disorders: Graduate-level psychology research assistants

interviewed primary caregivers using the Structured Clinical Interview for DSM-IV-TR Axis I Disorders (SCID-I), a semi-structured psychiatric interview (21). Reliability studies have found a range of kappa values from 0.77 to 0.88 (22, 23). A licensed clinical psychologist provided supervision and verified diagnoses. Participants were interviewed to determine whether they currently had PTSD and/or whether they had lifetime PTSD, which we defined as a PTSD diagnosis more than 12 months prior to participation in the study. Participants were asked whether they had ever experienced any traumatic events. Participants who reported multiple traumas were asked to respond to questions based on the self-reported most traumatic event experienced. Diagnoses of PTSD were dichotomized into a PTSD diagnosis group and a non-PTSD diagnosis group for the purpose of analyses. A diagnosis of an anxiety disorder other than PTSD included presence (current or lifetime) of: anxiety disorder not otherwise specified; panic disorder with and without agoraphobia; agoraphobia; generalized anxiety disorder; social phobia; obsessive compulsive disorder. Diagnoses of PTSD and specific phobias were not included in the analysis of other anxiety disorders. A diagnosis of depressive disorder included presence (current or lifetime) of major depressive disorder and dysthymia.

Childhood Asthma Control Test: The childhood asthma control test (C-ACT) is a caregiver and child self-report measure of the child's asthma control in the last month. There are four questions that the child answers and three that the caregiver responds to. It has been validated in children between the ages of 4 and 11 (Cronbach's $\alpha = 0.79$) (24). Total scores, derived from a combination of caregiver and child responses, range from 0 to 27 and are dichotomized into poorly controlled or well-controlled asthma (>19 points) (24).

Language Preference: The caregiver assessment was done in English or Spanish in accordance with the caregiver's preference.

Years of Education: The years of education that the primary caregiver completed was calculated.

Poverty Threshold: Families were categorized as living above or below the federal poverty line (25).

Procedure

Caregivers signed an informed consent form and children provided written informed assent. The Institutional Review Board of the Albert Einstein College of Medicine approved this study. Caregivers and their children participated in an assessment session during which the measures discussed above were administered. Graduate-level research assistants assessed caregivers and their children independently. Caregivers received monetary compensation for their participation.

Data Analyses

To address study aim #1, an independent samples *t*-test was conducted to examine the unadjusted differences in AIRS

scores between caregivers with and without PTSD. A one-way between-groups analysis of covariance (ANCOVA) controlled for years of caregiver education. To address study aim #2, a chi-square analysis was conducted to determine whether caregivers with PTSD were more likely to have children with poorly controlled asthma than caregivers without PTSD. Additionally, an independent samples *t*-test was done to examine differences in AIRS scores between children with poorly controlled versus well-controlled asthma. An ANCOVA controlled for years of caregiver education. To address study aim #3, traumatic events were tallied. To address study aim #4, two independent sample *t*-tests were conducted; one to examine the unadjusted differences in AIRS scores between caregivers with and without an anxiety disorder diagnosis (other than PTSD and specific phobias) and the other *t*-test to examine the unadjusted differences in AIRS scores between caregivers with and without a depressive disorder. ANCOVAs controlled for years of caregiver education. All analyses were performed using PASW Statistics, version 18.

RESULTS

PTSD Diagnosis

PTSD was diagnosed in approximately 20.83% of the caregivers ($n = 25$). All 25 caregivers with PTSD had lifetime diagnoses (PTSD prior to the past 12-months). Of these 25 caregivers, 12 also had current PTSD diagnoses. There were no significant differences in demographic characteristics between the PTSD and non-PTSD groups (Table 1).

TABLE 1.—Demographic information for caregivers and children.

