

Aging of Holocaust Survivors: Discrepancies Between Subjective and General Health in the Greater Tel Aviv Area

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ABSTRACT: Aging has been associated with perceived lowering of health, especially in post-traumatic individuals. The effects may be more complex or even different for Holocaust survivors as they age due to their inherited resilience and life perspective. A cross-sectional study was conducted of Holocaust survivors and a matched comparison group recruited from the general Israeli population. All participants underwent a personal interview and completed the Cumulative Illness Rating Scale and a survey of subjective Likert-scale questions about perceived health. The study comprised 214 older adults: 107 Holocaust survivors and 107 comparison participants; 101 women and 113 men. The mean age for the participants was 80.7 ± 4.7 years (range 68–93). Holocaust survivors did not differ from comparison subjects in general health measures (mean 51.50 ± 3.06 vs. 52.27 ± 3.24 , respectively). However, the Holocaust survivors' subjective health was significantly lower, $F(2,211) = 4.18$, $P < 0.05$, and associated with decreased quality of life. The present study demonstrates the complex interplay between general and subjective health and suggests that future interventions need to focus on improving the psychological and social well-being of Holocaust survivors to achieve successful aging.

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Research advances in successful aging have been hindered by the lack of a consensual working definition of aging, with various definitions applied by research professionals [1]. The majority of studies attempting to explain successful aging focus predominantly on physical health. Successful aging includes not only maintaining physical health but also maximizing psychological resources and resilience in spite of a body that is changing with age [2].

Holocaust survivors are a unique cohort of older adults who can contribute to our understanding of the effects of invasive trauma on the aging processes. Seventy years after World War II and the Holocaust, studies of survivors' physical and mental health are still of interest. A comprehensive description of symptoms

and signs typical of Holocaust survivors, often termed "Survivor's Syndrome's," has been developed. Still, findings are not uniform [3], and the lack of robust empirical research coupled with methodological flaws prevents formation of firm conclusions regarding the effects of the Holocaust on aging survivors [4].

Two recent studies focused on the complex late effects of the Holocaust on survivors' subjective well-being. The first study [5] aimed to support hypotheses regarding expected Holocaust survivor-specific effects on indicators of subjective well-being. Life satisfaction did not differ among the groups. The authors suggested that significant differences of the impact of traumatic life events on cognitive vs. emotional indicators of subjective well-being should be further investigated. The second study [6] explored the interconnection between memories of Holocaust-related early traumatic events and survivors' sense of subjective well-being in later life. The authors found that surviving this horrendous period might have contributed to the development of a stronger sense of meaning and coherence, which in turn led to better mental health as survivors aged. Despite these studies, Kohn and colleagues [7] demonstrated that Holocaust survivors had an increased cancer risk, while Bercovich and co-authors [8] and Keinan-Boker et al. [9] found, based on self-reports or medical records, that child Holocaust survivors who were born during World War II had a higher prevalence of risk factors for metabolic diseases as well as obesity, dyslipidemia, diabetes, hypertension, cardiovascular morbidity, malignancy, peptic ulcer disease, and osteoporosis [10].

Self-rated perception of health is a major predictor of well-being across the life-cycle [11] and even of mortality for older adults [12]. The aim of the present study was to compare health and quality of life (QoL) between Holocaust survivors and a control group of age- and gender-matched elderly individuals. In addition, we provided potential insights into the association between health and QoL in older adults.

METHODS

The present study was designed and completed as a cross-sectional assessment. Using the Israeli National Census database

(years 2008–2009), a list of Holocaust survivors was compiled. The list specifically included Holocaust survivors living in the greater Tel Aviv area, as this is where the majority of Holocaust survivors in the country reside. Preliminary contact was made through a letter sent through the Israeli postal service describing the research aims and processes. The authors mailed 832 letters of which 757 (91%) were received by the addressee. There were 230 addressees (30%) who had passed away and were thus excluded. One week after mailing the letters, the potential participants were contacted by telephone and any questions were answered. A date was scheduled for a face-to-face interview with those who consented to the survey. During the telephone contact with 527 potential participants, 313 (59%) refused to participate in this project. Of those who refused, 280 (89%) declared that they were too busy to commit to the time necessary for participation. Thus, 214 participants who consented to be interviewed in a follow-up telephone call comprised the present sample. This result represents an overall response rate of 41% with a somewhat higher response rate (44%) among comparison participants.

Participants were defined as Holocaust survivors if they had been living in a European country under the Nazi occupation and rule between the years 1939–1945. For the purposes of the present study, the term “elderly” was defined as a person 65 years or older. Participants who were 65–74 years of age were referred to as younger Holocaust survivors (in line with French et al. [13]). A random sampling from the list of Holocaust survivors was performed and invitation letters were forwarded to chosen individuals. In a similar manner, age- and gender-matched comparison individuals were approached. A comparison participant was one who had been born in Europe but had immigrated to Israel (then British Mandate Palestine) before 1939.

The study was approved by the Tel Aviv University committee for experimentation with human participants.

