

ORIGINAL ARTICLE

The impact of resource loss on Holocaust survivors facing war and terrorism in Israel

R. DEKEL¹ & S. E. HOBFOLL²

¹*Bar-Ilan University, Ramat-Gan, Israel and* ²*Kent State University and Summa Health System, Kent, Ohio, USA*

(Received 27 July 2005; accepted 10 March 2006)

Abstract

We examined the distress level of 102 Holocaust survivors in Israel during a recent period of continuous exposure of the Israeli population to terror and the threat of missile attack. Based on the Conservation of Resources (COR) theory, we explored the contribution of losses suffered during the Holocaust and of current loss of resources due to terror attacks on their distress level. Twenty one percent of the sample had probable PTSD and high psychological distress levels in general. Current loss of psychosocial resources contributed significantly to survivors' current PTSD symptomatology and general psychological distress, above the contribution of the previous Holocaust-related loss. Our findings support COR theory, which states that traumatic events are associated with ongoing and often rapid loss of resources. Resource loss, in turn, is associated with higher distress levels. Moreover, current loss of resources compounds the impact of earlier resource losses incurred during the Holocaust.

Introduction

Since the beginning of the Al Aqsa *Intifada* in September 2000, Israeli society has been facing a continuous wave of terrorist attacks. Civilians of all walks of life have been killed or injured in suicide bombings, shootings, and intrusions into their homes. By February 2003, when this study was conducted, more than 300 Israeli civilians had been killed and more than 2000 injured in terrorist attacks. Compounding the dangers of terrorism, at the time of this study the second Gulf War harbored the threat of chemical, biological, and conventional missile attacks on the Israeli population.

Studies suggest that the continuous threat of terrorism and war place the population at high risk for emotional distress, even among individuals not directly involved in an attack. Research conducted among adults in Bosnia and Croatia (Grgic, Mandic, Koic, & Knezevic, 2002), the Palestinian territories (Baker & Kevorkian, 1995), and the United States (Galea et al., 2002; Silver, Holman, McIntosh, Poulin, & Gil-Rivas, 2002) has painted a similar picture of heightened anxiety, depression, post-traumatic stress disorder (PTSD) symptoms, and phobias. Similarly, war has been shown to have a significant impact on civilians when they are threatened by hostilities (Hobfoll, Lomranz, Eyal, Bridges, & Tzemach, 1989; Lomranz, Hobfoll, Johnson, Eyal, & Tzemach, 1994).

However, not all segments of the population are equally susceptible. According to the vulnerability perspective, prior exposure to traumatic events sensitizes individuals to new threats and heightens their vulnerability (Hyer, Summers, Braswell, & Boyd, 1995; Solomon, 1993). According to the inoculation perspective, the experience of a traumatic event creates familiarity and fosters the development of coping strategies that can both reduce the perceived stress of a similar event in the future and help the individual deal with it (e.g., Norris & Murrell, 1988). In light of these contradictory results, there is a need for further scrutiny of the issue. In the current study, we examined levels of emotional distress among Holocaust survivors, who encountered a new situation of ongoing terror and impending war. For them, the new threat of chemical warfare during the second Gulf War may have exacerbated their emotional distress, as chemical weapons were the Nazis' principal means of mass murder. We explored the unique contribution of the Holocaust experiences, with emphasis on the participants' losses during the Holocaust and on their current experience of loss of resources due to the terror attacks and war. We based our hypotheses on the Conservation of Resources (COR) theory, which has increasingly been used to explain and predict the impact of major

and traumatic stress on individuals (Hobfoll, 1998; 2001; Hobfoll, Canetti-Nisim, & Johnson, 2006) and has previously been applied to the lifelong impact of traumatic stress on older people (Lomranz, 1990).

Holocaust survivors

Participants in the study were exposed to the Holocaust as children or young adults. Some endured prolonged and repeated horrors in concentration camps, including continuous threats, starvation, humiliation, dehumanization, and torture. Others survived in hiding, often under assumed identities and in perpetual fear of being discovered. Most were isolated, many confined in small dark places, and some were subjected to abuse by the persons they thought would protect them. Most of them lost their family, friends, home, and belongings.

Several empirical studies conducted among child survivors of the Holocaust support the hypothesis that child survivors are at increased risk for developing PTSD, even more than four decades after the Holocaust. It has been estimated that the proportions of Holocaust survivors who developed PTSD ranged from 24% to over 40% (Cohen, Brom, & Dasberg, 2001; Cohen, Dekel, Solomon, & Lavie 2003; Kuch & Cox, 1992; Lev-Wiesel & Amir, 2000). The relatively high levels of distress among Holocaust survivors were found in clinical and community samples (Joffe, Brodaty, Luscombe, & Ehrlich, 2003; Sagi-Schwartz et al., 2003), and support the generalized nature of the long-term traumatic effects.

Few studies, however, have examined the emotional adjustment of Holocaust survivors to new stressors that they face. Holocaust survivors who developed cancer exhibited higher levels of psychological distress than did non-Holocaust cancer patients and healthy Holocaust survivors. This suggests that the severe trauma of the Holocaust contributes to increased vulnerability to psychological distress in the presence of new stressors (Baider, Peretz, & De-Nour, 1993; Peretz, Baider, Ever-Hadani, & De Nour, 1994). Similarly, Solomon and Prager (1992) found that during the first Gulf War, Holocaust survivors perceived higher levels of danger and reported more symptoms of acute distress than did a comparison group who had not been exposed to the Holocaust.

