Impact of Torture on Refugees Displaced Within the Developing World

Symptomatology Among Bhutanese Refugees in Nepal

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Context.—Most of the world's refugees are displaced within the developing world. The impact of torture on such refugees is unknown.

Objective.—To examine the impact of torture on Bhutanese refugees in Nepal.

Design.—Case-control survey. Interviews were conducted by local physicians and included demographics, questions related to the torture experienced, a checklist of 40 medical complaints, and measures of posttraumatic stress disorder (PTSD), anxiety, and depression.

Setting.—Bhutanese refugee community in the United Nations refugee camps in the Terai in eastern Nepal.

Participants.—A random sample of 526 tortured refugees and a control group of 526 nontortured refugees matched for age and sex.

Main Outcome Measures.—The *Diagnostic and Statistical Manual of Mental Disorders, Revised Third Edition* (*DSM-III-R*) criteria for PTSD and the Hopkins Symptom Checklist-25 (HSCL-25) for depression and anxiety.

Results.—The 2 groups were similar on most demographic variables. The tortured refugees, as a group, suffered more on 15 of 17 *DSM-III-R* PTSD symptoms ($P<.005$) and had higher HSCL-25 anxiety and depression scores ($P<.001$) than nontortured refugees. Logistic regression analysis showed that history of torture predicted PTSD symptoms (odds ratio [OR], 4.6; 95% confidence interval [CI], 2.7-8.0), depression symptoms (OR, 1.9; 95% CI, 1.4-2.6), and anxiety symptoms (OR, 1.5; 95% CI, 1.1-1.9). Torture survivors who were Buddhist were less likely to be depressed (OR, 0.5; 95% CI, 0.3-0.9) or anxious (OR, 0.7; 95% CI, 0.4-1.0). Those who were male were less likely to experience anxiety (OR, 0.66; 95% CI, 0.44-1.00). Tortured refugees also presented more musculoskeletal system– and respiratory system–related complaints ($P<.001$ for both).

Conclusion.—Torture plays a significant role in the development of PTSD, depression, and anxiety symptoms among refugees from Bhutan living in the developing world.

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SINCE 1990 a significant proportion of the southern Bhutanese population has sought refuge in Nepal and India.[1] These refugees, called Lhotsampas, are ethnically Nepali, the majority group in southern Bhutan.[2,3] Lhotsampa refugees were told to leave Bhutan by government officials and left fearing harassment and torture by the country's security forces. The Bhutanese Drukpa government appears to have sought to reduce the number of Lhotsampas in Bhutan and to weaken a prodemocracy movement.[1] The total number of refugees is estimated to be 103 000, which is about one sixth of Bhutan's official population.[1] By the end of 1994, 85 078 of these refugees were living in United Nations refugee camps in Nepal. Like the majority of refugees in the world, these refugees are displaced within the developing world.[4,5]

Most of the research on refugee mental health has taken place in the West.[6] Such research has pointed to high levels of traumatic experiences and psychiatric sequelae among help-seeking refugees presenting at clinics[7-11] as well as among refugees sampled from the community.[12-18] Symptoms of posttraumatic stress disorder (PTSD), depression, and anxiety, as well as multiple somatic complaints, are common.[7-16,18-21] Many refugees report exposure to torture,[9,10,14,19,21-27] which is likely an independent risk factor for symptomatology.[9,19,22,24-26,28-36] Studies of torture survivors, however, usually involve small, selected samples. Moreover, most of these studies have been inadequately controlled because of difficulties in soliciting nontortured respondents with similar life history, age, sex, social status, asylum status, and ethnicity, as well as health and functioning before exposure to torture.[37-38]

In the developing world refugees often face an uncertain future with respect to food, shelter, and physical security. In contrast, refugees living in the West are more likely to face problems related to asylum status[32,40] and acculturation.[41,42] As research on refugees settled in the West may not generalize to the majority of the world's refugees, calls have been made to conduct more research in the developing world.[4,6,43-46]

The few published epidemiological surveys on refugees and ex-refugees living in the developing world indicate that emotional sequelae are common.[21,47] Yet the extent of the impact of torture on refugees' mental health is unknown. Considering the increasing number of specialized services for torture survivors around the world,[48,49] there is a need to assess the impact of torture on refugees displaced within the developing world. We sought to do this through a case-control study using a large, random community sample of tortured Bhutanese refugees. The findings should assist in determining the need for care of torture survivors residing in refugee camps in the developing world.

