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Positive Adjustment Among American Repatriated Prisoners of the Vietnam War: Modeling the Long-Term Effects of Captivity

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Abstract

A longitudinal lifespan model of factors contributing to later-life positive adjustment was tested on 567 American repatriated prisoners from the Vietnam War. This model encompassed demographics at time of capture and attributes assessed after return to the U.S. (reports of torture and mental distress) and approximately 3 decades later (later-life stressors, perceived social support, positive appraisal of military experiences, and positive adjustment). Age and education at time of capture and physical torture were associated with repatriation mental distress, which directly predicted poorer adjustment 30 years later. Physical torture also had a salutary effect, enhancing later-life positive appraisals of military experiences. Later-life events were directly and indirectly (through concerns about retirement) associated with positive adjustment. Results suggest that the personal resources of older age and more education and early-life adverse experiences can have cascading effects over the lifespan to impact well-being in both positive and negative ways.

Keywords

Prisoners of war; torture; later-life stressors; social support; aging; lifespan; life satisfaction; quality of life; mastery

Out of life's school of war: What does not destroy me, makes me stronger.

Friedrich Nietzsche, *Twilight of the Idols* (1895).

What doesn't kill you makes you stronger.

Kelly Clarkson, *Stronger* (2011)

The study of exposure to potentially traumatic events and posttraumatic stress disorder (PTSD) has been enriched in recent years through increased attention to the possibility of healthy functioning despite overwhelmingly negative experiences or pronounced adversity (Bonanno, 2004, 2005; Masten & Obradovic, 2008). Although a significant minority of people who encounter severe stressors suffer persistent impairment, the vast majority experience distress that resolves quickly or dissipates over time or with intervention. For example, the National Vietnam Veterans Readjustment Study (Kulka et al., 1990) reported PTSD prevalence rates of about 15% for men and 9% for women approximately 2 decades after the war. Thus, more than 5 times as many men and 10 times as many women who served in the war zone did not have this condition. Similarly, the National Women's Study (Kilpatrick, Edmunds, & Seymour, 1992) documented that 31% of female rape victims developed PTSD at some point in their lives, with 11% having a current diagnosis. This suggests that almost 9 out of 10 rape victims were either resistant to the disorder or were in remission or recovered. And one of the most devastating natural disasters in recent U.S. history, Hurricane Katrina, produced an estimated 30% PTSD rate in metropolitan New Orleans 5 to 7 months later (Galea et al., 2007), reinforcing the notion that functioning and well-being remain predominant following catastrophic destruction and personal loss.

The study of adult trauma has recently witnessed a strong emphasis on *resilience*. Bonanno (2004, 2005) defines resilience as an outcome, characterized by the absence of posttraumatic psychopathology or the maintenance of symptom-free functioning in the wake of extreme

life events. For example, Bonanno, Galea, Bucciarelli, and Vlahov (2006, 2007) studied 2,752 residents of metropolitan New York City and operationalized resilience as having no more than one PTSD symptom during the first 6 months after 9/11; 65% of participants fell into this category. They found resilience associated with many of the well-known correlates and risk factors for PTSD, including gender, age, prior trauma, social support, and posttrauma life stressors (e.g., Brewin, Andrews, & Valentine, 2000; King et al., 2012; Ozer, Best Lipsey, & Weiss, 2003), albeit all in the inverse direction from their associations with PTSD. Additional findings reviewed by Bonanno, Westphal, and Mancini (2011) demonstrated the predominance of a stable and healthy posttraumatic response trajectory relative to other possible trends (symptom chronicity, progressive recovery, and delayed onset psychopathology). Related research (e.g., Park, 2009; Tedeschi & Calhoun, 2004) has addressed psychological benefits of highly stressful experiences. Such *posttraumatic growth* is reflected in reports of greater appreciation of life, stronger spirituality, more compassion, closer relationships, and enhanced self-efficacy following the stressful experience.

Much of the current literature on functioning following trauma focuses on relatively short-term consequences, and there have been calls for a lifespan developmental perspective on this topic (e.g., King et al., 2012; Settersten, 2006; Spiro, Schnurr, & Aldwin, 1997), especially for those who experienced war-related events in early adulthood. Elder and Clipp (1988, 1989) elucidated how wartime experiences in early adulthood can operate in concert with subsequent risk and protective factors to influence later-life outcomes, both stress reactions and positive attributes such as self-confidence and appreciation of life. In his review of trauma and aging among military veterans, Settersten (2006) advocated a life course orientation, emphasizing individual and sociohistorical influences on long-term negative and positive outcomes. Likewise, Chatterjee, Spiro, King, King, and Davison (2009) described the effects of military service, especially during wartime, as reverberating throughout individuals' lives, interacting with other stressors and personal resources to influence long-term health and adjustment, positively as well as negatively.

These trends foster enthusiasm for the study of healthy functioning and well-being in trauma-exposed individuals, emphasizing normative aging processes and important emotional and health consequences that may unfold in later years. Accordingly, the present study aimed to test a longitudinal lifespan developmental model of factors contributing to later-life positive adjustment in a unique group exposed to a severe trauma: American repatriated prisoners of war (RPWs) from the Vietnam era. The model included demographic characteristics at time of capture (age, education, and marital status), attributes assessed after release and return to the U.S. (reports of torture during captivity and mental distress at repatriation), and variables measured approximately 3 decades later (normative later-life stressors, perceived social support, positive appraisal of military experiences, and the focal dependent variable of positive adjustment).

Vietnam-era RPWs

Americans held captive during the Vietnam War were subjected to an array of stressors. In addition to life threat and injuries incurred during capture, incarceration was characterized by deprivation, intimidation, punishment, physical illness, and debilitation. Moreover, these

men were tormented with uncertainty regarding the length of their captivity and the extent to which their country, families, and friends were aware that they were still alive. For most, these conditions were endured over an extended period, averaging almost 5 years (Rochester & Kiley, 1998).

Despite such hardships, evidence suggests that this group of servicemen, as a whole, was quite resilient. Sledge, Boydstun, and Rabe (1980), studying the Air Force subset of this cohort, concluded that the extremely toxic environments to which they were subjected could have beneficial effects in addition to the damaging consequences typically reported for RPWs (e.g., Engdahl, Dikel, Eberly, & Blank, 1997; Sutker, Winstead, Galina, & Allain, 1990; Zeiss & Dickman, 1989). King et al. (2011) examined relations between an array of demographics and captivity stressors with indicators of mental distress at repatriation for the remaining Army, Navy, and Marine RPWs. Noting that a majority (Navy and Marine aviators) had received special training prior to capture aimed at coping and functioning under extreme duress, King et al. highlighted maturity, commitment, and preparedness as key ingredients to resilience for this group.

