Posttraumatic Residues of Captivity: A Follow-Up of Israeli Ex–Prisoners of War

Yuval Neria, Ph.D.; Zahava Solomon, Ph.D.; Karni Ginzburg, M.A.; Rachel Dekel, Ph.D.; Dan Enoch, M.D.; and Abraham Ohry, M.D.

Background: This article examines the long-term impact of wartime captivity.

Method: One hundred sixty-four prisoners of war (POWs) and 189 matched combatants of the 1973 Yom Kippur War filled out a series of questionnaires that assessed posttraumatic stress disorder (PTSD), general psychiatric symptomatology, and social functioning according to DSM-III-R criteria.

Results: Almost 2 decades after the war, ex-POWs exhibited higher rates and greater intensity of posttraumatic stress reactions, more general psychiatric symptomatology, and more severe problems in functioning at home, at work, and in the military than did the control group (Israeli veterans who were not POWs). They were also more likely to obtain official disability recognition and to seek psychological help. Their recovery was slower and professional help less effective. In addition, the veterans with PTSD in both groups had high rates of comorbid general psychiatric symptomatology.

Conclusion: These findings point to the depth, range, and persistence of the stress residuals of wartime captivity.

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Received May 23, 1995; accepted June 17, 1999. *From Tel Aviv University, Bob Shapell School of Social Work, Tel Aviv (Drs. Neria, Solomon, and Dekel and Ms. Ginzburg); the Tirat Hacarmel Mental Health Center, Haifa (Dr. Enoch); and the Rehabilitation Department of the Sheba Medical Center, Tel Aviv (Dr. Ohry), Israel.*

Reprint requests to: Prof. Zahava Solomon, Bob Shapell School of Social Work, Tel Aviv University, Tel Aviv 69978, Israel (e-mail: solomon@post.tau.ac.il).

War captivity is an ongoing traumatic experience that exposes the prisoner to a variety of repeated stressors.[1] These include systematic and persistent violence, filth, harsh climatic conditions, isolation, and deprivations of basic needs such as food, drink, and sleep, as well as isolation, lack of social support, infringement of autonomy, lack of privacy, humiliation, and physical torture. All of these may damage the captive's personal identity and may lead to the collapse of his defense mechanisms and willpower.[2]

Studies that examined the long-term effects of war captivity found wide and substantial emotional,[2–4] somatic,[5,6] cognitive,[7] and functional[8] disorders, which continue to disturb ex–prisoners of war (POWs) and seriously impair their quality of life for many years.

Among the emotional disorders, high rates of posttraumatic stress disorder (PTSD) ranging from 30%[9] to 88%[10] were observed. In addition, ex-POWs were found to exhibit a wide range of psychiatric symptomatology; anxiety and depression have been found to be the most common long-term disorders[11–16] as well as the most commonly noted comorbidities of PTSD among POWs.[17] The literature also points to elevated schizophrenic,[5] hysterical,[16] and paranoid[11] tendencies, as well as higher rates of hypochondria[16] and alcoholism[5,15] among former POWs. Moreover, many POWs experience severe long-term impairment of interpersonal[3,16] and sexual functioning,[11] and their divorce rates are high.[8,18]

These findings of multiple problems are consistent with the varied clinical picture of survivors of other traumatic events.[1,19–24] Together, they cast doubt on the ability of the narrow formulation of PTSD to grasp the wide-ranging emotional, interpersonal, and functional damage caused by traumatic exposure, including captivity.

Therefore, to comprehend the full damage of war captivity, the broad spectrum of emotional and functional aftereffects should be evaluated. This study examines the long-term adjustment of Israeli ex-POWs of the 1973 Yom Kippur War 18 years later. Using a wide range of measures, it assesses not only PTSD but also its accompanying psychiatric disorders and the work, military, and interpersonal functioning of the ex-POWs compared with those of matched combatants in the same war who were not captured.

METHOD

Subjects

This study examines 2 groups of Israeli veterans (N = 353; 164 ex-POWs, 189 controls) of the 1973 Yom Kippur War.

Prisoners of war. According to Israel's Ministry of Defense records, 240 POWs were taken from the Israeli Army land forces during the Yom Kippur War (October 1973).

Three of the men have since died, and 20 were living abroad at the time of the study. Of the remaining 217 ex-POWs residing in Israel at the time of the study, 164 participated in the study, constituting a 76% response rate. The group consisted of 136 POWs who were captured by the Egyptians and 28 that were imprisoned by the Syrians. Despite the difference in duration of captivity—8 months for those imprisoned in Syria and 6 weeks for those imprisoned in Egypt—POWs of both groups were subjected to intense isolation and systematic torture, consisting of the infliction of severe physical pain and great mental pressure. Mental pressure was applied by a range of techniques, including frightening the prisoner with numerous threats (of death, mutilation, or killing family and friends); exhausting him through inadequate food, extremes of heat or cold, prolonged standing, or deprivation of exercise; and prolonged interrogations. POWs were humiliated verbally and by interfering with their personal hygiene and natural bodily functions.

