ORIGINAL ARTICLE

Torture vs Other Cruel, Inhuman, and Degrading Treatment

Is the Distinction Real or Apparent?

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Context: After the reports of human rights abuses by the US military in Guantanamo Bay, Iraq, and Afghanistan, questions have been raised as to whether certain detention and interrogation procedures amount to torture.

Objective: To examine the distinction between various forms of ill treatment and torture during captivity in terms of their relative psychological impact.

Design and Setting: A cross-sectional survey was conducted with a population-based sample of survivors of torture from Sarajevo in Bosnia and Herzegovina, Banja Luka in Republica Srpska, Rijeka in Croatia, and Belgrade in Serbia.

Participants: A total of 279 survivors of torture accessed through linkage sampling in the community (Banja Luka, Sarajevo, and Rijeka) and among the members of 2 associations for war veterans and prisoners of war (Belgrade).

Main Outcome Measures: Scores on the Semi-structured Interview for Survivors of War, Exposure to Torture Scale, Structured Clinical Interview for *DSM-IV*, and Clinician-Administered PTSD (posttraumatic stress disorder) Scale for *DSM-IV*.

Results: Psychological manipulations, humiliating treatment, exposure to aversive environmental conditions, and forced stress positions showed considerable overlap with physical torture stressors in terms of associated distress and uncontrollability. In regression analyses, physical torture did not significantly relate to posttraumatic stress disorder (odds ratio, 1.41, 95% confidence interval, 0.89-2.25) or depression (odds ratio, 1.41, 95% confidence interval, 0.71-2.78). The traumatic stress impact of torture (physical or nonphysical torture and ill treatment) seemed to be determined by perceived uncontrollability and distress associated with the stressors.

Conclusions: Ill treatment during captivity, such as psychological manipulations, humiliating treatment, and forced stress positions, does not seem to be substantially different from physical torture in terms of the severity of mental suffering they cause, the underlying mechanism of traumatic stress, and their long-term psychological outcome. Thus, these procedures do amount to torture, thereby lending support to their prohibition by international law.

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WIDELY ACCEPTED definitions of torture, such as that provided by the Convention Against Torture and Other Cruel, Inhuman, or Degrading Treatment or Punishment,[1] refer to torture as "severe pain or suffering, whether physical or mental," inflicted on a person for particular purposes. After reports[2] of human rights abuses by the US military in Guantanamo Bay, Iraq, and Afghanistan, a US Defense Department working group report[3] on detainee interrogations and a US Justice Department memorandum[4] on US torture policy argued for a fairly narrow definition of torture that excludes mental pain and suffering caused by various acts that do not cause severe physical pain. According to this definition, various interrogation and detention procedures, such as blindfolding, hooding, forced nudity, isolation, forced standing, rope bondage, deprivation (of sleep, light, water, food, or medical care), and psychological manipulations designed to break a person's resistance (eg, humiliating treatment or other acts designed to create fear, terror, or helplessness in the detainee), do not constitute torture. This report also stated that proof of "severe mental pain or suffering" associated with torture requires proof of "prolonged mental harm," such as the development of posttraumatic stress disorder (PTSD). The implications of such a narrow definition of tor-

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ture have raised serious concerns in the human rights community.

The problems in defining torture arise in part from lack of sufficient knowledge on 3 issues: (1) the severity of mental suffering associated with particular stressors during detention or captivity, (2) the psychological mechanisms by which these stressors exert their traumatic impact, and (3) their long-term psychological effects. Various forms of ill treatment, whether physical or psychological, might share the same mechanisms of traumatization as torture and therefore lead to similar psychological outcomes.[5] To our knowledge, no study has yet examined these issues, partly owing to the difficulties in conducting research in this area.

A recent study[6] of war survivors in former Yugoslavia, 279 of whom had a history of torture, provided a valuable opportunity to examine some of these issues. Using the structured Exposure to Torture Scale, we obtained information on the degree of perceived distress and loss of control associated with 46 stressor events commonly reported by survivors of torture. We tested the following hypotheses: (1) forms of torture that involve severe physical pain are associated with more distress and uncontrollability than all other stressors that do not involve severe physical pain and (2) exposure to physical forms of torture is more likely to be associated with PTSD and depression than stressors that do not involve severe physical pain. Because substantial evidence[7-12] during the past 30 years suggests that unpredictability and uncontrollability of stressors play a role in the development of anxiety and fear, we also tested the hypothesis that perceived distress and uncontrollability of the torture stressors, rather than mere exposure to them, would be associated with a greater likelihood of PTSD and depression (hypothesis 3).

METHODS

STUDY DESIGN AND SAMPLING

Because the details of the method are presented elsewhere,[6] they will be summarized herein. The study involved 1358 survivors of war trauma from Banja Luka, Sarajevo, Rijeka, and Belgrade. "Target sampling"[13] was used to ensure adequate representation of 5 survivor groups of interest (combat veterans, torture survivors, refugees, internally displaced people, and survivors of the North Atlantic Treaty Organization bombardment of Belgrade) and sufficient numbers of cases of PTSD in the sample to test the study hypotheses. We attempted to minimize sampling bias in the targeted groups as much as possible by using linkage sampling.[14] This method involved tracing and contacting survivors in the community through "key informants" (project staff and their acquaintances, contacts in various nongovernment organizations, and the study participants). To minimize sampling bias with respect to psychological status, the key informants were asked to make a list of their friends or acquaintances who had an experience of a particular index stressor, disregarding any available information on their psychological status. These survivors were then contacted and invited to participate in the study. Once the interview was completed, each survivor was asked to list all friends or acquaintances with a similar trauma experience. This process continued until the targeted sample size for a particular stressor of interest was achieved.

