A Model of the Generation of *Ataque de Nervios*: The Role of Fear of Negative Affect and Fear of Arousal Symptoms

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This article examines a model of the generation of *ataque de nervios*, according to which both fear of negative affectivity and fear of arousal symptoms are associated with the emergence of *ataques*. We examine the relationship of fear of negative affectivity and fear of arousal to the severity of *ataque de nervios* during the last month and the last 6 months among Caribbean Latinos residing in the United States. The measures include a Fear of Anger Scale and the Anxiety Sensitivity Index (ASI), the ASI augmented with two items that assess fear of arousal symptoms common in *ataques*: chest tightness and a sense of inner heat. In keeping with the model of *ataque* generation, one-way analysis of variances (ANOVAs) and discriminant function analyses illustrated that items assessing “fear of negative affect” and “fear of somatic and psychological symptoms of arousal” both differentiated well among the levels of *ataque* severity. In addition, key *ataque* symptoms—mental incapacitation fears, shakiness, chest tightness, palpitations, and a sense of inner heat—were the best discriminators among levels of *ataque* severity. In patients with severe *ataques*, the scores of “fear of negative affect” and “fear of *ataque-de-nervios*-type somatic and psychological symptoms” were extremely elevated. This further suggests that both these types of fears are associated with this idiom of distress and that the specific content of the fears is linked to the symptom picture of the idiom. This suggests specific therapeutic targets for the treatment of *ataque*, namely, the reduction of anxiety sensitivity (and more generally negative-emotion and arousal sensitivity) using cognitive behavioral therapy (CBT), relaxation, and mindfulness techniques.

Introduction

Ataque de nervios (literally, an attack of nerves) is a key idiom of distress among Caribbean Latino and other Latin American populations [1–4]. Upon becoming angry, anxious, or upset for some reason, an *ataque de nervios* may serve as an expression of being psychologically distressed. An *ataque* can also serve as a culturally sanctioned way of responding to events such as hearing of the illness, injury, or death of a loved one. Yet still, an *ataque* may occur without any clear precipitant. Typical *ataque* symptoms include a sense of impending loss of control, chest tightness, a feeling of heat in the body, palpitations, shaking of the arms and legs, and feelings of imminent fainting.

In an *ataque*, the person may fear dying from bodily dysfunction or fear engaging in behaviors that result from a loss of control, such as suicide or hurting others. Some *ataques* resemble the panic attacks of patient with panic disorder; others are more like anger attacks, the person throwing and breaking things; and yet others are expressions of grief, such as at the unexpected death of a loved one.

In this article, we propose a model of how an *ataque de nervios* is generated (see Fig. 1). According to this model, often fear of certain negative emotions—particularly, anxiety and anger—and fear of psychological-and-somatic-type arousal symptoms play a key role in the generation of *ataque de nervios*. In this model, we specify

Figure 1 A model of the generation of an *ataque de nervios*.

some ways in which fear of negative affect and fear of arousal symptoms may give rise to an *ataque*. (Arousal symptoms mean those psychological and somatic symptoms that are induced by a state of anxiety, fear, or anger, the somatic symptoms mainly resulting from the activation of the sympathetic and parasympathetic nervous system. Examples of psychological symptoms are racing thoughts and a feeling of derealization; examples of somatic symptoms are palpitations, dizziness, and cold extremities. Arousal symptoms may also be produced by hyperventilation or chest breathing, in particular, chest tightness, shortness of breath, shakiness, a feeling of bodily lightness, or derealization.)

Initially, the person may experience certain negative emotions and arousal symptoms owing to various causes. These include a dispute, hearing upsetting news (e.g., that someone has become ill or has died, that someone has been arrested, or that a spouse is romantically involved with another person), recalling a past traumatic

event, or a worry episode, such as thinking about unpaid bills or the acting-out behaviors of a child. Once the person becomes distressed for any of these reasons, this distress may induce various somatic and psychological symptoms: anxiety and fear may produce these symptoms both by activating the sympathetic and parasympathetic branches of the autonomic nervous system and by bringing about hyperventilation/chest breathing.

Even before an *ataque* occurs, the initially induced emotions and symptoms may activate various types of associations and concerns that lead to a rapid escalation of distress, with that marked distress increasing the likelihood of an *ataque* (see the middle of Fig. 1). For one, these emotions and symptoms may activate trauma memories: experiencing palpitations along with fear may recall an event of sexual abuse, a time when that very somatic symptom and emotion were prominent. Second, they may activate catastrophic cognitions about the symptoms that are not classified as being part of an *ataque*

de nervios: that palpitations indicate a heart attack, or dizziness an imminent stroke. And third, they may activate metaphoric networks associated with negative affect and with current life-distress issues: shortness of breath may recall negative life events configured in asphyxia metaphors (see below for further discussion of these types of metaphors). If such “fear networks” are activated, then this will increase general fear and arousal, making the occurrence of an *ataque* even more likely.

Once negative emotions and/or arousal symptoms are experienced—and in some cases, only once the negative emotions and/or arousal symptoms have activated the various fear networks as indicated above—then any or several of the four main processes may result in an *ataque*.

