

# Comparison of two methods of inquiry for torture with East African refugees: Single query versus checklist

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## Abstract

Purpose was first to compare two methods of inquiry regarding torture: i.e., the traditional means of inquiry versus a checklist of torture experiences previously identified for these African refugees. Second, we hoped to identify factors that might influence refugees to not report torture on a single query when checklist data indicated torture events had occurred or to report torture when checklist data indicated that torture had not occurred.

*Method* consisted of queries to 1,134 community-dwelling East African refugees (Somalia and Ethiopia) regarding the presence-versus-absence of torture in Africa (single query), a checklist of torture experiences in Africa that we had previously identified as occurring in these groups, demography, non-torture traumatic experiences in Africa, and current posttraumatic symptoms.

*Results* showed that 14% of the study participants reported a torture experience on a checklist, but not on a single query. Nine percent responded positively to the single query on torture, but then failed to check any torture experience. Those

reporting trauma on an open-ended query, but not on a checklist, had been highly traumatized in other ways (warfare, civil chaos, robbery, assault, rape, trauma during flight out of the country). Those who reported torture on the checklist but not on the single query reported fewer instances of torture, suggesting that perhaps a “threshold” of torture experience influenced the single-query report. In addition, certain types of torture appeared more apt to be associated with a single-query endorsement of torture. On regression analysis, a single-query self-report of torture was associated with traumatic experiences consistent with torture, older age, female gender, and non-torture trauma in Africa.

*Conclusion.* Inconsistent reporting of torture occurred when two methods of inquiry (one open-ended and one a checklist) were employed in this sample. We believe that specific contexts of torture and non-torture trauma, together with individual demographic characteristics and severity of the trauma, affect the self-perception of having been tortured. Specific information regarding these contexts, demographic characteristics, and trauma severity are presented in the report.

*Keywords:* refugee, torture, trauma, posttraumatic stress symptoms, Africa

## Introduction

Clinicians have been advised to query refugee patients about their traumatic experiences, including torture.<sup>1</sup> This task seems simple enough, given the United Nations (U.N.) definition of torture from 1984<sup>2,3</sup>:

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“...the term torture means any act by which severe pain or suffering, whether physical or mental, is intentionally inflicted on a person for such purpose as obtaining from him or a third person information or a confession, punishing him for an act that he or a third person has committed, or is suspected of having committed, or intimidating or coercing him or a third person, for any reason based on discrimination of any kind, when such pain or suffering is inflicted by, or at the instigation of, or with the consent or acquiescence of, a public official or other person acting in an official capacity. It does not include pain or suffering arising only from, inherent in, or incidental to lawful sanctions.”

However, application of this specific definition in clinical practice poses a number of problems. Clinical reports on torture do not utilize these detailed criteria.<sup>4-6</sup> In an effort to increase the validity of torture self-report, clinical investigators have tried to identify specific pathognomonic physical identifiers of torture, but without success.<sup>6,7</sup> In a systematic review of 161 published reports, drawn from 5,904 articles, an international panel observed, “The assessment of torture across the majority of surveys reviewed was reliant on self-reports, most commonly based on the endorsement of the Harvard Trauma Questionnaire, leaving open the possibility of variation in personal understandings of the term.”<sup>8</sup> Despite this methodological limitation, they found that a single-query self-report of torture “emerged as the strongest substantive factor associated with PTSD...”

Refugee studies have revealed high rates of torture and other trauma.<sup>9-12</sup> Nonetheless, the reliability of self-reported torture has been questioned. For example, in our study of East African refugees, dozens of refugees

reported having been tortured on a single query but then provided no instance of harm at the hands of authorities when specific examples were sought.<sup>9</sup>

The current study aimed at identifying the prevalence of torture using two different methods (the traditional single-query method and a checklist of torture experiences that occurred in that time and place) and improving our understanding regarding the self-report of torture by refugees.

### Background

Somalia and Ethiopia underwent civil disruption during the early 1990s, a decade before the current study. In Ethiopia, the majority Oromo tried to establish a separate country of Oromia,<sup>13</sup> resulting in a pogrom against them. In Somalia, the independence movement involved organized assaults on clans that held sway over government and commerce.<sup>14</sup> Violence occurred in home invasions, traffic stops, and armed invasions into shops. Thus, two different scenarios regarding torture resulted.<sup>9</sup> In Ethiopia, the torture involved primarily men in prison. Among Somalis, women experienced more violence in numerous settings (homes, streets, police stations) as their men had been killed or had already fled.

At the time of the study, all participants lived in the Minneapolis-Saint Paul metropolitan area of Minnesota, U.S.A. They lived freely in society (i.e., not in a refugee camp). Many Somalis lived in a single Minneapolis neighbourhood, whereas the Ethiopians inhabited many neighbourhoods. Most participants had official status as legal refugee residents of the U.S. Small numbers had non-refugee immigrant status or other status (student, visitor). Virtually all of them planned to remain in the U.S. as permanent residents or as citizens. Most had first fled to a neighboring African country as asylum

seekers before coming to the U.S. for permanent resettlement.

## Method

### *Definition of terms*

*Single-query self-report of torture.* Terms for torture existed in the Somali and Oromo languages. Translation and back-translation using standard translation techniques<sup>15-17</sup> produced semantic equivalence. Self-report of the occurrence of torture was based on a single query for these reasons:

- Study participants had no difficulty answering this query.
- Translated terms for torture were semantic equivalents of torture in English.
- Common clinical practice depends on a single query rather than a multi-event screen or scale.
- The research literature on torture has relied upon single-query self-report to establish a history of torture. Compared to demographic, historical, diagnostic, and trauma scales, this single-query self-report method has been shown to be the strongest substantive correlation with Posttraumatic Stress Disorder (PTSD) in a review of published reports on torture.<sup>8</sup>

*Torture items checklist.* We identified 61 torture events based on ethnographic interviews and pilot interviews during the first year of the study. We identified an additional 11 events based on later queries, such as trauma perpetrated by authorities while the survivor was incarcerated. Finally, we added four “other” events in case we had not obtained all traumatic events to which study participants were exposed (i.e., “other stress to senses”, “other deprivation”, “other physical suffering”, and “other psychological suffering”). The relative paucity of “other” endorsements (i.e., 41 endorsements) indi-

cated that we identified most of the trauma events suffered by these groups. These total 75 traumatic events are listed in the first column of Table 1. Since one event could occur only among women (i.e., pregnancy as a result of rape) and one event could only occur among men (i.e., weights tied to testicles), a maximum of 74 events could occur to any one individual. A total of 829 study participants reported one or more of these torture events.