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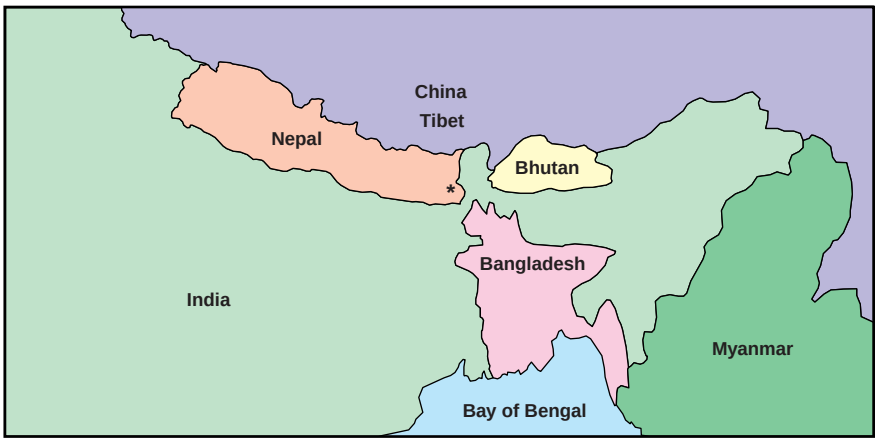

Location of the Bhutanese refugee camps in eastern Nepal (asterisk).

METHODS

Subjects

The sample of the study was taken from the Lhotsampa refugee community living in the United Nations refugee camps in the Terai in eastern Nepal (Figure). The Center for the Victims of Torture, Kathmandu, Nepal, a Nepali nongovernmental organization, had been helping tortured Bhutanese refugees since 1991.[50] By the end of 1994, in cooperation with political parties, human rights organizations, collaborating agencies, and ex-patients, the center had identified and registered 2331 survivors of physical torture living in the camps. Because the identification process included a hut-to-hut survey, it is likely that virtually all physical torture survivors in the camps had been identified. However, those refugees who were raped by members of security forces may not have come forward because of the stigma involved with this form of violence.

A sample size of 600 was determined to provide sufficient statistical power for analyses. Thus, in 1995, 600 (26%) of 2331 identified tortured refugees were drawn using simple random sampling. Of those 600 refugees, 585 (98%) were available for interviewing. Interviewers visited the huts of the other 2% of sampled refugees twice but did not find them at home. To increase the total sample to 600, an additional 20 refugees were sampled. Of those 20, 16 (80%) were available, creating a total sample of 601 (97%) of 620 approached refugees.

A matched control group of Bhutanese refugees was created by interviewing 1 neighbor of each of the 601 tortured refugees. Because it was known that many elderly men had been tortured, controls were chosen on the basis of matching sex and age to account for sex-related and age-related responses to torture. A difference in age of 10 years or fewer was accepted as an age match. Although many elderly respondents did not know their dates of birth, they knew their age in relation to historical events in Bhutan. The interviewers, familiar with the dates of these events, determined respondents' ages accordingly. Of 601 pairs, 526 matched pairs (88%) remained after excluding those younger than 19 years and incorrectly matched pairs.

Procedure and Instrumentation

The interview schedule included questions on demographics, charges for torture, the torturer, place of torture, duration of torture, duration in custody as well as in prison, and a checklist of 52 types of torture believed to occur in Bhutan. The interview schedule also contained a checklist of 40 medical complaints, covering cognitive, vegetative, psychotic, central nervous, musculoskeletal, gastrointestinal, genitourinary, cardiovascular, and respiratory system symptoms, and questions on diminished vision and hearing. This checklist was followed by questions on the history of respondents' and their family members' mental and physical health. The interview schedule concluded with questions covering PTSD criteria from the *Diagnostic and Statistical Manual of Mental Disorders, Revised Third Edition* (*DSM-III-R*) and the Hopkins Symptom Checklist-25 (HSCL-25),[51] translated into Nepali. A PTSD diagnosis was determined by fitting the positive answers to the symptom questions into *DSM-III-R* criteria.