- (1) *The “fear of a cultural syndrome” theory of ataque generation.* Once a person has experienced an event that is thought to typically trigger *ataques*, or once that person has any of the emotions or symptoms characteristic of an *ataque*, he or she may worry about having an *ataque*. Then, he or she may well survey the mind and body for other symptoms of an *ataque* and may become concerned that an *ataque* and all its feared symptoms and associated actions may occur—racing thoughts, uncontrollable shaking, chest tightness, asphyxia, heart attack, seizure, loss of control, and violent acts. This hypervigilant surveying of the mind and body in conjunction with the surge of fear that occurs upon fearing an imminent *ataque* will tend to induce the very feared *ataque* symptoms: this induction occurs by attentional mechanisms (i.e., owing to the person surveying the mind and body for pathognomic signs of an *ataque*), by activating the fight-or-flight nervous system, and by hyperventilation/chest breathing. The patient’s level of fear of *ataque-de-nervios*-associated symptoms will be greatly influenced by his/her perceived vulnerability to *ataques*, which depends in turn on variables such as the extent to which *ataques* have been recently experienced or the degree of the person’s self-perceived nervous system stability (e.g., as expressed by the term “*nervios*,” a term indicating that one is often nervous, which is thought to predispose to *ataques*). Also, predisposition to dissociation may play a role with respect to whether an *ataque* occurs (see below).
- (2) *The “negative affect intolerance” theory of ataque generation.* As another pathway to occurrence of an *ataque*, instead of the *ataque* itself representing the feared outcome, it may serve as a culturally sanctioned manner to handle negative affect. Upon having a strong negative emotion, the affect may feel intolerable and the person may fear that the emotion will result in loss of control, insanity, or violence. In

such a situation, the *ataque de nervios* may serve as a culturally sanctioned way of managing these negative emotions—by expressing them as time-limited events of acute emotionality, events that may involve dissociation. In such cases, individuals may fear arousal symptoms such as palpitations or racing thoughts not because they indicate the imminent onset of an *ataque* but because they indicate the intense experiencing of a feared and intolerable emotion with possible dangerous consequences. Whether or not a person will have an *ataque* as a way to deal with negative affect may depend on the person’s predisposition to dissociate. This is because dissociation may serve as the psychological mechanism that permits the expression of the acute affect while allowing responsibility for it to be at least partly disavowed [5].

- (3) *The “distress communication” theory of ataque generation.* Yet still, an *ataque* may serve as a culturally sanctioned way of communicating being in a distressed state. In this case, an *ataque* may or may not be feared but it serves as the best way to convey being in a psychological or social state of distress [1–2]. Whether distress is conveyed through an *ataque* may depend in part on the predisposition to dissociate.
- (4) *The “strategy” theory of ataque generation.* In this case, the *ataque* may serve as a “weapon of the weak,” meaning the best action option, given the person’s social situation: the only way to try to change the upsetting actions of others in the social network. Others in the social network may change their behavior when the patient has an *ataque*, or threatens to have one, for fear of the person becoming violent or insane, having a dire medical event, or because the *ataque* successfully transmits the degree of upset experienced by the sufferer. Here too, the dissociative capacity may influence whether or not the *ataque de nervios* is used as a strategy.

As indicated above, and in Figure 1, we hypothesize that whether any of the processes outlined above result in an *ataque* may be increased by the person having a predisposition to dissociation. A dissociative tendency may increase the ability to take on a culturally indicated behavioral form that involves a loss of a sense of bodily and mental control (key aspects of an *ataque*)—to take on a distinct and new identity, that of an *ataque* enactor. So, for instance, as the patient becomes increasingly afraid of having an *ataque* (mechanism (1) above), or as the person becomes increasingly distressed and in need of handling negative affect (mechanism (2)), then the dissociative capacity may influence whether the person enacts the cognitive-emotional-behavioral form that is an *ataque*.

As indicated in Figure 1, all four of the processes outlined above may play a role in an *ataque de nervios*. Sometimes, a patient may have an *ataque* generated by several of the processes: upon feeling angry at a family member, a particular patient may have an *ataque* both as a way to manage negative affect (mechanism (2)) and as a culturally sanctioned means to convey being greatly distressed (mechanism (3)). In the model, we also include the personal and interpersonal consequences of the *ataque*. Whether *ataques* will continue depends in part on these effects: how do children and spouse respond to the *ataque*, what treatments are undertaken to prevent further *ataques*, for example, culturally indicated treatments, and the personal and interpersonal effects of those treatments. It should be noted that though an *ataque* may not actually result owing to communication or strategic reasons, it will have communicative effect and certain consequences (desired and undesired) on the person's interpersonal and life situation.

As indicated in our model (see Fig. 1), fear of negative affect and fear of arousal will be highly associated with *ataque* severity for the following reasons:

- According to our theory of predisposition to *ataques*, an *ataque* is more likely to occur if the initially induced negative affects (e.g., anxiety or anger) and arousal symptoms (e.g., palpitations, shortness of breath, or cold extremities) activate "fear networks," such as trauma associations, catastrophic cognitions, and metaphoric associations. The person with such negative-affect- and arousal-symptom-related fear networks will have greater fear of negative affect and fear of arousal owing to these associations (e.g., the person fearing palpitations because he/she fears a heart attack or because he/she conjures memories of a car accident suffered as a child).
- According to the "fear of a cultural syndrome" theory of *ataques* (mechanism (1)), fear of having an *ataque* produces fear of negative affects and arousal symptoms that are thought to indicate an *ataque's* onset such as shakiness, racing thoughts, and chest tightness.
- According to the "negative affect intolerance" theory of *ataques* (mechanism (2)), the person will be afraid of negative affects, for example, anxiety and anger, these being affects he/she cannot tolerate. Such a person would be expected to also fear the arousal symptoms associated with those negative affects: palpitations and other arousal symptoms associated with anxiety, anger, and fear.