Analysis revealed no differences in sociodemographic and military variables nor in any of the outcome measures between POWs held in Egypt and those in Syria. Thus, we grouped all POWs together.

Controls. A control group of 280 combat veterans of the same war, matched to the POWs in personal and military background, was sampled from Israel Defense Forces (IDF) computerized data banks. Of these, 20 were abroad at the time of the study, and 5 had died. Of the remaining 255 men, 189 participated in the study, constituting a 74% response rate.

Age, ethnic background, marital status, and educational background were similar in the 2 groups. Mean age of the subjects during the war was 22 years. Father's country of origin was Israel in 7% of cases, Asia or Africa in 36%, and Europe or America in 57%. Twenty-six percent of the subjects were married during the war, and 70% had completed high school. The groups were found to differ, however, in military rank during the war: 80% of POWs versus 65% of controls were privates, 6% of POWs versus 10% of controls were corporals or sergeants, 13% of POWs versus 23% of controls were 1st or 2nd lieutenants, and 1% of POWs versus 2% of controls were lieutenant colonels or majors ($\chi^2 = 10.12$, $p < .05$). These differences were controlled for in the statistical analyses (presented in the Results section).

Measures

PTSD Inventory. The PTSD Inventory[25] is a self-report scale based on DSM-III-R criteria.[26] This scale evaluates whether or not a person has PTSD and measures both the intensity (number of symptoms) and the differential symptom profile of the syndrome. The questionnaire consists of 17 statements corresponding to the 17 PTSD symptoms listed in the DSM-III-R.[26] For each statement, subjects are asked to indicate whether or not they manifested the symptom in 2 given periods: "during the last month" and "in the past."

Internal consistency among the 17 items for both periods was high (Cronbach $\alpha = 0.89$ for past and 0.86 for present), and the scale was found to have a high convergent validity when compared with diagnoses based on structured clinical interviews.[25]

Symptom Checklist-90, Revised (SCL-90R). The SCL-90R is a self-report measure that evaluates the presence of 90 psychiatric symptoms during the 2 weeks preceding the assessment.[27] It examines the overall severity of psychiatric symptomatology as well as the severity of the 10 symptom categories: somatization, obsessive-compulsive problems, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism, and additional symptoms (symptoms that do not fit into any of the categories).

General distress is rated on 3 global indices: (1) the Global Severity Index (GSI), which reflects the clinical severity of all symptoms; (2) the Positive Symptom Total (PST), which is the total number of positively endorsed symptoms; and (3) the Positive Symptom Distress Index (PSDI), which is the mean intensity for positively endorsed symptoms only.

The SCL-90R has been found to be highly correlated with similar scales in the Minnesota Multiphasic Personality Inventory (MMPI).[28] The scale construct validity has been investigated, and all 9 symptom dimensions display moderate-to-high theoretical/empirical agreement and stability across variation in subject sample.[29]

Problems in functioning. Our self-report questionnaire, designed for the current study, consists of 3 items that assessed the following malfunctioning: (1) difficulties in communicating with others, (2) difficulties in readjusting to work, and (3) difficulties in readjusting to the family. Subjects were asked to indicate on a 4-point scale, ranging from "not at all" to "a great deal," the extent to which they had experienced these difficulties in the period since the war. Each subject received a total functioning score, which was the mean of the 3 items, and 3 subscores.

In addition, subjects were questioned about their military functioning (performance in reserve duty and military promotion), impairment in academic studies, participation in psychotherapy, and disability recognition by the Ministry of Defense, Rehabilitation Branch.

Combat exposure. Combat exposure was assessed to distinguish the impact of captivity from that of combat, which is also recognized as traumatogenic. Combat exposure was measured using a specially designed self-report scale consisting of 23 items tapping war experiences (e.g., "I was exposed to sights or smells of dead people"; "I found myself in a situation where it was not clear who was the commander"). Subjects were asked to indicate on a 4-point scale, ranging from "not at all" to "a great deal," the extent to which they had experienced these events dur-

Table 1. Long-Term Adjustment Scores by Group[a]

