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Ethnic differences in psychosocial factors in methadone maintenance: Hmong versus non-Hmong

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Abstract

Little is known about the characteristics of U.S.-based Asian populations undergoing methadone maintenance treatment for opioid use disorders. We evaluated psychosocial factors in 76 Hmong and 130 non-Hmong on methadone maintenance for at least two months in a single urban methadone maintenance clinic. Assessments included the Addiction Severity Index 5th Edition, the Symptom Checklist-90, and the Structured Clinical Interview for DSM-IV Axis I Disorders. The Hmong were older, predominately male, and on lower doses of methadone than the non-Hmong. Hmong had significantly lower ASI composite scores across all dimensions except employment and legal. While the SCL-90 Global Severity Index (GSI) score did not differ between groups, the Hmong had lower scores in the interpersonal sensitivity, depression, anxiety, hostility, and paranoid ideation dimensions. Sixty-seven percent of Hmong and 29% of non-Hmong were without Axis I diagnoses ($p < .001$). There was no difference between the groups in DSM-IV substance use diagnoses. The extent to which these psychosocial differences impact methadone dose requirements and treatment outcomes in Hmong and non-Hmong remains unknown.

Keywords

Ethnicity; Hmong; methadone; opioid use disorder; psychopathology

Introduction

The primary effects of methadone in the treatment of opioid use disorder are reductions in opioid withdrawal symptoms, drug craving, and illicit opioid use (Mattick, Breen, Kimber, & Davoli, 2009). Treating opioid use disorders with methadone is also associated with decreased incidence and prevalence of HIV and reduced mortality (Cornish, Macleod, Strang, Vickerman, & Hickman, 2010; MacArthur et al., 2012). Because of its profound effect on the treatment of opioid use disorders, methadone is included in the World Health Organization's list of essential medications.

Methadone is a full agonist at mu-opioid receptors and an antagonist at N-methyl-D-aspartate (NMDA) receptors (Gorman, Elliott, & Inturrisi, 1997). Methadone's long half-life

(~24 hours) allows for once-daily dosing without onset of withdrawal between doses, and its relatively small peak-to-trough ratio prevents daily euphoria in opioid-tolerant individuals. Once stable dosing is achieved, methadone blocks the effects of superimposed opioids (Dole, Nyswander, & Kreek, 1966). Clinical stability results from methadone's combined pharmacokinetic and pharmacodynamics properties, and the dose is often titrated until clinical stability is achieved. While most patients reach clinical stability on daily methadone doses between 80 and 120 mg, a substantial minority of patients remain unstable outside of this range and are at increased risk for ongoing drug use as well as dropping out of treatment (Johnson et al., 2000).

In addition to methadone dose, factors associated with retention in treatment include older age, medical illness, strength of therapeutic alliance with clinic staff, and treatment satisfaction (Kelly, O'Grady, Mitchell, Brown, & Schwartz, 2011; Villafranca, McKellar, Trafton, & Humphreys, 2006). Criminal justice involvement and ongoing drug use have been negatively associated with treatment retention. The effect of psychiatric comorbidity on methadone treatment outcome is more complex, with some studies showing increased drug use without negatively affecting retention whereas others show a negative effect on retention (Rounsaville, Kosten, Weissman, & Kleber, 1986; Rounsaville, Weissman, Crits-Christoph, Wilber, & Kleber, 1982).

Psychosocial instability and psychiatric diagnoses may have somatic and other subjective manifestations (generalized aches, fatigue, irritability, etc.), which may be confused for opioid withdrawal symptoms or may trigger craving. These behavioral-psychiatric domains could influence the perceived effect of methadone and thus lead to higher methadone doses. We previously observed superior treatment outcome on lower doses of methadone for Hmong patients attending a single urban safety-net methadone program in the United States (Bart, Wang, Hodges, Nolan, & Carlson, 2012). In the current article, we explore whether there are differences in psychopathology between our Hmong and non-Hmong patients that might explain these observed differences in methadone treatment outcome.

