Published in final edited form as:

Cogn Behav Pract. 2006 November 1; 13(4): 249–260. doi:10.1016/j.cbpra.2006.04.006.

Symptom Presentation and Symptom Meaning Among Traumatized Cambodian Refugees: Relevance to a Somatic Focused Cognitive-Behavior Therapy

Devon E. Hinton and

Massachusetts General Hospital and Harvard Medical School

Michael W. Otto

Boston University

Abstract

Among psychologically distressed Cambodian refugees, somatic complaints are particularly prominent. Cambodians interpret anxiety-related somatic sensations in terms of “Wind” (khyâl), an ethnophysiology that gives rise to multiple catastrophic interpretations; and they have prominent trauma-memory associations to anxiety-related somatic symptoms. In this article, we detail some of the common sensation-related dysphoric networks of Cambodian refugees, focusing on catastrophic cognitions and trauma associations. We argue that delineating symptom-related dysphoric networks is crucial to successfully adapt cognitive-behavioral interventions to treat panic disorder and posttraumatic stress disorder among Cambodian refugees, and that such an approach may be useful for the culturally sensitive adaptation of cognitive-behavior therapy for other traumatized non-Western groups.

The Current Article discusses how a somatic-focused cognitive-behavior therapy can be applied to the treatment of traumatized Cambodian refugees and, more generally, to non-English-speaking traumatized refugees. The article demonstrates that such a treatment approach must be based on a complex model of the generation of somatic symptoms among trauma victims.

Since 1975—the year that the Northern Vietnamese occupied Saigon and that the Khmer Rouge took over Phnom Penh—more than 1.5 million Southeast Asian refugees (Hmong, Laotians, Cambodians, and Vietnamese) have sought refuge in the United States (Chung, 2001). Cambodians endured multiple traumas before arriving in the United States; as a group, they appear to have sustained greater trauma than either Laotian or Vietnamese refugees (Chung, Bemak, & Okazaki, 1997). Making adjustment more difficult, Cambodian refugees have poor English skills, minimal education, and high rates of illiteracy in the Cambodian language (Chung & Bemak, 2002; Chung et al., 1997).

During the Pol Pot regime (1975–1979), 1 to 3 million of Cambodia's population of 7 million died of starvation, illness, or execution (Chung, 2001; Kiernan, 2002). Major traumas included the following (Mollica, Wyshak, Marneffe, Khuon, & Lavelle, 1987; Mollica, McInnes, Poole, & Tor, 1998): slave labor, starvation, disease (e.g., malaria), physical displacement, lack of shelter (e.g., sleeping in the rain), physical and sexual violence, torture and killing of friends and relatives, and the constant threat of death (by illness, starvation, or execution). At the end

of the Pol Pot period (in 1979), Vietnamese troops invaded the country; civilians were trapped between the fighting Pol Pot and Vietnamese troops and were exposed to artillery and small-arms fire. Even after managing to escape from Cambodia (as many did during the chaos of the Vietnamese invasion), refugees had to endure the additional hardship of long stays in dangerous refugee camps (Chung, 2001).

As would be expected from these extraordinary levels of trauma, Cambodian refugees have high rates of psychopathology. A large community survey ($N=586$) of Cambodian refugees in Long Beach, CA, found that 62% had PTSD and 51% major depression (Marshall, Schell, Elliott, Berthold, & Chun, 2005). Among Cambodian refugees treated at a psychiatric clinic in the Boston area, one study found that 56% had PTSD, with elevated PTSD scores (on the Clinician-Administered PTSD Scale; Hinton, Chhean, Pich, Pollack, et al., 2006), and another, a 60% rate of panic disorder (Hinton, Ba, Peou, & Um, 2000).

In a volume devoted to cross-cultural aspects of the effects of trauma, several authors argue that PTSD criteria of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV*; APA, 1994) may not represent the full spectrum of response to trauma across cultural contexts, and that the culture-specific reactions to trauma need to be elucidated (e.g., Kirmayer, 1996; Marsella, Friedman, & Spain, 1996). As asserted by Keane, Kaloupek, and Weathers (1996), there is not always *content equivalence* in the symptomatology of trauma-related disorder in different cultural groups; that is, certain symptoms may be more salient in one culture as compared to another, or, yet still, some symptoms may be unique to that culture. Keane et al. refer to the research agenda of delineating the full spectrum of symptoms associated with trauma-related disorder in a particular culture as the search for *content validity*.

Across cultures, stress-related emotional syndromes are conceptualized differently. For example, during psychological distress, Chinese patients commonly complain of having “neurasthenia” (literally, “weak nerves:” “neur” meaning “nerve,” and “asthenia,” “weak”), a term adopted from Western medicine into that country in the early 20th century (Chung & Singer, 1995; Kleinman, 1986; Lee, 1994, 1998, 1999); whereas Latino patients, particularly Dominicans and Puerto Ricans, frequently report having an *ataque de nervios* (literally, “an attack of nerves”), a distress pattern often constituting panic attacks (Guarnaccia, Canino, Rubio-Stipec, & Bravo, 1993; Guarnaccia, Rivera, Franco, & Neighbors, 1996; Guarnaccia & Rogler, 1999). As we will see below, traumatized Cambodian refugees have culture-specific symptom presentations—arising in large part from culture-specific syndromes—during PTSD-generated and panic disorder-generated distress.

We believe that when treating traumatized refugees, one should focus on somatic symptoms; somatic symptoms are prominent in PTSD populations (Shalev, Bleich, & Ursano, 1990; Shrestha et al., 1998; Van Ommeren et al., 2001) and are particularly emphasized in many non-English-speaking groups (Cintrón, Carter, Suchday, Sbrocco, & Gray, 2005; Jenkins, 1996; Kirmayer, 1996; Lin & Cheung, 1999; Parker, Gladstone, & Chee, 2001). To successfully implement cognitive-behavior therapy for traumatized refugees requires an understanding of symptom generation. Analysis of presenting symptoms (e.g., dizziness) should include delineation of sensation-related catastrophic cognitions, trauma associations, and metaphors. Such information allows for the development of a somatic symptom-focused CBT, an approach especially appropriate for traumatized refugees.

In this article, we will first demonstrate how Cambodian cultural syndromes (e.g., “weak heart”)—and ethnophysiological understanding of what processes produce anxiety symptoms (e.g., the pathomechanics of “Wind”)—lead to somatization of trauma-related distress; then delineate somatic symptom-related dysphoric networks; next discuss key emotions other than fear (viz., anger and survivor guilt) to address in treatment; and subsequently suggest

instruments for the assessment of trauma-related distress in this group. In the Conclusion, we will present additional reasons why a somatically focused cognitive-behavior therapy should be particularly efficacious in treating traumatized refugees.

The Somatization of Trauma-Related Distress Among Cambodian Refugees: The Role of Cultural Syndromes and Ethnophysiology

To understand a particular group's catastrophic cognitions about anxiety symptoms, one must research (a) its anxiety-related cultural syndromes, determining whether these cause *syndrome-generated catastrophic cognitions*, and (b) its ethnophysiological models of how anxiety symptoms occur, determining whether these cause *ethnophysiology-generated catastrophic cognitions* (Hinton, Pich, Safren, Pollack, & McNally, 2005, 2006). In the following section, we will illustrate how Cambodian cultural syndromes about and ethnophysiological understanding of anxiety symptoms cause trauma-related distress to result in multiple somatic symptoms (e.g., through such processes as attentional amplification and physiological arousal).

A Cultural Syndrome Common Among Cambodian Refugees: Weak Heart

Somatic complaints play an especially important role in symptom presentations among Southeast Asians (Chung & Singer, 1995; Kinzie, 2001; Lin & Cheung, 1999; Tseng et al., 1990; White, 1982). In a sample of Southeast Asian refugees, Chung and Singer (1995) performed a factor analysis of three scales (Anxiety, Depression, and Psychosocial) of the Health Opinion Survey (HOS). The factor analysis revealed a 1-factor solution, labeled Neurasthenia (i.e., “weak nerves”). The so-called Neurasthenia factor—uniting somatic and psychological symptoms of anxiety and depression, as well as psychosocial complaints—cohered around ideas of physical and psychological “weakness.” Chung and Singer hypothesized that Asians utilize the neurasthenia-type illness conceptualization for two reasons: (a) to avoid stigmatization (e.g., being labeled “crazy”) and (a) to avoid a mind/body dichotomization, which is antithetical to local medical traditions.