Feder et al. (2008) reported moderate levels of posttraumatic growth for a small sample of Vietnam-era RPWs. Those having higher scores on dispositional optimism exhibited more posttraumatic growth. Segovia, Moore, Linnville, Hoyt, and Hain (2012) defined resilience as never having received a psychiatric diagnosis over a 37-year post-repatriation period. With this criterion, 58% of their sample of RPWs was considered resilient. Greater optimism and older age at capture were associated with more resilience.

The current study built upon and extended these prior efforts by focusing on healthy functioning and well-being among Vietnam-era RPWs. Like Segovia et al. (2012), our model incorporated a longitudinal perspective, using data that span 3 decades. Unlike all previous studies of these men, we used data from the full complement of 567 Vietnam-era RPWs.

Model and Its Justification

The proposed model encompassed two general timeframes, the repatriation period (1973, when RPWs averaged 35 years old) and approximately 30 years later (2002, average age of 65). The logic of variable arrangement followed a developmental sequence, beginning with fixed markers or demographic characteristics that these men carried with them into the captivity experience, and culminating with self-reported assessments of positive adjustment in later life. The guiding conceptual framework was based on the notion that early experiences, including extreme stress and adversity, have multiple and complex influences that reverberate throughout life and contribute to later-life functioning. Underlying this general framework are two complementary propositions: (a) Hobfoll's (1989; Hobfoll & Wells, 1998) conservation of resources theory, "Kbased on the supposition that people strive to retain, protect, and build resources and that what is threatening to them [thus, stress-producing] is the potential or actual loss of these valued resources" (Hobfoll, p. 531), and (b) Aldwin's (Aldwin & Stokols, 1988; Aldwin, Sutton, & Lachman, 1996) deviation-amplification theory, wherein early life events and circumstances portend a negative (or

positive) spiral yielding a diminution (or enhancement) of resources across the lifespan. In both theories, resource loss and resource gain are processes that unfold over time.

The first predictors in the model were the demographic characteristics of age, education, and marital status at time of capture. Previous research with U.S. RPWs from World War II and the Korean Conflict (e.g., Dikel, Engdahl, & Eberly 2005; Page, Engdahl, & Eberly, 1991; Speed, Engdahl, Schwartz, & Eberly, 1989; Zeiss & Dickman, 1989) suggested that these variables are protective in preventing short- and long-term psychopathology. Also, higher levels of education appeared to promote well-being in Israeli RPWs assessed 18 years after the Yom Kippur War (Neria, Solomon, & Dekel, 1998). Taken together, older age, more education, and being married represent maturity or personal resources that would be expected to attenuate the extent of mental distress at repatriation (King et al., 2011) and affect long-term conditions and positive outcomes.

The central captivity stressor was torture, both psychological and physical insult. The RPW literature has solidly established that severity of the prisoner of war experience – including physical punishment, threats, and deprivations – predicts subsequent mental distress. For example, Dikel et al. (2005) showed that prisoner-of-war trauma (e.g., beatings/torture, intimidation, weight loss) was among the strongest predictors of PTSD in a sample of World War II and Korean Conflict RPWs. Eberly, Harkness, and Engdahl (1991), using a similar trauma index, found significant associations with generalized anxiety disorder and depression, as well as past and current PTSD among World War II RPWs. In addition, Sutker and Allain (1989) differentiated among World War II European theater RPWs, World War II Pacific theater RPWs, and Korean Conflict RPWs (together with a non-RPW combat-exposed comparison group) to document that the severity of the prisoner-of-war experience covaried with the presence of PTSD, depression, or any of an array of Axis I diagnoses, and all RPW groups were more symptomatic than the combat-only group. The model therefore included direct effects of torture on an index of mental health symptomatology.

Alternatively, a small body of research maintains that wartime captivity and its potential for torture and suffering can yield salutary effects. For example, Solomon et al. (1999) found that Israeli RPWs assessed almost 2 decades after repatriation did not differ from a comparison group of combat veterans on number of positive psychological consequences and that RPWs reported far more positive than negative changes. These researchers noted that greater insight, self-confidence, optimism, life satisfaction, and capacity for growth may be benefits carried forward to later years. Similar conclusions have been drawn using subsets of the Vietnam-era RPWs (Feder et al., 2008; Sledge et al., 1980). Salutary effects likely represent attempts to offset resource loss (and associated distress) with resource gain (facets of positive life change), supporting our model's proposed longitudinal linkages between torture during captivity and later-life conditions and adjustment.

Mental health symptomatology upon repatriation was conceptualized in terms of psychological distress following release and return from captivity. Based on conservation of resources (Hobfoll, 1989; Hobfoll & Wells, 1998) and deviation-amplification (Aldwin & Stokols, 1988; Aldwin et al., 1996) perspectives, this variable reflects a net loss of personal

resources, which could initiate a loss spiral (i.e., further depletion of resources that carries forward into later life). Thus, repatriation mental distress was proposed to have a direct and negative impact on later-life psychosocial resources and positive adjustment.

Moving to the model's later-life timeframe, a first category of factors purported to influence positive adjustment was recent stressors. Two types of stressor variables were examined. The first was normative later-life events (e.g., death of family members or close friends, health issues), which have a well-documented association with psychological and physical outcomes in older persons (Aldwin, 1990; Schneiderman, Ironson, & Siegel, 2005). This later-life events variable was considered an objective stressor that can deplete psychosocial resources and therefore impact positive adjustment. The second stressor variable was concerns about retirement (e.g., distress over finances, worries about boredom or isolation), a normative later-life stressor that has been demonstrated to play an important role in the lives of aging veterans (Davison et al., 2006). This variable reflects more subjective assessments signaling apprehension and uneasiness and was expected to be impacted by the objective index of later-life events and to be negatively associated with positive adjustment. Also, because persons exposed to traumatic events in earlier life are more vulnerable to ongoing and later-life stressors (e.g., King, King, Fairbank, Keane, & Adams, 1998), the initial model allowed direct paths from torture to the two later-life stressor variables.

