

***Susto* and *Nervios*: Expressions for Stress and Depression**

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Published online: 6 June 2008
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Abstract Folk illnesses that are cultural constructions of psychological distress offer a vehicle for the cross-cultural study of stress and stress-related morbidity. This study explores the relationship between the Latin American folk illnesses *susto* and *nervios* and mental health. We hypothesize that these folk illnesses are distinct and that there is a stronger association between current levels of stress and depressive symptoms with past experience of *nervios* than with *susto*, because the cultural constructions of these folk illnesses reflect chronic and acute concepts of distress, respectively. Interviews were conducted in Guadalajara, Mexico, where participants responded to questions about their socio-demographic characteristics, stress, depressive symptoms, and whether they had experienced *susto* or *nervios*. *Susto* and *nervios* are very prevalent and occur across sociodemographic subgroups, with the exception that *nervios* occurred more often in women ($p < 0.05$). *Susto* was significantly associated with stress and depressive symptoms ($p < 0.05$), but *nervios* had a much stronger association ($p < 0.0001$), even after controlling for gender. *Susto* and *nervios* were expressions of psychological distress; most of those with depression reported *susto* and/or *nervios*. This study validates the link between these folk illnesses and stress and depression and may, ultimately, facilitate cross-cultural research on stress.

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Keywords Folk illnesses · *Susto* · *Nervios* · Stress · Depression

Introduction

Health problems recognized within a particular culture that are not considered to be biomedical diseases, and that are not necessarily recognized across cultures, are referred to as culture-bound syndromes or, more generally, as folk illnesses. *Susto* (“fright”) and *nervios* (“nerves”) are two such Latin American folk illnesses that are associated with psychological distress. Rubel et al. (1984) initially linked the folk illness *susto* to stress. Similarly, Nations et al. (1988) linked nerves to anxiety and depression in the United States, and Guarnaccia et al. (1993, 2003) linked *ataques de nervios* (“attack of nerves”) to panic disorder and other psychiatric problems in Puerto Rico. Low (1985) hypothesized that *susto* and *nervios* might be similar expressions for distress, but recent work by Baer et al. (2003) indicates that these two folk illnesses are distinct with coherent constellations of symptoms and causes, much like any other illness, and are not simply different labels used by different subgroups.

In this study, we attempt to better understand the relationship between these two folk diagnoses and their relation to mental health problems, by comparing current levels of stress and depressive symptoms in those who have had the folk illnesses and those who have not had them. This work is an important link for cross-cultural research on stress and comorbidities due to stress, because these folk illnesses may be markers for severe stress and depression. Linking cultural constructions of distress in the form of folk illnesses with biomedical constructs of stress and depression may, ultimately, facilitate cross-cultural research on the role of stress in the etiology of other morbidities. If *susto* and *nervios* are indeed markers for stress and depression, then studies might be able to use these folk illnesses to study other conditions thought to be caused by stress/distress. Our work complements the work of Guarnaccia et al. (2003), who focused on a variant of *nervios*, *ataques de nervios*, among Puerto Ricans. We focus on Mexicans, however, because they, unlike the Puerto Ricans, recognize both *nervios* and *susto* (Baer et al. 2003). We then examine patterns in reporting such folk illnesses and whether past experience with a folk illness is associated with current levels of stress and depressive symptoms.

Background

Susto and *nervios* are both commonly reported in Mexico. In a comparative study of *susto* in three cultural groups in Mexico, Rubel et al. (1984) described *susto* as being caused by a startling or frightening experience that can lead to “a loss of a vital substance or force” (48) and is sometimes described as “soul loss” (Glazer et al. 2004). The resulting symptoms include listlessness, restless sleep, debilitation, depression and indifference to food, dress and personal hygiene. Recommended treatments focus on inducing the lost vital force back into the body to eliminate the

symptoms. Individuals with a folk diagnosis of *susto* had significantly higher mortality rates after seven years than did age- and gender-matched individuals without *susto* (Rubel et al. 1984).

