HADStress: A Somatic Symptom Screen for Posttraumatic Stress Among Somali Refugees

Joseph J. Westermeyer, M.D., Ph.D.
Robyn Campbell, B.S.
Rebecca Lien, M.P.H.
Marline Spring, Ph.D.
David R. Johnson, M.D., M.P.H.

James Butcher, Ph.D.
Jacqueline Hyland, B.S.
Paul Thuras, Ph.D.
James M. Jaranson, M.D., M.P.H.

Objective: **This study assessed whether a simple, readily implemented four-symptom somatic screen would be able to effectively identify current posttraumatic stress symptoms in victimized populations. *Methods:* The sample consisted of 622 Somali community-dwelling refugees who fled widespread violence and trauma occurring in East Africa during 1990–1992. Data were collected during 2000–2003 and included demographic characteristics, number of types of torture and nontorture trauma experienced earlier in Africa, and current self-rated posttraumatic stress symptoms, as measured by the Posttraumatic Stress Disorder Checklist (PCL). The sample was also assessed with the HADStress screen, which was developed for this study, to determine whether the screen was effective in detecting current posttraumatic stress symptoms. The HADStress screen assessed for the presence of four somatic symptoms: Headaches, Appetite change, Dizziness, and Sleep problems. All items were given equal weight. Possible scores on the screen range from 0 to 4, with higher scores indicating more somatic symptoms. *Results:* Univariate analysis showed that persons who experienced more types of trauma (both torture and nontorture trauma) and persons who had higher PCL scores (indicating more current posttraumatic stress symptoms) had significantly higher HADStress scores. Negative binomial regression analysis showed that PCL scores were the most effective variable in predicting HADStress scores. On the Tukey-B post hoc analysis, a HADStress score of 0 or 1 was associated with a mean PCL score of less than 30, a score of 2 was associated with a mean PCL score of 40.28, and a score of 4 was associated with a mean PCL score of 51.07 (suggesting that over 50% of this group would have active posttraumatic stress disorder). *Conclusions:* A score of 2 or higher on the HADStress scale among refugees warrants additional evaluation for posttraumatic stress symptoms in clinical settings. For communitywide efforts at early recognition and treatment, a cutoff score of 4 may be more practical and cost-effective. (*Psychiatric Services* 61:1132–1137, 2010)**

Dr. Westermeyer is with the Department of Psychiatry, University of Minnesota, 1935 Summit Ave., St. Paul, MN 55105 (e-mail: weste010@umn.edu). Ms. Campbell, Dr. Spring, Ms. Hyland, and Dr. Thuras are with the Department of Mental Health, Minneapolis Department of Veterans Affairs Medical Center. Ms. Lien is with Professional Data Analysts, Inc., Minneapolis. Dr. Johnson is with the Department of State Health Services, Washington, D.C. Dr. Butcher is with the Department of Psychology and Dr. Jaranson is with the Division of Epidemiology and Community Health, School of Public Health, both at the University of Minnesota, Minneapolis.

Refugees are often reluctant to divulge past and ongoing traumatic experiences (1,2). Consequently, clinicians may not be able to provide effective treatment to refugees with trauma-related disorders. In this study we introduced and evaluated a simple, readily implemented somatic symptom screen that may be useful in identifying patients who are likely to have experienced major trauma and who have ongoing discomforting and disabling symptoms. Such a screening instrument could prove useful in providing care for refugees. Because our four-item screen is brief and easily remembered, it can function much like the four-item CAGE questionnaire used to screen for alcohol dependence (3,4).

Somatization—psychological stress manifested as physical symptoms in the absence of biomedical disease—involves multisymptom, multisystem somatic complaints (1,5). High rates of somatization have occurred in association with combat (6), torture (7), and other traumatic experiences (8,9). Refugees have had especially high rates of somatization (10,11). Although somatic symptoms have been related to the severity of posttraumatic stress disorder (PTSD) among veterans (12) and refugees (13), the use of somatic symptoms for screening purposes in victimized populations has not been assessed to our knowledge.

We developed and assessed a four-symptom somatic symptom screen in a community sample of Somali

refugees. A majority of the sample had experienced torture and other trauma in Africa in the early 1990s (approximately ten years before study data were gathered) (14). We selected these symptoms because of their relatively low prevalence in "normal" populations, compared with traumatized groups (6,11,15). This screen, termed the HADStress, includes the following current symptoms: Headache, Appetite change, Dizziness or faintness, and Sleep problems. We hypothesized that a higher number of current somatic symptoms would be related to past experiences of torture and other types of trauma in the home country, as well as to current posttraumatic stress symptoms.