The Anxiety Sensitivity Index (ASI) [6] contains many items that assess fear of anxiety and fear of various somatic and psychological symptoms of arousal (see Table 3). Though called a measure of fear of anxiety, most

of the ASI items more accurately assess fear of arousal, that is, symptoms found more broadly during anger, anxiety, fear, and other dysphoric states [4,6]. For example, fear of a somatic symptom such as palpitations may result either from typical anxiety-type concerns (e.g., such symptoms thought to indicate an imminent heart attack) or from fear of anger (FOA)-type concerns (such symptoms bringing to mind past anger episodes when those symptoms were experienced) or fear of a psychological symptom such as racing thoughts may arise from its association with anxiety or anger states. For this reason, the ASI items would be most accurately classified in the following fashion:

- "Fear of somatic arousal symptoms" (items 3, 4, 6, and 8–11), two ASI examples being fear of palpitations and fear of shortness of breath;
- "Fear of psychological arousal symptoms" (items 2 and 12), one ASI example being: "It scares me when I am unable to keep my mind on a task";
- "Fear of the emotion of anxiety" (items 15 and 16), these two ASI items being: "When I am nervous, I worry that I might be mentally ill," and "It scares me when I am nervous"; and
- "Social concerns items" (items 1, 5, and 13), one ASI example being: "It embarrasses me if my stomach growls."

The ASI assesses fear of several somatic and psychological symptoms that are typical of an *ataque de nervios*. Caribbean Latinos often consider mental symptoms such as poor concentration or somatic symptoms such as shakiness to indicate a disorder of the "nervous system" that could lead to the onset of an *ataque de nervios*, given sufficient provocation. Shakiness, for example, commonly occurs during an *ataque* and is considered a sign of losing control (a key aspect of an *ataque*), possibly leading to dangerous consequences if persistent, such as loss of voluntary motor control or nervous system collapse. A patient often describes the symptoms of trembling using various idiomatic expressions: "Things fall from my hands" (*se me caen las cosas de las manos*), suggesting that he or she is nervous to the point of shaking, an idiom configuring this physical symptom as a loss of control over the body. In patients with very low health literacy, trembling may conjure the image of the violent shaking of the epileptic and lead to the fear that an *ataque* elicited by strong emotion may be an episode of this medical disorder or its precursor [2]. Several other somatic symptoms about which the ASI assesses the degree of fear are also typical of *ataques*, most particularly, fear of fainting, palpitations, and shortness of breath [1–3].

Two other arousal-type somatic symptoms, chest tightness and inner heat, are not in the ASI but cause

substantial concern among Puerto Rican patients, in part, because they can indicate the onset of an *ataque de nervios* [2]. Both symptoms are also used as metaphors to describe being in a dysphoric state. For instance, in the Spanish language, many of the metaphors to depict feeling distressed involve images of squeezing (e.g., *en aprietos*, “being squeezed,” meaning to be in a difficult situation; or *presionar*, “to push down upon,” meaning “to compel to do something”) or of placing a weight on the chest (e.g., *tomar demasiado a pecho*, “to take too much to the chest”), meaning to let something affect you excessively. Other than a sense of asphyxiation, chest tightness suggests a state of inner pressure, of almost intolerable tension, which may escalate to a feeling of near explosion.

Another symptom common in an *ataque*, but not listed in the ASI, is a feeling of inner heat [2]. Among Caribbean Latinos, this symptom is associated with the idea of an uncontrollable inner process, a state of extreme anxiety, an inner boiling, with connotations of anger. Often the heat is said to rise from the chest (cf. *hwa byung* among Korean populations [7]). Upon the onset of an *ataque*, patients often have a sense of unbearable heat and to gain relief, they may take a shower, sit in front of a fan, or rub themselves with a herb-containing alcohol (*alcoholado*) to cool the body. Patients often refer to the inner heat as “asphyxiating” (*me da sofoco*), pairing the idea of heat with that of shortness of breath.

In keeping with our model of the generation of *ataque de nervios* (see Fig. 1), previous studies showed that the following two scales predicted the severity of *ataque de nervios* [8,9]: the ASI, which, as indicated above, is a measure of fear of negative affect and fear of arousal symptoms, and the Dissociation Experiences Scale (DES), a measure of dissociation predisposition, that is, the tendency to respond to intolerable affect by radical shifts in consciousness and behavior, as represented by an *ataque*. Also, another study showed the ASI to be particularly high among less acculturated Puerto Ricans [10]. Our model suggests a cultural reason for the elevated scores: increased catastrophizing about anxiety symptoms due to fears that they signal an *ataque de nervios*, and increased fear that negative emotionality may lead to dangerous consequences.

The current article investigates our model of the generation of an *ataque de nervios*. According to this model of *ataque* generation (Fig. 1), FOA, fear of anxiety, and fear of arousal symptoms, most particularly those arousal symptoms that are considered part of an *ataque de nervios*, should predict the severity of *ataque de nervios*. As a measure of these constructs, we used a scale assessing FOA and an expanded ASI—the ASI plus two anxiety symptoms common in an *ataque*, namely, chest tightness and

a sense of inner heat. We hypothesized that these two scales would be able to distinguish among various levels of severity of *ataque de nervios* and that those scale items assessing fear of negative affectivity (viz., anger and anxiety) and fear of the symptoms most closely related to *ataque de nervios* would be the best discriminators of *ataque* severity, as assessed by one-way analysis of variances (ANOVAs), effect sizes, and discriminant function analyses. The current study explores these hypotheses for *ataque* frequency in the last month and last 6 months.

Methods

Participants

The patients were Caribbean Latinos (85% Puerto Rican and 15% Dominican) attending an outpatient clinic in Lowell, Massachusetts. The patients at this clinic have high rates of anxiety disorders. Based on an interview by a psychiatrist using the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV), 32% had posttraumatic stress disorder (PTSD), 41% had panic disorder, and 50% had generalized anxiety disorder [8]. Consecutive patients were invited to participate, and informed consent was obtained after a full explanation of study procedures. Patients with psychotic, organic, or current substance abuse disorder were excluded. Of the 140 participating patients, 64% (89/140) were women. The clinic, which is a freestanding psychiatric outpatient facility, treats a low-income, inner city population. Most of the patients in the current study were unemployed and received disability benefits.