The present study is based on a subsample of 279 survivors of torture (102 from Belgrade, 58 from Rijeka, 52 from Sarajevo, and 67 from Banja Luka). The Belgrade sample included mainly former army conscripts recruited from 2 associations for war veterans and prisoners of war in Belgrade. The Banja Luka and Sarajevo samples included former soldiers and civilian ex-detainees recruited from the community. The Rijeka sample consisted mostly of men who had been captured in Vukovar and sent to collective camps. The inclusion criteria were experience of torture, age 18 to 65 years, literacy, absence of past or present psychotic illness, and willingness to give written consent for participation in the study.

MEASURES

The measures included the Semi-structured Interview for Survivors of War,[6] the Structured Clinical Interview for *DSM-IV* (version 2),[15] and the Clinician-Administered PTSD Scale for *DSM-IV*.[16] The Semi-structured Interview for Survivors of War, modified from an earlier version for survivors of torture,[17] included an Exposure to War Stressors Scale (54 war-related stressors) and an Exposure to Torture Scale that elicited information on 46 different forms of torture and related stressors. Each stressor event was rated as absent or present and also for associated distress (0 = not at all distressing, 1 = slightly distressing, 2 = moderately distressing, 3 = fairly distressing, and 4 = extremely distressing) and loss of control (0 = completely in control and 4 = not at all in control/entirely helpless). The perceived distress rating reflected anxiety, fear, discomfort, or any other distressing emotion experienced during the event. The perceived control rating was based on detailed information about the behavioral and cognitive coping strategies (eg, acts designed to protect oneself from life-threatening or distressing events, cognitive dissociation, distraction, and distress-reducing beliefs/thoughts/interpretations relating to the event) used in avoiding a particular stressor event or lessening the pain or distress during the event. A Global Distress Rating and a Global Sense of Control Rating were also used to assess the survivors' overall perceived distress or loss of control during the torture. These ratings were demonstrated to have sufficient validity in a previous study.[18] The Clinician-Administered PTSD Scale ratings of social and occupational disability (0 = no adverse impact and 4 = extreme impact, little or no social/occupational functioning) were also used as measures of post-torture psychiatric status. Because these ratings were highly intercorrelated, they were summed to derive a measure of social/occupational disability.

The interviews were conducted between March 11, 2000, and July 30, 2002, by 21 psychiatrists and psychologists from 4 study sites. They were standardized with a senior psychiatrist (C.C.) who had received extensive training from the main author (M.B.) for this purpose. The concordance rates in assessments, detailed in a previous study,[6] were satisfactory. Written informed consent was obtained for all study procedures. The study was approved by the research ethics committee of the Institute of Psychiatry, King's College, University of London.

STATISTICS

The assessment of PTSD was conducted in relation to the most distressing event reported by the participants. Because some survivors reported a war-related traumatic event other than torture as their most distressing experience, a diagnosis of PTSD in their case related to that event and not to their torture. These cases were included in all analyses involving the Exposure to Torture Scale but were excluded from those involving the diagnosis of PTSD. Between-group comparisons involved χ^2 tests or 1-way analyses of variance. Hierarchical logistic regression

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analyses examined the factors related to current PTSD and depression. A multiple regression analysis (sequential entry) was conducted to examine the predictors of social/occupational disability. The data were analyzed by one of us (M.B.) using a software program (SPSS Version 12; SPSS Inc, Chicago, Ill).

RESULTS

SAMPLE CHARACTERISTICS

Two hundred forty-one participants (86.4%) were men and 192 (68.8%) were married. The mean (SD) participant age was 44.4 (10.2) years. Fifty-one participants (18.3%) were Bosniaks, 56 (20.1%) were Croats, 165 (59.1%) were Serbs, and 7 (2.5%) were of mixed or other ethnic origin. Thirty-nine participants (14.0%) had a primary school education, 168 (60.2%) had a secondary school education, 35 (12.5%) had a high school education, and 37 (13.3%) had a university or postgraduate education. One hundred ninety-one survivors (68.5%) had combat experience, 141 (50.5%) had refugee experience, 140 (50.2%) had internal displacement experience, 192 (68.8%) had detention camp experience, and 178 (63.8%) had prisoner-of-war experience. Participants reported a mean (SD) of 19.0 (5.9) war-related stressors and 19.3 (7.5) torture-related stressors. The mean (SD) time since last torture was 96.3 (24.6) months.