Methods
Background
Between 1990 and 1992, uprisings occurred in several countries of East Africa. Each nation's upheaval involved certain unique aspects. In Somalia, clans that were out of governmental, commercial, and artistic power rose up against clans holding power. This action involved sudden, coordinated invasion into government offices, commercial enterprises, and other public institutions, with summary executions of adult men. Consequently, many men fled the country, leaving their families behind. Over time, clan violence involved fewer men and more women, who either remained in their homes or were fleeing the country when they were apprehended. This study was planned in 1998 and 1999; data were collected from 2000 to 2003 (about ten years after the original traumatic experiences). This study was approved by the institutional review board at the University of Minnesota.

Sample
Study participants included 622 Somali refugees living in the Minneapolis–St. Paul metropolitan area. A non-probability sample was obtained because of the impossibility of identifying all potential participants to conduct a random sample. A detailed description and demographic evaluation of this representative sample have been published previously (16). The

method of sampling Somali refugees depended heavily on targeted cluster sampling (that is, neighborhoods and demographic clusters). Based on data drawn from refugee resettlement records, birth records, and registered school children, the sample included approximately 8% of Somali adults in the community. The participation rate of those contacted was 97% (14). Study participants varied in their time of residence in the United States, ranging from a few days to several years. However, most of them had been in the United States for two or three years (mean±SD of 3.5±3.0). Among the 622 participants, 323 (52%) were male and 299 (48%) were female. The mean age was 37.1±15.3 years. Nineteen (3%) of the participants were living outside of Somalia during 1990–1992; they were attending school or employed in other countries.

HADStress screen
Two symptoms, headache and sleep disturbance, were selected for the HADStress screen because of their common prevalence around the world in clinical samples (15). In addition, the prevalence of these symptoms has been shown to be dramatically different in "healthy" populations and in traumatized populations with PTSD or other psychiatric disorders (6). Dizziness was selected because it is not a common complaint in primary care settings (15) or even among combat veterans (6), but 22% of 966 refugees fleeing to Israel reported dizziness (17). Dizziness is also the most common cardiovascular symptom among women with somatization disorder (18). Headache and dizziness could both be related to brain damage or to emotional distress, whereas sleep problems and appetite change tend to be related to emotional distress. These four symptoms did not have culturally specific meanings in East Africa, unlike, for example, the term "pain in the heart," which can serve as an expression of loss or sadness in East Africa (19). All four symptoms occurred within the broader Somali lexicon of somatic symptoms (20). Although translations, linguistic equivalence, and cultural connota-

tions can affect endorsement of symptoms, variability in translation of somatic symptoms tends to be minimal compared with that of emotional terms, such as anxiety or depression (21). All study participants completed the screen, and we received no complaints about these queries. Participants were also asked about whether they associated physical symptoms with thinking about their torture experience.

Data collection instruments
The PTSD Checklist (PCL) was used to assess the severity of posttraumatic stress symptoms (22). The PCL is a 17-item self-report Likert scale, with responses ranging from 1, not at all, to 5, extremely. Total possible PCL scores range from 17 to 85, with scores ≥50 reflecting more severe posttraumatic symptoms. This instrument was translated into the Somali language by speakers fluent in Somali and English and was then back-translated into English by another group also fluent in Somali and English. Discrepancies were addressed, and the process was repeated until the back-translation accurately reflected the PCL items. We then conducted a pilot study of the translated version in a sample of Somalis to assess the instrument's performance. In this pilot study, participants were queried about any difficulty in understanding and responding to the PCL items.

Items on torture were collected during interviews and pilot studies in the first year of the study, before the survey data collection began. Thus each item was presented to each study participant. Items were compiled in a questionnaire that included 74 types of torture: 41 types of physical torture, 19 types of psychological torture, six types of sensory torture, and eight types of sexual torture (two of which were gender specific). Some items could be classified under more than one category; questionable items were included in the category with which they were most often associated.

Trauma was categorized as torture if it occurred while the person was detained by and under the control of the authorities before they fled Soma-

lia (14). Miscellaneous or "other" torture items received few endorsements by the 622 study participants, suggesting that the questionnaire reflected most of the torture experienced by this group. [An appendix showing the types of torture and the number of persons in our sample who experienced each type of torture is available as an online supplement at ps.psychiatryonline.org.]