Measure	POWs		Controls		Statistic			
	Mean	SD	Mean	SD	F	df	p	p[b]
Present PTSD symptoms	3.50	4.52	1.83	2.86	17.52	1,347	< .001	< .001
Past PTSD symptoms	6.65	4.68	4.89	3.81	15.03	1,347	< .001	= .06
SCL-90R scales								
GSI	0.58	0.63	0.38	0.45	10.94	1,336	< .001	= .07
PST	30.58	23.03	21.83	18.94	4.64	1,336	< .001	< .005
PSDI	1.52	0.70	1.45	0.61	0.34	1,336	NS	NS
Somatization	0.54	0.74	0.30	0.42	12.02	1,287	< .001	< .05
Obsessiveness	0.89	0.87	0.51	0.55	20.21	1,287	< .001	< .001
Interpersonal sensitivity	0.60	0.67	0.41	0.49	7.66	1,287	< .001	NS
Depression	0.54	0.72	0.31	0.47	10.22	1,287	< .01	< .05
Anxiety	0.50	0.67	0.35	0.45	12.86	1,287	< .001	= .07
Hostility	0.45	0.73	0.32	0.45	10.61	1,287	< .001	< .05
Phobic anxiety	0.25	0.47	0.12	0.57	8.50	1,287	< .01	< .05
Paranoid ideation	0.60	0.74	0.30	0.57	6.90	1,287	< .01	NS
Psychoticism	0.43	0.61	0.23	0.41	10.60	1,287	< .001	= .06
Additional symptoms	0.64	0.73	0.78	0.52	12.43	1,287	< .001	= .09
Communication problems	1.67	0.93	1.41	0.77	7.26	1,318	< .01	NS
Adjustment to work	1.63	1.05	1.41	0.81	4.29	1,318	< .05	NS
Adjustment to family	1.41	0.82	1.22	0.45	6.27	1,318	< .05	NS

[a]Abbreviations: GSI = Global Severity Index, NS = not significant, POW = prisoner of war, PSDI = Positive Symptom Distress Index, PST = Positive Symptom Total, PTSD = posttraumatic stress disorder, SCL-90R = Symptom Checklist-90, Revised.
[b]After controlling for combat exposure.

ing the war. Each subject received a total combat exposure score, which was the mean of the 24 items.

Procedure

Eighteen years after their participation in the war, POWs and control subjects were asked to come for assessment to the Rehabilitation Department of the Sheba Medical Center (Tel Hashomer, Israel). The request was accompanied by a personal letter explaining that, owing to the IDF's concern for the well-being of its soldiers, the recipient was being asked to take part in a study assessing soldiers' medical status. Subjects were seated in groups of 30 to 50 and filled out a battery of questionnaires. This took approximately 2 hours and included a short break. Prior to filling out the questionnaires, subjects signed a consent form and were assured that the data would remain confidential and would in no way affect their status in military or civilian life.

RESULTS

The ex-POWs were compared with the non-POW combat controls in PTSD, general psychiatric symptomatology, and functioning, as well as in the disability recognition they received and their self-reported need for and receipt of psychotherapy.

Posttraumatic Stress Disorder

Prevalence. The first issue examined was the prevalence of PTSD in the 2 groups at 2 points of time, right after the war (when the POWs were released) and at the time of the study, 18 years later. Chi-square tests showed that diagnosed PTSD was more prevalent among the ex-POWs than in the control group both in the past (23.2% vs. 14.1%, respectively; $\chi^2 = 4.42$, df = 1, $p < .05$) and in the present (12.8% vs. 3.3%, respectively; $\chi^2 = 11.04$, df = 1, $p < .001$).

Severity. To examine the severity of subjects' distress, we calculated the mean number of symptoms they reported in the past and in the present. As can be seen in Table 1, both in the past and in the present, the ex-POWs reported more symptoms than the control group.

Recovery from PTSD. To examine the impact of time and group on the prevalence of PTSD symptoms, we conducted a multivariate analysis of variance (MANOVA). This analysis showed the impact of both group ($F = 2.07$, df = 17,330; $p < .01$) and time ($F = 59.97$, df = 17,330; $p < .001$), as well as a significant interaction ($F = 2.25$, df = 17,330; $p < .001$). PTSD symptoms were more prevalent among the ex-POWs than among the controls. Moreover, although the number of subjects reporting the symptoms tended to decrease with time in both groups, the rate of recovery was higher among the controls.

To examine whether recovery was related to the receipt of psychotherapy, we conducted chi-square tests. Results indicated significant associations in both groups ($\chi^2 = 7.52$, df = 1, $p < .01$ for ex-POWs; $\chi^2 = 29.23$, df = 1, $p < .001$ for controls). Among POWs, 24% of those who received psychotherapy recovered from PTSD compared with 8% of those who did not. Among controls, the association was even stronger: 42% of those who received psychotherapy recovered, in contrast to 6% of those who did not.

