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Psychopathology and Other Health Dimensions among the Offspring of Holocaust Survivors: Results from the Israel National Health Survey

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Abstract: Background: Holocaust survivors show long-lasting psychopathological wounds and scars. The experiences they endured during WWII were thought to impair their parental functioning. A trans-generational transmission of the trauma has been reported by clinicians and by researchers exploring the vulnerability of the adult offspring when facing major stressful events. However, the two previous epidemiological studies conducted so far failed to show enhanced psychopathology when the children of the Holocaust survivors were compared with suitable controls. *Methods*: In the Israel-component of the World Mental Health Survey offspring of Holocaust survivors were identified (N=430) and compared to offspring of Europe-born parents who did not reside in Nazi-occupied countries (N=417) on several measures of psychopathology and physical health dimensions that have a marked psychological components, and on health and mental health help-seeking practices. *Results*: No statistical differences were elicited between both groups on all those domains. *Conclusions*: Apparently, Holocaust survivor parents succeeded to spare their children from the untoward consequences of the psychological wounds and scars of their traumatic past. Survivors strived to secure a better and safer life for their children as evidenced by the relatively higher level of education that the offspring of the survivors were able to achieve than the comparison group, although their own educational career was truncated. Also, separations from parents until the end of adolescence of the children did not differ between the two groups.

Research findings on the effects of the Holocaust experience on the survivors have consistently shown higher levels of psychopathology compared with adequate controls, shortly and even long after World War II ended (1, 2). Those findings were made in different countries and in studies based on clinical and community samples. Importantly, these studies were unrelated to compensation claims (1). Clinicians subsequently reported that the children of the survivors were equally affected (3–5). This was not surprising as Holocaust survivors were suspected to be impaired in their parental functioning (6). Factors such as bereavement, the ghost of past severe traumatic experiences during and immediately after WWII, hastily contracted marriages after liberation, concern about a safe future, compounded by pogroms upon return to the original places of residence, immigration, and exposure to war-related stressors in Israel were all assumed to build an adverse scenario with regard to successful parenting (1). For example, authors raised the hypotheses that processes related to child rearing, such as separation-individuation (7) and attachment (8) might be disrupted.

Today, the picture that emerges from a vast literature on the mental health of children of Holocaust survivors is more complex. Community-based epidemiological inquiries, which are not based on illness behavior, cast a doubt on the above findings (9, 10). Indeed, reviewers (11, 12) concluded that clinical and community studies fail to concur. Whereas "…clinical studies tend to present a specific 'psychological profile' that includes a predisposition to PTSD, various difficulties in separation-individuation and a contradictory mix of resilience and vulnerability when coping with stress…" (12),

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community surveys do not show that the offspring of the survivors differ from well-selected comparison populations. Admittedly, the clinical studies were not uniform with regard to their findings. As noted by reviewers, several of those studies failed to support the notion that psychopathology in the first generation is transmitted to the second. In addition, not all of the clinical studies were free from methodological shortcomings (1, 5). Yet, for many practitioners the existence or lack of existence of the "second generation syndrome" has not reached closure, especially since a set of well designed studies have identified vulnerability factors in the offspring with regard to the reaction to stressors such as being diagnosed with breast cancer (13, 14), and exposure to war actions (15). In these cases, samples of female and male children of Holocaust survivors, respectively, showed higher measures of psychopathology than comparison groups. Analogously, Yehuda et al. found that the offspring of survivors compared to suitable comparison groups reacted to traumatic events with higher frequency of PTSD and/or other psychiatric disorders (16). Yehuda et al. also showed that the vulnerability in the offspring of Holocaust survivors expresses itself through the hypothalamic-pituitary-adrenal axis with lower cortisol levels than controls (17).

In view of the contrasting findings obtained in those three different sources of data, further epidemiological exploration would seem to be fully justified provided the new study offers comparative advantages with regard to previous work in both its methodology and domains covered. The Israeli component of the World Mental Health Survey provided us with such an opportunity (18). In this community study, offspring of Holocaust survivors and of Europe-born parents who had not resided in Nazi-occupied countries were included in a large country-wide survey. The outcome variables comprised a number of factors that had not been researched in the two earlier community studies (9, 10), such as use of services, self-appraisal of health, self-reported physical health conditions, and suicidal behavior. Psychopathological domains that had been explored in those past studies, such as emotional distress and mood and anxiety disorders, complement these new measures.

