Coping in old age with extreme childhood trauma: Aging Holocaust survivors and their offspring facing new challenges

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Objective: The Holocaust has become an iconic example of immense human-made catastrophes, and survivors are now coping with normal aging processes. Childhood trauma may leave the survivors more vulnerable when they are facing stress related to old age, whereas their offspring might have a challenging role of protecting their own parents from further pain. Here we examine the psychological adaptation of Holocaust survivors and their offspring in light of these new challenges, examining satisfaction with life, mental health, cognitive abilities, dissociative symptoms, and physical health.

Methods: Careful matching of female Holocaust survivors and comparison subjects living in Israel was employed to form a case-control study design with two generations, including four groups: 32 elderly female Holocaust survivors and 47 daughters, and 33 elderly women in the comparison group, and 32 daughters (total N = 174). Participants completed several measures of mental and physical health, and their cognitive functioning was examined. The current study is a follow-up of a previous study conducted 11 years ago with the same participants.

Results: Holocaust survivors showed more dissociative symptomatology (odds = 2.39) and less satisfaction with their life (odds = 2.79) as compared to a matched group. Nonetheless, adult offspring of Holocaust survivors showed no differences in their physical, psychological, and cognitive functioning as compared to matched controls.

Conclusions: Holocaust survivors still display posttraumatic stress symptoms almost 70 years after the trauma, whereas no intergenerational transmission of trauma was found among the second generation.

Keywords: Holocaust; early childhood trauma; mental health; dissociative symptomatology; intergenerational transmission of trauma

Introduction

During the last hundred years, numerous devastating wars and genocides have created millions of casualties and severe trauma in many more surviving adults and children (Burnham, Lafta, Doocy, & Roberts, 2006; Danieli, 1998). The Holocaust that took place during World War II and aimed at the destruction of the Jewish people in Europe has become the most widely studied example of such immense man-made catastrophes. The study of its long-term effects may help to gain better understanding of the adaptation of victims of recent genocides extended in countries like Cambodia, Nigeria, Rwanda, Sudan, and former Yugoslavia. In the current study we explore the (mal-) adaptation of aging Holocaust survivors and their adult offspring in light of the developmental tasks they have to cope with in old age. Childhood trauma may leave the survivors more vulnerable when they are facing stress related to old age, whereas their offspring might have a challenging role of protecting their own parents from further pain. Here, we examine the adaptation of Holocaust survivors and their offspring in light of these new challenges, examining satisfaction with life (SWL), mental health, cognitive abilities, dissociative symptoms, and physical health. This study is a follow-up of a previous study conducted 11 years ago with the same participants, which makes it possible to examine the stability of adaptation of Holocaust survivors over time.

Holocaust survivors who were children during World War II are now coping with normal aging processes such as illness, frailty, dependency, and isolation, which might elicit memories from their past experience (Shmotkin & Barilan, 2002). Moreover, signs of unresolved trauma or loss might emerge again as an expression of loss of significant others and the survivors’ own impending death. Their children are themselves adults now, also facing major challenges such as balancing demanding work and family life (Erikson, 1950).

During the Holocaust, adults and children experienced a total disruption of their life experiences. They were prisoners at work camps or death camps, or were hidden in hostile territory, and often were exposed to death and loss of family members (Safford, 1995). This man-made catastrophe was characterized by an environment that was extremely threatening and dangerous with no rational explanation or meaning.

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Studies on the effects of the Holocaust on survivors and their families reflect a wide range of perspectives. Accordingly, the conclusions vary, and are sometimes even contradictory (Barel, Van IJzendoorn, Sagi-Schwartz, & Bakermans-Kranenburg, in press; Bar-on et al., 1998; Van IJzendoorn, Bakermans-Kranenburg, & Sagi-Schwartz, 2003). Many studies documented the survivors’ syndrome (Nederland, 1968), meaning that Holocaust survivors suffer from severe and enduring psychological effects of the massive trauma, manifested in chronic anxiety (de Graaf, 1975), depression, disturbances in cognition and memory, tendency to isolation (Nederland, 1968), sense of guilt (Chodoff, 1986), low psychological well-being, and difficulties in emotional expression (Amir & Lev-Wiesel, 2003; Nadler & Ben-Shushan, 1989). In addition, physical health problems have been documented (e.g., Antonovsky, Maoz, Dowty, & Wijsenbeek, 1971; Landau & Litwin, 2000); in particular cancer morbidity (Keinan-Boker, Vin-Raviv, Lipshitz, Linn, & Barchana, 2009).