	PTSD diagnosis % (n)	Non-PTSD diagnosis % (n)	p
Caregivers			
Female	100.00 (25)	96.84 (92)	.37
Male	0.00 (0)	3.16 (3)	
Ethnicity			
Latino	68.00 (17)	53.68 (51)	.20
Non-Latino	32.00 (8)	46.32 (44)	
Race ^a			
White	31.82 (7)	35.63 (31)	.74
Non-White	68.18 (15)	64.37 (56)	
Relationship to child			
Biological mother	88.00 (22)	90.53 (86)	.71
Other	12.00 (3)	9.47 (9)	
Primary language			
English speaking	88.00 (22)	88.42 (84)	.95
Spanish speaking	12.00 (3)	11.58 (11)	
Years of education			
<i>M</i> (SD)	11.76 (3.88)	12.19 (2.79)	.56
SES poverty threshold ^b			
Above poverty threshold	57.89 (11)	56.16 (41)	.89
Below poverty threshold	42.11 (8)	43.84 (32)	
Children			
Female, % (n)	40.00 (10)	42.11 (40)	.85
Male, % (n)	60.00 (15)	57.89 (55)	
Child age, <i>M</i> (SD)	9.20 (1.35)	9.26 (1.39)	.84

Notes: ^aData incomplete for 11 participants, statistics based on data available.

^bData incomplete for 28 participants, statistics based on data available.

TABLE 2.—Traumatic events.

Traumatic event	Frequency
Aunt died of asthma	1
Car accident	2
Caregivers' child or family member hurt	3
Death of a parent or sibling	4
Domestic violence	1
Mugged	1
Murder of parent, family member, or friend	6
Physical violence	2
Sexually abused	8
Stabbed	1
Threatened by someone	1
Witnessed violence	5

Note: Some participants reported multiple events, and others did not give specific events.

Frequency of Traumatic Events Associated with PTSD

A complete record of the traumatic events that led to PTSD in caregivers was not available, due to the reluctance of some caregivers to discuss the traumatic details of their past (Table 2). Traumatic events reported included: rape; sexual, physical, and domestic violence; death of a family member; shooting; murder; and car accidents. Only one participant reported that the traumatic event suffered was related to asthma, specifically the death of a family member due to asthma.

Total AIRS Scores

An independent samples *t*-test compared the total AIRS scores for caregivers with PTSD and caregivers without PTSD (Table 3). On an average, caregivers with PTSD had significantly lower total AIRS scores ($M = 2.87 \pm 0.37$) than caregivers without PTSD ($M = 3.09 \pm 0.34$), $t(118) = 2.74$, $p < .01$. This difference remained significant after controlling for years of caregiver education, $F(1, 105) = 4.92$, $p < .05$, partial eta squared = 0.045. This finding shows that caregivers with PTSD were more likely to have beliefs congruent with the lay model of asthma management.

AIRS Subscale Scores

In addition to AIRS total scores, subscale scores were analyzed (Table 3). Caregivers with PTSD had significantly

lower (less congruent with the professional model of asthma management) scores on the Emotional Aspects of Medication Use index ($M = 2.66 \pm 0.67$) than caregivers without PTSD ($M = 3.11 \pm 0.69$), $t(118) = 2.91$, $p < .01$. This difference remained significant after controlling for years of caregiver education, $F(1, 105) = 5.06$, $p < .05$, partial eta squared = 0.046. This finding suggests that caregivers with PTSD are more likely to believe that taking medications for asthma may set their children apart from others and increase the likelihood that they will experience emotional problems. Additionally, these parents are more likely to endorse items that suggest that their children do not like taking daily medications.

Caregivers with PTSD also had significantly lower (less congruent with the professional model of asthma management) scores on the nature of symptoms subscale ($M = 2.58 \pm 0.66$) than those without PTSD ($M = 2.87 \pm 0.57$), $t(118) = 2.21$, $p < .05$. This difference remained significant after controlling for years of caregiver education, $F(1, 105) = 4.97$, $p < .05$, partial eta squared = 0.045. This suggests that caregivers with PTSD are more likely to view asthma as an episodic acute condition that they cannot control.

No significant relationships were found between PTSD diagnosis and scores on the Attitudes toward Medication Use, Treatment Expectations, and Facts about Asthma subscales.

Childhood Asthma Control Test

In the total sample, 52.5% ($n = 63$) of children had caregiver/child-reported C-ACT scores that indicated poorly controlled asthma. There was no significant difference between scores on the caregiver/child-reported C-ACT in caregivers with PTSD (64% reported that their children's asthma was poorly controlled) and caregivers without PTSD (49% reported that their children's asthma was poorly controlled), $\chi^2(1) = 1.68$, $p = .20$.

