The Psychological Toll of the Intifada: Symptoms of Distress and Coping in Israeli Soldiers

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Abstract

Background: Detrimental effects of military service among the civilian Palestinian population have been reported in soldiers.

Objectives: To examine the frequency and type of stressors encountered by soldiers in close contact with the CPP and its relationship with post-traumatic symptomatology. We also investigated coping methods and the preferred types of professional help.

Methods: Using random digit dialing methodology we conducted a phone survey of veteran soldiers, men (n=167) and women (n=59) in close contact with the CPP; the comparison group comprised male veteran soldiers with no CPP exposure (n=74). We used focus groups to develop context-related measures to assess exposure to violent incidents, coping modes and preferred modes of professional assistance. We included measures of traumatic exposure, post-traumatic stress symptoms and post-traumatic stress disorder.

Results: Soldiers who served among the CPP had greater exposure to traumatic events and to civilian-related violent incidents (more than half as victims, and a third as perpetrators); and 17.4% perceived their behavior as degrading civilians. Primary traumatic exposure, perceived health problems and avoidance coping were found to be risk factors for PTS and PTSD. Involvement in incidents that may have degraded Palestinian civilians predicted PTS.

Conclusions: Friction with the CPP in itself does not constitute a risk factor for psychopathology among soldiers. However, contact with this population entails more exposure to traumatic events, which may cause PTS and PTSD. Furthermore, a relative minority of soldiers may be involved in situations that may degrade civilians, which is a risk factor for PTS. To avoid violent and sometimes degrading behaviors, appropriate psycho-educational and behavioral preparation should be provided.

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Since the Six Day War in 1967 Israeli military service often includes administration of the Palestinian civilian population in the West Bank and Gaza. Anecdotal evidence that the 'occupation' of the Palestinian population has been socially, politically and morally detrimental to Israeli society has emerged [1-3]. Although the negative psychological impact of the conflict on the Palestinian civilian population has been investigated, no empirical study has assessed the psychological impact of the occupation on Israelis, perhaps for concern that findings may be taken out of context, politically. A societal 'conspiracy of silence' concerning violent encounters with Palestinian civilians is also possible [1,2]. The present study sought to examine the psychological impact of the 'occupation' on soldiers and to study post-traumatic symptomatology.

Military service at border crossings includes physical and administrative scrutiny of hostile and fearful civilians, who have waited in line for hours to come to work in Israel, receive medical treatment in Israeli hospitals, or cross the border for various other reasons. One such reason might be to perpetrate terrorist actions, thus soldiers face difficult dilemmas every time a Palestinian Red Crescent ambulance speeds toward them [4]. Military personnel often have to enforce unpleasant decisions. Military raids and incursions are an integral part of these duties, and may include entry into houses suspected of harboring terrorists, door-to-door fighting, roadblocks, and facing angry and belligerent stone-throwing and/or gun-shooting mobs.

Although there have been no empirical or controlled studies on how the occupation of Palestinian civilian populations impacts Israeli soldiers, qualitative studies performed in Israel have shown that military service in the occupied territories has led to significant traumatization [2,3,5] and to a phenomenon called moral trauma [4]. This is a profound and unsettling feeling that often involves intrusive re-experiencing, guilt, shame, doubt, self-hate and regret observed in soldiers ambivalent towards the moral righteousness of their actions. Following extreme violence towards civilians, these feelings may be accompanied by dissociation and by carryover effects of the violence

* The first and second authors contributed equally to this study.
CPP = civilian Palestinian population
PTS = post-traumatic stress symptoms
PTSD = post-traumatic stress disorder

into civilian life (e.g., road accidents, domestic violence) [5,6]. Research findings in the last decade suggest that peacekeeping activities in civilian populations may significantly challenge the mental health of soldiers [7]. Studies of homecoming Vietnam veterans [8-10] have empirically shown that participation in or witnessing violence against civilians and captured soldiers has significantly predicted post-traumatic symptomatology beyond traumatic situations encountered on the battlefield. Considering the lack of empirical and controlled studies on the impact of military service among Palestinian civilians, we aimed to examine the frequency and type of stressors encountered by soldiers who were and were not in close contact with the civilian Palestinian population. We also examined the relation of these stressors with post-traumatic symptoms, post-traumatic stress disorder, coping modes, and the professional help that Israel Defense Force veterans tend to prefer for coping with military service-related distress.