Measures

Frequency of *Ataque de Nervios*

We determined the frequency of self-labeled *ataque de nervios* in the last month and last 6 months. We asked the patients how many *ataques* they had in the last month, assessing on the following 3-point Likert-type scale: 0 (0/month), 1 (1–3/month), and 2 (>3/month). We then asked about how often, on average, they had an *ataque* in the last 6 months, assessing on the following 4-point Likert-type scale: 0 (0/month), 1 (1–5/6 months), 2 (1–5/month), and 3 (>5/month).

Anxiety Sensitivity Index (ASI)

The 16-item ASI rates, on 0–4 Likert-type scales, the degree of fear of anxiety-related sensations [6] from no fear (0) to very much (4). The Spanish version of the ASI has been validated in a Puerto Rican sample [9]. The elevated scores on the ASI predict an increased risk for

spontaneous panic attacks [11], panic and other anxiety disorders [12], and anxious response to symptom provocation procedures such as hyperventilation or carbon dioxide inhalation [13–14]. The ASI distinguishes among anxiety disorders. For example, patients with panic disorder score higher than those with generalized anxiety disorder even if their mean scores on the measures of trait anxiety are indistinguishable; persons with PTSD also have elevated ASI scores [15–16].

ASI Addendum Items (ASI Addendum)

We assessed for the degree of fear of two anxiety symptoms not assessed by the ASI but that typically present in an *ataque*: fear of chest tightness (*pecho apretado*) and fear of bodily heat (*calor*). With 20 patients, we determined the test–retest ($r = 0.86$) and interrater ($r = 0.91$) reliability of these items when considered as a composite scale.

Fear of Anger (FOA) Items

To assess the role of FOA in generating an *ataque*, we added two fear of anger items, namely, “It makes me afraid when I am angry,” and “When I am angry, I fear I will lose control.” Each was assessed on the same Likert-type scale as was used for the ASI. With 20 patients, we determined the test–retest ($r = 0.83$) and interrater ($r = 0.93$) reliability of these items when considered as a composite scale.

Procedures

First, the patients completed the ASI, ASI addendum, and FOA items. Unaware of the ASI results, the therapist (a native Spanish speaker, who has worked with Latino populations for over 10 years) interviewed the patient about *ataque de nervios* frequency in the previous month. All interviews were conducted in Spanish and all instruments were administered in the Spanish version (see “Measures”).

Results

In total, 66% (92/140) of the patients had at least one *ataque de nervios* in the last month, whereas 34% did not. As indicated in Table 1, patients with *ataques* in the last month had much higher ASI, ASI addendum, and FOA scores. In total, 74% of patients had an *ataque* in the last 6 months, whereas 26% did not. As indicated in Table 2, patients with *ataques* in the last 6 months had much higher ASI, ASI addendum, and FOA scores. With respect to the presence of *ataque de nervios* in the last month or in

Table 1 ASI, somatic addendum, and “fear of anger” scores of patients with and without *ataque de nervios* in the last month

Item	<i>Ataque de nervios</i> in the last month n = 92	No <i>ataque de nervios</i> in the last month n = 38	t(138)
ASI	2.5 (0.9)	1.7 (0.8)	5.9*
Somatic addendum	2.6 (0.8)	1.5 (1.0)	6.3*
Fear of Anger Scale	3.0 (1.2)	2.1 (1.4)	5.9*

All items of the scales are rated on 0–4 Likert-type scales. All scores are per-item average scores.

* $P < 0.001$.

Table 2 ASI, somatic addendum, and “fear of anger” scores of patients with and without *ataque de nervios* in the last 6 months

Item	<i>Ataque de nervios</i> in the last 6 months n = 104	No <i>ataque de nervios</i> in the last 6 months n = 36	t(138)
ASI item average	2.5 (0.8)	1.4 (0.7)	7.3*
Somatic addendum	2.6 (1.0)	1.2 (0.8)	7.6*
Fear of Anger Scale	3.0 (1.2)	1.7 (1.3)	5.1*

All items of the scales are rated on 0–4 Likert-type scales. All scores are per-item average scores.

* $P < 0.001$.

the last 6 months, the rate did not vary by gender, nor did the two groups with and without *ataques* in the last month or last 6 months differ by age.

In the sample, *ataques* were extremely frequent. With respect to the frequency of *ataques* in the last month, the ratings on the 0–2 Likert-type scale were as follows: 0 = 35% (49/140), 1 = 26.4% (37/140), and 2 = 38.6% (54/140). With respect to the frequency in the last 6 months, the ratings on the 0–3 Likert-type scale were as follows: 0 = 25.7% (36/140), 1 = 18.6% (26/140), 2 = 24.3% (34/140), and 3 = 31.4% (44/140).