A significant relationship between the caregiver/child-reported C-ACT scores and caregivers' AIRS scores (Table 4) was found. Caregivers who reported their children's asthma as poorly controlled ($M = 2.96 \pm 0.32$) had total AIRS scores less aligned with the professional model compared to caregivers who reported their children's

TABLE 3.—Asthma Illness Representation Scale (AIRS) scores.

	PTSD diagnosis ($n = 25$) M (SD)	Non-PTSD diagnosis ($n = 95$) M (SD)
Total AIRS**	2.87 (0.37)	3.09 (0.34)
Subscales		
Attitude toward Med Use	2.67 (0.67)	2.84 (0.63)
Emotional Aspects of Med Use**	2.66 (0.67)	3.11 (0.69)
Facts about Asthma	3.74 (0.38)	3.67 (0.35)
Nature of Symptoms*	2.58 (0.66)	2.87 (0.57)
Treatment Expectations	2.73 (0.56)	2.94 (0.57)

Notes: *Significant at $<.05$.

**Significant at $<.01$.

TABLE 4.—Relationship between AIRS scores and childhood asthma control test scores.

	Poorly controlled asthma ($n = 63$) M (SD)	Well-controlled asthma ($n = 57$) M (SD)
Total AIRS*	2.96 (0.32)	3.13 (0.37)
Subscales		
Attitude toward Med Use	2.73 (0.61)	2.89 (0.67)
Emotional Aspects of Med Use	2.91 (0.72)	3.13 (0.68)
Facts about Asthma	3.71 (0.33)	3.64 (0.39)
Nature of Symptoms	2.80 (0.56)	2.82 (0.64)
Treatment Expectations*	2.65 (0.54)	3.17 (0.49)

Note: *Significant at $<.01$.

asthma as well controlled ($M = 3.13 \pm 0.37$), $t(118) = -2.65$, $p < .01$. This difference remained significant after controlling for years of caregiver education, $F(1, 105) = 6.17$, $p < .05$, partial eta squared = 0.056. Caregivers who reported their children's asthma as poorly controlled ($M = 2.65 \pm 0.61$) had scores on the Treatment Expectations subscale that were more aligned with the lay model, compared with caregivers who reported their children's asthma as well controlled ($M = 3.17 \pm 0.49$), $t(118) = -5.43$, $p < .01$. This difference remained significant after controlling for years of caregiver education, $F(1, 105) = 24.65$, $p < .01$, partial eta squared = 0.190. No significant relationships between scores on the other AIRS subscales (Attitudes toward Medication Use, Facts about Asthma, Nature of Asthma Symptoms, and Emotional Aspects of Medication Use) and children's asthma control were identified.

Exploratory Analyses

Total AIRS scores of caregivers with an anxiety disorder (excluding PTSD and specific phobias) ($M = 2.99 \pm 0.34$) and caregivers without anxiety disorders ($M = 3.06 \pm 0.36$) were not significantly different, $t(117) = 0.92$, $p = .36$. This lack of significant difference remained after controlling for years of caregiver education $F(1, 105) = 0.005$, $p = .94$, partial eta squared = 0.000. Similarly, total AIRS scores of caregivers with depressive disorders ($M = 3.05 \pm 0.34$) and caregivers without depressive disorders ($M = 3.04 \pm 0.37$) were not significantly different, $t(118) = -0.19$, $p = .85$. This lack of significant difference also remained after controlling for years of caregiver education $F(1, 105) = 0.009$, $p = .93$, partial eta squared = 0.000.

DISCUSSION

Caregivers with diagnoses of PTSD had asthma illness representations that were significantly less aligned with the professional model of asthma management than caregivers without PTSD. Specifically, caregivers with PTSD view asthma as an acute, episodic disease that is difficult to manage. They worry about the emotional implications of medication use and endorse statements indicating that their children do not like the taste of their medications and that they feel different because they are required to take daily medication. These are important findings because illness representations can impact asthma management by caregivers (2, 4). For instance, this study showed that caregivers who had asthma illness representations less aligned with the professional model reported that their children had poorly controlled asthma. This is consistent with data showing that caregivers with illness representations more aligned with the professional model report that their children have fewer asthma symptoms and doctor visits for asthma (2).