The Hmong are a distinct ethnic minority primarily from Laos. During the Vietnam conflict, Hmong fought against communism as a U.S. ally. Following the U.S. withdrawal from Vietnam and subsequent communist government control in Laos, the Hmong were subject to retaliation and a refugee crisis ensued. Currently, approximately 70,000 Hmong reside in Minnesota, many as refugees. Historically, Laos, and the Hmong specifically, has been known for opium cultivation (Westermeyer, 1982). Opium was often used as part of traditional medical practice. The prevalence of opium dependence in prewar Hmong villages was estimated at 12% (Westermeyer, 1981). Thus, with immigration to the United States, a percentage of Hmong with opioid use disorders had treatment needs and entered into methadone maintenance therapy (Westermeyer, Lyfoung, & Neider, 1989). Given their refugee status, need for cultural adaptation to the United States, and trauma exposure from the war, we hypothesized that the Hmong's seemingly paradoxically good response to treatment on lower doses of methadone compared to their U.S. counterparts could be related to either a unique pharmacological effect or possibly a difference in psychosocial and culturally mediated processes. We initiated a pharmacokinetic study comparing Hmong and non-Hmong patients attending the same methadone clinic. The results of that study have

been reported elsewhere (Bart, Lenz, Straka, & Brundage, 2014). This article presents findings from psychosocial evaluations of the same Hmong and non-Hmong population.

Methods

Methadone-maintained patients enrolled in a single urban safety-net hospital outpatient addiction medicine clinic were invited to participate in this study via posted flier and word of mouth. As per federal criteria, all participants on methadone maintenance were at least 18 years of age and met Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) criteria for opiate dependence (American Psychiatric Association, 1994) of at least one year duration prior to initiating methadone. This was part of a study of methadone pharmacokinetics (Bart et al., 2014), and thus, participants were excluded if they were unable or unwilling to provide informed consent, had decompensated liver disease, were in the second or third trimester of pregnancy, or were taking medications known to alter methadone pharmacokinetics. The study was approved by the Human Subjects Research Committee of the Hennepin County Medical Center and conducted in accordance with the Helsinki Declaration of 1975 (as revised in 1983). Because data included sensitive psychiatric and drug-related information, a Certificate of Confidentiality was obtained from the National Institutes of Health National Institute on Drug Abuse. Most Hmong participants were not literate in English or written Hmong, so consent forms were translated into Hmong and then read to participants by native Hmong speakers in the presence of a study coordinator who could answer questions about the protocol.

While the primary aim of the study was to develop a population pharmacokinetic model of methadone comparing Hmong to non-Hmong participants, various structured and semistructured psychosocial assessments were completed to help better describe the study population. Assessments were conducted during a three-hour interval between blood draws and included the following.

The Addiction Severity Index (ASI) is a semistructured interview that is widely used in clinical and research settings (McLellan et al., 1992). The ASI covers seven dimensions (e.g., medical, employment, alcohol, drug, legal, family/social, and psychiatric) that may be related to treatment progress and outcome. Past 30-day ratings can be codified using the ASI Composite Index Scores (0–1, with larger scores indicating greater severity) (McGahan, Griffith, Parente, & McLellan, 1986). The Cronbach's alpha (a measure of internal consistency) of the composite scores in methadone patients ranges from 0.69 to 0.93 depending on dimension (Bovasso, Alterman, Cacciola, & Cook, 2001). While the ASI is nondiagnostic, it is a reliable and valid measure of severity that can be used to plan and track treatment (McLellan, Luborsky, Woody, & O'Brien, 1980; McLellan et al., 1992). Baseline scores can also predict treatment outcomes for dimensions such as drug and alcohol use, psychopathology, legal problems, and employment in a methadone-maintained population (Bovasso et al., 2001).