Subjects and Methods

The first stage involved the development of study tools with focus groups, and the second stage involved the administration of those questionnaires together with standardized questionnaires in a phone survey during the first two weeks of February 2006.

Focus groups

Two focus groups constructed an evaluation instrument to assess: a) coping of soldiers who were in close contact with Palestinian civilians, b) exposure to violent incidents, and c) preferred modes of professional help. The focus groups comprised 20 male and female veterans discharged after 3 years of military service; their mean age was 25 years (range 22–35, SD = 3.5). Veterans were asked about exposure to violent incidents involving Palestinian civilians, how they coped with the accompanying distress or memories, risk and resiliency factors for distress, and what type of help/support and services they would like to receive.

Sample

As lists of veteran soldiers are obviously not available from the Israel Defense Force, we used an embedded random digit dialing methodology to locate veteran soldiers released from military service within the previous 10 years, including about 55% men and 20% women exposed to civilian Palestinians and 25% men not exposed. With this methodology if the person reached by phone did not meet inclusion criteria the polling institute could continue another line of interview not related to this study. Overall, 402 homes that fulfilled our criteria were reached, and of those, 300 responded (74.6% agreement rate). Our final sample included 167 male CPP veterans (55.7%), 59 female CPP veterans (19.7%) and 74 non-CPP veteran men (24.6%), yielding a maximum sampling error of 5.66%.

Procedure

The study was approved by the Helsinki Committee of the Lev Hasharon Mental Health Center. Responders gave verbal informed consent before the interview took place. Interviews were carried out by trained interviewers by phone using a structured questionnaire. The questionnaire included:

- *Demographic factors*: Gender, age, years of education, religiosity, place of birth, and income (ranging from 1 = much lower than average, to 5 = much higher than average).
- *Objective exposure to traumatic events*: Participants were asked whether they were wounded during military service (yes/no), whether they knew someone who was wounded during service (yes/no) and whether they had been in a life-threatening incident during service (yes/no). We then created a Guttman scale variable of no, secondary (knew someone close who was wounded or killed) and primary exposure to traumatic events (wounded or in a life-threatening situation).
- *Exposure to violent incidents*: Based on the focus group transcripts we listed three violent situations involving civilians to which soldiers could have potentially been exposed: a) being the victim of physical or verbal violence by civilians (stone throwing, pushing, fighting); b) having acted violently against civilians (hitting, pushing, arresting); and c) having witnessed or having themselves degraded Palestinians. Degradation was defined as violating the dignity of a person.
- *Traumatic stress-related symptoms, PTSD, traumatic stress resiliency and perceived health status*: These three measures were assessed using a modified phone-adapted version of the Stanford Acute Stress Reaction Questionnaire [SASRQ; 11]. The SASRQ has acceptable statistical properties [11] and has been used in trauma-related phone and web surveys [12,13] to assess acute stress disorder, TSR symptoms and PTSD, and its development and reliability are described elsewhere [12,13]. DSM IV criteria for PTSD were used in this study (including the presence of functional problems or significant distress) [12,13]. Traumatic stress-related symptoms reflected the sum of symptoms reported by the participants. Participants were considered traumatic stress resilient if they endorsed no SASRQ items. We added one item about perceived health status ("I am troubled by physical pain and ailments"), rated from 1 (very true) to 5 (not true at all).
- *Coping*: Based on the content analysis of the transcripts of the focus groups 14 coping items were retained; each was answered on a scale from 1 (not at all used) to 5 (very much used). Factor analysis using a Varimax rotation found a three-factor structure defined *a posteriori* as "Seeking information and help," "Social activities" and "Drug or alcohol use." The first, "seeking information and help" (alpha Crohnbach = 0.83), consisted of six items: getting professional help; looking for answers in art, religion or spirituality; going to self-help groups; looking for information on how to cope; looking for information on similar experiences; and going abroad. The second, "Social activities" (alpha Crohnbach = 0.83), comprised five items: went to work or studies, talked to friends about my experiences, talked to family about my

SASRQ = Stanford Acute Stress Reaction Questionnaire
TSR = traumatic stress related

experiences, went out to have a good time, remained close to my family. The third, "Drug or alcohol use," consisted of two items (alpha Crohnbach = 0.47). The item "I tried to ignore the emotions and the memories" did not enter meaningfully into any factor and was considered a separate factor.