Alongside studies of maladaptive outcomes and psychopathology of Holocaust survivors, there is a growing body of evidence that their psychological adjustment is within the normal range (e.g., Barel et al., in press; Leon, Butcher, Kleinman, Goldberg, & Almagor, 1981). Survivors managed to build families and to establish social relationships (Harel, B. Kahana, & E. Kahana, 1993). In a recent meta-analysis involving 12,746 participants from 71 samples, Holocaust survivors were compared with their counterparts on physical health, psychological well-being, posttraumatic stress symptoms, psychopathological symptomatology, cognitive functioning, and stress-related physiology (Barel et al., in press). Results showed that even in non-select samples (i.e., drawn from population-wide demographic information) Holocaust survivors showed substantially more posttraumatic stress symptoms than comparisons. However, they displayed good adaptation in physical health, cognitive functioning, and stress related physiology, suggesting also remarkable resilience.

The resilience of the first generation of survivors might explain the unexpected absence of intergenerational transmission of trauma in the set of studies involving the second and third generations, respectively (Sagi-Schwartz, Van IJzendoorn, & Bakermans-Kranenburg, 2008; Van IJzendoorn et al., 2003). In a meta-analytic study on 32 samples with 4418 children of Holocaust survivors there was no evidence for secondary traumatization in studies with non-select recruitment and non-clinical samples (Van IJzendoorn et al., 2003). In a quasi-experimental study with carefully matched Holocaust survivors, their daughters and their grandchildren, we examined posttraumatic stress, attachment, mental health, social adaptation, and parenting style. Intergenerational transmission was absent as no differences were found in the second and third generation offspring of Holocaust survivors and their comparisons, although the first generation of survivors showed posttraumatic symptoms even more than half a century after the Holocaust (Sagi-Schwartz et al., 2003).

Not all efforts made by Holocaust surviving parents to protect their offspring yielded adaptive outcomes. Yehuda, Schneider, Wainberg, Binder-Brynes, and Duvéden (1998), for example, reported that although adult children of Holocaust survivors did not experience more traumatic life events than their comparisons they nevertheless showed higher prevalence of current and lifetime PTSD, and they were more likely to perceive non-life-threatening events as very distressing. Others reported that Holocaust survivors’ offspring were more affected when confronted with extreme stress such as cancer (Baider et al., 2000) or combat (Solomon, Kotler, & Mikulincer, 1988) and that daughters of survivors were more vulnerable to the intergenerational transmission of parental trauma (Felsen, 1998). Taken together, the meta-analytic results suggest that intergenerational transmission of the Holocaust trauma to the next generation might be observed in particular in studies with weaker designs using convenience samples and in clinical samples (Van IJzendoorn et al., 2003).

As survivors grow old, traumatic experiences may vary in their impact on life. Trauma may leave the survivors more vulnerable when they are facing stress related to old age (e.g., Solomon & Prager, 1992). Safford (1995) suggested that although many survivors demonstrated resilience and adaptability (e.g., Leon et al., 1981), they may be particularly vulnerable to changes that are associated with normal aging processes, because former coping strategies, such as hard work and taking care of the next generation, are no longer available. Daily coping requires intensive investment in meaningful activities that provide the opportunity to focus on the present and future, rather than on the past (Steinitz, 1982). Illness, frailty, dependency, isolation, and loneliness may disrupt such activities, and traumatic memories and unresolved losses might become more dominant. The absence of social support may contribute to some of the negative consequences for psychological well-being (Fening & Levav, 1991; Harel et al., 1993; Landau, & Litwin, 2000). Second-generation Holocaust survivors, now in their 50s and 60s, might have a challenging role of protecting their own parents from further pain (Steinitz, 1982).

The remarkable resilience that in some studies was found to characterize Holocaust survivors, in particular in parenting their offspring, could also serve them as they are aging. Good health, adequate social resources and satisfactory social relationships are predictors of mental health among aged in general.
The Dissociative Experiences Scale (DES) was developed by Bernstein and Putnam (1986) to assess the frequency of dissociative experiences. It contains 28 self-report items that ask participants to indicate the frequency (0–100%) of various dissociative experiences such as discontinuities in awareness, imaginative involvement, and amnesia, excluding experiences that occurred when they were under the influence of alcohol or drugs. Translation into Hebrew was done for the purpose of the current study by Hebrew and English native speakers, using a dual-focus approach in order to maintain linguistics equivalence (Peña, 2007). Total scores were calculated by averaging the 28 items scores, resulting in a scale score ranging from 0 to 100. Cronbach’s alpha reliability coefficients were 0.86 for first generation, and 0.83 for second generation.