Two psychosocial resource variables were expected to contribute directly and positively to healthy functioning in older age. The first, social support, has been repeatedly associated with well-being in older adults (e.g., Chen & Feeley, 2014; Ferguson & Goodwin, 2010; Krause, 2004). The second referenced the appraisal of wartime events and circumstances, specifically the extent to which older veterans view their military experiences positively. Elder and Clipp (1989) documented that 60–70% of older combat veterans had positive reminiscences of their wartime years (e.g., “learned to cope with adversity,” gained “self-discipline”). Further, Aldwin, Levenson, and Spiro (1994) and Settersten, Day, Elder, and Waldinger (2012) underscored perceived desirable effects of military service as a later-life resilience factor. Thus, we examined positive appraisal of military experiences as another personal strength that could contribute to the RPWs' long-term adjustment.

Positive adjustment was conceptualized as a synthesis of general life satisfaction, mental health-related quality of life, and sense of mastery. Life satisfaction and emotional health/quality of life are widely used indicators of well-being (see Steel, Schmidt, & Schultz, 2008). Sense of mastery, on the other hand, has been considered both a personality characteristic that predicts various socioemotional and health-related outcomes (e.g. Forbes, 2001; Gadalla, 2010; Nicolaisen & Thorsen, 2012) and as a component of well-being (Ryff & Keyes, 1995), especially in later life (e.g., Jang, Chiriboga, Lee, & Cho, 2009; Netz, Wu, Becker, & Tenenbaum, 2005). Here, sense of mastery was viewed as a “personality process” (Aldwin et al., 1996, p. 839; see also Pearlin, Nguyen, Schieman, & Milkie, 2007) amenable to change as a function of stress and coping. Thus, it is a marker of well-being and positive adjustment in later adulthood when normative stressors herald the possibility of loss, decline, and dependence.

Hypotheses

Numerous associations are necessarily implied by constructing and testing any complex model. Although general expectations of relationships among stressors, resources, and other individual difference characteristics are highlighted in the previous paragraphs, the following hypotheses were especially salient:

1. The demographic variables of age, education, and marital status (i.e., being married) at time of capture were expected to be negatively associated with repatriation mental distress.
2. The torture variables were hypothesized to manifest direct associations with repatriation mental distress, indicative of early dysfunction.
3. In contrast, the torture variables were also proposed to have cross-time associations with positive appraisal of military experiences, indicative of a long-term salutary effect.
4. Repatriation mental distress was hypothesized to inversely impact positive adjustment both directly and indirectly through its influence on social support and positive appraisal of military experiences.
5. Both normative later-life stressors, later-life events and concerns about retirement, were proposed to directly and negatively relate to positive adjustment. The effect of later-life events was also expected to be mediated through concerns about retirement, since experiencing stressful events could create additional worries about transitioning to the retirement phase of life.

Method

Participants and Procedure

Participants were 567 men who served in the U.S. Armed Forces (Air Force, $n = 326$; Navy, $n = 138$; Army, $n = 77$; and Marines, $n = 26$). All were captured (beginning in 1964) during the Vietnam War and repatriated in 1973. At time of capture, their average age was approximately 30 years, and they had served an average of 8 years in the military; at time of repatriation, their average age was 35 years. The sample was predominantly Caucasian (96%). Almost 2/3 (65%) had completed college; 11% had additional graduate or professional training.

Immediately upon their release, all RPWs were transported to Clark Air Force Base in the Philippines and then evacuated to U.S.-based military hospitals for evaluation and treatment. Captivity experiences and mental health status were assessed in 1973 via clinical interviews and debriefings. These early data were drawn from archives at the R. E. Mitchell Center for Repatriated Prisoner of War Studies, Pensacola, Florida.

Later-life characteristics and adjustment outcomes were measured in 2002 via a mail survey when RPWs averaged 65 years old. They received information regarding the study and its human subject protections; consent was indicated by the act of returning the completed survey. The response rate was 62% of RPWs still living and accessible through the Mitchell

Center. This research was approved by the IRBs of the Naval Aerospace Medical Research Laboratory and VA Boston Healthcare System.

RPWs who responded to the 2002 survey ($n = 291$) were compared to RPWs for whom 2002 data were not available ($n = 276$). Those who participated in 2002 were somewhat older at time of capture ($M = 30.59$; $SD = 5.49$) than those who did not ($M = 29.17$; $SD = 6.07$), $t(549) = 2.91$, $p < .01$, $r = .12$). Participants in the 2002 survey had slightly more years of education at time of capture ($M = 15.43$; $SD = 1.65$) than nonparticipants ($M = 14.74$; $SD = 2.06$), $t(533) = 4.23$, $p < .01$, $r = .18$). The two groups did not differ on the proportion who were married at time of capture [76% for participants vs. 74% for nonparticipants, $\chi^2(1, N = 555) = 0.58$, ns , $r = .03$], nor on months of captivity duration [$M = 54.88$; $SD = 29.44$ for participants vs. $M = 51.50$; $SD = 29.60$ for nonparticipants, $t(565) = 1.36$, ns , $r < .01$].

Measures

Demographic characteristics (recorded at time of capture)—Age and education at time of capture were quantified in years; marital status was indexed as 0 = *not married* and 1 = *married*. These variables were parameterized as single causal indicators (Bollen & Bauldry, 2011) in the modeling procedures.

Torture (recorded in 1973)—The physical torture measure contained 10 items reflecting exposure to physical abuse, including deprivations, withdrawal of sustenance, or other forms of punishment (e.g., actual physical mistreatment, prolonged sitting or standing). The psychological torture measure comprised 15 items reflecting exposure to psychological abuse, including threats of non-repatriation, attempts to elicit guilt for role in war, offers of “privileges,” or other forms of psychological punishment or manipulation. Response options were 0 = *never* to 3 = *very often*. For both physical and psychological torture, average item scores were computed and treated as single causal indicators.

Repatriation mental distress (recorded in 1973)—Three scales assessing mental distress at repatriation were derived from psychiatrists’ ratings during clinical interviews. The first, general distress, contained 10 items assessing demoralization, anxiety, and emotional problems. Response options were 0 = *none* to 3 = *marked*. Interpersonal negativity, a 16-item scale, evaluated the degree to which the RPW presented with a negative, pessimistic, or skeptical attitude. Response options were 0 = *not at all* to 2 = *often*. An index of posttraumatic stress symptomatology (PTSS) was constructed from 13 interview items that best matched the major symptom clusters of PTSD as defined by the *Diagnostic and Statistical Manual of Mental Disorders*, 4th Edition (*DSM-IV*; American Psychiatric Association, 1994): (a) reexperiencing, (b) numbing/avoidance, and (c) hyperarousal.¹ Item scores were converted to Z scores due to differences in response formats. Thus, each has a mean of 0 and a standard deviation of 1. Repatriation mental distress was modeled as a single latent variable with average item scores on general distress

¹One item best matched *DSM-IV* PTSD Criterion B (*reexperiencing*): “recurrent intrusive thoughts or images of traumatic events or stressful experiences.” Six items were deemed representative of Criterion C (*numbing/avoidance*), albeit most heavily weighted toward the numbing aspect of this symptom cluster: “withdrawn,” “flat or bland affect,” “apathy,” “ambivalence,” “conceals emotions,” and “emotional numbness.” Six items reflected Criterion D (*hyperarousal*): “restless/fidgeting,” “startle reactions,” “tenseness,” “psychophysiological signs of anxiety,” “easily upset by noise, change, or confusions,” and “sleep problems.”