To take into account the possible effect of combat exposure on the differences between the groups, we conducted MANOVAs of a number of PTSD symptoms at the 2 points of time with the combat exposure score as covari-

Table 2. Percentage of Subjects Exceeding Norms for Outpatients, by Group

SCL-90R Scale	POWs	Controls	Statistic F[a]	p
PST	20.7	8.7	10.21	< .01
GSI	13.4	6.0	5.59	< .05
PSDI	17.1	8.7	5.51	< .05
Somatization	17.1	8.7	5.51	< .05
Obsessiveness	20.1	7.1	12.89	< .001
Interpersonal sensitivity	13.4	8.2	2.53	NS
Depression	7.9	3.3	3.66	NS
Anxiety	12.8	4.9	6.89	< .01
Hostility	17.1	6.5	9.49	< .01
Phobic anxiety	11.0	4.9	4.49	< .05
Paranoid ideation	17.7	12.0	2.27	NS
Psychoticism	12.2	7.1	2.66	NS

[a]df = 1,336.

ant. The difference between the groups remained significant, pointing to the significant role of war captivity (see Table 1).

Psychiatric Symptomatology

First, we calculated 3 global SCL-90R scores, which provide a general picture of the subjects' psychiatric state. A MANOVA of each of the 3 scores showed a significant difference between the groups ($F = 5.14$, $df = 13,334$; $p < .01$). One-way analyses of variance conducted on each of the variables separately are presented in Table 1.

As can be seen, significant differences between the groups were found in 2 of the 3 measures, the GSI and the PST. That is, the general psychiatric state of the ex-POWs was worse than that of the control group, and they exhibited more psychiatric symptoms.

To obtain a more detailed picture of the content of the subjects' psychopathologic profile, 10 scores for 9 types of disturbances and 1 subscale of the additional symptoms were calculated. The MANOVA that was carried out for each of the subscales revealed a significant difference between the groups ($F = 2.48$, $df = 10,278$; $p < .01$). One-way analyses of variance showed significant group differences in all 10 subscales. As can be seen in Table 1, the ex-POWs reported greater distress in each of the categories examined.

To control for any possible effect of combat exposure on the differences between the groups, we conducted MANOVAs for each of the global and subscale scores with the combat exposure score as covariant. Most of the difference between the groups remained significant, pointing to the specific impact of war captivity on psychiatric symptomatology.

Since the SCL-90R has norms for various groups, it enables us to evaluate the intensity of the subjects' distress by comparing their scores with normative scores. We thus calculated the percentage of subjects in the 2 groups whose scores were higher than the norms for ambulatory psychiatric patients. As can be seen in Table 2, a higher percentage of ex-POWs than controls scored significantly higher than the norm for ambulatory patients in the 3 global measures, indicating that the general psychiatric condition of POWs was worse than that of the controls. The same pattern was found in half the specific subscales: somatization, obsessiveness, anxiety, hostility, and phobic anxiety.

Functioning

Twenty-two percent of the ex-POWs reported that their academic studies were impaired as a result of their war experiences, compared with 13% of the controls ($\chi^2 = 7.25$, $df = 2$, $p < .05$).

The military functioning of the 2 groups differed in several ways. Thirty-nine percent of the ex-POWs reported serving fewer days of reserve duty than they had prior to the Yom Kippur War, compared with 7% of the controls ($\chi^2 = 57.63$, $df = 2$, $p < .001$). Only 52% of the ex-POWs advanced in military rank, compared with 73% of the controls ($\chi^2 = 15.22$, $df = 1$, $p < .001$). Moreover, 79% of the ex-POWs chose to return to the army in noncombat roles, compared with 29% of the control group ($\chi^2 = 66.00$, $df = 2$, $p < .001$). Similarly, only about 14% of the ex-POWs participated in combat activity after the Yom Kippur War, as opposed to 49% of the control group ($\chi^2 = 45.89$, $df = 1$, $p < .001$).

The subjects' social functioning was gauged by their difficulties in communication, adjustment at work, and adjustment to their families after the war. A MANOVA yielded significant group differences ($F = 4.45$, $df = 4,315$; $p < .01$). One-way analyses of variance indicated that in all 3 areas, the ex-POWs report more difficulties than the control group (see Table 1).

To take into account the possible effect of combat exposure on the differences between the groups, we conducted MANOVAs for each of the functioning measures with combat exposure score as covariant. Most of the difference between the groups did not remain significant.

Disability Recognition

Significant differences were also found in the rates of disability recognition by the Ministry of Defense ($\chi^2 = 29.68$, $df = 1$, $p < .001$). A higher percentage of ex-POWs (20.4%) than controls (2.2%) reported that they received Ministry of Defense recognition as having a war-related emotional disability.*

Psychotherapy

In response to the question of whether they felt the need for psychotherapy, 29% of the ex-POWs answered

*These rates are similar to the formal rates reported by the Ministry of Defense, according to whom 20.7% of the ex-POWs and 1.6% of the controls were recognized at the time of the study as having a war-related emotional disability.

in the affirmative, compared with 15% of the controls ($\chi^2 = 10.11$, df = 1, $p < .01$). Similarly, a higher percentage of ex-POWs (31.7%) than controls (6.9%) reported receiving psychotherapy ($\chi^2 = 33.63$, df = 1, $p < .001$).