This study suggests that a history of traumatic experiences may impact the asthma illness representations that caregivers form. Although reported traumas experienced by caregivers were often experienced when they were younger and were mainly unrelated to asthma, individuals

who experience trauma may adopt fatalistic attitudes and view the world as outside of their control, which may explain why they are more likely to perceive their children's asthma as an uncontrollable disease (26). Additionally, PTSD is often associated with the avoidance of triggers that could result in individuals experiencing PTSD symptoms such as flashbacks (13). Parents may avoid proactively caring for their children's asthma because of the stress associated with it. Instead of interpreting asthma as a chronic disease requiring constant care they may only acknowledge asthma when symptoms are present and difficult to ignore. This is similar to the *no symptoms, no asthma* disease belief discussed previously (5).

Caregivers with diagnoses of PTSD might also attempt to limit potential exposure to trauma. Thus, they might be less willing to leave their homes to attend medical appointments and might limit the time they allow their children to be outdoors (26). These behaviors can increase their children's exposure to indoor allergens leading to worse asthma symptoms and validating the perception that asthma is unmanageable. Wright and colleagues (26) found that caregivers experiencing greater reported levels of violence reported an inclination to ruminate, which might impact their problem-solving style. The tendency to ruminate might lead caregivers to focus on only certain aspects of their children's asthma and treatment and be less open to new or different ideas. Additionally, intrusive thoughts might make it difficult for caregivers to gain perspective of their children's asthma and understand it well.

The prevalence of PTSD in this sample of caregivers (20.83%) is higher than the rates found in community-based samples (~8%), but is consistent with rates found among other inner-city minority populations (13, 27). Urban residents tend to experience high levels of community violence (28), and psychological stress has been associated with residing in areas with greater poverty, and more exposure to negative physical and social conditions, such as violence (28).

Despite research showing that exposure to community violence is associated with worse asthma outcomes (28), this study failed to find a relationship between asthma control and caregivers' diagnoses of PTSD. The small sample of caregivers with PTSD, as well as the fact that approximately half of the entire sample had poorly controlled asthma, might explain the absence of a statistically significant relationship. Traumatic events that led caregivers to develop PTSD could not be formally evaluated, yet it is noteworthy that in the data available there was only one caregiver who reported an asthma-related event as traumatic. Other studies that have investigated PTSD and asthma have often focused on assessing traumatic events related to asthma, while a unique feature of this study is that it investigated traumatic events in general.

There are certain limitations to this study that are important to address. Many of the child participants were recruited from the same inner-city hospital asthma clinic. Thus, there was limited variability in patient demographic characteristics and the healthcare providers they used.

Another limitation is the cross-sectional design of this study, which made it impossible to determine causality. Thus, it is not known whether the PTSD diagnoses of the caregivers directly impacted their asthma illness representations, or if other mitigating factors were at play. Additionally, because the study was not designed to specifically examine the etiology of PTSD, we did not oversample PTSD patients. Therefore, we could not analyze whether there were different relationships between types of trauma and illness representations. A further limitation of this study is that due to our limited sample size, for the purpose of analyses, we combined individuals with current PTSD and lifetime PTSD diagnoses into one group.

Future research would be advantageous to build upon the results of this study. Replication in larger community-based samples would show whether the results of this study are generalizable. In a larger sample, it would also be possible to explore whether different types of trauma and the amount of traumatic events experienced have varying effects on illness representations of caregivers. Future studies should examine whether illness representations of caregivers and asthma control of their children differ between those with current and lifetime diagnoses of PTSD. It would also be beneficial to study the relationship between PTSD in caregivers and other measures of their children's asthma control, such as quick-relief medication use, school absences due to asthma, and emergency department visits for asthma.

CONCLUSION

This research establishes a relationship between diagnoses of PTSD in caregivers and their illness representations of their children's asthma. Results indicated that traumatic events experienced across caregivers' lifetimes have an association with their perceptions of their children's asthma. Caregivers with PTSD had illness representations that were less aligned with the professional model of asthma management. The study results highlighted the importance of evaluating trauma, particularly in inner-city samples such as this one, in which the rate of PTSD is greater than those found in community-based samples. Future methods of intervention could include evaluation of caregivers' trauma history, and asthma education focused on the nature of asthma, its symptoms, and medical treatment.

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DECLARATION OF INTEREST

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of this article.

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