Well-being

Two subscales were used to assess the subjective well-being. The adapted version of the Mental Health Inventory (Florian & Drori, 1990) that was used in the first phase of Holocaust study consists of 14 items dealing with distress and well-being. Participants were asked to indicate on a six-point Likert scale the extent to which they experienced feelings of distress and
well-being during the past month with higher scores reflecting more well-being and less distress. Cronbach’s alpha reliability coefficients in the current study were 0.84 for the first generation, and 0.95 for the second generation.

Satisfaction with life

SWL scale is a five-item questionnaire designed to assess SWL as a whole (Pavot & Diener, 1993). Using seven-point Likert scales, participants were asked to rate their level of agreement with statements on a scale of 1 (strongly disagree) to 7 (strongly agree). The score for the overall scale is the sum of all five items. Higher scores represent more SWL, whereas lower score represent dissatisfaction. Cronbach’s alpha reliability coefficients were 0.65 for the first generation and 0.84 for the second generation. The Hebrew version has been used in various studies in Israel (e.g., Cohen & Shmotkin, 2007). Intercorrelations between the two subscales of subjective well-being were $r = 0.28$ for the first generation ($p < 0.05$), and $r = 0.68$ for the second generation ($p < 0.01$).

Cognition

The Telephone Instrument for Cognitive Status Modified (TICS-m) was administered to participants during an interview. The TICS-m consists of 21 items with a maximum score of 50 points, with lower scores reflecting more cognitive impairment. The questions pertain to long- and short-term memory, orientation to time and place, attention, language and abstraction. The Hebrew version is a direct translation of the English TICS-m (Beeri, Werner, Davidson, Schmidler, & Silverman, 2003). Studies have shown convergent validity with other cognitive tests and test–retest validity (e.g., de Jager, Budge, & Clarke, 2003; Desmond, Tatemichi, & Hanzawa, 1994).

Physical health

Physical health status was assessed by a questionnaire developed by Herczeg Institute on Aging (Tel Aviv University) and used in a previous Holocaust study (Van der Hal-Van Raalte, Bakermans-Kranenburg, & Van IJzendoorn, 2008). Subjects were asked to rate their health using a five-point Likert scale ranging from 1 = very unhealthy to 5 = very healthy. Also, they were asked to indicate which of 19 listed health problems they suffered. Participants could add more health conditions if they wanted, and a list of 40 possible health problems was obtained. The total number of health problems ranged from 0 (no health problems) to 15 for first generation, and from 0 to 8 for second generation. This questionnaire is widely used for socio-demographic research in Israel. The correlation between the two health measures was $r = 0.62$ ($p < 0.01$) for the first generation, and $r = 0.27$ ($p < 0.05$) for the second generation.

Life events

The Life Events questionnaire was developed for this study. This checklist consists of 18 items describing stressful life events, such as marital conflict or illness of family members. Subjects were asked to mark if they had or had not experienced that life event in the past year and to rate the accompanying stress on a three-point Likert scale. Participants could add more stressful life events if they wanted, and a list of 35 possible stressful life events was obtained. The correlation between the two stressful life events measures was $r = 0.91$ ($p < 0.01$) for the first generation, and $r = 0.93$ ($p < 0.01$) for the second generation.

Statistical analysis

In order to avoid biased results due to extreme values, all measures were inspected for outliers, which were defined as values larger than SD = 3.29 above the mean or smaller than SD = 3.29 under the mean (Tabachnick & Fidell, 2007). Physical health, stressful life events, and dissociation distributions were moderately positively skewed, and square-root transformation was used for the analysis. The distributions of the variables SWL for both generations and cognition for the first-generation participants were moderately negatively skewed and a reflection of square-root transformation was used. For the perceived physical health measure of second-generation participants, reflected log 10 transformation was used since the distribution was substantially negatively skewed. For the DES of first-generation participants, one case was deleted since it reflected clinical dissociation (Carlson & Putnam, 1993; Frischholz et al., 1990), whereas the study focused on a non-clinical sample.