Although it might seem obvious that Holocaust survivors would be more vulnerable to such stressors, it is also possible to argue that Holocaust survivors would be more fatalistic or even hardened against threat—having ‘been through worst’. In this regard, we underscore that the samples were non-clinical, and the survivors examined in the study were apparently doing ‘well enough’ in life. Most of them had worked and raised families, and there was

no obvious impairment in their functioning (Leon, Butcher, Kleinman, Goldberg, & Almagor, 1981).

Exposure and vulnerability

The variability in Holocaust survivors’ level of distress may be explained, in part, by factors related to the nature of their individual traumatic experiences. Length, type, and severity of exposure, age during the Holocaust, and the number of family members whom the survivor lost are all important factors. However, the findings regarding type of exposure and PTSD are inconsistent. Kuch and Cox (1992) found that persons who had been in a concentration camp were three times more likely to have PTSD than persons who had not been in concentration camps. Similarly, Cohen et al. (2003) found that survivors who were in concentration camps reported significantly more PTSD symptoms than survivors who were in hiding. However, Yehuda, Schmeidler, Siever, Binder-Brynes, & Elkin (1997) and Lev-Wiesel and Amir (2000) did not find differences in the level of PTSD between survivors who were prisoners in concentration camps and others who were in hiding.

Studies have found differential patterns in the relationship between age at the time of trauma and current symptoms. Yehuda et al. (1997) found that older age at the time of trauma was related to increased symptoms of intrusive thoughts and nightmares. Those who were younger at the time of the Holocaust were more likely to report current symptoms of amnesia, emotional detachment, and hyper-vigilance. Cohen et al. (2003) also found that survivors who were older during the Holocaust reported higher rates of post-traumatic symptoms. Sigal and Weinfeld (2001) found that prolonged stress was apparent among those who were teenagers or adults at the end of the war, but not among those who were children or pre-teens.

These studies provide some indication about the role of these variables as risk factors for PTSD, but none of them examined the contribution of the earlier Holocaust factors and experiences to vulnerability when confronting a new threat. In the current study, we identified the critical resource losses of close family and examined their current impact on respondents faced with a renewed life threat.

Loss of resources due to terrorist attacks

The Conservation of Resources (COR) theory has been found to explain a substantial portion of the variance in the impact of major and traumatic stress (Hobfoll, 2001; Ironson et al., 1997; King, King, Foy, Keane, & Fairbank, 1999; Norris & Kaniasty, 1996). According to COR (Hobfoll, 1988, 1989), individuals strive to obtain, retain, and protect resources. Resources such as self-esteem, available social support, a feeling of trust, and a

sense of control are highly valued by individuals (Hobfoll, 1991). Psychological stress occurs when resources are lost, threatened, or invested without return. Stress conditions, such as terror and war, tend to create an immediate and rapid threat to or loss of resources. Older people may have greater difficulty replenishing resources such as independence and social ties, but at the same time they may have gained valuable experience in the effective use of resources and may be able to apply this knowledge to balance limit resource loss (Hobfoll & Wells, 1998). Holocaust survivors may be especially at risk because they lack models and a culture to guide them in dealing with the latter part of their lives. As Baltes (1997) argued, such older people live in a 'new culture' that does not have the built-in foundational, cultural support that older elements of our culture have created. Before our time, few people reached that age. Today, society has created new socio-cultural structures for them.

The COR theory's linking between resource loss and level of distress has received extensive support. In a study of inner-city women, Hobfoll, Johnson, Ennis, and Jackson (2003) found that greater resource loss was associated with increased depressive mood and anger. Moreover, resource loss, especially loss of personal and social resources, was associated with psychological distress following Hurricane Georges (Sattler et al., 2002). Similarly, Galea et al. (2002) found that individuals who lost family, friends, or jobs were particularly affected by the World Trade Center attack of September 11th. In a large sample of Israeli citizens studied during the *Intifada* in the year 2000, resource loss was associated with higher levels of depression and PTSD (Hobfoll, Canetti-Nisim, & Johnson, 2006). A study by Benotsch et al. (2000) assessed Gulf War returnees at two time points and found that resources decreased and PTSD symptoms increased over time. Moreover, Time 1 resources predicted Time 2 psychopathology after accounting for Time 1 emotional distress.

For Holocaust survivors, a key aspect of the Holocaust experience may be their resource losses during that time. Critical among these would be loss of family (parents, siblings, children, and extended family). According to COR theory, these losses would make Holocaust survivors more vulnerable to current threats due to terrorism and war. Then current resource losses would further compound the survivors' vulnerability, leading to further increases in psychological distress, especially among those who experienced major resource losses both then and now.

The current study examined the independent and combined contribution of exposure to the Holocaust and to current terror attacks and war on Holocaust survivors' PTSD and general emotional distress. Following COR theory, we hypothesized that resource loss during the Holocaust, and the current

threat of resource loss and actual resource loss during the period of the impending second Gulf War and of the ongoing state of terrorism, would predict heightened psychological distress and PTSD symptomatology in a sample of Holocaust survivors.