As indicated in Tables 3–6, patients with the most severe rate of *ataques* in the last month and last 6 months had extremely elevated fear of certain *ataque-de-nervios*-type symptoms: an ASI or ASI addendum score of 3 or more on the following items—fear of poor concentration (mental symptom) and fear of shortness of breath, chest tightness, inner heat, shakiness, and palpitations (somatic symptoms). The score on fear of negative emotions (viz., fear of anxiety and fear of anger) was also very elevated. We conducted one-way ANOVAs and an estimation of effect sizes to assess the ability of the items of the ASI, ASI addendum, and FOA scales to differentiate among the

Table 3 *Ataque de nervios* in the last month: item analysis of the augmented ASI (16-item ASI plus a 2-item addendum) with item means, between-group ANOVAs, and effect sizes

Item	Groups classified by the frequency of <i>ataques</i> during the last month			ANOVA	
	0/month: M (SD)	1–3/month: M (SD)	Weekly to daily: M (SD)	F	η^2
1. It is important to me not to appear nervous.	1.6 (1.5)	2.0 (1.0)	2.8 (1.3)	11.8*	0.14
2. When I cannot keep my mind on a task, I worry that I might be going crazy	1.1 (1.2)	1.4 (1.0)	2.9 (1.3)	31.8*	0.32
3. It scares me when I feel “shaky.”	1.2 (1.3)	2.0 (1.4)	3.0 (1.1)	25.8*	0.27
4. It scares me when I feel faint.	1.5 (1.2)	2.4 (1.3)	2.5 (1.2)	10.0*	0.13
5. It is important for me to stay in control of my emotions.	1.9 (1.4)	2.7 (1.2)	2.6 (1.6)	4.6	0.06
6. It scares me when my heart beats rapidly.	2.1 (1.6)	2.6 (1.2)	3.3 (1.0)	12.0*	0.15
7. It embarrasses me when my stomach growls.	1.5 (1.5)	1.8 (1.5)	2.3 (1.7)	3.0	0.04
8. It scares me when I am nauseous.	1.6 (1.3)	1.8 (1.1)	2.4 (1.5)	4.8	0.07
9. When I notice that my heart is beating rapidly, I worry that I will have a heart attack.	2.2 (1.5)	2.8 (1.1)	2.9 (1.3)	9.0*	0.10
10. It scares me when I become short of breath.	1.9 (1.6)	3.0 (1.1)	3.3 (1.1)	13.8*	0.17
11. When my stomach is upset, I worry that I might be seriously ill.	1.7 (1.3)	2.3 (1.3)	2.6 (1.7)	5.2	0.07
12. It scares me when I am unable to keep my mind on a task.	1.7 (1.3)	2.3 (1.1)	3.1 (1.0)	20.3*	0.23
13. Other people notice when I am shaky.	1.4 (1.4)	1.6 (1.3)	2.8 (1.1)	18.5*	0.21
14. Unusual body sensations scare me.	2.0 (1.4)	1.9 (1.3)	3.1 (1.0)	14.1*	0.17
15. When I am nervous, I worry that I might be mentally ill.	1.3 (1.3)	2.1 (1.5)	2.6 (1.4)	11.8*	0.15
16. It scares me when I am nervous.	1.7 (1.2)	2.5 (1.2)	3.4 (1.0)	29.6*	0.30
A1. It scares me if I feel hot in the body.	1.1 (1.3)	1.7 (1.3)	2.6 (1.0)	22.0*	0.24
A2. It scares me if I feel tight in my chest.	1.9 (1.3)	3.0 (0.9)	3.1 (1.5)	14.7*	0.16

Effect size = η^2 .* $P < 0.0001$, owing to a Bonferroni correction due to multiple comparisons.**Table 4** *Ataque de nervios* in the last month: item analysis of the Fear of Anger Scale with item means, between-group ANOVAs, and effect sizes

Item	Groups classified by the frequency of <i>ataques</i> during the last month			ANOVA	
	0/month: M (SD)	1–3/month: M (SD)	Weekly to daily: M (SD)	F	η^2
1. It scares me when I get mad.	2.0 (1.6)	2.4 (1.4)	3.3 (1.2)	12.7*	0.15
2. When I get mad, I fear losing control.	2.4 (1.5)	2.7 (1.5)	3.3 (1.2)	5.1	0.06

 η^2 = effect size* $P < 0.0001$, owing to a Bonferroni correction due to multiple comparisons.

severity of *ataques* in the last month and last 6 months. Many items were discriminated across the groups consisting of various frequencies of *ataques* in the last month. Items assessing fear of psychological and somatic arousal were particularly good discriminators, as were fear of negative affect items, such as fear of anxiety and FOA items.

To classify the three groups with various levels of severity of *ataques* in the last month, we conducted a stepwise discriminant function analysis with the ASI, ASI addendum, and FOA items (see Table 7). In the stepwise

solution, eight predictors were identified that accurately predicted diagnostic group classification, with 72% of the cases being correctly identified. Of note, all the predictors were items assessing fear of psychological and somatic arousal and items assessing fear of negative emotions, namely, an ASI item assessing fear of anxiety (“It scares me when I am nervous”) and an FOA item.

We repeated this analysis with the four levels of severity of *ataques* in the last 6 months (see Table 8). In the stepwise solution, eight predictors were identified that accurately predicted diagnostic group classification, with

Table 5 *Ataque de nervios* in the last 6 months: item analysis of the augmented ASI (16-item ASI plus a 2-item addendum) with item means, between-group ANOVAs, and effect sizes