Of these 75 traumatic events, we judged 27 to be feasible only in a context of torture, rather than non-torture situations involving general abuse of detainees. These 27 events considered by us to be pathognomonic for torture are listed in Table 2.

The four categories of single-query for lifetime torture versus checklist for torture items are as follows:

- Group a: negative response to single query and no endorsed items on checklist items
- Group b: negative response to single query but one or more endorsed checklist items
- Group c: positive response to single query but no endorsed checklist items
- Group d: positive response to single query and one or more endorsed checklist items.

The categorization above differs from that in our earlier publication,<sup>9</sup> which was concerned with validity of torture group assignment, rather than with comparing torture self-report on two methods of data collection (the focus of this report). In our earlier study, participants were classified as torture survivors if they met one of these criteria:

1. Responded positively to any of the three queries:

**Table 1.** Torture single-query versus torture checklist (all 75 items) in study participants endorsing any checklist item (n = 829)

Torture checklist items	Single query regarding torture		Statistics	
	b. n = 551	d. n = 278	OR	X <sup>2</sup>
Probability < 0.0007				
Thought control	4	56	27.14	101.51
Burned with boiling water	2	19	17.09	28.78
Electrical shock	2	14	12.59	18.92
Head injury w/torture	17	102	12.30	167.13
Immersion in water	10	51	10.19	71.66
Strangling	9	45	10.12	61.90
Blows to ears	12	50	8.18	64.46
Electricity to genitals	4	13	6.68	12.46
Suffocation	8	27	6.47	29.17
Rope bondage, w/tightening	8	27	6.47	29.17
Weights to testicles *	5	16	6.39	15.68
Total darkness > 2 days	20	59	5.90	64.31
Release w/immediate re-arrest	17	50	5.80	53.23
Severe overcrowding	21	61	5.77	66.13
Beaten on soles of feet	29	84	5.70	95.61
Immobilized, tied up	28	78	5.50	85.42
Blindfolding	18	47	5.12	45.70
Nakedness	6	15	4.91	12.19
Deprived of medical care	38	91	4.74	91.92
False accusation, self-incrimination, recanting	23	53	4.54	47.42
Lifted by hair	17	38	4.41	31.73
Maimed, bone fracture	12	27	4.41	21.75
Forced to do things that now are disturbing	12	27	4.41	21.75
Prevent urination, defecation	10	22	4.40	16.91
Deprived of sleep	25	54	4.32	45.79
Isolated > 3 days	20	43	4.30	35.21
Lost consciousness with abuse	9	19	4.27	13.76
Blows w/weapon	80	166	4.12	178.68
Deprived of food	65	130	3.96	123.64
Forced position for hours	25	49	3.92	37.34
Deprived of hygiene	21	41	3.88	30.38
Sexual touching w/assault	17	33	3.83	23.64
Family/friend made to observe your torture/abuse	15	28	3.73	18.83
Deprived of water	70	123	3.68	101.16
Mock execution	34	61	3.54	43.76
Flogged	57	100	3.49	20.66
Forced watch/listen to torture, killing	21	36	3.41	22.69
Made to inform on others	43	65	3.00	38.21

Torture checklist items	Single query regarding torture		Statistics	
	b. n = 551	d. n = 278	OR	X <sup>2</sup>
Death threats, self/other	101	115	2.26	49.71
Punched, slapped, kicked	163	190	2.37	111.97
Knife/sharp wounds	47	55	2.33	101.08
Demeeaning comments, self/family	102	97	1.89	26.29
Forced hard labor	102	93	1.81	22.11
Threats, self/family/etc.	151	130	1.70	30.04
Probability 0.05 to 0.007 (borderline)				
Forced teeth extraction	1	5	8.99	Fisher
Forced degrading act	1	5	8.99	Fisher
Amputation	2	8	7.19	Fisher
Sex w/animal, object	1	4	7.19	Fisher
Finger-, toe-nails removed	2	7	6.29	Fisher
Hanging by extremities	4	9	4.62	Fisher
Torturer attitude changes	6	13	4.25	9.08
Forced watch sun, lights	7	15	4.15	10.63
Made to harm others	7	14	3.87	9.14
Immersion, dirty fluid	7	14	3.74	9.14
Limbs, body stretched	6	11	3.60	6.21
Abuse w/excrement	5	8	3.20	Fisher
Burned w/cigarette	13	20	3.00	10.07
Thrown from a height	11	15	2.70	5.95
Constant loud noise	38	34	1.77	5.97
Detonate explosive nearby	103	80	1.54	10.34
Non-significant (> 0.05)				
Forced choices	5	7	----	Fisher
Other psychological suffering	1	6	----	Fisher
Other stress to senses	4	5	----	Fisher
Genital infection after rape	6	0	----	Fisher
Burned w/fire, burning stick	3	4	----	Fisher
Other deprivation	2	3	----	Fisher
Forced, sexual acts	7	6	----	Fisher
Rape, by opposite sex	12	9	----	0.47
Forced to take harmful drugs	3	0	----	Fisher
Burned w/chemicals	2	2	----	Fisher
Rape, by same sex	7	2	----	Fisher
Other physical suffering	9	3	----	Fisher
Water dripped on head	16	9	----	0.003
Pregnant after rape **	5	3	----	Fisher
Needles under nails	3	2	----	Fisher

Statistics: Chi Square w/correction for continuity and Fisher Exact test, 2-tailed.

