Published in final edited form as:

Psychol Trauma. 2016 March ; 8(2): 172–179. doi:10.1037/tra0000056.

A Cross-Cultural Longitudinal Examination of the Effect of Cumulative Adversity on the Mental and Physical Health of Older Adults

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Abstract

Self-oriented adversity refers to traumatic events that primarily inflict the self, whereas other-oriented adversity refers to events that affect the self by primarily targeting others. The present study aimed to examine whether cultural background moderates the effects of self-oriented and other-oriented adversity on mental and physical health of older adults. Using longitudinal data from the Israeli component of the Survey of Health and Retirement, we focused on 370 Jews and 239 Arabs who reported their exposure to various adversities across the lifespan, and completed questionnaires regarding mental and physical health. Results showed that the effect of self-oriented adversity on health did not differ among Jews and Arabs. However, other-oriented adversity showed a stronger effect on Arabs' mental and physical health than on Jews' health. Our findings suggest that the accumulation of adverse events that affect the self by primarily targeting others may have a stronger impact in collectivist cultures than in individualist cultures.

Keywords

cumulative adversity; cultural background; older adults; SHARE-Israel

The notion of cumulative adversity refers to exposure to potentially traumatic events across the lifespan. The rationale underlying this concept is that stressful and traumatic experiences that accumulate over the years exert a more lasting influence on mental and physical health than does a single traumatic event (Shmotkin & Litwin, 2010). Therefore, it is suggested that the higher the number of exposures to adversities over the lifespan, the higher the risk for functional impairments in old age (Keinan, Shrira, & Shmotkin, 2012). However, several features of adversity should be accounted for, and one major characteristic of adversity refers to its primary focus (Palgi, Shrira, Ben-Ezra, Shiovitz-Ezra, & Ayalon, 2012; Shmotkin & Litwin, 2010).

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Self-oriented versus other-oriented adversity

The primary focus of adversity can be either self-oriented or other-oriented. Self-oriented adversity refers to stressful or traumatic events that primarily inflict the self (e.g., being wounded in war or military action; being at risk of death due to illness or serious accident), whereas other-oriented adversity refers to stressful or traumatic events that affect the self by primarily targeting others, and includes eventualities in which the individual witnessed or learned about others' adversity (e.g., experiencing the death of a child or a grandchild; experiencing the injury or the death of a loved one in a terrorist act; see, Shmotkin & Litwin, 2010). The distinction has gained more relevance since the DSM-IV (American Psychiatric Association, 1994) defined a traumatic event in a wider scope, also referring to 'witnessing' or 'learning about' stressors that may evoke trauma. The DSM-5 (American Psychiatric Association, 2013) broadened the definition of trauma, and specific criteria were established for either self-oriented exposures (criteria A1) or for other-oriented experiences (criteria A2, A3, A4). The differentiation between self and other-oriented adversity draws from the distinction made in the trauma literature between direct and indirect exposure (Weathers, & Keane, 2007). However, the former refers to general exposure to cumulative adversity. Therefore, although these events are usually stressful, they do not necessarily mark a major discontinuity in the life trajectories of almost every individual, as requested in order to meet criteria for traumatic event (Friedman, Resick, Bryant, & Brewin, 2011).

Although prior research differentiated between various types of adversity, the self vs. other distinction has largely been overlooked. However, few studies did address this distinction (e.g., Keinan et al., 2012; Kira, Lewandowski, Somers, Yoon, & Chiodo, 2012; Ogle, Rubin, & Siegler, 2014; Palgi et al., 2012; Shmotkin & Litwin, 2009; Shrira, Shmotkin, & Litwin, 2012). Overall, these studies found that self-oriented adversity was more strongly related to negative outcomes in late life than was other-oriented adversity. For example, Shmotkin and Litwin (2009) reported that self-oriented adversity was related to higher incidence of depressive symptoms, and other authors have shown that self-oriented adversity was related to more persistent and more severe posttraumatic stress disorder (PTSD) symptoms (Anders, Frazier, & Frankfurt, 2011; Breslau et al., 1998; Ogle et al., 2013). Other-oriented adversity showed mixed results and was associated with greater loneliness (Palgi et al., 2012), unrelated to mental health (Keinan et al., 2012), or even associated with increased quality of life and well-being (Shrira et al., 2012). Although these findings do not correspond with findings showing clear negative consequences as a result of indirect exposure to traumatic events (see for example Friedman et al., 2011; Marshall, 2007), it should be noted that, rather than exclusively focusing on PTSD, studies on other-oriented adversity took a broader look at general late-life functioning.