Excluding the 49 survivors whose PTSD assessments were conducted in relation to war stressors other than torture, 174 (75.7%) of the 230 survivors had lifetime PTSD and 128 (55.7%) had current PTSD (according to the Clinician-Administered PTSD Scale), 39 (17.0%) had a current major depressive episode, 40 (17.4%) had a past major depressive episode, and 34 (14.8%) had at least 1 anxiety disorder other than PTSD. Of the 128 survivors with PTSD, 38 (29.7%) also had major depression (16.5% of the whole sample).

PERCEIVED DISTRESS AND LOSS OF CONTROL ASSOCIATED WITH STRESSORS

Table 1 provides the percentages of participants rating the stressors as fairly/extremely distressing and slightly/not controllable at all and the mean distress and control ratings. The stressors were grouped under 7 categories to facilitate comparison. The physical torture category included stressors that involved physical pain. The other categories included mostly stressors that are regarded in the US Justice Department memorandum[4] as acts that do not constitute torture because they do not involve infliction of severe physical pain (hereafter referred to as nonphysical stressors). Although sexual torture also has a strong humiliation component, it was taken as a separate category to allow comparison with the other stressors.

More than 80% of the survivors rated 30 stressors as fairly to extremely distressing, which included, in addition to physical torture, various psychological manipulations, humiliating treatment, and forced stress positions. The mean distress ratings for physical torture stressors ranged from 3.2 to 3.8. The mean distress ratings for 16 (48.5%) of the 33 stressors from the other categories were in the same range. Sham executions, witnessing torture of close ones, threats of rape, fondling of genitals, and isolation were associated with at least as much if not more distress than some of the physical torture stressors. There was thus substantial overlapping between physical torture and other stressors in terms of associated distress. The control ratings also showed a similar pattern.

High distress ratings for 30 stressors did not necessarily mean that the distress scale lacked sufficient discriminatory power. This finding reflected the fact that certain stressors occur concurrently in a torture setting, reinforcing the effects of each other, as will be discussed later. The distress ratings showed sufficient variability across different types of stressors. For example, the mean distress ratings for physical torture stressors were higher than those for some stressors in the deprivation of basic needs category (eg, deprivation of medical care, prevention of personal hygiene, food deprivation, denial of privacy, and infested surroundings). Another finding that supports the validity of the Exposure to Torture Scale is that control ratings were generally lower than distress ratings, suggesting that the 2 ratings measured different constructs. This finding makes theoretical sense in that survivors often can exercise some degree of control over the stressors, despite experiencing high levels of distress.[5]

To facilitate comparison across the stressor categories, the distress ratings for the items in each category were averaged to obtain a single distress rating in relation to each stressor category. The same procedure was also conducted with the control ratings. The **Figure** shows the mean distress and control ratings for each stressor category. The mean distress ratings were by and large similar across stressor categories.

RELATIONSHIP BETWEEN CUMULATIVE IMPACT OF STRESSORS AND PSYCHOLOGICAL OUTCOME

The concurrent occurrence of stressors in a torture setting often leads to highly correlated variables in assessment, which makes it difficult to disentangle the effects of individual stressors. Therefore, we examined the relative cumulative impact of physical vs nonphysical stressors. Distinguishing survivors who had only physical torture from those who had only nonphysical torture was, however, not possible because most participants reported at least 1 physical torture event and all reported at least 1 nonphysical torture stressor. The most commonly reported physical torture was beating (87.8%). Therefore, we divided the sample into 3 subgroups defined by those who reported nonphysical torture only (n=20) (group 1), nonphysical torture plus beating (n=44) (group 2), and nonphysical torture plus at least 1 form of physical torture other than or in addition to beating (n=166) (group 3). In group 3, all but 5 survivors had an experience of beating and at least 1 other form of physical torture. Thus, this distinction contrasted nonphysical torture with "low-intensity" physical torture (eg, only beating) and "high-intensity" physical torture (eg, all physical torture stressors, including beating).

One survivor who reported rape but no other physical torture was included in the physical torture category

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Table 1. Perceived Distress and Uncontrollability Associated With Stressors