The sample was also asked about nontorture trauma events. These events occurred during the same time frame, but they did not occur while Somalis were detained by officials. These events were related to civic unrest, armed conflict, and refugee flight out of the country (for example, insufficient food or water, engaged in combat, exposed to artillery barrage, assault, rape, attack by wild animals, saw others raped and murdered, loss of home, and loss of crops or other property).

Statistical analysis

In the descriptive analysis of the data, we used phi and Cramér's V tests to compare the somatic symptoms with one another and with scores on the HADStress screen. Spearman rho correlation coefficients were used to compare the number of torture types with the total number of torture types in each of the four subcategories (that is, physical, psychological, sensory, and sexual torture). Spearman rho correlation coefficients also compared the total number of torture and nontorture trauma items.

Univariate comparisons were analyzed with one-way analysis of variance and chi square tests. Using the Bonferroni correction (.05/5), a sig-

nificance level was set at .01.

Because the HADStress screen is essentially a count variable with a Poisson distribution, a negative binomial regression model was used to examine the relationship between independent predictors (PCL score, gender, age, number of torture trauma types, and number of nontorture trauma types) and the HADStress score. Independent variables that showed a significance of .10 or less were entered simultaneously into the negative binomial regression. Probability of .05 or less was considered significant for the negative binomial regression.

Analysis of variance was undertaken to assess the group differences of HADStress scores with the PCL scores as the dependent variable. Post hoc comparisons were computed (Tukey-B test) to test for significant differences between individual scores on the HADStress screen and scores on the PCL.

Results

Descriptive findings

Somatic symptoms. Among the 622 Somalis in our sample, 247 (40%) reported headaches, 100 (16%) reported appetite changes, 65 (10%) reported dizziness or faintness, and 106 (17%) reported sleep problems. The number of somatic symptoms reported by these 622 Somalis followed a skewed pattern. For example, 322 Somalis (52%) reported none of the four symptoms, 163 (26%) reported one symptom, 55 (9%) reported two symptoms, 43 (7%) reported three symptoms, and 29 (5%) endorsed all four symptoms.

Only 22 of the 622 Somalis (4%) reported that they had any physical

symptoms in association with thinking about their torture experience. Thus, among most individuals with one or more of these symptoms, there was no conscious link to torture. The four study symptoms were associated with one another and with the total scores on the HADStress to a highly significant extent. As shown in Table 1, each of the symptoms was highly correlated with the others and with the HADStress scores (p<.001). On the basis of the effect size criteria detailed by McCarthy and colleagues (23), each of the four somatic symptoms had a "very large" effect (.722 to .876) on the HADStress scores.

Torture and other traumatic experiences. In our sample of 622 Somalis, 431 (69%) reported that they had experienced one or more types of torture. The sample indicated that they had experienced a mean±SD of 2.1±2.8 physical torture items (range=0–22, skewness=2.6), 1.3±2.0 psychological torture items (range= 0–13, skewness=2.0), .5±1.4 sensory torture items (range=0–9, skewness= 3.6), .1±.6 sexual torture items (range= 0–4, skewness=5.5), and 4.0±5.7 total torture items (range=0–45, skewness=2.7). The Spearman probabilities between the four categories and the total score were all significant at p<.001 (with correlation coefficients ranging from .38 to .90). A total of 546 Somalis (88%) reported that they had experienced one or more nontorture trauma events (mean of 5.5±4.5 events, range=0–19, skewness=.7). The total number of torture types and total number of nontorture trauma types per individual were significantly correlated with each other (Spearman ρ=.64, p<.001).

Table 1

Associations between somatic symptoms and HADStress scores among 622 Somali refugees

Symptom	Headache		Sleep problem		Appetite change		HADStress score[a]	
	φ	p	φ	p	φ	p	Cramér's V	p
Dizzy	.292	.001	.516	.001	.351	.001	.753	.001
Headache			.419	.001	.316	.001	.876	.001
Sleep problem					.465	.001	.846	.001
Appetite change							.722	.001

[a] The HADStress scale measures the presence of Headaches, Appetite change, Dizziness, and Sleep problems. Possible scores range from 0 to 4, with higher scores indicating more somatic symptoms.