Attrition

Possible differences in mortality between Holocaust survivors and comparison subjects were tested. A chi-squared test showed no differences between the two groups $\chi^2 (1, N = 104) = 0.44, p = 0.74$. In order to test for possible selective attrition, we compared the trauma and well-being data of the participants who continued their participation in the current phase with those who dropped out. Holocaust survivors who continued to take part in the study reported more unusual beliefs in the previous phase of the study (11 years ago) than those who dropped out, $t (44) = 2.07, p = 0.04$ (Table 1). No other differences were found for the trauma measures. It was also found that comparison subjects who continued to participate in the study reported higher mental health 11 years ago than participants that did not continue, $t (48) = 2.99, p < 0.05$. However, no differences were found for daughters of Holocaust survivors and comparison subjects.
Table 1. Holocaust survivors and comparison subjects: between samples analysis.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Group</th>
<th>Did not participate in phase 2 M (SD)</th>
<th>Participated in phase 2 M (SD)</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unresolved state of mind</td>
<td>Holocaust survivors</td>
<td>15.28 (4.86)</td>
<td>17.93 (7.26)</td>
<td>1.38</td>
<td>0.18</td>
</tr>
<tr>
<td></td>
<td>Comparisons</td>
<td>15.16 (4.70)</td>
<td>13.24 (5.61)</td>
<td>−1.24</td>
<td>0.22</td>
</tr>
<tr>
<td></td>
<td>Daughters of Holocaust survivors</td>
<td>17.19 (5.45)</td>
<td>15.67 (4.93)</td>
<td>−0.64</td>
<td>0.52</td>
</tr>
<tr>
<td></td>
<td>Daughters of comparisons</td>
<td>13.35 (4.67)</td>
<td>15.54 (7.37)</td>
<td>1.16</td>
<td>0.25</td>
</tr>
<tr>
<td>Unusual beliefs</td>
<td>Holocaust survivors</td>
<td>26.72 (8.64)</td>
<td>34.64 (14.09)</td>
<td>2.07</td>
<td>0.04</td>
</tr>
<tr>
<td></td>
<td>Comparisons</td>
<td>29.74 (11.54)</td>
<td>26.45 (8.69)</td>
<td>−1.14</td>
<td>0.26</td>
</tr>
<tr>
<td></td>
<td>Daughters of Holocaust survivors</td>
<td>38.20 (11.82)</td>
<td>35.53(11.67)</td>
<td>−0.48</td>
<td>0.63</td>
</tr>
<tr>
<td></td>
<td>Daughters of comparisons</td>
<td>31.11 (10.35)</td>
<td>32.90 (9.65)</td>
<td>0.62</td>
<td>0.54</td>
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<tr>
<td>Intrusion</td>
<td>Holocaust survivors</td>
<td>17.84 (7.16)</td>
<td>21.41(7.98)</td>
<td>−0.22</td>
<td>0.83</td>
</tr>
<tr>
<td></td>
<td>Comparisons</td>
<td>17.84 (7.16)</td>
<td>18.45 (8.18)</td>
<td>0.98</td>
<td>0.33</td>
</tr>
<tr>
<td></td>
<td>Daughters of Holocaust survivors</td>
<td>17.84 (8.14)</td>
<td>16.28 (6.52)</td>
<td>0.26</td>
<td>0.80</td>
</tr>
<tr>
<td></td>
<td>Daughters of comparisons</td>
<td>17.42 (6.47)</td>
<td>17.42 (6.47)</td>
<td>0.78</td>
<td>0.44</td>
</tr>
<tr>
<td>Avoidance</td>
<td>Holocaust survivors</td>
<td>19.50 (7.49)</td>
<td>22.14 (8.67)</td>
<td>1.05</td>
<td>0.30</td>
</tr>
<tr>
<td></td>
<td>Comparisons</td>
<td>12.58 (3.85)</td>
<td>15.35 (6.80)</td>
<td>1.84</td>
<td>0.07</td>
</tr>
<tr>
<td></td>
<td>Daughters of Holocaust survivors</td>
<td>13.60 (3.36)</td>
<td>15.65 (6.91)</td>
<td>−1.12</td>
<td>0.29</td>
</tr>
<tr>
<td></td>
<td>Daughters of comparisons</td>
<td>13.95 (6.16)</td>
<td>14.48 (5.89)</td>
<td>0.31</td>
<td>0.76</td>
</tr>
<tr>
<td>Autonomic anxiety</td>
<td>Holocaust survivors</td>
<td>18.56 (7.77)</td>
<td>15.83 (6.93)</td>
<td>−1.24</td>
<td>0.22</td>
</tr>
<tr>
<td></td>
<td>Comparisons</td>
<td>12.95 (4.18)</td>
<td>13.16 (5.57)</td>
<td>0.14</td>
<td>0.89</td>
</tr>
<tr>
<td></td>
<td>Daughters of Holocaust survivors</td>
<td>14.00 (4.85)</td>
<td>12.56 (3.63)</td>
<td>−0.81</td>
<td>0.42</td>
</tr>
<tr>
<td></td>
<td>Daughters of comparisons</td>
<td>13.16 (5.37)</td>
<td>12.55 (3.96)</td>
<td>−0.46</td>
<td>0.65</td>
</tr>
<tr>
<td>Cognitive worry</td>
<td>Holocaust survivors</td>
<td>15.94 (7.78)</td>
<td>15.06 (5.01)</td>
<td>−0.47</td>
<td>0.64</td>
</tr>
<tr>
<td></td>
<td>Comparisons</td>
<td>13.63 (4.57)</td>
<td>14.39 (6.19)</td>
<td>0.46</td>
<td>0.65</td>
</tr>
<tr>
<td></td>
<td>Daughters of Holocaust survivors</td>
<td>14.00 (2.45)</td>
<td>14.30 (4.35)</td>
<td>0.15</td>
<td>0.88</td>
</tr>
<tr>
<td></td>
<td>Daughters of comparisons</td>
<td>13.21 (5.17)</td>
<td>13.39 (4.69)</td>
<td>0.12</td>
<td>0.90</td>
</tr>
<tr>
<td>Well-being</td>
<td>Holocaust survivors</td>
<td>52.06 (14.47)</td>
<td>56.00 (10.56)</td>
<td>1.07</td>
<td>0.29</td>
</tr>
<tr>
<td></td>
<td>Comparisons</td>
<td>49.79 (11.67)</td>
<td>59.23 (9.25)</td>
<td>2.99</td>
<td>0.005</td>
</tr>
<tr>
<td></td>
<td>Daughters of Holocaust survivors</td>
<td>50.15 (18.83)</td>
<td>53.98 (10.18)</td>
<td>0.39</td>
<td>0.70</td>
</tr>
<tr>
<td></td>
<td>Daughters of comparisons</td>
<td>58.53 (9.29)</td>
<td>56.48 (8.85)</td>
<td>−0.78</td>
<td>0.44</td>
</tr>
</tbody>
</table>