INSTRUMENTS

The Cumulative Illness Rating Scale (CIRS), a measure of multi-morbidity, was applied to the source data. This scale measures the chronic medical illness burden on 14 organ systems and domains while considering the severity of the medical conditions of each. If there are several diseases in a single system or domain, the score considers the one with the highest impact. The 14 organ systems or domains measured by CIRS include: cardiac (heart only), hypertension, vascular, respiratory, ear-nose-throat, upper gastrointestinal tract, lower gastrointestinal tract, hepatic, renal, other genitourinary, musculoskeletal-integumentary, neurological, endocrine-metabolic, and psychiatric-behavioral.

We chose the CIRS measures to compare subjective health-related QoL with general quantification of morbidity. The CIRS has been shown to result in a better measure of multi-morbidity than most other available instruments [14].

Subjective evaluation of health was based on a single item. Each participant was asked to rate their subjective perception

of their own health on a 5 point Likert scale where 1 = severely bad health status and 5 = excellent health status.

QoL was measured using the World Health Organization Quality of Life (WHOQOL)-BREF. The WHOQOL-BREF an abbreviated generic QoL scale of life assessment that contains a total of 26 questions. It has been widely used for research on older populations. The WHOQOL-BREF has been tested and found to be appropriate for combined use and for comparisons in older people across gender and different educational levels [15].

STATISTICAL ANALYSIS

Statistical analyses were performed using Statistical Package for the Social Sciences software version 18 (SPSS Inc., Chicago, IL, USA). Proportions were compared using chi-square or two-sided Fisher's exact tests. Adjustment for age and gender as potential confounders of any association were investigated. Analyses were performed with two-sided $P < 0.05$ considered statistically significant.

RESULTS

During the first telephone contact with potential participants, 214 consented to be interviewed in a follow-up phone call. This group comprised the study sample. Of these participants, 107 were Holocaust survivors and 107 were comparison participants. There were 113 male and 101 female participants, mean age was 80.7 ± 4.7 years (range 68–93). All participants signed an informed consent form after hearing a detailed explanation from the primary investigator (IO).

The Holocaust survivors and comparison participants did not differ in gender, level of education, past professional work experience, marital status, number of children, or religious orientation. See Ohana et al. [16] for a detailed description of these comparisons. Briefly, there was a minor over-representation of male participants in our sample (52.8%). In both groups the majority of participants had served in the Israeli army after immigrating to the country (67.3% of the Holocaust survivors group and 69.2% of the comparison group). In both groups, just over half of the participants had a high school education and 43% of the sample had a skilled job during their employment career. In both groups, more than half of the participants were living with a partner and less than one quarter defined their religious orientation as traditional. Table 1 shows demographic and measures variables.

General health as measured by the CIRS did not differ significantly between groups. Mean CIRS score for the Holocaust survivors group was 51.5 ± 3.06 vs. 52.3 ± 3.24 for the comparison participants ($F = 3.15$, not significant). Subjective appreciation of one's health on the Likert 5 point scale between Holocaust survivors (mean 3.2 ± 1.05) and comparison participants (3.6 ± 0.9) differed significantly ($F = 4.18$, $P < 0.05$). QoL was significantly lower among Holocaust survivors, with a mean WHOQOL-BREF score = 73.6 ± 28.3 vs. 82.2 ± 22.6 for the

Table 1. Demographic variables and measurements

	Holocaust survivors	Comparison participants	P value for between-group difference
Gender			
Female	54 (50.5%)	59 (55.1%)	NS
Male	53 (49.5%)	48 (44.9%)	
Age, years	80.3 ± 4.9	81.1 ± 5.1	NS
Marital status: in partnership	58 (54.2%)	70 (65.4%)	< 0.05
Education: high school	53 (49.5%)	57 (53.3%)	NS
Work experience: skilled worker	45 (42.1%)	47 (43.9%)	NS
Number of children: one	14 (13.1%)	7 (6.5%)	< 0.05
Religious orientation: traditional	23 (21.5%)	15 (14%)	NS
CIRS score	51.5 ± 3.1	52.3 ± 3.1	NS
Subjective health score (Likert-scale)	3.2 ± 1.05	3.6 ± 0.9	< 0.05
Quality of life (Likert-scale)	2.38 ± 1.1	3.16 ± 0.9	< 0.01

CIRS = Cumulative Illness Rating Scale

comparison group, $F = 5.7, P < 0.01$. The relationship between health and QoL was tested using Pearson’s correlation. Among Holocaust survivors, the CIRS score significantly correlated with QoL ($r = 0.50, P < 0.001$) as did subjective health ($r = 0.64, P < 0.001$). Among comparison participants the CIRS score also significantly correlated with QoL ($r = 0.44, P < 0.001$) while subjective health was not correlated ($r = 0.22$, not significant).

DISCUSSION

In the present study, Holocaust survivors rated their subjective health as poorer than that of comparison participants despite CIRS scoring of health status not being different. In addition, subjective health did not correlate with QoL for the comparison participants while it significantly correlated for Holocaust survivors. We tentatively suggest that these findings emphasize the importance of subjective health perceptions and the possible impact that early life trauma may have had on Holocaust survivors.