PTSD Comorbidities

To examine the comorbidities of PTSD in the 2 groups, we calculated the percentage of veterans with and without PTSD in each group whose scores on the SCL-90R exceeded those of the norms for ambulatory psychiatric patients. The percentages were calculated separately for all 9 of the SCL-90R symptom categories.

The veterans with PTSD in both the ex-POW and control groups exhibited considerably more psychiatric symptomatology than those without PTSD. That is, the comorbidity in the veterans with PTSD in both groups was very high. As can be seen in Table 3, each of the 9 SCL-90R symptom categories was endorsed by between 50% and 100% of the veterans in both groups.

Interestingly, the picture of the comorbidity in the ex-POW and control groups was fairly similar. In both groups, the most commonly reported symptoms (by 65% or more of the veterans) were obsessiveness, somatization, anxiety, and paranoid ideation. The 2 groups differed, however, in interpersonal sensitivity: whereas 100% of PTSD subjects in the control group endorsed these symptoms, only 47.6% of POWs with PTSD did so.

Table 3. Subjects With PTSD and Comorbidity With SCL-90R Subscales (percentage exceeding norms for outpatients)

SCL-90R Scale	POWs	Controls	χ^2
Somatization	71.4	66.7	0.05
Obsessiveness	85.7	83.3	0.02
Interpersonal sensitivity	47.6	100	5.31*
Depression	47.6	66.7	0.68
Anxiety	71.4	83.3	0.34
Hostility	66.7	33.3	2.15
Phobic anxiety	57.1	50	0.10
Paranoid ideation	66.7	83.3	0.62
Psychoticism	52.4	66.7	0.39

*$p < .05$.

DISCUSSION

Almost 2 decades after the Yom Kippur War, ex-POWs reported significantly greater distress than non-POW combat controls. The residuals were not only deep; as hypothesized, they also extended over a wide range of measures, from trauma-specific emotional disorders through general psychiatric disorders and problems in functioning. In addition to experiencing significantly higher rates of PTSD and slower recovery, the ex-POWs had more severe general psychiatric symptomatology manifested by somatization, obsessiveness, anxiety, hostility, and phobic anxiety; more impairment in functioning (in family, work, and the military); higher rates of recognized war-related psychiatric disability; and a greater sense of need for and utilization of psychological assistance.

These findings are consistent with former studies showing long-term traumatic sequelae ranging from specific trauma-related reactions to general psychiatric disorders among prisoners of war.[2,7,9,10,30,31] They are also consistent with both clinical and empirical findings on war-induced psychopathology, which similarly show elevated levels of other disorders, including depression, anxiety, and substance abuse in addition to PTSD.[20,21,32]

The findings raise the question of why war captivity is more pathogenic than combat. The explanation may lie in the interpersonal nature of war captivity compared with combat. Combat confronts the soldier with the threat to life and limb, and there is ample evidence of the psychological damage that this threat can cause,[23,33] but in many cases it is an impersonal event. The trauma of captivity, however, occurs within the relationship between the captive and his captors. The torture, humiliation, and concerted efforts to "break" the individual that are part and parcel of captivity[34–36] are intentionally inflicted on the victim by persons he gets to know and may relate to on a daily basis. According to Herman,[1] this kind of ongoing directed abuse creates an extreme sense of helplessness, seriously damages persons' self-structure, and makes it hard for them to recover their capacity to feel, trust, and relate to others.

In addition, whereas both combat and captivity are recognized pathogenic stressors, there are clear differences between the 2, which may mediate their detrimental effects. While in both situations men's lives are repeatedly threatened, the social context and support are different. Combatants are equipped with weapons and protective devices and fight alongside commanders and comrades. The powerful stress-mediating effect of unit cohesion and social support derived from comrades and commanders is well documented as a sustaining force for combatants.[37,38] On the other hand, captivity renders the POW totally isolated and deprived of any human compassion and support. The severity of captivity may thus be compounded by isolation and loneliness, leaving a more profound and enduring traumatic imprint.

Additional explanations may be offered for the exacerbated problems in functioning among the ex-POWs. These may be related to the higher exposure to stress of these veterans. Another explanation is the more severe PTSD and psychiatric symptomatology found in this group. As has been amply noted, the symptoms of PTSD may put considerable obstacles in the way of ordinary activities and interactions.[23,39] The same can be said of most psychiatric symptomatology. Another possible explanation is that the POWs internalized the behaviors that were useful in captivity, such as suspiciousness and hyperalertness, and generalized them to their lives afterward, where these behaviors were often counterproduc-

tive. Eberly and colleagues[40] suggest that traumatized POWs can be seen as survivors who continue to exhibit patterns of affect, behaviors, and cognitions that were adaptive during the traumatic phase.