In a cross-cultural study of beliefs about *susto* comparing rural Mexican-Americans, urban Mexicans, and rural Guatemalans, Weller et al. (2002) found similar descriptions of *susto*. A single or “prototypical” explanatory model for *susto* was shared within and across the three communities. Causes cited by all groups included a frightening experience, a sudden surprise or shock, such as seeing someone get killed or being in an accident. Symptoms included shaking/trembling, agitation, crying, bad dreams, difficulty sleeping, paleness, fear of unfamiliar places and people, general malaise and *nervios*. *Susto* was often treated at home (physicians are not recommended) and prayer was thought to help. The Mexican model also included drug use, fighting among family members and spirits of dead people as causes and a lack of appetite, weight loss, muscle/body aches and vomiting and diarrhea as additional symptoms. Mexicans also reported that a psychiatrist, psychologist or herbalist was considered helpful, as well as trying to keep calm (relaxing, taking sedatives or getting a massage).

Nervios is similar to *susto* in many aspects of etiology and symptoms. *Nervios*, however, can be an explanation of illness, a symptom of illness, as well as a state of illness (Baer et al. 2003). Among Mexicans, individuals with *nervios* (being “ill” with *nervios* or “suffering” from *nervios*) report feelings of desperation, high or low blood pressure, headaches, chest pains and abdominal pains, and they tend to report a variety of social, political, economic and familial issues (Finkler 1989; Salgado de Synder et al. 2000). Treatment in Mexico includes home remedies, such as herbal teas, which are frequently used in combination with physician-prescribed medications (Finkler 1989).

There are also different types of *nervios*. Among Puerto Ricans, a person may be a “nervous” person with a vulnerable personality since birth; or a person may develop and suffer from *nervios*, much like an illness (Guarnaccia et al. 2003:351); or a person may experience a more severe form with seizure-like attacks (*ataques* or *ataques de nervios*), associated with psychiatric disorders (e.g., panic disorder [347]). Puerto Ricans suffering from *nervios* describe being overwhelmed, trembling, being nervous, fearful and/or sad, having explosive anger, being irritable, and being out-of-control (351). Treatments acknowledge the severity of the latter two types, and often include mental health professionals, as well as support from family and friends.

To better understand the similarities and differences across regions in the folk illness *nervios*, Baer et al. (2003) systematically compared beliefs about *nervios* among Puerto Ricans in Hartford, Connecticut, rural Mexican-Americans, urban Mexicans, and rural Guatemalans. They found sufficient consistency in the explanatory models of individuals that a single explanatory model accounted for most within- and-across community variation. Symptoms included crying, difficulty sleeping, shaking/trembling, sadness (and depression), being easy to anger and hopelessness. Suggested treatments included trying to relax, taking sedatives and praying. The more detailed Mexican and Puerto Rican community models also included seeing a psychiatrist or psychologist for treatment, and the Mexican model

included poor health outcomes for those with untreated nervios (e.g., untreated nervios can cause a person to become diabetic).

Some studies note a higher prevalence of nervios among women (Finkler 1989), and others suggest that nervios is associated specifically with stressed, harassed, abused and/or neglected women, especially in rural areas (Salgado de Synder et al. 2000:465–467). O’Neill and Selby (1968) reported a similar pattern among Zapotecs in Mexico, but for the folk illness, *susto*. They identified the diagnosis of *susto* as a “channel of escape for the relief of psychological stress engendered within the cultural framework,” particularly for women, who experience more intracultural stress than men (97). Because of these similarities, Low (1985) hypothesized that the same phenomenon may be labeled differently by rural and urban populations.

A systematic comparison between *susto* and nervios across Latin Americans shows many similarities (Baer et al. 2003). Several situations that are often cited as causes of *susto*, such as seeing or being in an accident, seeing someone killed or experiencing a great shock or surprise, are also considered to be causes of nervios. Weak people or people with a weak character are considered to be more likely to get either illness. In addition, *susto* can cause nervios and nervios can cause *susto*. However, despite the many similarities, each appears to be a distinct illness, with nervios being more chronic, with persistent emotional distress related to family problems, drugs/alcohol and/or fighting), while *susto* appears to be of shorter duration and is typically linked to a single stressful incident (Baer et al. 2003). Nervios also tends to occur primarily in adults, especially in adult women, while *susto* can occur in young children as well. Because of this, Baer et al. (2003) rejected the idea that nervios might be the term used by more urban/Ladino populations for the problem that rural/indigenous people labeled *susto*.

