

Psychiatric disorders and other health dimensions among Holocaust survivors 6 decades later

Asaf Sharon, Itzhak Levav, Jenny Brodsky, Annarosa Anat Shemesh and Robert Kohn

Background

No previous community-based epidemiological study has explored psychiatric disorders among those who survived the Holocaust.

Aims

To examine anxiety and depressive disorders, sleep disturbances, other health problems and use of services among individuals exposed and unexposed to the Holocaust.

Method

The relevant population samples were part of the Israel World Mental Health Survey. The interview schedule included the Composite International Diagnostic Interview and other health-related items.

Results

The Holocaust survivor group had higher lifetime (16.1%; OR = 6.8, 95% CI 1.9–24.2) and 12-month (6.9%; OR = 22.5, 95% CI 2.5–204.8) prevalence rates of anxiety disorders, and more current sleep disturbances (62.4%; OR = 2.5, 95% CI 1.4–4.4) and emotional distress ($P < 0.001$) than their counterparts, but did not have higher rates of depressive disorders or post-traumatic stress disorder.

Conclusions

Early severe adversity was associated with psychopathological disorder long after the end of the Second World War, but not in all survivors. Age during the Holocaust did not modify the results.

Declaration of interest

None.

The psychopathological impact of the Holocaust, in which 5 820 960 Jews of all ages lost their lives,¹ on survivors was compounded by events following the Second World War such as pogroms in Poland, residence in displaced refugee camps and illegal immigration to Israel. These adversities created emotional wounds that took years to heal, if at all. Psychiatrists treating those who survived upon liberation and during the early years after the war coined the term *Konzentration Lager* (German for ‘concentration camp’) syndrome,^{2,3} since the modern term ‘post-traumatic stress disorder’ (PTSD)⁴ was not then available to encompass the manifold psychopathological wounds and early scars they detected.⁵ These were imputed to the multiple and repeated assaults on the person, family and community.⁶

Eitinger, in the early 1960s, searched for the presence of the *Konzentration Lager* syndrome in three paired samples of survivors in Israel and Norway.³ Those in Israel were identified among in-patient psychiatric services ($n = 396$), psychiatric clinics ($n = 92$) and collective communities (*kibbutzim*) ($n = 66$). In Norway the samples included patients from psychiatric hospitals ($n = 96$), individuals referred for claim compensation ($n = 152$) and ex-prisoners of war ($n = 50$). Eitinger found different proportions of the syndrome by settings: in the three Israeli samples they were 27%, 55% and 35% respectively, whereas the respective findings in the three Norwegian groups were 36%, 81% and 6%. However, Eitinger’s study, although showing the psychiatric impact of the war experiences, did not fit a true community-based design nor did it apply standardised methods to derive diagnoses.

Over the years, including long after the Second World War,⁷ several surveys on emotional distress have been conducted, for example in Canada and Israel. These community surveys relied on standardised instruments to measure emotional distress, such as the 12-item General Health Questionnaire.⁸ Almost invariably respondents who had survived the Holocaust were found to have higher emotional distress scores than suitable comparison groups.⁶ Importantly, all studies were conducted in contexts independent from secondary gains linked to compensation claims

that could have compromised their reliability. The survivor groups often included people who were adults during the war, but rarely those who went through it as children or adolescents, as in our study.

Curiously, and in marked contrast to the rich clinical literature on the psychiatric disorders of Holocaust survivors, no epidemiological study on the true prevalence of those disorders ever followed Eitinger’s inquiry. The Israel-based component of the World Mental Health Survey (Israel–WMHS) included both people who had survived the Holocaust and a suitable comparison group.⁹ This enabled reporting on the first community-based inquiry, and given the dwindling number of survivors through their advancing age, it may remain as the only study to examine relevant psychiatric diagnoses, e.g. depressive and anxiety disorders, including post-traumatic stress disorder (PTSD). In addition, we examined emotional distress, sleep disturbances, complaints of pain, body mass index (BMI), selected self-reported chronic medical conditions, smoking and mental health services utilisation.

Method

Sample selection

The Israel–WMHS followed the procedures established for all participating sites.^{9,10} The sample, comprising non-institutionalised *de jure* residents aged 21 years and over, was extracted from the National Population Register and designed to reflect the gender-age distribution of the general population, including local- and foreign-born Jewish Israelis. The sample was weighted back to the national population to account for unequal selection probabilities resulting from disproportionate stratification, clustering effects and non-response. The weights were adjusted to make weighted sample totals conform to known population figures taken from reliable Central Bureau of Statistics sources for the years of the field operation. Face-to-face interviews at the respondents’ homes took 60 min on average and were

conducted from May 2003 to April 2004. Laptop computer-assisted personal interview methods were used by well-trained and supervised interviewers. The Government Statistician sent a letter to each respondent prior to the first contact to explain the purpose of the overall study. This was reiterated by the interviewer who requested the respondent's verbal informed consent. The response rate was 71% among Jewish Israelis in the overall survey, with no replacements. A Human Subjects Committee approved the study.