Note: Holocaust survivors, N = 48; comparisons, N = 50; daughters of Holocaust survivors, N = 48; and daughters of comparisons, N = 50.

Results

First, we will present the stability across the two phases of the study, 11 years apart, for those measures that were employed at each point in time. Then, we will test the associations within each generation, and finally we will test the associations between the first and second generation.

Stability over the years

Mental health

The Mental Health Inventory for general well-being was used in both phases of the study. Repeated measures ANOVA showed stability of mental health between two phases of the study for first-generation participants (both for Holocaust survivors and comparison subjects) F(1, 58) = 5.36, p < 0.05 and no difference in level of well-being, F(1, 58) = 0.86, p = 0.36. Second-generation participants (both daughters of Holocaust survivors and daughters of comparisons) did not show stability in their mental health F(1, 72) = 1.89, p = 0.17, and no significant differences were found for the level of mental health between the two phases F(1, 72) = 0.04, p = 0.85.

First-generation Holocaust survivors and comparisons

Table 2 presents the main measures of Holocaust survivors, their daughters and their comparisons. Holocaust survivors reported higher frequency of dissociative experiences than their comparisons, t (62) = 2.19, p < 0.05, they were less satisfied with their lives, t (63) = −3.38, p < 0.01, they suffered from more cognitive impairments than comparison subjects, t (63) = 2.08, p < 0.05, and they perceived their life events as more stressful, t (63) = 2.35, p < 0.05, than women their age who did not experience the Holocaust. Multivariate logistic regression was conducted in order to predict whether a participant belonged to Holocaust survivors group, or to the comparison group. Results of the logistic regression analysis are presented in Table 3. Wald χ² term expresses the added value of each variable in predicting group membership. The odds ratio is larger when the probability of the participant to belong to the group of Holocaust survivors is higher. As displayed in Table 3, SWL (odds = 2.79, p < 0.05) and dissociative experiences (odds = 2.39, p < 0.05) were significant predictors of group membership. Participants who were less satisfied with their life and who showed more dissociative symptomatology were more likely to belong to the group of Holocaust survivors.