The goal of contemporary approaches to the study of these folk illnesses has not been to reduce the folk illnesses to their biomedical equivalents (a generally impossible task) but, rather, to understand the meaning that folk diagnoses have within the community and as possible risk factors for morbidity and mortality. Rubel et al. (1984) systematically explored psycho-social factors associated with *susto*. Using a case-control design, they tested for differences between individuals with *susto* and those without it in terms of social stress (defined as the difference between expected and perceived role performance in three different cultural settings), as well as physical/organic disease and emotional/psychiatric impairment. They found that *susto* was associated with greater stress and a greater likelihood of parasitic infections and anemia, and as mentioned earlier, follow-up of the original sample after seven years indicated a significantly higher mortality rate among those who had had *susto*. Baer and Penzell (1993) also found higher morbidity among Mexican farm workers who had experienced *susto*.

Although the relationship between folk illnesses and mental health is still not well understood, folk illnesses, including *susto* and nervios, are now included along with the psychiatric and psychological diagnoses as an appendix (DSM-IV, Appendix 1 [American Psychiatric Association 1994]). While the more extreme form of nervios, *ataques de nervios*, has been linked to psychiatric diagnoses among Puerto Ricans (Guarnaccia et al. 2003), less is known about the milder and more common form, nervios. *Ataques de nervios* is very strongly associated with the

psychiatric diagnosis of panic disorder and, to a lesser extent, depression, affective disorder and posttraumatic stress disorder (347). The milder form, *nervios* or “suffering from nerves,” may be associated with dysthymia and may be “a chronic and lower intensity form of depression” (357). Guarnaccia et al. (1993) stressed that while *ataque de nervios* did not correlate precisely with any one particular psychiatric diagnosis, it “is a way Puerto Ricans describe the cluster of symptoms associated with anxiety and/or depressive disorders” (161).

Among Latin Americans, *nervios* and *susto* each constitute well-recognized “illnesses” that are cultural expressions for stress or distress. They represent a coherent constellation of symptoms and explanatory models (e.g., causes, symptoms and treatments) (Kleinman et al. 1978) that are shared across regions. These illnesses are so widely recognized that in many ways they are comparable in recognition and coherence to such illnesses as the common cold (Baer et al. 1999; Weller and Baer 2002). As such, *susto* and *nervios* are cultural constructions and codifications for extremely stressful experiences with culturally sanctioned responses to those experiences.

In this study, we explore the association between these two folk illnesses and between the folk illnesses and indicators of mental health. We explore patterns in reporting the folk illnesses in a population seeking health care in Guadalajara, Mexico, and examine the degree to which the occurrence of folk illnesses varies by sociodemographic characteristics. We then examine the association between an individual’s past experience with a folk illness and the degree of current stress and depressive symptoms. Based on descriptions of *nervios*, Baer et al. (2003) suggested that *nervios* may represent a more chronic or persistent form of distress. Here, we explore the acute/chronic distinction among people who have and have not had these conditions. We hypothesize that *susto* and *nervios* will both be associated with stress and depression, but that *nervios* will be more strongly associated with *current* levels of stress and depressive symptoms due to its chronic nature. Establishing the nature of these folk illnesses as cultural constructions of stressful life experiences and elucidating the similarities and differences between them in terms of standardized/validated measures of stress and depression may facilitate cross-cultural research on psychiatric comorbidities and cross-cultural research on stress and its role in the etiology of chronic disease.

Methods

Setting

The study was conducted in Guadalajara, Mexico, because both folk illnesses are widely recognized there. Guadalajara is the capital of the state of Jalisco, with a population of more than four million people of mestizo (mixed Indian and European) ancestry, and is the second largest city in Mexico. Patients were interviewed at a Family Medicine clinic of the Instituto Mexicano de Seguro Social (IMSS) national health care system. Patients were selected from a Family Medicine clinic because rates of depression tend to be somewhat higher in primary care clinics than in the

community (Wittchen et al. 1999), allowing us to study the main variables with a reasonable sample size. The clinic offers outpatient treatment and emergency care by Family Practice physicians to 110,000 largely working-class patients. The IMSS system of national health care tends to serve the majority of the Mexican population, as participation is available to employed citizens who work in businesses of more than 10 employees. The IMSS health center in Guadalajara is part of a regional tertiary-level health care center serving all of northwestern Mexico.