- *Help seeking*: Veterans were asked whether they sought professional help (yes/no) related to their service.
- *Modes of professional help preferences*: Based on the content analysis of the focus groups we compiled a list of seven potential professional services for veterans to be rated on a scale from 1 (not at all required) to 5 (very much required): participation in discussion and support groups, lectures about experiences and coping with events that occurred during military service, a telephone hotline, internet forums, support for veterans' families, and personal support meetings with volunteers.

Statistical analysis

t-tests, chi-square, and ANOVA were used for the primary analysis of data. We then performed regressions for the assessment of the relation of the studied variables to PTSD and the severity of PTSD symptoms.

Results

Table 1 presents demographic data and exposure to traumatic events in the three study groups. CPP-exposed men had significantly higher scores in all categories concerning exposure to either objective trauma or involvement in violent incidents.

Clinical variables and exposure

Post-traumatic symptomatology and health problems in the three study groups are given in Table 1. Of all CPP-exposed men 11.4% revealed symptom criteria for PTSD. Although not significant, there were twice as many PTSD cases among CPP-exposed men. The men's groups showed more functional problems ($\chi^2 = 4.3$, $P = 0.04$) and avoidance in the CPP-exposed group ($\chi^2 = 4.8$, $P = 0.03$).

Coping modes, help seeking and CPP exposure status

Remaining close to family and talking to friends are the most common coping methods (Table 2). Chi-square comparisons of men only showed that CPP-exposed men engage more in work and studies ($t = 2.2$, $P = 0.03$); talk more often with friends ($t = 2.0$, $P = 0.05$); remain closer to family ($t = 2.3$, $P = 0.02$); seek answers in religion, spirituality or art ($t = 3.2$, $P = 0.001$); and look for information on how to cope with the situation ($t = 2.4$, $P = 0.02$) compared to non-CPP-exposed men. Analysis showed more use of the "seeking information and help" factor in CPP-exposed men ($t = 2.9$, $P = 0.001$). Among CPP-exposed men, those who witnessed humiliation or had humiliated civilians were more prone to cope by "looking for information on similar experiences" ($t = 3.2$, $P = 0.002$) and using drugs or alcohol ($t = 2.9$, $P = 0.005$). Professional psychological help was sought by 15 veterans: 13 from the Ministry of Defense and 2 from independent psychologists.

Table 1. Demographics, exposure to traumatic events, post-traumatic symptomatology and health problems among male and female veterans exposed to and men not exposed to the CPP