Respondents were asked about traumatic events that may have occurred either during their flight from Bhutan or during the preflight government repression, as a reference point in administering the PTSD criteria. Examples of such traumatic events were provided, including torture, murder of relatives or friends, loss of property, destruction of one's village, and lack of food and shelter.

In our study an average score of 1.75 or more on the HSCL-25 anxiety or depression subscales was used to identify people with high depression and anxiety scores. A cutoff score of 1.75 has been used to identify depression and anxiety in several populations, including multiethnic samples of torture survivors and refugees living in the industrialized world.[8,9,27,40,52,53] The 1.75 cutoff score has also been applied in a study of Cambodian refugees residing in United Nations border camps.[21] However, because this score was not validated for Bhutanese refugees, depression and anxiety diagnoses were not assigned. Because of illiteracy in our sample, the HSCL-25 was administered by the interviewer. The Cronbach α internal consistency coefficient in this sample was .87 for the HSCL-25 anxiety subscale, .87 for the HSCL-25 depression subscale, and .88 for the *DSM-III-R* PTSD items. A subsequent study will examine the diagnostic validity of the Nepali translation of the *DSM-III-R* criteria and the HSCL-25 through the administration of the anxiety, depression, and PTSD sections of the Composite International Diagnostic Interview.[54]

Participants were interviewed by local physicians in the refugees' own huts. Because of illiteracy and mistrust toward written contracts, verbal consent, rather than written consent, was obtained from each refugee after a description of the study had been provided. The interviewers were all men, and they were not blinded with regard to torture status. Because the questions covering the *DSM-III-R* criteria do not lead to simple yes or no responses, respondents were allowed enough time to think before answering each question and encouraged to talk freely about their responses. Impressions thus drawn by the interviewers were marked as responses. The interviewers had received a 1-day training session by a psychiatrist in differential diagnosis of PTSD, who observed 2 interviews conducted by each interviewer during pretesting.

Statistics

Because the study involved comparisons between 2 matched groups, the McNemar χ^2 test and paired t tests were used to analyze the discrete and continuous variables. If fewer than 25 matched cases had different values, the binomial distribution was used to compute significance levels.[55] All comparisons were 2-tailed. Considering large sample sizes as well as a high number of comparisons, statistical significance for these comparisons was set at .01, reducing the Meehl effect[56] and the likelihood of chance significance.

Hierarchical logistic regression analyses were performed on the total sample of 1052 tortured and nontortured refugees to evaluate the impact of torture and other

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group differences on the outcome variables. Sequential logistic regression analyses were performed on the sample of 526 tortured refugees to investigate the predictors of psychological status within the tortured group. Statistical significance for the regression analyses was set at .05. All analyses were performed with SPSS, Version 6.13 (SPSS Inc, Chicago, Ill).[55]

RESULTS

Differences between the tortured and nontortured refugees with respect to their year of arrival in Nepal and their age were not significant. Refugees who reported experiencing torture had been in the refugee camps for an average of 3.4 years (SD, 0.7) and were an average of 41 years old (SD, 13; range, 21-87 years). Similarly, on average, nontortured refugees had been in the camps for an average of 3.4 years (SD, 0.6) and were an average of 41 years old (SD, 13; range, 21-83 years). No significant differences for average age verifies that the 2 groups were matched properly.

Table 1 displays a comparison of other demographic variables. Because the 2 groups were matched on sex, they consisted of an equal number of men (n = 404) and women (n = 122). The groups also appeared similar on most other variables. However, a significantly higher proportion of refugees in the torture group had been a member of a political or human rights organization in Bhutan (14% vs 8%). Also, a significantly higher proportion of the nontortured refugees was illiterate (55% vs 47%) and Buddhist (14% vs 9%). In addition, the nontortured refugees more often had a history of significant physical illness (18% vs 12%). Analyses of the impact of these group differences will be provided herein.