The Symptom Checklist-90 (SCL-90) is a measure of psychopathology used in clinical and research settings (Derogatis, 1992; Derogatis, Lippmann, & Covi, 1973). It has been used in methadone patients and in Hmong (Jacobs, Doft, & Koger, 1981; Westermeyer, Vang, &

Neider, 1984). It is a self-administered assessment that covers nine dimensions of psychopathology (depression, anxiety, obsessive compulsive, somatization, phobic anxiety, paranoid ideation, hostility, interpersonal sensitivity, and psychoticism) and an overall distress dimension (Derogatis et al., 1973). It provides quantitative data that allow for comparisons between and within groups. Normative values are defined as <0.5, borderline scores 0.5–1, and abnormal scores >1 (Derogatis et al., 1973). While the SCL-90 is reliable and has internal consistency (Cronbach's alpha range 0.77–0.90), the dimensions do not have strong predictive validity for Diagnostic and Statistical Manual of Mental Disorders diagnostic categories (Derogatis, Rickels, & Rock, 1976). The SCL-90 may be best suited as a descriptive measure of behavioral symptoms or as a unidimensional measure of symptoms best summarized through the Global Severity Index (GSI), an overall distress dimension (Cyr, Kenna-Foley, & Peacock, 1985; Derogatis, 2000; Zack, Toneatto, & Streiner, 1998).

The Structured Clinical Interview for DSM-IV Axis I Disorders is a structured interview that provides the “gold standard” for current and lifetime DSM-IV diagnoses for axis I disorders (First, Spitzer, Gibbon, & Williams, 1998).

All interviews were conducted by a single trained bachelor-level research coordinator, thus eliminating interrater variability. Interviews were not recorded for later fidelity audits, however. For Hmong participants, interviews were conducted with the assistance of an interpreter knowledgeable in medical and drug use terminology. The SCL-90 had been previously translated into Hmong (Westermeyer et al., 1984) and was read aloud by a Hmong interpreter.

Data analyses

We evaluated differences in demographic (age, gender) and psychosocial factors (ASI composite scores, SCL-90, SCID) between Hmong and non-Hmong. Separate comparisons of the Caucasian and African American groups on psychosocial variables did not show differences, and these groups were collapsed, allowing for the comparisons between Hmong and non-Hmong herein presented. Differences between demographic and psychosocial factors were examined using *t* tests, analysis of variance (ANOVA), chi-square, or the nonparametric Mann-Whitney *U* test and the Kruskal-Wallis test, as appropriate. Significant *p* values were <.05, and because of the exploratory nature of this analysis, values were not corrected for multiple testing.

Results

Tables 1 and 2 show the participant characteristics. Methadone-maintained Hmong were predominantly male and older than their non-Hmong counterparts (Table 2). As in our previous retrospective study (Bart et al., 2012), the Hmong were on significantly lower doses of methadone than non-Hmong participants.

Differences in ASI composite scores between Hmong and non-Hmong methadone-maintained participants are presented in Table 3.

Separate comparisons of the Caucasian and African American groups (American Indian and Hispanic sample sizes were too small to be included) did not show differences in ASI dimensions and the acceptability of comparing Hmong to the aggregate group of non-Hmong.

Symptom checklist-90 dimension differences between Hmong and non-Hmong

As with the ASI composite scores, separate analyses of Caucasian and African American groups showed no difference in SCL-90 dimension scores; thus, the non-Hmong groups were combined. Of the nine dimensions assessed in the SCL-90, the only normative value found in this study was for the Hostility dimension in the Hmong population (Table 4). The Hmong had abnormal scores for the Somatization dimension only whereas non-Hmong had abnormal scores in the Obsessive-Compulsive and Depression dimension. All other dimensions in both Hmong and non-Hmong were in the borderline range.

The Hmong and non-Hmong significantly differed in the Interpersonal Sensitivity, Depression, Anxiety, Hostility, and Paranoid Ideation dimensions with the Hmong having lower scores in each of these dimensions. Hmong had a higher score in the Somatization dimension of borderline significance. Because of concerns over the discriminant validity of the various dimensions of the SCL-90, it has been recommended that the GSI could be utilized as a unidimensional measure of psychiatric symptom severity (Cyr et al., 1985). We found no difference in GSI scores between Hmong and non-Hmong.