\*Man-only item (weights from testicles)

\*\*Woman-only item (pregnancy)

**Table 2.** Torture single query versus torture checklist in study participants endorsing any pathognomonic item (n = 405)

Torture event on questionnaire	Single query regarding torture		Statistics:	
	b. n = 163	d. n = 242	OR	X <sup>2</sup>
<i>I. 27 events considered pathognomonic for torture</i>				
Probability < 0.0007				
Burned with boiling water	3	32	7.33	14.57
Immersion in water	15	84	3.77	32.95
Electrical shock	5	28	3.74	18.92
Rope bondage, w/tightening	11	50	3.09	13.67
Beaten on soles of feet	36	122	2.28	31.67
Total darkness > 2 days	29	85	1.97	13.62
Probability 0.05 to 0.0007 (borderline)				
Weights to testicles (male)	6	30	3.35	8.09
Abuse w/excrement	5	25	3.32	6.47
Hanging by extremities	6	27	3.03	6.31
Limbs, body stretched	8	32	2.69	6.66
Immersion, dirty fluid	9	35	2.64	7.14
Torturer attitude changes	8	27	2.29	4.06
Head injury w/torture	33	86	1.76	10.25
Forced position for hours	29	74	1.72	7.74
Mock execution	42	92	1.47	6.06
Non-significant (> 0.05)				
Forced to watch/listen to torture/killing	25	57	-----	3.58
Forced teeth extraction	3	13	-----	2.34
Finger-, toe-nails removed	4	15	-----	2.27
Electricity to genitals	5	16	-----	1.82
Thought control	19	41	-----	1.76
Forced choices	7	19	-----	1.50
Burned w/cigarette	17	35	-----	1.08
Forced watch sun, bright lights	12	24	-----	0.50
Sex w/animal, object	2	5	-----	Fisher
Needles under nails	4	7	-----	Fisher
Water dripped on head	18	22	-----	0.23
Forced to take harmful drugs	4	3	-----	Fisher
<i>II. 48 events not considered pathognomonic for torture</i>				
Probability < 0.0007				
Strangling	10	68	4.61	28.82
Suffocation	9	51	3.84	17.46
Blows to ears	15	79	3.54	28.73
Blows w/weapon	58	182	3.11	61.71
Blindfolding	17	72	2.87	20.10
Immobilized, tied up	25	100	2.70	29.61
Forced hard labor	28	112	2.69	35.20
Flogged	32	124	2.61	39.77
Severe overcrowding	21	80	2.57	20.13

Torture event on questionnaire	Single query regarding torture		Statistics:	
	b. n = 163	d. n = 242	OR	X <sup>2</sup>
Made to inform on others	21	77	2.47	18.02
Release w/immediate re-arrest	20	73	2.46	16.64
Deprived of sleep	23	75	2.20	14.23
False accusation, self-incrimination, recanting	22	71	2.17	12.94
Deprived of food	54	163	2.04	44.51
Deprived of medical care	38	114	2.02	22.52
Deprived of water	65	154	1.59	21.19
Punched, slapped, kicked	90	200	1.50	34.71
Probability 0.05 to 0.0007 (borderline)				
Amputation	2	16	5.50	5.44
Made to harm others	6	31	3.46	8.71
Nakedness	7	35	3.37	9.77
Prevent urination, defecation	11	42	2.60	8.72
Sexual touching w/assault	14	52	2.50	10.95
Lifted by hair	16	56	2.36	10.94
Forced to do things that now are disturbing	13	42	2.18	6.52
Family/friend made to observe your torture/abuse	13	41	2.11	6.02
Maimed, bone fracture	14	43	2.07	6.05
Isolated > 3 days	23	67	1.96	9.62
Deprived of hygiene	24	60	1.69	5.41
Demeaning comments, self/family	45	100	1.50	7.39
Death threats, self/other	54	108	1.35	4.90
Reverse association				
Genital infection after rape	5	0	∞	Fisher
Non-significant (> 0.05)				
Forced degrading act	2	13	-----	3.60
Lost consciousness w/abuse	12	32	-----	2.87
Other psychological suffering	1	6	-----	Fisher
Knife/sharp wounds	36	66	-----	1.13
Thrown from a height	13	28	-----	1.02
Other deprivation	2	6	-----	Fisher
Forced sexual acts	5	12	-----	0.46
Burned w/chemicals	3	8	-----	Fisher
Other physical suffering	7	9	-----	0.00
Threats, self/family/etc.	77	115	-----	0.00
Burned w/fire, burning sticks	4	6	-----	Fisher
Other stress to senses	4	6	-----	Fisher
Pregnant after rape	3	4	-----	Fisher
Rape, by opposite sex	9	12	-----	0.00
Constant loud noise	31	39	-----	0.39
Rape, by same sex	7	6	-----	0.53
Detonate explosive nearby	59	76	-----	0.80

- a. I was tortured.
  - b. Have you been tortured in prison?
  - c. Were you tortured in jail or prison?
2. Reported one of the 27 torture techniques that we considered could have occurred only during torture sessions (see Table 2 for these 27 torture techniques), even if the participant responded negatively to the three queries above. For convenience, we will refer to any of these 27 techniques as being “pathognomonic” of torture.

For the current study, we employed criterion 1a as a self-report of torture. Criterion 1b and 1c were excluded from the current study, since they are not the usual queries used to establish whether torture has occurred in survey studies similar to this one<sup>8</sup> or in clinical practice. Criterion 2 was utilized for our second checklist analysis. Due to differing goals and definitions in this report as compared to our earlier report,<sup>9</sup> the four categories in this study (as described above) contained different numbers than our earlier publication.

Among the 1,134 study participants, 344 (30%) reported torture on the single query noted in 1a above. This percentage was higher than the mean torture prevalence of 21% reported in a review of 84 surveys, falling into the extreme 5% of outliers (95% CI, 17%-26%).<sup>8</sup>

Some torture events occurred repeatedly (e.g., beatings, food deprivation), whereas other highly traumatic events occurred once. For example, one woman was forced to have sex with her husband's older brother, then the older brother was tortured in her presence to force the sex act, and finally he was killed in front of her – three traumatic events within one continuous episode.