Table 1.—Demography of 526 Tortured and 526 Matched Nontortured Bhutanese Refugees

Variable	Tortured, No. (%) (n = 526)	Nontortured, No. (%) (n = 526)	Statistic*	*P* Value
Marital status				
Single	25 (5)	15 (3)	$\chi^2 = 2.4$	.12
Married	478 (91)	468 (89)	$\chi^2 = 0.9$	.35
Widow(er)	20 (4)	31 (6)	$\chi^2 = 2.1$	.14
Divorced or separated	3 (1)	12 (2)	Binomial	.04
Religion				
Hindu	475 (90)	447 (85)	$\chi^2 = 6.4$	.01
Buddhist	45 (9)	73 (14)	$\chi^2 = 6.8$	.01
Other	6 (1)	6 (1)	Binomial	>.99
Education				
Illiterate	245 (47)	288 (55)	$\chi^2 = 7.9$	.005
Literate through nonformal education	150 (29)	115 (22)	$\chi^2 = 5.9$	.02
Primary school (1-5)	88 (17)	75 (14)	$\chi^2 = 1.2$	.27
Middle school (6-8)	20 (4)	33 (6)	$\chi^2 = 3.1$	.08
High school (9-12)	20 (4)	13 (2)	$\chi^2 = 1.1$	.30
College	3 (1)	2 (0)	Binomial	>.99
Occupation in Bhutan				
Agriculture	388 (74)	408 (78)	$\chi^2 = 1.8$	.18
Service	39 (7)	41 (8)	$\chi^2 = 0.0$	.91
Other	99 (19)	77 (15)	$\chi^2 = 3.0$	.08
Member of a political or human rights organization in Bhutan	73 (14)	41 (8)	$\chi^2 = 9.1$	.003
History of physical illness	64 (12)	96 (18)	$\chi^2 = 6.8$	.009
History of mental illness	14 (3)	24 (5)	$\chi^2 = 2.1$	.14
Epilepsy	3 (1)	13 (2)	Binomial	.02
Physical illness in the family	40 (8)	36 (7)	$\chi^2 = 0.1$	.72
Mental illness in the family	15 (3)	21 (4)	$\chi^2 = 0.7$	.39
Epilepsy in the family	8 (2)	11 (2)	Binomial	.65
Criminal record in Bhutan	7 (1)	0 (0)	Binomial	.02

*The reported χ^2 values are the result of McNemar tests (*df* = 1). If fewer than 25 cases had different values for the 2 dichotomous variables, the binomial distribution was used to compute the significance level.

The Torture

The interviews took place, on average, 4 years after the start of the torture (SD, 0.75; range, 0-8 years). The correlation between the year of the start of the torture in Bhutan and the year of arrival in Nepal was significant (r[524] = 0.35; P<.001). The majority of tortured refugees (76%) reported that charges against them were political; 22% reported that the charges were ethnic. The torture took place in custody or prison (59%), at home (27%), or in another place (14%). The refugees were generally unable to distinguish between custody and prison. The majority of tortured refugees reported that their torturers were soldiers or police (97%), prison guards (1%), or unidentifiable (2%). The refugees were generally unable to distinguish between police and soldiers. Ninety-three percent of the refugees reported that the ethnicity of their torturers was Drukpa, 3% reported that the torturers were Nepali, and 4% did not know the ethnicity of the torturers. Tortured refugees reported that the duration of the torture was 1 day in 45%, 2 to 7 days in 32%, 8 to 30 days in 14%, 31 to 365 days in 8%, and 1 to 3 years in 1% of the cases (mean [SD], 21 [79] days; range, 1-1095 days).

All refugees in the tortured group reported that they had been physically tortured (this was the criterion to be included in this group). In addition, 90% of these respondents reported experiencing torture techniques that do not involve the body. The total number of experienced torture techniques was 1 in 4%, 2 to 10 in 46%, 11 to 20 in 43%, and 21 to 42 in 7% of the tortured refugees (mean [SD], 10 [7]; range, 1-42). Of 21 refugees who experienced 1 torture technique only, 18 received severe beatings, 1 was made to do force labor, and 2 were raped.