Method

Participants and procedures

The sample of participants comprised 102 Holocaust survivors: 33% males ($n=34$) and 67% females ($n=68$). The age of the sample ranged from 61 to 91 years ($M=76.8$, $SD=5.60$); 49% were widows ($n=50$), 36.3% married ($n=37$) and 7.8% divorced ($n=8$). Years of education ranged from 4 to 24 (mean = 10.06, $SD=3.44$). Socio-economic situation: 92% no longer worked ($n=94$); 85.3% evaluated their socio-economic situation as average ($n=87$), 5.9% rated themselves as above average ($n=6$), and 8.8% rated themselves as below average ($n=9$). Health: 62.7% rated their health status as fair ($n=64$), 26.5% rated it as good ($n=26$), and 10.8% rated it as poor ($n=10$). Independence: 87.3% described themselves as completely independent with regard to everyday living ($n=89$), 10.8% as partially independent ($n=11$), and 2% as not independent ($n=2$). Country of birth: 50% were born in Poland ($n=51$), 16.7% in Romania ($n=17$), 10.8% in Czechoslovakia ($n=11$), and the remaining 22.5% in other European countries ($n=22$). Six people immigrated to Israel during the Second World War, the rest after the war; 70% during the first five years after the war (1946–1950; $n=71$) and the remaining 24% after 1950 ($n=24$).

Our sample was drawn from members of three centers for Holocaust survivors in the central region of Israel. After explaining the objective of the research at general group meeting, interviews were scheduled with every candidate who agreed to participate. Participants were interviewed in their homes or at the center, according to their preference. Interviews were held in March 2003, when the USA forces invaded Iraq. At the same time, there were numerous terrorist attacks in Israel, so that the period of the study symbolized the compound threat of terrorism and the second Gulf War. Data were collected over a period of approximately three weeks.

Instruments

Background variables. The questionnaire contained data on gender, age, country of origin, marital status, employment, years of education, and physical health status.

The experience during the Holocaust. Two related exposure variables were examined. Participants were

asked to indicate where they had been during the Holocaust, out of a list of locations appearing in the questionnaire (ghettos, concentration camps, work camps, hiding places). The number of places participants had stayed in the Holocaust was calculated as an indicator of the complexity of their exposure. They were also asked to report whether they lost relatives in the Holocaust, and if so, what their relationship was (father, mother, brothers, partner, children, and others). Based on their responses, the number of relatives they lost was calculated.

Additional stressful life events. Participants were presented with a list of 13 stressful life events such as war, divorce, car accidents (Solomon, 1995), and were asked to indicate whether or not they had directly experienced them. Three events (war, death of a close relative and severe disease of a loved person) were experienced by over 75% of the participants and therefore were not used in the analysis. The total score was calculated as the number of events that the participant experienced.

Exposure to terror. Participants were given a list of situations reflecting the degree of exposure to terror during the last three years (Bleich, Gelkopf, & Solomon, 2003) and were asked whether they were directly exposed or injured in a terrorist attack. In addition they were asked whether they personally knew someone who was killed (yes/no) or injured physically (yes/no) or emotionally (yes/no) in a terror attack.

Loss of psychosocial resources questionnaire. Loss of psychosocial resources was assessed using an 11-item scale based on COR theory (Hobfoll, 1998), developed for research on September 11 and generalizable to any type of terrorist attack. The psychosocial resource loss scale, recommended by the NIMH for all September 11-related research, helps make our research comparable to USA studies. Items were scored from 1 (not at all) to 4 (extremely). Factor analysis revealed two factors that explained 45% of the variance. The first factor consisted of six items and involves the loss of personal resources (e.g., 'Since the terror began I feel more pessimistic about my future well being'). The Cronbach's alpha value for this factor was 0.75. The second factor consisted of five items involving the loss of interpersonal resources (e.g., 'In the last period were you disappointed by someone you expected to support you?'). The Cronbach's alpha value for this scale was 0.65.

Current distress measures. Post traumatic stress disorder related to terror attacks was assessed through the PTSD Inventory (Solomon et al., 1993), a self-report scale based on DSM-IV criteria (American Psychiatric Association [APA], 1994).

The questionnaire consisted of 17 statements corresponding to the 17 PTSD symptoms listed in the DSM-IV (APA, 1994). Participants were asked to indicate whether or not they suffered from each symptom during the previous month. The number of symptoms they listed was used to gauge the intensity of post-traumatic symptomatology. The scale was found to have high convergent validity when compared with diagnoses based on structured clinical interviews (Solomon et al., 1993). Internal consistency among the 17 items in the current sample was moderately high (Cronbach's alpha = 0.86).

Brief Symptom Inventory (BSI). The BSI is a self-report measure that inquires about 53 psychiatric symptoms during the two weeks preceding the assessment (Derogatis, 1977). It assesses both the Global Severity Index (GSI), which reflects the clinical severity of all symptoms and is computed by averaging participants' answers on the 53 symptoms, and the severity of the nine symptom categories: somatization, obsessive-compulsive problems, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psycho-ideation. The questionnaire has good reliability and validity and has been widely used for a range of populations in Israel, including people with cancer (Ben-Zur, 2001) and immigrants (Mirsky, 1997). The level of distress found in the present study was compared with recent Israeli norms (Gilbar & Ben-Zur, 2002). The Cronbach's alpha values for the current sample ranged from 0.64–0.87 for the subscales, and 0.96 for the general score.