	Men non-CPP (n=74) N (%)	Men CPP (n=167) N (%)	Women CPP (n=59) N (%)
Demographics			
Age, mean (SD)*	24.7 (3.2)	25.7 (2.7)	25.8 (2.8)
Immigration status	4 (9.5)	26 (15.6)	12 (16.2)
Religious – traditional (vs. atheist)	20 (33.9)	75 (44.9)	21 (32.4)
No work	14 (23.7)	21 (28.4)	38 (22.8)
≥12 yrs education	48 (64.4)	49 (66.2)	109 (55.3)
Income, mean (SD) (range 1–5)	2.1 (1.0)	2.1 (1.0)	2.4 (1.0)
Exposure to traumatic and life-endangering situations			
Personally wounded**	6 (8.1)	32 (19.2)	3 (5.1)
Knew someone wounded***	29 (39.2)	129 (77.2)	35 (59.3)
Reported to be in danger of death***	2 (2.7)	64 (38.3)	12 (20.3)
Level of exposure# * **			
No exposure	42 (46.8)	29 (17.4)	21 (35.6)
Primary exposure (wounded or in danger of death)	8 (10.8)	77 (46.1)	13 (22.0)
Secondary exposure (knew someone wounded)	24 (32.4)	61 (36.5)	25 (42.4)
Involvement in violent incidents with civilians			
Victim of violence by civilians***	3 (4.1)	88 (52.7)	15 (25.4)
Acted with violence against civilians***	1 (1.4)	57 (34.1)	10 (16.9)
Witness to degradation or degraded Palestinians***	2 (2.7)	29 (17.4)	6 (10.2)
Post-traumatic symptoms			
Symptom criteria for PTSD	4 (5.4)	19 (11.4)	3 (5.1)
Resiliency (absence of symptoms)	20 (27.0)	33 (19.8)	16 (23.2)
Hyper-arousal criteria	19 (25.7)	53 (31.7)	16 (27.1)
Avoidance criteria**	5 (6.8)	29 (17.4)	3 (5.1)
Re-experiencing criteria*	21 (28.4)	68 (40.7)	14 (23.7)
Dissociation (at least 1 item)**	22 (29.7)	63 (37.7)	9 (15.3)
Functional problems (at least 1 item)*	10 (13.5)	40 (24.0)	6 (10.2)
Post-traumatic stress symptoms			
Mean (SD) (range 1–24)**	3.9 (5.2)	5.2 (5.7)	3.0 (3.7)
Health problems*	24 (24.5)	14 (12.7)	10 (10.9)

*$P < 0.05$, **$P < 0.01$, ***$P < 0.001$. Df for 3x3 = 4, for 3x2 = 2, and for 2x2 analysis = 1.
Guttman scale: veterans with both primary and secondary exposure were considered as primary exposed.

Modes of professional help preferences and CPP exposure status

The preferred modes of professional help were counseling and participation in discussion groups (Table 2). CPP-exposed men compared to non-CPP-men showed no difference on professional help preferences. In addition, women were more interested in all possible services (participation in discussion groups: $\chi^2 = 18.7$, $P = 0.001$; lectures $\chi^2 = 16.3$, $P = 0.003$; telephone hotlines $\chi^2 = 34.7$, $P = 0.001$; psychological treatment/counseling $\chi^2 = 30.3$, $P = 0.001$; internet forums $\chi^2 = 22.1$, $P = 0.001$; help for families $\chi^2 = 34.1$, $P = 0.001$; and help from a volunteer $\chi^2 = 16.2$, $P = 0.003$).

Table 2. Coping items, coping factors, help seeking and professional help preferences used by male and female veterans exposed to and men not exposed to the CPP

	Men non-CPP (n=74) Mean (SD)	Men CPP (n=167) Mean (SD)	Women CPP (n=59) Mean (SD)
Coping items (range 1–5)			
I went out to have a good time (recreational activities)	2.7 (1.7)	2.9 (1.5)	3.3 (1.7)
Remained close to my family*	2.3 (1.4)	2.7 (1.5)	2.9 (1.6)
Talked to friends about my experiences*	2.1 (1.5)	2.6 (1.6)	2.4 (1.7)
Busied myself with work or studies*	1.9 (1.3)	2.4 (1.6)	2.0 (1.5)
Talked to family about my experiences	2.1 (1.4)	2.3 (1.5)	2.2 (1.6)
Went abroad for a long period	1.4 (1.0)	1.9 (1.4)	1.7 (1.4)
Tried to ignore the emotions and the memories	1.6 (1.2)	1.7 (1.2)	1.3 (1.0)
I searched for answer in religion, spirituality or art**	1.2 (0.8)	1.8 (1.3)	1.5 (1.1)
I went to get professional help	1.4 (1.1)	1.7 (1.3)	1.5 (1.2)
I looked for information on similar experiences	1.3 (0.9)	1.6 (1.0)	1.4 (1.0)
I looked for information on how to cope*	1.3 (0.9)	1.6 (1.2)	1.5 (1.1)
I used alcohol	1.6 (1.1)	1.5 (.9)	1.2 (.8)
I took part in self-help groups or workshops	1.2 (0.7)	1.4 (1.0)	1.2 (.8)
I used drugs	1.1 (0.6)	1.2 (.7)	1.0 (.0)
Coping factors			
Seeking information or/and help ** (range 6–30)	7.9 (3.9)	9.9 (5.2)	8.5 (5.1)
Social activities (range 5–25)	11.1 (6.0)	12.9 (5.9)	12.7 (6.3)
Drugs and alcohol use (range 2–10)	2.7 (1.5)	2.7 (1.3)	2.2 (0.6)
Tried to ignore the situation (range 1–5)	1.6 (1.2)	1.7 (1.2)	1.3 (1.0)
Concrete request for help N (%)	3 (4.1)	11 (6.6)	1 (1.7)
Modes of preferred professional help (range 1–5)			
Counseling	3.7 (1.2)	3.5 (1.5)	4.6 (0.8)
Participation in discussion groups	3.7 (1.3)	3.4 (4.3)	4.3 (1.2)
Help and counseling for family (spouses & parents)	3.4 (1.4)	3.3 (1.4)	4.4 (0.8)
Telephone hotline	3.5 (1.4)	3.2 (1.5)	4.4 (1.1)
Personal meetings with a volunteer	3.3 (1.4)	3.2 (1.5)	4.1 (1.3)
Lectures on coping with military-related distress	3.1 (1.4)	3.1 (1.4)	3.9 (1.3)
Information and forums on the internet	3.2 (1.3)	2.9 (1.5)	3.2 (1.4)