Participants

We chose to focus on those who were fully involved with adult roles and responsibilities. Thus, adult patients who were ≥ 30 years of age were approached for participation. To avoid a spurious association between folk illness and depression, those with a prior diagnosis of diabetes were excluded from the sample. Because diabetic patients are more likely to be depressed than are nondiabetic patients (Anderson et al. 2001) and because diabetic patients may be more likely to report folk illnesses (Baer et al. 2003; Poss and Jezewski 2002; Weller et al. 2002), the high prevalence of diabetes in this population (Weller et al. 1999) could make an association between folk illness and depression appear stronger than it really is, if diabetic patients were included. The project was approved by the Ethics Committee of the IMSS hospital and the Institutional Review Boards of the collaborating universities.

Materials

Interviews collected information on patients' demographic and clinical characteristics and medical history. Socioeconomic status was estimated with educational level, income and rural/urban background. A history of folk illnesses was assessed by self-report: "Have you suffered from *susto*/fright?" (*¿Usted ha padecido susto?*) and "Have you suffered from *nervios*/nerves?" (*¿Usted ha padecido de nervios?*).

Stress and depression were measured with standardized and validated instruments. Current stress was measured with Cohen's Perceived Stress Scale (PSS; Cohen et al. 1983). Stress is assumed to cause pathology and illness. It can be measured with an accumulation of "objective" events (good and bad) that can cause stress. However, individuals may vary in their perception of those events as stressful due to their personality, coping mechanisms and other factors. Because of this, *perceived* stress may be a better indicator of an individual's stress level. Cohen's PSS is a global measure of perceived stress as a measure of "the degree to which respondents found their lives to be unpredictable, uncontrollable, and overloading" (387). The scale is a self-reported index of the overall stress in daily life with a good reliability. Ten questions are rated on five-point scales in terms of their frequency during the past month (from never to very often). The total score can range from 0 to 50, with high scores indicating more stress. Scores indicate current stress and have a moderate correlation with stressful events that have occurred over the past year (Cohen et al. 1983).

Current depressive symptoms were measured with the Zung (1965) depression scale. As with the Beck (Zich et al. 1990) and the CES-D (Radloff 1977) scales, the Zung scale is a self-reported checklist of depressive symptoms with very good reliability. There are 20 items (such as crying, difficulty sleeping, irritability) rated on four-point scales in terms of their frequency (none of the time to most of the time) in the past several days. The total score can range from 20 to 80, with higher scores indicating more depressive symptoms. Very high scores (≥ 50) show good validity in distinguishing those with a depressive disorder (Zung 1965).

Translation of measures of stress and depression must be done appropriately. The directors of the Social, Epidemiological and Health Services Research Unit of IMSS, Guadalajara (coauthors J.G.A.G. and A.L.S.R.), native Mexican-Spanish speakers, coordinated and supervised the translation of the stress and depression scales into Mexican Spanish for this study. A Spanish version of the PSS (<http://www.psy.cmu.edu/~scohen/>), appropriate for Spain, was modified to make it appropriate for the Spanish used in Guadalajara, Mexico. The version of the Zung depression scale comes from the translation and validation study by Calderon Narvaes (1992) in Mexico.

Analysis

Data were analyzed using bivariate tests between categorical variables, for example, between gender and a history of *susto*, with chi-square tests and between categorical variables and interval scale variables, for example, between a history of *susto* and age, with *t*-tests. Measures of association comparable to the Pearson correlation coefficient (ϕ or ϕ and η or η) or odds ratios are reported for each analysis. A multivariate analysis (logistic regression) was used to predict the presence of depression from demographic characteristics and folk illnesses. All statistical tests were conducted using SAS. In order to test the main hypotheses comparing the degree of stress or depressive symptoms with a history of a folk illness, a minimum sample size of 160 was required to detect an effect size of ≥ 0.25 with a *t*-test (the η coefficient for a *t*-test or ANOVA, equivalent to a Pearson's correlation coefficient) with $\alpha = 0.05$ and statistical power of 0.80 (Hays 1963:330).

