

Letter to the Editor

Ethnic differences in asthma-panic disorder comorbidity*To the Editor:*

Adults with asthma are at substantially higher risk for panic disorder (PD) than individuals without asthma.¹ There is evidence that asthma and PD may interact with each other and produce greater morbidity for each disease.^{1,2} Respiratory-related symptoms, such as dyspnea, chest tightness, and sensations of smothering are common in both disorders. The overlap in symptoms may lead an individual to mistake a panic attack as an asthma attack. This confusion may trigger a maladaptive cycle of using short-acting β_2 -agonists to treat respiratory anxiety symptoms, mistaken as asthma, and thus further increasing feared bodily sensations and panic.³

The study of ethnic differences may help identify patients who are at greater risk for the deleterious effects of asthma-PD comorbidity, and may aid the development of culturally relevant interventions. Puerto Rican adults may be at greater risk for developing PD,⁴ and non-Latino black adults may be at lower risk for PD than other racial/ethnic groups.⁵ Puerto Ricans also have the highest asthma prevalence rates, followed by non-Latino black, non-Latino white, and Mexican Americans.⁶ The primary aim of the present study was to examine ethnic differences in asthma-PD comorbidity in a primarily Puerto Rican and African American sample.

Consecutive patients with asthma were recruited from an asthma clinic and the emergency department of an inner-city hospital in the Bronx, NY. English-speaking and Spanish-speaking adults 18 years or older were eligible for participation if they self-reported an asthma diagnosis. A pulmonary physician who was blind to diagnosis of PD later conducted a chart review of participants to confirm asthma diagnosis, rate asthma severity, and exclude participants with conditions that could be confused with asthma.

Clinical psychology graduate students administered the PD section of the Primary Care Evaluation of Mental Disorders Patient Health Questionnaire. This brief psychiatric interview was conducted in the clinics immediately after recruitment in either English or Spanish, according to the participant's preference. Both the English and Spanish versions of the Patient Health Questionnaire have high sensitivity and specificity for diagnosis of PD and good construct validity.^{7,8} The Primary Care Evaluation of Mental Disorders Patient Health Questionnaire uses diagnostic algorithms based on the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition. Graduate students were trained using guidelines³ to supplement the psychiatric interview with additional questions to tease apart asthma attacks and anxiety specifically related to asthma versus full PD criteria. A licensed clinical psychologist provided supervision for all interviews. Participants self-reported their primary ethnicity, age, highest level of education completed, and the number of days of rescue inhaler use during the past week.

Logistic regression models were used to examine between-group differences on diagnosis of PD and use of rescue inhalers, which was split into daily versus not daily use. Given the distribution of severity ratings, we created a dichotomous variable of intermittent-mild persistent (mild) versus moderate-severe persistent. Comparisons between English and Spanish-speaking

TABLE I. Participants' characteristics

Characteristic	Mean $\pm$ SD (%)
Age (y)	44.6 $\pm$ 15.8
Sex (% female)	67.8
Education (y)	11.8 $\pm$ 2.9
Recruitment site (%)	
Emergency department	54.5
Asthma clinic	45.5
Race/ethnicity (%)	
Puerto Rican (n = 142)	47.2
African American (n = 75)	24.9
White/non-Latino (n = 22)	7.3
Dominican (n = 19)	6.3
Afro-Caribbean (n = 20)	6.6
Other Latino (n = 15)	5.0
Other (n = 8)	2.7
Asthma severity [†] (%)	
Mild (n = 57)	22.3
Moderate/severe (n = 199)	77.7

[†]Only 8 participants were rated as severe persistent, and thus, this category predominantly represents patients with asthma with moderate persistent severity.

participants only focused on Puerto Rican and Dominican participants.