Analysis of the comparison between CPP men and non-CPP men are presented here.
*$P < 0.05$, **$P < 0.001$.

Objective exposure and clinical variables

Table 3 presents the clinical features and perceived health status as related to level of exposure. Individuals with primary exposure had more PTSD, more PTS, more difficulties functioning and less TS resiliency than persons with secondary or no exposure to trauma.

Objective measures of traumatic exposure, coping modes and professional help preferences

Veterans with primary exposure more frequently try to ignore events ($F = 5.8$, $P = 0.003$) and use more drugs ($F = 5.0$, $P = 0.007$). Veterans with either primary or secondary exposure tended to look more for information on coping methods ($F = 3.1$, $P = 0.05$) and those with primary exposure used more drugs or alcohol ($F = 4.3$, $P = 0.01$).

Veterans with primary exposure requested *less* group support ($F = 7.3$, $P = 0.001$), *less* personal support by a volunteer ($F = 4.1$, $P = 0.02$), and had a tendency to want to participate *less* in forums or search for information on the internet ($F = 2.7$, $P = 0.07$).

PTSD symptomatology and coping modes

Veterans with symptom criteria for PTSD used more "seeking information and help" ($t|298| = 2.91$, $P = 0.006$), "social activities" ($t|298| = 3.01$, $P = 0.003$) and "ignoring the situation" ($t|298| = 5.2$, $P = 0.001$). Pearson correlations showed more use of all coping factors for veterans with higher scores on the PTSD severity measure (seeking information and help $r = 0.3$; social activities $r = 0.3$; drugs or alcohol abuse $r = 0.2$; ignoring emotions and memories $r = 0.5$; all $P < 0.001$).

Involvement in violent incidents and PTSD symptomatology

Table 3 presents comparisons of exposure to violence variables with PTSD symptomatology. Veterans who witnessed or had humiliated Palestinians more often reported symptom criteria for PTSD and had higher PTSD severity scores. Those who witnessed or who had degraded Palestinians used avoidance, re-experiencing and dissociation more frequently and had more functional problems.

Predictors of PTSD and PTSD severity score

Based on the previous analyses we performed one logistic regression and one linear regression to assess the relative contribution of each of the following items to PTSD symptom criteria and PTSD symptoms: a) CPP exposure status; b) primary and secondary exposure; c) exposure to violence (having had violent encounters with armed Palestinians, having been a witness or having degraded Palestinians); d) health problems; and e) coping modes. Results are presented in Table 4.

The results show that primary exposure, health problems and avoidance coping are significant predictors of symptom criteria for PTSD. Having witnessed or degraded Palestinians is an additional variable predictive of PTSD symptom severity.