Results

A sample of 200 patients was interviewed. The sample was 67.0% female and 76.1% were married or living with a partner (Table 1). The average age was 53.1 years, and ranged from 30 to 90 years of age. Some of those interviewed came from a rural background (18.5%). About a quarter (23.5%) of the sample had no formal education, almost half (40.8%) had some primary level education or had completed sixth grade and about one third (35.7%) of the sample had education beyond the primary level. These levels of education are below those for Mexico and for the state of Jalisco, possibly reflecting the older age of the sample (Table 2).

Table 1 Sample characteristics

Gender (female)	67.0%
Married	76.1%
Age	53.1 yr
Rural background	18.5%
Income	
0–1.9× min wage	27.2%
2–3.9× min wage	44.1%
4+× min wage	28.7%
Educational level	
None	23.5%
1–6 yr	40.8%
> 6 yr	35.7%

Table 2 Sample, regional and national educational levels

	Educational level (%)		
	None	1–6 yr	> 6 yr
This sample	23.5	40.8	35.7
State of Jalisco ^a	8.2	40.2	51.5
Mexico ^a	10.3	37.5	52.2

^a From Instituto Nacional de Estadísticas, Geografía e Informáctica for population 15 years of age and older

Past experience with *susto* and *nervios* was high. *Susto* was reported by 69.4% of the sample. A history of *susto* was not significantly associated with age, marital status, educational level, income or a rural background. Unmarried individuals tended to have lower rates of *susto*, although the difference was not significant: 50% of unmarried, 71% of married and 74% of separated, divorced or widowed participants reported *susto* (Cramer's $V = 0.13$, $p = 0.20$). Women also tended to report more *susto*: 73.7% of women and 60.6% of men reported *susto*, but the difference was not significant ($\phi = 0.13$, $p = 0.06$).

Nervios was also very common, reported by 650.0% of the sample. Rates of *nervios* did not differ by age, marital status, educational level, income or rural background, but did differ by gender. *Nervios* was reported by 76.1% of women and 42.4% of men ($\phi = 0.33$, $p < 0.0001$). Rates of *nervios* tended to differ by marital category, although the differences were not significant: 53% of unmarried, 62% of married and 77% of separated, divorced or widowed participants reported *nervios* (Cramer's $V = 0.14$, $p = 0.13$).

Both the stress scale and the depression scale showed excellent reliability. Although reliability and validity evidence is available from other applications, the psychometric properties of the stress and depression scales were checked to ensure that the scales had similar properties for this sample. The reliability coefficient was 0.80 for the 10-item stress scale and 0.90 for the 20-item depression scale. Since high reliability also indicates content validity (Nunnally 1978), the PSS and Zung scales demonstrated good reliability with evidence of content validity for this population.

Individuals reporting a past folk illness had significantly higher levels of current stress and depressive symptoms. Those reporting *susto* had significantly higher levels of stress (16.95 vs. 14.02; $\eta = 0.17$, $p < 0.018$) and depressive symptoms (41.80 vs. 37.77; $\eta = 0.15$, $p < 0.038$) than those who did not report *susto*. *Nervios*, however, had a stronger association with stress and depression. Those reporting *nervios* had significantly higher levels of stress (17.79 vs. 13.00; $\eta = 0.28$, $p < 0.0001$) and depressive symptoms (44.36 vs. 33.80; $\eta = 0.40$, $p < 0.0001$) than those who did not report *nervios*.

A large proportion of the sample reported both folk illnesses: 47.7% reported both, 21.6% reported *susto* only, 17.1% reported *nervios* only and 13.6% did not report either. Having one folk illness (either *susto* or *nervios*) may put one at risk for having the other. Those who had one folk illness were 1.75 times more likely to have the other, although the association between the two folk illnesses did not reach statistical significance ($p = 0.074$). Women were more likely to report *nervios* and *nervios* plus *susto* ($p < 0.001$; Table 3). Those who reported one or both folk illnesses were slightly less educated than those not reporting a folk illness ($p = 0.062$), although rural background did not differ meaningfully across the subgroups ($p = 0.649$). Those reporting both folk illnesses reported more stress (18.11) than those with only one folk illness (15.34) or those with neither folk illness (10.85; $p < 0.0001$). Similarly, those reporting both folk illnesses had more depressive symptoms (44.79) than those with one only folk illness (38.52) and those without a folk illness (31.38; $p < 0.0001$).