($\alpha = .83$), interpersonal negativity ($\alpha = .83$), and PTSS ($\alpha = .80$) as manifest indicators.

Later-life stressors (recorded in 2002)—The Elders Life Stressor Inventory (ELSI; Aldwin, 1990) measured later-life events. This self-report instrument contains 30 potentially stressful events relevant to older individuals and considered a part of the normative aging process. Respondents indicated whether a listed event had occurred during the previous year. Sample items include “major personal injury or illness” and “death of a spouse.” A summed score of the total number of endorsed events was calculated and included in the model as a single causal indicator.

A more subjective index of later-life stressors was the Concerns about Retirement Scale (King, King, Vickers, Davison, & Spiro, 2007). This 16-item self-report measure assesses the extent to which retirement, or impending retirement, creates worry or distress. Items were rated using a 5-point Likert format (0 = *strongly disagree* to 4 = *strongly agree*). Sample items include “I am/was concerned about financial matters after retirement” and “I am/was concerned about having to retire later than I might like.” The scale has high internal consistency reliability (α in current sample = .94). Concerns about retirement was included in the model as a latent variable with three observed indicators: concerns about the timing of retirement (4 items; $\alpha = .78$), about biopsychosocial well-being (6 items; $\alpha = .83$), and about enjoying retirement (6 items; $\alpha = .90$).

Psychosocial resources (recorded in 2002)—The first psychosocial resource was perceived social support as measured by King et al.’s (2007) 9-item Social Support Scale. This measure assesses the extent to which one receives emotional and instrumental support from family and friends. The response format is a 5-point Likert-type scale (0 = *strongly disagree* to 4 = *strongly agree*). Sample items include “Among my friends or relatives, there is someone I can go to when I need advice” and “If I were unable to do my daily chores, there is someone who would help me with these tasks.” Alpha for the full scale was .84. Average item scores of parcels representing emotional (6 items; $\alpha = .79$) and instrumental (3 items; $\alpha = .76$) support were used as manifest indicators.

The 11-item Positive Appraisal of Military Experiences Scale (King et al., 2007) gauged personal gains and growth attributed to combat and military service. Items were rated using a 5-point Likert-type scale (0 = *strongly disagree* to 4 = *strongly agree*). Sample items include “The military taught me how to get along with others” and “I personally benefited in the long run by serving in the war.” Positive military appraisal ($\alpha = .83$ in this sample) was modeled as a latent variable with average item scores on three manifest indicator parcels: self-awareness and personal growth (4 items; $\alpha = .74$), specific skills and gains (4 items; $\alpha = .68$), and general benefits (3 items; $\alpha = .45$).

Positive adjustment (recorded in 2002)—The Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) is a 5-item measure of satisfaction with general features of one’s life. Respondents indicated the degree of satisfaction using a 7-point response format (0 = *strongly disagree* to 6 = *strongly agree*). Sample items include “If I could live

my life over, I would change almost nothing” and “In most ways my life is close to my ideal.” The sum of all item responses was computed ($\alpha = .91$).

The mental component score from the Veterans RAND Health Survey (VR-12; Kazis et al., 1998) assessed mental health-related quality of life as reflected by healthy functioning across emotional domains. It is a shortened version of the well-regarded SF-36 (Ware, Snow, Kosinski, & Gandek, 1993). Sample items are “How much of the time during the past 4 weeks have you felt calm and peaceful?” (response options: 1 = *none of the time* to 6 = *all of the time*) and “In general, would you say your health is” (response options: 1 = *poor* to 5 = *excellent*). A summary score for mental health-related quality of life was computed in a *T*-score metric ($M = 50$; $SD = 10$) normed to the Selim et al. (2009) nationally representative U.S. sample of 52,425 respondents to the Medical Expenditure Panel Survey conducted between 2000 and 2002. Cheak-Zamora, Wyrwich, and McBride (2009) reported a weighted component alpha of .82 and a test-retest coefficient (over 1 year) of .60 for the SF-12 mental summary index.

The third measure of positive adjustment was the Sense of Mastery Scale (Pearlin, Menaghan, Lieberman, & Mullan, 1981), a 7-item measure that assesses an individual’s sense of control over his/her life and perceived ability to handle negative life events. The measure uses a 5-point Likert-type scale (0 = *strongly disagree* to 4 = *strongly agree*). Sample items include “I often feel helpless in dealing with problems of life” (reverse-scored) and “I can do just about anything I really set my mind to.” The average item score was computed ($\alpha = .84$).

Total score on life satisfaction, *T* score on the VR-12, and average item score on sense of mastery served as manifest indicators of positive adjustment.

Overview of Data Analyses

We computed descriptive statistics for all manifest indicators. The overall sample was then randomly split into halves. We developed the measurement model using one half-sample. After arriving at a measurement model that fit these data well, we evaluated its fit to data from the second half-sample. A final measurement model was then specified and tested for the full sample.

We next addressed the longitudinal structural model of associations among key variables. We first removed paths between variables that had negligible bivariate associations in the measurement model, those with a critical ratio (*CR*) having an absolute value less than 1.5. Then, following guidelines from Anderson and Gerbing (1988), our most saturated structural model included all remaining plausible paths representing associations among variables. For example, the three demographic variables were initially specified as fixed covariates with potential influence on each downstream variable. For model trimming, we considered each endogenous latent variable sequentially, conceptually predicting from earlier to later, and focusing on the best combination of downstream paths in the prediction of each variable. A path was deleted if its associated $|CR| < 1.5$ and if its removal was conceptually justifiable and did not produce a significant deterioration in model fit.