Results

Holocaust exposure

Fifty-three percent of respondents had been in ghettos ($n = 54$), 47.5% had been in concentration camps ($n = 48$), 38.8% had been in work camps ($n = 39$), and 20% had been in hiding places ($n = 20$). Thirty-seven percent had been in one such location during the Holocaust ($n = 38$), 32% had been in two such places ($n = 33$), and 22% had been in three such places ($n = 22$). During the Holocaust, 74% had lost their mothers ($n = 75$), 66.3% had lost their fathers ($n = 67$), 66% had lost one or more siblings ($n = 67$), 4.5% lost their partner ($n = 5$), and 5.7% lost their children ($n = 6$). Eighty-nine percent lost other relatives ($n = 91$).

Terror exposure

Nineteen participants (18.6%) were directly or indirectly exposed to terror (in addition to the general threat of terror, to which the entire population was certainly exposed). Among those who had been exposed to terror, five had been directly

exposed to a terrorist attack; none had been injured; 10 knew someone who was killed in a terror attack, eight knew someone who had been injured in an attack, and nine knew someone who had suffered from emotional distress following a terror attack.

Distress levels

The number of PTSD symptoms ranged from 0 to 14, with a mean of 5.66 (SD=4.03). Twenty-one percent of the participants in the sample were identified as exhibiting probable PTSD, after they identified at least one item from Criterion B, at least three items from Criterion C, and at least two items from Criterion D.

Table I presents the means and standard deviations of the nine BSI subscales and the GSI total scores, and comparisons with the norms among the Israeli population (Gilbar & Ben-Zur, 2002; no specific norms for the older population were found). As can be seen from Table I, Holocaust survivors had higher levels of distress on the general score and on four of the sub-scales: somatization, anxiety, hostility, and phobia compared to the general Israeli norms.

A significant relationship was found between gender and level of PTSD symptoms ($t=2.94$, $df=100$, $p<0.004$). Females reported higher levels of PTSD symptoms ($M=6.45$, $SD=4.12$) than males ($M=4.05$, $SD=3.35$). No significant difference was found between males and females on GSI score ($t=1.51$, $df=99$, $p>0.05$). Moreover, age was negatively correlated with levels of PTSD symptomatology and GSI. Older age correlated with lower levels of PTSD symptomatology ($r=-0.20$, $p<0.05$) and GSI ($r=-0.22$, $p<0.050$).

Resource loss during the Holocaust and current psychological distress

No significant relationship was found between exposure to the Holocaust (main location during the Holocaust) on the one hand, and current distress (PTSD symptomatology and GSI) on the other. However, a significant relationship was found

between the loss of spouse and children during the Holocaust and distress measures. Holocaust survivors who lost their spouse during the Holocaust had significantly higher levels of PTSD symptoms than those who did not lose a spouse ($M=10.50$, $SD=5.07$ and $M=5.46$, $SD=3.88$, $t=2.52$, $df=100$, $p<0.05$). Similarly, Holocaust survivors who lost children during the Holocaust had significantly higher levels of PTSD symptoms than those who did not lose a child ($M=9.80$, $SD=4.49$ and $M=5.44$, $SD=3.91$, $t=2.41$, $df=100$, $p<0.05$).

Resource loss during the Intifada and current psychological distress

A *t*-test analysis was conducted to test the relation between exposure to terror and PTSD. There was no significant difference in the mean number of PTSD symptoms related to terror and GSI between those who were exposed to terror and those who were not.

Pearson's correlations between the two factors that measured current loss of psychosocial resources due to the *Intifada* on the one hand and the distress measures on the other, revealed significant positive correlations. Higher loss of interpersonal psychological resources was strongly associated with higher level of PTSD symptoms ($r=0.51$, $p<0.001$) and GSI ($r=0.55$, $p<0.001$). Higher level of loss of personal resources was also strongly associated with higher level of PTSD symptoms ($r=0.34$, $p<0.001$) and GSI ($r=0.24$, $p<0.05$).

Multivariate analyses

To examine the hypothesized relationship between resource loss and psychological distress, two hierarchical regressions were performed: one for PTSD symptomatology and another for GSI scores. Both analyses were performed in three steps: in the first step, the socio-demographic variables gender, age, education, and health status were entered; in the second step, Holocaust experiences (places and losses), other life events and exposure to terror

Table I. Means and standard deviation of the nine BSI sub-scale and the GSI total scores compared with the norms of the Israeli population.

Variables	Min	Max	Mean	SD	Israeli Norms	<i>t</i> -test	Percent above the norms
GSI	0	3.15	0.82	0.65	0.72	2.69**	51%
Soma	0	3.71	0.86	0.88	0.62	2.69**	49%
OCD	0	3.67	1.03	0.93	0.94	0.99	43%
Interpersonal sensitivity	0	3.25	0.64	0.72	0.68	-0.61	38%
Depression	0	4.00	0.81	0.79	0.70	1.40	45%
Anxiety	0	4.00	1.13	1.04	0.85	2.71**	45%
Hostility	0	2.80	0.59	0.65	0.72	-1.95*	36%
Phobia	0	4.00	0.72	0.84	0.46	3.16**	44%
Paranoia	0	3.60	0.79	0.75	0.91	-1.15	37%
Psychosis	0	4.00	0.49	0.68	0.57	-1.17	53%

* $p<0.05$; ** $p<0.01$; *** $p<0.001$

events were entered; in the third step the two factors measuring current loss of psychological resources because of the *Intifada* and the current threat of war were entered.