Previous studies that have evaluated the association of self-oriented and other-oriented adversity and health did it without accounting for possible cross-cultural differences. The purpose of the current study is to examine whether these concepts have differential effects on health across various cultural groups.

Individualist versus collectivist cultures: The case of Israeli Jews and Arabs

Different cultures hold different conceptions regarding the self and others as well as their interdependence (Jobson, 2009; Markus & Kitayama, 1991, 1994). In individualist, Western cultures the self is perceived as an independent and autonomous entity. These cultures emphasize values related to the self, such as privacy, separateness and the uniqueness of individuals, the need to express the self, realize internal attributes and promote one's own goals. In contrast, in non-Western, collectivist cultures the self is perceived as an interdependent-related entity, and external values such as belonging, fitting-in, and adjusting to the in-group are emphasized, while personal desires are expected to be constrained. Thus, these cultures view situational factors, such as norms, roles, and obligations, as the major determinants of behavior and values (Jobson, 2010; Markus & Kitayama, 1991).

The Jewish community in Israel is more individualistic in comparison to the Arab community, which is more collectivist (Braun-Lewensohn, Sagy, & Roth, 2010). It is possible that self-oriented and other-oriented adversity will have differing effects on mental and physical health within these two cultures.

Cultural differences in exposure to adversity and its outcomes

Previous studies showed that compared to Caucasians, Afro-Americans were more likely to develop PTSD once exposed (Kessler, Somnoga, Bromet, Hughes, & Nelson, 1995; Norris 1992). In another study, Latinos reported higher levels of PTSD once exposed (Perilla, Norris, & Lavizzo, 2002).

Several studies in Israel showed that Israeli Arabs presented higher levels of PTSD and other mental health symptoms compared to Jews (Hobfoll, Canetti-Nisim, & Johnson, 2006; Hobfoll, Canetti-Nisim, Johnson, Palmieri, Varley, & Galea 2008; Somer, Maguen, Or-Chen, & Litz, 2011). Other studies found mixed results regarding reports of PTSD symptoms (no difference in the first phase, but higher levels among Arabs in the second phase) (Gelkopf, Solomon, Berger, & Bleich, 2008). One study on daily hassles referred to such differences among young adults, demonstrating that in Israeli Arabs well-being was more strongly associated with hassles related to family relatives than it was among Israeli Jews (Ben-Ari & Levee, 2011). Yet, these studies did not examine differential effect of exposure on these groups. We suggest that cultural differences in the effect of self-oriented and other-oriented adversity may help to clarify the picture. Based on the literature, we propose that individuals from individualist cultures will be more affected by adversities that directly threaten the self and personal identity and less affected by adversities targeting significant others. Contrary, individuals from collectivist cultures will be affected by adversities that affect the self, but will also be affected by adversities that threaten one's sense of social belonging by targeting significant others.

The current study

We hypothesized that the mental and physical health of Jews and Arabs will be negatively influenced to the same degree by self-oriented adversity. In contrast, other-oriented adversity will have stronger negative effect on the mental and physical health of Arabs.

Method

Participants and Procedure

Data were drawn from the first two waves of the Israeli component of the Survey of Health, Ageing, and Retirement in Europe (SHARE-Israel), which presents a national sample of Israelis aged 50 or older and their spouses of any age, interviewed during 2005–2006 (Wave 1; W1) and again during 2009–2010 (Wave 2; W2). The design was based upon a probability sample of households within 150 representative statistical areas delineated by geographical and sociodemographic criteria. The total sample included 2,598 noninstitutionalized adults, out of whom 1,828 were interviewed again in W2 (70.4%). The data were collected by a comprehensive computer-assisted personal interview, which lasted about 90 minutes, as well as by a supplementary paper and pencil Drop-Off questionnaire, which was returned later. Informed consent had been obtained from all respondents prior to the interview. SHARE-Israel received ethical approval from the Institutional Review Board of the Hebrew University of Jerusalem (for more information on SHARE-Israel, see Litwin & Sapir, 2008).