Discussion

Veterans exposed to CPP report elevated levels of exposure to traumatic life-threatening situations. They were also involved in other acts of violence as perpetrators and as victims. This has also been described in qualitative studies and interviews of soldiers who served during the Intifada [2,3,5]. More than half the CPP-exposed men considered themselves victims of violence perpetrated by the CPP and more than a third reported that they acted violently against civilians; 17.4% of CPP-exposed vet-

Table 3. Post-traumatic symptomatology of primary, secondary and not exposed veterans and veterans exposed to violent incidents with civilians

		PTSD (n=26)	Hyper-arousal criteria (n=88)	Avoidance criteria (n=37)	Re-experiencing criteria (n=103)	Dissociation criteria (n=94)	PTS Mean (SD)	Functional problems (n=56)	TS resiliency (n=69)
Exposure									
Primary (n=98) N (%)		18 (18.4)***	38 (38.8)**	24 (24.5)**	48 (49)*	45 (45.9)*	4.4 (5.2)*	32 (32.7)*	9 (9.2)***
Secondary (n=110) N (%)		6 (5.5)	31 (28.2)	8 (7.3)	36 (32.7)	30 (27.3)	2.3 (3.8)	15 (13.6)	31 (28.2)
None (n=92) N (%)		2 (2.2)	19 (20.7)	5 (13.5)	19 (20.7)	19 (20.7)	1.4 (2.4)	9 (16.1)	29 (31.5)
Victim of violence by civilian Palestinians (n=106) N (%)	Not exposed	13 (6.7)	53 (27.3)	17 (8.8)	61 (31.4)	54 (27.8)	4.0 (5.2)	30 (15.5)	49 (25.3)
	Exposed	13 (12.3)	35 (33.0)	20 (18.9)*	42 (39.6)	40 (37.7)	5.2 (5.3)	26 (24.5)	20 (18.9)
Violent towards civil Palestinians (n=68) N (%)	Not exposed	18 (7.8)	67 (28.9)	23 (9.9)	68 (29.3)	65 (28.0)	4.2 (5.4)	39 (16.8)	57 (24.6)
	Exposed	8 (1.8)	21 (30.9)	14 (20.6)**	35 (51.5)***	29 (42.6)**	5.2 (4.8)	17 (25.0)	12 (17.6)
Witness to or degraded civil Palestinians (n=37) N (%)	Not exposed	18 (6.8)	73 (27.8)	25 (9.5)	80 (30.4)	76 (28.9)	4.1 (5.0)	44 (16.7)	63 (24.0)
	Exposed	8 (21.6)***	15 (40.5)	12(32.4)***	23 (62.2)***	18 (48.6)*	6.9 (6.4)***	12 (32.4)**	6 (16.2)

PTSD = symptom criteria for PTSD, PTS = post-traumatic stress symptoms, TS resiliency = absence of symptoms.
Analysis for primary, secondary and no exposure comparison are chi-square 3x2, except for PTS where ANOVA analysis was used. Analysis for exposure to violent incidents are chi-square 2x2, except for PTS where *t*-tests were used. *$P<0.05$, **$P<0.01$, ***$P<0.001$.

Table 4. Summary of hierarchical regression analysis (TSR symptoms) and logistic regression analysis for the predictors of symptom criteria for PTSD and post-traumatic stress symptoms

	Symptom criteria for PTSD OR (95%CI)	Post-traumatic stress symptoms Standard B (SE)
Primary exposure	0.3 (0.1–0.8)	0.13 (0.5)
Secondary exposure	NS	NS
CPP exposed	NS	NS
Violence towards/from civilians	NA	NS
Performed or witnessed degradation of civilian Palestinians	NS	0.10 (0.7)
Health problems	1.7 (1.2–2.4)	0.37 (0.2)
Tried to ignore the situation	1.5 (1.1–2.1)	0.22 (0.4)
Seeking information or/and help	NS	NS
Social activities	NS	NS
Drugs and alcohol use	NS	NS

Total R^2 for variables predicting post-traumatic stress symptoms = 44.8.
Respondents meeting symptom criteria for PTSD = 26/300 (8.3%)
$P<0.05$ for all variables
NS = not significant.

eran men were involved in and/or witnessed incidents that they considered degrading for Palestinian civilians. In accordance with studies linking life-threatening exposure to traumatization [14], we found that personal exposure to life-threatening traumatic incidents predicts higher levels of post-traumatic symptomatology as witnessed on the PTSD severity scale and health problem items. We also found that involvement in violent behavior, either as perpetrator or victim, does not necessarily lead to psychopathology. However, perceiving such actions as degrading predicted the severity of post-traumatic symptomatology.