PTSD symptoms. The current set of variables explained 48.3% of the variance of PTSD symptomatology ($F(14, 101) = 7.78, p < 0.001$). Step 1 explained 16.5% of the variance, with gender, age, and education contributing significantly. Women ($Beta = 0.21, p < 0.05$), younger age ($Beta = -0.17, p < 0.05$), and lower education ($Beta = -0.18, p < 0.05$) were associated with higher PTSD symptomatology. Step 2 contributed 10.1% to the explained variance: more places of exposure in the Holocaust were associated with higher post-traumatic distress ($Beta = 0.16, p < 0.05$). In addition, loss of siblings ($Beta = 0.20, p < 0.05$) and loss of children ($Beta = 0.22, p < 0.05$) were associated with higher post-traumatic distress. Finally, step 3 contributed 21.7% to the explained variance. Higher loss of personal resources ($Beta = 0.41, p < 0.001$) and interpersonal resources ($Beta = 0.21, p < 0.01$) were associated with higher post-traumatic symptomatology.

GSI distress. The set of variables explained 41.1% of the variance ($F(10, 101) = 7.97, p < 0.001$). Step 1 explained 10.7% of the variance. Similarly to PTSD symptomatology, the younger the survivors were during the Holocaust the higher their current distress ($Beta = -0.17, p < 0.05$). Step 2 contributed only marginally to the explained variance (1.2%). Higher number of relatives lost (examining each loss separately, as with PTSD symptoms, did not result in significant results) was associated with higher distress ($Beta = 0.20, p < 0.05$). The third step contributed an additional 29.2% to the explained variance. Similarly to PTSD symptomatology, current loss of psychological resources, both personal ($Beta = 0.46, p < 0.001$) and interpersonal ($Beta = 0.26, p < 0.01$), contributed significantly to GSI distress, above the contribution of previous traumas.

Discussion

One-fifth of the current sample of Holocaust survivors suffered from probable PTSD at a clinical level. In addition, Holocaust survivors showed higher levels of general psychiatric and somatic symptoms, anxiety, hostility, and phobia compared to Israeli norms (Gilbar & Ben-Zur, 2002). In addition, resource loss during the Holocaust (spouses or children) and current personal and interpersonal losses due to the *Intifada* were the most significant factors predicting both PTSD symptoms and general psychological distress. Other indicators of stress, such as the location of the

Holocaust experience and current stressful life events, paled in comparison to the impact of earlier life and current resource losses.

The rates of probable PTSD and PTSD symptoms were higher than the rates of PTSD symptomatology found in the general Israeli population during the same time frame, which have been estimated to be about 9% (Bleich et al., 2003). However, they were similar to PTSD rates that were found among direct victims of terror attacks in Israel (Kutz & Dekel, 2004; Shalev et al., 1998) or in other traumatic events elsewhere (Brewin Andrews, Rose, & Kirk, 1999).

The comparisons between our results and those among the general population and among direct victims of terror support the supposition that Holocaust survivors are at high risk for developing distress in times of repeated threats of terror and war. Two possible explanations can be suggested for this vulnerability. Firstly, it may be suggested that all the older population is at high risk of developing distress. Because we had no control group of older participants who were not Holocaust survivors, this explanation cannot be ruled out. However, in general the older population did not show higher levels of distress than other age groups when facing adverse situations like the Gulf war (Solomon & Ginzburg, 1998), an earthquake (Goenjian et al., 1994), or a terrorist attack (Bleich et al., 2003), which weaken the viability of this explanation.

The second explanation suggests that the severe trauma of the Holocaust increased the participants' vulnerability to psychological distress in the face of additional new stressors (Baider et al., 1993; Peretz et al., 1994), and especially in the face of recurrent previous stressors (Solomon & Prager, 1992). This pattern of results supports the 'vulnerability perspective' regarding repeated exposure to trauma. According to this perspective, prior experience of a traumatic event erodes people's self-confidence and mastery, depletes their coping resources, and reduces their ability to withstand subsequent stress. Expressed in the terms of COR theory, people with few resources to begin with are more prone to losing resources and suffer from higher distress levels when encountering an additional threat than do those with extensive resources (Hobfoll, 2001). However, because there was no control group in the current study, Holocaust survivors could not be compared with non-survivors. Hence these explanations remain speculative until further research can either support or disprove them.

Survivors who lost their spouse or their children during the Holocaust had higher levels of PTSD symptoms than those who did not lose a spouse or a child. These findings highlight the long-lasting effect of such a loss. Often, bereavement is followed by a normative painful adjustment to the loss. The period of grief and mourning may be lengthy,

although it is difficult to generalize because the duration of this process may vary depending on the individual (Fitzpatrick, 1998). The mourning process includes withdrawal from daily activities and routine, and a higher state of emotional arousal and sensitivity to one's surroundings. In addition, every culture has its own mourning rituals and customs, which enable the mourner to start processing the loss. During the Holocaust, however, physical survival was of the utmost importance and dealing with bereavement became a secondary issue, if it was an issue at all. It is therefore possible that losing a spouse or a child left sensitivity to further trauma and of all losses, losing a child maybe the most devastating (Burnett, Middleton, Raphael, & Martinek, 1997).