Though we agree with Chung and Singer's analysis of their data, we believe that, among Cambodian refugees, the somatic-focused factor should be labeled “weak heart” rather than “neurasthenia.” During distress, a Chinese patient often complains of “neurasthenia” (Kleinman, 1986; Lee, 1994, 1998, 1999), but a Cambodian patient complains of “weak heart” (*khsaoy beh doung*; Hinton, Hinton, Um, Chea, & Sak, 2002), and never utilizes the term “neurasthenia.” The “weak heart” syndrome produces somatization of psychological distress—i.e., an emphasis on somatic symptoms during states of psychic distress—among Cambodians refugees, just as does the concept of “weak nerves” (“neurasthenia”) among Chinese groups. Upon suffering anxiety-spectrum disorders (e.g., PTSD, panic disorder, and generalized anxiety disorder), and so experiencing multiple arousal-reactive symptoms (e.g., dizziness, palpitations, cold extremities), Cambodians consider a major cause to be bodily weakness, especially, a “weak heart” (*khsaoy beh doung*); also, Cambodians worry that a “weak heart” results in various dangerous physiological events, such as poor *Wind* and blood flow, potentially causing various physical disasters, as in a “*Wind attack*” (see below). Fueling catastrophic cognitions, bodily weakness is thought to be brought about by various enervating processes: “thinking too much” (*kut carauen*; i.e., worry and rumination about any subject), poor sleep, poor appetite, and anxiety itself. “Weak heart” causes catastrophic cognitions and somatization; that is, “weak heart” produces *syndrome-generated catastrophic cognitions* and *syndrome-generated somatization* (Hinton, Pich, Safren, et al., 2005, 2006). Because of the “weak heart” cultural syndrome, Cambodian refugees tend to experience multiple somatic symptoms during states of distress; this occurs through *attentional processes*, as in hypervigilance to symptoms thought to indicate “weak heart,” and *physiological processes*, as in increased anxiety—caused by concerns about having “weak heart”—that further activates

the autonomic nervous system. (For a factor analytic study that gives support to the argument that the concept of “weakness” plays a key role in the Cambodian interpretation of somatic and psychic distress, see Hinton, Sinclair, et al., in press.)

An Ethnophysiology of Wind: The Cambodian Understanding of Anxiety Symptoms

Full understanding of the somatic focus of many Cambodian patients requires further consideration of culture-specific aspects of symptom interpretation. Central to the Cambodian interpretation of anxiety-related somatic sensations is the concept of *Wind* (*khyâl*). Under conditions of good health, *Wind* (a sort of “inner air”) is believed to run unimpeded through conduits in the body, much like blood. Cambodians often construe anxiety symptoms as being generated by the disruption of the proper flow of *Wind* and blood in the body; the *Wind* ethnophysiology produces multiple catastrophic interpretations of somatic symptoms (Hinton, Um, & Ba, 2001a, 2001b, 2001c; Hinton, Pich, et al., 2004). For instance, if anxiety causes a feeling of tension at either the knee or elbow (through muscular tension and tight tendons), a Cambodian will attribute these sensations to the blockage of the vascular “tubes” (*sâsai*); a Cambodian worries that such tubal blockage may lead (a) to the death of the limb distal to the obstruction, owing to the lack of blood flow, and (b) to the dangerous ascent of *Wind* and blood in the body: first, into the trunk of the body, possibly causing asphyxia and cardiac arrest, second, into the neck, possibly causing rupture of the vessels, and third, into the cranium, possibly causing multiple adverse events such as syncope, blindness, or death. As can be seen, Cambodians interpret multiple somatic symptom of anxiety in terms of the pathomechanics of *Wind*, so that most anxiety states generate catastrophic cognitions about imminent bodily dysfunction. (Of note, this interpretation of anxiety-type symptoms—as being generated by the pathomechanics of a *Wind*-like substance—is extremely widespread in Southeast Asia, including in Laos [Hinton, 2000] and Vietnam [Hinton, Pham, Chau, Tran, & Hinton, 2003]; this *Wind* ethnophysiology seems to have its origins in Ayurvedic medicine, which had a great influence on Southeast Asian medical practices.)

When suffering a panic attack, Cambodians usually construe it to be a “*Wind* attack” (*gaeut khyâl*), and consequently engage in self-treatments aimed at *Wind* removal (especially “coining” and “cupping”). These self-treatments represent *safety behaviors* that perpetuate catastrophic cognitions about *Wind* (for a review of safety behaviors in panic disorder, see Barlow, 2002). For example, if a Cambodian panic patient is asked why, despite suffering so many *Wind* attacks, death or serious injury never occurred, the patient will usually reply, “Because I treated myself with *Wind*-removal techniques.” To perform “coining” (literally called “scratching *Wind*” [*kaoh khyâl*]), a Cambodian dips the edge of a coin in “*Wind* oil” (*preing khyâl*; a menthol substance that is considered to promote the exiting of *Wind* from the body), pushes the coin's edge into the skin, and drags it along the skin in a proximal-to-distal motion. The most commonly targeted areas in “coining” are the arms, chest, and back. Each proximal-to-distal movement results in a linear mark upon the epidermis (e.g., down the arms or along the ribs). Patients carefully survey the color of the streaks. A red color suggests minimal *Wind* accumulation in that area; a darker hue, especially purple, indicates excessive bodily *Wind*. Upon noticing a purple color, the patient will become much more concerned, and will initiate further coining and possibly other *Wind*-removal techniques, like “cupping.” To perform “cupping” (literally called “cupping *Wind*” [*cup khyâl*]), a Cambodian applies the circular, top edge of a warmed glass to the skin; upon cooling, a vacuum results, which causes the skin to be drawn upward into the glass, with this suction purportedly pulling *Wind* from the body.

Although *Wind* may be a culture-specific concern, these thoughts fit the same form as the catastrophic cognitions exemplified by Western cultures—viz., fears of death and disability (“Am I having a stroke?” “Is this a heart attack?”), of loss of control or insanity (“Am I having

a nervous breakdown?”), of humiliation or embarrassment (“People will think I am crazy”)—that contribute to the escalation of anxiety symptoms into panic in individuals with panic disorder (Clark, 1986, 1996; Harvey, Richards, Dziadosz, & Swindell, 1993). Such catastrophic thinking—whether based on *Wind* or other catastrophic explanations of symptoms—causes increased anxiety (Hedley, Hoffart, Dammen, Ekeberg, & Friis, 2000). The complex explanatory models of Cambodians for anxiety symptoms provide one source of catastrophic fears that drive the panic response to anxiety-related sensations. Catastrophic cognitions about symptoms are generated by a culture's ethnophysiology (e.g., *Wind*-related beliefs) and ethnophysiology-related syndromes (e.g., “weak heart” or “*Wind* overload;” see below); the ethnophysiology and its related syndromes must be understood in order to elicit and modify catastrophic cognitions. Attending to these *Wind*-related belief systems is not only important for selection of treatment strategies but also for placing CBT in the context of cultural expectations for treatment.

Trauma Associations to Somatic Symptoms

As is clear, cognitive-behavioral interventions adopt a tactic far different from cultural expectation; hence, the cognitive-behavior therapist faces the task of shifting beliefs about the appropriate response to these symptoms. However, attending to symptom interpretation—in terms of the pathomechanics of *Wind*—provides only a partial picture of anxiety-related distress in Cambodian patients. The meaning of these sensations in relation to trauma memories also needs to be considered. As elegantly explicated by Foa and Kozak (1986; see too, Foa & Rothbaum, 1998), trauma memories are likely to include somatic and emotional states in addition to the external, environmental cues for these memories. Owing to the extreme and prolonged adversity experienced by Cambodians (the Khmer) during the Pol Pot period, any of a wide range of physical sensations may cue trauma-related memories.

Metaphoric Resonances to Somatic Symptoms

Hayes, Strosahl, and Wilson (1999, p. 39) demonstrate the importance of semantic networks—e.g., the metaphoric and literal meaning of the word “trapped”—in the formation of panic-related conditioning. Often a somatic symptom will have correlated metaphors of distress; these metaphors, which vary by culture, guide somatization and affect the selection—as a result of emotional valences and meaning—of the symptom of anxious concern (e.g., cardiophobia, Eifert, 1992; see too, Kirmayer, 1984). Certain languages contain elaborate metaphors that configure distress as dizziness (Hinton, Chau, et al., 2001; Hinton, Pham, et al., 2003). As a result, for persons in these cultural groups, dizziness will—by means of *metaphor-guided distress evocation*—elicit current life-distress issues (e.g., debt, marital conflict); and, in turn, thinking about current life-distress issues will—by means of *metaphor-guided somatization*—induce dizziness.