As the queries regarding cumulative adversity were included in the Drop-Off questionnaire administered primarily in W1, our study groups were identified out of the 1,248 respondents who completed this questionnaire and then also participated in the second wave. Of these 1,248 respondents, 370 Israeli-born Jews and 239 Israeli-born Arabs were selected. The remaining 639 participants were Jews who immigrated to Israel from various countries. They were omitted from the current analyses to eliminate the possible effect of their original culture on their perception of adversity, and to control for possible effects of immigration.

Table 1 presents the background characteristics of the two study groups. Compared to the Arab group, the Jewish group was slightly younger, and included a higher percentage of women, a higher percentage of participants with higher education, as well as a higher percentage of individuals with household income at the upper tertile. The Arab group included a higher percentage of married participants, and more individuals reported being religious.

Attrition analyses comparing respondents who did not participate in W2 ($n = 127$) to those who did ($n = 609$) found no significant differences in age, education, income, religiosity, cognitive functioning, depressive symptoms, quality of life, or functional limitation. Respondents who participated in W2 included a higher proportion of women and a higher proportion of married individuals (ϕ ranged .07 to .13). When comparing these groups on W1 variables, those who participated in W2 also had lower disability scores and higher reported subjective health (absolute value for Cohen's d ranged .21 to .27). Nevertheless, these group differences had a relatively small effect size.

Measures

Lifetime cumulative adversity was assessed in W1 by the Potentially Traumatic Events Inventory. Based on Breslau, Kessler, Chilcoat, Schultz, Davis, and Andreski's (1998) survey of lifetime traumatic events and pilot versions administered to older Israelis (more details in Keinan et al., 2012), this inventory was adapted especially for the Drop-Off questionnaire in SHARE-Israel (Shmotkin & Litwin, 2009). The final inventory consisted of 17 difficult life events, which included bereavement-related events (e.g., experiencing the death of a spouse), life hardships (e.g., providing long term care to a disabled relative), health vulnerabilities (e.g., being at a risk of death due to illness or accident), war and terrorism related events (e.g., being wounded in war), and other victimizations (e.g., being the victim of crime). Some of these events go beyond those that meet the DSM-IV-TR (American Psychiatric Association, 2000) definition of traumatic events. This approach is consistent with a growing literature suggesting that the type of events causing posttraumatic symptoms is broader than what the current diagnostic criteria indicate (Lloyd & Turner, 2003; Robinson & Larson, 2010). Respondents were asked to mark whether each of the 17 events had ever happened to them. If confirming the experience of an event, respondents were further asked to specify their age when the event had first taken place, and to rate the impact of the event on their life as either "little" (1), "moderate" (2), or "great" (3). As two of the outcome measures of the current analysis included physical disability, two events reflecting health vulnerabilities (being at risk of death due to illness or serious accident, and being in need for long term care due to difficulty in caring for oneself) were omitted, leaving 15 events. A "self-oriented" adversity score was computed by summing the number of confirmed events in which the primary harm was to the self (e.g., "was the victim of violence or abuse"; possible range 0–6). An "other-oriented" adversity score was computed by summing the number of confirmed events in which the primary harm was to another person (e.g., "witnessing people killed by violence"; possible range 0–9).

The outcome measures included two major markers of mental health: depressive symptoms and quality of life, and two major markers of physical health: disability and functional limitation. These measures were available in both waves.

Depressive symptoms were assessed by the European Depression scale (Euro-D; Prince et al., 1999). This scale contains 12 items that specify recent depressive symptoms (e.g., "In the last month, have you cried at all?"), and participants are asked to endorse symptoms by selecting "yes" (coded 1) or to deny symptoms by selecting "no" (coded 0). Five items were phrased in positive terms (e.g., "do you keep up your interests?"). The total score was the sum of endorsed symptoms. Internal reliability was measured by Kuder-Richardson's ρ and was .72 and .80 at W1 and W2, respectively.