Stressor	Participants, No. (%)			Rating, Mean (SD)	
	Frequency	Fairly/Extremely Distressing	Slightly/Not at All in Control	Distress	Control
Sexual torture					
Rape	16 (5.7)	15 (93.8)	13 (81.3)	3.9 (0.5)	3.4 (0.8)
Fondling of genitals	30 (10.8)	29 (96.6)	23 (76.7)	3.7 (0.5)	3.2 (0.9)
Sexual advances	43 (15.4)	37 (86.1)	31 (72.1)	3.4 (0.8)	2.9 (1.2)
Physical torture					
Palestinian hanging*	4 (1.4)	4 (100.0)	2 (50.0)	3.8 (0.5)	2.8 (1.0)
Suffocation/asphyxiation	27 (9.7)	26 (96.2)	24 (88.9)	3.8 (0.5)	3.5 (0.7)
Electric torture	23 (8.2)	22 (95.6)	18 (78.3)	3.7 (0.6)	3.2 (1.2)
Falaqa†	47 (16.8)	45 (95.7)	31 (66.0)	3.6 (0.5)	2.9 (1.1)
Burning of parts of body	20 (7.2)	19 (95.0)	13 (65.0)	3.6 (0.6)	2.8 (1.2)
Forced extraction of teeth	11 (3.9)	10 (90.9)	10 (90.9)	3.6 (0.7)	3.5 (0.7)
Stretching of the body	20 (7.2)	17 (85.0)	14 (70.0)	3.5 (1.1)	3.0 (1.1)
Beating	245 (87.8)	229 (93.9)	121 (49.6)	3.5 (0.7)	2.5 (1.1)
Hanging by hands or feet	19 (6.8)	17 (89.5)	12 (63.2)	3.5 (0.6)	2.8 (1.1)
Needles under toenails or fingernails	5 (1.8)	4 (80.0)	4 (80.0)	3.4 (0.9)	2.8 (1.1)
Beating over the ears with cupped hands	112 (40.1)	103 (92.0)	61 (54.5)	3.4 (0.8)	2.6 (1.1)
Pulling/dragging/lifting by hair	164 (58.8)	135 (82.3)	76 (46.4)	3.2 (0.8)	2.3 (1.2)
Psychological manipulations					
Sham executions	86 (30.9)	82 (95.4)	57 (66.3)	3.7 (0.7)	2.8 (1.3)
Witnessing torture of close ones	81 (29.0)	80 (98.7)	48 (59.3)	3.6 (0.5)	2.7 (1.1)
Threats of rape	43 (15.4)	41 (95.4)	30 (69.8)	3.6 (0.6)	2.8 (1.2)
Threats against family	143 (51.3)	126 (88.1)	83 (58.1)	3.4 (0.9)	2.5 (1.1)
Witnessing torture of others	202 (72.4)	185 (91.6)	95 (47.0)	3.4 (0.7)	2.4 (1.1)
Threats of death	252 (90.3)	214 (85.0)	134 (53.2)	3.3 (0.9)	2.5 (1.2)
Threats of further torture	211 (75.6)	173 (82.0)	98 (46.4)	3.2 (0.8)	2.4 (1.1)
Fluctuation of interrogator's attitude	179 (64.2)	125 (70.2)	61 (34.2)	2.9 (1.0)	1.9 (1.3)
Humiliating treatment					
Throwing of urine/feces at detainee	35 (12.6)	31 (88.5)	21 (60.0)	3.4 (0.7)	2.6 (1.4)
Stripping naked	100 (35.8)	80 (80.0)	55 (55.0)	3.2 (1.0)	2.5 (1.3)
Excrement in food	12 (4.3)	9 (75.0)	8 (66.7)	3.2 (0.8)	2.9 (1.2)
Verbal abuse	264 (94.6)	191 (72.6)	96 (36.5)	3.0 (1.0)	2.0 (1.2)
Mockery/humiliation	257 (92.1)	189 (73.5)	101 (39.3)	3.0 (1.0)	2.0 (1.2)
Exposure to forced stress positions					
Rope bondage	133 (47.7)	116 (87.2)	64 (48.1)	3.2 (0.8)	2.4 (1.2)
Forced standing with weights on parts of the body	30 (10.8)	24 (80.0)	11 (36.7)	3.1 (1.0)	2.1 (1.2)
Forced standing	211 (75.6)	160 (75.8)	72 (34.1)	3.0 (0.9)	2.1 (1.1)
Restriction of movement	261 (93.5)	185 (70.9)	75 (28.8)	2.8 (1.0)	1.9 (1.2)
Exposure to sensory discomfort					
Exposure to extreme heat or cold	107 (38.4)	79 (73.8)	41 (38.4)	3.0 (0.9)	2.1 (1.2)
Exposure to bright light	63 (22.6)	45 (72.6)	25 (40.3)	2.9 (0.9)	2.2 (1.1)
Cold showers	82 (29.4)	58 (70.7)	33 (40.3)	2.9 (1.0)	2.1 (1.2)
Exposure to loud music	89 (31.9)	54 (60.7)	25 (28.1)	2.8 (0.9)	1.9 (1.1)
Deprivation of basic needs					
Isolation	91 (32.6)	79 (86.8)	46 (50.6)	3.5 (0.9)	2.4 (1.1)
Prevention of urination/defecation	115 (41.2)	99 (86.1)	55 (47.8)	3.3 (0.8)	2.4 (1.2)
Blindfolding	70 (25.2)	59 (84.3)	40 (57.1)	3.3 (0.9)	2.6 (1.2)
Sleep deprivation	194 (69.5)	157 (80.9)	85 (43.8)	3.1 (0.8)	2.2 (1.2)
Water deprivation	166 (59.7)	123 (74.1)	62 (37.4)	3.0 (1.0)	2.1 (1.3)
Deprivation of medical care	138 (49.5)	95 (68.9)	58 (42.0)	2.9 (1.1)	2.1 (1.3)
Prevention of personal hygiene	216 (77.4)	139 (64.4)	65 (30.1)	2.7 (1.0)	1.9 (1.2)
Food deprivation	206 (73.8)	122 (59.2)	56 (27.2)	2.7 (0.9)	1.8 (1.2)
Denial of privacy	217 (77.8)	129 (59.4)	47 (21.7)	2.6 (1.1)	1.7 (1.2)
Infested surroundings	188 (67.4)	112 (60.2)	44 (23.7)	2.6 (1.0)	1.7 (1.2)

*Hanging by the wrists tied at the back.
†Beating of the soles of the feet.