Sensation-Related Catastrophic Cognitions, Trauma Associations, and Metaphors

Cambodians may face a particularly vicious “one-two-three punch” of associations to the somatic sensations of anxiety (Hinton, Chhean, Fama, et al., in press; Hinton, Chhean, Pich, Um, et al., 2006): first, fear of the potentially dire implications of “heart weakness” and of dysregulation of *Wind* flow; second, tragic and overwhelming memories of distant traumas; and third, the evocation of metaphoric resonances to the sensation, bringing to mind current life distress, such as unpaid bills and a gang-involved child. Understanding these symptom meanings is crucial for the cognitive-behavior therapist in her or his role of treating PTSD and panic when using any of the many component interventions, such as prolonged imaginal exposure (e.g., Foa et al., 1999; Foa & Rothbaum, 1998), interoceptive exposure (e.g., Barlow,

2002; Craske, Meadows, & Barlow, 1994; Falsetti & Resnick, 2000; Otto, Penava, Pollack, & Smoller, 1996), cognitive restructuring (e.g., Clark, 1996; Resick, Nishith, Weaver, Astin, & Feuer, 2002; Resick & Schnicke, 1996), emotional acceptance training (Cloitre, Koenen, Cohen, & Han, 2002), or symptom management skills (e.g., Foa et al., 1999). Regardless of whether the task is reducing catastrophic interpretations of symptoms in the context of panic disorder or helping patients reduce emotional and avoidance responses to trauma cues, the cognitive-behavior therapist needs to understand the range of associations to somatic symptoms that are common in Cambodian refugees. To illustrate the complexity of this process, we outline below dysphoric networks (viz., catastrophic cognitions, trauma associations, and metaphor associations) of common symptoms among Cambodian refugees.

Dizziness

Several authors have noted the prominence of dizziness as a dysphoric response among Cambodian refugees (Caspi, Poole, Mollica, & Frankel, 1998; Hinton & Hinton, 2002; Mollica et al., 1993). Recent studies illustrate that dizziness often occurs during the panic attacks of Southeast Asians (Hinton et al., 2000; Hinton et al., 2001a, 2001b; Hinton, Chau, et al., 2001; Hinton, Pich, et al., 2004); in fact, data suggest that Asian groups may be unusually susceptible to certain types of dizziness, particularly motion sickness and orthostatic dizziness (see Hinton, Chau, et al., 2001; Hinton & Hinton, 2002).

Catastrophic cognitions—According to the Cambodian ethnophysiology, dizziness indicates the ascent of *Wind* and blood into the head, potentially resulting in a physical disaster, such as syncope. Dizziness upon standing is especially feared; it is thought that a surge of *Wind* and blood upward in the body toward the head is most likely at that time, a condition called “*Wind* overload” (*khyâl ko*). For this reason, upon standing, Cambodians anxiously assess the bodily state for symptoms that would indicate a pressurized rise of *Wind* and blood toward and into the head: a sore neck (from *Wind* and blood distending the neck vessels), dizziness (from excessive *Wind* and blood entering the head), blurry vision (from *Wind* exiting the eyes), or tinnitus, which in Cambodian is called “*Wind* from the ears” (*khyâl ceuny pii treujieu*; from *Wind* escaping from the auditory canals, analogous to the sound made by steam exiting the spout of a tea kettle).

Trauma associations—In the Pol Pot period, as a result of overwork and starvation, Cambodians often experienced dizziness upon rising to a standing position, and frequently fainted. For several months a year, often from 6 A.M. to 6 P.M., Cambodians were forced to transplant rice seedlings, which involved repeatedly bending over and then straightening up again. And illness, particularly malaria, produced another common set of associations to dizziness. During the Pol Pot period, almost every Cambodian endured daily malarial episodes for months; this was a common cause of death. In a malaria attack, after an initial hour-long period of rigors, accompanied by palpitations and other symptoms of autonomic arousal, there ensues an hour-long period of intense fever, along with extreme dizziness, as well as anxiety, nausea, palpitations, and shortness of breath (Hinton, Chhean, Pich, Um, et al., 2006). Yet still, during the Pol Pot period, dizziness was not uncommon in response to viewing blood (e.g., from shrapnel injury), decaying bodies, and eviscerations (a common method of execution); these images result not only in subjective dizziness but in an actual slowing of heart rate and in a drop of blood pressure (Baldaro et al., 2001).

Metaphoric resonances—Cambodians frequently utilize dizziness images to describe distress. As an example, if a son acts out and upsets his or her parent, that parent may complain, “My son shakes me” (*goun greulok knyom*). The very word for being busy is “to be spinning rapidly” (*rewuel*). Worry itself is configured as a kind of spinning of the mind, as a turning of the head from one problem to another: “I think here and then I think there, I think up and then

I think down” (*kut nih, kut nuh, kut anjeh anjoh*). Patients often string together these expressions when explaining why they currently feel dizzy: “My son shakes me. He makes me dizzy.”

Palpitations

Catastrophic cognitions—A Cambodian who suffers palpitations for any reason (e.g., startle) often worries about having a “weak heart.” For this reason, palpitations—as induced by anger, a loud noise, or any other cause—generate considerable fear for Cambodians; the heart may be “weak” (*khsaoy beh doung*) and may suddenly stop functioning (Hinton et al., 2002).

Trauma associations—Palpitations were commonly experienced by Cambodians in response to a wide variety of traumas, such as upon exposure to rifle fire, machine-gun fire, and exploding bombs, as in mines, grenades, mortal shells, and plane-dropped bombs, during the Civil War and the Vietnamese invasion.

Metaphoric resonances—To be offended is “to have pain in the heart” (*chuu ceut*).

Abdominal Sensations

Catastrophic cognitions—In anxiety states, North Americans often complain of “butterflies in the stomach” or of a “sinking sensation in the stomach” (Chambless, Caputo, Bright, & Gallagher, 1984; Noyes & Hoehn-Saric, 1998). Cambodians worry that abdominal sensations indicate the occurrence of an “upward hitting *Wind*” (*khyâl theau laeung leu*; Hinton, Chhean, Fama, et al., in press). As noted above, the rising *Wind* is believed to potentially cause catastrophic consequences (e.g., syncope, cardiac arrest, or bursting of the neck vessels), with these *Wind*-ascent fears being heightened if symptoms indicative of increased *Wind* pressure also occur (e.g., tinnitus, dizziness, or a sore neck).

Trauma associations—In the Pol Pot period, Cambodians experienced prolonged starvation, punctuated by daily bouts of hunger-induced peristalsis that caused abdominal pain (Hinton, Chhean, Fama, et al., in press). Inedible foodstuffs were eaten, such as the roots of the banana tree, resulting in abdominal cramps. Illness-caused gastrointestinal distress (e.g., from cholera, malaria, and typhoid) was frequent. And the sight of bloated corpses, or worse yet, the accidental imbibing of water in which corpses floated, caused extreme nausea.

Metaphoric associations—Cambodians often speak in idioms—like the English idioms “fed up” or “can’t stomach it”—to express being unable to further endure a certain situation: “overfull of a situation” (*ceuaet*) or “fed up in the heart” (*ceuaet ceut*). Also, hate is often cast in images of disgust, as in “he makes me nauseated” (*gpeum*), meaning, “I detest him.”

Cold Extremities

Catastrophic cognitions—To a Cambodian, a cold foot indicates that the flow of *Wind* and blood has been blocked in the leg, usually at the knee; and a cold hand, blockage in the arm, usually at the elbow. If such sensations are experienced, a Cambodian will worry that the limb may “die” (*slap*) from a lack of nurturing blood, and that the *Wind* and blood, subsequent to being blocked at either the elbow or the knee, will ascend upward toward the trunk and the cranium (Hinton et al., 2001a, 2001b); for Cambodians, cold extremities result in concerns not only of “limb death” (*slap day slap ceung*; i.e., stroke), but also of the various sequelae of a pressurized ascent of *Wind* and blood into the trunk and head.

Trauma associations—In the Pol Pot period, Cambodians were often forced to work in inclement weather. Owing to starvation, even when the ambient temperature was high,

Cambodians often felt cold and experienced chills. Chills and cold extremities were repeatedly experienced in malaria episodes. (As described above, malaria episodes involve an initial period of rigor-type chills along with various other symptoms, including anxiety, shortness of breath, and extreme dysphoria, which constitutes what might be referred to as biologically induced cold-type panic attack [see Hinton, Pham, et al., 2003].)

Metaphoric associations—Many Cambodian idioms express personal connectedness as a sense of bodily warmth: a good relationship is described as “warm” (*kâ kdaw*).