The Holocaust survivor group and the comparison group were part of the overall survey sample ($n = 4859$). The former group comprised European-born Jews who had fled from a Nazi-controlled country before war broke out in 1939 (e.g. Germany, Austria) or immigrated following the war's end until 1950, when survivors ceased to arrive in large numbers in Israel. The Holocaust survivor group included 145 individuals, of whom 55 had been in concentration camps, 36 had been in ghettos or in hiding and 54 had fled their country under a Nazi regime (14 of them before the war began). The comparison group comprised European-born Jewish Israelis who had arrived before 1939 and had not lived under a Nazi regime ($n = 31$) and Israel-born respondents whose fathers were born in Europe ($n = 112$).

Interview schedule

The following six sections of the Israel-WMHS interview are relevant to this study.

Sociodemographic factors

A questionnaire on sociodemographic variables (e.g. age, gender, origin, marital and employment status, education, income, degree of religious observance) was administered to all respondents.

Diagnostic assessment

Psychiatric disorders were diagnosed using the World Mental Health Survey version of the Composite International Diagnostic Interview (CIDI),^{9,10} translated into Hebrew and back-translated into English. This structured interview schedule enables diagnosis of selected psychiatric disorders according to the ICD-10 and DSM-IV classification systems.^{4,11} The following disorders were assessed: anxiety disorders (panic disorder, generalised anxiety disorder, agoraphobia without panic disorder, PTSD) and depressive disorders (major depressive disorder, dysthymia). For each disorder a screening subquestionnaire was administered. All participants responding positively to a specific screening item were asked the questions in the respective diagnostic section of the main questionnaire. Organic exclusion criteria were taken into account in determining DSM-IV diagnoses. Lifetime and 12-month prevalence rates were estimated when respondents' psychiatric disorders met DSM-IV diagnostic criteria for those periods.

Emotional distress

The 12-item General Health Questionnaire (GHQ-12) was used to measure emotional distress,⁸ and was referenced to the past 30 days. Its internal reliability consistency was satisfactory (Cronbach's $\alpha = 0.83$).

Sleep disturbances

To meet criteria, respondents had to report at least one difficulty in falling and/or staying asleep, and/or waking up too early, that was present for 2 weeks or more almost nightly, at some time during the preceding 12 months.

Other health-related conditions

Respondents were asked about headaches; other pain localisations; problems related to the cardiocerebrovascular system (stroke, heart attack, hypertension); smoking of at least one cigarette, ever or in the preceding year; weight and height (BMI); and use of any type of mental health services, ever and in the preceding year.

Exposure to adverse events

Respondents were asked about Holocaust-related and unrelated adverse events faced during both their lifetime and the 2 years preceding the interview. Those events were classified as fateful (e.g. terrorist attack) and non-fateful (e.g. divorce), as conceptualised by Shrout *et al.*¹² The adjustments made for the possible effects of adverse events on outcome variables excluded those that were Holocaust-related.

Statistical analysis

Educational level was dichotomised into 0–12 years (up to completed high school) and 13 years and above (post-high school). Religious observance was classified as 'secular' and 'religious', and marital status as 'married' and 'not married'. Chi-squared tests were applied for these categorical variables and for gender, to explore for differences between the study groups.

Generalised linear models (GLMs) were used to test for differences in continuous variables (age and GHQ-12 mean scores) between the survivor and comparison groups, and across the three subgroups of survivors. Intergroup comparisons in GHQ-12 scores were controlled for age, religious observance and education, whereas for the three survivor subgroups adjustment was made for age only. These variables had differed in the bivariate analysis.

Binary dependent variables were compared using logistic regression analyses.¹³ The coefficients were transformed into odds ratios to check for differences between the survivor and comparison groups. For anxiety and mood disorders, and self-reported problems of the cardiocerebrovascular system, differences were controlled for age, religious observance and education. For sleep disturbances, differences were controlled for age, religious observance, education and at least one anxiety or depressive disorder. Reports on headaches and other localisations of pain were controlled for age, religious observance, education and at least one depressive disorder.