Table 2

Univariate associations of HADStress scores and independent predictors among 622 Somali refugees

	HADStress score[a]												
	0		1		2		3		4		Test		
Variable	N	%	N	%	N	%	N	%	N	%	statistic	df	p
Demographic characteristic													
Age (M±SD)	34.5±13.1		36.5±16.7		45.1±16.6		47.2±17.3		43.7±15.0		F=11.16	4, 615	.001
Gender											χ^2=57.96	4	.001
Male	201	61	93	57	17	31	9	21	3	10			
Female	131	39	70	43	38	69	34	79	26	90			
Trauma and posttrauma symptoms													
Number of torture types (M±SD)	2.7±4.0		3.3±5.4		7.4±6.7		7.1±5.9		12.2 ±9.5		F=34.12	4, 617	.001
Number of nontorture trauma types (M±SD)	4.3± 3.7		4.6± 4.2		7.9±5.2		9.9± 3.6		11.2±4.7		F=39.48	4, 617	.001
PCL score (M±SD)[b]	25.2±9.7		30.0±9.6		41.1±13.6		42.9±14.2		53.8±14.8		F=70.74	4, 607	.001

[a] The HADStress scale measures the presence of Headaches, Appetite change, Dizziness, and Sleep problems. Possible scores range from 0 to 4, with higher scores indicating more somatic symptoms.

[b] Posttraumatic Stress Disorder Checklist. Possible scores range from 17 to 85, with higher scores reflecting more severe posttraumatic symptoms.

Univariate comparisons

Table 2 shows the univariate associations between independent predictors and the HADStress scores. Analysis showed that higher mean HADStress scores were associated with being older (p<.001), being female (p<.001), a higher number of torture types (p<.001), a higher number of nontorture trauma types (p<.001), and a higher PCL score (p<.001). Persons who reported having ever been tortured while in Somalia had higher HADStress scores (tortured: N=431, score of 1.4±1.4; not tortured: N=191, score of .5±.8).

Negative binomial regression: predicting HADStress scores

All five variables (PCL score, gender, age, number of torture trauma types, and number of nontorture trauma types) were then entered together in the negative binomial regression model. As shown in Table 3, the PCL score was the most effective variable in predicting the HADStress score. Gender was strongly associated with HADStress scores, with women reporting more symptoms than men. Older age also predicted higher HADStress scores. The number of torture types and the number of nontorture trauma types were not significant and were thus excluded from further analysis.

Post hoc tests

Post hoc tests showed that the HADStress scores were associated with PCL scores. Persons with HADStress scores of 0 and 1 had similar PCL scores (PCL scores of 25.15±9.7 and 26.96±9.6, respectively), persons with HADStress scores of 2 and 3 also had similar PCL scores (PCL scores of 40.28±13.6 and 43.93±14.2, respectively), and persons with a HADStress score of 4 had a mean PCL score of 51.07±14.8. All three groupings of HADStress scores differed significantly from each other.

Discussion

Rationale for a somatic screen

Some tortured refugees are reluctant to endorse having been tortured for a variety of reasons, ranging from distrust (24) to lack of familiarity with mental health services (2). Somatic symptoms appear to be a useful means of screening for the existence of posttraumatic stress symptoms, whether from torture or nontorture trauma. The HADStress screen can serve as a useful entry point for detecting posttraumatic stress symptoms among people who are reluctant to discuss their trauma experience with strangers. The strong association of somatic symptoms with current posttraumatic symptoms, and not simply with past trauma, on the generalized linear model demonstrates the clinical utility of this screen in identifying people who may be in need of additional clinical care.

Similarly, other investigators have observed higher rates of somatic

Table 3

Negative binomial regression model showing predictors of HADStress scores[a]

Parameter	B	SE	Wald χ^2	df	p
PCL score[b]	.035	.005	44.06	1	<.001
Gender	−.425	.146	8.50	1	.004
Age	.009	.004	4.26	1	.04
Number of nontorture trauma types	.029	.020	2.13	1	.14
Number of torture types	−.001	.011	.97	1	.91
Intercept	−1.749	.231	57.37	1	<.001

[a] HADStress, scale that measures the presence of Headaches, Appetite change, Dizziness, and Sleep problems

[b] Posttraumatic Stress Disorder Checklist

symptoms in traumatized populations, even years after the trauma occurred. For example, a study of 21,244 treatment-seeking Gulf War combat veterans revealed that healthy but physically traumatized veterans (coming for routine checkups with no known psychiatric diagnoses) reported higher somatic symptom rates a decade after combat exposure (6). These Gulf War veterans reported headache in 10% of cases and sleep disturbance in 9%.