Joint Discomfort and Limb-Muscle Soreness

Catastrophic cognitions—To a Cambodian, tightness and soreness in the leg, especially at the knee, indicates that the flow of *Wind* and blood has been blocked; the same is true for tightness and soreness in the arms, especially at the elbow. If such sensations are experienced, a Cambodian will worry that the limb may “die” (*slap*) from a lack of nurturing blood, and that the *Wind* and blood, subsequent to being blocked at either the leg or the arm, will ascend upward toward the trunk and the cranium (Hinton et al., 2001a, 2001b). Hence, for Cambodians, joint discomfort or limb-muscle soreness results in concerns not only of “limb death” (*slap day slap ceung*; i.e., stroke), but also of the various sequelae of a pressurized ascent of *Wind* and blood into the trunk and head.

Trauma associations—During the Pol Pot period, forced labor, for up to 20 hour a day, resulted in great joint and muscle soreness; these sensations became encoded into memories of Pol Pot events and may act as retrieval cues. Also, muscular soreness heralded the onset of a dreaded malarial episode.

Metaphoric associations—A feeling of blockage at the limb serves as a metaphor of blocked flow, of life and relationship lacking a sense of smooth progression.

Neck Tension

Catastrophic cognitions—Anxiety states, particularly panic, are associated with increased tension in the neck and shoulder musculature (e.g., the trapezius muscle; see Beck & Scott, 1988), which may produce pain (Arena, Bruno, Hannah, & Meador, 1995; Hazlett, McLeod, & Hoehn-Saric, 1994; Noyes & Hoehn-Saric, 1998, p. 57). Cambodians attribute neck tension to excessive *Wind* and blood pressure that may rupture the neck vessels. Also, anxiety and panic, through activation of the autonomic nervous system, increase the tension of the frontalis muscle, creating a sense of pressure (Hoehn-Saric, McLeod, & Zimmerli, 1991); these cephalic sensations are construed by a Cambodian as further evidence of a pressurized rise of *Wind* and blood upward into the confines of the cranium. Consistent with a cognitive-behavioral model of panic disorder, these catastrophic interpretations of “sore neck” sensations appear to be sufficient to cue panic attacks in Cambodian refugee samples (Hinton, Chhean, Pich, Um, et al., 2006; Hinton et al., 2001c).

Trauma associations—During the Pol Pot regime, Cambodians were forced to work up to 15 hours a day though starving. One of the main imposed tasks was digging and transporting dirt during dam building; dirt-filled buckets were suspended at either end of a pole balanced across a shoulder, resulting in extreme neck and shoulder discomfort. In a neck-focused panic attack (Hinton, Chhean, Pich, Um, et al., 2006; Hinton et al., 2001c), patients frequently experience vivid flashbacks of this labor. Furthermore, in the Pol Pot period, the most common form of execution consisted of striking the back of the head of the victim, referred to as “bursting the neck vessels” (*dac sâsai gâ*); or, not uncommonly, a person was killed by severing the throat with a palm-tree frond.

Metaphoric associations—In English, we have multiple metaphors concerning weight carrying and the upright posture—upright, slouch, shirker, rectitude, overburdened, “Can’t bear it any more,” a pillar of the community—that seemingly contribute to the commonness of back pain as a somatic idiom of distress (Scheper-Hughes & Lock, 1987). In Cambodian, many distress expressions are related to the neck. For example, to describe being overwhelmed by financial or other problems, a Cambodian may say, “*tinguen go*,” meaning “heavy in the neck.” Or a Cambodian may tell someone, “Don’t carry that pole at your neck, with its heavy load, all by yourself” (*gom reek khluen aeng*), meaning, “Let me help with your burden.” Or, if a Cambodian gives a little money to someone in financial distress, this is described as “helping to carry the pole at the neck, with its heavy load” (*juey reek*).

Emotions Other Than Fear for Special Therapeutic Consideration: Anger and Guilt

Anger

Several studies illustrate that anger plays an important role in the psychopathology of Southeast Asian refugees. Abe, Zane, and Chun (1994) found that Southeast Asian patients with PTSD demonstrated significantly higher scores on the Anger Reaction Index than patients without PTSD, including higher levels of both expressed and experienced anger. Similarly, in a study of Vietnamese refugees using the Symptom Checklist (SCL), of the 9 items that were able to differentiate between patients with and without PTSD, 3 were anger items (Hauff & Vaglum, 1994). In a study of Cambodian refugees, 58% of 100 patients with PTSD reported having endured an anger-induced panic attack in the previous month (Hinton, Hsai, Um, & Otto, 2003). As assessed by the anger questionnaire (Fava et al., 1991), the patients endorsed elevated levels of anger and anger-associated arousal. In addition, the autonomic arousal symptoms induced by anger often triggered catastrophic cognitions, as in concerns about neck vessel rupture (Hinton, Hsai, et al., 2003). And during anger-induced panic attacks, Cambodians often have trauma recall, including vivid flashbacks.

Survival Guilt

Attention to guilt is an important element of CBT treatment of PTSD (Resick et al., 2002). As many authors have commented, unresolved grief resembles many of the symptoms of PTSD (Boehnlein, 1987). Patients often experience increased survival guilt when unable to send sufficient money to parents, siblings, and other relatives in Cambodia; owing to the great poverty of that country, death from crime, illness, and poor nutrition is common. Also, survival guilt for Cambodians frequently presents in a culturally specific form: worry about the spiritual status of relatives who did not receive death ceremonials (Boehnlein, 1987; Cook, 2006; likewise, among Rwandan genocide survivors; see Bagilishya, 2000; Uwanyiligira, 1997). In the Khmer cultural context, death rites, such as chanting and cremation, are thought to ensure the future prosperity of the deceased. During the Pol Pot period, the deceased rarely received the culturally prescribed rites (Cook, 2006); at best, the person was buried in a shallow grave. Among Cambodian refugees, survival guilt may manifest as worry and anxiety about the spiritual status of deceased relatives: (a) “Does my relative’s spirit wander, hungry and distressed, still not having been reborn?” (b) “Will the spirits of the deceased cause me or my family to be ill or unfortunate?” and (c) “Will I be able to save enough money to do a proper merit-making for my deceased relatives?” To alleviate these feelings of fear and guilt, patients engage in various activities. The patient may frequently donate food to the monks during the daily chanting ritual held at the temple; this merit can be shared with the dead, so that they may have an auspicious rebirth. Many patients save enough money to visit Cambodia in order to conduct merit-making ceremonies in the natal village of the deceased; in a typical celebration, monks will chant, donations will be given to the monks, and gifts will be provided for the poor. Yet still, a stupa (e.g., a conical building) may be built in the village to store the ashes of the

deceased; or, if the body was never found, a special building (e.g., a monk's house) may be constructed to make special merit for the deceased. These actions aim to make merit for the deceased, appease the spirits of the dead, and ensure a successful rebirth for the deceased.

Assessing Cambodian Refugees Using Standardized and Culturally Sensitive Measures

Below we will review measures that have been validated among Cambodian populations, and suggest others that may be useful in assessment.

Hopkins Symptom Checklist²⁵ (HSCL-25) and HSCL Addendums

The HSCL-25 is a widely used measure that has been translated and validated for the Laotian, Cambodian, and Vietnamese populations (Mollica et al., 1987, 1990). It contains an anxiety scale (10 items) and a depression scale (15 items), with each item being rated on a 1–4 Likert-type scale. The scales have been shown to be sensitive to improvement (Mollica et al., 1990). However, trauma victims experience symptoms other than anxiety and depression, as in elevated levels of anger (Yehuda, 1999), phobic anxiety (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995), somatization (Shalev et al., 1990), and sleep disturbance. For these reasons, measures of these other domains of psychopathology (e.g., SCL subscales) should be utilized.

Also, an addendum to assess culturally specific somatic symptoms should be utilized. As discussed above, Cambodian refugees have culturally specific somatic presentations: tinnitus, blurry vision, neck soreness, and cold and sore extremities (Caspi et al., 1998; Cheung, 1993; Hinton et al., 2000; Hinton et al., 2001a, 2001b, 2001c; Mollica et al., 1993). Also, dizziness and faintness, which are considered by experts to be distinct processes (Yardley, 2001), are very important complaints in the Cambodian population, but they are lumped together in one HSCL-25 question along with “weakness” (“faintness, dizziness, or weakness”). In a somatic addendum, separate items should assess dizziness, faintness, weakness, and dizziness upon standing.