*Non-torture trauma.* Torture usually oc-

curs in a context of armed conflict and/or social disruption, including war, revolution, or ethnic-religious conflict. For this reason, most studies of torture have also assessed the prevalence of other forms of trauma besides torture.<sup>8</sup> We studied 30 other traumatic events not perpetrated by authorities. These occurred during civil unrest, armed conflict, flight out of the country, and criminal activities fostered by the general chaos and lack of civil security during the period.

On average, the 1,134 East Africans endorsed 6.5 non-torture trauma events. Using the convention employed by Steel et al to report non-torture trauma,<sup>8</sup> “0” refers to no trauma experienced by anyone and “1” refers to each participant experiencing all 30 traumatic events. In this study, the participants reported 22% of all potential non-torture traumatic events (i.e., 6.5/30 = 0.22). This rate of non-torture trauma was less than the mean of 29% reported in 120 surveys of torture, but well within the 95% confidence interval (16%-42%).<sup>8</sup>

#### *Sample*

The method of targeted sampling to obtain representative samples in each ethnic group has been published.<sup>12</sup>

*Single-query self-report of torture.* Among the 512 Ethiopians, 40% (206/512) reported having been tortured. Among the 622 Somalis, 22% (138/622) reported having been tortured on a single-query self-report question. The two groups showed a significant difference in their single-query self-report of torture ( $X^2=42.44$ , 1 d.f.,  $p < 0.001$ ).

More Ethiopian men than women reported torture on the single query (69%-vs-31%,  $X^2=50.32$ , 1 d.f.,  $p < 0.001$ ). Among Somalis, reports of torture on the single query were more common among women than men (69%-vs-31%,  $X^2=29.59$ , 1 d.f.,  $p < 0.001$ ).



*Torture items checklist.* Most Ethiopians (420/512, or 82%) endorsed one or more torture checklist items events (including all 75 pathognomonic and probable torture events). Most Somalis (428/622, or 69%) endorsed one or more torture events (including all 75 pathognomonic and probable torture items. This difference was significant ( $X^2=29.14$ , 1 d.f.,  $p < 0.001$ ).

More Ethiopian men endorsed one or more torture items on the checklist compared to women (92%-vs-73%,  $X^2=29.05$ , 1 d.f.,  $p < 0.001$ ). More Somali women than men endorsed one or more torture items on the checklist (78%-vs-60%,  $X^2=21.49$ , 1 d.f.,  $p < 0.001$ ).

*Ethno-religious affiliations.* Among the 512 Ethiopians, 99% were ethnic Oromo, with 1% either of mixed ethnic heritage or married to Oromos. Religious affiliations among Ethiopians were predominantly Islam (389/512 or 76%) and Christianity (105/512 or 21%). All 622 study participants from Somalia reported Somali as their identity and predominant language. Among the 622 Somalis, 601 (97%) reported practicing Islam.

#### *Other data collection instruments*

Demographic characteristics included age, gender, current marital status and nationality. The self-rated posttraumatic stress disorder checklist<sup>18</sup> assessed current post-traumatic symptoms. Translations and back-translations were undertaken as defined above, with the goal of semantic equivalence.

#### *Statistical analyses*

Table 1 includes all 551 who endorsed one or more of the 75 torture items on the checklist. Some of these 75 items might not have met World Health Organization criteria for torture, since the traumatic event may have been punishment, may have been perpetrated by other prisoners, or may have

been perpetrated by rogue jailors without official approval. For each item on the checklist, the Odds Ratio (OR) compared those reporting torture versus no reporting torture on the single query. Chi Square test (with correction for continuity) and Fisher Exact test (if any expected cell number was less than 5) were employed. Cut off for significance was set at  $p < 0.0007$  for these 75 bivariate comparisons using the Bonferoni correction (i.e., .05/75). Borderline significance was set at 0.05 to 0.0007. ORs were not determined if the significance was  $p > 0.05$ .

In Table 2, only those participants who reported one or more pathognomonic torture events were included in the analysis ( $n = 405$ ). The method of analysis for this table replicated that used in Table 1.

In Table 3, the four groups a, b, c, and d were compared using three torture-trauma scales, three demographic characteristics, and the PCL posttraumatic symptom scale. Those study participants who reported one of the 27 pathognomonic torture items were categorized as “checklist positive” as this was judged to be a more conservative means of comparing the four groups. Comparisons across all four categories involved two Chi Square tests for categorical data, four ANOVA's with post hoc comparisons for normally distributed data (i.e., skew  $< 1.0$ ), and, for non-normally distributed data (skew of 1.0 or more), one Kruskal-Wallis test (see the right-hand column of the table). For the 27 pathognomonic checklist items, only groups b and d were compared (since all of those in groups a and c had no checklist reports by definition). Only the 27 pathognomonic torture events showed a skew greater than one (skew = 1.73), so the Kruskal-Wallis test was used for this comparison. Cut-off was set at 0.007 for the seven comparisons using the Bonferoni correction (i.e., .05/7). At the

**Table 3.** Comparison of four groups a, b, c, and d. Using the 27 pathognomonic torture items for "checklist positive" categories: 1,134 East African refugees