Problems often result when patients with somatic complaints seek medical help in venues that do not recognize the origins of the patients' distress (25). Failure to recognize and treat somatization in primary care settings can lead to disappointed patients, frustrated clinicians, and greatly increased health care costs—although treatment for somatization can be effective in these settings (26). Delayed recognition and care has resulted in higher rates of comorbid psychiatric disorders and wasteful expenditure of health care dollars (17,27). Complicating the diagnostic issue is the fact that groups with high rates of somatization have often experienced greater-than-normal rates of brain injury, which can mimic psychogenic somatization (28).

Selecting a cutoff score

Economics, statistics, and practicality must guide the determination of a cutoff score on the HADStress screen. When a PCL score of 50 was used as indicative of severe symptoms, over half of those with a HADStress score of 4 could be expected to meet diagnostic criteria for PTSD (22).

In a clinical setting, with a symptomatic patient seeking care, the lower cutoff score of 2 would be more practical for several reasons. First, it would exclude the 78% of people in our sample who had a score of 0 or 1 on the HADStress scale and were thus unlikely to have increased posttraumatic stress symptoms, regardless of their trauma history. Second, within a few minutes the clinician could ascertain whether the patient's care warrants a more time-consuming evaluation, perhaps through evaluating the patient over several visits to establish sufficient rapport

to elicit a relevant trauma history. Third, clinical screening differs from general population screening in that those in the clinical setting are more apt to be experiencing discomfort or disability than those in the general population. Thus, a lower cutoff score for a screening instrument is often employed in clinical settings as compared to screening in the population at large. Fourth, treatment for PTSD and for other common comorbid conditions, such as mood, anxiety, and substance use disorders, is most effective when undertaken in early stages, before patients are isolated or disabled or require inpatient care (29).

The situation in a public health setting, where most people are not currently seeking treatment, differs from the clinical setting. By using a cutoff score of 2 on the HADStress scale, about 1,600 of the adult Somali population in the Minneapolis–St. Paul metropolitan area at the time of the study (estimated adult population of 7,272) would warrant clinical evaluation. If only people with scores of 4 were evaluated, 360 of the entire Somali population in the metropolitan region would warrant clinical evaluation. This is a ratio of 4.4 to 1. From an economic perspective, using a cutoff score of 2 to determine which Somalis would require extra care would be many times more expensive, with a lower detection rate. In sum, a cutoff score of 2 may be highly relevant in a clinical setting but unrealistically expensive in a public health setting.

Demographic characteristics and somatic symptoms

The association of more somatic symptoms on the HADStress scale with female gender could be due to the higher exposure of Somali women to torture, compared with Somali men, rather than to gender alone. It is also likely that the association between older age and a higher HADStress score was due to the delay between the trauma exposure in Africa and data collection in the United States. Some people who met the age criteria for inclusion in this study (that is, age 18 and above) were still children in the early 1990s, when the traumatic events were occurring in

Africa. Thus the higher HADStress scores among older Somalis and Somali women may be due to historical-environmental factors, rather than to inherent demographic factors.

Caveats

Each refugee group possesses characteristics common to all refugees (for example, feeling pushed out of the homeland and acculturation experiences). Likewise, every refugee group has unique characteristics (such as the level of trauma and subgroups targeted for torture). Thus the experience of this group cannot be extrapolated to all refugee groups.

In addition, we focused on only four somatic symptoms. Information about more symptoms might have been informative but would take longer to elicit. Effective screens include relatively few items. Because this study involved only one ethnic group, replication in another ethnic group should be undertaken.

Conclusions

The HADStress screen, a brief and nonthreatening screen that can be readily implemented in clinical settings, showed a high association with scores on the PCL in this Somali refugee sample. A cutoff score of 2 or higher on the HADStress screen among refugees warrants additional evaluation for posttraumatic stress symptoms in clinical settings. For communitywide efforts at early recognition and treatment, a cutoff score of 4 may be more practical and cost-effective.

References

1. Westermeyer J, Wahmanholm K: Assessing the victimized psychiatric patient: special issues regarding violence, combat, terror, and refuge-seeking. Hospital and Community Psychiatry 3:245–249, 1989

2. Westermeyer J: The Psychiatric Care of

Migrants: A Clinical Guide. Washington, DC, American Psychiatric Press Inc, 1989

3. Ewing JA: Detecting alcoholism: the CAGE questionnaire. JAMA 252:1905–1906, 1984

4. Mayfield D, McLeod G, Hall P: The CAGE questionnaire: validation of a new alcoholism screening instrument. American Journal of Psychiatry 131:1121–1123, 1974