Quality of life was measured by 12 items originating from the CASP-19 (Hyde, Wiggins, Higgs, & Blane, 2003). This measure conceptualizes quality of life in terms of need satisfaction in four domains: having a sense of control, autonomy, self-realization, and pleasure. Control is defined as the ability to actively intervene in one's environment. Autonomy is defined as the ability to be free from the unwanted interference of others. Self-realization and pleasure capture the active and reflexive processes of self-fulfillment. Items

are rated on a scale ranging from “never” (1) to “often” (4). The total score was the sum of ratings. Internal reliability was measured by Cronbach’s α and was .83 in both waves.

Disability was measured by counting difficulties in basic and instrumental activities of daily living (adapted from Katz, Downs, Cash, & Grotz, 1970, as well as from Lawton & Brody, 1969). This measure included 13 functions: dressing, crossing a small room, bathing, getting in or out of bed, eating, toileting, using a map, preparing meals, shopping on a daily basis, using the telephone, taking medications, doing housework, and handling personal finances. Difficulties in all of the functions were rated with a dichotomized answer (*not having difficulties/having difficulties*). The total score was the sum of difficulties. Internal reliability was measured by Kuder-Richardson’s ρ and was .70 and .91 at W1 and W2, respectively.

The *functional limitation* measure was adapted from Nagi (1976). It included five physical activities, specifically stooping, kneeling, or crouching, reaching or extending arms above shoulder level, pulling or pushing heavy objects, lifting or carrying heavy weights, and picking up a small coin from a table. Each limitation was rated with a dichotomized answer (*not having difficulties/having difficulties*). The total score was the sum of difficulties. Internal reliability was measured by Kuder-Richardson’s ρ was .75 and .78 at W1 and W2, respectively.

Covariates included background characteristics (as detailed below) and three markers of cognitive functioning (all assessed in W1).

Background characteristics consisted of age, gender, marital status, education, income, ratings of subjective health, and religiosity. Years of education were dichotomously classified as having up to 12 years of education or having more than 12 years of education. Income was indicated by the annual household income adjusted to the purchasing power parity (in Euro), further divided into tertiles. Subjective health was rated on a scale ranging from “very bad” (1) to “very good” (5). Religiosity was assessed by self-reported frequency of praying on a scale ranging from “never” (0) to “more than once a day” (5).

Cognitive functioning was measured in three domains: time orientation, verbal fluency, and arithmetic. The time orientation score was the sum of accurate responses provided after a request to name the current year, month, day of the month, and day of the week. The word fluency score was the sum of correct names of animals generated within one minute. Respondents whose score fell more than 3 standard deviations above the mean group score (e.g., greater than 40) were given a score of 40. The arithmetic score was the sum of correct answers on four arithmetic questions. Verbal recall was also available in SHARE but was not used because respondents showed an average improvement in scores across the two waves, most probably reflecting a practice effect and not a true age effect. Cognitive functioning differed across the two groups (see Table 1) and was thus controlled in the analysis of the effect of adversity on functioning.

Data Analysis

A series of multiple hierarchical regression analyses were performed to predict W2 outcomes. The basic regressions included cultural group (Jews vs. Arabs) and self-oriented

or other-oriented adversity in Step 1, and their interactions in Step 2. In the adjusted regressions we entered to Step 1 baseline levels of outcome measures in W1, and background characteristics (age, gender, education, marital status, income, subjective health, and religiosity) as well as cognitive functioning in Step 2.

All continuous variables were mean-centered before entering into the analyses. Significant interactions were probed and plotted using the PROCESS computational tool (Hayes, 2013).

Results

Descriptive Statistics of Lifetime Adversity

More than two thirds of respondents ($n = 447$) reported having experienced at least one potentially traumatic life event, with an average of 1.85 events per person ($SD = 2.00$). Jews reported having experienced more self-oriented and other-oriented adversities than did Arabs (see Table 1). Table 2 presents the number of respondents who reported the occurrence of each of the 15 adverse events in each cultural group.

Table 2 shows that in both groups the most frequently reported events included having a loved one at risk of death due to illness or accident, and providing long term care to a disabled or impaired relative. The least frequently reported events included being a victim of violence or abuse, and experiencing sexual assault. More Jews than Arabs reported having experienced self-oriented adversities and almost all other-oriented adversities. However, substantially more Arabs reported having experienced the death of a child or a grandchild.