Variables	Single query negative		Single query positive		Statistics P<0.0003
	Checklist negative	Checklist positive	Checklist negative	Checklist positive	
Category (n)	a. (627)	b. (163)	c. (102)	d. (242)	
Pathognomonic torture events (n = 27)					b vs. d: K-W Z=7.70
Range	0	1-16	0	1-20	
Mean (sd)	0	2.2 (2.5)	0	4.5 (4.1)	
Probable torture events (n = 48)					F=277.5; 3 d.f.
Range	0-22	1-53	0-2	1-60	
Mean (sd)	2.9 (3.1)	7.6 (9.8)	8.2 (5.8)	17.6 (13.6)	
Trauma, other					F=98.18; 3 d.f.
Range	0-18	0-16	0-18	0-22	
Mean (sd)	4.8 (3.6)	7.1 (4.2)	7.9 (4.2)	9.8 (4.6)	
Age*					F=18.6; 3 d.f.
Mean (sd)	33.4 (14.7)	33.5 (13.4)	37.9 (14.7)	39.5 (14.1)	
Gender					X <sup>2</sup> = 19.3; 3 d.f.
Men	340	80	37	148	
women	287	83	65	94	
Marital status					X <sup>2</sup> = 60.5; 6 d.f.
Single	227	50	27	38	
Married	202	42	22	68	
div-sep-wid	198	71	53	136	
PCL score					F=19,712.3; 3 d.f.
Range (total)	17-77	17-83	17-85	21-85	
Mean (sd)	27.3 (9.7)	34.7 (12.9)	40.2 (17.1)	46.6 (14.1)	

\* Current age is about 10 years after torture/trauma occurred.

bottom of Table 3, four comparisons were made for each variable as follows: a versus b, a versus c, b versus d, and c versus d.

In Table 4, a logistic regression analysis was conducted with self-report of torture (presence versus absence) as the dependent outcome. Variables with an alpha  $\leq 0.1$  in Table 2 (far right column) were entered into the regression. Since the 27 pathognomonic checklist items and the 48 non-pathogno-

monic checklist items were highly correlated with each other, only a single value (based on all 75 checklist items) was entered into the regression. A regression alpha  $< 0.05$  was considered significant.

## Results

### Description

Of the 1,134 participants, 829 (73%) reported one or more of the total 75 items on

**Table 4.** Binary logistic regression analysis: Self-report of torture (presence-vs-absence) as the dependent outcome.

Variable	B (SE)	Wald	Signif	Exp (B)	95% C.I.
Constant	- 2.564 (0.605)	17.97	0.001	0.08	---
All 75 torture events	0.056 (0.014)	16.01	0.001	1.06	1.03-1.09
Male-female	-0.842 (0.310)	7.39	0.007	1.35	1.09-1.67
Age (deciles)	0.298 (0.110)	7.28	0.007	1.03	1.01-1.06
Non-torture trauma	0.080 (0.038)	4.53	0.03	1.08	1.01-1.17
Single-married-other	0.257 (0.196)	1.71	0.19	1.29	0.88-1.90
PCL score	0.008 (0.009)	0.90	0.34	1.01	0.99-1.03

the torture checklist. A total of 405 participants (36% of 1,134) reported one or more of the 27 “pathognomonic torture” events listed in Table 1. Those reporting any torture item numbered twice those reporting only the pathognomonic torture events.

As shown in Table 3, the largest group was denying torture on the single query and no endorsement of any of the 27 pathognomonic torture items, with 627 out of 1,134 or 55%. The next largest group was d (i.e., reporting torture on the single query and endorsing a pathognomonic torture event on the checklist), with 242 of 1,134 or 21%. Group b (i.e., denying torture on the single query but endorsing one of the pathognomonic torture items on the checklist) was third largest, with 163 out of 1,134 or 14%. The least number of people fell into group c (i.e., reporting torture on the single query, but not endorsing any pathognomonic torture items on the checklist), with 102 out of 1,134 or 9%.

#### Comparison of group b and group d

Table 1. The item analysis shown in Table 1 was conducted to assess whether certain torture items were more apt to be associated with a positive single-query response (i.e., having been tortured). These 75 items could comprise torture, but 48 of them

might also involve licit punishment (e.g., a period of solitary confinement), conflict with other prisoners (interpersonal trauma), or individual harsh treatment by some jailers not acting with official support (e.g., threatening, insulting). Thus, these data likely include some number of people who were not tortured by the U.N. criteria, and some whose torture did not include any of the 27 torture checklist items that we have designated as pathognomonic of torture. Among the 829 people in this group, 551 (or 66%) responded negatively to the single query regarding torture; and 278 (or 34%) responded positively. A high OR in column 4 suggested that those experiencing the item were more apt to report on a single query that they had been tortured. Column 5 shows the statistical difference between columns 2 and 3. ORs were computed only on those torture items showing a significant difference of 0.05 or less.

Of the 75 items, 44 (or 59%) showed a highly significant difference between those reporting torture on the single query. These items tended to be more common; up to 68% of the positive-query group reported them. For many items, the cooperation or coordination of several people would be needed to impose the violent event, so a system-driven effort would be required. Of

the 75 items, 16 (or 21%) were in the borderline category. These items were less common overall; up to 29% of the positive-query group reported them. Of the 75 items, 15 (or 20%) were in the non-significant group. These items were the least common, with a maximum of 3% in the positive-query group reporting them.

*Table 2.* Column 1 of Table 2 includes only those 405 participants who reported one or more of the 27 trauma events that we judged were pathognomonic of torture. Of these 405 people, 163 (40%) in column 2 reported that they had not been tortured, and 242 (or 60%) in column 3 reported that they had been tortured. This analysis was conducted as a supplement to Table 1, which probably over-counted those who had been tortured. Table 2 was probably an undercount of those who had been tortured, and thus a more conservative estimate. As compared to Table 1, the analysis in Table 2 shows fewer items that are significantly different (44 versus 23 items), somewhat more borderline items (16 versus 23 items), and more non-significant items (15 versus 29 items). As shown in Table 2, only six out of the 27 pathognomonic events (or 22%) showed a significant difference (at  $p < 0.0007$ ) between the two groups. Four items involved pain or physical damage, one involved oxygen deprivation (immersion in water), and one involved decreased sensory input (total darkness for more than two days). ORs ranged up to 7.3.

Nine of the 27 items (or 33%) showed a borderline significance between 0.05 and 0.0007. Five items involved pain or physical damage, three involved psychological torture (abuse with excrement, torturer changes attitudes toward victim during torture, mock execution), and one involved oxygen deprivation (immersion in dirty fluid). ORs were lower overall than in the first group (1.5 to 3.4).