(because rape involves an element of physical force), whereas other stressors of a sexual nature (ie, fondling of genitals and sexual advances) were grouped together with the other stressors. **Table 2** provides a comparison of the 3 groups in demographic and trauma characteristics and posttrauma outcome. Group 1 included more women and unmarried survivors than did the other groups, but the groups were otherwise similar regarding demographic characteristics and time since torture. Group 3 had more severe overall trauma exposure than

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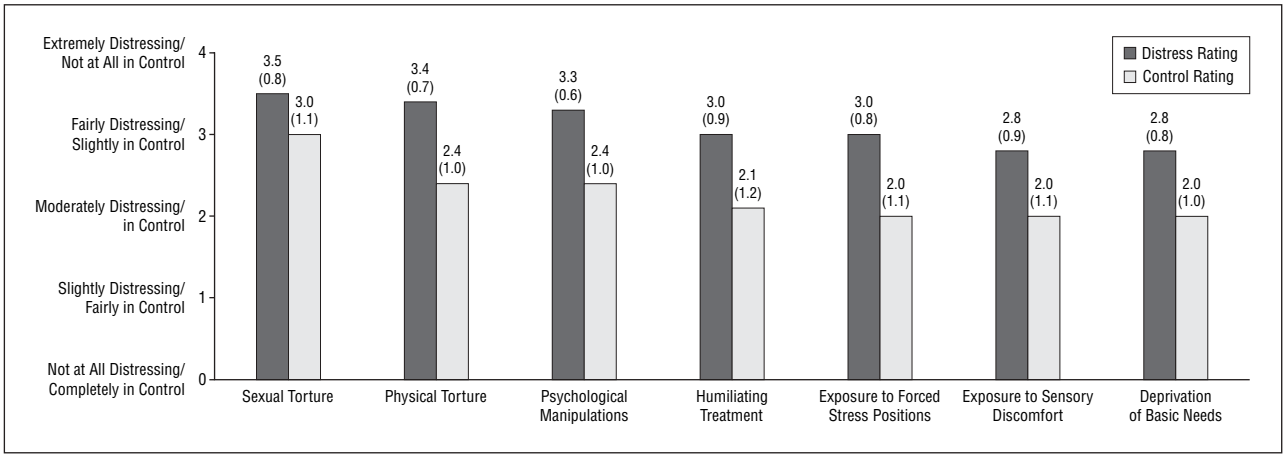

Figure. Mean (SD) distress and control ratings for the 7 stressor categories.

Table 2. Comparison of Survivors Exposed to Physical and Nonphysical Torture Forms

Characteristic	Group 1: Nonphysical Torture Only (n = 20)	Group 2: Nonphysical Torture + Beating (n = 44)	Group 3: Nonphysical + Physical Torture (n = 166)	χ^2 or F Statistic	*P* Value*
Sex (male), No. (%)	12 (60.0)	38 (86.4)	146 (88.0)	11.1†	.01
Marital status (married), No. (%)	8 (40.0)	35 (79.5)	113 (68.1)	9.9†	.01
Current PTSD, No. (%)	9 (45.0)	19 (43.2)	100 (60.2)	5.1†	.08
Lifetime PTSD, No. (%)	12 (60.0)	31 (70.5)	131 (78.9)	4.3†	.12
Current MDE, No. (%)	3 (15.0)	3 (6.8)	33 (19.9)	4.3†	.12
Age, mean (SD), y	43.0 (13.1)	46.4 (10.2)	44.4 (9.8)	1.0‡	.38
Education, mean (SD)§	2.4 (0.8)	2.1 (1.0)	2.3 (0.9)	0.5‡	.59
Time since torture, mean (SD), mo	97.0 (30.1)	90.6 (24.7)	95.6 (24.3)	0.8‡	.45
War events reported, mean (SD), No.	19.5 (5.2)	16.3 (4.6)	22.6 (6.3)	20.4‡	.001
Torture events reported, mean (SD), No.	11.6 (3.9)	13.7 (5.2)	22.7 (6.6)	57.7‡	.001
Stressors from each event category, mean (SD), No.					
Psychological manipulations	3.3 (1.6)	3.4 (1.7)	4.9 (1.6)	19.5‡	.001
Humiliating treatment	1.6 (0.6)	1.9 (0.6)	2.7 (0.8)	32.6‡	.001
Deprivation of basic needs	4.6 (2.6)	4.2 (2.5)	6.6 (2.4)	19.2‡	.001
Exposure to sensory discomfort	0.5 (0.8)	0.8 (1.0)	1.5 (1.3)	11.5‡	.001
Sexual torture (other than rape)	0.2 (0.5)	0.1 (0.4)	0.4 (0.7)	3.2‡	.04
Exposure to forced stress positions	1.4 (0.7)	1.7 (0.9)	2.6 (0.9)	30.9‡	.001
Global Distress Rating, mean (SD)	3.5 (0.6)	3.5 (0.6)	3.7 (0.5)	3.0‡	.053
Global Sense of Control Rating, mean (SD)	2.4 (1.2)	2.3 (0.8)	2.5 (1.0)	0.3‡	.78
Social disability (0-4), mean (SD)	1.2 (1.2)	1.0 (0.9)	1.3 (1.0)	2.0‡	.15
Occupational disability (0-4), mean (SD)	1.0 (1.2)	0.8 (1.0)	1.4 (1.2)	3.9‡	.02
Severity of PTSD symptoms (0-4), mean (SD)	1.5 (1.3)	1.5 (1.0)	1.8 (1.1)	2.3‡	.10
Beck Depression Inventory, mean (SD)	19.8 (15.8)	18.8 (12.8)	24.4 (13.1)	3.7‡	.03