Outcome Measures

Outcome measures were all strongly inter-correlated in both waves. Depressive symptoms and quality of life were negatively correlated ($r = -.35$ for W1 and $r = -.69$ for W2, both $ps < .0001$), and the same was true for quality of life and disability ($r = -.33$ for W1 and $r = -.55$ for W2, both $ps < .0001$), as well as for quality of life and functional limitation ($r = -.42$ for W1 and $r = -.62$ for W2, both $ps < .0001$). Depressive symptoms and disability were positively correlated ($r = .41$ for W1 and $r = .55$ for W2, both $ps < .0001$), and so were depressive symptoms and functional limitation ($r = .47$ for W1 and $r = .59$ for W2, both $ps < .0001$). Finally, disability and functional limitation were positively correlated ($r = .64$ for W1 and $r = .71$ for W2, both $ps < .0001$). The outcome measures also showed substantial between-wave correlations. The between-wave correlation was .43, .50, .53, and .54, all $ps < .0001$, for depressive symptoms, quality of life, disability, and functional limitation, respectively.

Jews and Arabs differed on all outcome measures, except for W1 depressive symptoms. In all cases, Jews reported more favorable mental and functional status (see Table 1).

We further examined correlations between adversity and outcome measures for Jews and Arabs separately. Among Jews, self-oriented adversity was significantly related to W1 depressive symptoms ($r = .13$, $p = .012$), and to W1 ($r = -.11$, $p = .030$) and W2 ($r = -.16$, $p = .002$) quality of life. Other-oriented adversity was not related to any outcome measure. Among Arabs, self-oriented adversity was related only to W2 functional limitation ($r = .12$,

$p = .049$). Other-oriented adversity was related to W1 ($r = .17, p = .008$) and W2 ($r = .16, p = .014$) depressive symptoms, to W1 disability ($r = .14, p = .025$), to W1 functional limitation ($r = .18, p = .003$), as well as to W2 quality of life ($r = -.17, p = .008$).

Main Regression Analyses

Table 3 presents the regression coefficients for the four basic regressions that examined our second hypothesis.

Cultural group did not interact with self-oriented adversity on any analysis, but did interact with other-oriented adversity in all cases. The interaction coefficients showed that other-oriented adversity was a stronger predictor of W2 outcomes among Arabs than among Jews.

Using PROCESS, we further explored the interaction of other-oriented adversity and the other variables by applying equations that estimate effects separately for Jews and for Arabs. While other-oriented adversity did not predict depressive symptoms among Jews ($B = -.31, t[599] = -1.03, p = .302$), it was a strong predictor of depressive symptoms among Arabs ($B = .93, t[599] = 2.75, p = .006$). Moreover, other-oriented adversity did not predict quality of life among Jews ($B = 1.41, t[573] = 1.91, p = .055$), but did predict it among Arabs ($B = -1.67, t[599] = -2.14, p = .032$). Other-oriented adversity did not significantly predict disability in either group, but adversity was positively related to disability only among Arabs (for Jews: $B = -.39, t[607] = -1.36, p = .172$; for Arabs: $B = .46, t[607] = 1.46, p = .144$). Finally, other-oriented adversity did not predict functional limitation among Jews ($B = -.35, t[608] = -1.23, p = .219$), but it did predict functional limitation among Arabs ($B = .66, t[608] = 2.10, p = .035$).

After controlling for the baseline levels of outcome variables, as well as for background characteristics and cognitive functioning, cultural group still significantly interacted with other-oriented adversity (depressive symptoms: $B = .92, t[580] = 2.24, p = .025$; quality of life: $B = -2.57, t[550] = -2.75, p = .006$; disability: $B = .96, t[587] = 2.67, p = .008$; functional limitation: $B = .75, t[588] = 2.04, p = .042$). After correcting for multiple analyses, two interactions remained significant (for predicting quality of life and disability).