The most commonly reported torture techniques were severe beatings (97%), threats (89%), humiliations (80%), verbal sexual humiliations (77%), forced incongruent acts (66%), social isolation (54%), hygienic deprivation (53%), being tied down (52%), nutritional deprivation (52%), sleep deprivation (52%), sensory deprivation (43%), health service deprivation (41%), forced labor (26%), hair torture (17%), prolonged standing (15%), undressing in front of others (15%), cold torture (14%), chepuwa (14%), and ear torture (11%). Incongruent acts are acts that are a violation of one's cultural or religious norms. For example, being forced to eat beef or pork is spiritual torture for most higher-caste Hindus. Sensory deprivation involves deprivation of various sensory stimuli such as light or sound (eg, being blindfolded, hooded, or kept in a dark room). Hair torture involves being dragged by the hair or having hair pulled out or burned. Cold torture involves forced exposure to extreme cold, such as snow. Chepuwa is a Bhutanese torture technique that involves tight clamping of the thighs or legs with bamboo, sometimes for a number of days. During chepuwa the torturer may press the 2 sides of the clamps with his legs or may stand on the 2 sides of the clamps.[57]

PTSD, Depression, and Anxiety Symptoms

With the exception of sleep disturbances and recurrent intrusive distressing recollections of the event, the tortured refugees, as a group, suffered significantly more on each of the *DSM-III-R* PTSD symptoms (Table 2). A diagnosis of PTSD was significantly more common in the tortured group than in the nontortured group (14% vs 3%; McNemar $\chi^2_1 = 40.6$; P<.001).

In addition, the tortured refugees as a group had significantly higher cumulative HSCL-25 anxiety scores (17.9 [SD, 6.1] vs

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Table 2.—Posttraumatic Stress Disorder Symptoms Among 526 Tortured and 526 Matched Nontortured Bhutanese Refugees

Posttraumatic Stress Disorder Symptom	Tortured, No. (%) (n = 526)	Nontortured, No. (%) (n = 526)	Statistic*	*P* Value
Recollections of the event	85 (16)	60 (11)	$\chi^2 = 4.4$	.04
Distressing dreams of the event	117 (22)	32 (6)	$\chi^2 = 51.5$	<.001
Reexperiencing	117 (22)	25 (5)	$\chi^2 = 64.7$	<.001
Distress when reminded of trauma	105 (20)	34 (6)	$\chi^2 = 41.9$	<.001
Avoidance of trauma thoughts	140 (27)	19 (4)	$\chi^2 = 100.7$	<.001
Avoidance of situations reminiscent of trauma	156 (30)	13 (2)	$\chi^2 = 131.8$	<.001
Psychogenic amnesia	26 (5)	1 (0)	Binomial	<.001
Diminished interest in activities	61 (12)	25 (5)	$\chi^2 = 17.5$	<.001
Detachment from others	125 (24)	68 (13)	$\chi^2 = 21.0$	<.001
Restricted affect	42 (8)	16 (3)	$\chi^2 = 12.5$	<.001
Sense of foreshortened future	100 (19)	24 (5)	$\chi^2 = 48.5$	<.001
Sleep disturbance	149 (28)	132 (25)	$\chi^2 = 1.3$	.25
Irritability	142 (27)	99 (19)	$\chi^2 = 9.0$	.003
Difficulty concentrating	163 (31)	91 (17)	$\chi^2 = 28.3$	<.001
Hypervigilance	62 (12)	30 (6)	$\chi^2 = 11.7$	<.001
Exaggerated startle response	91 (17)	38 (7)	$\chi^2 = 26.7$	<.001
Physiological arousal	107 (20)	21 (4)	$\chi^2 = 63.4$	<.001

*The reported χ^2 values are the result of McNemar tests (*df* = 1). If fewer than 25 cases had different values for the 2 dichotomous variables, the binomial distribution was used to compute the significance level.