To guard against model misspecification by dismissing paths that might have more appropriately been included, and absent any theory-based criterion-irrelevant components of variance among predictors (a basis for the existence of suppression; Tzelgov & Henik, 1991), we performed three likelihood ratio tests. First, we compared the fit of the measurement model (wherein all possible associations among variables are specified) to the fit of the model that we designated as the most saturated structural model. This provided a test of the viability of deleting the aforementioned bivariate associations with $|CR| < 1.5$. Second, we compared the fit of the measurement model to the fit of the final structural model. This allowed a check that the deletion of all directional paths could be justified. And, finally, we compared the fit of the most saturated structural model with the fit of the final structural model. Informed by the five *a priori* hypotheses, a general theme in removing paths was the achievement of parsimony to explain observed covariation among variables as simply as possible or with as few parameters as possible. Furthermore, the use of likelihood ratio tests has been judged more powerful and reliable than other approaches, such as LaGrange multipliers (modification indices) or the Wald statistic, and is thus preferable (SAS Institute Inc., 2009; UCLA Statistical Consulting Group, 2007).

Models were evaluated using the comparative fit index (CFI; Bentler, 1990), Tucker-Lewis fit index (TLI; Tucker & Lewis, 1973), root mean square error of approximation (RMSEA; Steiger, 1990), standardized root mean square residual (SRMR; Bentler, 1995), and Bayesian Information Criterion (BIC; Schwartz, 1978). Missing data were accommodated by full-information maximum likelihood estimation. Primary analyses were conducted with Mplus software version 5.1 (Muthen & Muthen, 1998–2007), and the computation of confidence intervals (CIs) for indirect effects was achieved using the distribution of products algorithm in MacKinnon's RMediation software (Tofghi & MacKinnon, 2011).

Hypotheses 1–5 were evaluated by considering salient direct and indirect effects; 95% CIs were constructed about parameter estimates. To affirm the outcomes for each hypothesis, alternative models were specified, chi-square differences were calculated, and BIC values were compared.

Results

Table 1 displays means and standard deviations for all manifest indicators. Of particular interest are means for indicators of positive adjustment. Considering different response metrics, the mean life satisfaction of 20.18 ($M = 25.18$ had a 1-to-7 response scale been used) is just under (less satisfied) than that reported for Diener et al.'s (1985) geriatric sample ($M = 25.8$) and slightly higher (more satisfied) than for another sample of older persons ($M = 24.2$; Pavot, Diener, Colvin, & Sandvik, 1991). Using Cohen, Cohen, Aiken, and West's (1999) percent of maximum possible score (POMP), mean life satisfaction equates to 67%; Diener et al.'s mean is 69%; and Pavot et al.'s mean is 64%. The mean of 50.42 on the VR-12 (Kazis et al., 1998) mental component score approximates the normalized *T* score-based mean of 50, signifying slightly above average on mental health-related quality of life. The mean of 2.96 (POMP = 74%) on sense of mastery is just above that reported by Pearlin et al. (1981) for a sample of adults ($M = 2.72$, POMP = 68%, had a

0-to-4 response scale been used), and almost identical to that reported by Pearlin et al. (2007) for older Caucasian men ($M = 2.97$; POMP = 74%).

The best-fitting measurement model for the first random half-sample yielded: $\chi^2(121, N = 274) = 156.88$, CFI = .98, TLI = .96, RMSEA = .033 (90% CI [.015, .047]), SRMR = .045, BIC = 10,690.89. When this model was imposed on the second half-sample, the fit was similar: $\chi^2(121, N = 293) = 151.67$, CFI = .98, TLI = .97, RMSEA = .029 (90% CI [.010, .043]), SRMR = .046, BIC = 10,655.88. Finally, we obtained strong model fit when specifying this same model to the full data: $\chi^2(121, N = 567) = 164.03$, CFI = .99, TLI = .98, RMSEA = .025 (90% CI [.014, .034]), SRMR = .034, BIC = 20,947.05.

Table 2 presents correlations among latent variables in the measurement model. All three demographic variables (age, education, and marital status) were significantly associated with repatriation mental distress. Physical, but not psychological, torture was also associated with repatriation mental distress. Age, education, and marital status at time of capture had a total of 5 significant correlations (out of a possible 15) with later-life variables; especially noteworthy were associations linking age with concerns about retirement ($r = -.27$), social support ($r = .27$), and positive adjustment ($r = .27$). Of the remaining 15 cross-time associations, 8 were significant. Particularly salient was the association between repatriation mental distress and positive adjustment ($r = -.29$). The focal outcome of long-term positive adjustment was significantly correlated with the earlier-assessed age and marital status at time of capture and repatriation mental distress, in addition to significant associations with other concurrently measured later-life variables.

Figure 1 presents a simplified general schematic of the most saturated structural model: $\chi^2(136, N = 567) = 187.47$, CFI = .98, TLI = .98, RMSEA = .026 (90% CI [.016, .034]), SRMR = .041, BIC = 20,875.38. This figure shows 27 paths and associated values for their path coefficients and 95% CIs, after 15 of 42 possible unidirectional paths were eliminated due to negligible bivariate associations ($|CR| < 1.5$). Model trimming (systematically eliminating paths with $|CR| < 1.5$) produced the final structure shown in Figure 2, which fit the data quite well: $\chi^2(143, N = 567) = 193.91$, CFI = .98, TLI = .98, RMSEA = .025 (90% CI [.015, .034]), SRMR = .048, BIC = 20,837.44. For both models, other parameter estimates (e.g., factor loadings, covariances, disturbances) and associated CRs are supplied in supplementary online documents.

It is noteworthy that the model trimming process did not significantly damage model-data fit. From the measurement model to the most saturated structural model in Figure 1, $\chi^2(15) = 23.44$, $p = .08$; from the measurement model to the trimmed structural model in Figure 2, $\chi^2(22) = 29.88$, $p = .12$; and from the most saturated structural model in Figure 1 to the final model in Figure 2, $\chi^2(7) = 6.44$, $p = .49$. Also, values of the BIC decreased from the measurement model (20,947.05) through the most saturated model (20,875.38) to the final model (20,837.44).

Hypothesis 1 concerned expectations regarding associations between the three demographic variables at capture and mental distress at repatriation. It was upheld for age and education at time of capture, but, despite a bivariate association between marital status and repatriation

mental distress, being married was not a unique contributor in the presence of older age and more education. When compared to an alternative model that removed the paths from age and education to repatriation mental distress, model-data fit significantly worsened, $\chi^2(2) = 34.78, p < .001$, and BIC increased to 20,859.54, thus affirming the salience of these links and providing additional support for Hypothesis 1.