SCID diagnoses: Hmong versus non-Hmong

Results of current Structured Clinical Interview for DSM-IV (SCID) Axis I diagnoses are presented in Table 5. Some participants had multiple diagnoses; thus, the total number of diagnoses exceeds the number of participants. Analysis was performed using chi-square for each diagnostic domain comparing the number of diagnoses within that domain to total number of diagnoses between Hmong and non-Hmong. Overall, the non-Hmong had more SCID diagnoses than Hmong. There was no difference in the number of current substance-related diagnoses between groups. While there was not statistical power to evaluate specific diagnoses within domains, it should be noted that although the non-Hmong had more anxiety disorders, the Hmong were disproportionately affected by posttraumatic stress disorder (71% versus 18% of anxiety diagnoses in non-Hmong).

Discussion

This is the first comparison of psychosocial factors between a methadone-maintained Asian (Hmong) and non-Asian clinical population. Compared to non-Hmong participants, we found that the Hmong had generally lower ASI composite scores, did not differ in SCL-90 global severity index score, and had fewer overall DSM-IV non-substance use disorder diagnoses. These findings are important because, while previous studies have looked at ethnic variation in psychosocial factors in methadone-maintained populations, they have not included Asians (Bovasso et al., 2001; Mancino et al., 2010). Further, studies of methadone populations in Asia do not account for the minority status of Asians in the United States or

the refugee status of our population and thus are not comparable or generalizable to the U.S. context.

Because the included participants in this study all had at least two months of methadone treatment, it is difficult to compare ASI composite scores to other studies in which the ASI was administered upon entry to treatment. Weisner, McLellan, and Hunkeler (2000) looked at ASI composite scores for 327 managed care members (70% Caucasian, 18% African American, and 11% Hispanic) entering treatment for a substance use disorder (not specific to methadone maintenance) and found scores of 0.38 and 0.11 for alcohol and drugs, respectively. Schwartz, Kelly, O'Grady, Mitchell, and Brown (2011) conducted ASI assessments on 351 opiate-addicted individuals (24% Caucasian and 75% African American) entering into methadone maintenance and found alcohol and drug composite scores of 0.09 and 0.32, respectively. Bovasso et al. (2001) also examined 310 patients (ethnicity not defined) who had been on methadone for two to six weeks and found alcohol and drug composite scores of 0.12 and 0.36, respectively. None of these studies provides subanalyses based on ethnicity. The alcohol scores in these studies were higher than in our population (Hmong alcohol composite score 0.00; non-Hmong composite score 0.05) and those for drugs were higher than we observed (Hmong drug composite score 0.02; non-Hmong composite score 0.10).

Unexpectedly, medical, family, and psychiatric dimensions (for non-Hmong only) were worse in our population than those reported by Schwartz et al. (2011), although medical and psychiatric (non-Hmong only) dimensions were similar to those found by Bovasso et al. (2001). Weisner et al. (2000) did not report the family dimension, but our population had worse medical and slightly better psychiatric composite scores. Our findings could indicate that while methadone treatment brings improvement in alcohol and drug dimensions only, poor medical, family, and psychiatric dimensions are independent of a treatment effect.

Brown, Alterman, Rutherford, Cacciola, & Zaballero (1993) evaluated ethnic differences in ASI composite scores in methadone-maintained patients who had been in treatment for two to six weeks. This comparison included gender as a cofactor and only African American and Hispanic patients. Results showed African Americans had higher composite scores in alcohol only. There were, however, gender differences, with women having lower employment. There were no significant ethnicity x gender interactions in composite scores. The African American population in the current study had higher composite scores in medical, family, and psychiatric dimensions and lower scores in the drug, alcohol, and legal dimensions than those in the study by Brown et al. (1993); the employment dimension was similar. These differences may reflect a longer time in treatment for our population than for participants in the study by Brown et al. (1993). Because Brown et al. did not include a Caucasian reference group or an Asian population, we cannot determine how these groups compare to the remainder of our study population.