Item	Groups classified by the frequency of <i>ataques</i> during the 6 months				ANOVA	
	0/6 months: M (SD)	1–5/6 months: M (SD)	1–5/month: M (SD)	>5/month: M (SD)	F	η^2
1. It is important to me not to appear nervous.	1.5 (1.5)	1.6 (1.0)	2.5 (1.1)	2.7 (1.4)	7.1	0.14
2. When I cannot keep my mind on a task, I worry that I might be going crazy	0.8 (1.0)	1.6 (1.0)	1.8 (1.3)	2.9 (1.3)	22.5*	0.33
3. It scares me when I feel “shaky.”	0.9 (1.2)	1.3 (1.4)	2.8 (1.1)	3.0 (1.1)	28.6*	0.39
4. It scares me when I feel faint.	1.3 (1.2)	1.9 (1.1)	2.9 (1.0)	2.4 (1.3)	11.9*	0.21
5. It is important for me to stay in control of my emotions.	1.6 (1.5)	2.5 (1.0)	2.9 (1.1)	2.5 (1.6)	6.4	0.12
6. It scares me when my heart beats rapidly.	1.6 (1.4)	3.0 (1.2)	2.9 (1.1)	3.3 (1.0)	16.4*	0.27
7. It embarrasses me when my stomach growls.	1.3 (1.4)	1.5 (1.5)	2.7 (1.5)	1.9 (1.7)	4.9	0.10
8. It scares me when I am nauseous.	1.3 (1.3)	2.1 (1.2)	1.9 (1.1)	2.6 (1.5)	7.5	0.13
9. When I notice that my heart is beating rapidly, I worry that I will have a heart attack.	1.9 (1.1)	2.9 (1.2)	2.9 (1.0)	2.8 (1.4)	8.9*	0.18
10. It scares me when I become short of breath.	1.8 (1.5)	2.5 (1.5)	3.2 (0.9)	3.3 (1.1)	10.9*	0.21
11. When my stomach is upset, I worry that I might be seriously ill.	1.7 (1.3)	1.9 (1.4)	2.7 (1.2)	2.5 (1.7)	4.2	0.09
12. It scares me when I am unable to keep my mind on a task.	1.6 (1.2)	1.5 (1.4)	2.5 (0.9)	3.4 (0.9)	24.7*	0.35
13. Other people notice when I am shaky.	1.1 (1.3)	1.3 (1.5)	2.4 (1.0)	3.0 (1.2)	15.3*	0.25
14. Unusual body sensations scare me.	1.8 (1.5)	1.6 (1.2)	2.7 (1.1)	3.1 (1.1)	11.0*	0.20
15. When I am nervous, I worry that I might be mentally ill.	0.9 (1.0)	1.7 (1.4)	2.7 (1.4)	2.5 (1.5)	13.2*	0.23
16. It scares me when I am nervous.	1.2 (0.9)	2.4 (1.2)	2.8 (0.9)	3.5 (0.9)	40.3*	0.47
A1. It scares me if I feel hot in the body.	0.6 (0.9)	2.0 (1.4)	1.9 (1.1)	3.0 (1.0)	21.9*	0.32
A2. It scares me if I feel tight in my chest.	1.7 (1.1)	2.5 (1.3)	3.0 (0.9)	3.1 (1.4)	15.0*	0.20

 η^2 = effect size.* $P < 0.0001$, owing to a Bonferroni correction due to multiple comparisons.**Table 6** *Ataque de nervios* in the last 6 months: item analysis of the Fear of Anger Scale with item means, between-group ANOVAs, and effect sizes

Item	Groups classified by the frequency of <i>ataques</i> during the 6 months				ANOVA	
	0/6 months: M (SD)	1–5/6 months: M (SD)	1–5/month: M (SD)	>5/month: M (SD)	F	η^2
1. It scares me when I get mad.	1.7 (1.6)	2.4 (1.6)	2.8 (1.1)	3.4 (1.2)	11.4*	.21
2. When I get mad, I fear losing control.	1.9 (1.3)	2.7 (1.7)	3.2 (1.1)	3.3 (1.2)	9.1*	.18

 η^2 = effect size.* $P < 0.0001$, owing to a Bonferroni correction due to multiple comparisons.

78% of the cases being correctly identified. Of note, the predictors included only items assessing fear of psychological and somatic arousal and one item assessing fear of anxiety.

Discussion

The results of the current study support our model of the generation of *ataque de nervios*, specifically the hypothesis that fear of negative emotions (viz., anxiety and anger) as well as fear of arousal-type somatic and psychological symptoms are strongly linked to the severity

of *ataque de nervios*. More generally, the results of the current study support what might be called the *arousal sensitivity specificity hypothesis*: that the symptoms most feared by a group will vary, owing to cultural factors such as the range of cultural syndromes present in the group and the interpretations of danger assigned to specific sensations of arousal. In this sample, which had a high rate of *ataque de nervios*, those items that are considered to indicate the onset and worsening of an *ataque de nervios* were the best discriminators among levels of severity of *ataque de nervios*. Also, the fear of certain *ataque-de-nervios*-associated symptoms—such as difficulty in concentrating, shortness of breath, chest tightness,

Table 7 Predictor variables for *ataque* severity in the last month in a stepwise discriminant function analysis: individual items of the ASI, ASI addendum, and FOA scale

Step	Predictor variables	Variables in discriminant function	Wilks λ	Equivalent $F(3, 137)$
1	2. When I cannot keep my mind on a task, I worry that I might be going crazy.	1	0.67	31.8*
2	A1. It scares me if I feel hot in the body.	2	0.60	23.0*
3	A2. It scares me if I feel tight in my chest.	3	0.50	18.8*
4	14. Unusual body sensations scare me.	4	0.44	16.7*
5	16. It scares me when I am nervous.	5	0.41	15.1*
6	10. It scares me when I am short of breath.	6	0.38	13.6*
7	FOA1. It scares me when I get mad.	7	0.36	13.2*
8	4. It scares me when I feel faint.	8	0.35	12.9*

* $P < 0.01$.**Table 8** Predictor variables for *ataque* severity in the last 6 months in a stepwise discriminant function analysis: individual items of the ASI, ASI addendum, and FOA scale

Step	Predictor variables	Variables in discriminant function	Wilks λ	Equivalent $F(3, 137)$
1	16. It scares me when I am nervous.	1	0.53	40.2*
2	12. It scares me when I am unable to keep my mind on a task.	2	0.44	22.6*
3	6. It scares me when my heart beats rapidly.	3	0.37	18.1*
4	14. Unusual body sensations scare me.	4	0.32	16.1*
5	4. It scares me when I feel faint.	5	0.27	14.7*
6	2. When I cannot keep my mind on a task, I worry that I might be going crazy	6	0.23	13.8*
7	A1. It scares me if I feel hot in the body.	7	0.20	13.2*
8	3. It scares me when I feel "shaky."	8	0.17	12.8*

* $P < 0.01$.

inner heat, and shakiness—was extremely elevated in patients with *ataque de nervios*.