Hypothesis 2 addressed the association of torture with short-term mental dysfunction. As expected, physical torture led to repatriation mental distress. Because psychological torture had minimal bivariate association with repatriation mental distress, this path coefficient was not estimated in the final model. An alternative model that removed the path from physical torture to repatriation mental distress yielded $\chi^2(1) = 10.37, p < .01$, and BIC = 20,841.46, thus bolstering the strength of conclusions regarding Hypothesis 2.

Hypothesis 3 proposed long-term salutary effects of torture. Consistent with expectations, physical torture predicted enhanced later-life positive appraisal of military experiences. Psychological torture, on the other hand, failed to uniquely predict positive appraisal of military experiences. A model in which the physical torture-to-positive appraisal path was removed produced $\chi^2(1) = 8.99, p < .01$, and BIC = 20,840.08, thus supplying additional endorsement of Hypothesis 3.

Hypothesis 4, calling for both direct and indirect effects of repatriation mental distress on positive adjustment, was partially supported. Results revealed a strong direct effect over 30 years. However, using parameter estimates in Figure 1, the proposed indirect effects via social support ($a*b = -.91$, 95% CI [-2.63, .35]) and positive appraisal of military experiences ($a*b = .10$, 95% CI [-.48, .57]) were not supported. The indirect effect via social support, though accounting for 21% of the total effect, was lost since the decision rules for model trimming mandated no connection between repatriation mental distress and social support. The indirect effect via positive appraisal of military experiences was relatively limited, accounting for 2% of the total effect, and its nonendorsement relied largely on the trivial (and ultimately deleted) association between positive appraisal and positive adjustment. The final model in Figure 2 displays no indirect pathways. An alternative model removing the direct pathway resulted in $\chi^2(1) = 11.97, p < .001$, and BIC = 20,843.07, further endorsing Hypothesis 4.

Hypothesis 5 was fully supported. Both later-life events and concerns about retirement had direct effects on positive adjustment. Moreover, there was an indirect effect of later-life events on positive adjustment via concerns about retirement ($a*b = -.09$, 95% CI [-.16, -.04]). This indirect pathway accounted for 30% of the total effect. An alternative model removing the direct influence of both later-life stressor variables on positive adjustment resulted in $\chi^2(2) = 41.04, p < .001$, and BIC = 20,865.79, thus supporting the salience of these two links in the overall model.

Beyond those associations stipulated by hypotheses, Figure 2 shows several direct links between earlier and later data. Older age at time of capture predicted both [lack of] concerns about retirement and [more] social support approximately 30 years later. Psychological torture had two links (albeit weaker) to later variables, positively predicting enhanced social

support ($CR = 1.90$) and negatively predicting concerns about retirement ($CR = -1.71$). There was also a modest negative influence of repatriation mental distress on later positive appraisal of military experiences ($CR = -1.64$).

Several additional longitudinal indirect effects were significant. These included influences from age to positive adjustment through repatriation mental distress ($a*b = .02$, 95% CI [.00, .04]), concerns about retirement ($a*b = .09$, 95% CI [.04, .15] and social support ($a*b = .10$, 95% CI [.04, .17]); from education to positive adjustment through repatriation mental distress ($a*b = .10$, 95% CI [.04, .18]); and from physical torture to positive adjustment through repatriation mental distress ($a*b = -.26$, 95% CI [-.50, -.07]). Later-life events were cross-sectionally associated with less social support, and thus indirectly related to positive adjustment ($a*b = -.08$, 95% CI [-.16, -.03]). There were two weaker indirect pathways connecting psychological torture to positive adjustment via concerns about retirement ($a*b = .35$ 95% CI [-.05, .82]) and social support ($a*b = .54$ 95% CI [-.01, 1.17]).

Regarding the model's endogenous variables, 8% of the variance in repatriation mental distress, 14% in concerns about retirement, 10% in social support, 5% in positive appraisal of military experiences, and 66% in positive adjustment were accounted for by their respective predictors. Furthermore, 61% of the variance accounted for in concerns about retirement, 70% in social support, and 100% in positive appraisal of military experiences, all three assessed in later-life, were attributable to early-life variables. Because positive adjustment was highly related to these other concurrently measured later-life variables, and these other later-life variables were, in turn, predicted by early-life variables, the unique contribution of the early-life variables to positive adjustment was necessarily curtailed, 6% in this model. Nonetheless, the overall model suggests mechanisms by which early-life situations may influence later-life well-being.

Discussion

In this study, we traced longitudinal influences for a number of factors that potentially impact later-life fulfillment and healthy functioning for the 567 U.S. servicemen who survived captivity during the Vietnam War. Results align with the contention that highly stressful early-adulthood experiences can reverberate across one's life and influence later well-being (Chatterjee et al., 2009). Findings also highlight the importance of personal resources to long-term positive adjustment for individuals who endure lengthy exposure to deprivation, threat, and physical harm (Aldwin et al., 1996; Hobfoll, 1989).

As proposed, both age and education at time of capture demonstrated direct negative associations with mental distress at time of repatriation. This finding is consistent with other research on wartime captivity (e.g., Page et al., 1991; Zeiss & Dickman, 1989), in that older and more educated RPWs exhibit fewer mental health problems after their release. These demographic characteristics and qualities may be construed as personal resources that these men carried with them, to greater or lesser extent, as they entered captivity and faced weeks, months, and years of imprisonment and associated hardships.

The positive association of physical torture with repatriation mental distress reinforces a large body of literature documenting both the deleterious effects of maltreatment during wartime captivity (e.g., Dikel et al., 2005; Sutker & Allain, 1996) and the general dose-response relationship between trauma exposure and dysfunction (Brewin et al., 2000; Ozer et al., 2003). But physical torture displayed a dual influence. In line with RPW literature on resilience and growth (e.g., Feder et al., 2008; Sledge et al., 1980), the association of physical torture with positive appraisal of military experiences tentatively implies that being subjected to and successfully surviving physical torture might promote the subsequent accumulation of personal strength in the form of restorative meaning-making about early life adversity (Agaibi & Wilson, 2005). Thus, a salutary resource gain may emanate from torture and serve as a long-term counterbalance to its initial negative effect.

Interestingly, psychological torture had virtually no association with repatriation mental distress. A possible explanation may lie with a trend toward habituation to the impact of psychological torture. That is, psychological threats and attempts at manipulations, if frequently encountered without consequence, may lose their potency and effectiveness in eliciting negative reactions and thus neutralize any observed systematic covariation with repatriation mental distress.