Fears of Somatic Sensations of Anxiety

The Anxiety Sensitivity Index (ASI) is a measure of fear of anxiety symptoms, for example, of palpitations and shortness of breath (Reiss & McNally, 1985). ASI scores are most elevated in PTSD and panic disorder, both being disorders characterized by prominent panic attacks (Taylor, Koch, & McNally, 1992). Fear of arousal-reactive symptoms has been shown to aggravate PTSD and panic disorder (Bryant & Panasetis, 2001; Cox, Fuentes, Borger, & Taylor, 2001; Ehlers, Mayou, & Bryant, 1998; Federoff, Taylor, Asmundson, & Koch, 2000; Otto & Reilly-Harrington, 1999). Given the high rate of PTSD and panic disorder in Cambodian refugees (Hinton et al., 2000), the clinician should use the ASI when assessing members of this group.

Although the ASI addresses fear of certain anxiety sensations (e.g., palpitations), Cambodians frequently fear certain somatic symptoms not assessed by the ASI: neck tension, because they worry about rupture of the neck vessels (Hinton et al., 2001c; Hinton, Chhean, Pich, Um, et al., 2006); abdominal distention, because they worry about *Wind* ascending in the body to cause impaired breathing and other bodily disasters (Hinton et al., 2001a, 2001b); and dizziness upon standing, because they worry about having “*Wind* overload.” Accordingly, the first author developed a Cambodian ASI addendum to assess culturally specific fears. In a recent study (Hinton, Pich, Safren, et al., 2005), a Cambodian version of the ASI, with a 9-item culturally specific addendum, differentiated between patients with and without panic disorder. Moreover, certain of the addendum items (e.g., “fear of abdominal fullness fear” and “dizziness upon standing”) were among the best predictors of panic disorder (and PTSD) status. The nine

addendum items are as follows: (a) “It scares me when I have a sore neck;” (b) “It scares me when I have numbness in my arms or legs;” (c) “It scares me when I have cold hands or cold feet;” (d) “It scares me when I have sore arms or legs;” (e) “It scares me when I have tired arms and legs;” (f) “It scares me when I have tinnitus;” (g) “It scares me when I stand up and feel dizzy;” (h) “It scares me when I have abdominal fullness;” and (i) “It scares me when I have stomach discomfort.”

Multiple studies indicate that anxiety sensitivity should be categorized by its origin (for a review, see Hinton, Pich, Safren, et al., 2005, 2006): (a) *catastrophic cognitions-caused anxiety sensitivity*, (b) *trauma associations-caused anxiety sensitivity*, (c) *metaphor-caused anxiety sensitivity*, (d) *direct conditioning-caused anxiety sensitivity* (i.e., fear becoming directly conditioned to anxiety symptoms [Barlow, 2002]), (e) *sensitization-caused anxiety sensitivity* (i.e., repeatedly experiencing a symptom—e.g., dizziness during repeated malaria attacks—causing it to be more easily triggered, that is, results in neural sensitization [Rosen & Schulkin, 1998]), and (f) *other-caused anxiety sensitivity* (i.e., reactivity resulting from other causes, as in a biologically inherited reactivity to anxiety symptoms). (At present, there is no method by which direct conditioning-caused anxiety sensitivity, sensitization-caused anxiety sensitivity, or other-caused anxiety sensitivity can be assessed; they are purely hypothetical constructs.) In a particular culture, anxiety sensitivity, that is, the reactivity to anxiety-related somatic symptoms, will vary depending on the exact nature and severity of these six subtypes of anxiety sensitivity. When using the ASI, the clinician must realize that all six subtypes of anxiety sensitivity are being assessed by certain items (e.g., “It scares me when my heart beats rapidly”), whereas catastrophic cognitions-caused anxiety sensitivity is being specifically assessed by other items (e.g., “When I notice my heart is beating rapidly, I worry that I might have a heart attack”). Importantly, one could use these same analytic categories to describe a somatic sensitivity (i.e., “somatic sensitivity” as opposed to the general term, “anxiety sensitivity”), such as “dizziness sensitivity;” so, for example, one could analyze, for one refugee or for a refugee group, the degree of (a) catastrophic cognitions-caused dizziness sensitivity, (b) trauma associations-caused dizziness sensitivity, (c) metaphor-caused dizziness sensitivity, (d) direct conditioning-caused dizziness sensitivity, and (e) sensitization-caused dizziness sensitivity. (As stated above, direct conditioning-caused dizziness sensitivity and sensitization-caused dizziness sensitivity are hypothetical constructs that are clinically useful but not directly assessable.)

Panic Attack Subtypes

Because of the commonality of panic attack subtypes in the Cambodian population, we have found systematic assessment to be an important way to measure improvement. The Panic Disorder Severity Scale (Shear et al., 1997) profiles panic attacks in terms of both distress and frequency (scored on a 0–4 Likert-type scale). At our clinic, we use a Panic Attack Severity Scale (PASS) to assess the severity of orthostatic panic (O-PASS), neck-focused panic (N-PASS), and gastrointestinal panic (G-PASS) (Hinton, Chhean, Pich, Um, et al., 2006; Hinton, Pich, et al., 2004). The PASS includes the distress and frequency scale of the PDSS, and additionally, a question that rates how long the panic attack lasted on a 0–4 Likert-type scale: 0 (*none*), 1 (*less than 5 min*), 2 (*less than 15 min*), 3 (*less than 45 min*), and 4 (*more than 45 min*). The PASS demonstrates excellent interrater and test-retest reliability for each of the panic attack subtypes (Hinton, Pich, et al., 2004). Also, for each panic subtype, we assess the severity of associated flashbacks along four different dimensions—length, distress, frequency, and degree of dissociation—each rated on a 0–4 Likert-type scale (cf. Hackmann, Ehlers, Speckens, & Clark, 2004). To assess the degree of dissociation, we utilize the flashback part of the Clinician-Administered PTSD Scale (Weathers, Keane, & Davidson, 2001), which rates severity on a 0–4 Likert-type scale.

Concluding Comments: Somatic-Focused CBT for Traumatized Refugees

Among Cambodian refugees, symptom presentations tend to be somatic, and the meaning and interpretation appears to be richly dependent on culture-related beliefs, as in the *Wind* ethnophysiology and associated worries about the dangers of *Wind* blockade. Attending to these beliefs, and the cultural expectations for treatment, helps the cognitive-behavior therapists to better design cognitive and exposure interventions to alleviate fears underlying PTSD and panic. Anger and guilt also represent important areas for evaluation and intervention.

As reviewed above, Cambodian refugees, and traumatized refugees in general, present with multiple somatic symptoms. In the treatment of traumatized refugees, we suggest a somatic-focused approach, supplemented by careful attention to anger and survival guilt. A somatic-focused approach facilitates the obtaining of relevant clinical data, motivates the patient to participate in treatment, identifies pathological processes generating symptoms, and suggests which cognitive-behavioral techniques should be utilized. Let us examine some of the advantages and implications of such an approach during the evaluation stage.

In our clinical experience, asking refugees abstract questions—as in the typical probe questions for PTSD and panic disorder, or questions about flashbacks—will frequently result in false negatives. In particular, patients may not talk about trauma experiences for various reasons:

1. The refugee may not understand the question. (In Western, English-speaking culture, we are accustomed to discussing “flashbacks,” a concept made familiar by books and movies about Vietnam veterans; we often forget that most other cultures do not have such an extensive elaboration of this phenomenon.)
2. The refugee may not wish to share the information for fear of reexperiencing the event upon retelling it.
3. The refugee may not relate the information because of cultural imperatives about privacy: the idea that personal information should not be shared with those outside the family (e.g., to emphasize the need to keep information strictly within the family, Cambodians may use the proverb, “Don’t take your heart out of your chest to let the bird peck it”).
4. The refugee may be afraid to divulge information, worrying that it might be used against him or her, this being part of the cautious reticence typical of the trauma victim.
5. The refugee may conceal the information because of shame, either personal (e.g., not giving someone food who subsequently died of starvation) or cultural (e.g., a Cambodian thinking, “If I tell you what I saw, you will think me, and Cambodians, to be barbarians, a damned race”).

A somatic-focused approach facilitates the elicitation of clinically relevant information in traumatized, refugee populations. By asking about a particular episode in which a presenting somatic symptom was experienced, more adequate information will be obtained for various reasons:

1. Such questions will be easily understood (e.g., “When you get the dizziness, do thoughts of the past, of bad things that happened in Cambodia, come into your mind, such as being beaten, nearly fainting, or seeing horrible things?”).
2. Contextual cues aid recall.
3. Wishing a decrease of somatic symptoms, the refugee may share the information, being motivated by a desire for symptom relief.