Comparing our SCL-90 scores to those of other methadone-maintained populations has proved difficult because most studies utilize the SCL-90 early in treatment rather than in an already stabilized population. In an earlier report from our clinic of Hmong initiating methadone maintenance, Azeem, Carlson, and Soudaly (2002) noted SCL-90 scores in

abnormal ranges in all dimensions. This would indicate that the opiate-addicted Hmong had quite abnormal behavioral symptoms at time of admission and that these symptoms improved through time given that the current Hmong study population had been on methadone for an average of six years. Westermeyer and Chitasombat (1996) compared Hmong and non-Hmong SCL-90 scores in opiate-dependent patients receiving behavioral treatment only (i.e., they were not on methadone) and found higher SCL-90 scores for depression, somatization, phobic anxiety, and psychoticism in the Hmong than in non-Hmong, whereas we found lower scores in interpersonal sensitivity, depression, anxiety, and paranoid ideation. Both of his populations scored higher than our population in these dimensions, and given that they were not being treated with methadone, it is not clear whether the differences between studies are due to different populations or different treatment modalities. Rounsaville, Glazer, Wilber, Weissman, and Kleber (1983) evaluated 72 methadone patients (58% Caucasian, with ethnicity of the remaining patients undefined) with comorbid psychiatric illness who had been on methadone for at least six weeks. He reported only the GSI results, which had a mean score of 1.8, more than twice the level we found. Woody et al. (1983) reported an SCL-90 GSI score of 1.5 approximately six months after one of three psychotherapeutic interventions in 110 methadone patients (38% Caucasian and 62% African American). Platt, Steer, Ranieri, and Metzger (1989) evaluated ethnic differences in SCL-90 scores for each of the nine dimensions (no GSI scores reported) in a population of 900 White and Black methadone patients. They found that only Obsessive-Compulsive and Depression dimensions differed by ethnicity with Blacks scoring lower in each. They concluded, however, that SCL-90 scores do not need ethnic or gender adjustments. While we did find dimension differences between Hmong and non-Hmong, determining whether these differences are due to behavioral symptoms or are an indicator that the scores for Hmong need to be weighted differently is beyond the scope of the current study.

There are few prior studies of the SCL-90 in Hmong. Westermeyer (1988) measured SCL-90 scores in both psychiatrically ill and non-psychiatrically ill Hmong. The GSI in the non-ill Hmong was 0.51, lower than in our population; however, the psychiatrically ill Hmong had GSI scores between 0.97 and 1.09 (for adjustment-disorder diagnoses and other psychiatric diagnoses, respectively), both higher than in our population. For the nine dimensions, there were mixed differences between our population and that of Westermeyer: our population had higher scores than Westermeyer's non-ill for Somatization, Obsessive-Compulsive, Anxiety, Hostility, Phobic Anxiety, and Psychoticism dimensions; lower scores for Interpersonal Sensitivity, Depression, and Paranoia dimensions. Compared to those with adjustment-disorder diagnoses, our population had lower scores for all dimensions except Somatization and Psychoticism. The lower scores in our Hmong population may be related to a cohort effect in that as a refugee population, the Hmong have undergone stressors that may have decreased through time as they adjust to their new setting (Westermeyer, Neider, & Vang, 1984). Indeed, Westermeyer, Neider, et al. (1984) also found significantly improved dimension scores for GSI, Somatization, Hostility, and Phobic Anxiety over two years in non-psychiatrically ill Hmong. The high Somatization score in the methadone-maintained Hmong may be explained by an older age of participants than in the Westermeyer study or by the large number of methadone-maintained Hmong with war-related injuries, which

contributed to their opium exposure and subsequent development of addiction. There is no clear explanation for the higher psychoticism score in our population versus that of Westermeyer and why both our Hmong and non-Hmong psychoticism scores are greater than those of other methadone populations, especially considering the paucity of SCID identified psychotic disorder diagnoses.

Our population had slightly higher current SCID diagnoses for anxiety and mood disorders than reported in other methadone populations (Brooner, King, Kidorf, Schmidt, & Bigelow, 1997) although, consistent with other reports, anxiety disorders predominate. Psychotic and eating disorders were similar in our population to those in other populations. We found a relatively low prevalence of current substance use disorder, likely a result of ongoing treatment of the study population.