Methods and Procedures

Survey sample selection

This inquiry was nested in the Israeli component of the World Mental Health Survey (WMH). Accordingly, it followed the procedures established by the World Health Organization and Harvard University in the approximately 30 countries that participated in the survey (18). Our sample was extracted from the National Population Register (NPR) and comprised non-institutionalized *de jure* residents aged 21 and over. The sample was designed to reflect a distribution of respondents combining gender-age-population groups (Arabs, Jews: Israel-born or pre- and post-1990 immigrants from the former USSR).

In large localities (N=73), where approximately 80% of the total population live, a one-stage stratified sample was drawn. Each stratum was defined as a combination of population group, age and gender. The records in each stratum were sorted by geographic characteristics and a systematic sample was drawn. In small localities (N=1113), a two-stage sample was drawn. First, the localities were assigned to 33 strata according to localization, size and type (e.g., village, kibbutz). A systematic sample of localities was drawn from each stratum with probability proportional to their size; 89 localities were selected, at least two localities in each stratum. In the second stage, the sampling rate was set so that the final probability of individuals was fixed across localities. A systematic sample of individuals in the sampled localities was drawn from the NPR, after sorting the records by population group, age and gender. On average, 15 respondents were selected in each locality.

The interviewed sample was weighted back to the total population to compensate 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 totals taken from reliable Central Bureau of Statistics (CBS) sources. Face-to-face interviews at the homes of respondents were conducted from May 2003 to April 2004. The survey was administered using laptop computer-assisted personal interview (CAPI) methods by professional survey interviewers trained and supervised by the CBS. A letter signed by the Government Statistician, explaining the purpose of the survey and the

rights of respondents, was sent to each potential respondent a few days prior to the first contact attempt. Upon making in-person contact with the sampled respondent, the interviewer explained the survey purpose once again and obtained verbal informed consent. Interviews took on average 60 minutes. A total of 4,859 interviews were completed, with an overall response rate of 71% among Jewish- and other-Israelis. There were no replacements. A Human Subjects Committee approved the study.

Definition of offspring of Holocaust survivors and the comparison group

The index group included Israel-born or Europe-born respondents, except those from the former Soviet republics, aged 30 years and over, where at least one of the parents had lived in a Nazi-occupied country (only mother, n=63; only father, n=91; both parents, n=276; total n=430) during World War II. This group of respondents was identified relying on the following questions: "Did your father/mother live in a country that was under the Nazi regime or in a country that was under the direct influence of the Nazi regime?" All those who answered positively were asked: "During the Holocaust, was your father/mother in a ghetto?" "During the Holocaust, was your father/mother in hiding?" "During the Holocaust, was your father/mother in a labor camp?" "During the Holocaust, was your father/mother in a death camp?" and "Was your father/mother forced to leave his/her place of residence because of the Nazi regime?" The comparison group comprised of children of Europe-born parents who did not reside in Nazi-occupied countries during WWII (N=417).

The interview schedule

The computerized survey schedule included socio-demographic information; the 12-item General Health Questionnaire (GHQ-12); the World Mental Health Survey Composite International Diagnostic Interview (WMHS-CIDI); general and mental health service utilization; general health (mental and physical) self-appraisal; self-reported physical health conditions; smoking; and suicidal behaviors.