5. Tseng W: Clinician's Guide to Cultural Psychiatry. San Diego, Elsevier, 2003

6. Engel CC, Liu X, McCarthy BD, et al: Relationship of physical symptoms to posttraumatic stress disorder among veterans seeking care for Gulf War–related health concerns. Psychosomatic Medicine 62: 739–745, 2000

7. Hollifield M, Warner TD, Lian N, et al: Measuring health status in refugees: a critical review. JAMA 288:611–620, 2002

8. Maja D, Koning IM, Stams GJ, et al: Factors associated with traumatic symptoms and internalizing problems among adolescents who experienced a traumatic event. Anxiety, Stress, and Coping 21:377–386, 2008

9. Neuner F, Schauer E, Catani C, et al: Posttsunami stress: a study of posttraumatic stress disorder in children living in three severely affected regions of Sri Lanka. Journal of Traumatic Stress 19:339–347, 2006

10. Cheung P: Somatization as a presentation in depression and posttraumatic stress disorder among Cambodian refugees. Australian New Zealand Journal of Psychiatry 27:422–428, 1993

11. Westermeyer J, Bouafuely M, Neider J: Somatization among refugees: an epidemiological study. Psychosomatics 30:34–43, 1989

12. Beckham JC, Moore SD, Feldman ME, et al: Health status, somatization, and severity of posttraumatic stress disorder in Vietnam combat veterans with posttraumatic stress disorder. American Journal of Psychiatry 155:1565–1569, 1998

13. Perron J, Hudelson P: Somatisation: illness perspectives of asylum seekers and refugee patients from the former country of Yugoslavia. BMC Family Practice 7:10, 2006

14. Jaranson JM, Butcher JN, Halcon L, et al: Somali and Oromo refugees: correlates of torture and trauma. American Journal of Public Health 94:591–598, 2004

15. Ustun TB, Sartorius N (eds): Mental Illness in General Health Care: An International Study. New York, Wiley, 1995

16. Spring M, Westermeyer J, Halcon L, et al: Sampling in difficult-to-access refugee and immigrant communities. Journal of Nervous and Mental Disease 191:813–819, 2003

17. Ritsner M, Ponizonsky A, Kurs R, et al: Somatization in an immigrant population in Israel: a community survey of prevalence, risk factors, and help seeking behavior. American Journal of Psychiatry 157: 385–392, 2000

18. Gilding JM, Smith R, Kashner TM: Does somatization disorder occur in men? Clinical characteristics of women and men with multiple unexplained somatic symptoms. Archives of General Psychiatry 8:231–236, 1991

19. Andermann LF: Ethiopian Jews meet Israeli family physicians: a study in cultural somatization. Transcultural Psychiatric Research Review 33:333–345, 1996

20. Youngerman R, Minuchin-Itzigsohn S, Barasch M: Manifestations of emotional distress among Ethiopian immigrants in Israel: patient and clinician perspectives Transcultural Psychiatry 36:45–63, 1999

21. Westermeyer J, Janca A: Language, culture, and psychopathology. Transcultural Psychiatry 34:291–311, 1997

22. Weathers FW, Litz BT, Herman DS, et al: The PTSD Checklist (PCL): reliability, validity, and diagnostic utility. Presented at the annual meeting of the International Society for Traumatic Stress Studies, Chicago, November, 1993

23. McCarthy PL, Cicchetti DV, Sznajderman SD, et al: Demographic, clinical and psychosocial predictors of the reliability of mothers' clinical judgment. Pediatrics 88: 1041–1046, 1991

24. Westermeyer J: Paranoid symptoms and disorders among 100 Hmong refugees: a longitudinal study. Acta Psychiatrica Scandinavica 80:47–59, 1989

25. Gureje O, Simon GE, Ustun TB, et al: Somatization in cross-cultural perspective: a World Health Organization study in primary care. American Journal of Psychiatry 154:989–995, 1997

26. Isaac A, Wise T: A low-frustration strategy for treating somatization. Current Psychiatry 2:33–50, 2003

27. Magruder KM, Frueh BC, Knapp RG, et al: PTSD symptoms, demographic characteristics, and functional status among veterans treated in VA primary care clinics. Journal of Traumatic Stress 17:293–300, 2004

28. Ta K, Westermeyer J, Neider J: Physical disorders among Southeast Asian refugee outpatients with psychiatric disorders. Psychiatric Services 47:975–979, 1996

29. Williams C, Westermeyer J: Refugee Mental Health in Resettlement Countries. New York, Hemisphere, 1986