There are few reports of psychiatric diagnoses in Hmong. Westermeyer (1988) conducted diagnostic interviews based on earlier DSM-III criteria in 97 community-dwelling Hmong and found that 54% were without an Axis I diagnosis. Seventeen patients (18%) had clear DSM diagnoses, with most being in the depressive dimension. The remainder were affected by adjustment disorders related to their recent immigration. In this study, we found that 67% of Hmong were without a current DSM-IV diagnosis, despite coming from a population expected to be at higher risk due their history of opioid dependence compared to Westermeyer's nonaddicted population. This may be related to our population having been in the United States considerably longer and further removed from the effects of war than Westermeyer's relatively new refugee population assessed in 1977, just as Hmong were arriving as refugees. However, as Westermeyer's population acculturated to the United States, adjustment disorder diagnoses decreased and, as a result, the number of patients with no DSM diagnoses likely increased (Westermeyer, Vang, et al., 1984). This increase may also relate to a treatment effect in that these new immigrants with diagnoses on initial assessment could have received treatment, and thus some of these diagnoses may have resolved. Our population was receiving treatment for opioid dependence and had access to psychiatric care.

There are a number of limitations to this study. All measures were conducted at a single timepoint, and therefore, we are not able to determine change through time or the effect that current treatment may have on score dynamics. We do not have data on the number of participants receiving psychiatric care at the time of the study to determine the number of those receiving psychiatric treatment versus those outside of psychiatric treatment. An additional limitation is that the Hmong were predominately male, older, and had been in treatment longer than the non-Hmong and we did not adjust our analyses for age, gender, or time in treatment. Mouanoutoua, Brown, Cappelletty, and Levine (1991), however, used a Hmong-Adapted Beck Depression Inventory in a Hmong population and found that presence of depressive symptoms in Hmong did not differ by gender, although women tended to have higher depression scores than men. They did not compare Hmong to non-Hmong.. We are not able to identify other literature that evaluates the effect of age and gender on measures of psychopathology in Hmong. Hmong had several outliers in SCL-90 depression dimension scores compared to non-Hmong yet had a smaller percentage of mood disorder DSM-IV diagnoses. While it is doubtful that these outliers in one dimension could adversely

influence our results across other SCL-90 dimensions or the ASI composite scores, we cannot rule out that this reflects an overall bias in our analyses. Finally, some of our findings have large standard deviations, indicating that negative findings may be due to an underpowered sample size and interethnic differences would have been identified with a larger sample size. Future studies with larger sample sizes are needed for verification.

Conclusion

We found distinct differences in addiction severity, behavior, and psychiatric diagnoses between methadone-maintained Hmong and non-Hmong populations. These differences may affect measures of addiction treatment outcome with methadone. For example, the lower methadone dose requirements and better retention of Hmong in treatment we previously identified (Bart et al., 2012) could potentially be explained by less symptom severity as seen in ASI composite scores and a lower burden of DSM-IV psychiatric diagnoses. This is less likely as reports of non-medication-based treatment in Hmong show similar outcomes to reports of these treatments provided to non-Hmong, although direct comparison has yet to be made (Mayet, Farrell, Ferri, Amato, & Davoli, 2005; Westermeyer, 1982; World Health Organization, 2002).

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Table 1

Participant demographics.

Total sample size	206
Male (%)	127 (61.7)
Mean age in years (SD)	47.2 (13.2)
Hispanic (%)	4 (1.9)
Caucasian (%)	63 (30.6)
African American (%)	44 (21.4)
American Indian (%)	19 (9.2)
Hmong (%)	76 (36.9)

SD = Standard Deviation.

Table 2

Hmong and non-Hmong characteristics.

	Hmong (<i>n</i> = 76)	Non-Hmong (<i>n</i> = 130)	<i>p</i> value
Male, N (%)	54 (71.1)	72 (55.4)	<.05 ^A
Age, years (SD)	56.6 (11.6)	41.7(10.7)	<.001 ^B
Methadone dose, mg (SD)	54.0 (19)	82.4 (31.2)	<.001 ^B
Time on methadone, years (SD)	6.0 (3.9)	1.9 (2.8)	<.001 ^B

SD = Standard Deviation.

^A χ^2 .^B *t* test.

Table 3

ASI composite scores: Hmong and non-Hmong.