The finding regarding the relationship between age and distress (i.e., higher levels of distress reported by younger survivors) is consistent with other studies on Holocaust survivors (Yehekel, 1995) and with other studies showing that the younger people are when exposed to a traumatic event, the more likely they are to suffer from PTSD later in life (Engdahl, Dikel, Eberly, & Blank, 1997; Speed, Engdahl, Schwartz, & Eberly, 1989). The younger they were during the Holocaust, the less stable their development was. The early disruption of their relationships with their parents may have generated a basic lack of trust in humanity, as well as a feeling of constant danger and difficulty developing secure and stable attachment (Bar-Or et al., 1998).

Finally, lower education was also associated with higher psychological distress. Education is associated with qualities such as motivation and persistence, which foster coping and endurance. Education is a proxy measure for persistence, verbal skills, and intellectual skills which all facilitate coping with crises. This finding is consistent with other studies showing that education improves adjustment to stress (Menagham, 1983; Neria, Solomon, & Dekel, 2000). Conversely, because many child survivors continued their schooling after the Holocaust, their levels of emotional adjustment may have affected the level of education that they attained.

Our findings support the COR stress theory and its application across cultures and types of traumatic events. Traumatic events may be associated with rapid loss of resources which, in turn, may generate high levels of distress. Current personal and interpersonal losses due to the *Intifada* were the most significant factors predicting both PTSD symptoms and general psychological distress. Personal resources are those associated with loss of confidence, optimism, a sense of safety, and one's coping ability. Interpersonal resources are associated with loss of trust and confidence in others and disappointment in the level of support received or given to others. Moreover, both earlier and current losses combined to contribute to current distress.

It is possible that new stress can trigger the memory of past trauma experienced as well as new symptoms of stress, loss, and grief. Unresolved conflicts related to stress experienced in the past may resurface in the face of new stress (Solomon & Prager, 1992). Further longitudinal studies assessing prospectively the cumulative effects of traumatic events are needed.

The findings should be considered in light of the limitations of the study. In our study there was no control group of participants who were not Holocaust survivors. Moreover, our convenience sample limits the extent to which our findings can be generalized. Finally, a longitudinal design would have enabled us to track changes over time.

To conclude, the survivors who participated in the current study are among the last eyewitnesses of the Holocaust events. We found that one-fifth of them suffered from PTSD, and that their current loss of resources following a terrorist attack was related to increased levels of distress. This finding reflects the resilience of the majority of the survivors, as well as the lasting psychological damage that the Holocaust caused to the remaining participants. In light of the ongoing terrorist attacks in Israel, there is a need to systematically identify the latter group of survivors and to provide appropriate therapeutic responses for their potential emotional needs.

Acknowledgements

The authors wish to thank Galit Holinger for her valuable help in coordinating data collection.

References

- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: American Psychiatric Association Press.
- Baider, L., Peretz, T., & De Nour, A. K. (1993). Holocaust cancer patients: A comparative study. *Psychiatry: Interpersonal & Biological Processes*, 56, 349–355.
- Baker, A. M., & Kevorkian, N. S. (1995). Differential effects of trauma on spouses of traumatized households. *Journal of Traumatic Stress*, 8, 61–74.
- Baltes, R. B. (1997). On the incomplete architecture of human ontogeny: Selection, optimization, and compensation as foundation of development theory. *American Psychologist*, 52, 366–380.
- Bar-Or, D., Eland, J., Kleber, R. J., Krell, R., Moore, Y., Sagi, A., et al. (1998). Multigenerational perspectives on coping with Holocaust experience: An attachment perspective for understanding the developmental sequelae of trauma across generations. *Journal of Behavioral Development*, 22, 315–338.
- Benotsch, E., Brailey, K., Vasterling, J. J., Uddo, M., Constans, J. I., & Sutker, P. B. (2000). War zone stress, personal and environmental resources, and PTSD symptoms in Gulf War veterans: A longitudinal perspective. *Journal of Abnormal Psychology*, 109, 205–213.