Among the ASI items, fear of being nervous was a very good discriminator among levels of severity of *ataque de nervios*. This is in keeping with the fact that becoming acutely nervous is the hallmark feature of an *ataque de nervios* (literally an "attack of nerves") and is also consistent with the theory that anxiety may be experienced as an intolerable affect, thereby giving rise to a dissociation-like response in the form of an *ataque*. Other good discriminators were items indicating fears of disordered cognitive processes, such as fear of poor concentration. As discussed in "Introduction", Caribbean Latino populations consider such symptoms to indicate a serious problem with the nervous system, which may be associated acutely with the onset of an *ataque*. Also, fear of shaking was a good discriminator in this study, a symptom considered to be a key indicator of a disturbed state of the nervous system, of imminent loss of control, and of the onset of an *ataque*. Of note, the one social concern

item that was a good discriminator was: "Other people notice when I am shaky." This fits well the arousal sensitivity specificity hypothesis: when the person is afraid, others will notice the shaking and will perceive him or her to have a disordered nervous state, including risking the onset of an *ataque*.

Concerns about certain physical symptoms were very good discriminators of *ataque* severity, particularly those physical symptoms that are key symptoms of an *ataque*: items having to do with asphyxia, namely, fear of chest tightness and fear of shortness of breath, as well as a fear of inner heat, which in this population connotes a feeling of asphyxia. In contrast, fear of symptoms not characteristic of *ataques de nervios*, such as gastrointestinal symptoms, was not associated with *ataque* severity. The affective power of shortness-of-breath symptoms is increased by the many metaphors to express distress in the Spanish language that involve chest tightness (see "Introduction" for a discussion of several of these) and shortness of breath: "to insult" is "to take away breath" (*desaire*),

whereas “to give breath” (*dar aliento*) means “to encourage someone” [17]; “My room is filling up with water” (*se me llena el cuarto de agua*) means “I am in a difficult situation”; “Don’t drown in a glass of water” (*no se ahogue en un vaso de agua*) means “Don’t take the matter so seriously; alternatively “God squeezes you, but doesn’t drown you” (*Dios aprieta pero no ahoga*), meaning God may make you pass through difficulties, but will not leave you without options. Yet still, relief from an *ataque* is often said to occur through crying, or even throwing things, because it is thought to bring about a release of this tension, with this sense of release being referred to as “*desahogarse*,” literally, “undrowning,” again, emphasizing an ability to breathe [4]. Likewise, heat complaints are common among Latino groups to indicate dysphoria and acute emotional distress. Jenkins and Valiente [18] describe the use of heat complaints among Salvadorean refugees as an idiom of distress. The current article indicates the importance of heat complaints among Caribbean Latinos. As noted above, during an *ataque*, patients often use multiple methods to cool down, such as sitting in front of a fan, bathing, or cooling the body by applying herbal alcohol (*alcoholado*).

The study has important implications with respect to treatment. It suggests that *ataque de nervios* may generate, or be generated by, fear of negative affect and fear of arousal symptoms, and that to decrease anxiety sensitivity, *ataque de nervios* symptoms and interpretations should be specifically targeted and addressed. That is, fear of arousal symptoms, whatever its cause, will tend to worsen *ataque de nervios*, and likewise, *ataque de nervios* will be associated with fear of arousal symptoms (e.g., as indicated in the model, if the patient has recently experienced an *ataque*, there will be a tendency to interpret negative emotions and arousal symptoms as a harbinger of further *ataques* and to be fearful of that prospect). It has been noted in studies of patients with anxiety disorders that increased anxiety sensitivity seems to start a vicious circle: it increases the likelihood of a panic attack, and the panic attack in turn increases fear of anxiety symptoms [19]. In the case of Caribbean-Latino populations, anxiety sensitivity, *ataque de nervios*, and panic attacks would be expected to create a vicious spiral of worsening, one increasing the other.

The current study suggests that it may be useful clinically to consider not only arousal sensitivity in the broad sense, or just arousal sensitivity clusters (e.g., physical concerns, mental incapacitation fears, or social concerns), but also arousal sensitivity with respect to specific symptoms. This finding has important treatment implications. Among Caribbean Latinos with *ataques*, general psychoeducation about anxiety and its symptoms may be complemented by specifically targeting fears about the in-

ability to concentrate. Techniques such as meditation may be helpful. And too, Caribbean-Latino populations with *ataques* would seem to have great sensitivity to specific symptoms associated with that cultural syndrome: shortness of breath, chest tightness, trembling, fainting sensations, and inner heat. Education and interoceptive exposure should target these symptoms. For example, hyperventilation through chest breathing would be expected to be an excellent treatment intervention for this purpose because it provokes these very symptoms, which can then be addressed therapeutically. We have found hyperventilation with reassociation and education to be an excellent intervention for Cambodian refugees with PTSD and comorbid culturally specific panic attacks [20] and in a pilot CBT treatment of Caribbean Latinos, we found such techniques effective in decreasing the severity of *ataque de nervios* and PTSD (D.E. Hinton, E. Rivera, M.H. Pollack, submitted manuscript).