Statistical significance was estimated using the SPSS package for complex samples, version 13 for Windows. This program allows second order Rao-Scott chi-squared calculations to correct for complex sample design and weighting.¹⁴ For multivariate analysis (GLM and logistic regression), this program allows for the correction of standard errors according to Taylor's linearisation method for GLM,¹⁵ and the Newton-Raphson iterative method for logistic regression parameter estimation.¹⁶

Results

Those who had survived the Holocaust were significantly older (mean age 74.6 years, s.d. = 6.9) than their counterparts (mean age 69.0 years, s.d. = 8.5; $t = 6.31$, d.f. = 282, $P < 0.001$). There were significant age differences among the three Holocaust subgroups ($P < 0.01$). People who had lived in ghettos or in hiding were younger than those in the other two subgroups ($P < 0.01$) and closer in mean age to the people in the comparison group. The percentage of those with relatively higher education was lower

than for the comparison group (23.2% and 47.2% respectively; $\chi^2 = 18.09$, d.f. = 1, $P < 0.001$).

Half of the survivor group defined themselves as secular, in contrast to 70% of the comparison group ($\chi^2 = 16.21$, d.f. = 1, $P < 0.001$). There was no statistically significant difference in gender or marital status between the two groups. On average, respondents in the survivor group were 15.6 years old (s.d. = 6.9) at the end of the war. Those who were in ghettos or in hiding (mean age 12.0 years, s.d. = 7.4) were significantly younger in 1945 than those in concentration camps (mean age 17.4 years, s.d. = 5.2; $t = -3.92$, d.f. = 139, $P < 0.001$) and those who fled Nazi-controlled countries (mean age 16.5 years, s.d. = 7.2; $t = -2.82$, d.f. = 139, $P < 0.01$).

Respondents in the survivor group lived apart from one or both parents below the age of 16 years with greater frequency than their counterparts (25.5% and 16.1% respectively; $\chi^2 = 3.9$, d.f. = 1, $P = 0.06$). Of the former group ($n = 34$), 22 individuals had lost a parent on account of death, in contrast to the comparison group (10 of 24 individuals).

Exposure to traumatic events

The frequency of exposure to at least one traumatic event in the past was significantly higher in the survivor group than in the comparison group (93.9% and 83.0% respectively; OR = 3.2, 95% CI 1.4–7.2), but the difference was all Holocaust-related, such as receiving beatings or being a refugee. Also, the frequency of recent events did not differ between the three subgroups of survivors; as a result, this variable was not controlled.

Anxiety disorders

The combined lifetime rate of anxiety disorders among the survivor group (16.1%) was statistically significantly higher than among the comparison group (3.9%; OR = 4.8, 95% CI 1.8–12.4), and this was also the case for 12-month prevalence rates

(6.9% and 0.6% respectively; OR = 12.1, 95% CI 1.5–99.3). The respective rate differences remained significant after controlling for age, religious observance and education (OR = 6.8, 95% CI 1.9–24.2 and OR = 22.5, 95% CI 2.5–204.8) (Table 1). When specific anxiety disorders were examined, we found that the lifetime rates of PTSD (3.8%), panic disorder (1.1%) and generalised anxiety disorder (2.9%) in the survivor group were not significantly different from the comparison group (0.0%, 0.0% and 2.6% respectively).

Depressive disorders

No statistically significant difference was found between the survivor and comparison groups for lifetime or 12-month prevalence rates of depressive disorders, both unadjusted and adjusted for confounders (Table 1).

Emotional distress

The GHQ-12 mean score in the survivor group (19.9, s.d. = 6.1) was statistically significantly higher than in the comparison group (16.7, s.d. = 4.8; $t = 3.62$, d.f. = 279, $P < 0.001$, adjusting for demographic variables).

Sleep disturbances

The percentage of the survivor group who reported at least one sleep disturbance (62%; $n = 90$) was twice that of the comparison group (33%; $n = 46$; OR = 3.4, 95% CI 2.0–5.6). The difference remained significant after adjusting for age, education, religious observance and past-year presence of anxiety and depressive disorders (OR = 2.5, 95% CI 1.4–4.4).