Abbreviations: MDE, major depressive episode; PTSD, posttraumatic stress disorder.
*Bonferroni-adjusted significance level, $P = .002$.
†χ^2_2.
‡$F_{2,227}$.
§Based on an ordinal variable: 1, primary school; 2, secondary school; 3, high school; and 4, university/postgraduate.

did the other groups, as indicated by more torture and war stressors. However, greater overall severity of torture meant exposure to more events from all stressor categories and not only to physical torture events. The comparison of the number of stressors in each event category across the 3 groups (0.5, 4.2, and 6.6, respectively) in Table 2 shows that overall severity of torture is largely accounted for by the stressors in the "deprivation of basic needs" category. Despite greater severity of trauma exposure, group 3 did not report greater distress or loss of control during the torture and did not have significantly higher rates of PTSD and depression than the other groups. Significant differences were noted on only occupational disability and the Beck Depression Inventory. Caution needs to be exercised in interpreting these latter results because multiple comparisons might have led to type II error, and thus the between-group comparisons need to be assessed in relation to a Bonferroni-adjusted $P = .002$. Furthermore, univariate analyses might be misleading because they do not take into account pos-

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Table 3. Factors Related to PTSD and Depression

	PTSD				Depression			
	χ^2	*df*	*P* Value	R^2	χ^2	*df*	*P* Value	R^2
Step 1	12.2	3	.01	0.07	1.84	3	.61	0.01
Step 2	3.5	1	.06	0.09	2.20	1	.14	0.03
Step 3	22.5	2	.001	0.21	24.68	2	.001	0.20
Model	38.3	6	.001	0.21	28.71	6	.001	0.20
Factors	**OR (95% CI)**				**OR (95% CI)**			
Step 1								
Sex	0.60	0.28-1.30	.19	NA	0.74	0.26-2.08	.56	NA
Age	1.03	1.00-1.05	.07	NA	1.01	0.98-1.05	.44	NA
Education	0.59	0.43-0.83	.01	NA	0.78	0.51-1.19	.25	NA
Step 2								
Sex	0.69	0.32-1.53	.36	NA	0.83	0.29-2.39	.73	NA
Age	1.03	1.00-1.05	.07	NA	1.02	0.98-1.05	.42	NA
Education	0.60	0.43-0.83	.01	NA	0.78	0.51-1.20	.26	NA
Severity of torture	1.51	0.98-2.33	.06	NA	1.61	0.82-3.13	.16	NA
Step 3								
Sex	0.48	0.20-1.11	.09	NA	0.52	0.17-1.56	.24	NA
Age	1.03	1.00-1.06	.09	NA	1.01	0.97-1.05	.65	NA
Education	0.61	0.44-0.87	.01	NA	0.85	0.54-1.33	.47	NA
Severity of torture	1.41	0.89-2.25	.14	NA	1.41	0.71-2.78	.33	NA
Overall distress	1.76	0.98-3.18	.06	NA	6.74	1.95-23.37	.01	NA
Overall control	1.70	1.23-2.35	.001	NA	1.52	1.01-2.28	.05	NA

Abbreviations: CI, confidence interval; NA, not applicable; OR, odds ratio; PTSD, posttraumatic stress disorder.

sible intervening effects of other variables correlated with the predictor variables of interest. Also note that any trend toward significance does not necessarily reflect the effects of physical torture per se because group 3 included the most severely tortured survivors, and more severe torture meant not only physical torture but also more nonphysical forms of torture, as noted previously herein.

To circumvent the problem posed by univariate analyses as much as possible, we conducted logistic regression analyses using the diagnosis of current PTSD and major depression as the dependent variables in turn. Age, sex, and education were entered into the equation at step 1. A variable representing the distinction between the 3 groups in Table 2 (1 = nonphysical torture, 2 = nonphysical torture + beating, and 3 = nonphysical torture + at least 1 form of physical torture other than or in addition to beating) was entered at step 2 so that we could examine its effects independent of demographic variables. For the purposes of testing the study hypothesis, this variable constituted a better measure of severity of torture than total number of torture stressors because it represented a continuum of torture severity not only in terms of the nature of stressors experienced (eg, nonphysical vs physical) but also quantitatively (eg, number of torture stressors experienced). This variable showed a strong correlation with total number of torture stressors ($r = 0.58$; $P < .001$). Thus, variability in this measure meant exposure to not only physical torture but also to more stressors of all types. Because this variable was based on observable or measurable aspects of the torture experience, it will be referred to as objective severity of torture.