And by inquiring in detail about the somatic symptom, other than acquiring more adequate information, one creates an empathic encounter (i.e., the patient has presented with a particular somatic complaint, which you are addressing), increases patient motivation (the patient and the treater have both identified the somatic symptom as a key therapeutic focus), and improves patient collaboration (the patient will be much more willing to share information, including trauma recall).

In conducting *somatic-focused therapy for traumatized refugees*, we would suggest the following therapeutic steps. In initial evaluation, the clinician should pay particular attention to the traumatized refugee's somatic complaints and delineate how the sensations are initially induced (e.g., a worry episode inducing initial symptoms) and the nature of sensation-associated cognitions (viz., catastrophic cognitions, trauma associations, and metaphoric associations). Certain instruments (e.g., the ASI supplemented by items assessing fear of culturally specific symptoms) may be helpful in profiling feared somatic and psychological symptoms. Such information will allow the clinician to determine whether the somatic symptom is part of a PTSD-, panic disorder-, or hybrid-type panic attack (by "hybrid" we mean a panic attack that has both PTSD and panic disorder characteristics); and it will immediately suggest a means of therapeutic intervention. In treatment, one should (a) identify firing sequences that generate symptoms; (b) teach methods of somatic relaxation; (c) have the patient narrativize the content of somatic symptom-related flashbacks; (d) elicit and modify somatic symptom-related catastrophic cognitions; (e) explore somatic symptom-related metaphoric resonances (e.g., dizziness-encoded thoughts of a son's truant behaviors); (f) perform interoceptive exposure to somatic sensations; and (g) re-associate positive affect and memory to somatic sensations. We have found such techniques to be effective in the treatment of PTSD, panic disorder, and somatic complaints among Cambodian refugees (Hinton, Chhean, Pich, Safren, et al., 2005; Hinton, Pham, et al., 2004; Hinton, Safren, Pollack, & Tran, 2006—this issue).

We would also suggest one reason why arousal-reactive sensations like dizziness may be particularly important to assess and treat in traumatized populations. If a trauma memory is *encoded by an exteroceptive stimulus*, that is, by a cue external to the body, as in a visual stimulus, then when the person is later exposed to the stimulus, though the stimulus may activate the stimulus-related trauma network, the stimulus itself will not worsen as the patient becomes frightened and distressed; in fact, the stimulus lessens in intensity, even disappears, as the patient leaves the locality. However, if the trauma memory is *encoded by an interoceptive stimulus*, that is, by a cue internal to the body, particularly one that is arousal reactive, such as dizziness, then when the person is later exposed to the stimulus, not only will the stimulus activate the trauma network, but also the stimulus itself will worsen as the person becomes frightened and distressed; the stimulus is internal to the body and cannot be escaped, and rather increases as anxiety and distress increase.

In this article, we outlined a somatic-focused approach to the evaluation and treatment of traumatized refugee populations, an approach that is particularly suited to cognitive-behavioral methods. We have tried to present practical examples of how somatic sensations among traumatized refugees can be explored, and how that somatic symptom-related information can be utilized to implement a somatically focused cognitive-behavior therapy. Future studies, comparing such an approach to other well-established treatment protocols (e.g., Cognitive-Processing Therapy: Resick et al., 2002; Multiple Channel Exposure Therapy: Falsetti & Resnick, 2000; or Prolonged Exposure: Foa et al., 1999), need to be conducted to determine whether they offer a similar degree of benefit.

References

- Abe J, Zane N, Chun K. Differential responses to trauma: Migration-related discriminants of post-traumatic stress disorder among Southeast Asian refugees. *Journal of Community Psychiatry* 1994;22:121–135.
- American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*. Washington, DC: Author; 1994.
- Arena JG, Bruno GM, Hannah SL, Meador KJ. A comparison of frontal electromyographic biofeedback training, trapezius electromyographic biofeedback training, and progressive muscle relaxation therapy in the treatment of tension headache. *Headache* 1995;35:411–419. [PubMed: 7672959]
- Bagilishya D. Mourning and recovery from trauma; in Rwanda, tears flow within. *Transcultural Psychiatry* 2000;37:337–353.
- Baldaro B, Mazzetti M, Codispoti M, Tuozi G, Bolzani R, Trombini G. Autonomic reactivity during viewing of an unpleasant film. *Perceptual and Motor Skills* 2001;93:797–805. [PubMed: 11806603]
- Barlow, DH. *Anxiety and its disorders: The nature and treatment of anxiety and panic*. Vol. 2nd. New York: The Guilford Press; 2002.
- Beck JG, Scott SK. Physiological and symptom response to hyperventilation: A comparison of frequent and infrequent panickers. *Journal of Psychopathology and Behavioral Assessment* 1988;10:117–127.
- Boehnlein JK. Clinical relevance of grief and mourning among Cambodian refugees. *Social Science and Medicine* 1987;25:765–772. [PubMed: 3686107]
- Bryant RA, Panasetis P. Panic symptoms during trauma and acute stress disorder. *Behaviour Research and Therapy* 2001;39:961–966. [PubMed: 11480836]
- Caspi Y, Poole C, Mollica RF, Frankel M. Relationship of child loss to psychiatric and functional impairment in resettled Cambodian refugees. *Journal of Nervous and Mental Disease* 1998;186:485–491.
- Chambless DL, Caputo GC, Bright P, Gallagher R. Assessment of fear of fear in agoraphobics: The body sensations questionnaire and the agoraphobic cognitions questionnaire. *Journal of Counseling and Clinical Psychology* 1984;6:1090–1097.
- Cheung P. Somatization as a presentation in depression and post-traumatic stress disorder among Cambodian refugees. *Australian and New Zealand Journal of Psychiatry* 1993;27:422–428. [PubMed: 8250785]
- Chung R. Psychosocial adjustment of Cambodian refugee women: Implications for mental health counseling. *Journal of Mental Health Counseling* 2001;23:115–126.
- Chung R, Bemak R. Revisiting the California Southeast Asian Mental Health Needs Assessment data: An examination of refugee ethnic and gender differences. *Journal of Counseling and Development* 2002;80:111–119.
- Chung, R.; Bemak, F.; Okazaki, S. Counseling Americans of Southeast Asian descent. In: Lee, C., editor. *Multicultural issues in counseling*. Alexandria, VA: American Counseling Association; 1997. p. 207–232.
- Chung R, Singer K. Interpretation of symptom presentation and distress: A Southeast Asian refugee example. *Journal of Nervous and Mental Disease* 1995;183:639–648. [PubMed: 7561810]
- Cintrón JA, Carter MC, Suchday S, Sbrocco T, Gray J. Factor structure and construct validity of the Anxiety Sensitivity Index among island Puerto Ricans. *Journal of Anxiety Disorders* 2005;19:51–68. [PubMed: 15488367]
- Clark DM. A cognitive approach to panic. *Behaviour Research and Therapy* 1986;24:461–470. [PubMed: 3741311]
- Clark, DM. Panic disorder: From theory to therapy. In: Salkovskis, PM., editor. *Frontiers of cognitive therapy*. New York: The Guilford Press; 1996. p. 318–344.
- Cloitre M, Koenen KC, Cohen LR, Han H. Skills training in affective and interpersonal regulation followed by exposure: A phase-based treatment for PTSD related to childhood abuse. *Journal of Consulting and Clinical Psychology* 2002;70:1067–1074. [PubMed: 12362957]
- Cook, SE. The endurance of the Cambodian family under the Khmer Rouge regime: An oral history. In: Cook, SE., editor. *Genocide in Cambodia and Rwanda: New perspectives*. London: Transaction; 2006. p. 119–162.