Composite domain	Hmong (<i>n</i> = 76)	Non-Hmong (<i>n</i> = 129) ^A	W value	<i>p</i> value
Medical	.28 (.39)	.4 (.38)	14,196	<.05
Employment	.76 (.26)	.82 (.23)	13,809	>.1
Alcohol use	.00 (.00)	.05 (.09)	15,040	<.001
Drug use	.02 (.04)	.1 (.1)	16,410	<.001
Legal ^B	.00 (.00)	.09 (.18)	—	—
Family/social	.17 (.07)	.27 (.18)	15,146	<.001
Psychiatric	.07 (.13)	.28 (.23)	16,033	<.001

SD = Standard Deviation.

ASI = Addiction Severity Index.

^A One non-Hmong participant did not complete the ASI.

^B No Hmong had legal problems, so comparison could not be made.

Table 4

SCL-90: Hmong and non-Hmong.

Composite area	Hmong (<i>n</i> = 76)	Non-Hmong (<i>n</i> = 130)	W value	<i>p</i> value
Somatization	1.17 (.78)	.91 (.56)	12,438	.053
Obsessive-compulsive	1.00 (1.02)	1.03 (.82)	12,803	>.1
Interpersonal sensitivity	.51 (.68)	.78 (.77)	13,845	<.005
Depression	.70 (.72)	1.05 (.79)	14,290	<.001
Anxiety	.63 (.73)	.81 (.73)	13,534	<.05
Hostility	.46 (.62)	.59 (.74)	13,565	.050
Phobic anxiety	.50 (.63)	.52 (.71)	12,840	>.1
Paranoid Ideation	.52 (.72)	.73 (.75)	14,003	<.01
Psychoticism	.73 (.93)	.70 (.81)	13,011	>.1
Global severity	.73 (.69)	.81 (.61)	13,165	>.1

SD = Standard Deviation.

SCL = Symptom Checklist.

Table 5

Number of total current SCID diagnoses.

SCID Axis I diagnosis	Hmong (<i>n</i> = 76 patients, 85 diagnoses)	Non-Hmong (<i>n</i> = 125 patients, 230 diagnoses)*	Significance ^A
No current diagnosis	51 (67%)	36 (29%)	$p < .001$
Schizophrenia/psychotic disorders	2 (2.4%)	3 (1.3%)	Insufficient sample size
Schizophrenia	1	1	—
Delusional	1		—
Brief psychotic	0	1	—
Psychotic NOS	0	1	—
Anxiety disorders	17 (20%)	127 (55%)	$p < .001$
Generalized anxiety	1	32	—
Panic disorder	1	24	—
Agoraphobia	0	4	—
Specific phobia	0	9	—
Social phobia	2	10	—
Obsessive compulsive	1	23	—
PTSD	12	23	—
Anxiety due to general medical condition	0	1	—
Anxiety NOS		1	—
Mood disorders	4 (4.7%)	38 (17%)	$p < .05^B$
Dysthymic disorder	1	11	—
Major depression	3	13	—
Bipolar disorder		12	—
Mood disorder due to general medical condition	0	2	—
Substance-related disorders	11 (13%)	23 (10%)	$p > .1$
Alcohol dependence	0	1	—
Amphetamine dependence	0	1	—
Cannabis abuse	0	2	—
Cannabis dependence	0	4	—
Opioid abuse	1	0	—
Opioid dependence	7	4	—
Cocaine dependence	1	2	—
Sedative-hypnotic dependence	0	1	—
Substance-induced anxiety	1	2	—
Substance-induced mood	1	5	—
Substance-induced psychotic	0	1	—
Eating disorders	0	3 (1.3%)	Insufficient sample size
Binge-eating disorder	0	2	—
Bulimia nervosa	0	1	—
Total number of diagnoses	85	230	$p < .05^C$

PTSD = posttraumatic stress disorder; SCID = Structured Clinical Interview for DSM-IV; NOS = not otherwise specified.

* Five non-Hmong did not complete SCID interview.

^A χ^2 for number of diagnoses observed in a domain against total number of diagnoses across all domains.

^B Yates's χ^2 .

^C χ^2 total number of diagnoses against number of participants.

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