Supplementary Analyses

In light of the main findings, we decided to further examine which other-oriented events were related to greater effect on functioning outcomes among Arabs. We thus divided adversities according to their types: bereavement (death of spouse, child, or grandchild), life hardship (having a loved one at risk of death due to illness or accident and providing long term care to a disabled or impaired relative), and war and terrorism (experiencing the injury or the death of a loved one in a terrorist act, losing a loved one in a war or in military service, witnessing a terrorist act in which the respondent not harmed personally, witnessing the serious injury or the death of someone in war or military action). The last event (i.e., witnessing an accident or violent act in which someone was seriously injured or killed) was not included in these analyses because it has been previously shown that it belonged to a separate category of adversities (cf., Shrira, 2014).

W2 outcomes were regressed in the same way as in the main analyses, examining together all the main effects of the four event types and their interactions with cultural group after controlling for baseline level of outcome, background characteristics, and cognitive functioning.

For depressive symptoms, there was a significant interaction between cultural group and events of bereavement ($B = .88, t[581] = 2.12, p = .034$); for quality of life, there was a significant interaction between cultural group and events of life hardship ($B = -1.98, t[550] = -2.41, p = .016$); for disability, there was a significant interaction between cultural group and events of war and terrorism ($B = .90, t[588] = 1.95, p = .050$). There were no significant interactions between cultural group and any of the events in predicting functional limitations. All interaction coefficients reflected a stronger relationship between events and outcomes among Arabs.

Discussion

The present study examined the effect of cumulative adversity on functioning in the second half of life. More specifically, it examined whether cultural groups differ in the effect that self-oriented and other-oriented cumulative adversity has on mental and physical health. Our findings show that Jews reported more exposures to self-oriented adversity as well as to other-oriented adversity (except for death of a child/grandchild). These results may mean that there are cultural differences in reporting patterns, though it is also possible that questionnaire format was somewhat different in either language. These findings are in line with previous studies in Israel that showed that Arabs reported lower levels of exposure to adversities, though they also reported higher level of PTSD symptoms (Hobfoll et al., 2008; Klodnick, Guterman, Haj-Yahia, & Leshem, 2014). Afro-Americans have also been shown to report less exposure than did Caucasians, but at the same time were more likely to develop PTSD once they were exposed (Kessler, Somnaga, Bromet, Hughes, & Nelson, 1995; Norris 1992). Altogether, the current and previous findings point to a stronger effect of cumulative adversities among cultural minorities.

As predicted, the association between self-oriented adversity and mental and physical health was similar among Jews and Arabs. However, the association between other-oriented adversity and mental and physical health was stronger among Arabs than among Jews. These findings may represent differences in the way people from collectivist and from individualist cultures perceive and react to stress (Ben-Ari & Levee, 2011) and adversities. The effect of other-oriented adversity was especially striking in view of the fact that self-oriented adversity affected only quality of life (to a similar degree in both study groups). Importantly, Arabs were affected by other-oriented adversity in almost all mental and physical outcomes.

These results suggest that people from a collectivist culture are more vulnerable to other-oriented adversity than are people from individualistic culture. While the inclusion of other-oriented exposure in Criterion A is not uniformly supported (see Brewin et al., 2009, for a discussion), it is important to see the potential effect of such exposure on functioning in

people from a collectivist culture. This culture-related vulnerability needs to be further explored.

We note that the study is restricted to specific aspects of mental and physical health outcomes, and it did not examine factors of resilience related to other-oriented exposure. It is possible that values such as feeling that one belongs to the community or caring for others, which are associated with collectivist cultures (Jobson, 2010), are helpful in coping with other-oriented adversities. Indeed, previous research showed a favorable effect of other-oriented adversity on well-being and cognitive functioning (Keinan et al., 2012; Kira et al., 2012).

Finally, our supplementary analyses revealed different patterns of associations between types of adversity and outcomes among Jews and Arabs. These findings show that the effect of adversity on mental and physical health originates from different exposures in each culture. Events that were related to war and terrorism (i.e., Criterion A according to DSM) were related to a stronger degree with Arabs' disability than with that of Jews. However, mostly non-Criterion A stressful events (e.g., bereavement and life hardship) were related to a stronger degree with Arabs' mental health (depressive symptoms and quality of life) than with that of Jews. Thus, the relationship between cumulative adversity and health is complex and depends not only on cultural background, but also on the characteristics of the adverse event as well as on the outcome measure. Future studies will have to further examine these effects.