Twelve of the 27 items (or 44%) showed no difference between true positive and false negative groups. The non-significant trauma events tended to occur less often. Six events involved pain or physical damage, three were psychological (forced to watch/listen to torture or killing, thought control, forced aversive choices), two were sensory (forced to stare at sun or bright light, water dripping on head), and one was sexual.

As shown in the second section of Table 2, 17 of the 48 non-pathognomonic items (or 35%) showed a significant difference at  $p < 0.0007$ . They tended to occur frequently in the group responding positively to the single query on torture. Six items involved pain or physical damage, eight items involved deprivations (oxygen, food, water, sleep, medical care, adequate space, and insufficient rest due to excessive labor), and three entailed psychological torture.

Of the 48 items, 14 (or 29%) showed a borderline significance. They were a mix of physical, sexual, deprivation, and psychological torture. Only one event was more frequent in the group not reporting torture on the single query than in the positive response group (genital infection after rape).

Seventeen non-pathognomonic items (35%) showed no difference between the two groups. Several of them were commonly experienced (loud noises, threats, cutting wounds, explosions detonated nearby), but most were infrequent.

#### *Comparison of four groups (see Table 3)*

For this analysis we used those responding to one or more of the 27 pathognomonic torture items as “checklist positive” in order to conduct a conservative analysis. All seven variables showed a significant difference with the four groups a, b, c, and d. Since the 27 pathognomonic torture events did not occur in groups a and c by definition, comparisons

involving these variables and these groups were not conducted.

*Group a versus group b.* Group b reported more “probable torture events” as well as more “non-torture trauma” as compared to group a. Posttraumatic stress symptoms were significantly greater in group b, lending internal validity to the two categories. Age, gender, and marital status did not differ between the two groups.

*Group a versus group c.* Group c reported a higher mean “probable torture events” and “non-torture trauma events” than group a. Demographically, group c was 4.5 years older on average, included more women, and had more separated-divorced-widowed marital status (all at a significant level).

*Group b versus group d.* Group b reported half as many “pathognomonic torture items” and half as many “probable torture items” as group d (both significant). The difference in mean number of “non-torture trauma items” events was less great, but still significant, with a lower mean number in group b. Group b was 6 years younger on average and had more single members (both significant). On the self-rated PCL symptoms, group b had a mean of 6.4 points less than group d (also significant). Gender distribution did not differ in the two groups.

*Group c versus group d.* Group c had about one-half as many “probable torture items” and almost two fewer “non-torture trauma events” as compared to group d (both significant). Group c members included more women and had lower mean PCL scores (both significant). Marital status did not differ.

The same analysis as that described above was conducted using the 829 people endorsing one or more of the 75 torture items as “checklist positive”. This analysis revealed the same categorical similarities and differences as those described above, albeit

### Bivariate statistical associations between groups

27 pathognomonic torture events, Mann-Whitney Z

b vs. d:  $Z = 7.70$ ,  $p < 0.0001$

NB: The True-negative and false-positive groups (In which pathognomonic torture events = 0) were not compared since the count of pathognomonic torture events is confounded with the definition.

48 Probable torture events, Tukey's b Post Hoc test,  $p < 0.05$

Subset	1	2	3
a	2.9		
b		7.6	
c		8.2	
d			17.6

Non-torture trauma (e.g., civil unrest, combat, flight, crime), Tukey's b Post Hoc test,  $p < 0.05$

Subset	1	2	3
a	4.8		
b		7.1	
c		7.9	
d			9.8

Age, Tukey's b Post Hoc test,  $p < 0.05$

Subset	1	2
a	33.4	
b	33.5	
c		37.9
d		39.5

Gender a vs. c:  $X^2 = 10.62$ , 1 d.f.,  $p = 0.001$   
c vs. d:  $X^2 = 16.89$ , 1 d.f.,  $p < 0.0001$

Marital status a vs. c:  $X^2 = 16.31$ , 2 d.f.,  $p < 0.0001$   
b vs. d:  $X^2 = 13.29$ , 2 d.f.,  $p = 0.001$

PCL total score, Tukey's b Post Hoc test,  $p < 0.05$

Subset	1	2	3	4
a	27.3			
b		34.7		
c			40.2	
d				46.6

with some differences in levels of significance. The primary author will provide this material to interested readers upon request.

*Regression analysis: factors predicting a self-report of torture (see Table 4)*

A logistic regression analysis was conducted with the single-query self-report of torture (presence vs. absence) as the dependent variable. Variables were entered together. The “pathognomonic” and “probable” torture events were combined into a single 75-item variable, since the data in Table 2 did not indicate major differences in the two separate variables vis-à-vis a single-query self-report of torture.

The factor with the highest Wald score was the number of events from the 75 torture items, indicating that endorsing more torture items was a strong predictor in the model for single-query self-reported torture. Each additional torture item increased the chance of reporting having been tortured on the single query by 6% (95% C.I. 3% to 9%). Next, female gender independently increased the likelihood of reporting torture on the single query by 35% (95% CI 9% to 67%). Third, each decade of age increased the rate of single query reporting by 3% (95% CI 1% to 6%). Non-torture trauma events also independently predicted single query torture reporting, showing an 8% increase with each trauma event (95% CI 1% to 17%). Marital status and posttraumatic stress disorder symptoms (on the PCL) did not affect the rate of single-query torture self-report.

The same regression analysis as that described above was conducted using the 829 people endorsing one of more of the 75 torture items as “checklist positive”. This analysis replicated this finding, with the number of torture items endorsed on the checklist most strongly predicting a single-query self-

report to torture, and PCL symptoms not predicting the single-query response. The primary author will provide this material to interested readers upon request.

## Discussion

### *Single-query self-report of torture*

These data confirmed the work of Steel et al.<sup>8</sup> in demonstrating that a single-query self-report of torture can show strong association with other findings. In their review, Steel et al. showed a strong association of PTSD symptoms and torture self-report. We confirmed this association in our bivariate analysis of torture self-report versus the PTSD Checklist (PCL) score.