- Cox BJ, Fuentes K, Borger SC, Taylor S. Psychopathological correlates of anxiety sensitivity: Evidence from clinical interviews and self-report measures. *Journal of Anxiety Disorders* 2001;15:317–332. [PubMed: 11474817]
- Craske, MG.; Meadows, E.; Barlow, DH. *Mastery of your anxiety and panic and agoraphobia supplement*. Vol. 2nd. San Antonio, TX: Psychological Corporation; 1994.
- Ehlers A, Mayou R, Bryant B. Psychological predictors of chronic posttraumatic stress disorder after motor vehicle accidents. *Journal of Abnormal Psychology* 1998;107:508–519. [PubMed: 9715585]
- Eifert GH. Cardiophobia: A paradigmatic behavioural model of heart-focused anxiety and non-anginal chest pain. *Behaviour Research and Therapy* 1992;30:329–345. [PubMed: 1616469]
- Falsetti SA, Resnick HS. Cognitive-behavioral treatment for PTSD with panic attacks. *Journal of Contemporary Psychotherapy* 2000;30:163–179.
- Fava M, Rosenbaum JF, McCarthy M, Pava J, Steingard R, Bless E. Anger attacks in depressed outpatients and their response to fluoxetine. *Psychopharmacology Bulletin* 1991;27:275–279. [PubMed: 1775598]
- Fedoroff IC, Taylor S, Asmundson GJ, Koch WJ. Cognitive factors in traumatic stress reactions: Predicting PTSD symptoms from anxiety sensitivity and beliefs about harmful events. *Behavioural and Cognitive Psychotherapy* 2000;28:5–15.
- Foa EB, Dancu CV, Hembree EA, Jaycox LH, Meadows EA, Street GP. A comparison of exposure therapy, stress inoculation training, and their combination for reducing posttraumatic stress disorder in female assault victims. *Journal of Consulting and Clinical Psychology* 1999;67:194–200. [PubMed: 10224729]
- Foa EB, Kozak MJ. Emotional processing of fear: Exposure to corrective information. *Psychological Bulletin* 1986;99:20–35. [PubMed: 2871574]
- Foa, EB.; Rothbaum, BO. *Treating the trauma of rape*. New York: The Guilford Press; 1998.
- Guarnaccia PJ, Canino G, Rubio-Stipec M, Bravo M. The prevalence of *ataques de nervios* in the Puerto Rico Disaster Study: The role of culture in psychiatric epidemiology. *Journal of Nervous and Mental Disease* 1993;181:157–165. [PubMed: 8445374]
- Guarnaccia PJ, Rivera M, Franco F, Neighbors C. The experiences of *ataque de nervios*: Towards an anthropology of emotions in Puerto Rico. *Culture, Medicine, and Psychiatry* 1996;20:343–346.
- Guarnaccia PJ, Rogler LH. Research on culture-bound syndromes: New directions. *American Journal of Psychiatry* 1999;156:1322–1327. [PubMed: 10484940]
- Hackmann A, Ehlers A, Speckens A, Clark DM. Characteristics and content of intrusive memories in PTSD and their changes with treatment. *Journal of Traumatic Stress* 2004;17:231–240. [PubMed: 15253095]
- Harvey JM, Richards JC, Dziadosz T, Swindell A. Misinterpretation of ambiguous stimuli in panic disorder. *Cognitive Therapy and Research* 1993;17:235–248.
- Hauff E, Vaglum P. Chronic posttraumatic stress disorder in Vietnamese refugees. *Journal of Nervous and Mental Disease* 1994;182:85–90. [PubMed: 8308537]
- Hayes, SC.; Strosahl, KD.; Wilson, KD. *Acceptance and commitment therapy*. New York: The Guilford Press; 1999.
- Hazlett RL, Mcleod RD, Hoehn-Saric R. Muscle tension in generalized anxiety disorder: Elevated muscle tonus or agitated movement. *Psychophysiology* 1994;31:189–195. [PubMed: 8153255]
- Hedley L, Hoffart A, Dammen T, Ekeberg O, Friis S. The relationship between cognitions and panic attack intensity. *Acta Psychiatrica Scandinavica* 2000;102:300–302. [PubMed: 11089731]
- Hinton, DE. *Dissertation Abstracts International*. Vol. 60. 2000. Musical healing and cultural syndromes in Isan: Landscape, conceptual metaphor, and embodiment (Doctoral dissertation, Harvard University, 2000); p. 2553
- Hinton DE, Ba P, Peou S, Um K. Panic disorder among Cambodian refugees attending a psychiatric clinic: Prevalence and subtypes. *General Hospital Psychiatry* 2000;22:437–444. [PubMed: 11072060]
- Hinton DE, Chau H, Nguyen L, Nguyen M, Pham T, Quinn S, et al. Panic disorder among Vietnamese refugees attending a psychiatric clinic: Prevalence and subtypes. *General Hospital Psychiatry* 2001;23:337–344. [PubMed: 11738465]

- Hinton DE, Chhean D, Fama JM, Pollack MH, McNally RJ. Gastrointestinal-focused panic attacks among Cambodian refugees: Associated psychopathology, flashbacks, and catastrophic cognitions. *Journal of Anxiety Disorders*. in press
- Hinton DE, Chhean D, Pich V, Pollack MH, Orr SP, Pitman RK. Assessment of posttraumatic stress disorder in Cambodian refugees using the Clinician-Administered PTSD Scale: Psychometric properties and symptom severity. *Journal of Traumatic Stress* 2006;19:405–411. [PubMed: 16788999]
- Hinton DE, Chhean D, Pich V, Safren SA, Hofmann SG, Pollack MH. A randomized controlled trial of CBT for Cambodian refugees with treatment-resistant PTSD and panic attacks: A cross-over design. *Journal of Traumatic Stress* 2005;18:617–629. [PubMed: 16382423]
- Hinton DE, Chhean D, Pich V, Um K, Fama JM, Pollack MH. Neck-focused panic attacks among Cambodian refugees: A logistic and linear regression analysis. *Journal of Anxiety Disorders* 2006;20:119–138. [PubMed: 16464700]
- Hinton DE, Hinton SD. Panic disorder, somatization, and the new cross-cultural psychiatry; or, the seven bodies of a medical anthropology of panic. *Culture, Medicine, and Psychiatry* 2002;26:155–178.
- Hinton DE, Hinton SD, Um K, Chea A, Sak S. The Khmer “weak heart” syndrome: Fear of death from palpitations. *Transcultural Psychiatry* 2002;39:323–344.
- Hinton DE, Hsia C, Um K, Otto MW. Anger-associated panic attacks in Cambodian refugees with PTSD: A multiple baseline examination of clinical data. *Behaviour Research and Therapy* 2003;41:647–654. [PubMed: 12732373]
- Hinton DE, Pham T, Chau H, Tran M, Hinton SD. “Hit by the wind” and temperature-shift panic among Vietnamese refugees. *Transcultural Psychiatry* 2003;40:342–376. [PubMed: 14649850]
- Hinton DE, Pham T, Tran M, Safren SA, Otto MW, Pollack MH. CBT for Vietnamese with treatment-resistant PTSD and panic attacks. *Journal of Traumatic Stress* 2004;17:429–433. [PubMed: 15633922]
- Hinton DE, Pich V, Safren SA, Pollack MH, McNally RJ. Anxiety sensitivity among Cambodian refugees with panic disorder: A discriminantfunction and factor analytic investigation. *Behaviour Research and Therapy* 2005;43:1631–1643. [PubMed: 16239155]
- Hinton DE, Pich V, Safren SA, Pollack MH, McNally RJ. Anxiety sensitivity among Cambodian refugees with panic disorder: A factor analytic investigation. *Journal of Anxiety Disorders* 2006;20:281–295. [PubMed: 16564433]
- Hinton DE, Pich V, So V, Pollack MH, Pitman RK, Orr SP. The psychophysiology of orthostatic panic in Cambodian refugees attending a psychiatric clinic. *Journal of Psychopathology and Behavioral Assessment* 2004;26:1–13.
- Hinton DE, Safren SA, Pollack MH, Tran M. Cognitive-behavior therapy for Vietnamese refugees with PTSD and comorbid panic attacks. *Cognitive and Behavioral Practice* 2006;13
- Hinton DE, Sinclair J, Chung RC, Pollack MH. The SF-36 among Cambodian and Vietnamese refugees: An examination of psychometric properties. *Journal of Psychopathology and Behavioral Assessment*. in press
- Hinton DE, Um K, Ba P. *Kyol goeu* (“wind overload”) part I: A cultural syndrome of orthostatic panic among Khmer refugees. *Transcultural Psychiatry* 2001;38:403–432.
- Hinton DE, Um K, Ba P. *Kyol goeu* (“wind overload”) part II: Prevalence, characteristics and mechanisms of *kyol goeu* and *near-kyol goeu* episodes of Khmer patients attending a psychiatric clinic. *Transcultural Psychiatry* 2001;38:433–460.
- Hinton DE, Um K, Ba P. A unique panic disorder presentation among Khmer refugees: The sore-neck syndrome. *Culture, Medicine, and Psychiatry* 2001;25:297–316.
- Hoehn-Saric R, Mcleod DR, Zimmerli WD. Psychophysiological response patterns in panic disorder. *Acta Psychiatrica Scandinavica* 1991;83:4–11. [PubMed: 2011954]
- Jenkins, JH. Culture, emotion, and PTSD. In: Marsella, AJ.; Friedman, MJ.; Gerrity, ET.; Scurfield, RM., editors. *Ethnocultural aspects of posttraumatic stress disorder*. Washington, DC: American Psychological Association; 1996. p. 165-183.
- Keane, TM.; Kaloupek, DG.; Weathers, FW. Ethnocultural considerations in the assessment of PTSD. In: Marsella, AJ.; Friedman, MJ.; Gerrity, ET.; Scurfield, RM., editors. *Ethnocultural aspect of*