Other health-related conditions

The percentage of the survivor group who reported at least one localisation of pain was higher than that of the comparison group

Table 1 Comparison of those exposed and not exposed to the Holocaust: anxiety and depressive disorders, emotional distress and other health dimensions

	Holocaust group ($n=145$)	Comparison group ($n=143$)	Statistical significance	
			Uncontrolled OR (95% CI) ^a	Controlled OR (95% CI) ^a
All anxiety disorders, %				
Lifetime rates	16.1	3.9	4.8 (1.8–12.4)	6.8 ^b (1.9–24.2)
12-month rates	6.9	0.6	12.1 (1.5–99.3)	22.5 ^b (2.5–204.8)
All depressive disorders, %				
Lifetime rates	10.0	9.9	1.0 (0.5–2.7)	1.8 ^b (0.7–4.8)
12-month rates	5.6	4.7	1.2 (0.4–3.7)	1.9 ^b (0.5–7.6)
Sleep disturbances, past 12 months, %	62.4	33.0	3.4 (2.0–5.6)	2.5 ^c (1.4–4.4)
Mental health services utilisation, %				
Ever	21.3	21.5	1.0 (0.6–1.8)	1.1 ^d (0.6–2.2)
Past 12 months ^e	18.1	11.0	1.8 (0.9–3.5)	1.0 ^c (0.5–2.0)
Smoking, %				
Ever	48.4	44.0	1.2 (0.7–2.0)	
Current	10.0	8.1	1.3 (0.5–3.0)	
Pain (ever), %	48.5	35.9	1.7 (1.0–2.7)	1.7 ^f (1.0–2.9)
Cardiocerebrovascular (ever), %	64.0	48.0	1.9 (1.2–3.2)	1.5 ^b (0.8–2.5)
Overweight, measured by BMI, % ^h	60.3	58.2	1.1 (0.7–1.8)	
Emotional distress score (past 30 days), mean (s.d.)	19.9 (6.1)	16.7 (4.8)	$t = 4.8$, d.f. = 282, $P < 0.001$	$t = 3.6$, d.f. = 279, $P < 0.001$ ^g

a. Comparison group as reference.

b. Controlling for age, religious observance and education.

c. Controlling for age, religious observance, education and past-year anxiety and mood disorders combined.

d. Controlling for age, religious observance, education and lifetime anxiety and mood disorders combined.

e. Utilisation of mental health professionals, doctors or other health professionals, psychotropic medications, religious counsellors or healers.

f. Controlling for age, religious observance, education and mood disorders during lifetime.

g. Product of linear regression controlling for age, religious observance and education.

h. Defined as a body mass index (BMI) ≥ 25 kg/m².

(48.5% and 35.9% respectively; OR = 1.7, 95% CI 1.0–2.7). However, this difference was no longer apparent following adjustment for potential confounders (age, religious observance, education, and mood disorders during the lifetime). There was no significant difference between the two groups for current or past smoking, or for being overweight based on BMI. Self-reported problems of the cardiocerebrovascular system were more frequent among the survivor group than among the comparison group (64.0% and 48.0% respectively; OR = 1.9, 95% CI 1.2–3.2). Following control for age, education and religious observance this difference was no longer significant.

Mental health service utilisation

Overall, 21.3% of the survivor group reported that they had consulted a health professional or a traditional agent for a mental problem sometime in their life. A similar rate, 21.5%, was found in the comparison group (controlling for age, religious observance, education and lifetime anxiety and mood disorders combined, OR = 1.1, 95% CI 0.6–2.2). In addition, 18.1% of the survivor group and 11.0% of the comparison group reported that they had consulted in the previous 12 months; again not a statistically significant difference (OR = 1.0, 95% CI 0.5–2.0).

Discussion

The Second World War ended in 1945, yet for some – but not all – of those who survived the Holocaust the psychopathological impact seems to have been present over the years, and even six decades later. We found that anxiety disorders (combined), emotional distress and sleep disturbances were more frequent among Holocaust survivors living in the community than among their counterparts. All health dimensions analysed were controlled for possible confounders. Importantly, our findings of psychopathological problems did not seem to result from learning about symptoms in the clinical context, since those in the survivor group used mental health services no differently from the comparison group, and secondary gain was unlikely in the context of our survey. Other dimensions of morbidity investigated, such as depressive disorders (expected to be higher on account of the early losses sustained by those in the survivor group) and PTSD (following threats to their life and/or physical integrity), were not elevated. The latter two negative findings pose intriguing issues for further research in analogous populations. Also negative were the findings on pain, selected self-reported cardiovascular problems, obesity and smoking.

As there are no similar studies in other countries where Holocaust survivors ultimately settled, such as Australia, Canada and the USA, it cannot be ascertained whether the higher rates of psychopathological morbidity elicited are confined to Israel, where survivors participated actively or passively in wars and were directly or indirectly exposed to terror throughout most of their lives. These events could have interacted with prior vulnerability resulting from Second World War adversities.