The current study suggests that to decrease the severity of *ataque de nervios* among Caribbean Latinos, one should decrease fear of negative emotions not only by decreasing the fear that such emotions indicate the onset of an *ataque* but also by improving patients’ ability to tolerate negative affectivity, thus reducing the vulnerability to *ataques* as a coping mechanism. The ability to tolerate negative affect can be improved by teaching emotion regulation techniques such as emotional distancing or mindfulness-type meditation. By enhancing the tolerance of a negative affect, psychological and somatic arousal symptoms will be less feared as indicators of the intensity of negative emotions, thus reducing *ataque* severity. In a pilot study, we found that teaching emotional regulation techniques (e.g., applied muscle relaxation and meditation) was useful as a treatment of *ataques* (D.E. Hinton, E. Rivera, M.H. Pollack, submitted manuscript).

A recent study revealed that Puerto Rican populations have elevated rates of anxiety disorders compared with other Latino groups [21] and another study showed that they had higher rates of panic attacks in response to an acute stressor (the 9/11 attacks) than the non-Latino population, even controlling for multiple demographic variables [22]. We would suggest that arousal sensitivity (and possibly negative affect intolerance) may play a key role in this process, including specific arousal sensitivity regarding the symptoms of *ataque de nervios*. Also, other processes, such as extreme stigmatization of being “*loco*,” a local term meaning “crazy,” may play a role in increasing arousal sensitivity, that is, the degree of fear experienced upon detecting symptoms such as poor concentration [9]. It is possible that the cultural availability of an idiom of distress such as *ataque de nervios* is a double-edged sword. On the one hand, it communicates distress, which may lead to desired ecological responses, such as increased

recognition by the family of the person's suffering or empowerment for a woman in facing an abusive husband. On the other hand, the availability of the syndrome may increase the rate of anxiety disorders, possibly by increasing the level of anxiety sensitivity.

Past research with highly somaticizing non-Western populations has shown the ASI to be highly predictive of psychopathology [9,15,23]. (Though for a contrasting view, based on a study of an adolescent, non-clinical Latino sample, see [24].) Those studies, and the current study, which shows a robust relationship of the ASI to an idiom of distress, suggest that the ASI, especially with supplemental items to evaluate culturally specific concerns, is a useful method for studying the cross-cultural predisposition to anxiety and culturally specific idioms of distress. Fear of an anxiety symptom sensitizes the person to the symptom and produces more reactivity to it. Cross-cultural study of anxiety should determine in a particular culture which anxiety symptoms are most feared and why. This should include assessment of the local syndromes that may be modulating the degree of anxiety sensitivity as well as potentiating the expression of specific psychological and somatic symptoms.

Our model suggests three ways in which *ataque de nervios* may be related to anxiety sensitivity. First, the patient may have high anxiety sensitivity because anxiety sensations activate culturally mediated fear networks, trauma associations, and metaphoric resonances. This elevated sensitivity may escalate arousal symptoms into an *ataque* regardless of the reason for the induction of the arousal symptoms (a dispute, anger, upsetting news, or worrying). Second, anxiety sensitivity may be associated with *ataques* because the fear of *ataques* itself produces fear of anxiety symptoms. This is the anxiety amplification theory of *ataques*, according to which the fear of a cultural syndrome increases the fear of the anxiety symptoms that are thought to signal its emergence, including the emotion of anxiety itself. Third, an anxious or otherwise distressed person may express an *ataque* as a culturally patterned way of coping with a strong negative affect. Anxiety sensitivity, in this case, may be related to the underlying difficulty in tolerating emotional distress, not to the *ataque*, which is merely the expression of this diathesis (affect management theory of *ataques*). It is also important to emphasize that *ataques* may be shaped by culturally sanctioned practices for communicating distress (communication-of-distress theory of *ataques*) and of changing a difficult situation (strategy theory of *ataques*), which may have little to do with anxiety sensitivity. Many *ataques* in nonclinical settings are not associated with any kind of psychopathology, but rather are transient, normal reactions to stressful events.

Future studies should investigate the various elements of our model (see Fig. 1) in terms of their capacity to generate an *ataque de nervios*. It is likely that several of the elements are active simultaneously, or that they change over time. Fear of the *ataque* itself, for example, may emerge only after the person has had a distressing *ataque* experience, even one that started as a relatively normative communication of distress. Longitudinal studies would be very useful in this regard, particularly in disentangling the time course of the relationship between *ataque* and increased anxiety sensitivity. Future studies should also examine the role of other components of our model, such as dissociation predisposition and self-perceived vulnerability and should include more extensive assessment of the intolerance of a negative affect.

Conflict of Interest

Mark Pollack has been on advisory boards and has done consultation for AstraZeneca, Brain Cells Inc, Bristol Myers Squibb, Cephalon, Dov Pharmaceuticals, Forest Laboratories, GlaxoSmithKline, Janssen, Jazz Pharmaceuticals, Labopharm, Eli Lilly & Co, Medavante, Neurocrine, Neurogen, Novartis, Otsuka Pharmaceuticals, Pfizer, Predix, Roche, Laboratories, Sanofi, Sepracor, Solvay, Tikvah Therapeutics, Transcept Inc, UCB Pharma, Wyeth. He has received research grants from Astra-Zeneca, Bristol Myers Squibb, Cephalon, Cyberonics, Forest Laboratories, GlaxoSmithKline, Janssen, Eli Lilly, NARSAD, NIDA, NIMH, Pfizer, Roche Laboratories, Sepracor, UCB Pharma, Wyeth. He has done presentations with support from Bristol Myers Squibb, Forest Laboratories, GlaxoSmithKline, Janssen, Lilly, Pfizer, Solvay, Wyeth. He has equity in Medavante, Mensante Corporation, Mindsite, Targia Pharmaceuticals and receives copyright royalties for the SIGH-A, SAFER.

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