According to DSM-IV,[41] PTSD is the only psychiatric disorder that is clearly the direct result of traumatic exposure. Yet our findings clearly indicate that PTSD is not the only psychiatric disorder that follows traumatic stress. By and large, these results are consistent with studies of various populations conducted in other parts of the world and following different traumatic events, including the Lockerbie plane crash,[42] the Buffalo Creek dam collapse,[43] civil violence in Northern Ireland,[44] the civilian war in Cambodia,[45] the general population in the United States,[46,47] and others, that revealed that PTSD is often accompanied by other comorbidities.

To explain the high occurrence of comorbidity of PTSD, 4 alternative explanations may be suggested: (1) preexisting disorders constitute a vulnerability to PTSD, (2) the other disorders are subsequent complications of PTSD, (3) the disorders occur because of shared risk factors, and (4) comorbidity is a result of a measurement artifact (i.e., symptoms of PTSD artificially increase the chances of other disorders). Close inspection of the most prevalent comorbidities in this study (i.e., obsessiveness, somatization, anxiety, paranoid ideation) reveals that symptom overlap is minimal. If comorbid disorders constitute a predisposing or a vulnerability factor for PTSD, we would expect an elevated level of other disorders prior to combat. This possibility is unsubstantiated for Israeli combatants who were all screened and found healthy before the war. Both PTSD and other comorbidities emerge after war, but based on our design, we cannot unequivocally determine whether comorbidities are complications of PTSD or share the same risk factors.

Interestingly, the veterans with PTSD in the ex-POW group did not have significantly higher rates of comorbidity than those in the control group. The ex-POWs suffered from higher rates of general psychiatric symptomatology than the controls, which suggests that even the veterans without PTSD among the ex-POWs suffer more distress than their peers without PTSD in the control group. This finding may raise questions about the exclusivity of PTSD as the only direct result of traumatic exposure, such as whether PTSD should in fact be regarded as the most common conspicuous and even as the only psychiatric disorder stemming from traumatic events. Alternative views would hold that traumatic sequelae is multifaceted and not limited to PTSD symptomatology.[23] Furthermore, the complex, long-term course of both PTSD and its comorbidities should be carefully assessed, since one possible speculation based on current findings is that general symptomatology may persist even when PTSD is in remission. From a somewhat different perspective, it has been suggested that the existing diagnostic criteria for PTSD may be appropriate for a circumscribed traumatic event. Yet after prolonged repeated trauma, the clinical picture may be more diffuse, comprehensive, and complex.[48,49]

Contrary to our expectations that the ex-POW PTSD veterans would experience greater comorbidity than the PTSD casualties in the control group, no such difference was found. The expectation was based on the assumption that the degree of comorbidity would be related to the severity of the posttraumatic reactions. The finding may mean that while comorbidity of PTSD is prevalent among trauma casualties, it is not related to severity of PTSD. Alternatively, this finding may be an artifact of the small number of veterans with PTSD in the 2 groups. Further research employing longitudinal designs and careful assessments of various traumatic events of various populations is required to cast light on the complex interplay between PTSD and its comorbidity.

The significantly lower level of interpersonal sensitivity among the ex-POW PTSD veterans is also surprising. It may have to do with the more personal nature of their trauma, which may have caused greater erosion of trust in them than the more impersonal trauma of the non-POW combat veteran casualties. Furthermore, Israeli POWs, much like POWs in other countries, were met with suspicion and even accusation of succumbing to the enemy and being traitors on homecoming. The interrogation of our subjects in a military installation in Israel upon their release was described by some of them as worse than what they were subjected to by the enemy. It may be that the ex-POW PTSD veterans who suffered personal torture and humiliation at the hands of their captors have so little faith and so few expectations of other human beings that they can no longer feel hurt by them.

Lastly, the findings show that about twice as many ex-POWs as combat controls felt that they needed psychotherapy, and about 5 times as many actually sought and obtained it. The rates of psychotherapy seeking and readiness to admit the need for help were high relative to norms in Israel,[23] even in the control group. They are testimony to the intensity of the distress from which men in both groups suffer, as well as the increasing acceptance in Israeli society in recent years of seeking help following traumatic military experiences. The higher rates of both reported need and actual help seeking among the ex-POWs may be explained by their greater trauma-related and general distress and their lower recovery rates. Even those who received treatment were less prone to recover than the combat controls who were treated. The complex and prolonged stressors to which they were exposed may have contributed to their intensive, pervasive, and widespread distress.[1] Previous studies of Israeli veterans clearly demonstrated the link between level of distress and help seeking. The most distressed veterans were more inclined to apply for help.[23] The difference may also be explained by the public awareness developed in the wake of

the research that POWs are a particularly high-risk group for severe and long-term disorders. Filtering down to the society at large, this awareness would reduce the stigma of help seeking by ex-POWs.