- Ben-Zur, H. (2001). Your coping strategy and my distress: Interspouse perceptions of coping and adjustment among breast cancer patients and their spouses. *Families, Systems and Health, 19*, 83–94.
- Bleich, A., Geklopf, M., & Solomon, Z. (2003). Exposure to terrorism, stress-related mental health symptoms, and coping behaviors among a nationally representative sample in Israel. *Journal of American Medical Association, 290*, 612–620.
- Brewin, C. R., Andrews, B., Rose, S., & Kirk, M. (1999). Acute stress disorder and posttraumatic stress disorder in victims of violent crime. *American Journal of Psychiatry, 156*(3), 360–366.
- Burnett, P., Middleton, W., Raphael, B., & Martinek, N. (1997). Measuring core bereavement phenomena. *Psychological Medicine, 27*, 49–57.
- Cohen, M., Brom, D., & Dasberg, H. (2001). Child survivors of the Holocaust: Symptoms and coping after fifty years. *Israel Journal of Psychiatry and Related Science, 38*, 3–12.
- Cohen, E., Dekel, R., Solomon, Z., & Lavie, T. (2003). Posttraumatic stress symptoms, fear of intimacy among treated and non-treated survivors who were children during the Holocaust. *Social Psychiatry and Psychiatric Epidemiology, 38*, 611–617.
- Derogatis, L. (1977). *The SCL-90 Manual I: Scoring, Administration, and Procedures for the SCL-90*. Baltimore: Johns Hopkins University School of Medicine, Clinical Psychometrics Unit.
- Engdahl, B. E., Dikel, T. N., Eberly, R., & Blank, A. (1997). Post-traumatic stress disorder in community group of former Prisoners of War: A normative response to severe trauma. *American Journal of Psychiatry, 154*, 1576–1581.
- Fitzpatrick, T. R. (1998). Bereavement events among elderly men: The effects of stress and health. *Journal of Applied Gerontology, 17*, 204–228.
- Galea, S., Ahern, J., Resnick, H., Kilpatrick, D., Bucuvalas, M., Gold, J., et al. (2002). Psychological sequelae of the September 11 terrorist attacks in New York City. *New England Journal of Medicine, 346*, 982–987.
- Gilbar, O., & Ben-Zur, H. (2002). Bereavement of spousal caregivers of cancer patients. *American Journal of Orthopsychiatry, 72*, 422–432.
- Goenjian, A., Najarian, L., Pynoos, R., Steinberg, A., Manoukian, G., Tavosian, A., et al. (1994). Posttraumatic stress disorder in elderly and younger adults after the 1988 earthquake in Armenia. *American Journal of Psychiatry, 151*(6), 895–901.
- Grgic, M., Mandic, N., Koic, O., & Knezevic, M. Z. (2002). Differences in depression and hopelessness between displaced children and non-displaced children. *Socijalna-Psijhijatrija, 30*, 154–159.
- Hobfoll, S. E. (1988). *The ecology of stress*. Washington, DC: Hemisphere.
- Hobfoll, S. E. (1989). Conservation of resources, a new attempt at conceptualizing stress. *American Psychologist, 44*, 513–524.
- Hobfoll, S. E. (1991). Traumatic stress: A theory based on rapid loss of resources. *Anxiety Research, 4*, 187–197.
- Hobfoll, S. E. (1998). *Stress, culture, and community: The psychology and philosophy of stress*. New York: Plenum Press.
- Hobfoll, S. E. (2001). The Influence of culture, community, and the nested-self in the stress process: Advancing Conservation of Resources Theory. *Applied Psychology, 50*, 337–370.
- Hobfoll, S. E., Canetti-Nisim, D., & Johnson, R. J. (2006). Exposure to terrorism, stress-related mental health symptoms, and defensive coping among Jews and Arabs in Israel. *Journal of Consulting and Clinical Psychology, 72*, 207–218.
- Hobfoll, S. E., & Wells, J. D. (1998). Conservation of resources, stress and aging: Why do some slide and some spring? In J. Lomranz (Ed.), *Handbook of aging and mental health: An integrative approach* (pp. 121–134). New York: Plenum Press.
- Hobfoll, S. E., Johnson, R. J., Ennis, N. E., & Jackson, A. P. (2003). Resource loss, resource gain, and emotional outcomes among inner-city women. *Journal of Personality and Social Psychology, 84*, 632–643.
- Hobfoll, S., Lomranz, J., Eyal, N., Bridges, A., & Tzemach, M. (1989). Pulse of a nation: Depression mood reactions of Israel to Israel-Lebanon War. *Journal of Personality and Social Psychology, 56*, 1002–1012.
- Hyer, L., Summers, M. N., Braswell, L., & Boyd, S. (1995). Post-traumatic stress disorder: Silent problem among older combat veterans. *Psychotherapy: Theory, Research, and Practice, 32*, 348–364.
- Ironson, G., Wynings, C., Schneiderman, N., Baum, A., Rodriguez, M., Greenwood, D., et al. (1997). Post-traumatic stress symptoms, intrusive thoughts, loss, and immune function after Hurricane Andrew. *Psychosomatic Medicine, 59*, 128–141.
- Joffe, C., Brodaty, H., Luscombe, G., & Ehrlich, F. (2003). The Sydney Holocaust Study: Post-traumatic stress disorder and other psychosocial morbidity in an aged community sample. *Journal of Traumatic Stress, 16*, 39–47.
- King, D. W., King, L. A., Foy, D. W., Keane, T. M., & Fairbank, J. A. (1999). Post-traumatic stress disorder in a national sample of female and male Vietnam veterans: Risk factors, War-zone stressors, and resilience-recovery variables. *Journal of Abnormal Psychology, 108*, 164–170.
- Kuch, K., & Cox, B. (1992). Symptoms of PTSD in 124 survivors of the Holocaust. *American Journal of Psychiatry, 149*, 337–340.
- Kutz, I., & Dekel, R. (2006). Follow-up of victims of one terrorist attack in Israel: ASD, PTSD and the perceived threat of Iraqi missile attacks. *Personality and Individual Differences, 40*, 1579–1589.
- Leon, G. R., Butcher, J. N., Kleinman, M., Goldberg, A., & Almagor, M. (1981). Survivors of the holocaust and their children: Current status and adjustment. *Journal of Personality and Social Psychology, 41*, 503–516.
- Lev-Wiesel, R., & Amir, M. (2000). Posttraumatic stress disorder symptoms, psychological distress, personal resources and quality of life in four groups of Holocaust child survivors. *Family Process, 39*, 445–459.
- Lomranz, J. (1990). Long-term adaptation to traumatic stress in light of adult development and aging perspectives. In M. P. Stephens, J. Crowther, S. E. Hobfoll & D. Tennenbaum (Eds.), *Stress and coping in later-life families* (pp. 99–121). Washington, DC: Hemisphere.
- Lomranz, J., Hobfoll, S., Johnson, R., Eyal, N., & Tzemach, M. (1994). A nation's response to attack: Israelis' depressive reactions to the Gulf War. *Journal of Traumatic Stress, 7*, 55–69.
- Menaghan, E. G. (1983). Individual coping efforts: Moderators of the relationship between life stress and mental health outcomes. In H. B. Kaplan (Ed.), *Psychosocial stress: Trends in theory and research* (pp. 157–191). New York: Academic Press.
- Mirsky, J. (1997). Psychological distress among immigrant adolescents: Culture specific factors in the case of immigrant adolescents from the former Soviet Union. *International Journal of Psychology, 32*, 221–230.
- Neria, J., Solomon, Z., & Dekel, R. (2000). Adjustment to war captivity: The role of socio-demographic background, trauma severity, and immediate response, in the long-term mental health of Israeli, ex-POWs. *Anxiety, Stress and Coping, 13*, 229–246.
- Norris, F. H., & Kaniasty, K. (1996). Received and perceived social support in times of stress: A test of the social support deterioration deterrence model. *Journal of Personality and Social Psychology, 71*, 498–511.
- Norris, F. H., & Murrell, S. A. (1988). Prior experience as a moderator of disaster impact on anxiety symptoms in older adults. *American Journal of Community Psychology, 16*, 665–683.