The GHQ-12 has previously been used in Israel (19). This scale screens for psychiatric disorder and is a measure of emotional distress. Scores range between 12 and 48, where higher scores indicate increased distress. The Cronbach's *alpha* that measures internal reliability consistency was 0.88 for the combined groups. The WMHS-CIDI is a fully structured diagnostic instrument, which assesses lifetime and 12-month prevalence of several mental disorders according to both the ICD-10 and the DSM-IV psychiatric classification systems**;** the WMHS-CIDI has been found to be of acceptable reliability and validity (20**).** The following disorders were included in this report: anxiety disorders (panic disorder, generalized anxiety disorder, agoraphobia without panic disorder, and post-traumatic stress disorder) and mood disorders (major depressive disorder, dysthymia, bipolar I and II disorders). Twelve-month and/or lifetime prevalence rates of DSM-IV disorders were determined whenever respondents' current or past symptoms met diagnostic criteria. For each disorder, a screening section was administered to each respondent. All participants answering positively to a specific screening question were referred to the respective diagnostic section of the questionnaire. Whenever appropriate, organic exclusion criteria were taken into account in the assessment of the DSM-IV diagnoses. Respondents were asked whether they had consulted with any one of a list of health and community agents for problems related to their mental health during the preceding 12 months. The professionals included those in specialized mental health services (psychologists, psychiatrists, social workers), general medical professionals (such as family physicians), religious counselors and other healers (e.g., naturopaths). Respondents who did not use those services during the same period of time were asked whether they thought they needed mental health treatment. Respondents were asked to appraise their health using a 1 to 5 scale, from excellent to poor. Self-report of a number of health conditions with obvious psychological load was examined: sleep problems; hypertension and cardiovascular and cerebrovascular disorders; asthma; diabetes; and body mass index, as an indicator of obesity. Current smoking was measured at any level of the habit. Lastly, we inquired about lifetime suicidal behavior; this single variable included ideation, planning and attempt.

Analysis

One-way analysis of variance was used to assess dif-

ferences in the means and standard errors of emotional distress among the offspring of Holocaust survivors and control group measured by the GHQ, adjusting for education. A variable, AMAD, was created to include any anxiety or mood disorder that was present during the last year and lifetime. Sleep problems included difficulties to fall and stay asleep and early morning awakening. Cardiovascular and cerebrovascular variables were combined. Suicidal behaviors, thinking, planning and attempts were collapsed into one measure. All other measures were analyzed individually. Rao-Scott Chi-Square (21) statistics were applied to test significance of differences in the distributions between offspring of Holocaust survivors and the comparison group. Statistical significance was established at .05. Odds ratios (ORs) and 95% confidence intervals (CIs) for the measures of psychopathology and other health dimensions adjusted for confounders were calculated using logistic regression analysis. Confidence intervals that excluded the unity were regarded as significant. Strata and cluster weights were assigned to each subject according to complex sampling design. All statistical analyses were performed in SAS 9.1.3, a statistical package that takes into account complex sampling designs (21).

Results

Table 1 shows the socio-demographic features of both offspring of Holocaust survivors and the comparison group. No statistically significant differences were noted, except for educational attainment (p=0.0007); the offspring of Holocaust survivors had more years of schooling than the comparison group. There were neither group differences with regard to separation from the biological parents before age 16, nor for placement outside the home before age 18.

Table 1. *Offspring of Holocaust survivors and comparison group by socio-demographic features (raw numbers and weighted proportions)*

Variables		Holocaust group n=430 n (%)	Comparison group n=417 n (%)	Statistical significance
Gender	Male	214 (48.1)	195 (45.9)	χ^2=0.46 df=1 p=.50
	Female	216 (51.9)	222 (54.1)	
Age groups	30–49	189 (45.8)	174 (45.2)	χ^2=0.03 df=1 p=.86
	50+	241 (54.2)	243 (54.8)	
Marital status	Married	346 (82.4)	317 (78.3)	χ^2=2.36 df=1 p=.12
	Not married	84 (17.6)	100 (21.7)	
Education, yrs.	0–12	122 (28.0)	173 (40.8)	χ^2=14.47 df=2 p=.0007
	13–15	118 (27.6)	98 (23.9)	
	16+	189 (44.4)	248 (35.3)	
	Missing data	1		
Place of origin	Israel-born	275 (65.7)	248 (59.9)	χ^2=3.12 df=1 p=.08
	Europe-born	155 (34.3)	169 (40.1)	
Lived with both biological parents before age 16				
	Yes	380 (88.3)	377 (91.1)	χ^2=1.85 df=1 p=.17
	No	50 (11.7)	40 (8.9)	
Outside the home for more than 6 months before age 18				
	Yes	45 (10.6)	40 (8.9)	χ^2=0.67 df=2 p=.41
	No	384 (89.4)	377 (91.1)	
	Missing	1		

Table 2 shows that both groups did not differ statistically with regard to emotional distress and the common mental disorders — anxiety and mood disorders — assessed with CIDI, for both lifetime and 12-month prevalence rates. Both groups did not differ in the age of onset of those disorders up to age 18, when almost all Jewish males and most Jewish females leave home for Army service. Also, no differences were noted with regard to suicidal behaviors, sleep problems or smoking. General health was self-assessed as excellent or very good by 67.2% of the offspring of Holocaust survivors in contrast to 59.2% by the comparison group. When this variable was adjusted for education, the difference did not reach statistical significance (OR 1.3, 95% CI [1.00–1.7]). No difference was elicited in the percentage of individuals that consulted health services for a mental condition neither during their lifetime nor during the preceding year.