The finding of direct negative impact of repatriation mental distress on positive adjustment is concordant with expectations and may be understood in terms of both conservation of resources (Hobfoll, 1989; Hobfoll & Wells, 1998) and deviation-amplification (Aldwin & Stokols, 1988; Aldwin et al., 1996) perspectives regarding the lifespan implications of early trauma exposure. RPWs who were more mentally distressed upon repatriation potentially suffered resource loss, yielding decreases in long-term positive adjustment. Conversely, RPWs who emerged from captivity with less mental distress may have experienced net resource gain by virtue of their ability to maintain psychological integrity despite extreme threat and suffering. This accomplishment, in turn, heralded enhanced life satisfaction, mental health-related quality of life, and sense of mastery. Repatriation mental distress also served an important mediational function, linking the protective assets of older age and more education at time of capture and the negative influence of physical torture to positive adjustment 30 years later.

The more objective later-life events stressor variable was particularly noteworthy. As hypothesized, it had a direct association with positive adjustment, but there also appeared to be two mechanisms by which its indirect influence was manifest. First, a positive association with concerns about retirement yielded a negative indirect effect, as proposed. This suggests that exposure to more later-life events predisposes individuals to anticipate and experience the transition to retirement with apprehension and anxiety, which, in turn, diminishes positive adjustment. Such an indirect pathway from a more objective stressor through a more subjective stressor to psychosocial outcomes has been previously documented in the context of wartime events and circumstances predicting dimensions of mental health (e.g., King, King, Gudanowski, & Vreven, 1995). Second, later-life events was linked to positive adjustment via social support. This indirect pathway recapitulates the notion that stressful life events may foretell psychosocial resource loss. That is, social support, though typically seen as a protective factor to overcome threat, stress, or trauma, may also contract when

older persons experience normative later-life changes and challenges (e.g., death or illness of family and friends, reductions in activities of daily living, shifts in living situations). From another perspective, changing circumstances may produce a sense of vulnerability that gives rise to a perception of reduced support. That is, rather than or in addition to actual support decreasing, feelings of vulnerability may alter the perception of support, which in turn is linked to decreased positive adjustment.

That the early-adulthood personal resource of older age at time of capture contributed to later-life social support reflects cumulative advantage (“the rich get richer”), a perspective proposed by Dannefer (2003) as increasingly important for contemporary gerontology. It also recapitulates Hobfoll’s (Hobfoll & Wells, 1989) caravan metaphor, representing the successive acquisition and safeguarding of an individual’s capital through the years, and Aldwin et al.’s (1996) amplification process, wherein higher initial levels of resources allow more fine-tuned coping skills to promote the development of even more resources. In like manner, the age-to-concerns about retirement-to-positive adjustment pathway may signal that older RPWs at time of capture are less likely to be threatened by retirement 30 years later, affording them more life satisfaction, healthier emotional functioning, and greater sense of control.

How do these findings reinforce and extend what we know about the Vietnam-era RPWs? What lessons can be gleaned for others who survive trauma or extreme adversity? And are there implications for service delivery?

Because most U.S. servicemen who were imprisoned during the Vietnam War were pilots/aviators, they were older and more educated than general military personnel. In addition, they had been subjected to rigorous Survival, Evasion, Resistance, and Escape training that sought to prepare them for possible capture and prisoner of war experience. This included anticipation of potential solitary confinement and torture, methods for maintaining morale and military rank during imprisonment, clandestine communication techniques, and resistance to interrogation and indoctrination. Thus, a good portion, but certainly not all, of the participants in this study possessed a reservoir of helpful strategies to offset the stress of captivity. Such psychological preparation surely served as a protective factor during captivity (King et al., 2011) and may also partially account for the negligible impact of psychological torture in this study. They also returned to the U.S. as probably the one group of Vietnam veterans who received respect and gratitude for their service and sacrifice. Most retained their active-duty status within the military’s supportive structure, being afforded opportunities to replenish and extend their pool of resources into later years, including military retirement pay and other life-long benefits, and thereby promoting long-term positive adjustment.

Our findings have implications for the broader trauma field. First, they encourage further lifespan developmental study of trauma survivors to document their trajectories of well-being over time and especially to identify critical points in the lifespan where different mechanisms that account for outcomes may be operating (Chatterjee et al., 2009). Furthermore, as noted previously, results are consistent with many of the lifespan developmental tenets promoted by Hobfoll (Hobfoll & Wells, 1998) and Aldwin (Aldwin et

al., 1996). In particular, findings reinforce the notion of resource gain as a consequence of emerging emotionally intact from a potentially traumatic experience. They also highlight the commonsense view that individuals who have more personal resources prior to exposure are less vulnerable to subsequent adjustment problems. This is in line with the general risk and resilience trauma literature (Brewin et al., 2000; Ozer et al., 2003) that identifies persons who are older and more educated as more likely to fend off or overcome posttraumatic difficulties. Importantly, in the present study, evidence suggests that the effects of such pretrauma characteristics can carry forward decades into the future.

In broad perspective, the findings motivate early assistance to trauma survivors to prevent a possible long-lasting negative impact on general well-being. They also encourage techniques that target resource enhancement, especially social support, as a beneficial approach (Meichenbaum, 2011). Finally, the findings point to the potential of later-life stressful events and circumstances to independently impact well-being distinct from earlier trauma exposure and its associated consequences. These later-life normative stressors can overwhelm the positive reservoir of an individual's cumulative resources or exacerbate an existing loss spiral. Thus, professionals who work with older adults should give balanced attention to assessment for both trauma history and ongoing later-life stressful events (Cook & O'Donnell, 2005).

Concerning study limitations, a major challenge was posed by use of archived medical and psychological data generated through extensive clinical evaluations and military debriefings, not necessarily intended for research. Although some assessments relied on structured inquiries about particular events (e.g., torture experiences), many were observations by medical or psychological professionals. In most cases, reliable and valid indicators had to be systematically crafted from the existing information. Although this sometimes resulted in measures that are less psychometrically sophisticated than those available today – most notably, a scale for PTSS rather than a more contemporary DSM-oriented assessment of PTSD – we were able to achieve reasonable levels of reliability and covariation with expected outcomes. Potential unreliability was obviated further by specification of latent variables (and associated residual errors) in the measurement and structural models. Specification of measurement error affords the creation of perfectly reliable latent variables, yielding unbiased structural coefficients.