Although no empirical study has assessed the frequency of degrading behaviors by Israeli soldiers towards civilians, qualitative studies [3-5,15] and a recent survey conducted by the Israeli Army found that 25% of close to one thousand combatants posted in the occupied territories reported that they had been involved in abusive behaviors towards civilians*. This finding reinforces Zimbardo's study [16] that found that under certain circumstances one may commit acts he or she would not ordinarily commit. Unlike laboratory studies, military settings not only allow but inherently promote the use of violent force.

From the focus groups we learned that friction with the civilian Palestine population may evoke fear and anxiety especially in ambiguous situations where soldiers do not know whether they are confronting civilians or terrorists in disguise. Orders and guidelines for appropriate and safe interaction with the population cannot cover the various scenarios encountered by soldiers. This may cause helplessness, anger and frustration [5] which may be directed at the military authorities responsible for their deployment amid the civilian population, but also and mainly towards Palestinian civilians which is sometimes expressed through violent or abusive behavior. Anger and violence towards civilians were also reported in relation to a desire for revenge, especially when fellow soldiers were wounded or killed during service.

When military duty is performed under such circumstances, across time a pattern of aggressive and abusive behaviors may become "normative" [17]. In those cases a soldier may feel peer pressure to participate in, or not to report abusive behavior, for fear of social isolation and even alienation. There are a number of explanations for the relationship between abusive behaviors both perpetrated and witnessed, and PTS. Performance of or witnessing violent or degrading behavior may be extremely unsettling and provoke an unprecedented identity crisis. Abusive

* Reported in the daily newspaper *Yediot Aharonot* on 16 December 2007; page 4.

behavior, "out of character" and contrary to one's moral values may be cause for shame. Soldiers who repeatedly lost control may seriously fear the future implications of what they fear they have become.

An emotional factor that may be related to the pathogenic effect of abusive behavior on PTSD is guilt feelings [10,18], which may impede recovery in both victims and perpetrators of atrocities [18]. Another consequence may be dissociative responses [9]. Possibly when soldiers are faced with an important conflict of values, dissociation from the emotions evoked by the situation may act as a protective mechanism [8,9]. Alternatively, our results may suggest that it is not the degradation that engendered traumatic effects, but that traumatized individuals may be more prone to abusive behavior.

The human response to extremely stressful events is related to cognitive appraisal and the coping mechanisms employed [19]. Regarding coping modes, we found that soldiers preferred to talk to friends, preferably those who shared similar experiences. They also reported talking to their parents, though they may have been reluctant to worry their parents with their stories. Distraction by various social activities was also prevalent among the soldiers. Those with elevated levels of post-traumatic symptomatology reported using more coping methods. These findings are in line with studies suggesting that increased PTS is associated with increased coping activity aimed at containing intense distress [20]. As in other studies [21] we found that soldiers with elevated levels of PTS were more avoidant and used more drugs and alcohol. This may also be related to a social phenomenon in Israel where many young veterans seek spiritual and drug-related experiences in the Far East. On the other hand, it is also possible that those with a primary tendency to cope by denial and drug use may be more at risk for developing traumatic symptomatology [22].

Finally, those who witnessed or degraded civilians also sought more information on similar experiences and used more drugs or alcohol to cope with the experiences of their service compared to those who had not. This pattern may further express an attempt to make sense or normalize or contain distressful experiences.