A similar lack of statistically significant difference was found with regard to the physical health variables examined (see Table 3), including visits to the general health services in the preceding two weeks.

The above analysis was repeated for the subgroup of offspring of Holocaust survivors whose parents were in extermination camps (n=32) and where both parents went through the Holocaust (n=276); there were no statistically significant differences with the comparison group (results available upon request).

Discussion

Given the parents' ordeal during and immediately after WWII, authors had expected that their offspring would be affected in terms of their psychopathology as well as other psychological domains (1, 4, 12). Yet, all the domains we investigated — selected psychopathological and physical measures, and the use of mental or general health services — showed no differences between the group of children of Holocaust survivors and the comparison group.

Table 2. *Offspring of Holocaust survivors and comparison group by selected psychopathological measures*

Measures	Holocaust group n=430	Comparison group n=417	Holocaust vs Comparison group	Holocaust vs Comparison group, education adjusted
GHQ, Mean (SE)	17.4 (0.3)	17.5 (0.3)	F=0.08; df=1; p=.78	F=0.03; df=1; p=.86
	% (n)	% (n)	OR (95% CI)	OR (95% CI)
AMAD,* 12 months	6.7 (29)	4.2 (17)	1.6 (0.9–3.0)	1.7 (0.9–3.1)
AMAD, onset (before age 18)	3.8 (19)	2.9 (13)	1.2 (0.9–1.7)	1.2 (0.8–1.6)
AMAD, lifetime	12.6 (56)	11.2 (48)	1.2 (0.8–1.8)	1.1 (0.7–1.7)
Self-appraisal of mental and physical health	67.2 (281)	59.2 (232)	1.4 (1.1–1.9)	1.3 (1.0–1.7)
Suicidal behavior (ideation, planning or attempt), lifetime	3.6 (16)	2.4 (10)	1.5 (0.7–3.5)	1.7 (0.8–4.0)
Smoking	18.8 (81)	18.3 (76)	1.0 (0.7–1.5)	1.1 (0.8–1.6)
Sleep problems	26.2 (116)	24.9 (105)	1.1 (0.8–1.5)	1.1 (0.8–1.6)
Mental health treatment, last 12 months	13.6 (60)	12.1 (53)	1.1 (0.8–1.7)	1.2 (0.8–1.8)
All other respondents thought of seeking mental health treatment, last 12 months **	4.7 (18)	5.1 (18)	0.9 (0.5–1.8)	0.8 (0.4–1.8)
Any health service treatment, lifetime	26.7 (120)	21.4 (91)	1.3 (1.0–1.9)	1.3 (0.9–1.7)

* AMAD: any anxiety or mood disorder

** N refers to respondents that did not receive mental health treatment. Offspring of Holocaust survivors, n=380; Comparison group, n=386.

Table 3. *Offspring of Holocaust survivors and comparison group by selected self-reported physical health measures*

Physical health measures	Holocaust Group (1) n=430	Comparison group (2) n=417	(1) vs (2) unadjusted	(1) vs (2) education adjusted
Body mass index (BMI) mean (SE)	26.1 (0.2)	25.8 (0.2)	F=0.79; df=1; p=.37	F=1.97; df=1; p=.16
	% (n)	% (n)	OR (95% CI)	OR (95% CI)
BMI 30+	18.5 (76)	16.7 (65)	1.1 (0.8–1.7)	1.2 (0.8–1.8)
Physical problems for 6 months and over	34.5 (149)	33.5 (145)	1.0 (0.8–1.4)	1.1 (0.8–1.4)
Chronic pain, different locations	39.4 (173)	34.0 (143)	1.2 (0.9–1.7)	1.3 (1.0–1.7)
Myocardial infarction, CVA or hypertension	25.6 (111)	28.6 (128)	0.9 (0.6–1.2)	0.9 (0.7–1.2)
Asthma	6.4 (28)	6.4 (28)	1.0 (0.6–1.8)	1.0 (0.6–1.8)
Diabetes	6.8 (31)	9.3 (43)	0.7 (0.4–1.2)	0.8 (0.5–1.2)
Use of health services, last 2 weeks	42.4 (179)	41.4 (179)	1.0 (0.8–1.4)	1.0 (0.8–1.4)