Another way to express the relationship between folk illnesses and possible depression, is to consider a threshold value for depressive symptoms that may be indicative of a depressive disorder. If the depressive symptom scores are dichotomized so that a large number of depressive symptoms (≥ 50) are used to indicate possible depression (Zung 1965), we see that those reporting *susto* are 2.26 (95% CI: 10.01, 50.02) times more likely, and individuals reporting *nervios* are 19.19 (95% CI: 4.50, 81.97) times more likely to be depressed, than are those not reporting these folk illnesses.

The association between folk illness and depression, however, is asymmetric. The conditional probability or likelihood of a reported folk illness given that someone is depressed is the true positive rate or sensitivity of the folk illness (Weinstein et al. 1980). *Susto* was reported by 81% of those with possible depression (symptoms ≥ 50) and *nervios* was reported by 96% of those with possible depression (column percentages in Table 4). This means, that there is a

Table 3 Distribution of possible risk factors across illness groups

Risk factor	No folk illness ($n = 27$) (%)	<i>Susto</i> only ($n = 43$) (%)	<i>Nervios</i> only ($n = 34$) (%)	<i>Susto</i> & <i>nervios</i> ($n = 95$) (%)	Total (%)
Education < 6 yr	48	57	61	73	64
Rural background	26	21	15	17	19
Female gender ^a	41	49	71	81	67

^a $p < 0.05$

Table 4 Sensitivity of folk illnesses

	Depression (symptoms > 50)	No depression (symptoms <50)	Total (%)
Susto reported	28% (81%)	72% (66%)	100
No susto	15% (19%)	85% (34%)	100
Nervios reported	36% (96%)	64% (55%)	100
No nervios	3% (4%)	97% (45%)	100

Column percentages in parentheses

very high likelihood that someone with depression will report nervios and, to a slightly lesser extent, will report susto. However, the majority of individuals reporting a folk illness were not depressed (row percentages in Table 4). The likelihood of depression among those reporting susto (28%) is only slightly elevated over the overall prevalence of depressive symptoms at the clinic (25%), while the prevalence of depression among those with nervios (36%) is much higher than that in the general clinic population (25%). This means that although those reporting a folk illness are at much greater risk for depression, the majority of individuals who report a folk illness will not be depressed.

The strong association between a past folk illness and current likelihood of depression (those with susto are twice as likely and those with nervios are 20 times as likely!) is due to the specificity of the folk illnesses. It is very unlikely that someone with depression would *not* report a folk illness. It is the *absence* of a reported folk illness that has important predictive value and the ability to rule out depression. When a folk illness is *not* reported (the negative predictive value) the likelihood that a person is depression-free is 85% for susto and 97% for nervios. This means that it would be very rare (3%) for someone denying a past experience with nervios to be depressed. In the community, where the prevalence of depression would be lower than at a primary care clinic, these findings would be much more pronounced.

A logistic regression analysis was used to test the combined effect of susto, nervios and gender on the likelihood of depression (Zung score ≥ 50). Considered together, the effects of all three variables were slightly reduced, although nervios retained a very strong, independent association with depression (Table 5). Individuals reporting nervios were 14.4 (95% CI: 3.3, 62.7) times more likely to be depressed than those not reporting nervios. Those reporting susto were 1.8 (95% CI: 0.8, 4.3) times more likely to be depressed and women were 2.5 (95% CI: 1.0, 6.8) times more likely to be depressed than men. The model with gender, susto and nervios had a good fit to the data (Hosmer & Lemeshow test, $p = 0.93$).