Table 3.—Odds Ratios and 95% Confidence Intervals for PTSD, Depression, and Anxiety Based on Hierarchical Logistic Regression Analyses on Tortured and Nontortured Bhutanese Refugees*

		OR (95% CI)		
Predictors	No. (%)	PTSD	Depression	Anxiety
History of torture	526 (50)	4.6 (2.7-8.0)†	1.9 (1.4-2.6)†	1.5 (1.1-1.9)‡
Buddhist	118 (11)	0.5 (0.2-1.4)	0.5 (0.3-0.9)§	0.7 (0.4-1.0)
Illiterate	533 (51)	1.1 (0.7-1.7)	0.9 (0.6-1.2)	1.4 (1.1-1.8)§
Member of a political or human rights organization in Bhutan	114 (11)	1.6 (0.9-2.9)	1.0 (0.6-1.6)	1.0 (0.6-1.5)
History of physical illness	160 (15)	0.4 (0.2-1.0)	0.8 (0.5-1.3)	1.0 (0.7-1.5)

*Group differences are predictors, and posttraumatic stress disorder, depression, and anxiety are outcome variables (determined by *Diagnostic and Statistical Manual of Mental Disorders, Revised Third Edition*). N = 1052. PTSD indicates posttraumatic stress disorder; OR, odds ratio; and CI, confidence interval.
†*P*<.001.
‡*P*<.005.
§*P*<.05.

16.4 [SD, 4.3]; paired $t[525] = 4.8$; $P<.001$) and cumulative HSCL-25 depression scores (22.6 [SD, 7.0] vs 21.3 [SD, 4.9]; paired $t[525] = 3.7$; $P<.001$). Using a mean HSCL-25 item score of 1.75 as the cutoff value, significantly more tortured refugees had high anxiety scores (43% vs 34%; McNemar $\chi^2_1 = 8.1$; $P = .004$) and high depression scores (25% vs 14%; McNemar $\chi^2_1 = 19.6$; $P<.001$).

The impact of demographic group differences on PTSD, depression, and anxiety symptoms was assessed through 3 separate hierarchical logistic regression analyses. The predictors in these 3 analyses were the variables on which the 2 groups differed. These variables were history of torture, Buddhist religion, illiteracy, member of political or human rights organization in Bhutan, and history of physical illness. History of torture was entered in the first step. The other predictors were entered in the second step. The 3 outcome variables were *DSM-III-R* PTSD diagnosis, high HSCL-25 depression scores, and high HSCL-25 anxiety scores.

Results of the hierarchical logistic regression analyses are displayed in Table 3. The analyses show that torture, adjusted for other group differences, predicts symptoms of PTSD, depression, and anxiety. Moreover, Buddhist religion predicted the absence of high HSCL-25 depression scores. Because the tortured group included fewer Buddhists, this group difference partly explains the torture survivors' elevated depression scores. In addition, illiteracy predicted anxiety scores. Yet, because illiteracy was more common in the control group, these group differences do not account for the elevated anxiety scores.

Sequential logistic regression analyses were performed on the sample of 526 tortured refugees to investigate the predictors of psychological status within the tortured group. The outcome variables were *DSM-III-R* PTSD diagnosis, high HSCL-25 depression scores, and high HSCL-25 anxiety scores. Eighteen separate univariate logistic regressions were performed on each of the 3 outcome variables. Predictors were time since torture, political charge for torture, ethnicity of torturer, torture during incarceration in prison or custody, total number of torture techniques experienced, duration of torture, survivor of physical sexual torture, age, sex, marital status (not married), Buddhist, illiteracy, level of education, member of a political or human rights organization in Bhutan, history of physical illness, history of mental illness, physical illness in the family, and mental illness in the family (data not shown). Eight of 54 univariate logistic regressions were significant: 2 for PTSD, 4 for depression, and 2 for anxiety. Significant predictors were subsequently entered into a multivariate logistic regression analysis on each of the 3 outcome variables (Table 4). The total number of torture techniques experienced was the only significant predictor for PTSD. The total number of torture techniques experienced was also a risk factor for depression. Female sex was a risk factor for anxiety. Buddhist religion was a protective factor for both depression and anxiety.