Second generation and comparisons

Table 2 presents the main outcomes of daughters of Holocaust survivors and their counterparts. No significant differences were found between the
two groups on any of the variables measured. Here too multivariate logistic regression was conducted in order to predict whether a participant belonged to the offspring of Holocaust survivors, or to the comparisons. As displayed in Table 3, none of the variables that were included in the logistic regression analysis predicted group membership of the second generation.

**Associations between generations**

Significant positive correlations were found between Holocaust survivors and their daughters on the total sum of stressful life events, \( r = 0.53, p < 0.01 \): the more stressful life events mothers (first generation) reported, the more did their daughters (second generation) report.
report such events. Also, when mothers reported more stress of those life events, their daughters reported more stress too \( r = 0.42, p < 0.05 \) (Table 4).

### Discussion

Holocaust survivors who were children during the Second World War, now in their 70s and 80s, showed more dissociative symptomatology, less satisfaction with their life, more cognitive impairment, and they reported more stress associated with their recent life events as compared to a matched group of women their age, also born in Europe but who migrated to pre-State of Israel with their parents just before the onset of the Holocaust. SWL and dissociative symptomatology were associated with the Holocaust experiences in the multivariate analysis as well. Hence, Holocaust survivors show markers of the traumatic experiences even almost seven decades after the Holocaust. Nonetheless, adult offspring of Holocaust survivors showed no differences in their physical, psychological, and cognitive functioning as compared to matched controls. Our current findings are consistent with the finding of the first phase of the study (Sagi-Schwartz et al., 2003), suggesting that Holocaust survivors still display posttraumatic stress symptoms, but that they do not lag behind in their mental health as compared to their counterparts. Furthermore, the remarkable resilience of first-generation participants was manifested in the absence of intergenerational transmission of trauma to the second generation. The adult offspring of survivors are not different from their comparisons on any of the assessments. Our findings therefore correspond with the meta-analytic studies, which indicate that although survivors display posttraumatic symptomatology, there is no evidence of intergenerational transmission of the trauma to their offspring in non-convenience samples like our sample (Van IJzendoorn et al., 2003).

Concerning the association between first and second generation we found that only the number of recent life events and the subjective stress as a result of these events seemed to be converging. The more stressful life the first generation reported, the more life events their daughters had experienced, and when the first generation reported more stress because of those life events, their daughters reported more stress too. Some of the stressors reported by the two generations referred to family stressors such as sickness or divorce in the family, which might explain at least part of the association.

From a human life-span perspective, the main developmental task of old age is to achieve ego integrity through acceptance of one’s life experiences, and by integrating and balancing the positive and the negative experiences. Failure to reach that end in this phase of life may result in despair or depression (Erikson, 1987). The resolution of this developmental task depends, however, on the successful mastering of previous transitions through childhood, adolescent, and adulthood, such as establishing trust in caring persons and the wider social context, and achieving the capacity for intimate relationships. It is clear that the Holocaust experiences destroyed the trajectory of normal psychological development as all survivors in our study lost their parents during the war (which was a condition for participation), leaving the child survivors confused, isolated, and despaired (Safford, 1995). Furthermore, maybe integrating the Holocaust atrocities is not only impossible, but even not adaptable (Danieli, 1981). For Holocaust survivors, integrating and in a sense accepting their traumatic experiences may appear antithetical to the justification for their survival which is to serve as angry witnesses of the outrage of the Holocaust (Krystal, 1981). Therefore, ego integrity might be at least partially achieved through the role of being a ‘historian’ rather than being a ‘victim’ (Safford, 1995), especially when survivors share their personal testimony with family and others.