The fact that the rate of recovery among treated POWs was lower than among treated controls is yet further evidence not only of the difficulties in treating trauma but also of the fact that the more massive the trauma, the more damage it causes, and the more difficult it is to ameliorate with professional intervention.

Herman[1] has challenged the use of some prevalent therapeutic techniques used with combat veterans, including desensitization and flooding. These methods were proven effective in reducing the intrusive and hyperarousal symptoms of PTSD. Yet the effects of such interventions are specified and have no carry-over effect to other traumatic cues. What is called for, she claims, is a more general multifaceted approach that restores safety, sense of power and control, self-worth, and trust. Rehabilitation of capacities for work and love and a social reconnectedness are believed to be achieved by a more comprehensive approach, combining biological, social, and psychological techniques. Developing such therapeutic methods and standardizing and evaluating their efficacy among populations surviving extensive trauma, such as POWs, constitute a major challenge to both clinicians and researchers.

REFERENCES

1. Herman JH. Trauma and Recovery. New York, NY: Basic Books; 1992
2. Ursano RJ, Rundell JR, Fragala MR, et al. The prisoner of war. In: Ursano RJ, Norwood AE, eds. Emotional Aftermath of the Persian Gulf War. Washington, DC: American Psychiatric Association; 1996:443–476
3. Solomon Z, Neria Y, Ohry A, et al. PTSD among Israeli former prisoners of war and soldiers with combat stress reaction: a longitudinal study. Am J Psychiatry 1994;151:554–559
4. Neria Y, Solomon Z, Dekel R. Eighteen years follow-up of Israeli prisoners of war and combat veterans. J Nerv Ment Dis 1998;186:174–182
5. Beebe GW. Follow up studies of World War II and Korean War prisoners: morbidity, disability, and maladjustment. Am J Epidemiol 1975;101: 400–422
6. Ohry A, Solomon Z, Neria Y, et al. The aftermath of captivity: an 18-year follow-up of Israeli ex POWs. Behav Med 1994;20:27–33
7. Sutker PB, Winstead DK, Galina ZH, et al. Cognitive deficits and psychopathology among former prisoners of war and combat veterans of the Korean Conflict. Am J Psychiatry 1991;148:67–72
8. Van Vranken E. Current status and social adjustment of US Army returned prisoners of war. Presented at the 5th Annual Joint Medical Meeting Concerning POW/MIA Matters; 1978; San Antonio, Tex
9. Speed N, Engdahl B, Schwartz J, et al. Posttraumatic stress disorder as a consequence of the POW experience. J Nerv Ment Dis 1989;177:147–153
10. Sutker PB, Allain AN. Assessment of PTSD and other mental disorders in World War II and Korean Conflict POW survivors and combat veterans. Psychiatr Assess 1996;8:18–25
11. Ursano RJ. The Viet Nam prisoner of war: precaptivity personality and the development of psychiatric illness. Am J Psychiatry 1981;138:315–318
12. Dent OF, Tennant CC, Goulson KJ. Precursors of depression in World War II veterans 40 years after the war. J Nerv Ment Dis 1987;175:486–490
13. Tennant C, Goulston K, Dent O. Clinical psychiatric illness in prisoners of war of the Japanese: forty years after release. Psychol Med 1986;16: 833–839
14. Page WF, Engdahl BE, Eberly RE. Prevalence and correlates of depressive symptoms among former prisoners of war. J Nerv Ment Dis 1991;179: 670–677
15. Sutker PB, Winstead DK, Galina ZH, et al. Assessment of long-term psychosocial sequelae among POW survivors of the Korean Conflict. J Pers Assess 1990;54:170–180
16. Sutker PB, Allain AN. MMPI profiles of veterans of WWII and Korea: comparisons of former POWs and combat veterans. Psychol Rep 1991;68: 279–284
17. Engdahl BE, Speed N, Eberly RE, et al. Comorbidity of psychiatric disorders and personality profiles of American World War II prisoners of war. J Nerv Ment Dis 1991;179:181–187
18. Nice DS, McDonald B, McMillian T. The families of US Navy prisoners of war from Vietnam five years after reunion. J Marriage Fam 1981;43: 431–437
19. Smith DW, Frueh CB. Compensation seeking, comorbidity, and apparent exaggeration of PTSD symptoms among Vietnam combat veterans. Psychol Assess 1996;8:3–6
20. Bleich A, Koslowski M, Dolev A, et al. PTSD and depression: an analysis of comorbidity. Br J Psychiatry 1997;170:479–482
21. Skodol AE, Schwartz S, Dohrenwend BP, et al. PTSD symptoms and comorbid mental disorders in Israeli war veterans. Br J Psychiatry 1996;169: 717–725
22. McFarlane AC, Papay P. Multiple diagnoses in posttraumatic stress disorder in the victims of a natural disaster. J Nerv Ment Dis 1992;180:498–504
23. Solomon Z. Combat stress reaction: the enduring toll of war. New York, NY: Plenum Press; 1993
24. Kroll J, Habenicht M, Mackenzie M, et al. Depression and posttraumatic stress disorder in Southeast Asian refugees. Am J Psychiatry 1989;146: 1592–1597
25. Solomon Z, Benbenishty R, Neria Y, et al. Assessment of PTSD: validation of the revised PTSD Inventory. Isr J Psychiatry Relat Sci 1993;30: 110–115
26. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised. Washington, DC: American Psychiatric Association; 1987
27. Derogatis LR. Symptom Checklist-90 (Revised): Administration, Scoring, and Procedures Manual, I. Baltimore, Md: Clinical Psychometrics Research; 1977
28. Derogatis LR, Rickles K, Rock A. SCL-90 and the MMPI: a step in the validity of a new self-report scale. Br J Psychiatry 1976;128:280–289
29. Derogatis LR, Clearly P. A confirmation of the dimensional structure of the SCL-90: a study in construct validity. J Clin Psychol 1977;33:981–989
30. Kluznik JC, Speed N, Van Valkenburg C, et al. Forty-year follow-up of United States prisoners of war. Am J Psychiatry 1986;143:1443–1446
31. Goldstein G, van Kammen W, Shelly C, et al. Survivors of imprisonment in the pacific theater during World War II. Am J Psychiatry 1987;144: 1210–1213
32. Boudenwyns PA, Woods MG, Hyer L, et al. Chronic combat related PTSD and concurrent substance abuse: implications for treatment of this frequent "dual diagnosis." J Trauma Stress 1991;4:549–560
33. Kardiner A, Spiegel H. War Stress and Neurotic Illness. New York, NY: Harper; 1947
34. Molica RF, Wyshak G, Lavelle J. The psychosocial impact of war trauma and torture on Southeast Asia refugees. Am J Psychiatry 1987;144: 1567–1572
35. Molica RF, Wyshak G, Lavelle J, et al. Assessing symptom change in Southeast Asian refugee survivors of mass violence and torture. Am J Psychiatry 1990;147:83–88
36. Turner SW, Gorst-Unsworth C. Psychological sequela of torture. In: Wilson JP, Raphael B, eds. International Handbook of Trauma Stress. New York, NY: Plenum Press; 1993:667–684
37. Solomon S, Miculincer M, Hobfoll S. Objective versus subjective measurement of stress and social support: the case of combat-related reactions. J Consult Clin Psychol 1987;55:577–583
38. Steiner M, Neumann M. Traumatic neurosis and social support in the Yom Kippur War returnees. Mil Med 1978;143:866–868
39. Horowitz M. Stress response syndromes: a review of posttraumatic stress and adjustments. In: Wilson JP, Raphael B, eds. International Handbook of Traumatic Stress. New York, NY: Plenum Press; 1993:49–60
40. Eberly RE, Harkness AR, Engdahl BE. An adaptational view of trauma response as illustrated by the prisoner of war experience. J Trauma Stress 1991;4:363–380
41. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition. Washington, DC: American Psychiatric