Some limitations of our study should be considered. First, we assumed that Jews generally hold individualist values whereas Arabs generally hold collectivist values. However, we did not examine values. Future research should investigate values more explicitly. Second, our findings are specific to older adults, and a greater age-range could be helpful in the attempt to generalize our conclusions. Third, we did not examine cultural differences in post-traumatic symptoms, and adding this measure to future research could extend the current findings. Fourth, our study did not take into consideration variability or change in values. The Arab society in Israel might become less collectivist and these changes can affect reactions to self-oriented and other-oriented adversity (Khalaila & Litwin, 2011). Finally, although we controlled for cultural differences in background characteristics and cognitive functioning, it is still possible that the effects we found may be partially accounted by other interpersonal factors that may characterize Israeli Arabs, or by the fact that they represent a minority group.

In summary, our findings show that earlier exposure to adversity, and specifically to other-oriented adversity, has a different effect on mental and physical health of older adults from varying cultural backgrounds. In light of the continuous discussion regarding the inclusion of other-oriented exposures as part of Criterion A, it is important to point out that the effect of such exposures is culture-dependent. Furthermore, our findings add to the current knowledge regarding cumulative adversity, and strengthen findings from the trauma literature showing that other-oriented adversities, even such that that is not included in Criterion A, affect one's functioning in certain cultural groups. These results are especially relevant for assessment and clinical intervention in the aftermath of cumulative adversity.

Our findings call for clinicians' sensitivity to cultural differences. We suggest that clinicians should be attentive to other-oriented adversity and its influence, especially in collectivist communities, where social support and community connectedness are pivotal elements in treatment and rehabilitation after exposure to stressful and traumatic events (Kayser, Wind, & Shankar, 2008; Moscardino et al., 2010).

Acknowledgments

Project development and data collection in Israel were supported by the National Institute of Health of the United States (NIH), National Insurance Institute of Israel, German-Israeli Foundation for Scientific Research and Development (GIF), European Commission through the 7th framework program, Israeli Ministry of Science and Technology, and Israeli Ministry of Senior Citizens. The data were collected by the Israeli Gerontological Data Center at the Hebrew University in Jerusalem.

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Table 1

Demographic Characteristics and Study Variables, by Cultural Group

Variable	Jews (<i>n</i> = 370)	Arabs (<i>n</i> = 239)	Comparison test; <i>t</i> / χ^2 (df)	Significance level
Self-oriented adversity; <i>M</i> (<i>SD</i>)	.47 (.90)	.27 (.57)	2.93 (607)	.004
Other-oriented adversity; <i>M</i> (<i>SD</i>)	1.79 (1.65)	.99 (1.03)	7.39 (607)	< .0001
W1 Depressive symptoms; <i>M</i> (<i>SD</i>)	2.24 (2.14)	2.43 (2.52)	-.96 (606)	.338
W1 Quality of life; <i>M</i> (<i>SD</i>)	25.31 (5.85)	18.05 (4.26)	17.56 (600)	< .0001
W1 Disability; <i>M</i> (<i>SD</i>)	.30 (1.22)	.79 (1.63)	-3.98 (607)	< .0001
W1 Functional limitation; <i>M</i> (<i>SD</i>)	1.01 (1.86)	2.17 (2.43)	-6.27 (607)	< .0001
W2 Depressive symptoms; <i>M</i> (<i>SD</i>)	1.82 (2.19)	3.13 (2.99)	-5.75 (597)	< .0001
W2 Quality of life; <i>M</i> (<i>SD</i>)	26.30 (5.61)	21.86 (6.04)	8.99 (571)	< .0001
W2 Disability; <i>M</i> (<i>SD</i>)	.55 (1.65)	2.15 (3.26)	-7.10 (605)	< .0001
W2 Functional limitation; <i>M</i> (<i>SD</i>)	.97 (1.91)	3.43 (2.93)	-11.47 (606)	< .0001
Age; <i>M</i> (<i>SD</i>)	60.03 (7.94)	61.54 (7.93)	-2.28 (607)	.023
Gender; % women	61.9	48.1	11.20 (1)	.001
Years of education; % > 12 years	55.4	10.9	121.59 (1)	< .0001
Marital status; % married	81.4	95.8	26.91 (1)	< .0001
Income; % upper tertile	52.4	5.0	153.72 (2)	< .0001
Subjective health; <i>M</i> (<i>SD</i>)	4.02 (.96)	4.10 (.96)	-1.05 (607)	.293
Religiosity ^a ; <i>M</i> (<i>SD</i>)	1.11 (1.68)	3.21 (1.92)	-13.71 (599)	< .0001
Time orientation; <i>M</i> (<i>SD</i>)	3.84 (.45)	3.61 (.87)	3.71 (607)	< .0001
Word fluency; <i>M</i> (<i>SD</i>)	22.10 (6.84)	17.81 (6.65)	7.55 (599)	< .0001
Arithmetic ability; <i>M</i> (<i>SD</i>)	3.71 (1.01)	2.89 (1.35)	8.01 (607)	< .0001