Our data did not support the association of PTSD symptoms and a single-query self-report of torture once the number of torture events was entered into a logistic regression analysis. Steel et al. did not have the same or similar variable available in their panoply of review data. The elimination of the PTSD symptoms from a self-report of torture suggests that symptoms alone do not drive the self-report of torture. Rather, a larger number of torture items are apt to lead to a self-report of torture. This is an important clarification, for it indicates that numerous torture experiences and not simply clinical distress predicts single-query self-reported torture.

That said, the number of torture items was not the only predictor of torture self-report. In this study, older age was a predictor. This was probably due to older people being at great risk, both because of their role and status in society, but also because many study participants were still children at the time of greatest civic chaos in East Africa.

Female gender also increased the self-report of torture, as compared with men. Likewise, non-torture trauma increased the self-reporting of torture. These latter findings are elaborated in the discussion below.

*Reliability of torture prevalence rates*

The prevalence rate of single-query self-reported torture in this sample was 36%. This rate would be reduced to 27% if the cases in group c (i.e., no endorsements of torture items on the checklist) were removed. However, the rate would be increased to 39% if the cases in group b (with one or more endorsements on the torture checklist) were added to the 27%. Thus, this analysis of single-query self-reports of torture does not minimize the extent of torture in societies exposed to widespread war or other violence. On the contrary, the findings indicate that torture is probably under-reported in surveys using a single-query self-report of torture. If other violence that is “probable torture” is considered, the under-reporting of torture is perhaps even greater. In this study, addition of “probable torture” cases to “pathognomonic torture” cases would double the number of people exposed to torture in this East African sample (and greatly increase the number of cases in group b).

This study includes only two African ethnic groups coming from two countries and differing violent contexts. Thus, our apparent under-count of torture may not extrapolate to other countries, ethnic groups, and contexts. However, collection of additional data besides the single-query on torture is apt to provide a truer and more useful assessment of violent experience and posttraumatic maladies.

Posttraumatic symptoms did not bear a relationship to a self-report of torture, once other factors were considered in the logistic regression. Thus, personal misery did not produce the self-perception of having been tortured in this sample. Basoglu et al<sup>20</sup> also noted that posttraumatic symptoms alone, in the absence of torture events, did not lead to a self-report of torture.

*Reluctance to identify a person as tortured*

We did not anticipate that such a large number of people (12% of the study participants) would deny having been tortured on a single query while reporting experiences that we considered pathognomonic for torture on a checklist. Factors associated with this reticence were fewer torture items endorsed on the checklist and fewer non-torture trauma events. Group b participants were also younger on average and more apt to be single than those reporting torture. Rationales for minimizing torture reports, drawn from anecdotal cases in our clinical work, may include:

- For those steeped in a traumatic environment (with cascades of omnipresent torture, abuse, deprivation, armed conflict, trauma during flight), one’s own trauma may be discounted in comparison with greater trauma observed in others.
- Some study participants knew that they were undertaking rebellious acts against a ruling class (especially the Ethiopian males), expected to be punished if detained, and may have prepared for harm – factors associated with improved mental health following torture.<sup>20</sup> They may have seen the torture and other trauma as punishment rather than as unwarranted victimization.
- Some refugees may view severely tortured people as stigmatized, with brain injury, posttraumatic symptoms, and disabilities leaving them unfit for employment, marriage, and leadership. Thus, denial of torture may be salutogenic, as the traumatized person engages in self-directed recovery, and/or an attempt to avoid stigmatization, especially among younger, single men.



*Group b versus group c*

Group c experienced a high level of trauma, albeit without any pathognomonic torture items endorsed on the checklist. They reported a mean of 8.2 “probable torture” events and a mean of 7.9 “non-torture trauma” events (associated with flight, armed conflict, crime, and general chaos) – a total of 16.1 traumatic events. This compared with a mean 16.9 torture and non-torture events reported by group b – a comparable level of trauma events. In addition, group c reported a mean of 5.5 more PTSD symptoms on the PCL, as compared to group b. In summary, group c comprised a highly traumatized group, comparable to group b, and with more current posttraumatic stress compared to group b.

The demographic characteristics of group c distinguished them from the other groups. Compared to group a, they were 4.5 years older on average and included many separated-divorced-widowed people. Group c included significantly more women than groups a and d. These demographic factors may have contributed to their perception of having been tortured. Older age, female gender, and loss of a marital partner may also have fostered a perception of having been tortured when traumatic events of diverse kinds were experienced.

Non-torture traumatic experiences are common in circumstances that spawn crescendos of violence, such as war, revolution, genocide, tyranny, anarchy, and similar chaotic situations.<sup>8,11,21</sup> A perception of having been tortured may have extended to any trauma in the personal lexicon of group c. Or they may have viewed the inability or unwillingness of reigning authorities to protect them from trauma as evidence of official sanctioned violence, essentially a form of torture. More information is needed about this group, their experiences, and their points of view.

*Pathognomonic versus probable torture events*

The “pathognomonic torture” category was developed to solve a validity problem in our earlier analysis. This convention met the goal of our earlier analysis, which was to identify a group of people who had undergone torture. However, this process led to the discovery that many study participants denied having been tortured in a single-query self-report, but nonetheless reported pathognomonic torture events.

Despite its utility for the validity study, the concept of “pathognomonic torture” has certain limitations. For example, both pathognomonic and probable torture can produce the same damaging effects. Using “cutting off oxygen to the brain” as common modality, two events were judged to be pathognomonic of torture (immersion in water, immersion in dirty fluid), and two events were judged not to be pathognomonic of torture (strangling, suffocation). One might argue that the suffocation or strangling might have occurred in another context, such as resisting arrest or fighting with police, jailers, or other prisoners. However, the ORs for these four methods fell into the same range, suggesting that participants who experienced strangling or suffocation were as apt to say they had been tortured as those who had suffered immersion.