Table 4.—Odds Ratios and 95% Confidence Intervals Based on Sequential Logistic Regression Analyses on Tortured Bhutanese Refugees*

Predictors	OR (95% CI)
Posttraumatic Stress Disorder	
Total No. of torture techniques†	1.06 (1.02-1.10)‡
Age†	0.98 (0.04-25.86)
Depression§	
Time since torture†	1.24 (0.96-1.36)
Total No. of torture techniques†	1.03 (1.00-1.07)‖
Torture involved sexual violence	1.70 (0.95-3.05)
Buddhist	0.28 (0.10-0.81)‖
Anxiety§	
Male	0.66 (0.44-1.00)‖
Buddhist	0.50 (0.26-0.98)‖

*Outcome variables were *Diagnostic and Statistical Manual of Mental Disorders, Revised Third Edition* posttraumatic stress disorder, depression, and anxiety. N = 526. OR indicates odds ratio; CI, confidence interval.
†Continuous variable.
‡*P*<.005.
§A score of 1.75 or more on the Hopkins Symptom Checklist-25[51] depression and anxiety items was used to identify high depression and anxiety scores.
‖*P*<.05.

Table 5 displays statistically significant differences in terms of medical complaints between the tortured and nontortured groups. The tortured refugees had more medical complaints than the nontortured refugees. The largest significant differences were observed in musculoskeletal system– and respiratory system–related complaints. Forty-one percent of the tortured refugees complained of backache, compared with 12% of nontortured refugees. Consistent significant differences were found for 3 vegetative complaints: loss of appetite, sleep disturbance, and loss of sexual desire. In addition, tortured refugees complained more of diminished vision and diminished hearing.

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COMMENT

The design of this study involves a large, random community sample of tortured and matched nontortured refugees displaced within the developing world. Both the tortured and nontortured groups experienced stress due to displacement, and both groups continue to experience comparable stress as refugees living in a camp. The 2 groups are highly similar. Differences between the groups are most likely associated with the self-reported experience of torture.

Yet, as Basoglu[37] has discussed, the design of this type of study does not control for a possible interaction between torture and refugee trauma. That would require a design involving tortured refugees, nontortured refugees, tortured nonrefugees, and nontortured nonrefugees. As the experience of one traumatic event may increase one's vulnerability to subsequent stressors, it is likely that the greater symptomatology observed in the tortured group is not only due to torture per se but also due to an interaction between torture and refugee trauma.

Symptomatology among Bhutanese refugees who were not physically tortured may be explained as follows. These refugees may have witnessed atrocities or may have experienced psychological torture, murder of relatives, loss of property, loss of employment, destruction of their homes, or lack of food and shelter. Moreover, their future is highly uncertain because they have not yet been offered asylum status in any country.

The traumatization of the torture survivors in this study appears low compared with other survivors of violence living in the West.[44] Desjaralais et al[4] suggest that the long-term health status of torture survivors can be positively influenced by safety in a different country, availability of personal social support, availability of community and mental health resources, and commitment to a political ideology. Indeed, these 4 factors may have a positive impact on the health of the Bhutanese refugee torture survivors. The Bhutanese refugee camps are fairly safe. Personal support is available to many survivors as villages and families have often been displaced as a whole. Many refugees strongly support political movements that aim for repatriation. Moreover, community and mental health resources are available, including a specialized service for torture survivors.[50] In addition to these factors, religion provides a positive way of coping for both Buddhist and Hindu refugees. Many see their misfortune as a result of bad Karma, that is, the effect of past deeds. They believe that performing regular rituals will convince offended gods to be more favorable and to help them return to a safe Bhutan.

Table 5.—Medical Complaints Presented by Tortured and Nontortured Bhutanese Refugees

Type of Complaint	Tortured, No. (%) (n = 526)	Nontortured, No. (%) (n = 526)	Statistic*	*P* Value
Presence of complaints	460 (87)	419 (80)	$\chi^2 = 11.9$	<.001
Vegetative	121 (23)	61 (12)	$\chi^2 = 22.6$	<.001
Sleep disturbance	73 (14)	17 (3)	$\chi^2 = 35.2$	<.001
Loss of appetite	70 (13)	32 (6)	$\chi^2 = 14.6$	<.001
Loss of sexual desire	22 (4)	1 (0)	Binomial	<.001
Musculoskeletal system	308 (59)	112 (21)	$\chi^2 = 133.9$	<.001
Backache	216 (41)	61 (12)	$\chi^2 = 108.3$	<.001
Muscle pain	36 (7)	11 (2)	$\chi^2 = 12.3$	<.001
Chest pain†	66 (13)	9 (2)	$\chi^2 = 41.8$	<.001
Respiratory system	127 (24)	47 (9)	$\chi^2 = 40.5$	<.001
Chest pain†	105 (20)	34 (6)	$\chi^2 = 39.8$	<.001
Hemoptysis	16 (3)	3 (1)	Binomial	.004
Diminished vision	173 (33)	134 (25)	$\chi^2 = 6.7$	.01
Diminished hearing	43 (8)	16 (3)	$\chi^2 = 11.5$	<.001