Since Rowe and Kahn’s milestone article in 1987 [17], research focusing on successful aging has flourished. Their MacArthur model is a multidimensional construct, incorporating avoidance of disease and disability, maintained physical and cognitive function as well as social activities [17,18]. Thousands of articles have been written on the concept and its components, and more than 100 variations of the original model have been suggested. Notably, in recent years, it was proposed that social and behavioral scientists should recognize more fully the potential value of information on biomarkers and genetics as predictors of successful aging. Other important psychologically based models, which are life-course oriented [17,18], emphasize the “how” of successful aging whereas the MacArthur model emphasized the “what.” These researchers have called for adopting a life-course perspective.

The study of Holocaust survivors can contribute to our understanding of the impact of early life trauma on successful aging [19]. The study of aging Holocaust survivors may also inform us about the disability paradox. Briefly, the paradox is: Why do many people with serious and persistent disabilities report that they experience a good or excellent quality of life when to most external observers these individuals seem to live an undesirable daily existence? [20]. In one large study examining the determinants of self-rated health among 5222 adults aged 60 years or older, association with physical health was diminished in the group that was 75 years of age and older compared with 60 to 65 year olds [13]. However, an age-associated decline of subjective health was found to be stronger in old-old (74–84 years of age) samples than in young-old (65–74 years of age) samples. Correlations of subjective health with physical health and functional health were lower in the old-old group than in the young-old samples [21]. Thus, the study of Holocaust survivors might help in untangling some of the challenges inherent in the research of aging.

The health of Holocaust survivors, especially as they age, has been the focus of much research, with special emphasis on mental health [22]. Although it is often thought that Holocaust survivors describe subjective ill health and show preoccupation with medical issues, this finding is not always directly reflected in research results [23]. Two major research efforts have demonstrated subjective appreciation of health status to be low among Holocaust survivors compared to controls [24,25]. Stessman and colleagues [26] were unable to show higher frequency of physical illness in a large sample of Holocaust survivors participating in the Jerusalem longitudinal study, yet subjectively the survivors did report a higher level of ill health. Similar findings were reported by Landau and Litwin [27]. Our findings support these reports and extend the understanding of the association between variables tested [28]. It is, however, important to note that increased risk of cancer as well as metabolic and cardiovascular disorders have been reported in Holocaust survivors [7-10]. Our findings and those of other groups [26,27] demonstrate that these increased risk rates are subjectively translated by Holocaust survivors into a perception of personal frailty.

Holocaust survivors in our study did not experience poorer physical health, yet they did rate their health as poorer. The subjectively poorer health appreciation correlated with lower QoL among Holocaust survivors. This result correlates with Bowling and Iliffe [2] in clarifying the predictive value of biological, psychological, and social approaches to QoL in aging. In this comprehensive evaluation, the authors studied community dwelling older adults who were not Holocaust survivors. They demonstrated that while the biomedical (health) approach failed to achieve significance, only the psychological approach (perceived self-efficacy and optimism) retained significance in predicting quality of life in older adults [2].

The present study has several limitations that need be addressed. The CIRS is a self-report assessment instrument, so

it may not genuinely represent objective health, which would ideally be assessed based on a physician rating or by functional tests. Willingness to participate in the study was much higher among the comparison participants who were approached, and the sample size is modest. The sample can be viewed as a convenience sample since all participants were recruited from the greater Tel Aviv urban area. The cross-sectional design does not lend itself to speculation about causal dynamics between health and quality of life.

The external validity of our findings due to the selective nature of the study population and the fact that response rates differed between the two comparison groups may be less than optimal. Finally, the participating Holocaust survivors are of relatively old age, possibly more resilient, and with a greater life expectancy than the general population.

Subjective well-being and health are closely linked to age. One of the major aspects of subjective well-being is life satisfaction. A Gallup World Poll [28], consisting of a continuing survey in more than 160 countries, shows a U-shaped relation between evaluative well-being and age in high-income countries, with the lowest levels of well-being in ages 45–54 years. However, this pattern is not worldwide. Respondents from the former Soviet Union and Eastern Europe show a large progressive reduction in well-being with age. Respondents from Latin America also show decreased well-being with age. The relation between physical health and subjective well-being is bidirectional. Older people with illnesses such as coronary heart disease, arthritis, and chronic lung disease show impaired well-being. The well-being of elderly people is an important objective for both economic and health policy. Present psychological and economic theories do not adequately account for the variations in patterns of well-being with age [29]. The present study adds to the important topic of healthful aging by demonstrating the effects of early life trauma on the evaluative well-being of aging Holocaust survivors.

CONCLUSIONS

We tentatively conclude that aging of Holocaust survivors is associated with a subjective sense of poor health and this negatively impacts on QoL. While Holocaust survivors may be more physically healthy, this finding did not seem to impact on their health perceptions. Practical implications for future interventions need to focus on improving psychological well-being of older adults to achieve successful aging. Mindfulness, problem solving, social engagement, and other measures supporting well-being should be tested in an effort to achieve better QoL for aging Holocaust survivors and other older adults.

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