The concept of “trauma pathognomonic of torture” needs further examination. Despite its limited utility in this study, some experiences appear highly apt to be labeled torture. For example, water boarding to cut off oxygen might rank along with immersion in fluids, strangulation, and suffocation from the perspective of the victim. “Blindfolding”, which may seem fairly benign outside of a context involving trauma-by-authorities, appears to be highly associated with reports of torture (OR in Table 2 is 2.87). Using the more highly selective pathognomonic items



as an inclusion criterion did not increase the number of significant items associated with single query responses. Possible explanations for the lack of enhanced selectivity might include the following:

1. the smaller number of cases in Table 2 (n = 405) as compared to Table 1 (n = 829);
2. the infrequent occurrence of some pathognomonic items; and
3. lack of empirical support for our notion of pathognomonic torture items.

#### *Caveats*

In the absence of collateral data regarding torture, we relied upon the participants themselves for data in this study. Participants were reporting their experiences in confidence, using a checklist that had been developed by interviews with their peers. We did not inquire for each harmful event whether participants considered the event to be torture or more general abuse; future work might employ such an approach.

The findings apply to two East African nations in which widespread torture and trauma occurred in the 1990s; they may not apply to other peoples, times, or places.

Terms such as torture and the items on the Posttraumatic Checklist were translated from English into Somali and Oromo, and then back translated into English for semantic equivalence. Although we used standard procedures to establish semantic equivalence, small differences in psychometric equivalence can survive these methods.<sup>22</sup>

In devising the torture single-query self-report and trauma checklists, we adhered to the participants' subjective description of the events (e.g., immersion in water, strangling) even though certain physiological consequences (lack of oxygen to the brain) might

have comprised a final common pathway in the traumatic experience.

#### **Conclusions**

Our torture checklist originated from people who had undergone harm at the hands of authorities in Somalia and Ethiopia. As shown in Tables 1 and 2, the ORs provided a measure of the likelihood that any one event, if experienced, would be associated with a self-report of torture. A survey of those ORs suggests the following:

- Some traumatic experiences were more strongly associated with a self-report of torture than others (e.g., burned with boiling water, immersion in water, strangling, suffocation, electrical shock).
- No one traumatic event, whether in the pathognomonic torture category or the probable torture category, was inevitably associated with a self-report of torture.
- Number of torture events and number of non-torture trauma events influenced the self-report of torture, whereas current posttraumatic symptoms did not independently predict a self-report of torture.
- Older age and female gender were associated with an increase of self-reported single-query torture.

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#### References

1. Westermeyer J, Wahmanholm K. Assessing the victimized psychiatric patient: special issues regarding violence, combat, terror, and refuge-seeking. *Hosp Community Psychiatry* 1989;3:245-9.
2. Jaranson JM. Government-sanctioned torture: status of the rehabilitation movement. *Transcultural Psychiatric Research Review* 1995;32:253-86.
3. Danieli Y, Rodley NS, Weisaeth L, eds. *International responses to traumatic stress*. Amityville, NY: Baywood Publishing Company, Inc., 1996.
4. Allodi F, Stiasny S. Women as torture victims. *Can J Psychiatry* 1990;35:144-8.
5. Astrom C, Lunde I, Ortnern J et al. Sleep disturbances in torture survivors. *Acta Neurol Scand* 1989;79:150-4.
6. Hougen HP. Physical and psychological sequelae to torture. A controlled study of exiled asylum applicants. *Forensic Sci Int* 1988;39:5-11.
7. Moreno A, Grodin MA. The not-so-silent marks of torture. *JAMA* 2000;284:538.
8. Steel Z, Chey T, Silove D et al. Association of torture and other potentially traumatic events with mental health outcomes among populations exposed to mass conflict and displacement. *JAMA* 2009;302:537-49.
9. Jaranson JM, Butcher JN, Halcon L et al. Somali and Oromo refugees: correlates of torture and trauma. *Am J Public Health* 2004;94:591-8.
10. Hollifield M, Warner TD, Lian N et al. Measuring health status in refugees: a critical review. *JAMA* 2002;288:611-20.
11. Hollifield M, Jenkins J, Lian N et al. Assessing war trauma in refugees: properties of the Comprehensive Trauma Inventory-104. *J Trauma Stress* 2006;19:527-40.
12. Spring M, Westermeyer J, Halcon L et al. Sampling in difficult-to-access refugee and immigrant communities. *J Nerv Ment Dis* 2003;191:813-9.
13. Youngerman R, Minuchin-Itzigsohn S, Barasch M. Manifestations of emotional distress among Ethiopian immigrants in Israel: patient and clinician perspectives. *Transcult Psychiatry* 1999;36:45-63.
14. Gettleman J. As Somali crises swells, experts see a void in aid. *The New York Times*. 20 Nov, 2007;Sect. 1.
15. Brislin R. Back-translation for cross-cultural research. *J Cross Cult Psychol* 1970;1:185-216.
16. Cheung FM. Cross-cultural considerations for the translation and adaptation of the Chinese MMPI in Hong Kong. In: Butcher JN, Spielberger CD, eds. *Advances in personality assessment*. Vol 4. Hillsdale, N.J.: Lawrence Erlbaum Press, 1985.
17. Butcher JN. Translation and adaptation of the MMPI-2 for international use. In: Butcher JN, ed. *International adaptations of the MMPI-2*. Minneapolis, MN: University of Minnesota Press, 1996:26-45.
18. Weathers FW, Litz BT, Herman DS et al, ed. *The PTSD Checklist (PCL): reliability, validity, and diagnostic utility*. Annual Meeting of the International Society for Traumatic Stress Studies. Chicago, 1993.
19. Caetano R, Clark CL. Trends in alcohol consumption patterns among Whites, Blacks, and Hispanics: 1984 and 1995. *J Stud Alcohol* 1998;59:659-68.
20. Basoglu M, Livanou M, Crnobaric C et al. Psychiatric and cognitive effects of war in former Yugoslavia: Association of readiness for trauma and posttraumatic stress reactions. *JAMA* 2005;294:580-90.
21. Westermeyer J. Severity of trauma among refugee psychiatric patients. *Psychiatric Times*. April 2000;Sect. 68.
22. Westermeyer J, Janca A. Language, culture, and psychopathology. *Transcult Psychiatry* 1997;34:291-311.