The difficulties in integrating past experiences with present challenges were indicated in the lower SWL that Holocaust survivors displayed as compared to women who did not experience the Holocaust. However, in contrast to studies that found that Holocaust survivors display more mental health difficulties compared to comparisons (e.g., Amir & Lev-Weisel, 2003; Joffe, Brodaty, Luscombe, & Ehrlich, 2003), we did not find such differences in our study. The differences in SWL, along with the lack

<table>
<thead>
<tr>
<th></th>
<th>Holocaust survivors and their daughters (N = 79)</th>
<th>Comparison subjects and their daughters (N = 64)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dissociation experiences</td>
<td>0.21</td>
<td>0.03</td>
</tr>
<tr>
<td>Mental Health Inventory</td>
<td>0.02</td>
<td>0.28</td>
</tr>
<tr>
<td>SWL</td>
<td>0.31</td>
<td>-0.03</td>
</tr>
<tr>
<td>Cognitive questionnaire</td>
<td>-0.29</td>
<td>-0.12</td>
</tr>
<tr>
<td>Perceived physical health</td>
<td>-0.15</td>
<td>-0.17</td>
</tr>
<tr>
<td>Physical health</td>
<td>0.03</td>
<td>0.04</td>
</tr>
<tr>
<td>Perceived stress of life events</td>
<td>0.58**</td>
<td>0.09</td>
</tr>
<tr>
<td>Number of stressful life events</td>
<td>0.52**</td>
<td>0.17</td>
</tr>
</tbody>
</table>

Note: **p < 0.01.
of differences in mental health, might be explained by the differences between the measures: Life satisfaction is a conscious cognitive judgment of one's life, according to a personal set of criteria, and it reflects a global long-term perspective rather than specific, unconscious and affective ratings (Pavot & Diener, 1993). In contrast, the mental health index refers to the prevalence of specific feelings and behavior experienced during the last month (Florian & Drori, 1990). As we are studying the long-term effects of childhood trauma in general and the challenges of coping with this past trauma in old age, the differences found in SWL may indicate more clearly the coexistence of disturbing traumatic memories and the remarkable strength that Holocaust survivors demonstrate in their everyday life, leading normal and creative lives, and successfully raising non-traumatized next generations.

Alongside integrating past and present, we found higher levels of dissociative symptomatology among Holocaust survivors. Dissociative markers, defined as the failure to integrate experiences such as memories and perceptions of reality that are normally associated (Kennedy et al., 2004), characterize many psychological disorders, and it has been suggested to be the mechanism that underlies the relation between early trauma and later psychopathology (Putnam, 1997). In a meta-analytic study, dissociation, as measured by the DES (Bernstein & Putnam, 1986), was found to be strongly associated with traumatic experiences (Van Ijzendoorn & Schuengel, 1996). Dissociation serves as a psychological defense mechanism as it prevents further processing of raw materials so that memories are stored in a fragmented way (Kennedy et al., 2004), and therefore traumatic memories appear to differ from non-traumatic memories in terms of vividness, intrusiveness, and amnesias. Dissociative symptoms might be indexed by amnesia and memory symptoms, and by processing symptoms (Putnam, 1997). Amnesia and other memory problems can be manifested as forgetfulness for well-known information, unexplainable gaps in autobiographical recall, and problems with identifying the source of information. Dissociative process symptoms may include depersonalization, derealization, and hallucinations.

It is not surprising therefore, that cognitive functioning is significantly affected by traumatic experiences as evidenced in the assessment of impairments in cognitive performance within the Holocaust survivors group. The observed impairment cannot be due to normal aging processes, since their same-age comparisons showed higher cognitive functioning. Our findings are consistent with studies that found cognitive failures to be related to stress, for example through employee exhaustion (Van der Linden, Keijzers, Eling, & Van Schaik, 2005), and related to posttraumatic stress because of child maltreatment (Goodman, Quas, & Ogle, 2009). Boals (2008) recently found that Holocaust survivors with higher levels of posttraumatic symptoms (i.e., intrusiveness and avoidance of traumatic thoughts) were more likely to suffer from cognitive failures in everyday life such as forgetting appointments. Yehuda, Golier, Halligan, and Harvey (2004) also found that Holocaust survivors still suffering from posttraumatic stress showed impairments in learning and short-term memory as compared to survivors without PTSD and to comparisons that were not exposed to the Holocaust atrocities.