A total of 318 patients with asthma (range, 18-89 years) were approached for participation, and 306 (96.2% completion rate) patients agreed to participate. Five participants were excluded because of chronic obstructive pulmonary disease, which yielded a final sample of 301 participants (see Table I for demographics). Interviews were conducted in Spanish for 13.6% of participants. No differences were found between Puerto Rican and African American participants on asthma severity or emergency department recruitment. Thirty percent of participants reported experiencing a panic attack during the past week, and 16.6% met criteria for PD. Patients with PD were older (51.1 $\pm$ 12.0 years) than patients without PD (43.3 $\pm$ 16.2 years; P = .001). Patients with PD were more likely to have moderate-severe than mild asthma (odds ratio [OR], 2.00; 95% CI, 1.09-3.67). This finding was not significant after controlling for age and sex (OR, 1.79; 95% CI, 0.96-3.34). Educational level, sex, and recruitment site were not associated with PD.

Fig 1 shows that Puerto Rican patients with asthma (21.1%; n = 30 of 142) were more likely to have PD than African American patients with asthma (6.7%; n = 5 of 75; OR, 3.75; 95% CI, 1.39-10.12; P < .01). This effect size was even larger after controlling for age, sex, and asthma severity (OR, 8.35; 95% CI, 1.89-37.00; P < .01). Spanish-speaking Puerto Rican and Dominican patients had even higher rates of PD (40%) than English-speaking Puerto Rican and Dominican patients (15.9%; OR, 3.53; 95% CI, 1.54-8.09; P < .01). This finding remained significant after controlling for age and sex. Patients with asthma and PD were more likely to report daily use of quick-relief medication (69.4%) versus patients with asthma without PD (48.2%; OR, 2.45; 95% CI, 1.14-5.25; P < .05). This finding did not change after controlling for age and sex.

The high rate of PD in Puerto Rican patients may be related to the culture-bound syndrome of *ataques de nervios* (nervous

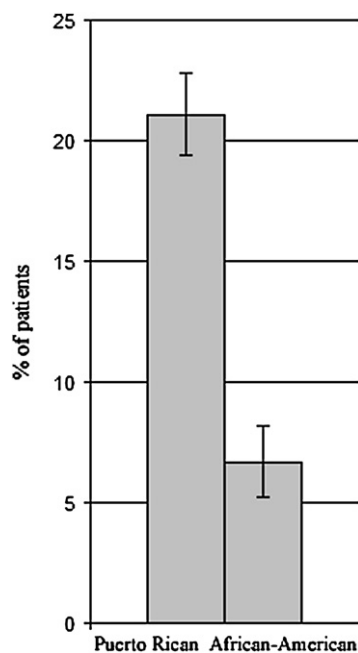


FIG 1. Rates of panic disorder $\pm$ SEM in Puerto Rican and African American participants with asthma.

attacks), which is an emotional reaction to a stressful event that includes multiple behavioral and physical symptoms, and feeling out of control. There is some overlap between PD and *ataques de nervios*.⁹ The common experience of *ataques de nervios* in Puerto Rican culture may lead to anxiety attacks in response to the stress of asthma attacks. Asthma may produce threatening bodily sensations and feelings of being out of control, and then lead to the development of chronic anxiety among susceptible individuals. The very high rate of PD in Spanish-speaking patients suggests that lower levels of acculturation may be a risk factor for asthma-PD comorbidity. Language barriers with providers may prevent detection and treatment of PD.

The findings from the current study have clinical implications for asthma management. The high level of daily rescue inhaler use among patients with PD may reflect poor asthma control or confusion between panic and asthma symptoms. It may be beneficial for patients with asthma and PD to use a peak flow meter to help differentiate between asthma and panic symptoms. This study is limited by the use of a convenience sample of treatment-seeking patients, and community-based studies are

needed. The current study also used a brief psychiatric interview to assess PD and did not assess other psychiatric disorders or *ataques de nervios*.

In conclusion, it is important for medical providers to be aware of the high rates of PD that may exist in Puerto Rican patients with asthma. Multidisciplinary approaches are needed to devise culturally relevant interventions to reduce asthma and PD morbidity.

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