- Peretz, T., Baider, L., Ever-Hadani, P., & De Nour, A. K. (1994). Psychological distress in female cancer patients with Holocaust experience. *General Hospital Psychiatry, 16*, 413–418.
- Sagi-Schwartz, A., van Ijzendoorn, M. H., Grossmann, K. E., Joels, T., Grossmann, K., Scharf, et al. (2003). Attachment and traumatic stress in female Holocaust child survivors and their daughters. *American Journal of Psychiatry, 160*, 1086–1092.
- Sattler, D. N., Preston, A. J., Kaiser, C. F., Olivera, V. E., Valdez, J., & Schlueter, S. (2002). Hurricane Georges: A cross-national study examining preparedness, resource loss, and psychological distress in the U. S. Virgin Islands, Puerto Rico, Dominican Republic, and the United States. *Journal of Traumatic Stress, 15*, 339–350.
- Shalev, A. Y., Freedman, S., Peri, T., Brandes, D., Sahar, T., Orr, S. P., et al. (1998). Prospective study of post-traumatic stress disorder and depression following trauma. *American Journal of Psychiatry, 155*, 630–637.
- Sigal, J., & Weinfeld, M. (2001). Do children cope better than adults with potentially traumatic stress? A 40-year follow-up of Holocaust survivors. *Psychiatry: Interpersonal & Biological Processes, 64*, 69–80.
- Silver, R. C., Holman, E. A., McIntosh, D. N., Poulin, M., & Gil-Rivas, V. (2002). Nationwide longitudinal study of psychological responses to September 11. *The Journal of the American Medical Association, 288*, 1235–1244.
- Solomon, Z. (1993). *Combat stress reaction: The enduring toll of war*. New York: Plenum Press.
- Solomon, Z. (1995). *Coping with war-induced stress*. New York: Plenum Press.
- Solomon, Z., & Ginzburg, K. (1998). War trauma and the aged: An Israeli perspective. In J. Lomranz (Ed.), *Handbook of aging and mental health: An integrative approach* (pp. 135–153). New York: Plenum Press.
- Solomon, Z., & Prager, E. (1992). Elderly Israeli Holocaust survivors during the Persian Gulf War: A study of psychological distress. *American Journal of Psychiatry, 149*, 1707–1710.
- Solomon, Z., Benbenishty, R., Neria, Y., Abramowitz, M., Ginzburg, K., & Ohry, A. (1993). Assessment of PTSD: Validation of the revised PTSD Inventory. *Israel Journal of Psychiatry and Related Sciences, 30*, 110–115.
- Speed, N., Engdahl, B. E., Schwartz, J., & Eberly, R. (1989). Post-traumatic stress disorder as a consequence of the prisoner of war experience. *Journal of Nervous and Mental Disease, 177*, 147–153.
- Yeheskel, A. (1995). The intimate environment and the sense of coherence among Holocaust survivors. *Social Work in Health Care, 20*, 25–35.
- Yehuda, R., Schmeidler, J., Siever, L. J., Binder-Brynes, K., & Elkin, A. (1997). Individual differences in post-traumatic stress disorder symptom profiles in Holocaust survivors in concentration camps or hiding. *Journal of Traumatic Stress, 10*, 453–463.

Copyright of *Aging & Mental Health* is the property of Routledge and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.