Table 5 Predictors of possible depression

Variable	Bivariate	Multivariate
Gender (female)	4.57 [95% CI: 1.83, 11.42]	2.54 [95% CI: 1.0, 6.8]
Susto	2.26 [95% CI: 1.01, 5.02]	1.84 [95% CI: 0.8, 4.3]
Nervios	19.19 [95% CI: 4.50, 81.97]	14.43 [95% CI: 3.3, 62.7]

Discussion and Conclusions

Findings from this study underscore the uniqueness of *susto* and *nervios*. Both illnesses are real entities, as opposed to the more vague term, stress. While both folk illnesses express distress, past experience with *nervios* appears to have more persistent effects that are reflected in current levels of perceived stress and depressive symptoms. This study complements previous findings on *nervios* and *ataques de nervios* in Puerto Rico. Among Puerto Ricans, Guarnaccia et al. (2003) found a very strong association between *ataques de nervios* and panic disorder and suggested that *nervios* may represent a mild form of depression. Our study, in Mexico, indicates that *nervios* is strongly associated with depression.

The consistency of explanatory models concerning *nervios* across Latin American groups (Baer et al. 2003) suggests that *nervios* would, most likely, be associated with depression in Puerto Rico and, perhaps, more generally in Latin America as well. This may also be the pattern in other cultures that recognize *nervios*. For example, Nations et al. (1988) found that about a third of patients reported the folk illness “nerves” at a primary care clinic in the United States. Those patients were significantly more likely to experience anxiety and depression and seemed to have lives filled with difficult social and economic situations resulting in considerable psychosocial stress. This pattern bears further exploration in other cultural contexts where *nervios* is commonly recognized.

Both *susto* and *nervios* were highly prevalent in a primary care setting in urban Mexico. These folk illnesses were reported by two thirds of the respondents (69 and 65%, respectively), and almost half of those individuals reported having had both *susto* and *nervios*. These rates are high, but are only slightly higher than the prevalence of *susto* and *nervios* in the surrounding Guadalajara community. Weller et al. (2002) estimated that 58% of Guadalajaran households have had *susto* and Baer et al. (2003) estimated that 63% have had *nervios*.

In this sample, *susto* was equally likely to occur across demographic subgroups. The higher level of stress among those who reported *susto* is similar to the findings of Rubel et al. (1984). They found an association between *susto* and stress for Mestizos and for two other ethnic groups (Chinantecs and Zapotecs) in Mexico. Rubel et al., however, did not find an association between *susto* and psychiatric impairment (using the Langer Screening Score for Psychiatric Impairment), possibly due to their small sample size.

Nervios was also equally likely to occur across demographic subgroups, with the exception that women were more likely to report it. Comparisons between this study and Guarnaccia et al.’s (2003) Puerto Rican study of *ataque de nervios* are limited, as the two studies did not focus on the same illness entity. In Puerto Rico, the community prevalence of the more extreme form of *nervios*, *ataque de nervios*, was 13.8% and was seen most commonly among the poor and working class (Guarnaccia et al. 1993, 2003). It was also associated with several psychiatric disorders. In our predominantly working-class primary care sample in urban Mexico, approximately two thirds reported *nervios*, and those who reported *nervios* had higher levels of current stress and more depressive symptoms than did those without *nervios* and more than those who reported *susto*.

The occurrence of both folk illnesses in almost half of those reporting either folk illness reinforces the notion that these two folk illnesses are distinct. While neither Low (1989), Kay (1989), nor Finkler (1989) discuss the situation of people who have had experience with both of these folk illnesses, the symptoms they report for sufferers of *nervios* are certainly consistent with a depressed state. Similarly, Rubel et al.'s (1984) description of *susto* may be consistent with a depressed state or possibly a posttraumatic stress disorder. *Nervios* seems to have stronger and longer-lasting effects on mental health than *susto*, and although *nervios* is not always accompanied by *susto*, it appears that when they are linked, depression is even more likely.

Nervios and *susto* are cultural expressions of psychological distress among Mexicans. Those reporting a folk illness were at much greater risk of poor mental health. The association between these folk illnesses and mental health, especially between *nervios* and depression, may be because individuals with high levels of stress and depressive symptoms are much more likely to report *nervios* and/or *susto*. These idioms of distress are almost universally reported by those who may be depressed. Much more than the idiom of “stress” in English, these folk illnesses capture a traumatic event etiology and the emotional and somatic responses to such events. Such a folk illness diagnosis may also be an attempt to explain one's current situation, as having resulted from past trauma or series of difficult situations.