- posttraumatic stress disorder. Washington, DC: American Psychological Association; 1996. p. 183-209.
- Kessler RC, Sonnega A, Bromet E, Hughes M, Nelson CB. Posttraumatic stress disorder in the national comorbidity survey. *Archives of General Psychiatry* 1995;52:1048–1060. [PubMed: 7492257]
- Kiernan, B. *The Pol Pot regime: Race, power, and genocide in Cambodia under the Khmer Rouge 1975–79*. New Haven: Yale University Press; 2002.
- Kinzie, JD. The Southeast Asian refugee: The legacy of severe trauma. In: Tseng, WS.; Streltzer, J., editors. *Culture and psychotherapy*. Washington, DC: American Psychiatric Press; 2001. p. 173-193.
- Kirmayer LJ. Culture, affect, and somatization, parts 1 and 2. *Transcultural Psychiatric Review* 1984;21:159–188.
- Kirmayer, LJ. Confusions of the senses: Implications of ethnocultural variations in somatoform and dissociative disorders. In: Marsella, AJ.; Friedman, MJ.; Gerrity, ET.; Scurfield, RM., editors. *Ethnocultural aspect of posttraumatic stress disorder*. Washington, DC: American Psychological Association; 1996. p. 131-165.
- Kleinman, A. *Social origins of distress and disease: Depression, neurasthenia, and pain in modern China*. New Haven: Yale University Press; 1986.
- Lee S. Neurasthenia and Chinese psychiatry in the 1990s. *Journal of Psychosomatic Research* 1994;38:487–491. [PubMed: 7990056]
- Lee S. Estranged bodies, simulated harmony, and misplaced cultures: Neurasthenia in contemporary Chinese society. *Psychosomatic Medicine* 1998;60:448–457. [PubMed: 9710290]
- Lee S. Diagnosis postponed: Shenjing Shuairuo and the transformation of psychiatry in post-Mao China. *Culture, Medicine, and Psychiatry* 1999;23:349–380.
- Lin KM, Cheung F. Mental health issues for Asian Americans. *Psychiatric Services* 1999;50:774–780. [PubMed: 10375146]
- Marsella, AJ.; Friedman, MJ.; Spain, H. Ethnocultural aspects of PTSD: An overview of issues and research directions. In: Marsella, AJ.; Friedman, MJ.; Gerrity, ET.; Scurfield, RM., editors. *Ethnocultural aspect of posttraumatic stress disorder*. Washington, DC: American Psychological Association; 1996. p. 105-131.
- Marshall GN, Schell TL, Elliott MN, Berthold SG, Chun CA. Mental health of Cambodian refugees 2 decades after resettlement in the United States. *Journal of the American Medical Association* 2005;294:571–579. [PubMed: 16077051]
- Mollica RF, Donelan K, Tor S, Lavelle J, Elias C, Frankel M, et al. The effect of trauma and confinement on functional health and mental health status of Cambodians living in Thailand-Cambodian border camps. *Journal of the American Medical Association* 1993;270:581–586. [PubMed: 8331755]
- Mollica RF, Grace W, Lavelle J, Truong T, Svang T, Yang T. Assessing symptom change in Southeast Asian refugee survivors of mass violence and torture. *American Journal of Psychiatry* 1990;147:83–88. [PubMed: 2293793]
- Mollica RF, McInnes K, Poole C, Tor S. Dose-effect relationships of trauma to symptoms of depression and post-traumatic stress disorder among Cambodian survivors of mass violence. *British Journal of Psychiatry* 1998;173:482–488. [PubMed: 9926076]
- Mollica RF, Wyshak G, Marneffe D, Khuon F, Lavelle J. Indochinese versions of the Hopkins Symptom Checklist-25: A screening instrument for the psychiatric care of refugees. *American Journal of Psychiatry* 1987;144:497–500. [PubMed: 3565621]
- Noyes, R.; Hoehn-Saric, R. *The anxiety disorders*. Cambridge, England: Cambridge University Press; 1998.
- Otto, MW.; Penava, SJ.; Pollack, RA.; Smoller, JW. Cognitive-behavioral and pharmacologic perspectives on the treatment of post-traumatic stress disorder. In: Pollack, MH.; Otto, MW.; Rosenbaum, JF., editors. *Challenges in clinical practice: Pharmacologic and psychosocial strategies*. New York: The Guilford Press; 1996. p. 219-260.
- Otto, MW.; Reilly-Harrington, N. The impact of treatment on anxiety sensitivity. In: Taylor, S., editor. *Anxiety sensitivity*. London: Lawrence Erlbaum; 1999. p. 321-336.
- Parker G, Gladstone G, Chee KT. Depression in the planet's largest ethnic group: The Chinese. *American Journal of Psychiatry* 2001;158:857–864. [PubMed: 11384889]

- Reiss, S.; McNally, RJ. The expectancy model of fear. In: Reiss, S.; Bootzin, R., editors. *Theoretical issues in behavior therapy*. New York: Academic Press; 1985. p. 107-121.
- Resick PA, Nishith P, Weaver TL, Astin MC, Feuer CA. A comparison of cognitive processing therapy with prolonged exposure and a waiting condition for the treatment of chronic posttraumatic stress disorder in female rape victims. *Journal of Consulting and Clinical Psychology* 2002;70:867–879. [PubMed: 12182270]
- Resick, PA.; Schnicke, MK. *Cognitive processing therapy for rape victims*. London: Sage; 1996.
- Rosen JB, Schulkin J. From normal fear to pathological anxiety. *Psychological Review* 1998;2:325–350. [PubMed: 9577241]
- Scheper-Hughes N, Lock M. The mindful body: A prolegomenon to future work in medical anthropology. *Medical Anthropology Quarterly* 1987;1:6–41.
- Shalev A, Bleich A, Ursano RJ. Posttraumatic stress disorder: Somatic comorbidity and effort tolerance. *Psychosomatics* 1990;31:197–203. [PubMed: 2330402]
- Shear MK, Brown TA, Barlow DH, Money R, Sholomskas DE, Woods SW, et al. Multicenter collaborative panic disorder severity scale. *American Journal of Psychiatry* 1997;154:1571–1575. [PubMed: 9356566]
- Shrestha NM, Sharma B, Van Ommeren M, Regmi S, Makaju R, Komproe I, et al. Impact of torture on refugees displaced within the developing worlds. *Journal of the American Medical Association* 1998;280:443–448. [PubMed: 9701080]
- Taylor S, Koch WJ, McNally RJ. How does anxiety sensitivity vary across the anxiety disorders? *Journal of Anxiety Disorders* 1992;6:249–259.
- Tseng WS, Asai M, Liu JO, Wibulswasdi P, Pismai W, Suryani LK, et al. Multi-cultural study of minor psychiatric disorders in Asia: Symptom manifestations. *International Journal of Social Psychiatry* 1990;36:252–264. [PubMed: 2079396]
- Uwanyiigira E. La souffrance psychologique des survivants des massacres au Rwanda: Approches thérapeutiques. *Nouvelle Revue d'Ethnopsychiatrie* 1997;34:87–104.
- Van Ommeren M, de Jong JT, Sharma B, Komproe I, Thapa SB, Cardena E. Psychiatric disorders among tortured Bhutanese refugees in Nepal. *Archives of General Psychiatry* 2001;58:475–482. [PubMed: 11343527]
- Weathers FW, Keane TM, Davidson JR. Clinician-Administered PTSD Scale: A review of the first ten years of research. *Depression and Anxiety* 2001;13:132–156. [PubMed: 11387733]
- White G. The role of cultural explanations in “somatization” and “psychologization”. *Social Science and Medicine* 1982;16:1519–1530. [PubMed: 7135026]
- Yardley L. Panic disorder with agoraphobia associated with dizziness: Characteristic symptoms and psychosocial sequelae. *Journal of Nervous and Mental Disease* 2001;189:321–327. [PubMed: 11379977]
- Yehuda R. Managing anger and aggression in patients with posttraumatic stress disorder. *Journal of Clinical Psychiatry* 1999;60:33–37. [PubMed: 10418813]