*The reported χ^2 values are the result of McNemar χ^2 tests ($df = 1$). If fewer than 25 cases had different values for the 2 dichotomous variables, the binomial distribution was used to compute the significance level.

†The interviewer schedule distinguished between chest pain related to the musculoskeletal system and to the respiratory system.

Several limitations apply to this study. First, experiences of torture were self-reported and could not be validated, and interviewers were not blinded to the torture status of respondents. Second, as medical examinations were brief and did not involve radiographs, it is unclear whether certain somatic complaints, such as backaches and chest pains, could possibly have been direct results of physical torture. If such examinations had been carried out, it would still have been difficult to establish whether these complaints were direct physical results of torture or whether these symptoms resulted from psychogenic processes. Third, without laboratory tests, torture survivors' affective symptoms could be explained by the possible presence of infectious diseases caught while in prison. Fourth, although both groups are similar in terms of age, sex, refugee status, ethnicity, and current stressors, the groups may be dissimilar in terms of social status and history of persecution (other than torture), as well as health and functioning before the torture. Fifth, the checklist of medical complaints as well as the *DSM-III-R* PTSD symptoms were not ascertained through validated interviews. Finally, the validity of the PTSD diagnosis has not been validated for the Bhutanese context. This limitation is true for most research on refugees, and is important because of likely ethnocultural variations in PTSD.[58]

Despite these methodological limitations, the significant differences on all but 2 of the *DSM-III-R* PTSD symptoms are striking. In a closely matched case-control study[55] of tortured political activists involving multiple comparisons in Turkey, Basoglu and colleagues[28] found significant elevated prevalence rates on all but 3 of the *DSM-III-R* PTSD symptoms. El Sarraj and colleagues[31] found prevalence rates of 20% or more for all but 1 of the *DSM-III-R* PTSD criteria among 550 torture survivors in Gaza. Such findings among diverse cultures indicate that PTSD symptoms may be helpful in describing at least part of a survivors' reaction to torture.

Although PTSD symptoms may be common among torture survivors, it has not been established that the *DSM-III-R* PTSD symptoms capture the essence of the impact of torture on these Bhutanese survivors. This study confirms previous research that torture survivors are more likely to experience somatic complaints as well as depression and anxiety symptomatology.[19,24,28] However, the classification "disorders of extreme stress—not otherwise specified"[59] is perhaps more useful in describing the sequelae of torture. This classification includes many symptoms that frequently have been presented by Bhutanese torture survivors at the Center for Victims of Torture Nepal. These symptoms include shame, mistrust, conversion, medically unexplained pain, and conviction of being permanently damaged. The structured interview for disorders of extreme stress—not otherwise specified[60] has been included in our subsequent study of Bhutanese torture survivors, currently in progress.

Young[61] has argued that the PTSD construct has often been applied incorrectly when Western patients (and clinicians) mistakenly use trauma as an explanatory model for depression and anxiety symptoms. However, Young's argument may not apply in the context of South Asia, where people typically do not see a relationship between trauma and psychological problems. Rather, patients' explanatory models for distress usually involve supernatural processes. In our experience, the tortured Bhutanese refugees al-

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most always explain psychiatric problems as resulting from bad Karma, spirits, witchcraft, or an offended god. These Bhutanese refugees come from a closed country and are relatively uneducated. They have not been exposed to the Western idea that trauma can lead to mental illness. Nevertheless, significantly more PTSD symptoms were observed among tortured refugees than in a highly similar control group of nontortured refugees. Thus, we conclude that torture plays a significant role in the development of PTSD symptoms among Bhutanese refugees.

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