Susto and *nervios* were also highly specific to depression; depression was very unlikely in individuals who did not report a folk illness. Interestingly, a similar asymmetry in the association between *ataques de nervios* and panic disorder was noted in Puerto Rico (Lewis-Fernandez et al. 2003). Although individuals with *ataques de nervios* were 25 times more likely to have a panic disorder than those without *ataques*, Lewis-Fernandez et al. noted that “it is rare to find panic disorder in Puerto Rico among community residents who do not self-identify as suffering from *ataque*” (72). In that study, *ataques de nervios* had a high sensitivity (13/16 = 81%) and, when combined with a low prevalence of panic disorder (2%), resulted in the likelihood of having panic disorder given an absence of *nervios* of approximately 1% (3 of 768 estimated from Guarnaccia et al. [2003:347]). These results directly parallel our findings for *nervios* and depression. In our study, the likelihood of depression, given an absence of *nervios*, was only 3%.

The paradox that those who are depressed are likely to report past experiences with *susto* and/or *nervios*, but that the majority of those who suffer from *susto* and/or *nervios* may not be depressed, suggests an interesting area for future study. It is possible that the culturally accepted diagnosis of a folk illness may provide the necessary timeout and social support from roles and responsibilities so that some people with such folk diagnoses do not go on to develop depression. The role of these folk illnesses may be to signal distress and generate a cultural response that is protective against more serious mental health consequences, and it is possible that these resources have a greater buffering effect for short-term or acute conditions such as *susto* than they do for chronic conditions like *nervios*. Anthropologists have long argued that culture provides adaptations to protect individuals from the stresses of their environment. Further research in this area might explore role expectations, social support, and any perceptions of changes in responsibilities that these folk illness diagnoses may provide. Our findings and those of Lewis-Fernandez et al. (2003)

suggest that folk illness diagnoses may represent a cultural approach to dealing with serious stressors in the environment before they seriously impact mental health.

Whether *susto* and *nervios* are risk factors for poor mental health outcomes, however, is unclear. More data on when the folk diagnosis is made in contrast, to when the specific depressive symptoms are noted, will be necessary to understand these relationships. This study was based on a retrospective reporting of folk illnesses and an assessment of current levels of stress and depression. A limitation of cross-sectional studies is that it is difficult to untangle whether folk illnesses are risk factors for poor mental health outcomes or are simply cultural constructions for those conditions. A longitudinal study would be necessary to truly verify the temporal relationship between these conditions. To truly test the temporal relationships, a large sample of individuals with and without these folk illnesses (who are all free from depression) would need to be followed for several years to see the incidence of depression in each group. However, until evidence accumulates across cross-sectional mental health surveys with retrospective reporting of risk factors, it is unlikely that a longitudinal cohort study will be attempted due to the costs and logistics involved in collecting such data.

In summary, this study found that Mexicans who have experienced *susto* and/or *nervios* in the past experience more current stress and depressive symptoms than those who do not report a folk illness, and that this is more pronounced for those who have had *nervios*. Further research is necessary to verify the association between *nervios* and depression in other cultural settings. Our results parallel those for *ataques de nervios* in Puerto Ricans; folk illnesses tend to be used by people to express distress, and most of those with a psychiatric disorder also report a past folk illness. Most of those who report a folk illness, however, do not have a psychiatric disorder, and it is the absence of a folk illnesses that is strongly associated with an absence of a psychiatric disorder. Future research might also explore the role of a folk illness diagnosis in garnering social support, thus representing a cultural approach to preventing more serious mental health problems. In addition, the duration of stress may be an issue. Finally, the findings from this study are relevant to cross-cultural research in chronic disease epidemiology. Stress has been implicated in the etiology of chronic conditions such as hypertension and cardiovascular disease. Folk illnesses such as *susto* and *nervios* are coherent, consistently defined constructions of stress and psychological distress that may facilitate research among Latin Americans by providing culturally defined indicators of acute and chronic stress for individuals in those cultural settings.

Acknowledgments This study was funded by NSF Grant SBR 9807373 to R. Baer, NSF Grant SBR 9727322 to S. Weller and CONACYT Grant 34153-S to J. Garcia de Alba Garcia and A. Salcedo Rocha. An earlier version of this paper was presented at the meetings of the American Anthropological Association, November 2005, Washington, D.C.

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