The present study encompassed two general timeframes, in and around repatriation and about 30 years later, when RPWs averaged 35 and 65 years of age, respectively. The ability to track adjustment and introduce additional variables through the middle adult years (the 40s and into the 50s) would provide additional insight into the lifespan consequences of early adult trauma and better elucidate mechanisms that might account for the ebb and flow of adjustment status over the years. For example, Ardelet, Landes, and Valiant (2010) reported an interaction between intensity of World War II combat for men in their 20s and generativity measured at around age 50 in the prediction of well-being in old age.

Furthermore, absent from the model were indices of temperament or personality, which has a prominent role in the prediction of long-term healthy functioning, life satisfaction, and similar positive outcomes (e.g., DeNeve & Cooper, 1998; Heller, Watson, & Ilies, 2004;

McCrae & Costa, 1991; Steel et al., 2008). Pre- and post-captivity assessments of personality would be particularly revealing regarding its malleability in the face of extremely adverse conditions and traumatic experiences. Later intermittent assessments over the lifespan would enable investigation into dynamic change in personality and related differential personality-based predictions as a function of time since exposure or age (see work by Caspi & Roberts, 2001; Roberts & Caspi, 2003; Roberts, Walton, & Viechtbauer, 2006). Unfortunately, we did not have sound assessments of contemporary personality constructs available in the database. Even without personality factors or intermediate assessments of other important constructs, we found a surprising number of early adult variables associated with later-life variables, either directly or indirectly.

One might question the generalizability of findings based on a unique sample of male members of the American military incarcerated under extreme conditions for an extended period of time. The counterpoint is that findings align with the broader knowledge base regarding traumatic stress, and lessons learned from this research may be applied to victims of other sustained traumas. As detailed by King et al. (2011), these might include imprisoned non-state-sponsored enemy combatants, political detainees and hostages, contemporary targets of human bondage and trafficking (prostitution, slavery, and child military soldiers), and even long-term victims of domestic abuse. Another potential limitation related to the sample is that responders to the 2002 survey were slightly older and more educated, and possibly healthier and better adjusted, than nonresponders. The approach to the treatment of incomplete data in the analyses, however, was intended to yield unbiased parameter estimates to the extent that the missing at random (Little & Rubin, 1987) or recoverability (McArdle, 1994) assumption was met.

In conclusion, the study of this group of servicemen who survived an extraordinary life experience helps clarify how individuals who face trauma can be capable of achieving long-term well-being and healthy functioning. The dynamics of personal resource gain or loss provide a useful framework toward this end. Future longitudinal research that can jointly map trajectories of resource availability and important variables related to emotional health would continue to advance this promising line of research.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Figure 1.

Schematic display of most saturated model predicting long-term positive adjustment over approximately 30 years. Unstandardized regression coefficients [95% CIs] are provided.

AGE = age at time of capture; EDU = education at time of capture; MAR = marital status at time of capture; PST = psychological torture; PHT = physical torture; RMD = repatriation mental distress; LLE = later-life events; RET = concerns about retirement; SOC = social support; PAM = positive appraisal of military experiences; POS = positive adjustment.

Figure 2.

Final structural model predicting long-term positive adjustment over approximately 30 years. Solid lines = positive paths. Dashed lines = negative paths. Bolded paths represent statistically significant associations ($|CR| > 1.96$). Nonbolded paths (RMD $\rightarrow$ PAM, PST $\rightarrow$ SOC, and PST $\rightarrow$ RET) have $|CR| > 1.5$ but < 1.96 . Unstandardized regression coefficients [95% CIs] are provided. AGE = age at time of capture; EDU = education at time of capture; MAR = marital status at time of capture; PST = psychological torture; PHT = physical torture; RMD = repatriation mental distress; LLE = later-life events; RET = concerns about retirement; SOC = social support; PAM = positive appraisal of military experiences; POS = positive adjustment.

Table 1

Descriptive Statistics for Indicators in the Measurement Model

Construct/Variable type	Indicator	<i>M</i>	<i>SD</i>
Demographics	Age at capture	29.90	5.80
	Education at capture	15.10	1.88
	Marital status at capture	0.75 ^a	0.43
Captivity stressors	Physical torture	1.05	0.54
	Psychological torture	1.33	0.57
Repatriation mental distress	General distress	0.22	0.30
	Interpersonal negativity	0.26	0.20
	Posttraumatic stress symptomatology	0.00 ^b	0.53
Later-life stressors: Later-life events	ELSI	5.01	5.10
Later-life stressors: Concerns about retirement	Timing of retirement	1.19	0.84
	Biopsychosocial well-being	1.34	0.81
	Enjoying retirement	1.29	0.93
Psychosocial resources: Social support	Emotional support	3.01	0.65
	Instrumental support	3.29	0.62
Psychosocial resources: Positive appraisal of military experiences	Self-awareness and personal growth	2.89	0.65
	Specific skills and gains	2.88	0.68
	General benefits	2.93	0.69
Positive adjustment	Life satisfaction	20.18	6.52
	Mental health-related quality of life	50.42	10.82
	Sense of mastery	2.96	0.69

Note: All statistics were estimated with full information maximum likelihood and therefore based on the full sample ($N = 567$). ELSI = Elders Life Stress Inventory.

^aSince marital status is a dichotomous variable (0 = *not married*, 1 = *married*), the mean of 0.75 indicates that 75% of the sample were married at the time of capture.

^bExpressed as average of scores in a Z-score metric; hence, the group mean is expected to be 0.

Table 2

Correlations among Variables in the Measurement Model

	AGE	EDU	MAR	PHT	PST	RMD	LLE	RET	SOC	PAM	POS
Age (AGE)	--										
Education (EDU)	.29	--									
Marital status (MAR)	.43	.22	--								
Physical torture (PHT)	.25	.05	.11	--							
Psychological torture (PST)	.17	.05	.05	.70	--						
Reparation mental distress (RMD)	-.14	-.23	-.11	.12	-.02	--					
Later-life events (LLE)	.00	.04	-.00	.15	.14	.08	--				
Concerns about retirement (RET)	-.27	-.00	-.06	-.06	-.11	.09	.23	--			
Social support (SOC)	.27	.17	.13	.07	.16	-.17	-.21	-.50	--		
Positive appraisal of military experiences (PAM)	.12	.14	.05	.17	.15	-.15	-.10	-.10	.59	--	
Positive adjustment (POS)	.27	.08	.14	.03	.06	-.29	-.32	-.65	.73	.34	--

Note. Correlations are estimated with full information maximum likelihood and therefore based on the full sample ($N = 567$).

Italicized: $|CR| > 1.5$.

Bold: $p < .05$.