What was learned? Young survivors mostly lived in ghettos or in hiding (e.g. in forests, sheltered by non-Jewish families), whereas those in camps perished.¹ Their personal narratives and psychopathology have been documented by Kielson in Europe, Kestenberg & Brener in the USA and Solomon & Chaitin in Israel.^{17–19} What emerged from all these studies is that the young were vulnerable to adversity and stressful events, whether experienced directly, e.g. hunger and forcible separations, or indirectly, through victimisation of their parents and siblings. For some of the survivors who were young at the time, traumatic events continued after the war ended, such as upon leaving their

places of hiding, with the resulting new separations from those who had protected them.²⁰ As for survivors who were born during the Second World War itself, stress may have affected them as early as during the intrauterine period of life.²¹ However, contrary to our expectations that the age at which the survivors faced adverse wartime experiences would affect them differently (age less than 10 years at the time of the Holocaust *v.* age 10 years or older), the interaction term between these relevant variables in the multivariate analysis yielded no significant effect.

To explain the psychological effects of Second World War adversities on young individuals and their lingering effects, theoreticians have suggested a number of different mechanisms that might act at different stages of life. Initially, these have been described for childhood.^{20,22} In later years, feelings attached to the encapsulated memories of the adverse past events might return, possibly reactivated by other events such as the national annual Remembrance Day, visits to the extermination camps in Europe, or war (e.g. the first Gulf War, when the threat of Iraqi missiles carrying lethal gas forced the Israeli population to wear masks and stay in sealed rooms).²³ Lastly, in older individuals, who often engage in retrospection, past memories might vividly evoke those early years of deprivation, losses and persecution, and as a result repressed or suppressed feelings might emerge.

Noteworthy in the context of this trauma are the reported sleep disturbances, also found in a community-based study of elderly people who were Holocaust survivors.²⁴ The sleep disturbances could result from (or even be independent of) the lingering components of non-specific post-traumatic disorders,²⁵ in which repeated and traumatic imagery or dreams regularly may appear during sleep. Rosen *et al* reported that the survivor group ($n=42$) ‘had ... more frequent awakenings due to bad dreams ... than depressed ($n=37$) and healthy subjects ($n=57$)’.²⁵ More recently, Bader *et al* attributed the primary insomnia found among adults with a history of childhood maltreatment to an ‘aftereffect of long-lasting stressful experiences in childhood’.²⁶

Our results, late psychopathological effects of early severe adversity, agreed with those found by researchers studying abused and other persecuted children,^{27,28} but differed from the findings of Sigal & Weinfeld in Canada.²⁹ Using proxy measures of psychiatric disorders, these authors obtained information from the offspring of parents who were children during the Second World War. They found no difference from a comparison group, a result attributed to the not-yet-developed cognitive capacity of young children to process and interpret traumatic information at the time the events occurred. Also, a study conducted on children who had survived the Holocaust interviewed in Israel during adulthood showed signs of adequate adjustment.³⁰ Our results differed from both studies, most probably because their authors did not use a structured psychiatric interview or interview unbiased samples of groups of survivors and comparisons, as done here.

Study limitations

This study has several limitations. With regard to its method, the relatively small sample size did not yield sufficient statistical power for a full examination of specific disorders and also accounted for the wide confidence limits. Importantly, the survivor group included in this study constituted a selective sample, since it comprised respondents who had reached a relatively advanced age and were healthy enough to live at home. The results we found could have extended to other health domains and disorders if institutionalised respondents, excluded by design in the Israel–WMHS, had been sampled as well.

The CIDI has been evaluated for validity in several countries and found to be satisfactory.³¹ Although there was no validation study on the Hebrew version of the CIDI, the agreements both on rates and covariates with the 27 studies conducted worldwide would provide some degree of evidence by proxy.¹⁰

With regard to substantive issues, the study did highlight the differences or lack of them between those exposed or not exposed to the Holocaust with reference to psychiatric disorders and other mental health dimensions. Since it was not the focus of the Israel–WMHS we could not account for resilience factors among the Holocaust survivor group, as had been noted by Antonovsky years ago,³² as most of our respondents did not show psychopathological symptoms, nor did we elicit attitudes and related behaviours, such as how an experience like the Holocaust might have affected the individual's world view.³³

Asaf Sharon, MA, Myers-JDC-Brookdale Institute, Jerusalem; **Itzhak Levav**, MD, MSc, Ministry of Health, Jerusalem; **Jenny Brodsky**, MA, Myers-JDC-Brookdale Institute, Jerusalem; **Annarosa Anat Shemesh**, MPH, Ministry of Health, Jerusalem, Israel; **Robert Kohn**, MD, MPhil, Department of Psychiatry and Human Behavior, Brown University, Rhode Island, USA

Correspondence: Dr Itzhak Levav, Ministry of Health, 29 Rivka, Jerusalem 93461, Israel. Email: itzhak.levav@moh.health.gov.il

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