The distress and control ratings, on the other hand, reflected subjective severity of torture because they were based on the survivors' own appraisal of the torture events. The global ratings of distress and control showed highly significant correlations with the respective distress (range, 0.31-1.00) and control (range, 0.46-0.79) ratings for more than 40 of the stressors. The correlation between global ratings of distress and control was only moderately high ($r = 0.42$; $P < .001$), indicating that they did not measure the same construct. These variables were entered at the final step because we were interested in examining not only the unique variance explained by the measure of objective severity (ie, controlling for all other variables) but also the variance it explained before the effects of the subjective severity measures were taken into account. Although the measure of objective severity of torture did not significantly correlate with the Global Sense of Control Rating ($r = 0.04$; $P = .59$), it showed a marginal but significant correlation with the Global Distress Rating ($r = 0.14$; $P = .04$).

The results of logistic regression analyses are given in **Table 3**. The independent variables explained 20.5% of the variance in current PTSD and 19.6% of the variance in depression. Objective severity of torture explained only about 2% of the variance in PTSD and depression, which was not statistically significant. On the other hand, the proportion of variance explained by the subjective severity measures in PTSD (11.6%) and depression (16.7%) at the final step was highly significant. In the full regression model only less education and greater perceived uncontrollability of the torture related to PTSD, whereas depression related to greater perceived distress and uncontrollability. Objective severity of torture related to neither PTSD nor depression. Because 38 (97.4%) of the 39 survivors with depression also had PTSD, the findings concerning depression also largely applied to depression comorbid with PTSD.

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Using social/occupational disability as the dependent measure in a multiple regression analysis and entering the independent variables in the same order as in the previous analyses, the independent variables explained 11.9% of the total variance ($F_{6,223}=6.1$; $P<.001$). Objective severity of torture explained only 1.4% of the total variance when entered at step 2, which was not significant ($P=.07$). On the other hand, the subjective severity measures explained significant variance (8.7%) at the final step ($P<.001$). In the full regression model, significant predictors were greater loss of control during the torture ($\beta=.27$; $P=.001$), male sex ($\beta=.13$; $P=.05$), and less education ($\beta=.16$; $P=.01$). Objective severity of torture did not show a significant prediction ($\beta=.09$; $P=.16$). These findings support the third study hypothesis that perceived distress and uncontrollability of the torture stressors, rather than mere exposure to them, would be associated with greater likelihood of PTSD and depression.

COMMENT

The present study results suggest that psychological stressors cannot be easily distinguished from physical torture in terms of their relative psychological impact. Although physical torture methods were rated as somewhat more distressing than some stressors that did not involve severe physical pain, certain other stressors, such as sham executions, threats of rape, sexual advances, threats against self or family, witnessing the torture of others, humiliating treatment, isolation, deprivation of urination/defecation, blindfolding, sleep deprivation, and certain forced stress positions, seemed to be as distressing as most physical torture stressors. These findings suggest that physical pain per se is not the most important determinant of traumatic stress in survivors of torture. The fact that physical torture did not contribute to long-term psychological outcome over and above the effects of nonphysical stressors further supports this point. These findings thus provide no support for the first 2 study hypotheses.

In this study, we could not examine the relative impact of individual stressors because in detention or interrogation settings various stressors occur concurrently or in clusters, leading to highly correlated trauma exposure variables in assessment. We did, however, construct a measure that not only contrasted the 2 types of stressors of interest (nonphysical vs physical) but also represented a continuum of cumulative exposure severity in terms of the number of all forms of stressors experienced. This measure was based on the assumption that exposure to each stressor led to the same degree of impact (eg, 1) and that the effects of different stressors were additive. The present results demonstrate that this measure has no predictive value, which could be explained by the fact that it does not take into account 2 important factors: the subjective impact of the stressors and the interactions between them. Consistent with the present study findings, previous research[19] has shown that what determines traumatic stress in torture survivors is perceived uncontrollability and stressfulness of the torture stressors and not mere exposure to them. An example of this phenomenon comes from a previous study[17] by our group that showed that 67% of political activists (with high levels of psychological preparedness for torture) did not develop PTSD despite having endured a mean of 23 different forms of torture (measured using the same scale as in the present study) and a mean of 291 exposures to torture. That study also showed that higher resilience levels, which also meant greater ability to exercise control over torture stressors, were associated with less perceived distress during torture and less PTSD subsequently.[19]

The cumulative impact of torture stressors is also determined by the interactions among them. The distressing or helplessness-inducing effect of a particular stressor might be compounded when combined with another stressor.[5] For example, the distressing effects of various forms of physical torture, such as beating or electrical shocks, might be augmented by blindfolding or hooding because the latter procedures remove visual control over the stressors, thereby making them less predictable and less controllable. Similarly, the traumatic impact of physical torture might be maximized when coupled with restriction of body movements, consistent with observations that restraint in animals potentiates the effects of exposure to uncontrollable stressors.[20] This might also explain the distressing effects of various stress positions, such as forced standing or rope bondage. Thus, the relative impact of each stressor needs to be considered in the context of its interactions with other concurrent stressors. A measure of mere exposure to torture stressors fails to capture such important information, and this is the most likely reason it showed no prediction with posttorture outcome in this study.