Note. Adversity, background characteristics and cognitive indices refer to W1.

^aMeasured by reported frequency of praying.

Table 2

Occurrence of Potentially Traumatic Events, by Cultural Group

Item	Jews		Arabs		Comparison $\chi^2(1)$	Significance
	N (%)	N (%)	N (%)	N (%)		
<i>Self-oriented adversity</i>						
Experienced extremely severe economic deprivation	70 (19.0)	49 (20.6)	.24		.624	
Experienced sexual assault (rape or harassment)	15 (4.1)	2 (.8)	5.50		.019	
Was the victim of crime (such as robbery or fraud)	38 (10.3)	4 (1.7)	16.84		< .0001	
Was the victim of violence or abuse	12 (3.2)	4 (1.7)	1.38		.240	
Was wounded in a terrorist act (an attack by terrorists against civilians)	7 (1.9)	3 (1.3)	.36		.543	
Was wounded in war or military action	25 (6.8)	4 (1.7)	8.23		.004	
<i>Other-oriented adversity</i>						
Experienced the death of a child or grandchild	28 (7.6)	50 (20.9)	23.18		< .0001	
Experienced the death of a spouse	40 (10.8)	9 (3.8)	9.63		.002	
Experienced the injury or the death of a loved one in a terrorist act	38 (10.4)	12 (5.0)	5.43		.020	
Had a loved one at risk of death due to illness or accident	161 (43.9)	54 (22.9)	27.57		< .0001	
Lost a loved one in a war or in military service	103 (27.9)	19 (8.0)	35.78		< .0001	
Provided long term care to a disabled or impaired relative	145 (39.4)	71 (29.8)	5.77		.016	
Witnessed a terrorist act in which respondent was not harmed personally	30 (8.1)	3 (1.3)	13.30		< .0001	
Witnessed an accident or violent act in which someone was seriously injured or killed	48 (13.0)	13 (5.4)	9.20		.002	
Witnessed the serious injury or the death of someone in war or military action	70(19.0)	5 (2.1)	38.34		< .0001	

Note. N = 609.

Table 3

Predicting Wave 2 Outcomes by Cultural group, Adversity Type, and their Interactions

Variable	W2 Depressive symptoms <i>B</i> (β)	W2 Quality of life <i>B</i> (β)	W2 Disability <i>B</i> (β)	W2 Functional limitation <i>B</i> (β)
<i>Step 1; R</i> ²	.06***	.13***	.09***	.20***
Cultural group	1.34 (.25)***	-4.50 (-.35)***	1.59 (.30)***	2.48 (.45)***
Self-oriented adversity	.11 (.02)	-1.27 (-.09)*	-.13 (-.02)	.31 (.05)
Other-oriented adversity	.21 (.03)	.23 (.01)	.02 (.004)	.03 (.007)
<i>Step 2; R</i> ²	.01*	.01**	.006	.009*
Cultural group X Self-oriented adversity	.08 (.007)	1.86 (.06)	-.15 (-.01)	.44 (.03)
Cultural group X Other-oriented adversity	1.24 (.10)**	-3.55 (-.13)**	.89 (.08)*	.93 (.08)*
<i>R</i> ²	.07***	.14***	.09***	.21***

Note. *N* ranged 572 to 607.

*
p < .05.

**
p < .01.

p < .001.