Taken together, SWL, dissociative symptomatology and cognitive functioning appear to be related to one another, and indicate a lack of cognitive-emotional ability of integrating past experiences in current life circumstances. Maybe the core of posttraumatic stress of Holocaust survivors resides in their fragmented past. This might be because their safe and known environment suddenly became extremely threatening and hostile without rational explanation or meaning, and because the duration of this situation was unpredictable (Kahana et al., 1988). Therapies and treatment may particularly address survivors’ integration capacity, to create a more coherent life history (Krystal, 1981; Van der Hal-Van Raalte et al., 2008).

In contrast to studies that reported more physical morbidity among Holocaust survivors (e.g., Amir & Lev-Weisel, 2003) we did not find such differences. This discrepancy might be explained by differences in sampling and design, as Barel et al. (in press) discuss in their meta-analysis. Amir and Lev-Weisel (2003) for example relied on a convenience sample which was recruited through Holocaust survivors’ organizations in Israel. One of the strengths of the current study also is the comparability of post-Holocaust life conditions of survivors and comparisons who might both have suffered from traumatic events in Israel after the Second World War in comparable ways. Holocaust survivors reported higher stress related to recent life events, even though they did not experience more stressful life events. This subjective stress was also found by Yehuda et al. (1998) in Holocaust offspring. A limitation of the current study is the use of only self-report measures. It should be noted, however, that the findings are in line with other studies that used other measures such as interviews (Sagi-Schwartz et al., 2003), and clinical diagnostic tools (Joffé et al., 2003), and also with meta-analytic studies. A larger sample would have increased the power of the statistical analyses to find more differences, but the power was sufficient to detect medium size effects. Furthermore, the current study was limited to female survivors and their female offspring, and replication in a male or mixed-gender sample is needed. Also, it has been suggested that Holocaust survivors would constitute a specific selection of resilient individuals who have shown to be able to cope with the most extreme traumatic events. However, we would like to stress the fact that perishing in the Holocaust by no means can be seen as indicative of lesser resilience. In most likelihood it was impossible to escape or survive such an industrially planned and conducted genocide without sheer luck, especially when we think about infants and children. A last limitation is that Holocaust
survivors have been studied intensively and some of our participants might have been included in previous studies. The effects of repeated testing are unknown.

Future studies may further investigate the underlying mechanisms of protective and risk factors of developing posttraumatic symptoms after extreme experiences. Such mechanisms could reside in the epigenetics of trauma (McGowan et al., 2009) or in gene-environment interactions underlying the emergence of posttraumatic stress reactions. A study examining Rwandan survivors (de Quervain et al., 2007) supports the claim for a genetic role in the predisposition to develop post-traumatic symptomatology. Also, the effect of trauma on neurobiological functioning (e.g., cortisol secretion) should be further examined. Diurnal cortisol patterns were explored among Holocaust survivors showing dysregulation in cortisol secretion resulting in elevated cortisol levels (Van der Hal-Van Raalte et al., 2008) as well as lowered levels of cortisol production (Yehuda et al., 2000; Yehuda, Golier, & Kaufman, 2005) in participants suffering from PTSD. Dissociation is generally considered to be a disorder, but an important question for future investigations is whether developing some form of amnesia for the extreme traumatic experiences of the Holocaust is adaptive as for example Breznitz (1982) argued. Removing traumatic memories from one’s mind may result in reduced hyper vigilance, normal cortisol levels, and reduced fight or flight responses, all of which might be adaptive. Perhaps the concept of ‘ego integration’ as applied to survivors of extreme trauma may be less feasible than currently thought. Alternatively, dissociation of traumatic memories might have short-term benefits (for raising the next generation) and at the same time long-term damage (to the individual’s neurobiological functioning).

In sum, Holocaust survivors showed higher frequency of dissociative symptomatology in old age, less satisfaction with their life, more cognitive impairment, and more stress as a result of stressful life events, as compared to a matched control group. Their adult daughters however did not differ from their comparisons. The basic human desire to reach old age with acceptance of past life experiences and accomplishments regardless of traumatic life events might not always be adaptable personally and socially, or remain without psychological costs. The Holocaust and by implication other genocides seem to leave their intractable imprints on the survivors many decades after the end of the traumatic events. Can we expect Holocaust survivors to resolve the loss of family members, friends and other attachment figures during childhood in a coherent framework and to accept these inhuman facts? As the survivors in our study showed, they were unable to integrate their past and present challenges, but they nevertheless successfully managed to keep their children emotionally unharmed. Perhaps dissociation instead of resolution of extreme, incomprehensible trauma is the desirable solution as it paves the way for a more balanced life of generations to come.

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