The present findings pointing to the important role of uncontrollability of stressors in traumatic stress are consistent with learning theory formulations of traumatic stress in torture survivors[5] and similar evidence from studies of other trauma survivors.[21,22] These findings imply that various psychological manipulations, ill treatment, and torture during interrogation share the same psychological mechanism in exerting their traumatic impact. All 3 types of acts are geared toward creating anxiety or fear in the detainee while at the same time removing any form of control from the person to create a state of total helplessness (see the article by Başoğlu and Mineka[5] for a review of some of the control removal strategies used by torturers). Thus, manipulations designed to remove control from the detainee might have a severe traumatic impact, even when they do not involve physical torture. Evidence shows that 20% of the suspects detained for ordinary police interrogation experience abnormally high levels of anxiety because of uncertainty and lack of control over the environment[23] and that some people develop PTSD after such an experience.[24]

Humiliating treatment and attacks on personal integrity, cultural values, morals, or religious beliefs may induce feelings of helplessness in the individual through not being able to act on anger and hostility generated by such aversive treatment. Evidence[25,26] shows that animals and humans respond with anger, hostility, and aggression to threats to physical and psychological well-

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being. Furthermore, the ability to aggress during uncontrollable stress can dramatically reduce the impact of the stressor in animals.[27] This idea is also supported by anecdotal reports of some torture survivors that suggest that expression of anger and hostility toward the torturers alleviates distress during torture.[5]

Because the study findings are highly relevant to the current controversy surrounding the definition of torture, it is worth examining what they imply for the definition proposed in the US Justice Department memorandum,[4] where it is argued that the definition of a particular act as torture requires proof of "prolonged mental harm" associated with that act. This argument was based on literature evidence showing that the most common psychiatric diagnosis among torture survivors is PTSD and that torture survivors have elevated rates of PTSD.[4(p15)] Because this document cited a review article[28] by the main author of the present study (M.B.) and a group of internationally recognized trauma experts (published in 2001 in a book sponsored by the US National Institute of Mental Health), it is worth briefly examining herein whether the literature evidence supports the argument concerning "prolonged mental harm." In the cited review article, the statement about PTSD being the most common diagnosis among torture survivors[28(p41)] was made in reference to the findings of a controlled study[17] that was conducted by our research group. This was based on the finding that torture survivors (political activists) had significantly more lifetime and current PTSD than did controls (33% vs 11% and 18% vs 4%, respectively). Although that study pointed to an association between torture and PTSD, the rates of PTSD in the sample were surprisingly low despite the extremely severe torture experienced by the survivors (a mean of 23 different forms of torture and a mean of 291 exposures to torture), as noted earlier. Thus, although there is evidence that torture leads to PTSD in some cases, many people survive extremely severe torture in relatively good psychological health and never develop PTSD. Conversely, some survivors develop PTSD after ostensibly milder forms of ill treatment or psychological stressors that do not involve physical torture. The fact that 60% of the present study participants without any experience of physical torture developed PTSD at some stage and 45% had current PTSD suggests that such cases are not uncommon. These findings do not support a definition of torture based on evidence of "prolonged mental harm." Such a definition does not make logical sense given that it would disqualify many severely tortured peoples' experience as torture simply because they did not develop PTSD.

This study was retrospective and thus subject to the methodological limitations inherent in such research. Problems in recall may have affected the survivors' reports to a certain degree, but this is unlikely to invalidate the results. Global distress and control ratings showed high and consistent correlations with the respective ratings for each stressor. The control ratings for each stressor were based on detailed information about the survivors' actual coping behaviors during the torture and thus were unlikely to reflect substantial distortions in recall associated with high distress levels at the time of assessment. Furthermore, the distress and control ratings seemed to have sufficient validity given that they varied across different types of stressors in a way that made intuitive and theoretical sense, as noted previously herein. In addition, evidence on the external validity of these measures from a previous study[18] shows that they are associated with psychological resilience factors in torture survivors. The latter is also true for the present study, but the data are not reported owing to space constraints.

In conclusion, aggressive interrogation techniques or detention procedures involving deprivation of basic needs, exposure to aversive environmental conditions, forced stress positions, hooding or blindfolding, isolation, restriction of movement, forced nudity, threats, humiliating treatment, and other psychological manipulations conducive to anxiety, fear, and helplessness in the detainee do not seem to be substantially different from physical torture in terms of the extent of mental suffering they cause, the underlying mechanisms of traumatic stress, and their long-term traumatic effects. Such stressors satisfy the criterion of "severe mental suffering," which is central to the definition of torture in international conventions. Furthermore, these findings do not support the distinction between torture and other cruel, inhuman, and degrading treatment made by the Convention Against Torture and Other Cruel, Inhuman, or Degrading Treatment or Punishment.[1] Although both types of acts are prohibited by this convention, such a distinction nevertheless reinforces the misconception that cruel, inhuman, and degrading treatment causes less harm and might therefore be permissible under exceptional circumstances. These findings point to a need for a broader definition of torture based on scientific formulations of traumatic stress and empirical evidence rather than on vague distinctions or labels that are open to endless and inconclusive debate and, most important, potential abuse.

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