Association; 1994
42. Brooks N, McKinlay W. Mental health consequences of the Lockerbie disaster. J Trauma Stress 1992;5:527–543
43. Green BL, Lindy JD, Grace MC, et al. Chronic posttraumatic stress disorder and diagnostic comorbidity in a disaster sample. J Nerv Ment Dis 1992;180:760–766
44. Loughrey GC, Bell P, Kee M, et al. Posttraumatic stress disorder and civil violence in Northern Ireland. Br J Psychiatry 1988;153:554–560
45. Kinzie JO, Boehnleen JJ. Posttraumatic psychosis among Cambodian refugees. J Trauma Stress 1989;2:185–198
46. Helzer JE, Robins LN, McEvoy L. Post-traumatic stress disorder in the general population. N Engl J Med 1987;317:1630–1634
47. Breslau N, Davis GC, Anderski P, et al. Traumatic events and posttraumatic stress disorder in an urban population of young adults. Arch Gen Psychiatry 1991;48:216–222
48. Niederland WG. The problem of the survivor. In: Krysral H, ed. Massive Psychic Trauma. New York, NY: International University Press; 1968: 8–23
49. Terr LC. Psychic trauma in children: observations following the Chowchilla school-bus kidnapping. Am J Psychiatry 1981;138:14–19