The lack of differences we found in our study confirm and expand the findings made in the only two epidemiological studies that were conducted previously, in Israel (9) and Norway (10), and that used different diagnostic instruments and research strategies. Our study, which was based on adult respondents, shares with its predecessors the limited information available on the possible psychopathology of the respondents during their young years, when they were living in closer contact with the parents and at a time closer to the traumatic events of WWII that the latter endured. However, our study design did enable us to explore differences with regard to the early age of onset of the anxiety or mood disorders. As noted earlier, we found no indication of any difference between the two groups of respondents. Furthermore, and unlike those two epidemiological inquiries (9, 10), ours explored several additional health domains that bear an obvious emotional load (such as asthma, hypertension) that had never been investigated earlier. The lack of differences remained.

Those two epidemiological inquiries (9, 10) and ours are not alone in their negative findings. Of late, Sagi-Schwatz et al. (8), in an ingenious laboratory-based study, found that attachment, a key psychological mechanism linking mothers with their offspring, was not more disrupted among a group of children of Holocaust survivors than in a suitable control group. In contrast to epidemiological community-based inquires that gather data from all community members whether healthy or sick, clinical studies based their observations on psychopathology examined in the practice. Conceivably, offspring of Holocaust survivors who seek help from mental health services impute the origin or the coloring of their problems to the family environment and parental behavior resulting from the traumatic experiences dating from WWII. Importantly, our study does not support a greater need of care among our index cases; we found no evidence that the offspring of Holocaust survivors consulted in the past or planned to consult more frequently for mental health problems during the preceding year of the survey compared with their counterparts.

The explanation for the disparity between the epidemiological findings and those obtained by the third type of inquiries, the exploration of the vulnerability of the offspring of Holocaust survivor facing major fateful stressors (13–17, 21), is more elusive. Possibly, the individuals who were selected for those studies, because they had faced or were facing major fateful stressful events (22), were carriers of a risk that requires triggers that are less ubiquitous in usual life in order to reach clinical expression.

The comparative advantages of our exploration were at least two. A larger number of individuals (over 800 individuals between index and comparison groups) were included than in previous epidemiological inquiries; this enabled us to apply adequate

statistical tests in the total sample, and the sub-sample where both parents underwent the Holocaust. In addition, the study addressed for the first time multiple health and mental health components, such as obesity, a proxy for a possible residual issue around food in parents who had faced chronic hunger. Admittedly, the study is not free from limitations, as noted above, we were not able to investigate the presence of psychopathology or behavioral disturbances when the respondent was a child, and we could not obtain reliable information on the full characteristics of the traumatic experience beyond where the parent was during WWII (ghetto, hiding, labor camp, extermination camp). We believe, however, that the strength of the study outweighs its limitations.

Our study argues for a change in the research agenda. Rather than to continue exploring the domain of ill-mental health among the offspring of Holocaust survivors, the research task that lies ahead with regard to this subject is to explore resilience. How is it that parents who underwent one of the cruelest human-made disasters in history and whose emotional scars could be elicited in community surveys long after their ordeal ended (1, 2) were able to spare their adult offspring from the transmission of different expressions of the trauma? It has been repeatedly noted that these survivors bore in secret their personal dramas while striving to secure for their children a safer and better life (23). The mutual (over) protection inferred from the narratives of offspring in a study conducted in Israel (24), construed by some observers as possibly pathogenic, and the "conspiracy of silence" (25), might have ultimately rendered the disorder-free outcome we found. Obviously, this outcome refers solely to the measures of mental and physical health we explored. In this study we were able to gather some evidence of the ability of Holocaust survivors to function as parents, separations up to Army age did not differ between both groups (index and comparison), and while Holocaust survivors were found to have a relatively lower level of education than controls (2), the offspring of Holocaust survivors achieved more years of education than the comparison group. To conclude, our study is a testimony of a generation of parents who suffered maximum adversity in their lives, but somehow were able to protect their children's mental health up to adulthood.

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