Preferred modes of professional help

Preferred modes of professional help in coping with traumatic experiences of military service are counseling and participation in discussion groups. This highlights the importance of having such services readily available for this population. On the other hand, and in line with studies showing that those veterans most in need of professional help avoid both seeking and accepting help [23], we found that veterans with more exposure as well as those with more PTS requested *less* professional help. This might be due to the stigma of treatment [24], the fear of being looked upon as mentally weak or disabled in the wake of the appearance of post-traumatic-related symptomatology, or the fear of raising trauma-related emotions and giving up current coping methods.

Women were more willing to receive professional help. Confrontations with mothers and children may have been especially difficult for women. It is also well documented that women are generally more open to receive help [25]. Indeed a large-scale study of treatment barriers for veterans of the Iraq and Afghanistan wars revealed that the greatest obstacle was the fear that one would be considered weak [23]. For many soldiers it may also be extremely difficult to disclose their shame and guilt, especially for those who witnessed degradation and either participated or remained passive.

Implications

Since the studies in social psychology in the 1960s and 1970s it has become clear that most individuals are capable of committing immoral acts, given appropriate circumstances. This study shows that the "occupation" of a civilian population may facilitate such behaviors and that when these individuals return to civilian settings some seem to be plagued by what they have done or seen. Although preventing potentially pathogenic encounters is beyond the scope of mental health intervention, facilitating soldiers' preparation and adjustment to the situation, promoting more human considerations, condemning abuse and degradation is possible. In line with Zimbardo [16] who recently analyzed the behavior of American soldiers in the Abu Ghraib jail in Iraq, we can point out certain risk factors that should be considered when striving to prevent degrading behaviors. There should be no ambiguity regarding what actions are allowed (and legal) in life-threatening situations. Clear behavioral guidelines are critical but at the same time cannot provide solutions to every possible scenario. In such situations soldiers may find themselves flooded with strong emotions like anxiety, anger, helplessness and frustration, which may be acted out as violent, sometimes degrading behavior against civilians. Psycho-education and preparation of soldiers for such duties is mandatory. This should include clear and detailed behavioral guidelines, raising awareness regarding the risk of non-necessary violent and sometimes humiliating behavior against civilians, and its de-legitimization. Psycho-education and training should also include basic elements of decision making, consultation with higher ranks, stress management and self-restraint skills, and utilizing simulations that are as close as possible to real-life situations. In addition, the finding that such behaviors may endanger the mental health of soldiers should be taken into account when offering consultation and therapeutic programs for soldiers and veterans.

Study limitations

The main limitation of this study is related to the sampling procedure. It is possible that young veterans who may not have telephone landlines were excluded, as were discharged soldiers who traveled abroad after their military service, some in an attempt to resolve and cope with service-related distress. A further limitation might lie in the under-reporting of violent behaviors due to social desirability. The diagnostic value of the questionnaire should also be taken with caution, as this was a telephone survey. Finally, non-responders were not assessed so results should be considered accordingly.

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A man can't ride on your back unless it's bent

Martin Luther King, Jr. (1929-1968), American civil-rights leader

Capsule

Serum procalcitonin for discrimination between septic and non-septic arthritis

Early differentiation between septic and non-septic arthritis is a difficult clinical task. Arthrocentesis with synovial gram-stain has only 50–75% sensitivity and culture results are not available immediately. Procalcitonin (PCT) has emerged as a biomarker for the diagnosis of bacterial infections with higher accuracy than other infection markers. Since previous studies evaluating the role of PCT in diagnosis of septic arthritis yielded conflicting results, Hugler et al. studied the role of an ultra-sensitive PCT assay in differentiating septic and non-septic arthritis. Of the 42 patients included in this study, 28 were classified as having non-septic arthritis and 14 as having septic arthritis. Various gram-negative and gram-positive bacteria were documented in patients with septic-arthritis. PCT concentrations were significantly higher in patients with septic arthritis than in patients with non-septic arthritis. The sensitivity of PCT for septic arthritis was 100 (93%) and its specificity 46 (75%) for cutoffs of 0.1 (0.25) ng/ml respectively. PCT sensitivity and specificity were higher than those of C-reactive protein and white blood cells. These data suggest that PCT might be used as a valid marker for early diagnosis of septic arthritis.

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